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Sveučilište u Rijeci
TEHNIČKI FAKULTET

University of Rijeka
FACULTY OF ENGINEERING

GODIŠNJAK TEHNIČKOG FAKULTETA Sveučilišta u Rijeci

ANNUAL REPORT OF THE FACULTY OF ENGINEERING University of Rijeka

2017./2018.

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TEHNIČKOG FAKULTETA

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OF THE FACULTY OF ENGINEERING

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LEKTURA | PROOFREADING:
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PRIJELOM | LAYOUT DESIGN:
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ADRESA UREDNIŠTVA | EDITORIAL BOARD ADDRESS:
Godišnjak Tehničkog fakulteta Sveučilišta u Rijeci
51000 Rijeka, Vukovarska 58, Hrvatska / Croatia

Tel.: +385 (0)51 / 651 - 444
Fax: +385 (0)51 / 651 - 416
dekanat@riteh.hr
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sadržaj
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dean's preface

Dragi prijatelji Tehničkog fakulteta!

Pred vama se nalazi Godišnjak posvećen pedeset i osmoj godini postojanja i djelovanja Tehničkoga fakulteta Sveučilišta u Rijeci. U njemu smo saželi aktivnosti naših djelatnika i studenata, kao i postignuća ostvarena tijekom akademske godine 2017./2018. Zahvaljujući rezultatima sustavnog provođenja strategije temeljene na izvrsnosti u nastavnoj, znanstvenoj i stručnoj djelatnosti, naš se Fakultet pozicionirao kao visoko organizirana i prepoznatljiva sastavnica Sveučilišta u Rijeci te kao jedna od vodećih institucija u Hrvatskoj koja odgaja i obrazuje stručnjake iz područja strojarstva, brodogradnje, elektrotehnike i računarstva.

Takav status možemo zahvaliti i kontinuiranom ulaganju u unaprjeđivanje uvjeta rada u nastavnim i laboratorijskim prostorima. U akademskoj godini 2017./2018. uloženo je gotovo četiri milijuna kuna u nabavku nove laboratorijske opreme, razvoj računalne infrastrukture te održavanje prostora Fakulteta.

Prošla je akademska godina bila obilježena brojnim događanjima, od kojih treba izdvojiti sljedeće: posjet Stručnog povjerenstva u postupku reakreditacije Fakulteta te dobivanje dopusnice za provođenje nastave na poslijediplomskom sveučilišnom (doktorskom) studiju iz znanstvenog područja tehničkih znanosti – polja Računarstvo.

Po prvi je puta na našem fakultetu organiziran JobFair, sajam poslova koji očekuju naše buduće inženjere. Odaziv tvrtki, kao i veliki interes za ovogodišnji JobFair, pokazatelj su velike potražnje naših kadrova na tržištu rada. Job Fair organiziran je istoga dana kada i Dan otvorenih laboratorija Tehničkog fakulteta gdje se učenicima trećih razreda srednjih škola omogućilo aktivno sudjelovanje u eksperimentalnoj nastavi upotrebom naprednih laboratorijskih resursa fakulteta.

Dear Friends of the Faculty of Engineering!

You are holding the latest edition of our Annual Report, which is dedicated to the 58th anniversary of foundation and work of the Faculty of Engineering of Rijeka University. We have summarised in it the activities of our staff and students as well as the achievements realised during the 2017/2018 academic year. Thanks to the results of systematic implementation of the Strategy based on excellence in teaching, research and professional activities, our Faculty has established itself as a highly organised and recognisable constituent institution of the University of Rijeka and as one of the leading institutions in Croatia, educating professionals in the field of Mechanical Engineering, Naval Architecture, Electrical Engineering and Computer Engineering.

Such a status is certainly due to the continuous investment in improving the working conditions in teaching and laboratory premises. In the 2017/2018 academic year, nearly four million kuna was invested in purchasing new laboratory equipment, developing computer infrastructure and in the maintenance of the Faculty premises.

The previous academic year was marked by numerous events, of which the following should be mentioned: the visit of the Expert Commission for the process of re-accreditation of the Faculty and receiving the permit for teaching at the postgraduate university (doctoral) study programme in the scientific area of engineering sciences – field of Computer Engineering.

For the first time a JobFair was oranised at our Faculty, presenting jobs that our future engineers expect. The response of the companies, as well as a great interest for this year's JobFair, indicate the high demand of engineers on the labour market. The Job Fair was organised on

U svrhu poticanja suradnje s gospodarstvom osnovan je Gospodarski savjet Tehničkog fakulteta kojeg, uz naše članove, čine čelnici uglednih instituicija i trgovačkih društava iz područja djelatnosti Fakulteta. Gospodarski savjet osnovan je prvenstveno radi poticanja suradnje na prijavi i provođenju zajedničkih znanstvenih, razvojnih i stručnih projekata, prilagođavanja studijskih programa potrebama gospodarstva i tržišta rada, boljeg povezivanja Fakulteta i gospodarstva u istraživanjima studenata doktorskih studija te organiziranja programa cjeloživotnog obrazovanja u skladu s potrebama gospodarstva i kvalitetnijeg izvođenja studentske prakse.

Kako sve ono što radimo nije ostalo nezapaženo, potvrđuju i ovogodišnje istaknute nagrade i priznanja našim nastavnicima: prof. dr. sc. Josip Brnić izabran je u počasno zvanje gostujućeg profesora na Shenyang University of Technology u Kini; našim umirovljenim profesorima u trajnom zvanju dr. sc. Božidaru Križanu i prof. dr. sc. Josipu Brniću dodijeljena su počasna zvanja professor emeritus Sveučilišta u Rijeci; CEEPUS mreža voditelja prof. dr. sc. Zlatana Cara ocijenjena je kao najbolja na razini cjelokupnog CEEPUS programa; doc. dr. sc. Jonatan Lerga dobitnik je Godišnje nagrade Primorsko-goranske županije; poslijedoktorand dr. sc. Goran Mauša dobitnik je Godišnje nagrade Zaklade Sveučilišta u Rijeci za 2016. g. u kategoriji Mladi znanstvenici za područje tehničkih i prirodnih znanosti; doc. dr. sc. Marino Brčić i mr. sc. Marijana Živić-Đurović, v. pred. dobitnici su nagrade za nastavnu izvrsnost za ak. god. 2017./2018. koju dodjeljuje Sveučilište u Rijeci.

Kako u nastavi i znanosti, tako su se naši nastavnici i studenti istaknuli i u sportu. Sportaši našega fakulteta osvojili su titulu najuspješnijeg fakulteta u ukupnoj konkurenciji, a imamo i najuspješnijeg sportaša Unisport lige 2017./2018.

Na Jedriličarskom kupu FSB 2018. u Šibeniku posada Tehničkoga fakulteta u Rijeci osvojila je prvo mjesto; na 20. Riječkoj regati u mornarskom veslanju u organizaciji Pomorskog fakulteta iz Rijeke ekipa Tehničkog fakulteta sudjelovala je u raznim kategorijama osvojivši prvo, drugo i treće mjesto.

Studentice i studenti našega fakulteta ostvarili su zapažene rezultate na međunarodnom natjecanju STEM Games 2018. održanom u Poreču. Natjecale su se znanstvene i sportske ekipe, a najveći uspjeh postigla je muška futsal ekipa osvojivši brončanu medalju.

Tim trkača Fakulteta po prvi je puta sudjelovao na poslovnoj utrci B2Brun i u kategoriji srednjih tvrtki, osvojio je prvo mjesto. Također, osvojio je prvo mjesto za najbolje plasirane tri trkačice te pojedinačno prvo mjesto u ženskoj i muškoj kategoriji.

Na Combisovom try (code) catch hackathonu održanom u Poreču, Riteh Web Team, sastavljen od studenata diplomskoga sveučilišnog studija računarstva, osvojio je drugo mjesto.

Naši studentski timovi (Riteh Racing Team, RITEH Waterbike i Adria Hydrofoil Team u suradnji s Pomorskim fakultetom) tradicionalno postižu značajne uspjehe. Riteh Racing Team ostvario je zapažene rezultate na natjecanju Baltic Open Bohemia 2017. u Češkoj i FS Italy 2017. u Italiji. Članovi tima organizirali su i sudjelovali na natjecanju FS Alpe Adria 2017. na kartodromu Bura u Šmriki na kojemu su osvojili prvo mjesto. Adria Hydrofoil Team osvojio je treće mjesto na međunarodnom natjecanju inovacija u brodogradnji u Saint Tropezu u Francuskoj.

Koristim ovu prigodu da svim djelatnicima i studentima čestitam pedeset i osmu obljetnicu Fakulteta i zahvalim im na njihovom doprinosu razvoju naše ustanove, posebno onima koji su svoj trud prepoznali u ovom uvodniku, a nije bilo prostora da ih poimence navedem. Radnoj skupini koju je i ove godine, kao glavni urednik, prevodio doc. dr. sc. Sanjin Kršćanski, a uz njega su je činili doc. dr. sc. Loredana Simčić, poslijedoktorand dr. sc. Neven Munjas, asistent Diego Sušanj i asistentica Ivana Lučin, zahvaljujem na velikom trudu koji su uložili u pripremu i uređenje cjelokupne građe.

U Rijeci, 5. listopada 2018.

Dekanica
Prof. dr. sc. Jasna Prpić-Oršić

the same day as the Day of Open Laboratories of the Faculty of Engineering, where third-grade students of secondary schools were able to participate actively in experimental teaching using the advanced laboratory resources of the faculty.

In order to foster the cooperation with economy, the Economic Council of the Faculty of Engineering has been established, which, together with our members, is made up of leaders of distinguished institutions and companies from the field of activity of the Faculty. The Economic Council was established primarily to encourage collaboration in the application and implementation of joint scientific, developmental and professional projects, adaptation of study programs to the needs of the economy and the labour market, better linkage between the Faculty and the economy in the research of PhD students, as well as organisation of lifelong learning programs in accordance with the needs of the economy and more efficient realisation of the student practice.

That these activities of our staff do not pass unnoticed is confirmed by the fact that this year too our teachers were winners of distinguished awards and recognitions. Prof. D. Sc. Josip Brnić was elected Honorary Professor at the Shenyang University of Technology in China; our retired tenured Professors D. Sc. Božidar Križan and D. Sc. Josip Brnić were given the honorary title Prof. Emeritus of Rijeka University; the CEEPUS network run by its leader Prof. D. Sc. Zlatan Car was evaluated as the best on the level of the entire CEEPUS programme; Assist. Prof. Jonatan Lerga won the Annual Award of the Primorsko-Goranska County; Postdoctoral research assistant D.Sc. Goran Mauša won the 2016 Award of the Foundation of the University of Rijeka in the category of scientists in the fields of engineering and natural sciences; Assist. Prof. Marino Brčić and M.Sc. Marijana Živić-Đurović, senior lecturer, won the Excellence in Teaching Award for the 2017/2018 ac. year, awarded by the University of Rijeka.

Besides in teaching and in science, our teachers and students have also achieved remarkable results in sports. Our athletes have won the title of the most successful faculty in the overall competition; in addition, we have the most successful athlete of the Unisport League 2017/2018.

At the FSB 2018 Sailing Cup, the crew of the Faculty of Engineering in Rijeka won the first place; at the 20th Rijeka`s Regatta in Maritime Rowing, organised by the Faculty of Maritime Studies in Rijeka, the crew of the Faculty of Engineering participated in various categories winning the first, second and third place.

Students of our faculty achieved stunning results in the STEM Games 2018 international competition, which was held in Poreč. Both scientific and sports teams took part in the competition, and the biggest success was achieved by the male futsal team that won the bronze medal.

The team of runners of the Faculty participated for the first time in the business race B2Brun and, in the category of medium enterprises, won the first place. The team also won the first place for the best three female runners as well as the single first place in the female and male category.

At the Combis try code catch hackathon held in Poreč, the Riteh Web Team, composed of students of the graduate university study programme of Computer Science, won the second place.

Our students teams (Riteh Racing Team, RITEH Waterbike and Adria Hydrofoil Team in cooperation with the Faculty of Maritime Studies) have traditionally achieved remarkable results. The Riteh Racing Team got stunning results at the Baltic Open Bohemia 2017 competition in the Czech Republic and 2017 FS Italy competition in Italy. The members of the team organised and participated in the FS Alpe Adria 2017 competition at the go-karting race track Bura in Šmrika where they won the first place. The Adria Hydrofoil Team won the third place at the international competition for innovations in Naval Architecture in Saint Tropez in France.

I would like to use this opportunity to congratulate all the staff and the students on the 58th anniversary of the Faculty and thank them for their contribution to the development of our institution, especially those who have recognised their effort in this Preface and there was no space to name them individually.

I express my gratitude to this year's working group, the editor-in-chief Assist. Prof. D. Sc. Sanjin Kršćanski, Assist. Prof. D. Sc. Loredana Simčić, postdoc D. Sc. Neven Munjas, Assistants Diego Sušanj and Ivana Lučin. Thank you for the effort you invested in the preparation of the material and the edition of this Annual Report.

In Rijeka, 5th October 2018

Dean
Prof. D. Sc. Jasna Prpić-Oršić

1 opće informacije general information

Tehnički fakultet Sveučilišta u Rijeci stožerna je visokoškolska i znanstvenoistraživačka institucija na području tehničkih znanosti, ne samo na Sveučilištu u Rijeci nego i u regiji u kojoj djeluje, konkurentna na europskom i svjetskom tržištu znanja. Fakultet danas objedinjuje djelatnost jedanaest zavoda, i to:

The Faculty of Engineering of the University of Rijeka is a leading higher education, scientific and research institution in the field of engineering sciences not only at the University of Rijeka, but also in the region where is situated. It is competitive on the European and the world knowledge market. The Faculty encompasses 11 departments, namely:

- Zavoda za automatiku i elektroniku
  Department of Automation and Electronics
- Zavoda za brodogradnju i inženjerstvo morske tehnologije
  Department of Naval Architecture and Ocean Engineering
- Zavoda za elektroenergetiku
  Department of Electrical Power Engineering
- Zavoda za industrijsko inženjerstvo i management
  Department of Industrial Engineering and Management
- Zavoda za konstruiranje u strojarstvu
  Department of Mechanical Engineering Design
- Zavoda za matematiku, fiziku, strane jezike i kineziologiju
  Department of Mathematics, Physics, Foreign Languages and Kinesiology
- Zavoda za materijale
  Department of Materials Science and Engineering
- Zavoda za mehaniku fluida i računarsko inženjerstvo
  Department of Fluid Mechanics and Computational Engineering
- Zavoda za računarstvo
  Department of Computer Engineering
- Zavoda za tehničku mehaniku
  Department of Engineering Mechanics
- Zavoda za termodinamiku i energetiku
  Department of Thermodynamics and Energy Engineering

U sklopu zavoda djeluje 36 katedri i 50 laboratorija, a na Fakultetu djeluju i Računalni centar, Knjižnica, te Financijska služba, Služba nabave i komercijale, Služba općih i kadrovskih poslova, Služba studentske evidencije i Tehnička služba. Od 181 zaposlenika 83 ih je u znanstveno-nastavnim, 6 u nastavnim i 36 u suradničkim zvanjima, 6 je znanstvenih novaka, 4 je zaposlenika na projektima Hrvatske zaklade za znanost, a 44 je djelatnika u administrativnim i stručnim službama. Dvoje je djelatnika na stručnom osposobljavanju. Na Fakultetu radi i veći broj vanjskih suradnika. Fakultet izvodi sveučilišne preddiplomske i sveučilišne diplomske studijske programe na području strojarstva, brodogradnje, elektrotehnike i računarstva te stručne preddiplomske studijske

The departments include 36 sections and 50 laboratories, and the Faculty also has a Computing Centre, a Library as well as an Accounting Division, Procurement Office, the General and Personnel Office, the Student Affairs Office and the Technical Service. Of the total number of 181 employees, 83 are in teaching-research, 6 in teaching and 36 in associate positions, 6 junior researchers, 4 members of staff work on projects funded by the Croatian Science Foundation, and 44 work in the administrative and professional services. Two employees are on a professional training. The Faculty engages a large number of external associates. The Faculty offers undergraduate and graduate university study programmes in

programe na području strojarstva, brodogradnje i elektrotehnike, kao i trogodišnji treći ciklus obrazovanja koji omogućava stjecanje doktorata znanosti na području tehničkih znanosti, i to na polju strojarstva, brodogradnje, elektrotehnike, temeljnih tehničkih znanosti te interdisciplinarnih tehničkih znanosti.

Do sada je na Tehničkom fakultetu u Rijeci diplome steklo 138 doktora znanosti, 95 magistara znanosti, 2899 diplomiranih inženjera (od čega 2335 strojarstva, 311 brodogradnje i 253 elektrotehnike), 1536 inženjera (od čega 717 strojarstva, 108 brodogradnje i 711 elektrotehnike), 1173 magistra inženjera (od čega 500 strojarstva, 107 brodogradnje, 445 elektrotehnike i 121 računarstva), 1659 sveučilišnih prvostupnika inženjera (od čega 817 strojarstva, 117 brodogradnje, 486 elektrotehnike i 239 računarstva) te 536 stručnih prvostupnika inženjera (od čega 210 strojarstva, 48 brodogradnje i 278 elektrotehnike). Danas tu studira više od 2000 studenata.

Tehnički fakultet ima dugu tradiciju izdavanja znanstvenih i stručnih radova. Tiskanje Zbornika radova započinje još 1970. godine, a 1988. godine spomenuta edicija mijenja naziv u Zbornik Tehničkog fakulteta Rijeka. Naziv se ponovo mijenja 1995. godine u Engineering Review, a pod tim nazivom časopis se tiska i danas. Osim znanstvenih i stručnih radova, djelatnici Fakulteta objavili su i mnogobrojne knjige i udžbenike.

Na Fakultetu je od 24. studenog 2000. godine aktivan Alumni klub Tehničkoga fakulteta Sveučilišta u Rijeci (skraćeno ALUMNI TFR) osnovan s primarnim ciljem izgradnje i jačanja veza i suradnje između bivših studenata i Tehničkoga fakulteta, ali i osobne suradnje između bivših studenata. Predsjednik ALUMNI TFR je doc. dr. sc. Vedran Kirinčić.

Dobrovoljno darivanje krvi na Fakultetu provodi se još od 1980. godine. U novije doba ta hvalevrijedna aktivnost provodi se organizirano od 2002. godine. U akademskoj godini 2017./2018. smo održali 3 akcije (18.10.2017., 16.1.2018. i 18.4.2018.) pri čemu je sakupljeno 157 doza ove dragocjene tekućine. Proteklih godina glavni organizator darivanja krvi je prof. dr. sc. Roberto Žigulić, a pomažu mu i članovi Kluba 25. Krv u podjednakom broju daruju i zaposlenici i studenti.

Na TFR od 1990. godine djeluje i podružnica Nezavisnog sindikata znanosti i visokog obrazovanja. Osim zaštite prava svojih članova, sindikalna podružnica na Fakultetu obavlja i zadatke iz djelokruga rada Zaposleničkoga vijeća koje na fakultetu nije konstituirano. Sindikalni povjerenici Podružnice su prof. dr. sc. Roberto Žigulić iz redova nastavnoga osoblja i Žarko Burić iz redova nenastavnoga osoblja.

mechanical engineering, naval architecture, electrical engineering and computer engineering as well as undergraduate vocational study programmes in mechanical engineering, naval architecture and electrical engineering. It also offers a three-year doctoral study in the area Engineering Sciences, in the fields of Mechanical Engineering, Naval Architecture, Electrical Engineering, Fundamental Engineering Sciences and Interdisciplinary Engineering Sciences.

So far, the Faculty of Engineering in Rijeka has delivered 138 D. Sc. and 95 Master of Science degrees. Of the former 2899 Graduate Engineer Diplomas 2335 were in Mechanical Engineering, 311 in Naval Architecture and 253 in Electrical Engineering; and of 1536 Engineer Diplomas 717 were in Mechanical Engineering, 108 in Naval Architecture and 711 in Electrical Engineering. The Bologna programme has produced 1173 Master Engineers (500 Mechanical Engineering, 107 Naval Architecture, 445 Electrical Engineering and 121 Computer Engineering), 1659 University Bachelor Engineers (817 Mechanical Engineering, 117 Naval Architecture, 486 Electrical Engineering and 239 Computer Engineering) as well as 536 Vocational Bachelor Engineers (210 Mechanical Engineering, 48 Naval Architecture and 278 Electrical Engineering). At present more than 2000 students study at the Faculty.

The Faculty of Engineering has a long tradition of publishing scientific and technical papers. Proceedings were first published as far back as in 1970, and as of 1988 under the name Proceedings of the Faculty of Engineering in Rijeka. In 1995, this was renamed into Engineering Review, which is still in use today. In addition to scientific and technical papers, the faculty staff has published numerous books and textbooks.

The Alumni Club of the Faculty of Engineering in Rijeka (ALUMNI TFR) was founded on 24th November 2000 with the primary aim of establishing and strengthening ties and cooperation not only between alumni and the Faculty but also among the alumni themselves. The chair of the ALUMNI TFR is Assist. Prof. D. Sc. Vedran Kirinčić.

Voluntary blood donation at the Faculty has been carried out since 1980. So in the last year, three such events were organized (October 18 2017, January 16 2018 and April 18 2018), where 157 doses of this precious liquid were collected. In recent years, the main organizer of the blood donation has been Prof. D. Sc. Roberto Žigulić, assisted by members of Club 25. The blood is being donated by equal number of staff and students.

Since 1990, a subsidiary of the Independent Union of Science and Higher Education Employees of Croatia has been active at the Faculty of Engineering. Apart from protecting the rights of its members, the union branch carries out tasks within the scope of Workers`s Council, which has not been organized at the Faculty. The Union representatives of the Subsidiary are Prof. D. Sc. Roberto Žigulić, representing the teaching staff, and Žarko Burić the non-teaching staff.


PRORAČUN GRANIČNE ČVRSTOĆE TRUPA BRODA
DELL

				GLAVNI TAJNIK	DEKANAT						
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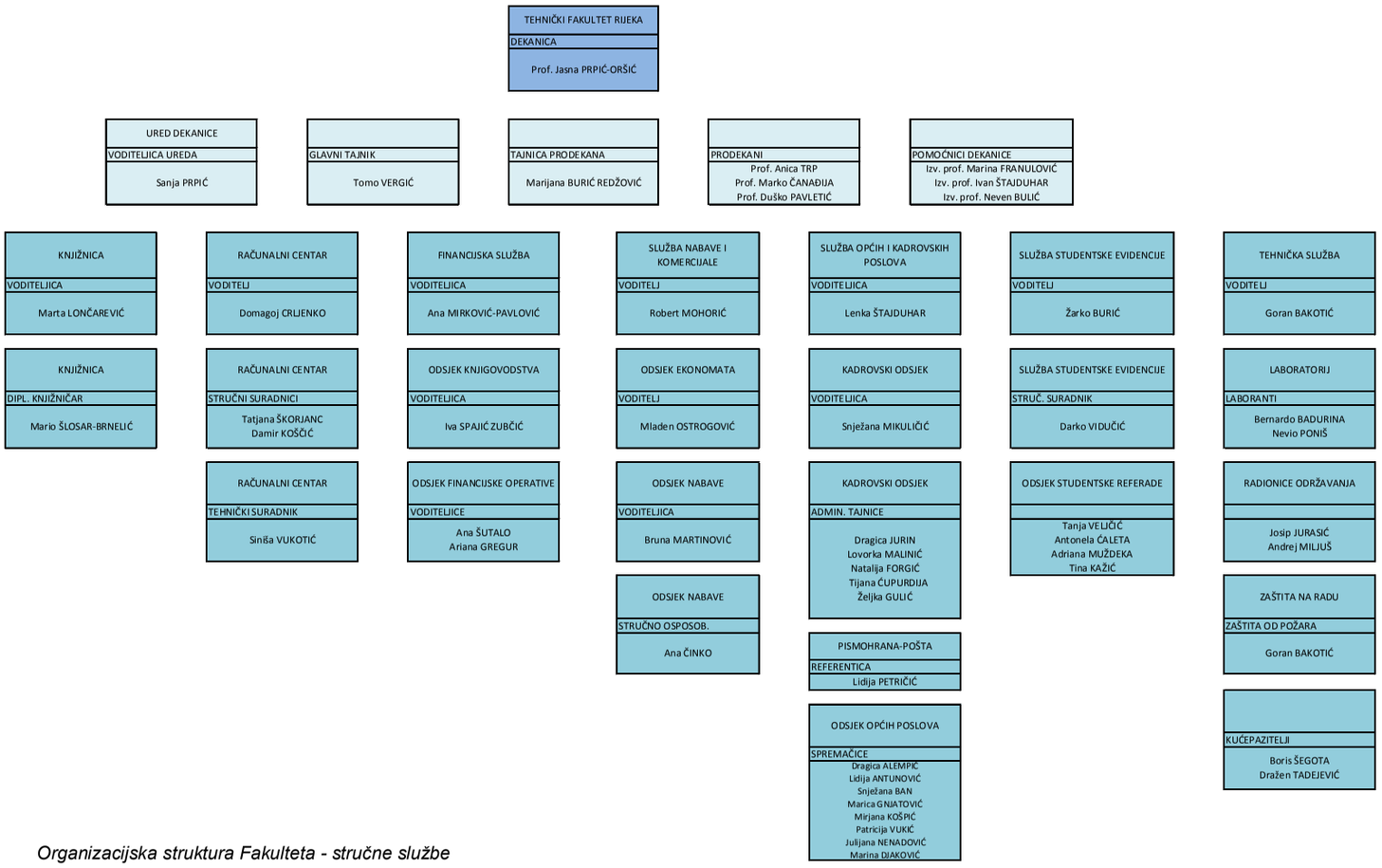
PREDSTOJNIK	PREDSTOJNIK	PREDSTOJNIK	PREDSTOJNIK	PREDSTOJNIK	PREDSTOJNICA	PREDSTOJNIK	PREDSTOJNIK	PREDSTOJNICA	PREDSTOJNIK	PREDSTOJNIK
Prof. Saša VLAHINIĆ	Prof. Roko DEJHALLA	Izv. prof. Dubravko FRANKOVIĆ	Prof. Tonči MIKAC	Prof. Neven LOVRIN	Prof. Nelida ČRNJARIĆ-ŽIC	Doc. Dario ILJKIĆ	Izv. prof. Lado KRANJČEVIĆ	Izv. prof. Tihana GALINAC GRBAC	Prof. Roberto ŽIGULIĆ	Prof. Branimir PAVKOVIĆ
Katedra za mjerne sustave	Katedra za otpor i propulziju broda	Katedra za električne strojeve i pogone	Katedra za mjernu tehniku i sustave kvalitete	Katedra za inženjersku grafiku	Katedra za primijenjenu matematiku i fiziku	Katedra za inženjerstvo materijala	Katedra za mehaniku fluida i hidrauličke strojeve	Katedra za komunikacijske sustave	Katedra za čvrstoću konstrukcija	Katedra za termodinamiku i termotehniku
VODITELJ	VODITELJ	VODITELJ	VODITELJ	VODITELJICA	VODITELJICA	VODITELJ	VODITELJ	VODITELJ	VODITELJ	VODITELJICA
Prof. Nino STOJKOVIĆ	Prof. Roko DEJHALLA	Prof. Livio ŠUŠNJIĆ	Prof. Duško PAVLETIĆ	Doc. Kristina MARKOVIĆ	Prof. Senka MAČEŠIĆ	Doc. Dario ILJKIĆ	Izv. prof. Zoran ČARIJA	Izv. prof. Miroslav JOLER	Prof. Domagoj LANC	Prof. Anica TRP
Katedra za signale i sustave	Katedra za projektiranje plovnih objekata	Katedra za opću elektrotehniku	Katedra za organizaciju i operacijski management	Katedra za konstruiranje i precizno inženjerstvo	Katedra za strane jezike i kineziologiju	Katedra za strukturu i svojstva materijala	Katedra za računarsko inženjerstvo	Katedra za programsku podršku	Katedra za dinamiku strojeva	Katedra za tehniku hlađenja
VODITELJ	VODITELJ	VODITELJ	VODITELJ	VODITELJ	VODITELJICA	VODITELJICA	VODITELJ	VODITELJ	VODITELJ	VODITELJ
Prof. Viktor SUČIĆ	Prof. Bruno ČALIĆ	Doc. Vedran KIRINČIĆ	Prof. Tonči MIKAC	Prof. Saša ZELENIKA	Elisa VELČIĆ-JANJETIĆ, v. pred.	Doc. Sunčana SMOKVINA HANZA	Izv. prof. Siniša DRUŽETA	Izv. prof. Ivan ŠTAJDUHAR	Prof. Sanjin BRAUT	Prof. Branimir PAVKOVIĆ
Katedra za elektroniku, robotiku i automatiku	Katedra za tehnologiju i organizaciju brodogradnje	Katedra za el. postrojenja i elektroenergetske sustave	Katedra za proizvodnu opremu i robotiku	Katedra za konstrukcijske elemente				Katedra za inteligentne računalne sustave	Katedra za mehaniku tijela	Katedra za brodsko strojarstvo
VODITELJ	VODITELJ	VODITELJ	VODITELJ	VODITELJ				VODITELJ	VODITELJ	VODITELJ
Prof. Zlatan CAR	Prof. Nikša FAFANDJEL	Izv. prof. Dubravko FRANKOVIĆ	Izv. prof. Zoran JURKOVIĆ	Prof. Boris OBSIEGER				Prof. Ivo IPŠIĆ	Prof. Marko ČANAĐIJA	Prof. Tomislav MRAKOVČIĆ
	Katedra za dinamiku plovnih objekata		Katedra za proizvodne tehnologije	Katedra za prijenosnike snage i transportna sredstva						Katedra za procesno energetsko strojarstvo i zaštitu okoliša
	VODITELJICA		VODITELJ	VODITELJ						VODITELJ
	Prof. Jasna PRPIĆ-ORŠIĆ		Prof. Goran ĆUKOR	Prof. Neven LOVRIN						Doc. Vladimir GLAŽAR
	Katedra za konstrukciju plovnih objekata		Katedra za projektiranje procesa							
	VODITELJ		VODITELJ							
	Prof. Albert ZAMARIN		Prof. Mladen PERINIĆ							

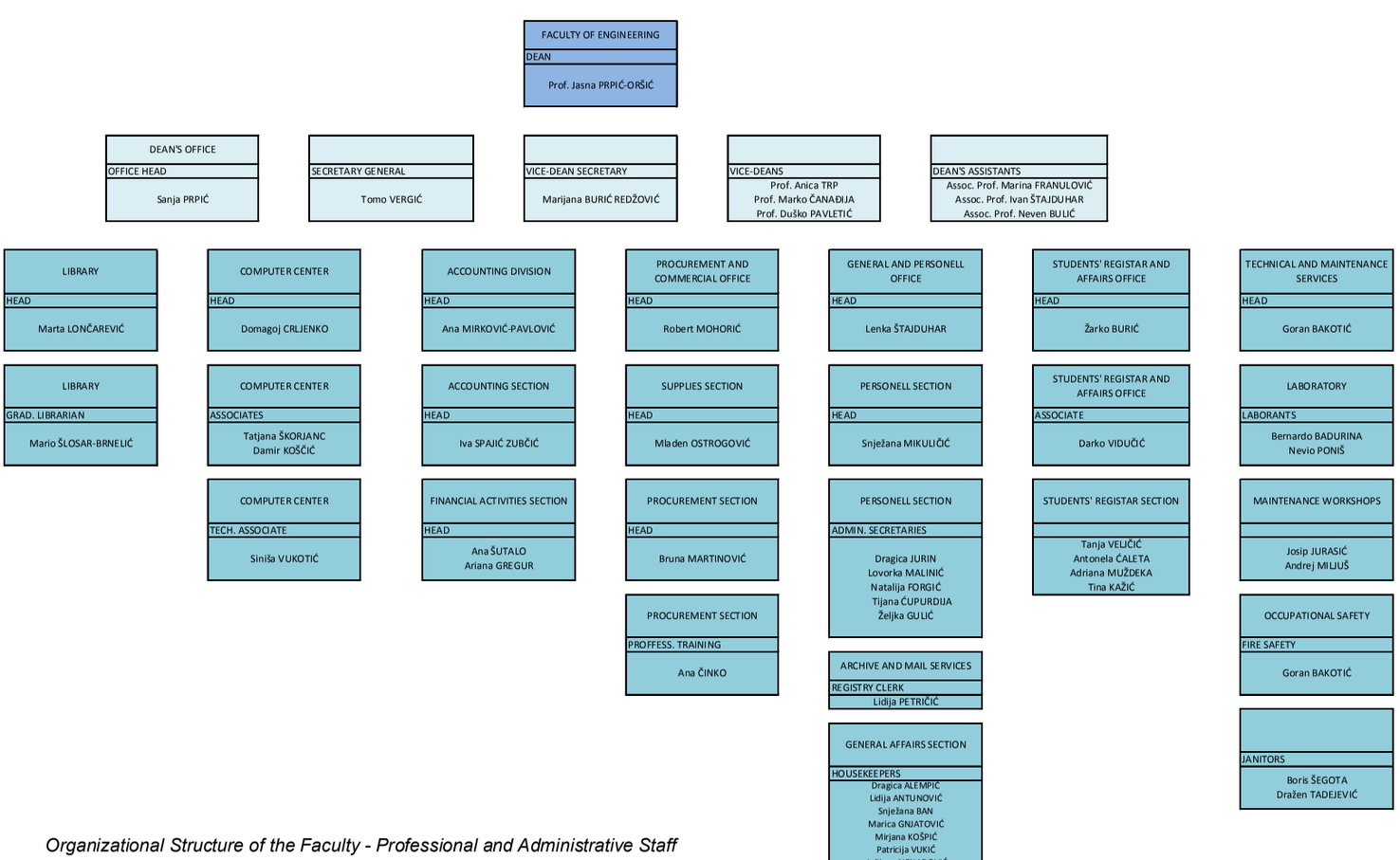
Organizacijska struktura Fakulteta - zavodi i katedre

				SECRETARY GENERAL	DEAN'S OFFICE	VICE-DEANS	DEAN'S ASSISTANTS				
					DEAN						
				Tomo VERGIĆ	Prof. Jasna PRPIĆ- ORŠIĆ	Prof. Anica TRP Prof. Marko ČANAĐIJA Prof. Duško PAVLETIĆ	Assoc. Prof. Marina FRANULOVIĆ Assoc. Prof. Ivan ŠTAJDUHAR Assoc. Prof. Neven BULIĆ				
DEPARTMENT OF AUTOMATION AND ELECTRONICS	DEPT. OF NAVAL ARCHITECTURE AND OCEAN ENGINEERING	DEPARTMENT OF ELECTRIC POWER ENGINEERING	DEPARTMENT OF INDUSTRIAL ENGINEERING AND MANAGEMENT	DEPARTMENT OF MECHANICAL ENGINEERING DESIGN	DEPT. OF MATHS, PHYSICS, FOREIGN LANGUAGES AND KINESIOLOGY	DEPARTMENT OF MATERIAL SCIENCE AND ENGINEERING	DEPARTMENT OF FLUID MECHANICS AND COMPUTATIONAL ENGINEERING	DEPARTMENT OF COMPUTER ENGINEERING	DEPARTMENT OF ENGINEERING MECHANICS	DEPARTMENT OF THERMODYNAMICS AND ENERGY ENGINEERING
DEPARTMENT HEAD	DEPARTMENT HEAD	DEPARTMENT HEAD	DEPARTMENT HEAD	DEPARTMENT HEAD	DEPARTMENT HEAD	DEPARTMENT HEAD	DEPARTMENT HEAD	DEPARTMENT HEAD	DEPARTMENT HEAD	DEPARTMENT HEAD
Prof. Saša VLAHINIĆ	Prof. Roko DEJHALLA	Assoc. Prof. Dubravko FRANKOVIĆ	Prof. Tonči MIKAC	Prof. Neven LOVRIN	Prof. Nelida ČRNJARIĆ-ŽIC	Assist. Prof. Dario ILJKIĆ	Assoc. Prof. Lado KRANJČEVIĆ	Assoc. Prof. Tihana GALINAC GRBAC	Prof. Roberto ŽIGULIĆ	Prof. Branimir PAVKOVIĆ
Chair of Measuring Systems	Chair of Resistance and Propulsion of the Ship	Chair of Electrical Engines and Drives	Chair of Measurment Techniques and Quality Systems	Chair of Engineering Graphics	Chair of Applied Mathematics and Physics	Chair of Material Engineering	Chair of Fluid Mechanics and Hydraulic Engines	Chair of Communication Systems	Chair of Structural Analysis	Chair of Thermodynamics and Thermotechnics
HEAD	HEAD	HEAD	HEAD	HEAD	HEAD	HEAD	HEAD	HEAD	HEAD	HEAD
Prof. Nino STOJKOVIĆ	Prof. Roko DEJHALLA	Prof. Livio ŠUŠNJIĆ	Prof. Duško PAVLETIĆ	Assist. Prof. Kristina MARKOVIĆ	Prof. Senka MAČEŠIĆ	Assist. Prof. Dario ILJKIĆ	Assoc. Prof. Zoran ČARIJA	Assoc. Prof. Miroslav JOLER	Prof. Domagoj LANC	Prof. Anica TRP
Chair of Signals and Systems	Chair of Vessel Design	Chair of Electrical Engineering	Chair of Organisation and Operational Management	Chair of Construction and Precision Engineering	Chair of Foreign Languages and Kinesiology	Chair of Structure and Material Properties	Chair of Computational Engineering	Chair of Software Engineering	Chair of Machine Dynamics	Chair of Refrigeration
HEAD	HEAD	HEAD	HEAD	HEAD	HEAD	HEAD	HEAD	HEAD	HEAD	HEAD
Prof. Viktor SUČIĆ	Prof. Bruno ČALIĆ	Assist. Prof. Vedran KIRINČIĆ	Prof. Tonči MIKAC	Prof. Saša ZELENIKA	Elisa VELČIĆ-JANJETIĆ, sen.lect	Assist. Prof. Sunčana SMOKVINA HANZA	Assoc. Prof. Siniša DRUŽETA	Assoc. Prof. Ivan ŠTAJDUHAR	Prof. Sanjin BRAUT	Prof. Branimir PAVKOVIĆ
Chair of Electronics, Robotics and Automation	Chair of Technology and Organisation of Naval Architecture	Chair of Electric Facilities and Power Systems	Chair of Production Equipment and Robotics	Chair of Construction Elements				Chair of Intelligent Computing Systems	Chair of Solid Mechanics	Chair of Marine Engineering
HEAD	HEAD	HEAD	HEAD	HEAD				HEAD	HEAD	HEAD
Prof. Zlatan CAR	Prof. Nikša FAFANDJEL	Assoc. Prof. Dubravko FRANKOVIĆ	Assoc. Prof. Zoran JURKOVIĆ	Prof. Boris OBSIEGER				Prof. Ivo IPŠIĆ	Prof. Marko ČANAĐIJA	Prof. Tomislav MRAKOVČIĆ
	Chair of the Vessel Dynamics		Chair of Production Technologies	Chair of Power Transmissions and Industrial Transport Equipment and Devices						Chair of Process Energy Engineering and Enviroment Protection
	HEAD		HEAD	HEAD						HEAD
	Prof. Jasna PRPIĆ-ORŠIĆ		Prof. Goran ĆUKOR	Prof. Neven LOVRIN						Assist. Prof. Vladimir GLAŽAR
	Chair of Vessel Construction		Chair of Process Planning							
	HEAD		HEAD							
	Prof. Albert ZAMARIN		Prof. Mladen PERINIĆ							

Organisational Structure of the Faculty - Departments and Chairs



Organizacijska struktura Fakulteta - stručne službe



Organizational Structure of the Faculty - Professional and Administrative Staff

2 fakultet u akademskoj godini 2017./2018.
the faculty in the academic year 2017/2018

2.1 opće informacije
general information

Na Tehničkom fakultetu tijekom akademske godine 2017./2018. u različitim fazama studija aktivno je studiralo 2268 studenata, a svoj studij u tom razdoblju uspješno je završilo 149 magistra inženjera, 224 sveučilišnih prvostupnika i 83 stručnih prvostupnika. U istoj je akademskoj godini na našem Fakultetu jedan kandidat obranio doktorsku disertaciju.

Unapređivanje uvjeta rada u nastavnim i laboratorijskim prostorima stalna je odrednica djelovanja Fakulteta, te u skladu sa svojim mogućnostima Fakultet neprekidno ulaže u podizanje kvalitete ovih bitnih resursa. U akademskoj godini 2017./2018. uloženo je više od tri milijuna kuna u nabavku nove laboratorijske opreme, razvoj računalne infrastrukture te održavanje prostora Fakulteta.

Kao i prethodnih godina, Fakultet je tijekom ak. god. 2017./2018. uložio više od milijun kuna vlastitih novčanih sredstava u nabavku opreme s ciljem osuvremenjivanja i unaprijeđenja nastavnih aktivnosti.

U svibnju 2018. godine Fakultetsko vijeće je prihvatilo izmjene studijskih programa preddiplomskih i diplomskih sveučilišnih studija Brodogradnja, Elektrotehnika i Strojarstvo te je cjelokupna dokumentacija zatim upućena na daljnji postupak na Sveučilište. Senat Sveučilišta je u lipnju 2018. godine donio odluku o izmjenama i dopunama studijskih programa. Usvojenim izmjena i dopunama osuvremenjeni su sadržaji na većem broju kolegija i zamijenjeni su postojeći izborni kolegiji novim kolegijima, čime je omogućeno povećanje atraktivnosti i prilagođavanje studijskih programa potrebama tržišta rada. Ovi su studijski programi ujedno akreditirani i za izvođenje na engleskom jeziku.

Kao i prethodnih godina, krajem rujna 2018. održano je uvodno predavanje za studente 1. godine preddiplomskih sveučilišnih studija, na kojem su studentima koji započinju studij dane osnovne informacije o studijima i studiranju. U zadnjem tjednu rujna su za nove studente održani pripremni seminari iz matematike i programiranja s ciljem ponavljanja određenih sadržaja i pripreme studenata za studij.

Tijekom akademske godine 2017./2018. na Tehničkom fakultetu se odvijao znanstvenoistraživački rad u okviru 40 znanstvenih projekata, od čega 6 znanstvenih projekata Hrvatske zaklade za znanost, 2 EU projekata, 24 projekta financiranih od strane Sveučilišta u Rijeci, 2 bilateralna projekta i 6 istraživačkih projekata s gospodarstvom.

Tijekom akademske godine 2017./2018. , Tehnički fakultet nastavlja s realizacijom mobilnosti studenata i profesora u sklopu Erasmus+ programa na način da je studentima omogućena mobilnost u svrhu studijskog boravka i obavljanja stručne prakse dok se mobilnost nastavnog i nenastavnog osoblja ostvaruje u svrhu održavanja nastave, odnosno stručnog usavršavanja.

Tehnički fakultet trenutno ima sklopljenih 25 Erasmus+ bilateralnih ugovora sa Sveučilištima iz Austrije, Cipra, Češke, Finske, Francuske, Italije, Litve, Mađarske, Poljske, Portugala, Rumunjske, Slovenije, Srbije i Švedske.

Tijekom akademske godine 2017./2018., putem Erasmusa, naši studenti ostvarili su sedam studijskih mobilnosti te dvije mobilnosti u svrhu obavljanje stručne prakse. Istovremeno smo ugostili šestero dolaznih stranih studenata. Jedan je naš profesor realizirao odlaznu mobilnost u svrhu usavršavanja dok smo mi pritom ugostili devet profesora od čega je šest boravilo na usavršavanju a tri sa svrhom održavanja nastave.

Suradnja s gospodarstvom kao i s drugim znanstvenim i obrazovnim ustanovama iznimno je bitan segment djelatnosti Fakulteta. Stoga je i u akademskoj godini 2017./2018. nastavljeno s umrežavanjem i poticanjem zajedničkog rada na znanstvenim i stručnim projektima, a sklopljeno je i više ugovora i sporazuma o znanstvenoistraživačkoj, obrazovnoj i stručnoj suradnji.

Neprekidno se provodi uređenje radnih prostora Fakulteta; pored redovitih održavanja prostora i opreme zamijenjeni su prozori na južnoj zgradi Fakulteta, zamijenjene su dotrajale ploče te je osuvremenjena prezentacijska oprema učionica, uređeni su zidovi i podovi u više učionica, kabineta i ureda te holu Fakulteta.

In the 2017/2018 academic year 2268 students studied actively at the Faculty of Engineering, of whom 149 earned the master's degree, 224 the university bachelor's degree and 83 the vocational bachelor's degree. In the same year, one candidate defended his doctoral thesis at our Faculty.

The improvement of the working conditions in teaching and laboratory premises is a permanent concern of the Faculty, and in line with its possibilities the Faculty continuously invests in the improvement of the quality of these important resources. In the 2017/2018 academic year, more than three million kunas was invested in the purchase of new laboratory equipment, the development of computer infrastructure and the maintenance of the Faculty premises.

As in previous years, during the 2017/2018 academic year the Faculty invested more than one million kuna from its own funds for the purchase of equipment in order to modernise and improve the teaching activities.

In May 2018, the Faculty Council accepted amendments to the study programmes of undergraduate and graduate university studies of Naval Architecture, Electrical Engineering and Mechanical Engineering and the whole documentation was sent to the University for further processing. In June 2018, the Senate of the University adopted the amendments to these study programmes. The adopted amendments modernised the content of a large number of courses and replaced the existing elective courses with new ones, which enabled the enhancement of attractiveness and adaptation of the study programmes to the needs of the labour market. The study programmes are also accredited for performing in English.

As in previous years, at the end of September 2018, an introductory lecture was held for students of the 1st year of undergraduate university and vocational studies, where students who started their studies were provided with basic information about the studies and studying. In the last week of September, preparatory seminars in maths and programming were held for these students to revise certain contents and prepare them for the studies.

During the 2017/2018 academic year, scientific research work was carried out within the framework of 40 scientific projects, of which six were projects of the Croatian Science Foundation, two were EU projects, 24 projects were funded by the University of Rijeka, two bilateral projects and six research projects with the economy.

During the 2017/2018 academic year, the Faculty of Engineering continued the realisation of the mobility of students and professors within the framework of the Erasmus+ programme, so that mobility is provided to students in order to study and complete professional practice, while mobility of the teaching and non-teaching staff is provided for the purpose of teaching, that is professional development.

The Faculty of Engineering currently has 25 bilateral agreements with universities from Austria, Cyprus, the Czech Republic, Finland, France, Italy, Lithuania, Hungary, Poland, Portugal, Romania, Slovenia, Serbia and Sweden. In the 2017/2018 academic year, seven of our students used the study mobility programme and two used it for professional practice, while at the same time we welcomed six foreign students. One of our teachers used the mobility for professional development, while we hosted nine foreign teachers, of whom six used the mobility for the same purpose and three of them in order to hold lectures.

The collaboration with the economy as well as with other scientific and educational institutions is an extremely important segment of the Faculty's activities. Therefore, in the 2017/2018 academic year, the Faculty continued with the networking and encouragement of cooperation on scientific and professional projects, and several contracts and agreements on scientific-research, educational and professional cooperation were concluded.

The Faculty continuously invests in and cares about its working premises. Along with regular maintenance of premises and equipment, the windows of the south building of the Faculty were replaced as well as the old blackboards. Furthermore, the presentation equipment of classrooms was modernized, and walls and floors in several classrooms, offices and the hall of the Faculty were arranged.

2.2 studenti nagrađeni u ak. godini 2017./2018.
awarded students in the 2017/2018 academic year

nagrada za akademski uspjeh | award for academic achievements

PREDDIPLOMSKI SVEUČILIŠNI STUDIJ | UNDERGRADUATE UNIVERSITY STUDY

Studij / Study	Godina / Year	Ime i prezime / Name and surname	Prosjek usvojenosti znanja, vještina i kompetencija / Knowledge, skills and competences average		ECTS
			godine / year	studija / study	
Strojarstvo/ Mechanical Engineering	1.	Marin Doričić	86%	86%	60
	2.	Lovre Šušić	93%	89%	120
Elektrotehnika/ Electrical Engineering	1.	Tajana Cvija	90%	90%	60
	2.	Antonio Žerjav	80%	84%	120
Računarstvo/ Computer Engineering	1.	Marina Banov	92%	92%	60
	2.	Mateja Napravnik	96%	94%	120

SVEUČILIŠNI PRVOSTUPNICI INŽENJERI | UNIVERSITY BACHELOR ENGINEERS

Studij/ Study	Ime i prezime/ Name and surname	Prosjek usvojenosti znanja, vještina i kompetencija/ Knowledge, skills and competences average
Strojarstvo/ Mechanical Engineering	Anja Mirić	91%
Brodogradnja/ Naval Architecture	Marin Smilović	77%
Elektrotehnika/ Electrical Engineering	Matteo Samsa	91%
Računarstvo/ Computer Engineering	Erik Otović	93%

DIPLOMSKI SVEUČILIŠNI STUDIJ | GRADUATE UNIVERSITY STUDY

Studij / Study	Godina / Year	Ime i prezime / Name and surname	Prosjek usvojenosti znanja, vještina i kompetencija / Knowledge, skills and competences average		ECTS
			godine / year	studija / study	
Strojarstvo/ Mechanical Engineering	1.	Martin Zlatić	95%	95%	60
Brodogradnja/ Naval architecture	1.	Karlo Stilinović	81%	81%	60
Elektrotehnika/ Electrical Engineering	1.	David Bačnar	89%	89%	60
Računarstvo/ Computer Engineering	1.	Tomislav Milanović	95%	95%	60

MAGISTRI INŽENJERI | MASTER ENGINEERS

Studij/ Study	Ime i prezime/ Name and surname	Prosjek usvojenosti znanja, vještina i kompetencija/ Knowledge, skills and competences average
Strojarstvo/ Mechanical Engineering	Ante Sikirica	96%
Brodogradnja/ Naval Architecture	Ivan Sulovsky	92%
Elektrotehnika/ Electrical Engineering	Korino Bogović	94%
Računarstvo/ Computer Engineering	Monika Vukušić	88%

PREDDIPLOMSKI STRUČNI STUDIJ | VOCATIONAL STUDY

Studij / Study	Godina / Year	Ime i prezime / Name and surname	Prosjek usvojenosti znanja, vještina i kompetencija / Knowledge, skills and competences average		ECTS
			godine / year	studija / study	
Elektrotehnika/ Electrical Engineering	1.	Erik Hrvatin	77%	77%	60
	2.	Dario Škaron	85%	83%	120

STRUČNI PRVOSTUPNICI INŽENJERI | BACHELOR ENGINEERS

Studij/ Study	Ime i prezime/ Name and surname	Prosjek usvojenosti znanja, vještina i kompetencija/ Knowledge, skills and competences average
Strojarstvo/ Mechanical Engineering	Ivana Čabrijan	80%
Elektrotehnika/ Electrical Engineering	Martin Dodlek	74%

nagrada dekanice za studentski aktivizam | dean's award for student activism

MARKO MESARIĆ

- Student 2. godine diplomskog sveučilišnog studija strojarstva
  Student of the 2nd year of Graduate University Study of Mechanical Engineering

IVANA ŽUŽIĆ

- Studentica 1. godine diplomskog sveučilišnog studija računarstva
  Student of the 1st year of Graduate University Study of Computer Engineering

2.3 časopis "engineering review"
the journal "engineering review"

Tehnički fakultet Sveučilišta u Rijeci ima dugu tradiciju izdavanja znanstvenih radova. Publiciranje znanstvenih radova djelatnika Tehničkog fakulteta seže u 1970. godinu kada započinje tiskanje Zbornika radova. Godine 1988. spomenuta edicija mijenja naziv u Zbornik Tehničkog fakulteta Rijeka, a 1995. godine uspostavlja se naziv Engineering Review, pod kojim se časopis i danas tiska.

Sve spomenute edicije bile su na raspolaganju za objavu radova kako nastavnog osoblja samog Fakulteta, tako i svima zainteresiranima. Fakultet nastoji zainteresirati znanstvenu javnost za publiciranje znanstvenih radova radi širenja razmjene znanstvenih postignuća temeljenih na istraživačkom radu. Područja iz kojih se u časopisu mogu objavljivati radovi prvenstveno obuhvaćaju strojarstvo, brodogradnju, temeljne tehničke znanosti, elektrotehniku, računalne znanosti i građevinarstvo. U ovom smislu časopis predstavlja jednu od rijetkih baza za publiciranje radova iz vrlo širokog dijapazona tehničkog područja. Razmatraju se i radovi koji su kvalitetni, a nisu izravno iz tehničkog područja, već mogu biti, primjerice, iz prirodnih znanosti, s određenom poveznicom s područjem tehnike. Nakon potpisanog ugovora o suizdavaštvu časopisa Engineering Review između Tehničkog fakulteta Sveučilišta u Rijeci (dekan Goran Turkalj) i Građevinskog fakulteta Sveučilišta u Rijeci (dekanica Aleksandra Deluka- Tibljaš), nastavljaju se aktivnosti oko izdavanja.

Izdavanje časopisa Engineering Review, od druge polovice 2011. godine, nastavlja se pod vodstvom glavnog urednika prof. dr. sc. Josipa Brnića (Editor- in- Chief). Pomoćni su urednici (Associate Editors) trenutno: prof. dr. sc. Marina Franulović, prof. dr. sc. Kristian Lenić, prof. dr. sc. Aleksandra Deluka-Tibljaš, prof. dr. sc. Domagoj Lanc, prof. dr. sc. Dubravko Franković, prof. dr. sc . Jonatan Lerga, prof. dr. sc. Dario Iljkić. Rad je prihvaćen za objavu u časopisu nakon dviju pozitivnih recenzija i obavljene jezične lekture. Jezičnu lekturu svih radova, nakon njihovih pozitivnih recenzija, uspješno obavlja Alenka Šunjić-Petrc, Ph. D. Računalnu podršku i rješenja pruža Tatjana Škorjanc, dipl. ing. Broj članova Editorial Boarda kao i broj članova Advisory Editorial Boarda je proširen. Članovi oba uredništva su eminentni domaći i inozemni profesori i stručnjaci. Veliku pomoć u pripremi, uređivanju i tiskanju radova pružaju nastavnici, asistenti i znanstveni novaci Tehničkog fakulteta: dr. sc. Željko Vrcan, dr. sc. Neven Munjas, Boris Delač, Ivan Volarić te Ivica Androjić i Ivana Pranjić s Građevinskog fakulteta u Rijeci.

Časopis Engineering Review indeksiran je u: Aluminum Industry Abstracts, Advanced Polymers Abstracts, Cambridge Scientific Abstract (CSA), Ceramic Abstracts/World Ceramics Abstracts, Composites Industry Abstracts, Computer and Information Systems Abstracts, Copper Technical Reference Library, Corrosion Abstracts, Electronics and Communications Abstracts, Engineered Materials Abstracts, High Technology Research Database with Aerospace, Inspec, Mechanical & Transportation Engineering Abstracts, METADEX, SCImago, SCOPUS, Web of Science (Emerging Sources Citation Index, od 2015. god.).

Zadovoljstvo je istaknuti kako je časopis, temeljem SCIMAGO kategorizacije rangiranja časopisa, u 2017. godini svrstan u Q2 (druga kvartila). Časopis je uređen za elektroničku obradu svih podataka i elektroničku komunikaciju, od prijave radova do recenzentskih postupaka i priopćavanja rezultata podnositeljima (autorima) radova. Ima široku bazu domaćih i inozemnih recenzenata koja se stalno dopunjava. Svaki rad recenziraju najmanje dva recenzenta od kojih je najmanje jedan inozemni. Za prihvaćanje rada niti jedna recenzija ne smije biti negativna. Časopis se objavljuje na engleskom jeziku, tri broja godišnje, a radovi su dostupni online (Hrčak, Tehnički fakultet u Rijeci) i u tiskanom obliku. Časopis također može objaviti određeni broj kvalitetnih radova s kongresa, a njihova kvaliteta mora biti zagarantirana jednom recenzijom kongresa i jednom novom recenzijom. Spomenuti radovi idu u prijavu istom procedurom kao i svi drugi radovi. Na kraju valja spomenuti kako je zainteresiranost za publiciranjem radova u časopisu prilično velika, a ponude za objavljivanjem dolaze iz inozemstva i iz Hrvatske. Ovakvoj zainteresiranosti svakako doprinosi uređeni sustav prijave, recenzija, indeksiranost i komunikacija s autorima.

The Faculty of Engineering of the University of Rijeka has a long tradition of publishing scientific papers. Significantly, the publication of scientific papers by the employees of the Faculty of Engineering dates back to 1970, when the first issue of Proceedings was published. In 1988, this edition was renamed the Proceedings of the Rijeka Faculty of Engineering and finally in 1995, the journal was renamed again into Engineering Review, its present title.

All these editions have readily published papers written not only by the teaching staff of the Faculty but also by all other interested authors. The Faculty makes every effort to arouse interest of the scientific community in the publication of scientific papers, all with the aim of disseminating and sharing scientific achievements based on research work. Papers eligible for publication in the journal are primarily those from the field of mechanical engineering, naval architecture, fundamental engineering sciences, electrical engineering, computer engineering and civil engineering. In this sense, the journal is one of the few bases that publish papers covering a wide range of engineering areas. However, quality papers not directly from the engineering area are also taken into consideration, for instance, those from the field of natural sciences but linked in a way to the area of engineering.

The Faculty of Engineering of Rijeka University and the Faculty of Civil Engineering of Rijeka University entered into a Contract on co-edition of Engineering Review, signed respectively by Deans Prof. D. Sc. Goran Turkalj and Prof. D. Sc. Aleksandra Deluka Tibljaš, thus ensuring the continuation of its publication.

As of the second half of 2011, Engineering Review has been published under the guidance of Editor-in Chief Prof. D. Sc. Josip Brnić. The Associate Editors are at the moment: Prof. D. Sc. Marina Franulović, Prof. D. Sc. Kristian Lenić, Prof. D. Sc. Aleksandra Deluka Tibljaš, Prof. D. Sc. Domagoj Lanc, Prof. D. Sc. Dubravko Franković, Prof. D. Sc. Jonatan Lerga and Prof. D. Sc. Dario Iljkić.

A paper is accepted for publication in the journal after two positive reviews, after which language editing of all papers is carried out by Alenka Šunjić- Petrc, Ph.D. Assistance with computer solutions has been provided by Tatjana Škorjanc, B. Sc. Furthermore, the member lists of both Editorial Board and Advisory Editorial Board have increased and now include prominent domestic and foreign professors and experts. A great assistance in the preparation and publication of papers is received by teachers, assistants and junior researchers of the Faculty of Engineering: D. Sc. Željko Vrcan, D. Sc. Neven Munjas, D. Sc. Boris Delač, D. Sc. Ivan Volarić, as well as Ivica Androjić and Ivana Pranjić from the Faculty of Civil Engineering in Rijeka.

Engineering Review has the following indexing: Aluminum Industry Abstracts, Advanced Polymers Abstracts, Cambridge Scientific Abstract (CSA), Ceramic Abstracts/World Ceramics Abstracts, Composites Industry Abstracts, Computer and Information Systems Abstracts, Copper Technical Reference Library, Corrosion Abstracts, Electronics and Communications Abstracts, Engineered Materials Abstracts, High Technology Research Database with Aerospace, Inspec, Mechanical & Transportation Engineering Abstracts, METADEX, SCImago, SCOPUS, Web of Science (Emerging Sources Citation Index, from 2015).

We are pleased to point out that according to the 2017 SCImago categorization of journals our journal was included in Q2 (second quartile). The journal uses electronic processing of all data, so that information on paper application, review procedures and results are electronically communicated to the authors. The journal has a broad base of national and international reviewers, which is constantly being supplemented. Each paper is reviewed by at least two referees, one of whom must be foreign. For the acceptance of the paper, all reviews have to be positive. The journal is published in English, in three issues annually, and the papers are available online (Hrčak, Faculty of Engineering Rijeka) and in printed form. The journal can also include a certain number of quality papers from a congress provided that their quality is guaranteed by one review of the congress and another new review. These papers undergo the same application procedure as all other papers. Finally, it is worth mentioning that lots of authors from Croatia and abroad have shown their interest in publishing their scientific papers in Engineering Review. Communication with authors, an ordered system of application, review and indexing highly contribute to the importance of the journal.

2.4 alumni tfr
alumni tfr

Alumni klub Tehničkog fakulteta Sveučilišta u Rijeci, skraćenoga naziva ALUMNI TFR, udruga je osnovana s primarnim ciljem uspostave i jačanja veza i suradnje između bivših studenata Tehničkoga fakulteta, ali i između bivših studenata međusobno. Udruga je osnovana pod nazivom Akademski klub doktora znanosti, magistara znanosti, diplomiranih inženjera i inženjera Tehničkoga fakulteta Sveučilišta u Rijeci na Osnivačkoj skupštini održanoj u Mramornoj dvorani Pomorskoga i povijesnoga muzeja Hrvatskoga primorja i Rijeke, dana 24. studenoga 2000. godine, u sklopu obilježavanja 40 godina djelovanja Fakulteta.

Svrha ALUMNI TFR je očuvanje tradicije Tehničkoga fakulteta Sveučilišta u Rijeci, promicanje ugleda Fakulteta u Republici Hrvatskoj i inozemstvu, skrb za razvitak i napredak Fakulteta, njegovanje i razvitak etike inženjerskoga poziva, utjecaj na stvaranje javnoga znanstvenog i stručnog mišljenja o svim bitnim pitanjima razvoja struke i znanosti te njihove primjene, utjecaj na razvitak i napredak spoznaje o potrebi očuvanja prirode i čovjekova okoliša, izgradnja i jačanje veza i suradnje između bivših studenata i Fakulteta, poticanje i uspostava veza i suradnje Fakulteta i sličnih obrazovnih, razvojnih i istraživačkih institucija u Republici Hrvatskoj i u svijetu, promicanje ugleda inženjerske struke te uspostava i razvijanje suradnje sa sličnim udrugama kod nas i u svijetu.

U ak. god. 2017./2018. na Izbornoj skupštini Alumni kluba TFR održanoj 14. 3. 2018. g. izabrano je novo rukovodstvo. Predsjednik ALUMNI TFR je doc. dr. sc. Vedran Kirinčić, dipl. ing., potpredsjednici su doc. dr. sc Jonatan Lerga, dipl. ing. i Danko Venturini, dipl. ing., a tajnik je doc. dr. sc. Rene Prenc, dipl. ing.

U predsjedništvu su:
izv. prof. dr. sc. Robert Basan dipl. ing., prof. dr. sc. Bernard Franković, dipl. ing., doc. dr. sc. Vladimir Glažar, dipl. ing., doc. dr. sc. Vedran Kirinčić, dipl. ing., dr. sc. Serđo Klapčić, dipl. ing., prof. dr. sc. Božidar Križan, dipl. ing., doc. dr. sc. Jonatan Lerga, dipl. ing., Ante Maras, dipl. ing., Mladen Merlak, dipl. ing., prof. dr. sc. Zoran Mrša, dipl. ing., prof. dr. sc. Zmagoslav Prelec, dipl. ing., dekanica tehničkog fakulteta prof. dr. sc. Jasna Prpić-Oršić, dipl. ing., dr. sc. Aleksandar Regent, dipl. ing., Siniša Reljić, dipl. ing. i Danko Venturini, dipl. ing. Likvidatorom je imenovan prof. dr. sc. Vladimir Medica, dipl. ing. Nadzorni odbor čine: mr. sc. Slavko Štambuk, dipl. ing., prof. dr. sc. Duško Pavletić, dipl. ing. i Davor Mihovilić, dipl. ing.

U organizaciji ALUMNI TFR, tijekom ak. god. 2017./2018., realizirane su sljedeće aktivnosti:

The Alumni Club of the Faculty of Engineering, Rijeka University (ALUMNI TFR) is an association established with the primary aim of fostering and strengthening liaisons and cooperation between the former alumni and the Faculty and among the alumni themselves. The association, founded under the name of Academic Fellowship, comprises holders of PhD, master`s and bachelor`s degrees (including former graduate and vocational engineers) of the Faculty of Engineering of the University of Rijeka. It was established at the Inaugural Meeting held in the Marble Hall of the Maritime and History Museum of Croatian Littoral Rijeka on 24 November 2000 to mark the 40th anniversary of the Faculty.

The purpose of the ALUMNI TFR is to preserve the tradition of higher education at the Faculty of Engineering of Rijeka University, to promote the reputation of the Faculty in the Republic of Croatia and abroad, to care for its development and progress, to nurture and foster ethics in the engineering profession, to exert influence on the creation of public scientific and professional opinion about all important issues in the development of profession and science, and on the development and advancement of awareness about the need to preserve the nature and the environment. Moreover, the aim is also to strengthen relations and cooperation between the former alumni and the Faculty, to encourage the establishment of links and cooperation between the Faculty and similar educational, developmental and research institutions in Croatia and worldwide, to promote the reputation of the engineering profession and establish and develop cooperation with similar organizations at home and abroad.

The ALUMNI TFR board elected at the electoral assembly held on 14th of March 2018 comprised: Assist. Prof. D.Sc. Vedran Kirinčić, M.Eng.,chairman, vice chairmen Assist. Prof. D. Sc. Jonatan Lerga, M.Eng. and Danko Venturini, M.Eng., including the secretary Assist. Prof. D. Sc. Rene Prenc, M.Eng.

The current members are:
Assoc. Prof. D. Sc. Robert Basan, M.Eng., Prof. D. Sc. Bernard Franković, M.Eng., Assist. Prof. D. Sc. Vladimir Glažar, M.Eng., Assist. Prof. D. Sc. Vedran Kirinčić, M.Eng., D. Sc. Serđo Klapčić, M.Eng., Prof. D. Sc. Božidar Križan, M.Eng., Assist. Prof. D. Sc. Jonatan Lerga, M.Eng., Ante Maras, M.Eng., Mladen Merlak, M.Eng., Prof. D. Sc.Zoran Mrša, M.Eng., Prof. D. Sc. Zmagoslav Prelec, M.Eng., the Dean of the Faculty of Engineering Prof. D. Sc Jasna Prpić-Oršić, M.Eng., D. Sc. Aleksandar Regent, M.Eng., Siniša Reljić, M.Eng. and Danko Venturini, M.Eng. including Prof. D. Sc. Vladimir Medica, M.Eng. as liquidator. The current members of the Supervisory Board are: M.Sc. Slavko Štambuk, M.Eng., Prof. D. Sc. Duško Pavletić, M.Eng. and Davor Mihovilić, M.Eng.

During the 2017/2018 academic year, the following activities were realized by the ALUMNI FER:

- *23. 3. 2018. u suorganizaciji s IEEE Studentskim ogrankom Sveučilišta u Rijeci je održano predavanje Success Stories, doc. dr. sc. Dražen Brščić s Tehničkog fakulteta u Rijeci.*
  23.03.2018 in cooperation with the IEEE Student branch of the University of Rijeka, ALUMNI TFR organized the lecture „Success Stories“ by Assist. Prof. D. Sc. Dražen Brščić, M.Eng. from the Faculty of Engineering in Rijeka.
- *4. 4. 2018. organizirano je predavanje „Projekt BUS – Budućnost Ugodnog Stanovanja“ – udruga SUPEUS, zajedno s IEEE Studentski ogranak Sveučilišta u Rijeci i Studentskim zborom Tehničkog fakulteta.*
  4.4.2018 in cooperation with the SUPEUS organization, the IEEE Student branch of University of Rijeka and the Student Organization of the Faculty of Engineering, ALUMNI TFR organized the lecture „Project FSL – Future of Sustainable Living“.
- *23. 5. 2018., u suorganizaciji s IEEE Young Professionals Hrvatska i IEEE Studentskim ogrankom Sveučilišta u Rijeci održano je predavanje na temu: Blockchain Technology, predavač je bio izv. prof. dr. sc. Kristijan Lenac s Tehničkog fakulteta u Rijeci.*
  23. 5. 2018 in cooperation with the IEEE Young Professionals Croatia and the IEEE Student branch of the University of Rijeka, ALUMNI TFR organized the lecture „Blockchain Technology“ by Assoc. Prof. D. Sc. Kristijan Lenac, M.Eng. from the Faculty of Engineering in Rijeka.
- *28. 5. 2018. Alumni Klub Tehničkog fakulteta u Rijeci zajedno sa IEEE Young Professionals Hrvatska i IEEE Studentskim ogrankom Sveučilišta u Rijeci organizirao je predavanje na temu: Razvoj komunikacijskih rješenja na Linux embedded platformi. Predavanje je održao Emil Egredžija iz tvrtke RAD-COM d.o.o. - Zenitel Norway AS grupa.*
  28.5.2018 in cooperation with the IEEE Young Professionals Croatia and the IEEE Student branch of the University of Rijeka, ALUMNI TFR organized the lecture „Development of communication solutions on Linux embedded platform“ by Emil Egredžija, M.Eng. from the company RAD-COM d.o.o. - Zenitel Norway AS group.

- *4. 6. 2018. Alumni Klub Tehničkog fakulteta u Rijeci zajedno s IEEE Young Professionals Hrvatska i IEEE Studentskim ogrankom Sveučilišta u Rijeci organizirao je predavanje na temu: Mikroservisna arhitektura: koncepti i primjena. Predavanje je održao Petar Zrinščak iz tvrtke CROZ d.o.o..*
  4.6.2018 in cooperation with the IEEE Young Professionals Croatia and the IEEE Student branch of the University of Rijeka, ALUMNI TFR organized the lecture „Microservice arhitecture: concepts and applications" by Petar Zrinščak, M.Eng. from the company CROZ d.o.o..
- *5. 7. 2018. održan je sastanak Predsjedništva Alumni kluba Tehničkog fakulteta u Rijeci.*
  5.7.2018 a meeting of Presidency of ALUMNI TFR took place.

2.5 doktorska disertacija obranjena u akademskoj godini 2017./2018.
doctoral dissertation defended in academic year 2017/2018

IME I PREZIME | NAME AND SURNAME:
Rajko Rubeša

POLJE | SCIENTIFIC FIELD:
Brodogradnja / Naval Architecture

NAZIV RADA | TITLE:
Optimizacija planiranja izrade tehničke dokumentacije tijekom gradnje broda
Optimisation of technical documentation planning during ship production

MENTOR(I) | SUPERVISOR(S):
prof. dr. sc. / Prof. D. Sc. Nikša Fafandjel
izv. prof. dr. sc. / Assoc. Prof. D. Sc. Tin Matulja

DATUM OBRANE | DATE OF DEFENCE:
16. 10. 2017.

Sažetak:

Preklapanje izrade tehničke dokumentacije i proizvodnog procesa gradnje broda posljedica je nastojanja skraćivanja trajanja njegove gradnje, ali se time ne moraju nužno smanjiti troškovi i rokovi gradnje broda. Dodatni radovi tijekom proizvodnog procesa gradnje broda mogu se neplanirano povećati ako nacrt distribuira u narednu fazu gradnje broda prije negoli je provjeren i usklađen s međusobno zavisnim nacrtima. U doktorskoj disertaciji istražen je utjecaj redoslijeda i razine preklapanja izrade međusobno zavisnih nacrta na njihovu nepouzdanost, nastalu kao posljedica izrade nacrta s nedostajućim, nepotpunim i nepouzdanim informacijama. Nacrt, koji je dovršen prije dovršenosti međusobno zavisnih nacrta, ima višu razinu nepouzdanosti jer je izrađen s nepotpunim informacijama nedovršenih nacrta. Optimizacija plana izrade tehničke dokumentacije izvodi se terminiranjem dovršenosti međusobno zavisnih nacrta u vremenu kojim se osigurava izrada promatranog nacrta s potpunim informacijama. Osnovan je algoritam za vrednovanje plana izrade tehničke dokumentacije s gledišta nepouzdanosti nacrta kojim se izračunava nepouzdanost sustava međusobno zavisnih nacrta s mogućnošću optimizacije plana. Postupak optimizacije je iteracijski, čiji će rezultati konvergirati optimalnom rješenju. Posebno je istražen utjecaj razine upotrebe funkcionalne tehničke dokumentacije izravno u proizvodnom procesu gradnje broda, ovisno o tehnološkoj razini brodogradilišta i cijeni rada. Za te potrebe uvedeni su novi pojmovi: faktor tehnološke faze proizvodnog procesa gradnje broda i relativna cijena rada te su hijerarhijski izmodelirani kriteriji za vrednovanje tehnološke razine proizvodnog procesa gradnje broda, razine opremanja broda prema tehnološkim fazama opremanja i utjecaj izmjena i dopuna tehničke dokumentacije na proizvodni proces njegove gradnje. Razvijeni kriteriji temelj su za vrednovanje tehnološke razine brodogradilišta. Također je osnovan algoritam za izradu krivulja pogodnosti primjene funkcionalne tehničke dokumentacije u proizvodnom procesu gradnje broda, kojim će se već kod samoga procesa ugovaranja broda omogućiti definiranje zadovoljavajuće razine zastupljenosti radionicke tehničke dokumentacije u proizvodnom procesu gradnje broda u okvirima utvrđenih troškova i rokova gradnje broda. Zaključno, razvijen je računalni alat za vrednovanje i optimizaciju planiranja izrade tehničke dokumentacije koji se sastoji od četiri integrirana modula, čiji su programski kodovi napravljeni na temelju opisanih algoritama.

Summary:

Overlap of ship design and production is a result in aspiration to shorten shipbuilding, but its use does not necessarily contribute in reduction of total shipbuilding cost and lead time. Activities on repair and rework in ship production could be unexpectedly enlarged in case if drawing is sent to the next shipbuilding stage before is checked and aligned with interdependent drawings. In doctoral thesis is investigated influence of drawings' designing sequence and their overlap level to drawings' uncertainty due to designing with unknown, incomplete or unreliable information. Drawing finished before its interdependent drawings are finished, has more level of unreliability because is done with incomplete information from unfinished drawings. Optimisation of technical documentation planning is performed in such approach that interdependent drawings are finished on time which ensure observed drawing designing and completion with fully completed information. It is developed an algorithm for evaluation of technical documentation plan in aspects of drawings' unreliability which calculate unreliability of system of interdependent drawings with possibility of plan's optimisation. Optimisation is iterative process whose result converges to optimal solution. Especially is investigated influence of functional technical documentation usage directly in ship production in relation with shipyard's technological level and labour cost. For this purpose new terms are introduced: factor of technological phase of ship production and relative labour cost, as well as are hierarchically modelled criteria for evaluation of technological level of ship production, level of ship outfitting according to technological phases of outfitting and influence of technical documentation amendments on ship production. Developed criteria are base for evaluation of shipyard's technological level. Also is developed an algorithm for creating the curves benefits of applying functional technical documentation in ship production, with which will be able during contractual stage to define appropriate level of detail technical documentation representation in ship production in framework of determined shipbuilding cost and schedule. In conclusion, it is developed a computing tool for evaluation and optimisation of technical documentation planning. It consists of four integrated modules whose program's codes are made according to described algorithms.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2.6 aktivnosti, zbivanja i konferencije
activities, events and conferences

2.6.1 intech 2018

Konferenciju IN-TECH 2018 organizirala je udruga World Association for Innovative Technologies (WAIT) i održana je u Zagrebu, u Hrvatskoj, od 5. do 7. rujna 2018. godine.

Konferencija promovira razvoj novih tehnologija i njihovu implementaciju u industriji. Konferencija ne bi bila moguća bez međunarodne suradnje Sveučilišta u Rijeci - Tehničkog fakulteta i Tehničkog Sveučilišta u Pragu - Strojarskog fakulteta. To je bila deveta po redu IN-TECH konferencija; prijašnje su bile u Pragu, Bratislavi, Rijeci, Budimpešti, Leiriji, Dubrovniku, Pragu i Ljubljani.

Konferencija je održana na Hrvatskom Katoličkom Sveučilištu. Sudionici su na raspolaganju imali dvije konferencijske dvorane za prezentacije i poster sekciju tijekom konferencije. Na IN-TECH 2018 konferenciji bilo je prisutno više od sto sudionika iz 25 zemalja s preko 80 znanstvenih i stručnih referata.

The IN-TECH 2018 Conference was organized by the World Association for Innovative Technologies (WAIT) and was held in Zagreb, Croatia, from September 5th to September 7th, 2018.

The conference promotes the development of new technologies and their implementation in the industry. This conference would not be possible without the international cooperation of the University of Rijeka - Faculty of Engineering and the Czech Technical University in Prague - Faculty of Mechanical Engineering. It was the 9th IN-TECH Conference: the previous ones were held in Prague, Bratislava, Rijeka, Budapest, Leiria, Dubrovnik, Prague and Ljubljana.

The conference was held at the Catholic University of Croatia, Zagreb, Croatia. The participants had two conference halls for their scientific discussions and poster session. At IN-TECH 2018 over 100 participants from 25 countries were

Konferenciju je otvorio predsjednik WAIT organizacije prof. dr. sc. Zlatan Car, predstavnik Sveučilišta u Rijeci, koji se u uvodnom govoru zahvalio svim sudionicima, naglasivši važnost međunarodne suradnje zbog povezanosti znanstvenika iz različitih područja čime se povećavaju znanstveni doprinosi. Rektor prof. dr. sc. Željko Tanjić kao domaćin s Hrvatskog Katoličkog Sveučilišta u Zagrebu istaknuo je značaj promoviranja i razvoja mladih znanstvenika i njihove suradnje na međunarodnoj razini, što je jedna od intencija ovoga skupa. U naredna dva dana, u sklopu konferencije, održano je 30 prezentacija znanstvenih radova. Također, na konferenciji je bilo izloženo preko 25 postera. Konferencija je završila ceremonijom zatvaranja na kojoj su dodijeljene nagrade najboljim radovima, posterima i izlaganjima.

The conference was opened by the president of the WAIT organization Prof. D. Sc. Zlatan Car, the representative of Rijeka University who in his opening speech thanked all the participants and pointed out the importance of international cooperation because of the association of scientists from different areas in order to achieve significant scientific contributions. The Rector Prof. D. Sc Željko Tanjić as a host form the Catholic University of Croatia pointed out the significance of promotion and development of young scientists as well as their cooperation on the international level, which is one of the intentions of this conference. In the next two days, about 30 scientific papers were presented. Also at the conference over 25 posters were presented. The conference ended with the closing ceremony at which the best papers, posters and presentations were awarded.

2.6.2 rijeka tehnologije

Na inicijativu prof. dr. sc. Saše Zelenike, a u okviru obilježavanja 45. obljetnice Sveučilišta u Rijeci, od 26. do 28. rujna 2018. g. održana je manifestacija „Rijeka tehnologije“. Manifestaciju su sinergijski organizirale sastavnice Sveučilišta u Rijeci na kojima studira više od 5.000 studenata: Tehnički, Građevinski i Pomorski fakultet, Odjel za fiziku i Centar za mikro i nanoznanosti i tehnologije, te Tehnička škola, Zajednica tehničke kulture, Dom mladih i Akademsko astronomsko društvo iz Rijeke.

Cilj Rijeke tehnologije je promocija i popularizacija obrazovanja i znanosti na područjima tehničkih i prirodnih znanosti. Tijekom manifestacije znanstvenici su u javnim prostorima govorili o svome radu, dok su građani imali priliku upoznati se s riječkim modernim tehnološkim postignućima koja dovode do napretka društva te poboljšanja životnih uvjeta, ali stvaraju i značajne ekonomske učinke, te su bile i jesu važan dio života, identiteta i blagostanja Rijeke i Riječana. Umjesto odljeva mozgova, one generiraju dodanu vrijednost, prihode i zapošljavanje talenata u RH. Doista, većina studenata riječkih fakulteta tehničke struke već na zadnjim godina studija radi, a podaci Hrvatskog zavoda za zapošljavanje jasno pokazuju da su maturanti i diplomanti ovih struka jako traženi i u pravilu se odmah zapošljavaju. Kroz zanimljiv i sveobuhvatan program manifestacije kroz čak tri dana, javnost je imala prilike vidjeti kako ustrajan, predan i, često, timski rad edukatora te mladih znanstvenika dovodi do impresivnih rezultata i razvoja naprednog te gospodarski prosperitetnog društva. Posebno su bila zapažena predavanja Zorana Vakule, glavnog meteorologa HRT-a, Korada Korlevića, astronoma i popularizatora znanosti iz Višnjana, kao i tribina „STEM obrazovanje: stanje i perspektive“ te izvanredne kratke prezentacije mladih znanstvenika s involviranih sastavnica Sveučilišta.

Nakon završetka Rijeke tehnologije, sudionici i posjetitelji manifestacije su u velikom broju posjetili i neovisnu ali povezanu manifestaciju „Europska noć istraživača“ u Tower centru Rijeka gdje je istraživačka skupina prof. dr. sc. Zelenike s Tehničkog fakulteta pripremila vrlo posjećenu i zanimljivu istraživačku postaju „Tehnološka rješenja za pametnu Rijeku“.

On the initiative of Professor Saša Zelenika, and in the framework of the events marking the 45th anniversary of the University of Rijeka, the event “Rijeka of Technology” was held from September 26th to 28th, 2018. The event was organized by the constituents of the University of Rijeka that are home to more than 5,000 students: the Faculties of Engineering, of Civil Engineering and of Maritime Studies, the Department of Physics and the Centre for Micro- and Nanosciences and Technologies, as well as the Technical School, the Association of Technical Culture, the Youth House and the Academic Astronomical Society in Rijeka.

The aim of the Rijeka of Technology event was to promote and broaden the educational and scientific activities carried on in the fields of technical and natural sciences. During the event, the scientists have presented in public places their work, while the citizens have had the occasion to get acquainted with state-of-the-art technological achievements in Rijeka, which generate social progress and enhancement of life conditions as well as create positive economic impacts and have been and still are an important part of the lives, the identity and the prosperity of the city and the citizens of Rijeka. Hence instead of the brain drain, these activities generate added value, revenues and employment of talents in Croatia. Indeed, most of the senior students from engineering faculties of Rijeka have already participated in some form of active work, while the data of the Croatian Bureau of Employment clearly indicate that the high-school and university graduates of these professions are wanted and regularly find employment very soon after graduation. Throughout the interesting and comprehensive three-day program of the event, the broad public has had the occasion to witness how hard, devoted, and often, team work of teachers and young scientists brings about impressive results, contributing to the development of an advanced and economically prosperous society. Especially appreciated have been the lectures of Zoran Vakula, head meteorologist of the Croatian television, and Korado Korlević, astronomer and a scientific enthusiast from Višnjan, as well as the round table named “STEM education: current state and perspectives” and the excellent short presentations of the young scientists from the involved constituents of the University.

At the end of the Rijeka of Technology event, the participants and the public have visited also the independent but related “European Researchers’ Night” event at the Tower Centre in Rijeka, where the research team of Professor Zelenika of the Faculty of Engineering prepared a very interesting and well-attended research post “Technological solutions for a smart Rijeka”.

2.6.3 7. savjetovanje o morskoj tehnologiji
the 7th conference on marine technology

...in memoriam akademiku Zlatku Winkleru.

Sedmo Savjetovanje održano je 17. studenog 2017. godine, kao i dosadašnja, na Tehničkom fakultetu Sveučilišta u Rijeci. Ove je godine uz stalne organizatore, Tehnički fakultet Sveučilišta u Rijeci i Udruge za proučavanje i razvoj pomorstva, u organizaciji sudjelovao i Pomorski fakultet Sveučilišta u Rijeci. Pokrovitelj je već tradicionalno Hrvatska akademija znanosti i umjetnosti – Razred za tehničke znanosti. Organizacijski odbor Savjetovanja bio je u sastavu: prof. dr. sc. Albert Zamarin, predsjednik, dr. sc. Igor Rožanić, počasni predsjednik, prof. dr. sc. Tomislav Mrakovčić, dopredsjednik, izv. prof. dr. sc. Marko Hadjina, tajnik, prof. emeritus Julijan Dobrinić, prof. dr. sc. Nikša Fafandjel, prof. dr. sc. Zoran Vukić, prof. dr. sc. Bernard Franković, prof. dr. sc. Branko Klarin, izv. prof. dr. sc. Tin Matulja, doc. dr. sc. Lidija Runko Luttenberger, doc. dr. sc. Siniša Vilke, doc. dr. sc. Goran Vukelić, dr. sc. Gorenka Sinovčić, dr. sc. Alan Klanac i Marko Perčić, mag. ing. mech.

Podneseno je dvadeset priopćenja iz područja tehničkih znanosti iz različitih polja i grana, i to: odobalne tehnologije, male i velike brodogradnje, brodske opreme, stabiliteta, podvodnih sustava i tehnologije, inženjerstva i zaštite okoliša, nautičke arheologije, brodske elektronike.

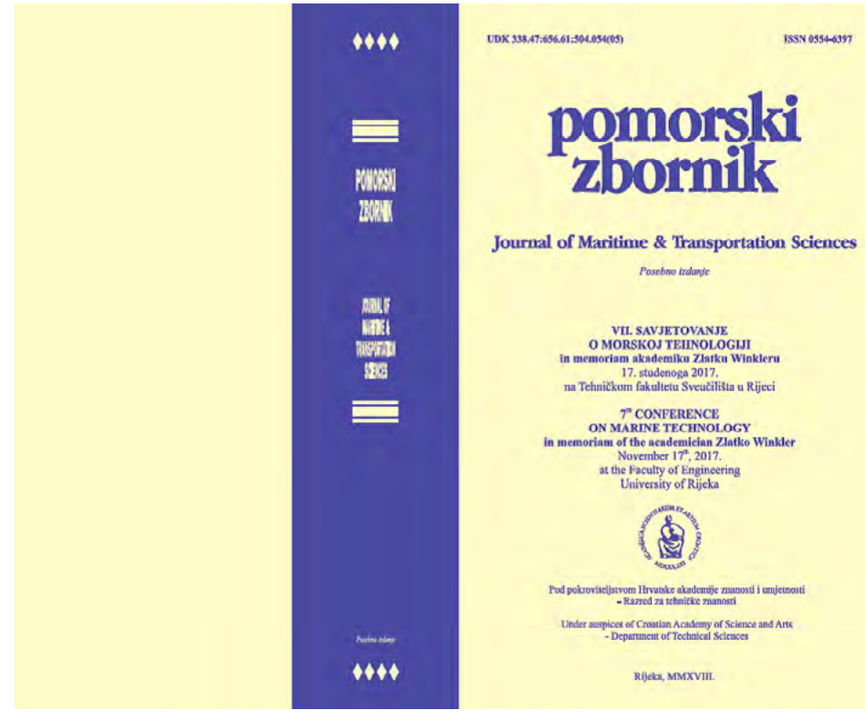
Za prethodnih pet savjetovanja zbornik radova je izrađen samostalno, a recenzije su bile napravljene za svaki pojedini Zbornik kao za znanstvenu knjigu. Za posljednja dva savjetovanja Zbornici su tiskani kao posebno izdanje Pomorskog zbornika, te su za svaki rad zatražene dvije recenzije. Specijalno izdanje Pomorskog zbornika sa 7. Savjetovanja je tiskano početkom 2018. godine. Indeksiran je u CSA, TRID, EBSCO bazama iz kojih se uvršteni članci priznaju kao radovi B kategorije znanstvenih radova prema Pravilniku za znanstvena napredovanja za područje tehničkih znanosti.

...In memoriam of the Academic Zlatko Winkler.

The seventh symposium was held on 17 November 2017, as well as all other symposiums, at the Faculty of Engineering of Rijeka University. This year along with the permanent organisers the Faculty of Engineering of Rijeka University and the Association for the study and development of maritime affairs, the Faculty of Maritime Studies also participated in its organisation. The conference was traditionally supported by the Croatian Academy of Arts and Sciences – Department of Engineering Sciences. The Organising Committee was composed of: Prof. D. Sc. Albert Zamarin, chairman, D. Sc. Igor Rožanić, honorary chairman, Prof. D. Sc. Tomislav Mrakovčić, vice-chairman, Assoc. Prof. D. Sc. Marko Hadjina, secretary, Prof. Emeritus Julijan Dobrinić, Prof. D. Sc. Nikša Fafandjel, Prof. D. Sc. Zoran Vukić, Prof. D. Sc. Bernard Franković, Prof. D. Sc. Branko Klarin, Assoc. Prof. D. Sc. Tin Matulja, Assist. Prof. D. Sc. Lidija Runko Luttenberger, Assist. Prof. D. Sc. Siniša Vilke, Assist. Prof. D. Sc. Goran Vukelić, D. Sc. Gorenka Sinovčić, D. Sc. Alan Klanac and Marko Perčić, M. Mech. Eng.

Twenty contributions were handed from the field of engineering sciences and different branches: offshore technology, small and large shipbuilding, ship equipment, stability, underwater systems and technology, engineering and environmental protection, nautical archaeology and ship electronics.

For the last five symposia the Proceedings were designed independently and the reviews were written for each individual Proceedings as for a scientific book. For the last two symposia the Proceedings were printed as a special edition of the journal Maritime Proceedings. Besides two review were requested for every paper. The special edition of the Maritime Proceedings related to the 7th Conference of Maritime Technology was printed at the beginning of 2018. The Maritime Proceedings are indexed in CSA, TRID, EBSCO bases specified in the Regulations for the scientific advancement in the field of Engineering Sciences as one of the database whose accepted papers are recognised as category B papers.



2.6.4 GNSS konferencija 2018
GNSS conference 2018

Tehnički fakultet u Rijeci sudjelovao je u organizaciji 12. godišnje konferencije Baška GNSS Conference, održane u Baški na otoku Krku, od 6. do 9. svibnja 2018. godine, kao tehnički kosponzor i aktivni sudionik. Tradicionalnu konferenciju o satelitskoj navigaciji i njoj srodnim disciplinama zajednički organiziraju Kraljevski institut za navigaciju (The Royal Institute of Navigation) iz Londona, UK te Pomorski fakultet Sveučilišta u Rijeci i Fakultet prometnih znanosti Sveučilišta u Zagrebu. Dugogodišnje sudjelovanje zaposlenika Tehničkog fakulteta u Rijeci okrunjeno je i službenim priznanjem Tehničkog fakulteta u Rijeci kao suorganizatora ugledne međunarodne konferencije koja okuplja vodeće svjetske stručnjake iz područja satelitske navigacije i srodnih disciplina, uključujući i operatore satelitskih navigacijskih sustava GPS (SAD), GLONASS (Ruska Federacija), Beidou (Kina) i Galileo (EU).

Dekanica Tehničkog fakulteta u Rijeci prof. dr. sc. Jasna Prpić-Oršić izabrana je za dopredsjednicu Međunarodnog programskog i organizacijskog odbora Konferencije kojim predsjeda John Pottle, dipl. ing. tel., direktor Kraljevskog instituta za navigaciju, dok je dužnost voditelja Konferencijskog programa ove godine obnašala Mia Filić, mag. inf. et math MRIN, vanjska suradnica Tehničkog fakulteta u Rijeci. Tehnički fakultet u Rijeci predstavio se 2018. g. i s nizom znanstvenih radova zaposlenika i studenata predstavljenih na konferenciji koji će, nakon obavljenog postupka međunarodne recenzije, biti objavljeni do kraja godine u Zborniku 12th Baška GNSS Conference, kojega ove godine uređuje izv. prof. dr. sc. Kristijan Lenac s Tehničkog fakulteta u Rijeci. Odlukom posebnog odbora, Nagrada za najbolji studentski rad ove je godine dodijeljena Franku Hržiću, asistentu Zavoda za računarstvo Tehničkog fakulteta u Rijeci i studentu poslijediplomskog doktorskog studija. Prof. dr. sc. Jasna Prpić-Oršić, dekanica Tehničkog fakulteta u Rijeci, organizirala je sa suradnicima s Tehničkog i Pomorskog fakulteta u Rijeci posebnu sekciju na temu Potpomažućih sustava inteligentnom odlučivanju u pomorskoj navigaciji, s devet predstavljenih znanstvenih radova. Više od 80 sudionika iz svih krajeva svijeta, s izuzetkom Australije, upoznalo se s više od 30 predstavljenih znanstvenih radova te sudjelovalo u posebnom sastanku Radne skupine S za signale i spektar (predsjedatelji: Jeffrey Auerbach – SAD i Takahiro Mitome – Japan) Međunarodnog odbora za satelitsku navigaciju Organizacije ujedinjenih naroda, koji je održan u nastavku 12. Baška GNSS Conference.

The Faculty of Engineering in Rijeka participated in the organization of the 12th annual Baška GNSS conference held in Baška on the island of Krk from 6th to 9th May 2018 as a technical co-sponsor and active participant. The traditional satellite navigation conference and its related disciplines have been organized by the Royal Institute of Navigation from London, the United Kingdom and the Faculty of Maritime Studies Rijeka and the Faculty of Transport and Traffic Sciences of the University of Zagreb.

The longstanding participation of the employees of the Faculty of Engineering is also crowned by the official recognition of the Faculty of Engineering as co-organizers of renowned international conferences, bringing together leading world experts from the field of satellite navigation and related disciplines, including GPS navigation operators in the US, GLONASS (Russian Federation), Beidou (China) and Galileo (EU).

The Dean of the Faculty of Engineering in Rijeka Prof. D. Sc. Jasna Prpić-Oršić was elected as Vice-President of the International Program and Organizational Committee of the Conference, chaired by John Pottle, B.Sc. tel., director of the Royal Institute for Navigation, while Mia Filić mag. inf. math MRIN, was head of the Conference Program this year, external associate of the Faculty of Engineering Rijeka.

The Faculty of Engineering introduced itself in this year's conference with a series of scientific papers of employees and students presented and they will be published by the end of the year following the international reviews in the Proceedings of the 12th Annual Baška GNSS Conference, which this year is being organized by Prof. D. Sc. Kristijan Lenac from the Faculty of Engineering in Rijeka. By the decision of the Special Committee, this year's Best Student Award was given to Franko Hržić, teaching assistant at the Department of Computer Engineering at our Faculty and a postgraduate doctoral student.

Prof. D. Sc. Jasna Prpić-Oršić, Dean of the Faculty of Engineering in Rijeka, organized a special section on the topic Supporting Systems of Intelligent Decision-Making in Naval Navigation with 9 Presented Scientific Works with Associates from the Faculty of Engineering and the Faculty of Maritime Studies in Rijeka.

More than 80 participants from all over the world, with the exception of Australia, were introduced with more than 30 scientific papers and participated in a special meeting of the Work Group S for Signals and Spectrum (Chairmen: Jeffrey Auerbach - USA and Takahiro Mitome - Japan) of the International Committee for satellite navigation of the UN Organization, held below by the Baška GNSS Conference.

2.6.5 5. ljetna škola CAD modeliranja
the 5th CAD modelling summer school

OBRAZLOŽENJE INICIJATIVE 5. LJETNE ŠKOLE CAD MODELIRANJA

Tehnički fakultet Sveučilišta u Rijeci, u suradnji s Prvom sušačkom hrvatskom gimnazijom u Rijeci, organizirao je 5. ljetnu školu CAD modeliranja, održanu od 2. do 6. srpnja 2018. godine. Glavni ciljevi bili su stjecanje osnovnih znanja potrebnih za oblikovanje i interpretaciju inženjerske grafike korištenjem tradicionalnih alata i računala te uočavanje važnosti i uloge grafike za vizualizaciju i dokumentiranje. Dodatni poticaj za provedbu ljetne škole bila je popularizacija znanosti i promocija Tehničkog fakulteta kod učenika srednjih škola, posebno kod polaznika gimnazijskih programa.

PROGRAM RADA ŠKOLE

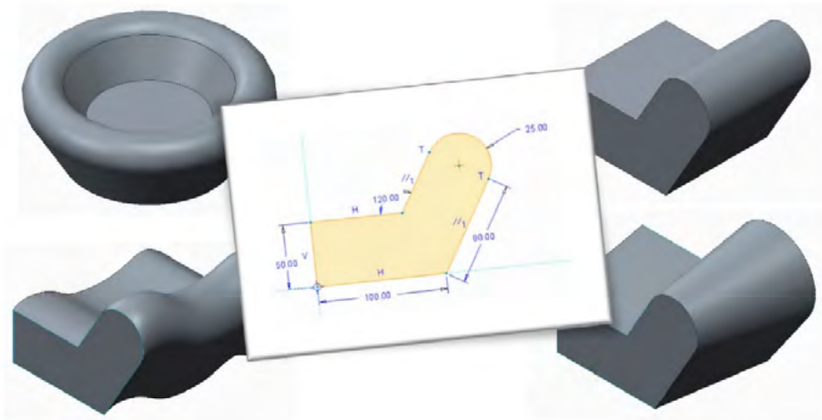
Kroz predavanja i praktični rad polaznici su se upoznali s osnovama tradicionalnih i CAD tehnika pri izradi 2D i 3D geometrijskog modela. Tradicionalne tehnike uključuju skiciranje, a CAD tehnike uključuju programsku opremu za izradu tehničke dokumentacije Autodesk AutoCAD 2018. Polaznicima su također pokazane mogućnosti paketa programske opreme za izradu parametarskih modela CATIA V5-6R2016 (Dassault Systèmes). Na kraju rada škole polaznicima je prezentirana oprema koja služi za brzu izradu prototipa (3D printer) kao i sama mogućnost primjene formirane baze podataka 3D CAD modela predmeta nastale modeliranjem u sklopu nastave ili korištenjem 3D skenera.

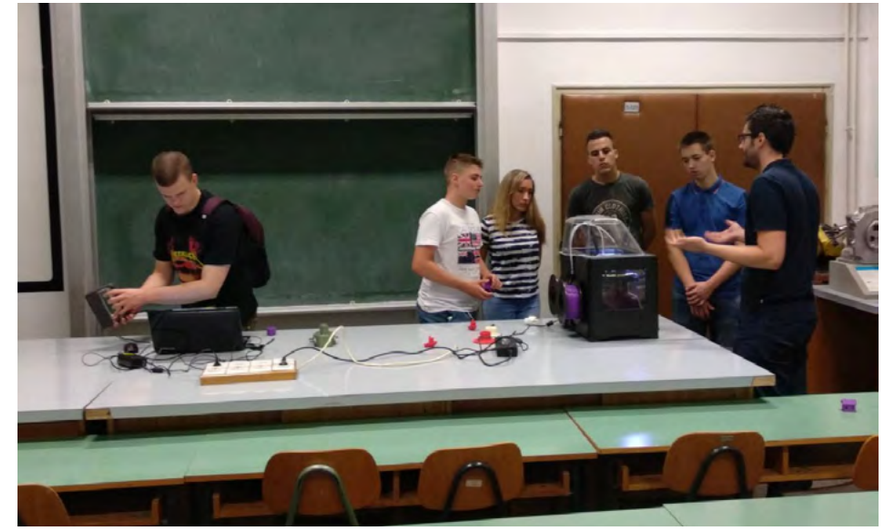
EXPLANATION OF THE INITIATIVE OF THE 5th CAD MODELLING SUMMER SCHOOL

The Faculty of Engineering of the University of Rijeka organised in collaboration with the First Croatian Grammar School of Sušak in Rijeka the 5th Summer School in CAD Modelling, which was held from 2nd to 6th of July 2018. It was intended to enable the participants to acquire the basic knowledge needed for the design and interpretation of the engineering graphics using traditional tools and computers, as well as to appreciate the significance and role of graphics in visualisation and documentation. An additional objective for the organisation of the Summer School was the popularisation of science and promotion of the Faculty of Engineering in high schools, especially grammar schools.

PROGRAMME OF THE SCHOOL

Through lectures and practical work, the participants were acquainted with the basics of traditional and CAD techniques for creating 2D and 3D geometric models. Traditional techniques included sketching, while CAD techniques included Autodesk AutoCAD 2018 software for creating technical documentation. The Participants were also presented with the possibilities of the software package for the creation of parametric models CATIA V5-6R2016 (Dassault Systèmes). At the end of the School, they were familiarized with the equipment which is used for rapid prototyping (3D printer) and also with the possibility to apply the database of the 3D CAD model of objects which were modelled within classes or obtained using the 3D scanner.



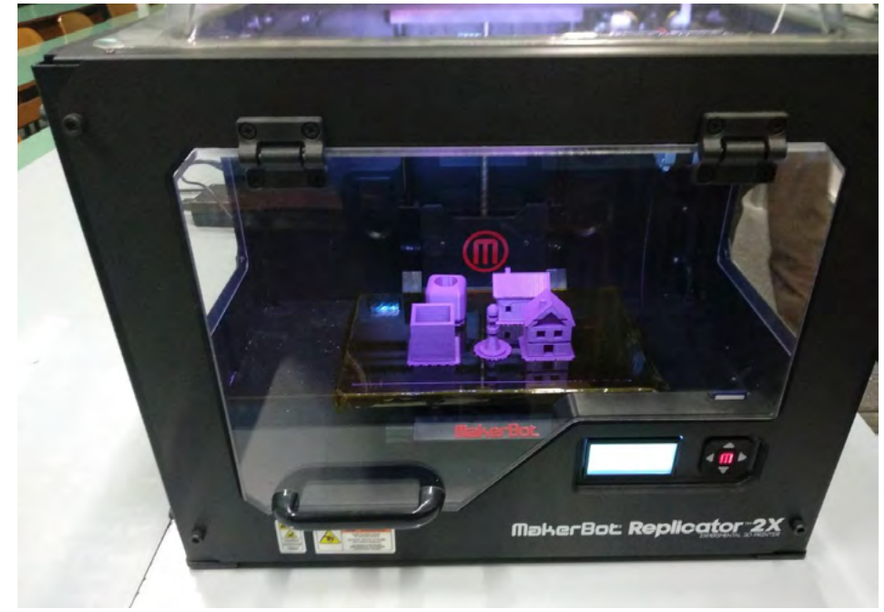


POPIS PREDAVAČA

Kao organizatori i predavači u radu škole od 2014. godine sudjeluju doc. dr. sc. Vladimir Glažar, doc. dr. sc. Goran Gregov i poslijedoktorand dr. sc. Ervin Kamenar. Školu je do danas uspješno završilo više od 90 polaznika, uglavnom učenika trećih i četvrtih razreda srednjih škola iz Rijeke i okolice.

LIST OF LECTURERS

As of 2014, Assist. Prof. D. Sc. Vladimir Glažar, Assist. Prof. D. Sc. Goran Gregov and D. Sc. Ervin Kamenar (postdoc) have participated in the activity of the School as organisers and lecturers. Moreover, more than 90 participants have attended the School to date, mainly third and fourth year high school students from Rijeka and the surrounding areas.



2.6.6 my first conference 2018

U zajedničkoj organizaciji Tehničkog, Građevinskog i Pomorskog fakulteta Sveučilišta u Rijeci, 27. rujna 2018. godine održana je druga konferencija za doktorande iz područja Tehničkih znanosti. Naziv konferencije je My First Conference i održana je na engleskom jeziku. Osim dva pozvana predavača, sudjelovalo je i 34 doktoranada i diplomanata. Iako je konferencija organizirana prvenstveno za studente Sveučilišta u Rijeci, sudjelovanje na konferenciji omogućeno je i studentima sa svih drugih sveučilišta.

Konferencija je organizirana prvenstveno za studente doktorskih studija i ambicioznije studente diplomskih studija inženjerstva. Radi privlačenja čim većeg broja sudionika, sudjelovanje na konferenciji je besplatno. Osnovni razlozi za organizaciju ovakve konferencije jesu sljedeći:

- Pozitivna kritika aktualnih istraživanja doktorskih studenata. U skladu s tim, radovi ne moraju predstavljati dovršena istraživanja.
- Doktorski studenti imaju mogućnosti usavršiti prezentacijske vještine.
- Povezivanje studenata s različitih institucija, što bi u konačnici trebalo rezultirati interdiscplinarnim istraživačkim projektima.
- Okruženje međunarodne konferencije simulira se uporabom engleskog jezika kao radnog jezika konferencije.
- Većina doktorskih studenata imaju obvezu redovitog javnog predstavljanja rezultata istraživanja, te se sudjelovanjem na konferenciji regulira i ova obveza.

Po pitanju tematike, pozvana predavanja bavila su se računarstvom i komunikacijama u pomorstvu. Redoviti radovi bavili su se temama iz termodinamike i mehanike, alternativnim izvorima energije, problemima iz domene pomorstva i oceanskog inženjerstva, softverskog inženjerstva, elektrotehnike te inženjerstva općenito.

In the organization of the Faculty of Engineering, Civil Engineering and Maritime Studies of the University of Rijeka, the second conference for Ph.D. students in the field of engineering sciences was held on 27 September 2018. The name of the conference is My First Conference and it was held in English. In addition to two invited lecturers, 34 Ph.D. students and graduates participated. Although the conference was organized primarily for students of the University of Rijeka, students from other universities were also able to participate.

The conference is organized primarily for students of doctoral studies and more ambitious graduate students of engineering. To attract as many participants as possible, the participation at the conference is free. The main reasons for organizing this conference are:

- Positive criticism of the current research of doctoral students. Thus, the research does not have to be completed.
- Doctoral students have the opportunity to improve their presentation skills.
- Connecting students from different institutions, which should ultimately result in interdisciplinary research projects.
- The international conference environment is simulated by using English as the working language of the conference.
- Most doctoral students must regularly present the results of their research, and by participating in the conference, this obligation is also regulated.

Regarding the topic, invited lectures were concerned with HPC computing and maritime communications. Regular papers focused on the topics of thermodynamics and mechanics, alternative energy sources, marine and ocean engineering problems, software engineering, electrical engineering and engineering in general.

2.6.7 hrzz projekti
hrzz projects

NAZIV PROJEKTA | PROJECT TITLE:
PROCJENA PONAŠANJA KONSTRUKCIJA U GRANIČNIM UVJETIMA RADA - STRUBECON
ASSESSMENT OF STRUCTURAL BEHAVIOUR IN LIMIT STATE OPERATING CONDITIONS - STRUBECON

Glavni istraživač
Prof. dr. sc. Josip Brnić,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Članovi istraživačkog tima

Prof. dr. sc. Goran Turkalj,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Prof. dr. sc. Marko Čanađija,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Prof. dr. sc. Domagoj Lanc,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Izv. prof. dr. sc. Marino Brčić,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Izv. prof. dr. sc. Goran Vukelić, Sveučilište u Rijeci, Pomorski fakultet, Hrvatska

Doc.dr. sc. Igor Pešić, poslijedoktorand,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Doc. dr. sc. Sanjin Kršćanski, poslijedoktorand,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Dr. sc. Neven Munjas, poslijedoktorand,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Damjan Banić, poslijediplomant,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Sandra Kvaternik, poslijediplomant,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Edin Merdanović, poslijediplomant,
Euro Façade Tech, Kuala Lumpur, Malezija

Principal investigator
Prof. Josip Brnić, D. Sc., University of Rijeka, Faculty of Engineering, Croatia

Members of the research team

Prof. Goran Turkalj, D. Sc., University of Rijeka, Faculty of Engineering, Croatia

Prof. Marko Čanađija, D. Sc., University of Rijeka, Faculty of Engineering, Croatia

Prof. Domagoj Lanc, D. Sc., University of Rijeka, Faculty of Engineering, Croatia

Assoc. Prof. Marino Brčić, D. Sc., University of Rijeka, Faculty of Engineering, Croatia

Assoc. Prof. Goran Vukelić, D. Sc., University of Rijeka, Faculty of Maritime Studies, Croatia

Assist. Prof. Igor Pešić, D. Sc., University of Rijeka, Faculty of Engineering, Croatia

Assist. Prof. Sanjin Kršćanski, D. Sc., University of Rijeka, Faculty of Engineering, Croatia

Neven Munjas, D. Sc., Postdoctoral researcher, University of Rijeka, Faculty of Engineering, Croatia

Damjan Banić, D. Sc. student, University of Rijeka, Faculty of Engineering, Croatia

Sandra Kvaternik, D. Sc. student, University of Rijeka, Faculty of Engineering, Croatia

Edin Merdanović, D. Sc. student, Euro Façade Tech, Kuala Lumpur, Malaysia

Sažetak projekta

Cilj je projekta definirati ponašanje konstrukcija u graničnim uvjetima rada. Projekt nastoji pružiti procjenu ponašanja konstrukcija uspoređujući parametre poput naprezanja, deformacije, pojave pukotina itd., a koje su uzrokovane određenim razinama naprezanja i temperaturama na ovakvim graničnim stanjima, s dopuštenim značajkama materijala.

Istražuju se sljedeći parametri: ispitivanje značajki materijala za različite okolišne uvjete; udarna energija, sila propagacije pukotine i životnog vijeka elemenata konstrukcija; procjena ponašanja polukrutih konstrukcijskih spojeva; razvoj numeričkih algoritama za optimizacije konstrukcija sa polukrutim spojevima; pravilno konstitutivno modeliranje u uvjetima graničnih uvjeta rada (poput plastičnosti, oštećenja, termomehaničke sprege); primjena novih materijala u graničnim uvjetima rada – nanokompozita.

Ciljane konstrukcije mogu biti čelične građevine, stupovi dalekovoda za prijenos električne energije, brodske strukture, strojevi i slično.

U prve tri godine projekta ostvareni su mnogi rezultati: u području eksperimentalnih istraživanja kratkotrajnog puzanja čelika, istraživački je tim uspješno izveo takve studije na više vrsta čeličnih materijala. Zatim, napravljeni su i vlačni testovi i Charpyjev test istih čelika, kao i ispitivanje zamora. Propagacija pukotina u nekima od materijala također je istraživana. Dodatni je napredak ostvaren u analizama polukrutih veza okvira gdje je nova procedura primijenjena na kompozitne okvire. Termomehanički višerazinski postupci također su razvijeni i to posebice za područje termoplastičnosti u uvjetima velikih deformacija. U području nanomehanike istraživane su interakcije ugljičnih nanocijevi i epoxyja. Nelokalne nanogredne formulacije prikladne za nanosenzoriku su također razvijene. Objavljeno je puno radova, kako u časopisima tako i na konferencijama, a neki su publicirani u časopisima indeksiranim u Current Contentsu.

Project summary

The project aims to describe the structures operating in limit state conditions. Therefore, the main objective is to provide an assessment of structure behavior by comparing the parameters such as stress, strain, crack occurrence, etc., caused by certain load level and temperature at this unexpected limit state, with those allowed by material properties. The main targets are: testing of material properties for the different environmental conditions; definition of impact energy and determination of the crack driving force and life assessment of structural elements; evaluation of the semi-rigid structural joints/connections behavior; development of a numerical algorithm for optimization of semi-rigid framed structures; creep buckling simulations of composite beam-type structures; proper constitutive modelling at limit operating conditions (i.e. plasticity, damage, thermomechanical coupling); application of new materials to be used at limit state – nanocomposites. Targeted structures may be single and multi-storey steel buildings, high-power electrical transmission towers, ship structures, machines, etc.

In the first three years of the project, the main research results can be stated as follows. In the domain of the experimental research of short-time creep of steels, the research team successfully performed studies on the determination of the material properties of different materials (steels). Besides that, tensile testing and Charpy impact behaviour of the same steels were performed, as well as fatigue characterization of them. Crack propagation in some steels was also researched. Additional progress was made in the analysis of semi-rigid frame connections, where the new procedure was applied to composite frames. Theromechanical framework for the multiscale analysis of structures was developed, especially for the large strain thermoplasticity. In the nanomechanics field, carbon nanotube and epoxy interactions were investigated. Nonlocal nanobeam formulation suitable for nanosensorics were developed.

NAZIV PROJEKTA | PROJECT TITLE:
ZELENIJI PRISTUP PROJEKTIRANJU BRODA I OPTIMALNOM PLANIRANJU RUTE - GASDORP
GREENER APPROACH TO SHIP DESIGN AND OPTIMAL ROUTE PLANNING - GASDORP

Glavni istraživač
Prof. dr. sc. Jasna Prpić – Oršić,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Članovi istraživačkog tima

Prof. dr. sc. Odd Magnus Faltinsen,
Norveško sveučilište znanosti i tehnologije, Trondheim, Norveška

Prof. dr. sc. Roko Dejhalla,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Prof. dr. sc. Tomislav Mrakovčić,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Prof.dr. sc. Duško Pavletić,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Prof. dr. sc. Igor Rudan,
Sveučilište u Rijeci, Pomorski fakultet, Hrvatska

Izv. prof. dr. sc. Nikola Račić, Pomorski fakultet, Sveučilište u Splitu, Hrvatska

Doc. dr. sc. Ozren Bukovac,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Doc. dr. sc. Dunja Legović,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Doc. dr. sc. Marko Valčić,
Sveučilište u Rijeci, Pomorski fakultet, Hrvatska

Natalija Vitali, poslijediplomant, Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Principal investigator
Prof. Jasna Prpić – Oršić, D. Sc.,
University of Rijeka, Faculty of Engineering, Croatia

Members of the research team

Prof. Odd Magnus Faltinsen, D. Sc., Norwegian University of Science and Technology, Trondheim, Norway

Prof. Roko Dejhalla, D. Sc., University of Rijeka, Faculty of Engineering, Croatia

Prof. Tomislav Mrakovčić, D. Sc., University of Rijeka, Faculty of Engineering, Croatia

Prof. Duško Pavletić, D. Sc., University of Rijeka, Faculty of Engineering, Croatia

Prof. Igor Rudan, D. Sc., University of Rijeka, Faculty of Maritime Studies, Croatia

Assoc. prof. Nikola Račić, D. Sc., Faculty of Maritime Studies, University of Split, Croatia

Assist. prof. Ozren Bukovac, D. Sc., University of Rijeka, Faculty of Engineering, Croatia

Assist. prof. Dunja Legović, D. Sc., University of Rijeka, Faculty of Engineering, Croatia

Assist. prof. Marko Valčić, D. Sc., University of Rijeka, Faculty of Maritime Studies, Croatia

Natalija Vitali, D. Sc. student, University of Rijeka, Faculty of Engineering, Croatia

Sažetak projekta

Točan izračun održive brzine broda u stvarnim uvjetima na moru važan je iz ekonomskih i ekoloških aspekata. Pouzdana procjena gubitka brzine broda u stvarnim uvjetima okoliša omogućuje točnija predviđanja povećanja snage i potrošnje goriva kao i emisiju plinova. Tehnološka poboljšanja na brodovima, kao što su poboljšani dizajn trupa i unapređenje energetskih i pogonskih sustava, mogla bi potencijalno smanjiti emisiju CO2 do 35 %. Ove se mjere djelotvorno mogu kombinirati s drugim operativnim mjerama, kao što su optimalno planiranje rute.

Predloženo se istraživanje provodi u tri glavna područja:

1. poboljšanje metodologije procjene brzine broda, potrošnje goriva i emisije stakleničkih plinova u stvarnim vremenskim uvjetima;
2. optimizacija brodskog trupa i brodskog porivnog sustava koji rade u stvarnom vremenskim uvjetima;
3. optimizacija plovidbene rute, uzimajući u obzir sve relevantne parametre.

Cilj je poboljšati značajke broda vodeći računa o pitanju zaštite okoliša, stvaranje tzv eko-učinkovitog ili "zelenog" broda.

Project summary

The accurate calculation of attainable ship speed at actual sea is essential from both the economic and environmental standpoint. Reliable ship speed loss estimation under real environmental conditions allows a more accurate prediction of power increase and fuel consumption as well as gas emissions from ships. Nowadays, this second issue has become very important because of the problem of global warming. Following the increasing awareness of the environmental and human health concerns of shipping, legislative measures have been taken on both national and global level, strictly determining (as of January 1, 2013) that new ships over 400 gross tonnage, to comply with the regulations, should have emissions of CO2 under limiting value. Technological enhancement of ships, like improved hull design as well as power and propulsion systems could potentially reduce CO2 emission up to 35 %. These measures could effectively be combined with several other operational measures, such as weather routing and voyage planning in order to ensure minimized fuel consumption and CO2 emissions from ships on every voyage.

The proposed research will be conducted in three main areas:

1. Improvement of the methodology of estimation of ship speed, fuel consumption and greenhouse gases (GHG) emissions (especially CO2) in real weather conditions,
2. Optimization of the ship hull (bow and stern) and ship propulsion system operating in real weather condition,
3. Optimization of the ship route by taking into account all the relevant parameters: weather prediction, attainable ship speed on waves, the main engine performance and navigation constrains.

The objective is to improve the ship design and performance taking into consideration the environmental issue, creating the so called eco-efficient or “green” ship. The project team consists of scientists who are experts in the naval architecture, mechanical engineering and marine engineering field, which allows solving the afore-mentioned problem at a multidisciplinary level.

NAZIV PROJEKTA | PROJECT TITLE:
RAZVOJ EVOLUCIJSKIH POSTUPAKA ZA KARAKTERIZACIJU PONAŠANJA BIOLOŠKIH TKIVA - BIOMAT
DEVELOPMENT OF EVOLUTIONARY PROCEDURES FOR CHARACTERIZATION OF BIOLOGICAL TISSUES BEHAVIOR - BIOMAT

Glavni istraživač
Prof. dr. sc. Marina Franulović,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Članovi istraživačkog tima

Izv. prof. dr. sc. Robert Basan,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Doc. dr. sc. Kristina Marković,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Dr. sc. Tea Marohnić, poslijedoktorand,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Stjepan Piličić, mag. ing. mech.,
doktorand, Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Prof. dr. sc. Robert Kunc,
Fakulteta za strojništvo, Univerza v Ljubljani, Slovenija

dr. sc. Ana Trajkovski,
Fakulteta za strojništvo, Univerza v Ljubljani, Slovenija

Senad Omerović,
poslijediplomant, Fakulteta za strojništvo, Univerza v Ljubljani, Slovenija

dr. sc. Simon Krašna,
Fakulteta za strojništvo, Univerza v Ljubljani, Slovenija

Principal investigator
Prof. Marina Franulović, D. Sc.,
University of Rijeka, Faculty of Engineering, Croatia

Members of the research team

Assoc. Prof. Robert Basan, D. Sc.,
University of Rijeka, Faculty of Engineering, Croatia

Assist. Prof. Kristina Marković, D. Sc.,
University of Rijeka, Faculty of Engineering, Croatia

Tea Marohnić, D. Sc., Postdoctoral researcher,
University of Rijeka, Faculty of Engineering, Croatia

Stjepan Piličić, mag. ing. mech.,
Doctoral researcher, University of Rijeka, Faculty of Engineering, Croatia

Prof. Robert Kunc, D. Sc.,
Faculty of Mechanical Engineering, University of Ljubljana

Ana Trajkovski, D. Sc.,
Postdoctoral researcher, Faculty of Mechanical Engineering, University of Ljubljana

Senad Omerović, D. Sc. student,
Faculty of Mechanical Engineering, University of Ljubljana

Simon Krašna, D. Sc.,
Postdoctoral researcher, Faculty of Mechanical Engineering, University of Ljubljana

Sažetak projekta

Za proces pravilnog konstruiranja i oblikovanja proizvoda vrlo je značajan optimalan izbor materijala, pri čemu posebnu pažnju treba posvetiti ponašanju materijala u stvarnim uvjetima primjene. U cilju poboljšanja i unaprjeđivanja značajki proizvoda, u inženjerstvu se sve veća pažnja posvećuje poboljšanju značajki konvencionalnih, a posebice razvoju inovativnih materijala te stvaranju pretpostavki za njihovu tehničku primjenu. Iako je područje istraživanja materijala i dalje u značajnoj mjeri usmjereno na metalne, polimerne materijale, staklo, keramiku, kompozite itd., sve veći interes posvećuje se istraživanju bioloških i njima sličnih materijala zbog izvrsnih svojstava i ponašanja pri različitim uvjetima i opterećenjima. Mnogi biološki sustavi imaju mehaničke karakteristike koje uvelike nadvisuju one koje se mogu ostvariti korištenjem konvencionalnih i sintetičkih materijala pa se u tom smislu vrše intenzivna istraživanja mehaničkih svojstava i ponašanja materijala prisutnih u, primjerice, školjkama,

Project summary

Optimal material selection is very important for the proper product design, whereby special attention should be paid to the behavior of materials under actual conditions of use. In order to enhance and improve product features, increasing attention is paid to enhancing the properties of conventional and especially the development of innovative materials and creating conditions for their technical applications. Although the materials research is still to a large extent focused on metallic, polymeric materials, glass, ceramics, composites, etc., increasing interest is devoted to the study of the biological and the like materials with excellent properties and behavior under different conditions and loads. The motivation for the research lies in the fact that many biological systems have mechanical characteristics which are greatly above those that can be achieved using conventional and synthetic materials. As a consequence, mechanical properties and behavior of materials present in, for example, clams, mussels, bone, spider silk, the muscles

mekušcima, kostima, paukovoj svili, mišićima i slično. U okviru projekta, za karakterizaciju i modeliranje ponašanja bioloških materijala koristit će se podaci dobiveni eksperimentalnim testiranjem uzoraka vratnih ligamenata ljudske kralježnice. Kao prikladan, odabran je hiperelastični materijalni model koji se može koristiti i za kompresibilne i nekompresibilne materijale. Kako bi se na što efikasniji način dobile što točnije vrijednosti parametara za predloženi nelinearni hiperelastični materijalni model, razvit će se tehnika određivanja parametara ponašanja materijala temeljena na genetskom algoritmu. Radi razvoja što boljeg genetskog algoritma i njegove optimizacije za zadani materijal ili skupinu materijala, odnosno što brže ostvarenja traženog rješenja, razvit će se procedura složenog genetskog algoritma te njegovi operatori, uz primjenu adekvatne funkcije cilja optimizacijskog postupka. Sam postupak će se automatizirati primjenom adekvatnih matematičkih i numeričkih postupaka. Ovaj prijedlog projekta predstavlja postavljanje inovativnih temelja u interdisciplinarnom području tehničkih znanosti i biomedicine te omogućava povezivanje članova predložene znanstvene skupine i osigurava njihovu međunarodnu vidljivost te općenito razvoj znanosti u Hrvatskoj u području istraživanja materijala.

Aktivnosti na projektu u razdoblju 2017-2018

Tijekom analize ponašanja biomaterijala, vodilo se računa o pravilnom odabiru materijalnog modela. Pri tome se obratila pozornost na svojstva materijala i prethodna saznanja do kojih se u proteklom periodu došlo na temelju istraživanja i sistematizacije objavljenih rezultata ispitivanja. Također uzeta je u obzir složenost modela, mogućnost njegove primjene, konvergencija rezultata temeljem simulacija i sl. Slijedom toga modeli su podijeljeni u karakteristične skupine: modeli s potpunom podudarnosti u odnosu na eksperimentalne podatke, modeli s gotovo potpunom podudarnosti, modeli s djelomičnom podudarnosti, tj. modeli upotrebljivi uz određenja odstupanja koja treba uzeti u obzir i modeli s vrlo slabom podudarnosti u odnosu na eksperimentalne podatke, tj. modeli koji ne zadovoljavaju predviđanja ponašanja spomenute vrste materijala. Za dva odabrana materijalna modela razvijene su procedure za genetski algoritam u smislu definiranja njihovih parametara i operatora, uz evaluaciju efikasnosti. Nadalje, za proširenje metodologije i razvoj sustava u cilju identifikacije parametara nekonvencionalnih i inovativnih materijala na osnovi kojih će se sustav dalje razvijati te validirati i verificirati, potrebni su detaljni rezultati eksperimentalnih ispitivanja u različitim uvjetima. Stoga se tijekom provedbe projekta kontinuirano vršilo prikupljanje i sistematizacija rezultata

and the like are intensely studied. Within the project, for the characterization and modeling of biological materials, the data obtained through experimental testing of samples of cervical ligaments of the human spine has to be used. In order to more efficiently obtain the precise values of the material parameters for the proposed nonlinear hyperelastic material model, the techniques for determining the parameters of material behavior based on genetic algorithm have to be developed. In order to develop the best genetic algorithm and to optimize it for the given material or group of materials, and to achieve desired solutions as soon as possible, complex genetic algorithm procedures and its operators have to be developed, by applying the appropriate objective function for the optimization procedure. The procedure can be automated by using the appropriate mathematical and numerical methods. This project proposes setting innovative foundations in the interdisciplinary field of engineering sciences and biomedicine, allows the connection of members of the proposed scientific groups and ensures their international visibility and contributes to the overall development of the field of material research.

Project activities in the period 2017-2018

In the analysis of the behavior of biomaterials the proper selection of the material model has to be taken into account. In this regard, over the past period the research and systematization of the published test results has been performed in order determine which material properties should be paid special attention to. The research also took into account the complexity of the material models, the possibility of their application, the convergence of the results based on the simulation and so on. Consequently, the models has been divided into characteristic groups: models with complete compatibility to the experimental data, models with almost complete compatibility, models with partial correlation - models that can be used with discrepancies that should be considered and models with very low correlation with experimental data - models that do not meet the predictions of the behavior of the mentioned type of material. For the two selected material models, genetic algorithm procedures have been developed in terms of defining their parameters and operators, based on evaluation of their efficiency. Furthermore, in the context of identification of the parameters of unconventional and innovative materials, on the basis of which the system will be further developed, validated and verified, requirement for further detailed results of experimental testing in different conditions has been noticed. Therefore, during the project implementation, the collection and systematization of the results

ispitivanja nekonvencionalnih materijala. Radi osiguranja stvaranja pretpostavki za daljnje unaprjeđivanje razvijenog rješenja te stvaranje jedinstvene metodologije za karakterizaciju velikog broja inovativnih materijala i olakšavanje njihove primjene u inženjerskoj praksi izrađeni su ispitni uzorci s ugljičnim i staklenim vlaknima aditivnom tehnologijom 3D printanja.

of the testing of unconventional materials were continuously carried out. Further improvement of the developed solution is expected through the experimental test results on test specimens with carbon and glass fibers which were produced using additive 3D printing technology. The aim is to create a unique methodology for the characterization of a large number of innovative materials and to facilitate their application in engineering practice.

NAZIV PROJEKTA | PROJECT TITLE:

POVEĆANJE ENERGETSKE UČINKOVITOSTI IZMJENJIVAČA TOPLINE - HEXENER

ENHANCEMENT OF THE HEAT EXCHANGER ENERGY EFFICIENCY - HEXENER

Glavni istraživač

Prof. dr. sc. Anica Trp,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Članovi istraživačkog tima

Prof. dr. sc. Kristian Lenić,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Prof. dr. sc. Branimir Pavković,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Izv. prof. dr. sc. Igor Wolf,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Doc. dr. sc. Paolo Blecich,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Doc. dr. sc. Igor Bonefačić,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Doc. dr. sc. Vladimir Glažar,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Dr. sc. Boris Delač,
poslijedoktorand, Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Mateo Kirinčić, poslijediplomant,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Fran Torbarina, poslijediplomant,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Principal investigator

Prof. Anica Trp, D. Sc.,
University of Rijeka, Faculty of Engineering, Croatia

Members of the research team

Prof. Kristian Lenić, D. Sc.,
University of Rijeka, Faculty of Engineering, Croatia

Prof. Branimir Pavković, D. Sc.,
University of Rijeka, Faculty of Engineering, Croatia

Assoc. Prof. Igor Wolf, D. Sc.,
University of Rijeka, Faculty of Engineering, Croatia

Assist. Prof. Paolo Blecich, D. Sc.,
University of Rijeka, Faculty of Engineering, Croatia

Assist. Prof. Igor Bonefačić, D. Sc.,
University of Rijeka, Faculty of Engineering, Croatia

Assist. Prof. Vladimir Glažar, D. Sc.,
University of Rijeka, Faculty of Engineering, Croatia

Boris Delač, D. Sc.,
Postdoctoral researcher, University of Rijeka, Faculty of Engineering, Croatia

Mateo Kirinčić, D. Sc. student,
University of Rijeka, Faculty of Engineering, Croatia

Fran Torbarina, D. Sc. student,
University of Rijeka, Faculty of Engineering, Croatia

Sažetak projekta

Predmet istraživanja projekta je povećanje energetske učinkovitosti izmjenjivača topline. Istraživanja će biti usmjerena na analizu izmjene topline i povećanja energetske učinkovitosti raznih tipova lamelnih izmjenjivača topline kao i latentnog spremnika topline kojega

Project summary

The research topic of the project is enhancement of the heat exchanger energy efficiency. Investigations will focus on the analysis of heat transfer and the enhancement of energy efficiency of various fin and tube heat exchangers, as well as of the latent heat storage unit, which

možemo smatrati posebnim tipom izmjenjivača. Znanstveno-istraživački ciljevi obuhvaćaju: numeričko i eksperimentalno istraživanje utjecaja geometrijskih karakteristika izmjenjivača topline na fizikalni proces izmjene topline i učinkovitost, numeričko i eksperimentalno istraživanje utjecaja pogonskih uvjeta izmjenjivača topline na fizikalni proces izmjene topline i učinkovitost, numeričko i eksperimentalno istraživanje utjecaja pogonskih uvjeta, geometrije i karakteristika akumulatora topline na izmjenu topline i učinkovitost latentnih spremnika topline te istraživanje pohrane energije u sustavu obnovljivih izvora energije s latentnim spremnikom. Očekivani znanstveni doprinos istraživanja je proširenje postojećih znanstvenih spoznaja vezanih za povećanje energetske učinkovitosti lamelnih izmjenjivača topline, latentnog spremnika topline kao komponente sustava te cijelog sustava obnovljivih izvora energije s latentnim spremnikom.

is as a special type of heat exchanger. Scientific research objectives include: numerical and experimental investigation of the influence of the heat exchanger geometry characteristics on the physical process of heat transfer and efficiency, numerical and experimental investigation of the influence of the heat exchanger operating conditions on the physical process of heat transfer and efficiency, numerical and experimental investigation of the influence of the latent heat storage operating conditions, geometry and phase change material characteristics on heat transfer and efficiency, as well as analysis of energy storage in the renewable energy system with the latent heat storage unit. The expected scientific contribution of the research is the increase of existing scientific knowledge related to the energy efficiency of fin and tube heat exchangers, latent heat storage as a component of the system and the overall system of renewable energy sources with the latent heat storage.

NAZIV PROJEKTA | PROJECT TITLE:

PROGRAMSKI SUSTAVI U EVOLUCIJI: ANALIZA I INOVATIVNI PRISTUPI PAMETNOM UPRAVLJANJU - EVOSOFT

EVOLVING SOFTWARE SYSTEMS: ANALYSIS AND INNOVATIVE APPROACHES FOR SMART MANAGEMENT - EVOSOFT

Glavni istraživač

Prof. Tihana Galinac Grbac,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Članovi istraživačkog tima

Prof. dr. sc. Per Runeson,
Sveučilište u Lundu, Švedska

Prof. dr. sc. Darko Huljenić,
Ericsson Nikola Tesla, Hrvatska

Prof. dr. sc. Fabrizio Montesi,
Sveučilište južne Danske, Danska

Izv. prof. dr. sc. Ivan Štajduhar,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Dr. sc. Goran Mauša, poslijedoktorand,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Dr. sc. Joao Pita da Costa, poslijedoktorand,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Ana Vranković, student,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Nikola Tanković, student,
Odjel za Informacijsko-komunikacijske tehnologije, Sveučilište Juraj Dobrila u Puli, Hrvatska

Sanja Grbac Babić, student,
Politehnika u Puli, Hrvatska

Jean Petrić, student,
Sveučilište Hertfordshire, UK

Principal investigator

Prof. Tihana Galinac Grbac, D. Sc.,
University of Rijeka, Faculty of Engineering, Croatia

Members of the research team

Prof. Per Runeson, D. Sc.,
Lund University, Sweden

Prof. Darko Huljenić, D. Sc.,
Ericsson Nikola Tesla, Croatia

Prof. Fabrizio Montesi, D. Sc.,
University of Southern Denmark, Denmark

Assoc. prof. Ivan Štajduhar, D. Sc.,
University of Rijeka, Faculty of Engineering, Croatia

Goran Mauša, Dr. Sc., Postdoctoral researcher,
University of Rijeka, Faculty of Engineering, Croatia

Joao Pita da Costa, Dr. Sc., Postdoctoral researcher, University of Rijeka, Faculty of Engineering, Croatia

Ana Vranković, student,
University of Rijeka, Faculty of Engineering, Croatia

Nikola Tanković, student,
Department of Information and Communication Technologies, University Juraj Dobrila Pula, Croatia

Sanja Grbac Babić, student,
Polytechnic Pula - College of applied sciences, Croatia

Jean Petrić, student,
University of Hertfordshire, UK

Sažetak projekta

Kompleksni programski sustavi koji se evolucijski razvijaju (EVOSOFT) postali su središnji dio sve većeg broja aplikacija, proizvoda i usluga kao potpora svakodnevnim ljudskim aktivnostima iz svih gospodarskih sektora. Često su to distribuirani sustavi, heterogeni, decentralizirani i međusobno zavisni, koji rade u dinamičnim i nepredvidljivim uvjetima, pa su njihova dostupnost i pouzdanost postale ključna svojstva potrebna za njihov rad i budući razvoj. Novo i još neistraženo područje istraživanja, a koje se obrađuje u ovom projektu, jest razumjeti kako apstraktne programske strukture i lokalna obilježja sustava utječu na distribuciju neispravnosti. Time se utječe na kritična svojstva sustava, među kojima su dostupnost i pouzdanost, čime se razvijaju inovativni pristupi za pametno upravljanje njihovim izvođenjem i evolucijom. Potrebno je za naglasiti da se ovdje suočavamo s potpuno novim pojavama, sličnim ljudskoj evoluciji, ali proizvedene ljudskim intelektom. Temelji i teorije iz drugih disciplina, čiji je cilj razumjeti ponašanje kompleksnih sustava, evoluciju te ljudsko razmišljanje, mogle bi ovdje biti primjenjive. Novi rezultati otvorit će nove mogućnosti u mnogim znanstvenim područjima, osobito u teoriji kompleksnih sustava i njenih primjena, te tako međudjelovati sa širokim spektrom znanosti: od prirodnih znanosti, kao što je to biomedicina, pa sve do društvenih znanosti. Industrijsko iskustvo prikupljeno iz empirijskog pristupa, programskom inženjerstvu je iznimno važno za daljnji razvoj discipline programskog inženjerstva. Nove teorije ne mogu biti djelotvorne i primjenjive u industriji bez temeljnog razumijevanja EVOSOFT ponašanja. Glavni cilj ovog projekta je ispunjavanje jaza između empirijskih dokaza i teoretskih modela. Kako bismo ga ostvarili, kombiniramo empirijska i teoretska znanja tako što ćemo:

- ponoviti studije i potvrditi empirijske principe i metode na kojima želimo graditi nove teorije,
- definirati strukturalne ovisnosti za primjenu empirijskih principa i metoda,
- definirati formalne modele i inovativne načine pametnog upravljanja.

Project summary

Evolving complex software systems (EVOSOFT) have become a central part of a rapidly growing range of applications, products and services supporting daily human activities from all economic sectors. As they are often distributed, heterogeneous, decentralized and inter-dependent, and operating in dynamic and unpredictable environments, availability and reliability become key properties for its operation and future evolution. The novel and still unexplored area of research addressed in this project is to understand how abstract software structures and local system properties influence fault distributions, thus affecting mission critical system properties, among which availability and reliability and to develop innovative approaches for smart management of their operation and evolution. We are facing with completely new phenomena, similar to human evolution, but produced by human intellect. Foundations and theories from other disciplines aiming to understand complex system behavior, evolution and human reasoning could be applied. New findings would open new opportunities in many scientific fields, especially in complex systems theory and its applications, thus interacting with a wide spectrum of sciences, from natural sciences such as biomedicine to social sciences. Industrial experience gathered by systematic Empirical Software Engineering approach is extremely important for further evolution of software engineering discipline. New theories cannot provide effective means for industry without fundamental understanding of EVOSOFT behavior. The main aim of this project is to fulfill this gap between empirical evidence and theoretical models. In that aim we combined empirical and theoretical skills aiming to:

- replicate studies and confirm empirical principles and methods and define a solid base to ground new theories,
- define structural dependencies for applicability of empirical principles, methods,
- define formal models and innovative approaches for smart management

NAZIV PROJEKTA | PROJECT TITLE:
OPTIMIZIRANJE I MODELIRANJE TERMALNIH PROCESA MATERIJALA - OMOTPOM
OPTIMISATION AND MODELLING OF THERMAL PROCESSES OF MATERIALS - OMOTPOM

Glavni istraživač
Doc. dr. sc. Dario Iljkić,
Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Članovi istraživačkog tima

Prof. dr. sc. Dražen Živković, Fakultet elektrotehnike, strojarstva i brodogradnje, Sveučilište u Splitu, Hrvatska

Prof. dr. sc. Božo Smoljan, Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Doc. dr. sc. Sunčana Smokvina Hanza Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Prof. dr. sc. Branimir Lela, Fakultet elektrotehnike, strojarstva i brodogradnje, Sveučilište u Splitu, Hrvatska

Prof. dr. sc. Domagoj Rubeša, Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Prof. dr. sc. Zvonimir Kolumbić, Filozofski fakultet, Sveučilište u Rijeci, Hrvatska

Prof. dr. sc. Loreta Pomenić, Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Dr. sc. Mauro Maretić, Tehnička škola, Pula, Hrvatska

Dr. sc. Zvonimir Dadić, poslijedoktorand, Fakultet elektrotehnike, strojarstva i brodogradnje, Sveučilište u Splitu, Hrvatska

Lovro Štic, poslijediplomant, Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Andrej Borić, poslijediplomant, Sveučilište u Rijeci, Tehnički fakultet, Hrvatska

Nikša Čatipović, poslijediplomant, Fakultet elektrotehnike, strojarstva i brodogradnje, Sveučilište u Splitu, Hrvatska

Neven Tomašić, poslijediplomant, Reneteh Ogulin d.o.o., Hrvatska

Goran Salopek, poslijediplomant, Filozofski fakultet, Sveučilište u Rijeci, Hrvatska

Milenko Jokić, poslijediplomant, Politehnika Pula, Visoka tehničko-poslovna škola, Pula, Hrvatska

Hrvoje Novak, poslijediplomant, NMP Produkt d.o.o. , Hrvatska

Principal investigator
Assist. Prof. Dario Iljkić, D. Sc.,
University of Rijeka, Faculty of Engineering, Croatia

Members of the research team

Prof. Dražen Živković, D. Sc., Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, University of Split, Croatia

Prof. Božo Smoljan, D. Sc., University of Rijeka, Faculty of Engineering, Croatia

Assist. Prof. Sunčana Smokvina Hanza, D. Sc., University of Rijeka, Faculty of Engineering, Croatia

Prof. Branimir Lela, D. Sc., Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, University of Split, Croatia

Prof. Domagoj Rubeša, D. Sc., University of Rijeka, Faculty of Engineering, Croatia

Prof. Zvonimir Kolumbić, D. Sc., Faculty of Humanities and Social Science, Rijeka, Croatia

Prof. Loreta Pomenić, D. Sc., University of Rijeka, Faculty of Engineering, Croatia

D. Sc. Mauro Maretić, Technical High School, Pula, Croatia

Zvonimir Dadić, D. Sc., Postdoctoral researcher, Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, University of Split, Croatia

Lovro Štic, D. Sc. student, University of Rijeka, Faculty of Engineering, Croatia

Andrej Borić, D. Sc. student, University of Rijeka, Faculty of Engineering, Croatia

Nikša Čatipović, D. Sc. student, Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, University of Split, Croatia

Neven Tomašić, D. Sc. student, Reneteh Ogulin d.o.o., Croatia

Goran Salopek, D. Sc. student, Faculty of Humanities and Social Sciences, University of Rijeka, Croatia

Milenko Jokić, D. Sc. student, Polytechnic of Pula, College of applied sciences, Pula, Croatia

Hrvoje Novak, D. Sc. student, NMP Produkt d.o.o. Croatia

Sažetak projekta

Termalni procesi materijala među najvažnijim su čimbenicima u proizvodnji i povećanju pouzdanosti inženjerskih komponenti. Termalni procesi poput toplinske obrade, lijevanja, oblikovanja u vrućem stanju i zavarivanja omogućuju proizvodnju komponenti zahtijevanog oblika i zahtijevanih svojstava. Cilj optimiziranja i modeliranja termalnih procesa materijala je razvoj modela i računalnih simulacija termalnih procesa materijala te primjene alata i kalupa u termalnim procesima.

Istraživanja termalnih procesa materijala fokusirana su na prijenos topline, mikrostrukturne pretvorbe, mehanička svojstva te distorzije i zaostala naprezanja, za što je potreban ujedinjeni termo-mehaničko-metalurški pristup.

Kako bi se zadovoljile potrebe industrije za kontroliranjem i optimiziranjem parametara termalnih procesa, razvijani računalni programi za simulaciju prijenosa topline, mikrostrukturnih transformacija, mehaničkih svojstava, distorzija i zaostalih naprezanja uzimaju u obzir zahtijevani oblik obratka, zahtijevanu raspodjelu mehaničkih svojstava i raspodjelu mikrostrukture, a pritom uz zahtjeve izbjegavanja pukotina i minimiziranja distorzija i zaostalih naprezanja.

Project summary

Thermal processing of materials is one of the most important factors in production and reliability of engineering components. All varieties of material thermal processing technology, from heat treatment, casting and hot metal forming, to the welding, not only manufactures workpieces of required shapes but also optimizes their final properties. Objective of the optimisation of thermal processes of materials is development of models and computer simulations of thermal processes of materials and study of optimizing the application of tools and dies in thermal processing of materials.

In the focus of the thermal processing research, are physical processes and material properties such as: heat transfer, microstructure transformations, mechanical properties and distortions and residual stresses. To solve these tasks, joined thermo-mechanic-metallurgical approach is required.

To meet the needs of industry to control and optimize the thermal process parameters, computer programs for simulation of heat transfer, microstructural transformations, mechanical properties, distortion and residual stresses that were being developed are taking into account the required workpiece shape, desired mechanical property distribution and desired microstructure distribution by avoidance of cracking reduction of distortion and residual stresses.

2.6.8 20. međunarodna regata u mornarskom veslanju
20th international sailor rowing regatta

Na jubilarnoj, 20. međunarodnoj regati u mornarskom veslanju, u organizaciji Pomorskog fakulteta u Rijeci, Tehnički fakultet nastupio je s tri ekipe. Natjecanje je održano 29. svibnja 2018. godine u akvatoriju riječke luke gdje su dvije ekipe TFR-a završile na 2. poziciji: prva u kategoriji student (Ž), a druga u revijalnom dijelu natjecanja. U ženskoj kategoriji je Tehnički fakultet nastupio s Učiteljskim fakultetom te osvojio svoju prvu medalju u toj kategoriji. Uspjeh je upotpunila muška ekipa osvojivši treće mjesto u svojoj kategoriji. Na regati je sudjelovalo 300 natjecatelja, a svoje ekipe su bodrili mnogobrojni posjetitelji. Ovakav način veslanja je poseban jer se prakticira u čamcima za spašavanje, kojima je, za razliku od takmičarskih čamaca, teže upravljati, a dodatno se naglašava i pomorska tradicija Kvarnera. Time je i Tehnički fakultet dao svoj doprinos Festivalu mora i pomorske tradicije – Fiumare 2018. (od 29. svibnja. do 6. lipnja 2018. g.) u sklopu kojega je regata i organizirana. Studenticama i studentima svih studija potpora je pružena i od strane nastavnog osoblja (profesori Žigulić, Sladić, Kolić, Munjas, Pešić, Stojković i Piličić), čime je nastavljen niz dobrih rezultata predstavnika Tehničkog fakulteta na domaćim i inozemnim regatama (Portorož, Slovenija).

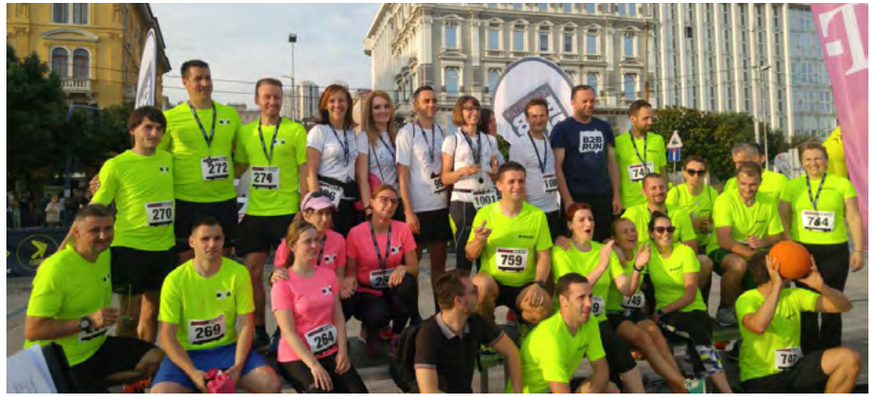
In the 20th International sailor rowing regatta, organized by the Maritime Faculty of Rijeka, the Faculty of Engineering participated with three crews. The competition was held on May 29, 2018, in the waters of the port of Rijeka, where two teams of the Faculty of Engineering took the 2nd position: the first in the student category (F) and the second in the promotional part of the competition. In the women's category, the Faculty of Engineering performed with the Faculty of Teacher Education and won its first medal in that category. The success was completed by the male team, winning the third place in its category. The number of participants in the regatta is estimated at 300, and many visitors supported their teams. This type of rowing is special because, firstly, it strongly emphasizes the maritime tradition of Kvarner and secondly, it is practiced in lifeboats, which, unlike the competing boats, are harder to operate. In this way the Faculty of Engineering has given its contribution to the Festival of Sea and Naval Tradition - Fiumara 2018 (May 29 - June 6, 2018), within which the regatta was organized. Students of all study programs were supported by the teaching staff (Prof. Žigulić, Sladić, Kolić, Munjas, Pešić, Stojković and Piličić), thus continuing a series of good results of the representatives of the Faculty of Engineering at national and international regattas (Portorož, Slovenia).

2.6.9 jedriličarski kup FSB 2018
sailing cup FSB 2018

Posada Tehničkog fakulteta u sastavu: Dubravko Franković (kormilar), Duško Pavletić, Sven Šojat i Marko Šestan osvojila je prvo mjesto u monotipskom jedriličarskom natjecanju „Jedriličarski kup FSB 2018“ koje se održalo od 15. do 17. lipnja 2018. godine u akvatoriju Šibenika, u organizaciji Sveučilišnog nautičkog kluba Fakulteta strojarstva i brodogradnje Sveučilišta u Zagrebu. Na natjecanju je sudjelovalo ukupno 8 posada sa sveučilišta iz Zagreba i Rijeke. Jedrilo se na regatnim monotip jedrilicama Beneteau Platu 25. Prva dva dana natjecanja, odjedreno je devet kvalifikacijskih regata po jakoj buri (četiri u petak i pet u subotu) nakon čega su formirane finalne grupe. Zadnji, finalni dan natjecanja jedrene su tri regate u teškim uvjetima, u početku po slaboj buri, a kasnije po jakom maestralu.

The Faculty of Engineering's crew: Dubravko Franković (helmsman), Duško Pavletić, Sven Šojat and Marko Šestan won the 1st place in the monotype sailing competition "FSB cup 2018" which was held on June 15 to 17, 2018 in the waters of Šibenik. The competition was organized by the University Nautical Club of the Faculty of Mechanical Engineering and Naval Architecture of Zagreb University. A total of 8 crews from the Universities of Zagreb and Rijeka participated in the competition. They sailed on Beneteau Platu 25 racing sailboats. During the first two days of the competition 9 qualifying races were held on a strong bora (4 on Friday and 5 on Saturday), after which the final groups were formed. The last day of the competition three regattas were sailed under difficult conditions, initially weak bora, and later strong landward breeze.

2.6.10 B2B run rijeka 2018



Tim trkača Tehničkog fakulteta sudjelovao je 24. 5.2018. g. u poslovnoj utrci B2Brun u Rijeci. U utrci su sudjelovali: Marina Franulović (kapetanica), Kristijan Lenac, Kristina Marković, Tea Marohnić, Tomislav Senčić i Sunčana Smokvina Hanza.

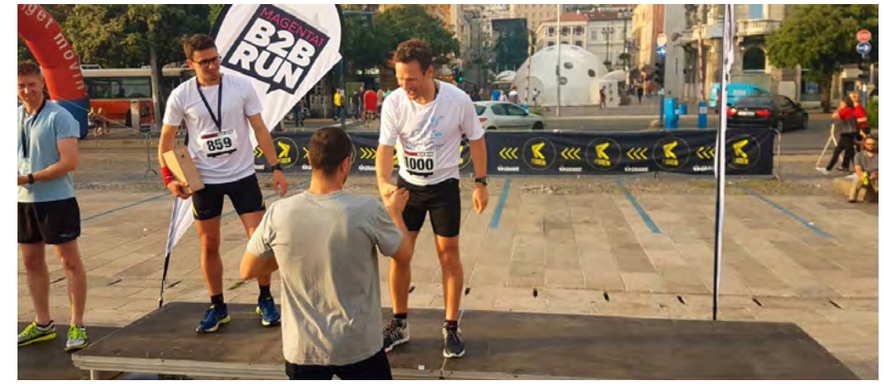
U kategoriji srednjih poduzeća u kojoj je sudjelovalo 29 timova, Tehnički fakultet je osvojio prvo mjesto.

Prvo mjesto pripalo je fakultetu i za najbrži ženski tim. Pojedinačne nagrade za prvo mjesto u ženskoj kategoriji osvojila je Sunčana Smokvina Hanza, a za prvo mjesto u muškoj kategoriji Tomislav Senčić.

The team of runners of the Faculty of Engineering participated in the B2Brun, the business running race in Rijeka on 24 May 2018. The members of the team were: Marina Franulović (captain), Kristijan Lenac, Kristina Marković, Tea Marohnić, Tomislav Senčić and Sunčana Smokvina Hanza.

29 teams participated in the category of medium enterprises and the Faculty of Engineering won the first place.

The first place also went to the faculty for the fastest female team. Additionaly, the first single female award was won by Sunčana Smokvina Hanza and the single male award by Tomislav Senčić.



2.6.11 studentski završni i diplomski radovi
student undergraduate and graduate theses

IME I PREZIME | NAME AND SURNAME:
Daniel Žgomba

Preddiplomski sveučilišni studij Brodogradnje
/ Undergraduate University Study Of Naval Architecture

NAZIV RADA | TITLE:
Metodologija uzdužnog porinuća
Methodology behind longitudinal ship launching

MENTOR(I) | SUPERVISOR(S):
doc. dr. sc. / Assist. Prof. D. Sc. Anton Turk
Izv. prof. dr. sc. / Assoc. Prof. D. Sc. Marko Hadjina

Sažetak:

U ovom završnom radu opisan je smještaj broda na navozu i uzdužno porinuće. U prvom dijelu rada opisan je kosi uzdužni ležaj sa svom opremom za prihvat i smještaj broda na navozu. Priloženi nacrti gradnje br. 705 dobiveni su direktno iz brodogradilišta „3. Maj“.

U drugome dijelu opisan je postupak uzdužnog porinuća i mogući kritični trenuci prilikom spuštanja broda niz navoz. Za svaki od kritičnih položaja broda dan je i način prevencije. Za svaku fazu porinuća izračunate su sile i momenti koji se javljaju, pomoću programa SIKOB.

Na osnovu dobivenih rezultata izrađen je statički dijagram porinuća.

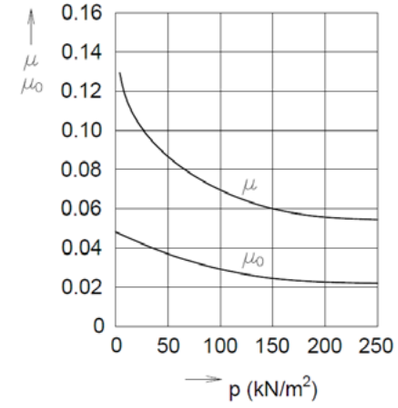
Summary:

In this final work the topic that has been covered is the ship placement on the slipway and the longitudinal launching. The first part of the work describes the longitudinal slipway with all of its equipment made for reception and placement of the ship on the slipway. All of the plans needed for the placement of the construction number 705, which are given in the insets, were collected directly from the shipyard “3. Maj“.

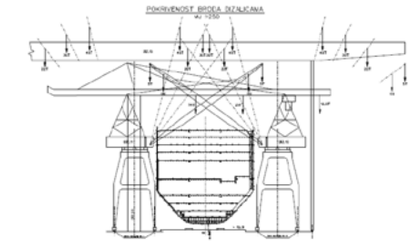
The second part of this final work describes the longitudinal launching of the ship with all the critical moments during the launching. For every critical position of the ship a way of prevention has been given. Forces and moments of forces which occur in every stage of launchng have been calculated using a program named “SIKOB“.

A static diagram has been created based on the calculations mentioned above.

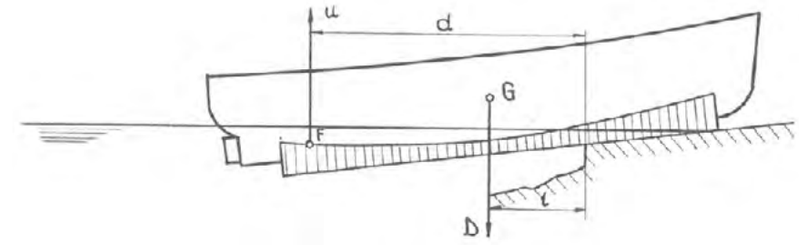
Saonik nakon mazanja
/ Slipway after coating



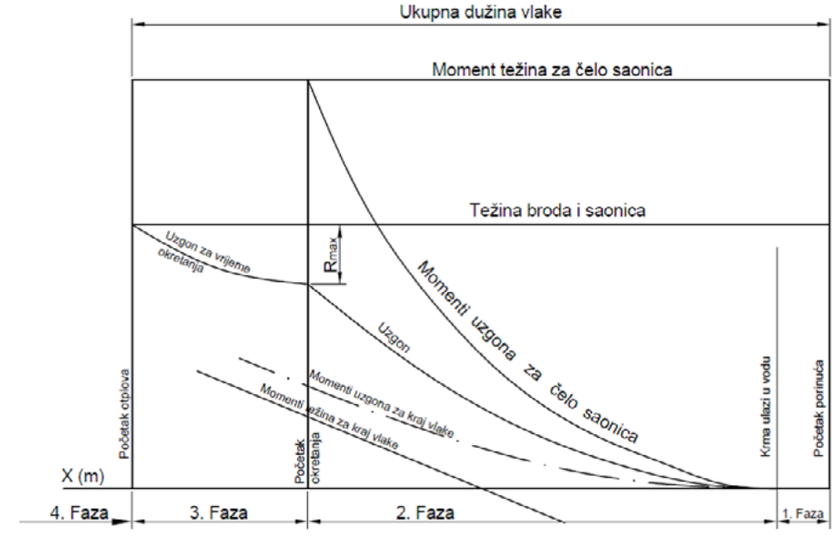
Ovisnost koeficijenata trenja o pritisku
/ Dependence of friction coefficients on pressure



Pokrivenost broda dizalicama
/ Ship coverage by cranes



Statički dijagram porinuća
/ Static diagram of launching



Kritičan položaj broda – ponik
/ Critical position of the ship - tipping

IME I PREZIME | NAME AND SURNAME:
Marin Smilović

Preddiplomski sveučilišni studij Brodogradnje
/ Undergraduate University Study Of Naval Architecture

NAZIV RADA | TITLE:
Planiranje gradnje trupa i opremanja broda | Ship Construction And Outfitting Planning

MENTOR(I) | SUPERVISOR(S):
Izv. prof. dr. sc. / Assoc. Prof. D. Sc. Marko Hadjina

Sažetak:

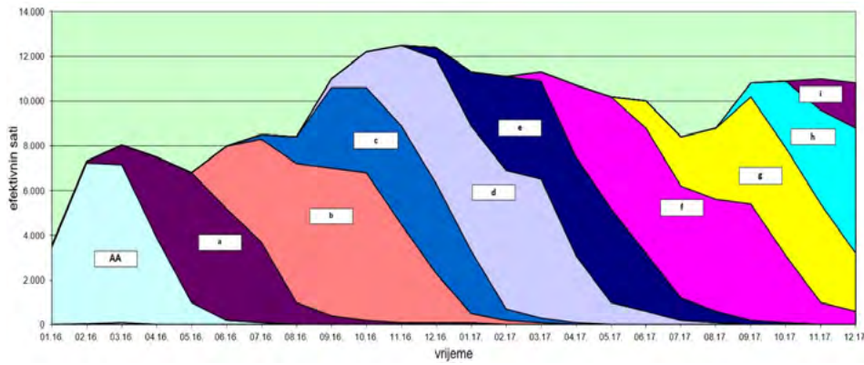
U završnom radu obrađen je sadržaj prve razine planiranja za odabranu gradnju u odabranom brodogradilištu za novogradnje. Početak rada baziran je na dokumentaciji u fazi ugovaranja, zaključivanju ugovora i pratećom dokumentacijom za gradnju broda. Prikazan je redoslijed montaže sekcija s utrošenim resursima.

Drugi dio razrađuje planiranje gradnje s prikazom odnosa opterećenja za određene aktivnosti i odnos vlastitog opterećenja i kooperacije. Prikazano je izvještavanje o gotovosti grupe te je izrađen redoslijed aktivnosti sekcije, od izrade dokumentacije do montaže. Definirano je opremanje van broda i njegove prednosti i nedostaci. Nadalje, na osnovu provedene analize, diskutirana je važnost pojedinih resursa u određenim faza ugovaranja i gradnje broda.

Summary:

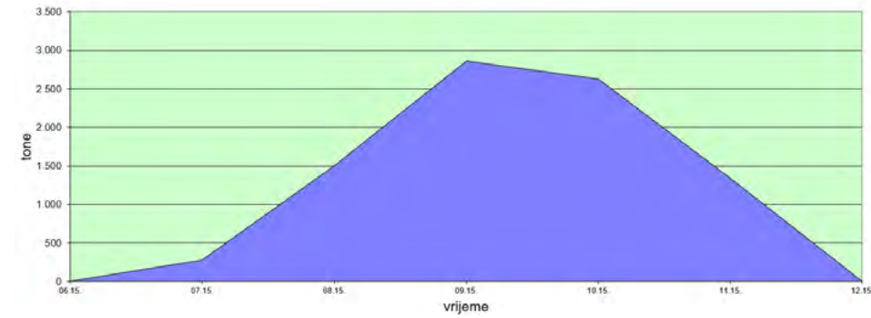
The subjects of this final paper are the contents and details involving the first level of planning for a chosen construction in a particular shipyard. Firstly, the present work is based on the documentation in the phase of signing a contract which includes the subsequent contract conclusion as well as the accompanying documentation for the ship construction. The order of assembly of various sections, with a list of resources spent for the same, is also shown in the first part.

The second part elaborates more on the planning of the construction by presenting the ratio of the load involving certain activities to the already set safe working load as well as their co-operation. It also shows reports on the status involving the finalization of a certain group in addition to the order of activities starting from preparing the documentation needed and ending with the assembly of parts into whole units. Advanced outfitting is also defined along with its advantages and disadvantages. Based on data that was given, this final paper offers some insight into which resources are important in each stage of both contracting and construction.



Planirana opterećenja u efektivnim satima za obradu po brodovima
*/ Planned load in effective hours for fabrication for each ship**

Odnosi opterećenja za aktivnosti po fazama rada
*/ Activity load ratio per work phases**



Mjesečno opterećenje obrade u tonama
*/ Monthly load of fabrication in tones**

**Podaci na grafovima su općeniti radi zaštite poslovnih podataka*
/Data on graphs are general due to business data protection

IME I PREZIME | NAME AND SURNAME:
Miloš Balunović

Diplomski sveučilišni studij Brodogradnje / Graduate University Study Of Naval Architecture

NAZIV RADA | TITLE:
Strukturna analiza kompozitnog katamarana | Composite Catamaran Structural Analysis

MENTOR(I) | SUPERVISOR(S):
Prof. dr. sc. / Prof. D. Sc. Albert Zamarin

Sažetak:

U radu je, u okviru procesa projektiranja strukture trupa broda, prikazana strukturna analiza natjecateljskog kompozitnog katamarana za nekoliko predloženih različitih varijanti topologije strukture do značajne valne visine od 4m i vjetrovima snage do 8 po Beaufort skali.

Uvodno su predstavljene osnovne strukturne i pomorstvene karakteristike katamarana. Izložene su osnove mehanike kompozita s osvrtom na načine i kriterije oštećenja i kolapsa.

Kao podlogu za strukturnu analizu, prema ISO 12215 pravilima, definirane su osnovne strukturne karakteristike oplate trupa za jednostruki laminat i za sendvič konstrukciju.

Definiran je laminat plan prema zahtijevanim karakteristikama laminata definiranog prema ISO pravilima i predložene su četiri kombinacije topološke raspodjele ukrepa i tipa laminata.

Izrađen je model konačnih elemenata kao podloga za strukturnu analizu i definirana su strukturna hidrostatska i hidrodinamička opterećenja. Uspoređene su sve kombinacije, a iterativnom metodom došlo se do cilja sličnih koeficijenata vjerojatnosti popuštanja kompozita (Tsai Wu kriterij). Konačno su uspoređene mase plovila na osnovu čega se odabrao najlakši tj. najpovoljnija kombinacija tipa laminata i topološke raspodjele strukturnih elemenata.

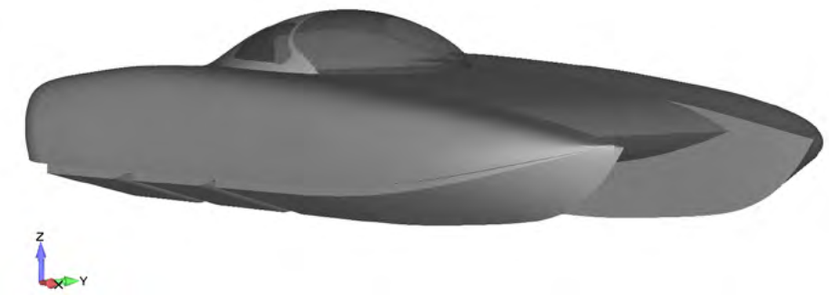
Summary:

This thesis describes a structural analysis of a competitive composite catamaran for a number of suggested different topology variants of the structure, with a significant height of waves up to 4m and speed of wind up to 8 according to Beaufort scale. The basic structural and seakeeping characteristics of the catamaran are presented in the introduction, as well as the basics of the composite mechanics with special attention to criteria of damage and collapse.

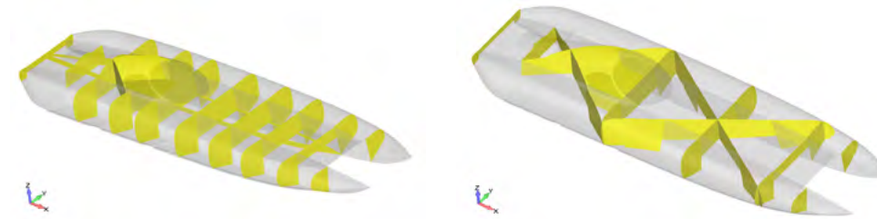
As a basis for structural analysis, according to ISO 12215 rules, the basic hull plating for single laminate and for sandwich construction are defined. The laminate plan is defined according to the required laminate characteristics as defined by the ISO rules. Moreover, four combinations of topological organisations and type of laminate are proposed. The finite element model was created as a base for structural analysis. Structural hydrostatic and hydrodynamic loads were defined as well. All combinations were compared, and by the iterative method the aim of similar composite yield probability coefficients (Tsai Wu criterion) was reached. Finally, the weight of vessels was compared, on the basis of which the easiest combination of laminates and topological distribution of structural elements was chosen.

Tip strukture i laminata	Masa plovila, kg	Razlika u odnosu na najlakši trup, %
sendvič konstrukcija i dijagonalno-poprečna struktura	6157	0.0%
sendvič konstrukcija i uzdužno-poprečna struktura	6166	0.1%
jednostruki laminat i uzdužno-poprečna struktura	6548	6.4%
jednostruki laminat i dijagonalno-poprečna struktura	6602	7.2%

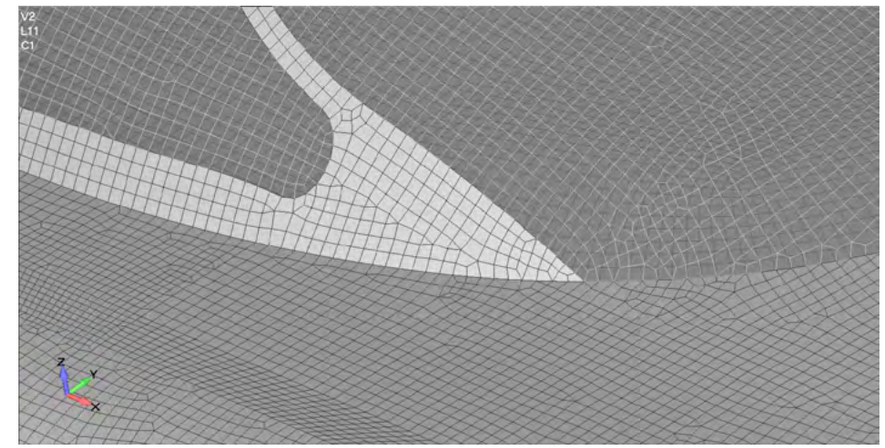
Structure and laminate type	Hull weight, kg	difference compared to the lightest by, %
Sandwich layup diagonally-cross strengthened	6157	0.0%
Sandwich layup cross - longitudinal strengthening	6166	0.1%
Single skin layup cross - longitudinal strengthening	6548	6.4%
Single skin layup diagonally-cross strengthened	6602	7.2%



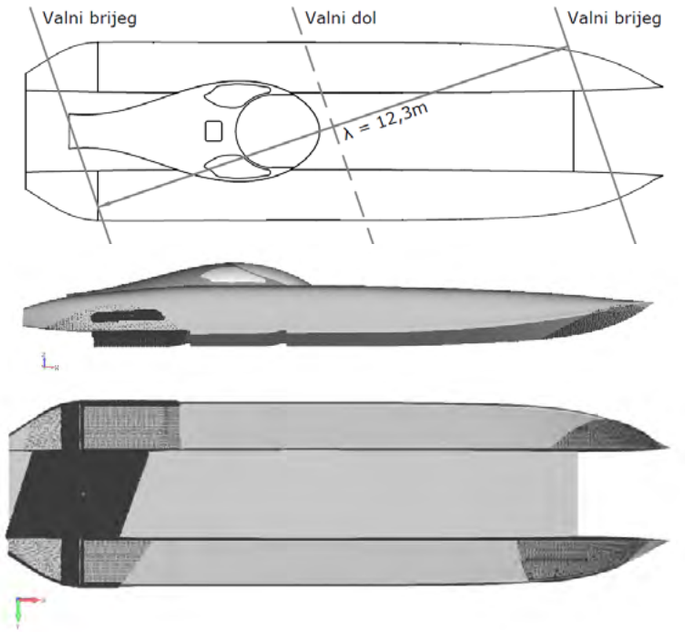
Natjecateljski model kompozitnog katamarana
/ Competition model of composite catamaran



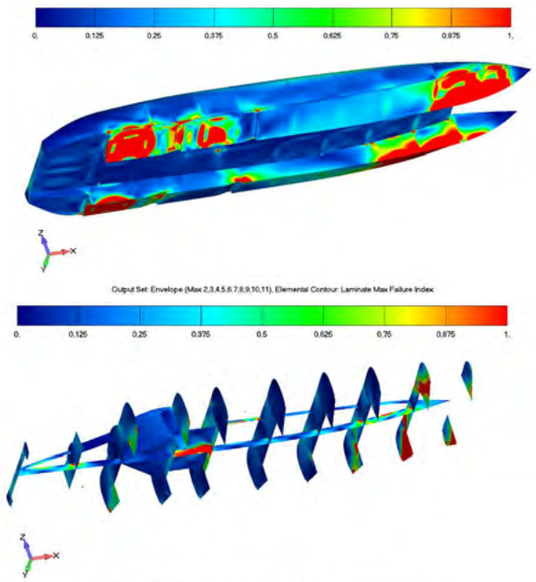
Poprečno (lijevo) i dijagonalno (desno) ukrepljenja struktura katamarana
/ Transverse (left) and diagonal (right) girder structure



Prikaz elemenata na spoju oplate s kabinskim pokrovom
/ Finite elements on shell-cabin joint



Opterećenje katamarana koso na valove (dinamički uvjeti)
/ Catamaran load diagonally on waves (dynamic conditions)



Jednostruki laminat i poprečna struktura
- koeficijent popuštanja po Tsai Wu kriteriju - preliminarni model
/ Single laminate and cross-sectional structure
- yield coefficient according to Tsai Wu criterion - preliminary model

IME I PREZIME | NAME AND SURNAME:
Danijel Cvitković

Diplomski sveučilišni studij elektrotehnike / Graduate University Study Of Electrical Engineering

NAZIV RADA | TITLE:
Pristupi za poboljšanje djelotvornosti neizravnog pretvarača s galvanskim odvajanjem
Flyback converter and its efficiency improvement

MENTOR(I) | SUPERVISOR(S):
izv. prof. dr. sc. / Assoc. Prof. D. Sc. Saša Sladić

Sažetak:

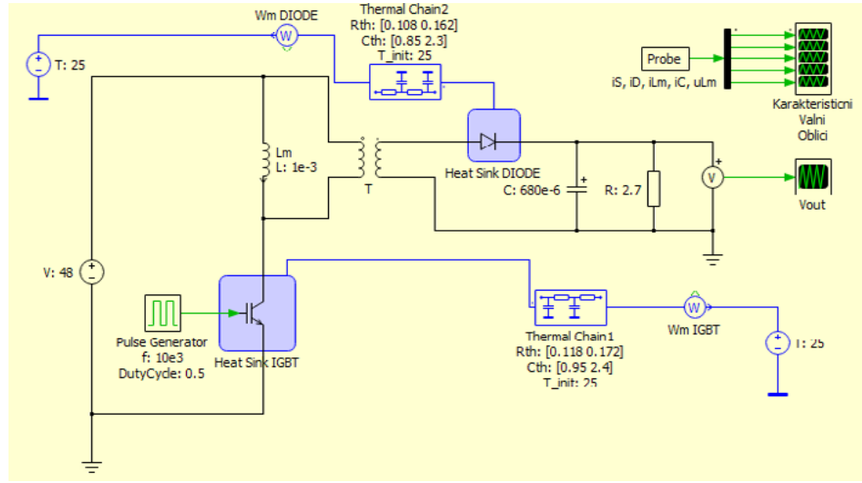
U radu je opisan način djelovanja neizravnog pretvarača s galvanskim odvajanjem (eng. Flyback converter) te su istraženi načini za poboljšanje njegove djelotvornosti. S obzirom da je primjena ovog tipa istosmjernog elektroničkog pretvarača široka i obuhvaća ispravljače za napajanje mobilnih uređaja, fotonaponske sustave i situacije u kojima je potrebno dobiti visoki napon, poput pretvarača u stroju s unutarnjim izgaranjem, rezultati rada imaju komercijalni značaj.

Problem zamjene diode protuparalelnim spojem tranzistora i diode istražen je simulacijski korištenjem dinamičkih modela poluvodičkih sklopki u okviru suvremenog simulacijskog alata Plecs. S obzirom da ova topologija pretvarača ima dvije upravljive elektroničke sklopke korišten je mikroprocesorski razvojni sustav s ARM CORTEX-M4 procesorom u cilju generiranja potrebnih upravljačkih signala. Korištenjem opisanih pristupa moguće je povećati djelotvornost promatranog pretvarača s približno 90 % na 95 %. Simulacijski rezultati su uspoređeni s praktičnim.

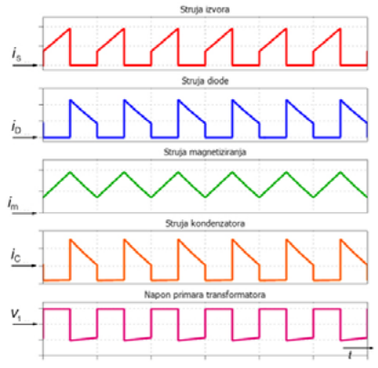
Summary:

This thesis describes the operating principle of a flyback DC/DC power converter. The possibilities of its efficiency improvement were also investigated. The flyback converter has been used widely in power supplies of mobile electronic equipment, photovoltaic systems and applications which demand high output voltage as in internal combustion engines which means that this work has commercial impact.

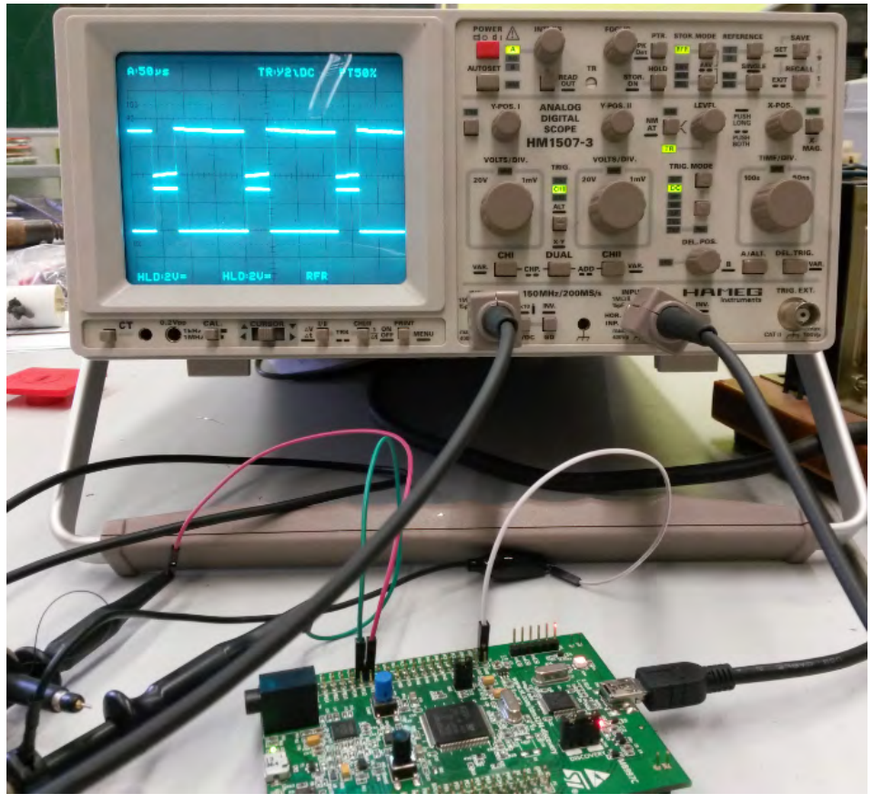
In order to improve the power converter efficiency a power diode has to be replaced with antiparallel connection of a power transistor and a power diode. That means two signals have to be generated in order to ensure synchronous rectification (complementary switching). It is possible to improve the efficiency of this type of power converter from approximately 90% up to 95%. Simulation results were compared with measurements.



Simulacijski model neizravnog pretvarača s galvanskim odvajanjem u simulacijskom programu Plecs
/ Simulation model of the flyback converter in the program Plecs



Simulirani valni oblici struje izvora iS, struje diode iD, struje magnetiziranja im, struje kondenzatora iC i napona primara kondenzatora v1 u programu Plecs (2A/d.s., 20V/d.s., 0,1ms/d.s.)
/ Simulated waveforms of source current iS, diode current iD, magnetizing current im, capacitor current iC and voltage of primary winding v1 (2A/d.s., 20V/d.s., 0,1ms/d.s.)



Izmjereni upravljački signali za komplementarno uključivanje tranzistora (2V/d.s., 50µs/d.s.)
/ Measured control signals for synchronous rectification (2V/d.s., 50µs/d.s.)

IME I PREZIME | NAME AND SURNAME:
Mario Margetić

Diplomski sveučilišni studij elektrotehnike / Graduate University Study Of Electrical Engineering

NAZIV RADA | TITLE:
Programiranje mikrokontrolera za učinske pretvarače
Additive technologies implementation in medicine

MENTOR(I) | SUPERVISOR(S):
izv. prof. dr. sc. / Assoc. Prof. D. Sc. Saša Sladić

Sažetak:

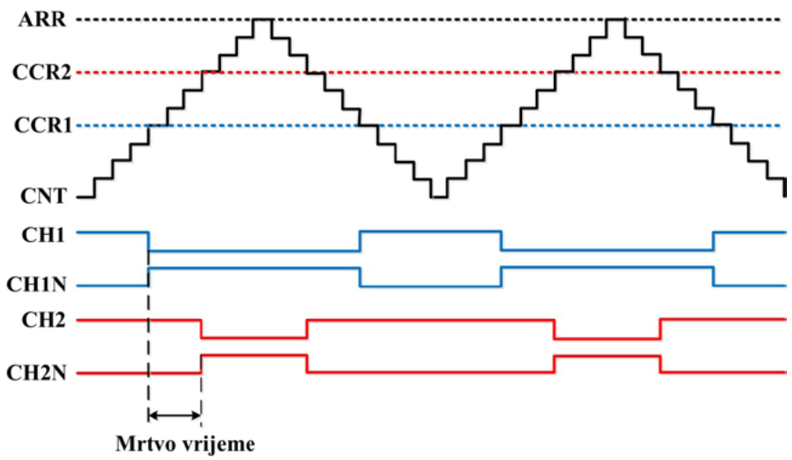
U ovom radu su opisani učinski pretvarači s galvanskim odvajanjem i bez njega. U skupinu učinskih pretvarača bez galvanskog odvajanja spadaju silazni, uzlazni i silazno-uzlazni pretvarači, a u skupinu učinskih pretvarača sa galvanski odvajanje spadaju simetrični (protutaktni), polumosni i mosni pretvarači. Teoretski dio rada popraćen je simulacijom simetričnog pretvarača u programskom paketu Simplorer. Za upravljanje pretvaračima potrebno je generirati upravljačke signale koji će upravljati tranzistorskim sklopkama. Kod generiranja upravljačkih PWM signala korišten je razvojni sustav STM32F4-Discovery s STM32F407VTG6 mikrokontrolerom. Za programiranje mikrokontrolera korišten je programski paket Keil µVision 5. Prije početka pisanja programskog kôda, potrebno je poznavati koncept mikrokontrolera, no također je potrebno dobro poznavati vremenske registre i brojače koje sadrži taj mikrokontroler. Iako postoje već gotove biblioteke za generiranje PWM signala, one nemaju mogućnost postavljanja dokinuća napona između dva PWM signala koje je potrebno kod upravljanja simetričnim (protutaktnim) pretvaračem. U radu su dani praktični rezultati i rezultati simulacija.

Summary:

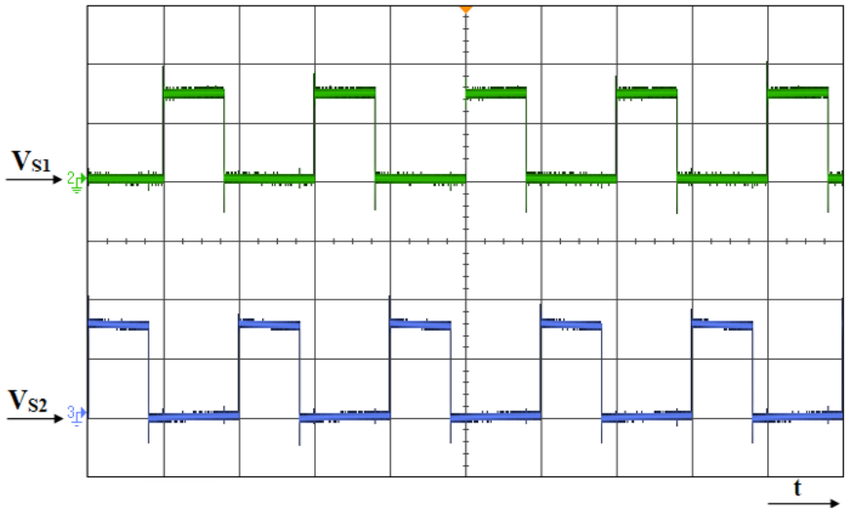
This paper describes power converters with and without galvanic separation. In the group of power converters without galvanic separation are buck, boost and buck-boost converters. In the group of power converters with galvanic separation are push-pull, half-bridge and bridge converters. The theoretical part of this work is supported by simulation of a push-pull converter which is modelled in the Simplorer software package. To be able to control the converters, it is necessary to generate control signals, which will control transistor switches. The STM32F4 development system with a STM32F407VTG6 microcontroller is used when generating control PWM signals. For microcontroller programing, a Keil µVision 5 software package was used. Before writing a program code it is important to know microcontroller architecture, but it is also necessary to know well timers and counters of this microcontroller. Although there are existing libraries for generating PWM signals, they do not have the ability to set the dead time between the two PWM signals which is necessary for push-pull converter control. Both simulation and measurement are given.

```
int main(void)
     {

  SystemClock_Config(); // Konfiguracija takta

  GPIO_Init();    // Inicijalizacija izlaznih pinova
  TIM1_Init();     // Inicijalizacija timera

  HAL_TIM_Base_Start(&htim1);  // Pokretanje vremenske baze

  HAL_TIM_PWM_Start(&htim1,TIM_CHANNEL_1);  // Pokretanje kanala 1
  if(HAL_TIMEx_PWMN_Start(&htim1,TIM_CHANNEL_1)!=HAL_OK)
    {
      Error_Handler();
    }

  HAL_TIM_PWM_Start(&htim1,TIM_CHANNEL_2);  // Pokretanje kanala 2
  if(HAL_TIMEx_PWMN_Start(&htim1,TIM_CHANNEL_2)!=HAL_OK)
    {
     Error_Handler();
    }

}
```

Glavna main() funkcija u kojoj se izvode druge funkcije prikazana u programskom sučelju Keil
/ C code in Keil programming interface



Generirani PWM signali s dokinućem napona
/ PWM signal generation comparing the signals from different timers and registers



Izmjereni valni oblici upravljačkih signala na mikrokontroleru (2V/d.s, 50μs/d.s)
/ Measured signals for power converter control (2V/d.s, 50μs/d.s)

IME I PREZIME | NAME AND SURNAME:
Nikola Bunčić

Diplomski sveučilišni studij strojarstva / Graduate University Study of Mechanical Engineering

NAZIV RADA | TITLE:
Model ultrazvučne kontrole puzanja u komponenti termoelektrane
A model of ultrasonic creep control in a thermal power plant component

MENTOR(I) | SUPERVISOR(S):
prof. dr. sc. / Prof. D. Sc. Marko Čanađija
Zn. sur. dr. sc. / Research associate D. Sc. Marko Budimir
(INETEC - Institute for Nuclear Technology, Lučko)

Sažetak:

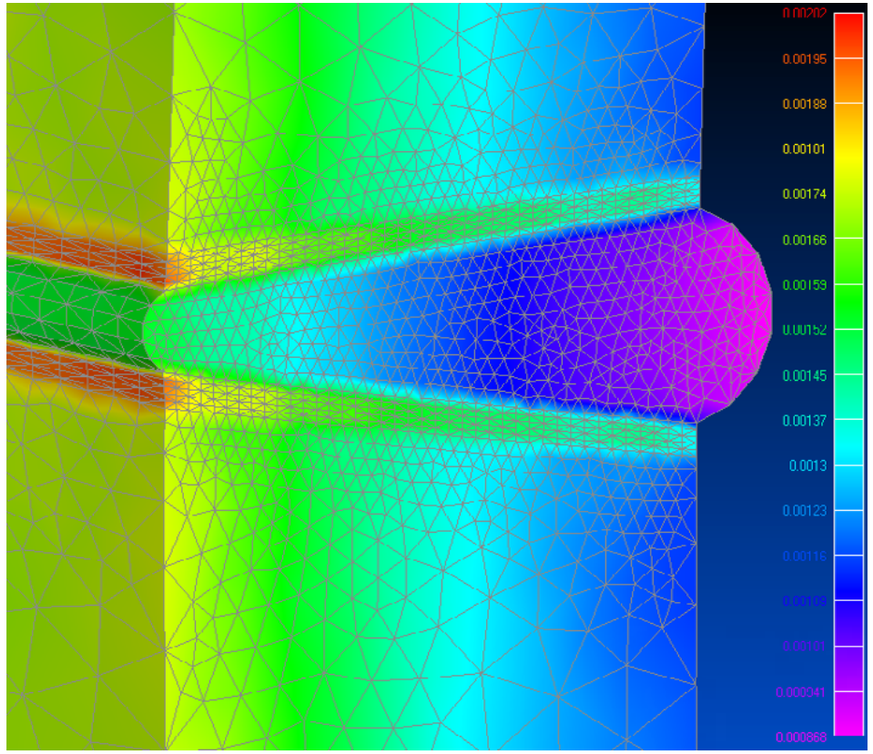
U ovom radu istražene su mogućnosti računalnog modeliranja (primjena metode konačnih elemenata) i detekcije defekata nastalih u ranoj fazi puzanja (sekundarno puzanje) u čeličnim cijevima (P91) koje se koriste u termoelektranama pomoću ultrazvučne kontrole bez razaranja. Za prikaz rasporeda i ponašanja deformacija nastalih zbog puzanja na modelu cijevi korišten je komercijalni FEMAP softver, a za ultrazvučnu analizu korišten je komercijalni PZFlex softver. Za definiranje puzanja u 3D modelu cijevi korišten je Nortonov zakon. Usvojeni izrazi i koeficijenti Nortonovog zakona prvobitno su korišteni u Microsoft Excelu na različitim iznosima naprezanja kako bi se ustanovili određeni trendovi koji aproksimiraju razvoj puzanja na modelu. Na osnovu koeficijenata Nortonovog zakona puzanja, napravljena je simulacija puzanja u FEMAP softveru koja pokazuje način na koji se 3D model cijevi deformira, područje najveće deformacije na 3D modelu cijevi te raspored i intenzitet naprezanja koja se pritom javljaju. Analiza u FEMAP softveru vrlo dobro pokazuje učinke puzanja na model i nastala kritična mjesta.

Ultrazvučne analize rađene su na dva modela s jednim defektom čija se površina postupno smanjivala, kako bi se testirale mogućnosti modela i konstruiranih sondi. Na kraju je napravljena i simulacija s grupom mikro defekata koji aproksimiraju puzanje u modelu cijevi. Na osnovu dobivenih rezultata donesen je zaključak o mogućnostima primjene ultrazvučne analize u svrhu detekcije prisutnosti puzanja. Analiza provedena u komercijalnom PZFlex softveru vrlo dobro pokazuje utjecaj prisutnih defekata u modelu cijevi ili testnom uzorku na širenje zvučnih valova.

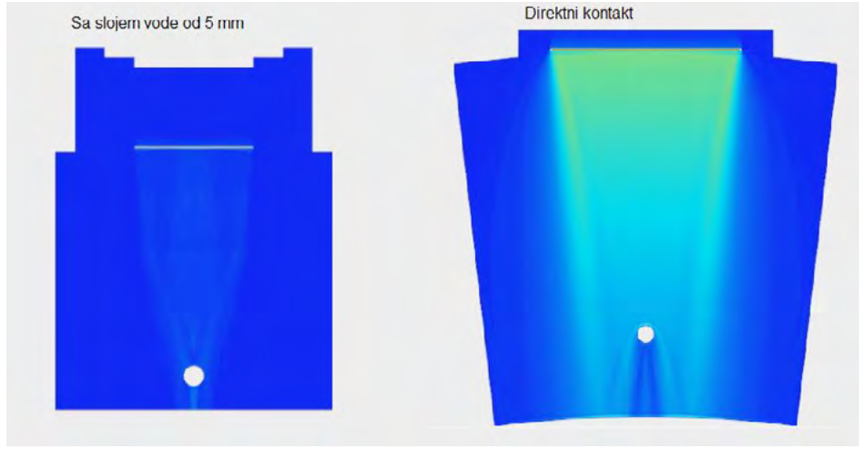
Summary:

This paper explores the possibilities of computer modeling (application of finite element method) and detection of defects by ultrasonic control without destruction. The defects of interest are occurring in the early stage of creep (secondary creep) in steel pipes (P91) used in thermal power plants. The commercial FEMAP software was used to show the layout and behavior of strain caused by creep on the tube model, and commercial PZFlex software was used for ultrasound analysis. Norton's law was used to define the creep in the 3D model of pipes. The adopted terms and coefficients of Norton's Law were originally used in Microsoft Excel at varying degrees of stress in order to establish certain trends that approximate the creep propagation in the model. Then the Norton's Law coefficients were used in the commercial FEMAP software for creep analysis on the 3D model of the tube. The conducted analysis shows the type of deformation that occurs on the 3D model of the tube. The analysis also shows the area of the greatest strain on the 3D model and the layout and intensity of the stress that is occurring. The analysis in the commercial FEMAP software shows very well the effects of creep on the model and the presence of critical spots.

Ultrasonic analyses were made on two models with one defect embedded in the models. Then the surface of the defect was gradually decreased for the purpose of testing the capabilities of the model and constructed transducers. Finally, a simulation with an array of defects was made in order to approximate the creep damage in the tube model. Based on the results obtained, a conclusion was made on the possibilities of using ultrasonic analysis to detect the presence of creep. The analysis carried out in the commercial PZFlex software shows very well the influence of the present defects in the tube model on the spread of the sound waves.



Deformacija zbog puzanja na manjem zavaru (600°C)
/ Solid creep strain in a smaller weld (600°C)



Razlika u jačini signala između dva modela
/ Difference in signal intensity between two models

IME I PREZIME | NAME AND SURNAME:
Dario Jocić

Preddiplomski sveučilišni studij brodogradnje
/ Undergraduate University Study Of Naval Architecture

NAZIV RADA | TITLE:
Određivanje dimenzijskih karakteristika opreme broda primjenom fotogrametrijske metode
Ship Equipment Dimensional Characteristic Determination Using Photogrammetry Method

MENTOR(I) | SUPERVISOR(S):
izv. prof. dr. sc. / Assoc. Prof. D. Sc. Tin Matulja
Izv. prof. dr. sc. / Assoc. Prof. D. Sc. Marko Hadjina

Sažetak:

Uvodni dio ovog rada objašnjava primjenu fotogrametrije i njen način rada koji se zasniva na principu triangulacije koji je također objašnjen. Spomenuti su i korišteni programi u ovome radu kao i njihov način dobivanja željenih prostornih koordinata.

U nastavku rada pobliže je opisan postupak digitalizacije tj. dobivanja točaka u prostoru pomoću programa Rhinophoto. Rad objašnjava svaki korak dobivanja tih točaka, od same pripreme opreme za rad do njihovih početaka korištenja u svrhu izrade forme broda te izrade nacrta karakterističnih linija broda. Forma broda i pripadajući nacrti rađeni su u programu Rhinoceros.

U završnom dijelu rada opisan je Kvarnerski guc koji odgovara tipu broda korištenog za ovaj završni rad.

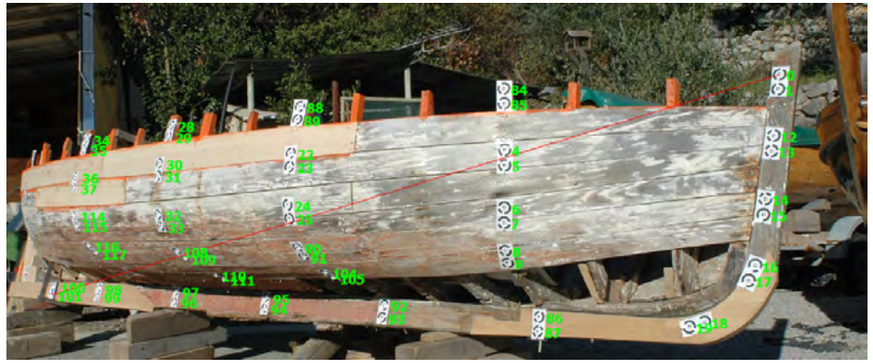
Summary:

The introductory part of this final paper explains the application of photogrammetry and the principle of triangulation. Triangulation is the main principle of this measuring technique. The initial part of this final paper also describes the photogrammetry-based software used with its methods of work.

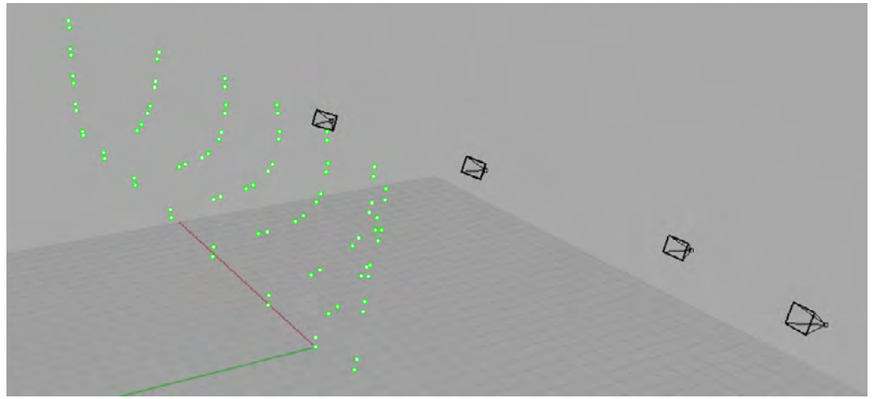
The main part describes in detail every procedure needed to get 3D coordinates from pictures of used object, using Rhinophoto and Rhinoceros software. First, the camera calibration and object preparation are described. Then, using photogrammetry software to process taken pictures in order to get 3D coordinates is explained. Furthermore, coordinates are used to get a 3D model of a photographed boat.

The boat, Kvarneski guc, as the main object for this paper is described at the end of this final paper.

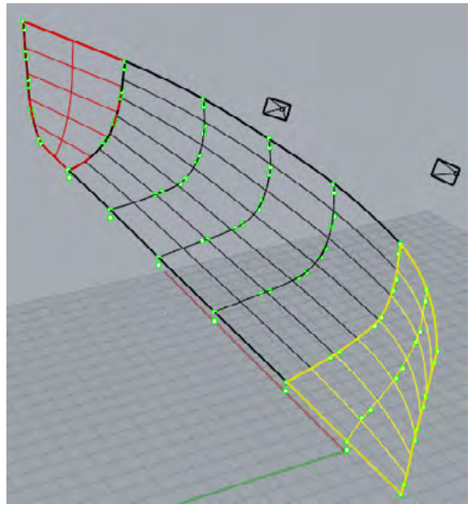
Pozicionirane oznake na brodu
/ Boat with photogrammetry markers



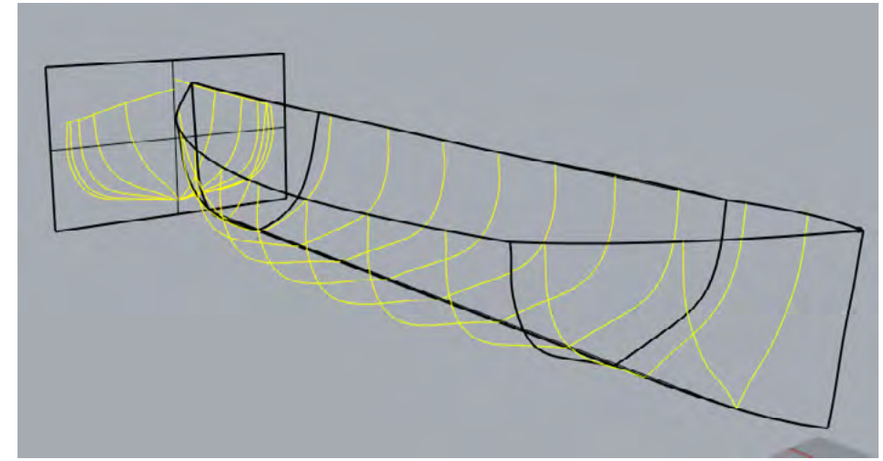
Procesuiranje fotografija u Rhinophoto programu
/ Photography processing with Rhinophoto software



Dobivene kooridinate točaka u prostoru
/ Created 3D coordinates of markers



Korištenje točaka u svrhu konstruiranja trupa broda
/ Using virtual position of markers in order to design a hull form



Generirana forma broda s pripadnim rebrima
/ Hull form with frames

IME I PREZIME | NAME AND SURNAME:
Ivica Mandić

Diplomski sveučilišni studij računarstva / Graduate University Study of Computer Engineering

NAZIV RADA | TITLE:
Uklanjanje šuma iz biomedicinskih slika korištenjem adaptivnih algoritama temeljenih na presjecištu intervala pouzdanosti
| Denoising of Biomedical Images Using the Adaptive Algorithms Based on the Intersection of the Confidence Intervals

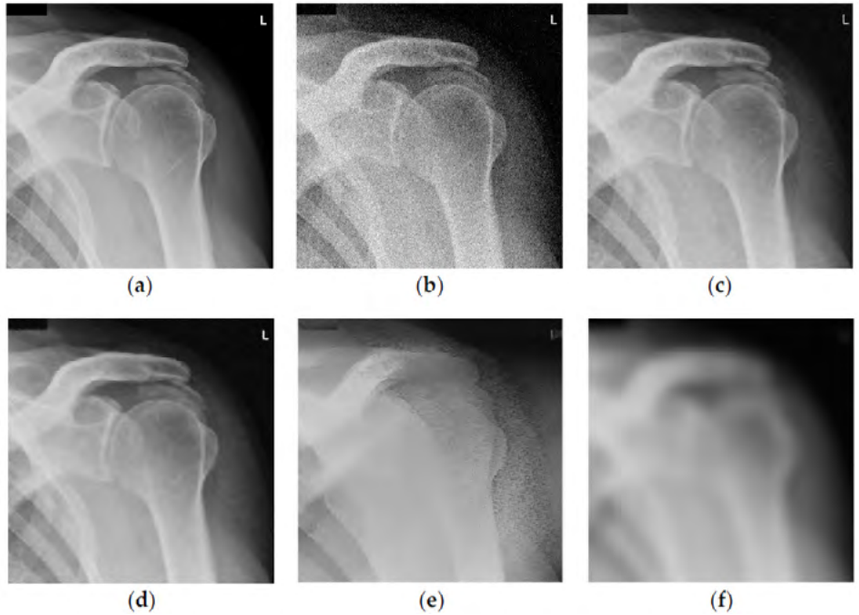
MENTOR(I) | SUPERVISOR(S):
Doc. dr. sc. / Assist. Prof. D. Sc. Jonatan Lerga

Sažetak:

Dijagnoza i tretman mnogih bolesti uvelike ovisi o kvaliteti medicinskih slika. Međutim, šum (nastao tijekom postupka snimanja i prijenosa slike) je jedan od glavnih faktora koji narušava njihovu kvalitetu. U ovom radu je predložen adaptivan postupak za uklanjanje šuma primijenjen na poboljšanje rendgenskih slika. Algoritam se temelji na modifikaciji postupka presjecišta intervala pouzdanosti. Jedan od prednosti predloženog postupka je činjenica da se estimacija svakog odšumljenog piksela izvršava neovisno za svaki piksel te je stoga metoda prikladna za jednostavnu paralelizaciju kako bi se poboljšala njena računalna učinkovitost. Predloženi postupak, u usporedbi s drugim testiranim metodama, nadmašuje iste vizualno i mjereno vršnim omjerom signala i šuma do 7.99 dB.

Summary:

Diagnostics and treatments of numerous diseases are highly dependent on the quality of captured medical images. However, noise (during both acquisition and transmission) is one of the main factors that reduce their quality. This paper proposes an adaptive image denoising algorithm applied to enhance X-ray images. The algorithm is based on the modification of the intersection of confidence intervals (ICI) rule. One of the advantages of the proposed method is the fact that the estimation of the noise free pixel is performed independently for each image pixel and thus, the method is applicable for easy parallelization in order to improve its computational efficiency. The proposed method, when compared to other tested methods, was shown to outperform them both visually and in terms of the peak signal-to-noise ratio by up to 7.99 dB.



Rendgenski snimak ramena. (a) Izvorna slika bez šuma; (b) Slika sa šumom (aditivni bijeli Gaussov šum, σ = 25); (c) Slika s uklonjenim šumom koristeći 2D LPA-RICI metodu (kvadrileteralna regija, Γ = 1.8, Rc = 0.8); (d) Slika s uklonjenim šumom koristeći 2D LPA-RICI metodu (oktagonalna regija, Γ = 1.8, Rc = 0.8); (e) Slika s uklonjenim šumom koristeći 2D LPA-RICI metodu (heksadekagonalna regija, Γ = 1.8, Rc = 0.8); (f) Slika s uklonjenim šumom koristeći filtre Gaussovog glađenja.
/ Shoulder X-ray scan. (a) Original noise-free image; (b) Noisy image (additive white Gaussian noise with σ = 25); (c) Image denoised using the 2D LPA-RICI method (quadrilateral region, Γ = 1.8, Rc = 0.8); (d) Image denoised using the 2D LPA-RICI method (octagonal region, Γ = 1.8, Rc = 0.8); (e) Image denoised using the 2D LPA-RICI method (hexadecagonal region, Γ = 1.8, Rc = 0.8); (f) Image denoised using Gaussian smoothing filters.

IME I PREZIME | NAME AND SURNAME:
Matteo Samsa

Preddiplomski sveučilišni studij elektrotehnike / Undergraduate University Study of Electrical Engineering

NAZIV RADA | TITLE:
CAN sabrinica u Formuli Student | CAN Bus in Formula Student

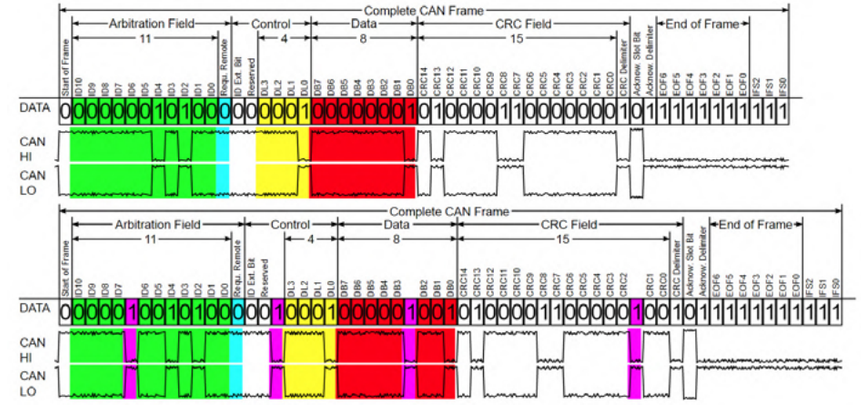
MENTOR(I) | SUPERVISOR(S):
Doc. dr. sc. / Assist. Prof. D. Sc. Jonatan Lerga

Sažetak:

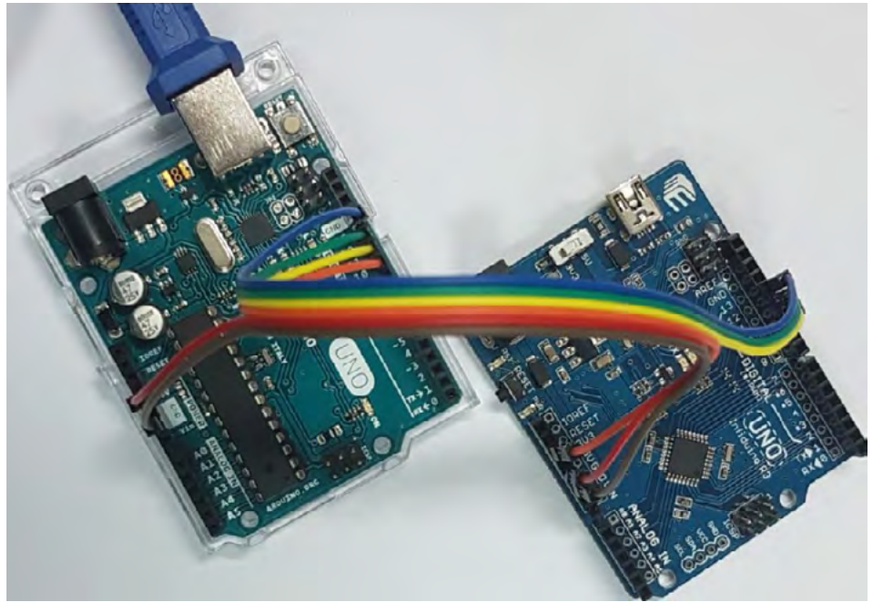
U teorijskom dijelu rada opisani su različiti aspekti rada CAN sabirnice: oblici i građe poruka, arbitraža i detekcija pogrešaka i njihovo ispravljanje. Uz to, navedene su prednosti sustava koji koriste CAN sabirnicu. Uz CAN komunikaciju objašnjeni su još i senzor Hallovog efekta i reed senzor magnetskog polja koji se koriste na bolidu RRC5 Riteh Racing Tima. Također, objašnjen je princip rada tenzometarskih traka u svrhu ispitivanja naprezanja i deformacije. U drugom, praktičnom dijelu, objašnjen je rad programskih kodova te komponente elektroničkog sustava bolida koje predstavljaju čvorove CAN sustava. Naposlijetku, opisana je primjena tenzometarskih traka u projektu Formula Student.

Summary:

The theoretical part of the thesis explains various aspects of the CAN bus: frames and data design, arbitration, and error detection and correction. In addition, the advantages of using CAN communication are presented. Additionally, the Hall Effect sensor and the magnetic reed sensor which were used on the RRC5 formula are explained. Furthermore, the strain gauge is analyzed for its usage in measuring stress and strain. In the practical part, the codes of each microcontroller and components of the CAN bus system are elaborated in details. Finally, the usage of the strain gauges in Formula Student is described.



Usporedni prikaz CAN podatkovnog okvira s i bez umetnutih bitova
/ Comparison of the CAN-frame before and after the addition of stuff bits



Programiranje koristeći ISP komunikaciju
/ Programming using the ISP communication

IME I PREZIME | NAME AND SURNAME:
Ivan Krsnik

Diplomski sveučilišni studij računarstva / Graduate University Study of Computer Engineering

NAZIV RADA | TITLE:
Automatizirano označavanje radioloških nalaza: Analiza slučaja zbirke podataka o pregledima koljena | Automated Labelling of Radiology Reports: A Case Study of a Knee Exam Database

MENTOR(I) | SUPERVISOR(S):
Izv. prof. dr. sc. / Assoc. Prof. D. Sc. Ivan Štajduhar

Sažetak:

Ogromne količine medicinskih informacija o stanjima pacijenata ostaju pohranjene u sustavima zbirke podataka bolnica u obliku tekstualnih nalaza, ali im često nedostaje semantička struktura. Glavni cilj ovog rada bio je ispitati izvedivost razvoja automatizirane metode označavanja radioloških nalaza, kao preteča za izgradnju zbirke podataka nalaza s mogućnosti pretraživanja. Analizirani skup podataka sastojao se od 1295 radioloških nalaza o stanju koljena, retrospektivno prikupljenih u Kliničkom bolničkom centru Rijeka, Hrvatska. Nalazi su ručno označeni jednom ili više oznaka iz skupine od 14 najčešćih kliničkih stanja. TF-IDF vreće riječi izdvojene su kao značajke nakon pripremne obrade podataka. Za ocjenjivanje učinkovitosti nekoliko vrhunskih modela nadziranog učenja na skupu podataka korištena je deseterostruka unakrsna provjera. Točnost, preciznost, odziv i F1 mjera procijenjeni su za svaki od modela. Analiza pogrešaka izvršena je kako bi se odredile najčešće pogreške koje se javljaju. Najbolja učinkovitost zabilježena je za model neuronske mreže s F1 mjerom od 81%. Model stroja s potpornim vektorima također se pokazao jako dobrim s F1 rezultatom od 80%. Model slučajne šume i naivni Bayes model znatno su slabiji s F1 mjerama od 64% i 62%. Učinkovitosti neuronske mreže i modela stroja s potpornim vektorima na učestalijim oznakama bile su posebno obećavajuće s F1 mjerama od 91% i 87% za oznake artroza i ozljeda. Modeli nadziranog strojnog učenja su više nego sposobni nositi se s automatiziranim označavanjem nestrukturiranih radioloških nalaza, ukoliko je dostupan dovoljno velik označen skup podataka.

Summary:

Vast amounts of medical information about patients' conditions remain stored in hospitals database systems in the form of textual reports, yet they are often lacking semantic structure. The main goal of this research was to inspect the feasibility of developing an automated method of labelling radiology reports, as a precursor for building query-capable report databases. The analysed dataset was composed of 1295 radiology reports concerning the condition of a knee, retrospectively gathered at Clinical Hospital Centre Rijeka, Croatia. Reports were manually labelled with one or more labels from a set of 14 most commonly occurring clinical conditions. Bag-of-words TF-IDF features were extracted after primary preprocessing. A 10-fold cross-validation was used to evaluate the performance of several state-of-the-art supervised learning models on the dataset. Accuracy, precision, recall and F1 scores were estimated for each of the models. Error analysis was performed in order to determine most frequently occurring mistakes. The best performance was recorded for a neural network model, having an F1 score of 81%. A support vector machine model also performed very well with an F1 score of 80%. Random forests model and naive Bayes model fared significantly worse with F1 scores of 64% and 62%, respectively. Performance of the neural network and the support vector machine models on more frequently occurring labels was especially promising with F1 scores of 91% and 87% for labels arthrosis and injury, respectively. Supervised machine-learning models are more than capable of dealing with automated labelling of unstructured radiology reports if a sufficiently large labelled dataset is available.

Nekoliko primjera projekcija sagitalne ravnine promatranih koljena s dodijeljenim oznakama. Neki od najinformativnijih slojeva su izabrani i prikazani ovdje: (nisu uočljiva sva klinička stanja): (a) Slučaj tumor (hemangiom), ozljeda (prijelom patele) i artroza (hondromalacija 4. stupnja, degenerativne promjene); (b) Slučaj ozljeda (nagnječenje tibije, složeno puknuće meniskusa, istegnuće ACL-a); (c) Slučaj artroza (degenerativne promjene, poplitealna cista, osteohondralna lezija), multikauzalna bolest (tromboza vena) i ozljeda (meniscus tear); (d) Slučaj artroza (degenerativne promjene, parameniskalna cista, poplitealna cista, moguć osteohondritis disekans) i ozljeda (nagnječenje femura, puknuće meniskusa, puknuće ACL-a).

/ Several examples of sagittal-plane projections of observed knees and their labels. Some of the most informative slices were handpicked and are depicted here (not all conditions are observable in these): (a) A case of neoplasia (hemangioma), injury (fractured patella) and arthrosis (grade IV chondromalacia, degenerative changes); (b) A case of injury (tibia contusion, complex meniscus rupture, ACL strain); (c) A case of arthrosis (degenerative changes, popliteal cyst, osteochondral lesion), multicausal disease (venous thrombosis) and injury (meniscus tear); (d) A case of artrhrosis (degenerative changes, perimenisceal cyst, popliteal cyst, suspect osteochondritis dissecans) and injury (femur contusion, meniscus tear, ACL rupture).

	a) NN				b) SVM			
Stanje	Točnost	Preciznost	Odziv	F1 mjera	Točnost	Preciznost	Odziv	F1 mjera
uredan	0.97	0.88	0.68	0.73	0.97	0.82	0.75	0.75
za daljnju obradu	0.96	0.10	0.04	0.06	0.96	0.07	0.04	0.05
artroza	0.88	0.91	0.91	0.91	0.87	0.89	0.91	0.90
ozljeda	0.85	0.86	0.87	0.87	0.84	0.85	0.87	0.86
degenerativna bol.	0.96	0.87	0.77	0.81	0.96	0.87	0.75	0.80
upalna bol.	0.95	0.56	0.29	0.35	0.95	0.48	0.26	0.32
tumor	0.97	0.83	0.64	0.67	0.97	0.84	0.60	0.65
multikauzalna bol.	0.98	0.43	0.23	0.27	0.98	0.40	0.28	0.31
razvojna anomalija	0.99	0.10	0.05	0.07	0.99	0.00	0.00	0.00
metabolička bol.	0.99	0.15	0.15	0.15	0.99	0.20	0.15	0.17
Težinski	0.61[a]	0.84	0.80	0.81	0.60[a]	0.82	0.79	0.80
	c) RF				d) NB			
Stanje	Točnost	Preciznost	Odziv	F1 mjera	Točnost	Preciznost	Odziv	F1 mjera
uredan	0.95	0.89	0.30	0.45	0.76	0.17	0.79	0.27
za daljnju obradu	0.97	0.00	0.00	0.00	0.96	0.00	0.00	0.00
artroza	0.74	0.78	0.81	0.80	0.67	0.69	0.89	0.77
ozljeda	0.76	0.78	0.79	0.78	0.60	0.64	0.67	0.66
degenerativna bol.	0.88	0.49	0.17	0.25	0.81	0.36	0.65	0.46
upalna bol.	0.94	0.00	0.00	0.00	0.92	0.28	0.13	0.16
tumor	0.94	0.03	0.02	0.03	0.95	0.69	0.30	0.39
multikauzalna bol.	0.97	0.00	0.00	0.00	0.97	0.33	0.25	0.24
razvojna anomalija	0.99	0.00	0.00	0.00	0.99	0.00	0.00	0.00
metabolička bol.	0.99	0.00	0.00	0.00	0.99	0.00	0.00	0.00
Težinski	0.38[a]	0.67	0.63	0.64	0.19[a]	0.58	0.69	0.62

Rezultati učinkovitosti modela mjereni prema točnosti, preciznosti, odzivu i F1 mjeri. Prikazane su zasebne vrijednosti za svaku oznaku posebno uz njihove težinske prosjeke. Točnost podskupa uključena je kao način da se odredi udio nalaza za koje su sve oznake predviđene ispravno. Težinski rezultati uzimaju u obzir broj pozitivnih primjera za svaku od oznaka, što daje veću važnost za vrijednosti za oznake koje se često pojavljuju u nalazima. Sve su vrijednosti prosjeci deseterostruke unakrsne provjere.

/ Results on model performance measured by accuracy, precision, recall and F1 scores. Shown are the separate scores for each label along with their weighted averages. A subset accuracy is included as a way to indicate the share of reports for which all of the labels were predicted correctly. Weighted scores are weighted by the number of positive examples for each of the labels, thus giving greater importance to scores for labels which appear frequently through the reports. All values are averages of a 10-fold cross validation run.

IME I PREZIME | NAME AND SURNAME:
Ivana Žužić

Preddiplomski sveučilišni studij računarstva / Undergraduate University Study of Computer Engineering

NAZIV RADA | TITLE:
Automatska transliteracija pisane glagoljice | Automated Transliteration of Written Glagolitic Script

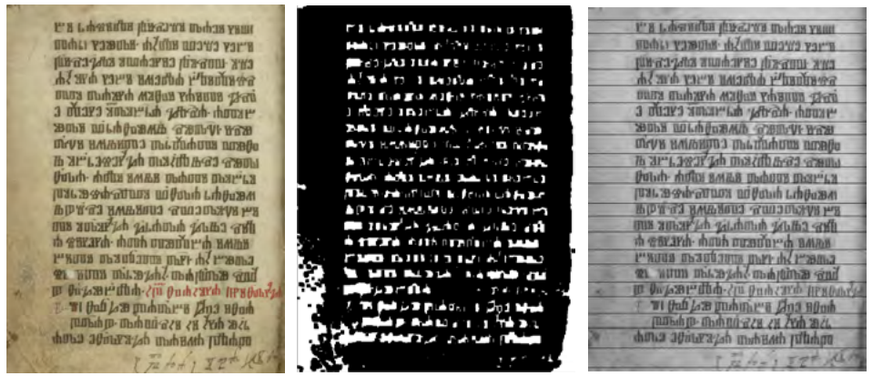
MENTOR(I) | SUPERVISOR(S):
Izv. prof. dr. sc. / Assoc. Prof. D. Sc. Ivan Štajduhar

Sažetak:

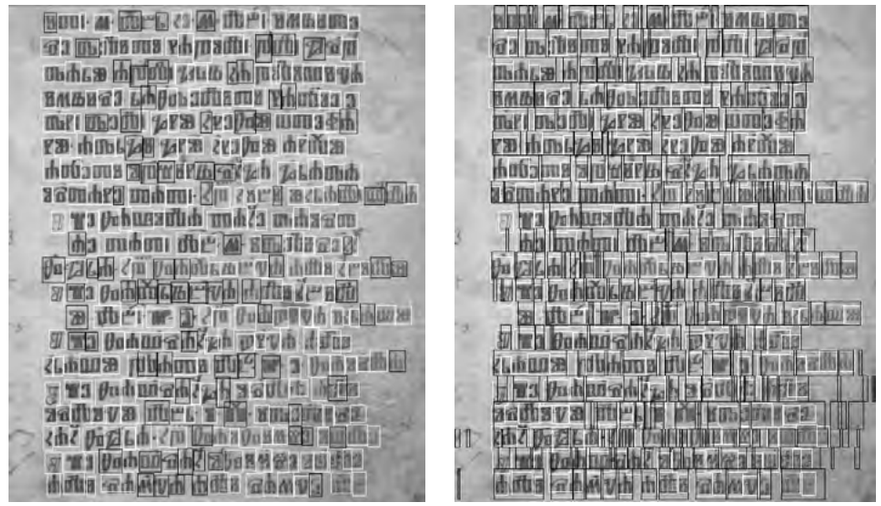
U ovom radu opisane su posebnosti glagoljskog pisma te njihov utjecaj na mogućnost automatske transliteracije tog pisma iz papirnatih povijesnih izvora pomoću strojnog učenja. Isprobano je nekoliko postojećih arhitektura konvolucijskih neuralnih mreža koje su bile korištene za prepoznavanje znakova različitih pisama u već postojećim radovima te je prokomentirana njihova efikasnost kod primjene na glagoljicu. Za potrebe rada sastavljen je skup podataka za treniranje, validiranje i testiranje uspješnosti neuralnih mreža.

Summary:

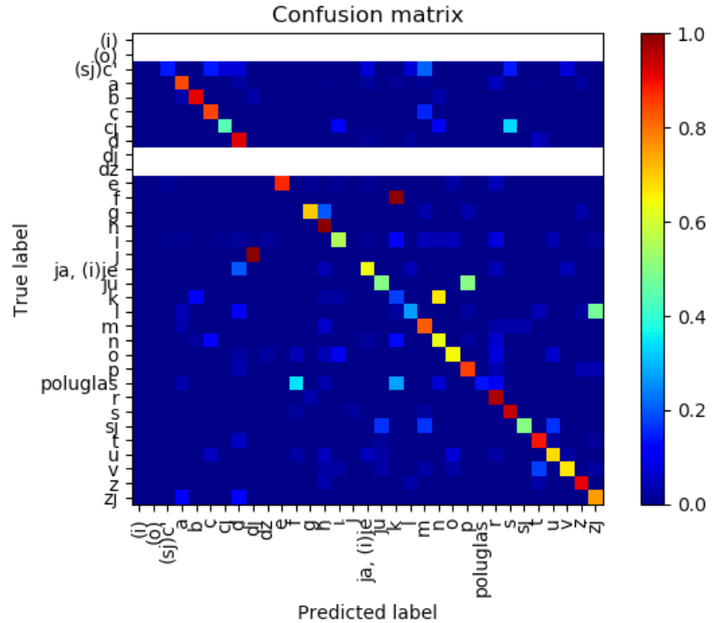
This thesis is describing the characteristics of the Glagolitic script and its effect on the possibility of automatic transliteration of that script from paper-based historical sources by machine learning. Several existing convolutional neural network architectures that were used to recognize the characters of different scripts in existing papers have been tried out and comments on their efficiency when applied to the Glagolitic script have been given. For the purpose of this thesis, a dataset for training, validation and testing of the performance of neural networks was assembled.



Faze segmentacije stranice Vrbničkog statuta na linije. Originalna stranica (lijevo). Binarizirana stranica, nakon erozije i invertiranja boja (sredina). Stranica podijeljena na linije (desno).
/ Line-segmenting phases applied to a page from the Vrbnik Statute. The original page (left). Binarised page, after erosion and colour inverting (middle). Page divided by line (right).



Segmentacija stranice Vrbničkog statuta. Okviri temeljne istine koji se nisu poklopili s izrezanima označeni su bijelom bojom, a oni koji su upareni s izrezanima crnom bojom (lijevo). Temeljna istina označena je bijelom bojom, svi segmentirani okviri crnom bojom (desno).
/ Segmenting a page of the Vrbnik Statute. Ground truth frames not overlaping with the segmented frames are coloured white, whereas those overlaping were coloured black (left). Ground truth depicted in white, all segmented frames in black (right).



Matrica zabune koja pokazuje uspješnost prepoznavanja znakova iz Vrbničkog statuta za korišten model po uzoru na arhitekturu modela LeNet.
/ Confusion matrix depicting character recognition performance on the Vrbnik Statute for a model based on LeNet model architecture.

3 studijski programi na fakultetu
study programs at the faculty

PREDDIPLOMSKI SVEUČILIŠNI STUDIJ 3-godišnji (180 ECTS)		UNDERGRADUATE UNIVERSITY STUDY 3 years (180 ECTS)	
Studij	Naziv	Study	Title
Strojarstvo	Sveučilišni prvostupnik inženjer strojarstva	Mechanical Engineering	University Bachelor of Mechanical Engineering
Brodogradnja	Sveučilišni prvostupnik inženjer brodogradnje	Naval Architecture	University Bachelor of Naval Architecture
Elektrotehnika	Sveučilišni prvostupnik inženjer elektrotehnike	Electrical Engineering	University Bachelor of Electrical Engineering
Računarstvo	Sveučilišni prvostupnik inženjer računarstva	Computer Engineering	University Bachelor of Computer Engineering

DIPLOMSKI SVEUČILIŠNI STUDIJ 2-godišnji (120 ECTS)		GRADUATE UNIVERSITY STUDY 2 years (120 ECTS)	
Studij	Naziv	Study	Title
Strojarstvo	Magistar inženjer strojarstva	Mechanical Engineering	Master of Mechanical Engineering
Brodogradnja	Magistar inženjer brodogradnje	Naval Architecture	Master of Naval Architecture
Elektrotehnika	Magistar inženjer elektrotehnike	Electrical Engineering	Master of Electrical Engineering
Računarstvo	Magistar inženjer računarstva	Computer Engineering	Master of Computer Engineering

POSLIJEDIPLOMSKI SVEUČILIŠNI (DOKTORSKI) STUDIJ 3-godišnji (180 ECTS)		POSTGRADUATE UNIVERSITY (DOCTORAL) STUDY 3 years (180 ECTS)	
Studij	Naziv	Study	Title
Strojarstvo	Doktor znanosti, područje Tehničkih znanosti	Mechanical Engineering	D. Sc. in the area of Engineering Sciences
Temeljne tehničke znanosti		Basic Engineering Sciences	
Brodogradnja		Naval Architecture	
Druge interdisciplinarne tehničke znanosti		Other Interdisciplinary Sciences	
Elektrotehnika		Electrical Engineering	

PREDDIPLOMSKI STRUČNI STUDIJ 3-godišnji (180 ECTS)		UNDERGRADUATE VOCATIONAL STUDY 3 years (180 ECTS)	
Studij	Naziv	Study	Title
Strojarstvo	Stručni prvostupnik inženjer strojarstva	Mechanical Engineering	Bachelor of Mechanical Engineering
Brodogradnja	Stručni prvostupnik inženjer brodogradnje	Naval Architecture	Bachelor of Naval Architecture
Elektrotehnika	Stručni prvostupnik inženjer elektrotehnike	Electrical Engineering	Bachelor of Electrical Engineering

Studiji na Tehničkom fakultetu ustrojeni su prema Bolonjskom modelu 3 + 2 + 3, što znači da se obrazovanje provodi kroz preddiplomski sveučilišni studij u trajanju od tri godine kojim se stječe 180 ECTS bodova, zatim diplomski sveučilišni studij u trajanju od dvije godine kojim se stječe 120 ECTS bodova te poslijediplomski sveučilišni (doktorski) studij u trajanju od tri godine kojim se stječe 180 ECTS bodova.

Osim tih studija, obrazovanje se provodi i kroz preddiplomske stručne studije u trajanju od tri godine kojima se stječe također 180 ECTS bodova. Taj je sustav s vrstama pojedinih studija i stečenim nazivima prikazan u tablici. U nastavku su opisane osnovne značajke pojedinog studija.

PREDDIPLOMSKI SVEUČILIŠNI STUDIJ STROJARSTVA

Preddiplomski sveučilišni studij strojarstva pripremat će studente za diplomski sveučilišni studij strojarstva, ali će im pružati i mogućnost zapošljavanja na odgovarajućim stručnim poslovima. Studij ima za cilj osposobljavanje studenata za primjenu temeljnih i specijalističkih znanja iz strojarstva, prepoznavanje, oblikovanje i rješavanje problema iz prakse, primjenu drugih stečenih znanja iz tehnike, matematike i računarstva, korištenje suvremenih inženjerskih alata, razumijevanje timskog rada i učinkovite komunikacije, razumijevanje etičnosti i etičke odgovornosti, te razumijevanje utjecaja inženjerskih rješenja na društvo i okolinu. Završeni student ovog studija mora biti sposoban uključiti se u kontinuirano obrazovanje i profesionalni razvoj, te posjedovati šire obrazovanje (poznavanje tema izvan tehnike).

Odluči li se student za nastavak studija, on će moći upisati diplomski sveučilišni studij strojarstva na Tehničkom fakultetu Sveučilišta u Rijeci, odnosno isti takav studij na ostalim sveučilištima u Republici Hrvatskoj.

Studies at the Faculty of Engineering are set according to the Bologna model 3 + 2 + 3, which means that education continues through a three year long undergraduate university study resulting in 180 ECTS credits obtained, followed by a two year graduate university study resulting in 120 ECTS credits obtained and a postgraduate university (doctoral) study which lasts three years and results in 180 ECTS credits obtained.

Apart from these studies, education is accomplished through a three year undergraduate vocational study that results in 180 ECTS credits. The curricula with the respective types of studies and obtained titles are shown in the following table. The basic characteristics of each study are described below.

UNDERGRADUATE UNIVERSITY STUDY OF MECHANICAL ENGINEERING

Undergraduate university study in Mechanical Engineering shall prepare students for the graduate university study in Mechanical Engineering, and shall also provide opportunities for employment at appropriate professional positions. The aim of the study is to train students to apply basic and specialist knowledge in mechanical engineering, to recognise, form, and solve practical problems, to apply other acquired knowledge in engineering, mathematics, and computer engineering, to use modern engineering tools, to understand teamwork and effective communication, to understand ethics and ethical responsibility, and to understand the influence of engineering solutions on the society and the surroundings. Graduating students must be capable of pursuing lifelong learning and professional development, and they must have a broad education (being familiar with topics outside engineering). If students decide to continue their study, they shall be able to enrol into the graduate university study in Mechanical Engineering at the University of Rijeka, Faculty of Engineering, or same study at other universities in Croatia.

Preddiplomski sveučilišni studiji

S	Strojarstvo			S	Brodogradnja			S	Elektrotehnika			S	Računarstvo		
	Predmet	N	B		Predmet	N	B		Predmet	N	B		Predmet	N	B
I	Matematika I	6	7	I	Matematika I	6	7	I	Matematika I	6	7	I	Matematika I	6	7
	Statika	5	6		Statika	5	6		Fizika I	4	5		Uvod u modernu fiziku	3	4
	Materijali I	4	4		Materijali I	4	4		Osnove elektrotehnike I	6	7		Elektrotehnika R	4	7
	Elektrotehnika	3	5		Elektrotehnika	3	5		Uvod u računarstvo	4	6		Programiranje I	4	6
	Računalne aplikacije u inženjerstvu	3	4		Računalne aplikacije u inženjerstvu	3	4		Inženjerska grafika i dokumentiranje	4	5		Računalne vještine	2	3
	Inženjerska grafika	4	4		Inženjerska grafika	4	4						Engleski jezik I	3	3
II	Matematika II	6	7	II	Matematika II	6	7	II	Matematika II	6	7	II	Matematika II	6	7
	Kinematika	5	6		Kinematika	5	6		Fizika II	4	5		Elektronika	4	7
	Čvrstoća konstrukcija I	6	7		Čvrstoća konstrukcija	6	7		Osnove elektrotehnike II	6	7		Programiranje II	5	7
	Materijali II	3	5		Materijali II	3	5		Programiranje	4	6		Digitalna logika	4	6
	Oblikovanje pomoću računala	4	5		Oblikovanje pomoću računala	4	5		Tehnologija materijala	3	5		Engleski jezik II	3	3
III	Dinamika	4	5	III	Dinamika	4	5	III	Inženjerska matematika ET	5	7	III	Inženjerska matematika R	4	5
	Mehanika fluida	5	5		Mehanika fluida	5	5		Mjerenja u elektrotehnici	5	7		Algoritmi i strukture podataka	5	7
	Nauka o toplini I	6	7		Zavarivanje I	3	4		Elektronika I	4	6		Građa računala	4	6
	Mjerenja i kontrola kvalitete	3	5		Termodinamika BG	4	5		Električne mreže	4	7		Signali i sustavi	4	6
	Računarske metode	4	5		Uvod u plovne objekte	3	4		Strani jezik I	2	3		Uvod u objektno orj. programiranje	4	6
	Strani jezik I	2	3		Osnove konstrukcijskih elemenata	4	4								
					Engleski jezik I	2	3								
IV	Inženjerska statistika	4	5	IV	Inženjerska statistika	4	5	IV	Digitalna logika	4	6	IV	Operacijski sustavi	4	7
	Konstrukcijski elementi I	5	7		Brodske forme	5	6		Elektronika II	4	6		Računalne mreže	4	7
	Hidraulički strojevi	4	5		Osnove gradnje broda	3	5		Osnove regulacijske tehnike	4	6		Računalna grafika	4	7
	Proizvodne tehnologije	4	5		Konstrukcija broda I	4	6		Izborni kolegij	4	4		Izborni kolegij I	3	4
	Strani jezik II	2	3		Engleski jezik II	2	3		Strani jezik II	2	3		Stručna praksa I		5
	Stručna praksa I		5		Stručna praksa I		5		Stručna praksa I		5				
V	Konstrukcijski elementi II	6	7	V	Plovnost i stabilitet broda	6	7	V	Električni strojevi	5	6	V	Ugradbeni računalni sustavi	5	7
	Toplinski strojevi i uređaji	4	5		Oprema broda	4	6		Energetska elektronika	5	6		Baze podataka	4	6
	Proizvodni strojevi, alati i naprave	4	5		Konstrukcija broda II	4	6		Signali i sustavi	4	6		Razvoj web aplikacija	4	7
	Kolegij izborne skupine	4	4		Tehnologija brodogradnje	4	6		Kolegij izborne skupine	4	7		Izborni kolegij II	4	5
	Tehnološki procesi	4	4		Izborni projekt	3	5		Izborni projekt	3	5		Izborni projekt	3	5
	Izborni projekt	3	5												
VI	Energetski sustavi	4	4	VI	Organizacija i ekonomika posl. sust.	3	4	VI	Elektromotorni pogoni	4	5	VI	Programsko inženjerstvo	5	7
	Automatizacija	3	4		Hidrodinamika plovnih objekata I	6	8		Organizacija i ekonomika posl. sust.	3	4		Organizacija i ekonomika posl. sust.	3	4
	Kolegij izborne skupine	4	4		Slobodni kolegij I	3	4		Kolegij izborne skupine	5	7		Uvod u umjetnu inteligenciju	4	5
	Organizacija i ekonomika posl. sust.	3	4		Slobodni kolegij II	3	4		Slobodni kolegij	3	4		Slobodni kolegij	3	4
	Slobodni kolegij	3	4		Završni rad		10		Završni rad		10		Završni rad		10
	Završni rad		10												

(Studijski programi pojedinih studija prikazani su na gornjoj i na tablicama koje slijede: sa S je označen semestar u kojem se predmet predaje, s N su označeni sati nastave tjedno, a s B broj ECTS bodova pripadnog predmeta.)

Undergraduate University Studies

S	Mechanical Engineering			S	Naval Architecture			S	Electrical Engineering			S	Computer Engineering		
	Course	N	B		Course	N	B		Course	N	B		Course	N	B
I	Mathematics I	6	7	I	Mathematics I	6	7	I	Mathematics I	6	7	I	Mathematics I	6	7
	Statics	5	6		Statics	5	6		Physics I	4	5		Introduction to Modern Physics	3	4
	Materials I	4	4		Materials I	4	4		Fundamentals of Electrical Engineering I	6	7		Electrical Engineering CE	4	7
	Electrical Engineering	3	5		Electrical Engineering	3	5		Introduction to Computer Engineering	4	6		Programming I	4	6
	Computer Applications in Engineering	3	4		Computer Applications in Engineering	3	4		Engineering Graphics and Documenting	4	5		Computer Skills	2	3
	Engineering Graphics	4	4		Engineering Graphics	4	4						English Language I	3	3
II	Mathematics II	6	7	II	Mathematics II	6	7	II	Mathematics II	6	7	II	Mathematics II	6	7
	Kinematics	5	6		Kinematics	5	6		Physics II	4	5		Electronics CE	4	7
	Strength of Materials I	6	7		Strength of Materials	6	7		Fundamentals of Electrical Engineering II	6	7		Programming II	5	7
	Materials II	3	5		Materials II	3	5		Programming	4	6		Digital Logic	4	6
	Modelling by Computer	4	5		Modelling by Computer	4	5		Materials Technology	3	5		English Language II	3	3
III	Dynamics	4	5	III	Dynamics	4	5	III	Mathematics for Engineers EE	5	7	III	Mathematics for Engineers CE	4	5
	Fluid Mechanics	5	5		Fluid Mechanics	5	5		Measurements in the Electrical Engineering	5	7		Algorithms and Data Structures	5	7
	Thermodynamics I	6	7		Welding Engineering I	3	4		Electronics I	4	6		Computer Architecture	4	6
	Measurments and Quality Control	3	5		Thermodynamics NA	4	5		Electrical Circuits	4	7		Signals and Systems	4	6
	Computational Methods	4	5		Introduction to Marine Vessels	3	4		Foreign Language I	2	3		Introduction to Object Oriented Programming	4	6
	Foreign Language I	2	3		Basis of Machine Elements Design	4	4								
					English Language I	2	3								
IV	Engineering Statistics	4	5	IV	Engineering Statistics	4	5	IV	Digital Logic	4	6	IV	Operating Systems	4	7
	Machine Elements Design I	5	7		Ship Hull Forms	5	6		Electronics II	4	6		Computer Networks	4	7
	Hydraulic Machines	4	5		Basics of Ship Production	3	5		Fundamentals of Automatic Control	4	6		Computer Graphics	4	7
	Production Technologies	4	5		Ship Structure I	4	6		Elective Course	4	4		Elective course I	3	4
	Foreign Language II	2	3		English Language II	2	3		Foreign Language II	2	3		Professional practice I		5
	Professional practice I		5		Professional Practice I		5		Professional practice I		5				
V	Machine Elements Design II	6	7	V	Seaworthiness and Stability of the Ship	6	7	V	Electrical Machines	5	6	V	Embedded Systems	5	7
	Heat Engines and Devices	4	5		Ship Equipment	4	6		Power Electronics	5	6		Database Systems	4	6
	Production Machines, Tools, Jigs and Fixtures	4	5		Ship Structure II	4	6		Signals and Systems	4	6		Web Application Development	4	7
	Elective group course	4	4		Shipbuilding Technology	4	6		Elective group course	4	7		Elective course II	4	5
	Technological Processes	4	4		Elective project	3	5		Elective project	3	5		Elective project	3	5
	Elective project	3	5												
VI	Energy Systems	4	4	VI	Organization and Economics of Business Syster	3	4	VI	Electrical Drives	4	5	VI	Software Engineering	5	7
	Automation	3	4		Marine Hydrodynamics I	6	8		Organization and Economics of Business Syste	3	4		Organization and Economics of Business Syste	3	4
	Elective group course	4	4		Free course I	3	4		Elective group course	5	7		Intoduction to Artificial Intelligence	4	5
	Organization and Economics of Business Syste	3	4		Free course II	3	4		Free course	3	4		Free course	3	4
	Free course	3	4		Final Work		10		Final work		10		Final work		10
	Final work		10												

(Curricula of the described studies are presented above and in the tables below: S signifies the semester in which the course is placed, with N lecturing hours per week, and B the number representing ECTS credits.)

PREDDIPLOMSKI SVEUČILIŠNI STUDIJ BRODOGRADNJE

Preddiplomski sveučilišni studij brodogradnje pripremat će studente za diplomski sveučilišni studij brodogradnje, ali će im pružati i mogućnost zapošljavanja na odgovarajućim stručnim poslovima. Na preddiplomskom studiju brodogradnje polaznicima će se u razumnoj količini i na dovoljno visokoj razini davati znanje iz temeljnih tehničkih sadržaja s jedne strane, te iz glavnih brodograđevnih sadržaja s druge strane, kako bi u svojoj radnoj praksi, kao i u svom daljnjem stručnom i znanstvenom usavršavanju, uvijek bili na razini postavljenih zadataka. Svojim opsegom i sadržajem ovaj će studij polazniku davati potrebnu širinu stručnih znanja koja ga po završetku studija osposobljava za samostalan rad, odnosno za rad u stručnim timovima u bilo kojem segmentu brodograđevne struke. Završeni student ovog studija mora biti sposoban uključiti se u kontinuirano obrazovanje i profesionalni razvoj, te posjedovati šire obrazovanje (poznavanje tema izvan tehnike).

Odluči li se student za nastavak studija, on će moći upisati diplomski sveučilišni studij brodogradnje na Tehničkom fakultetu Sveučilišta u Rijeci, odnosno isti takav studij na ostalim sveučilištima u Republici Hrvatskoj.

PREDDIPLOMSKI SVEUČILIŠNI STUDIJ ELEKTROTEHNIKE

Preddiplomski sveučilišni studij elektrotehnike pripremat će studente za diplomski sveučilišni studij elektrotehnike, ali će im pružati i mogućnost zapošljavanja na odgovarajućim stručnim poslovima. Studij ima za cilj osposobljavanje studenata za primjenu temeljnih i specijalističkih znanja iz elektrotehnike, prepoznavanje, oblikovanje i rješavanje problema iz prakse, primjenu drugih stečenih znanja iz tehnike, matematike i računarstva, korištenje suvremenih inženjerskih alata, razumijevanje timskog rada i učinkovite komunikacije, razumijevanje etičnosti i etičke odgovornosti, te razumijevanje utjecaja inženjerskih rješenja na društvo i okolinu. Završeni student ovog studija mora biti sposoban uključiti se u kontinuirano obrazovanje i profesionalni razvoj, te posjedovati šire obrazovanje (poznavanje tema izvan tehnike).

Odluči li se student za nastavak studija, on će moći upisati diplomski sveučilišni studij elektrotehnike na Tehničkom fakultetu Sveučilišta u Rijeci, odnosno isti takav studij na ostalim sveučilištima u Republici Hrvatskoj.

UNDERGRADUATE UNIVERSITY STUDY OF NAVAL ARCHITECTURE

Undergraduate university study in Naval Architecture shall prepare students for the graduate university study in Naval Architecture, and shall also provide opportunities for employment at appropriate professional positions. In the undergraduate study in Naval Architecture, the students shall be provided in a reasonable amount and at a sufficiently high level with knowledge in basic engineering on the one hand, and on the other, in main naval architecture, so that in their student practice, as well as in their further professional development, they shall meet the demands of the given tasks. In its scope and content, the study shall provide students with the necessary breadth of professional knowledge that shall enable them at the end of their study to carry out work independently and in professional teams in any segment of naval architecture. Graduating students must be capable of pursuing lifelong learning and professional development, and they must have a broad education (being familiar with topics outside engineering). If students decide to continue their study, they shall be able to enrol into the graduate university study in Naval Architecture at the University of Rijeka, Faculty of Engineering, or same study at other universities in Croatia.

UNDERGRADUATE UNIVERSITY STUDY OF ELECTRICAL ENGINEERING

Undergraduate university study in Electrical Engineering shall prepare students for the graduate university study in Electrical Engineering, and shall also provide opportunities for employment at appropriate professional positions. The aim of the study is to train students to apply basic and specialist knowledge in electrical engineering, to recognise, form, and solve practical problems, to apply other acquired knowledge in engineering, mathematics, and computer engineering, to use modern engineering tools, to understand teamwork and effective communication, to understand ethics and ethical responsibility, and to understand the influence of engineering solutions on the society and the surroundings. Graduating students must be capable of pursuing lifelong learning and professional development, and they must have a broad education (being familiar with topics outside engineering). If students decide to continue their study, they shall be able to enrol into the graduate university study in Electrical Engineering at the University of Rijeka, Faculty of Engineering, or same study at other universities in Croatia.

PREDDIPLOMSKI SVEUČILIŠNI STUDIJ RAČUNARSTVA

Preddiplomski sveučilišni studij računarstva pripremat će studente za diplomski sveučilišni studij računarstva, ali će im pružati i mogućnost zapošljavanja na odgovarajućim stručnim poslovima. Studij ima za cilj osposobljavanje studenata za primjenu temeljnih i specijalističkih znanja iz računarstva za karakterizaciju, projektiranje, izvedbu, eksploatiranje i održavanje informacijskih i računalnih sustava i procesa, oblikovanje i rješavanje problema iz prakse, primjenu informacijske i komunikacijske tehnologije u privrednim i društvenim subjektima, korištenje suvremenih inženjerskih alata, razumijevanje timskog rada i učinkovite komunikacije, razumijevanje etičnosti i etičke odgovornosti, vrednovanje informacijsko-komunikacijske tehnologije na osnovi kritičkog razmišljanja i intelektualnog poštenja te razumijevanje utjecaja inženjerskih rješenja na društvo i okolinu. Završeni student ovog studija mora biti sposoban uključiti se u kontinuirano obrazovanje i profesionalni razvoj, te posjedovati šire obrazovanje (poznavanje tema izvan tehnike).

Odluči li se student za nastavak studija, on će moći upisati diplomski sveučilišni studij računarstva na Tehničkom fakultetu Sveučilišta u Rijeci, odnosno isti takav studij na ostalim sveučilištima u Republici Hrvatskoj.

DIPLOMSKI SVEUČILIŠNI STUDIJ STROJARSTVA

Diplomskim sveučilišnim studijem strojarstva studenti stječu potrebna usko-specijalistička znanja iz navedenih područja te su time osposobljeni za obavljanje najsloženijih inženjerskih zadaća temeljenih na znanstvenom pristupu rješavanju problema. Stječu se nova specijalistička znanja iz strojarstva i sposobnost njegove primjene, kao i poznavanje i primjenu drugih specijalističkih znanja iz tehnike, matematike i računarstva. Studenti usvajaju sposobnost kontinuiranog obrazovanja i samoobrazovanja, sposobnosti samostalnog istraživanja, otkrivanja novih znanja, pripreme i izvođenja eksperimenata, te tumačenja podataka. Studijem se stječu znanja i kompetencije potrebne za projektiranje novih sustava, komponenata ili procesa, te učinkovito djelovanje u ulozi vođe tima. Studijski program sličan je programima studija na inozemnim visokim učilištima uz postizanje specifičnih zahtjeva sredine za koju se prvenstveno školuju kadrovi na Tehničkom fakultetu Sveučilišta u Rijeci. U studijski program ukomponirane su preporuke iz Bolonjske deklaracije koje se odnose na način osiguranja kvalitete studijskog

UNDERGRADUATE UNIVERSITY STUDY OF COMPUTER ENGINEERING

Undergraduate university study in Computing shall prepare students for the graduate university study in Computing, and shall also provide opportunities for employment at appropriate professional positions. The aim of the study is to train students to apply basic and specialist knowledge in computer engineering to characterise, design, execute, exploit, and maintain information and computer systems and processes, to form and solve practical problems, to apply information and communication technology in economic and social entities, to use modern engineering tools to understand teamwork and effective communication, to understand ethics and ethical responsibility, to evaluate information and communication technology on the basis of critical thinking and intellectual integrity, and to understand the influence of engineering solutions on the society and the surroundings. Graduating students must be capable of pursuing lifelong learning and professional development, and they must have a broad education (being familiar with topics outside engineering). If students decide to continue their study, they shall be able to enrol into the graduate university study in Computing at the University of Rijeka, Faculty of Engineering, or same study at other universities in Croatia.

GRADUATE UNIVERSITY STUDY OF MECHANICAL ENGINEERING

Graduate university study in Mechanical Engineering enables students to acquire highly specialist knowledge in the field and to be trained to perform the most complex engineering tasks based on the scientific approach to problem-solving. New specialist knowledge is acquired in mechanical engineering, and students are able to apply that knowledge; the same is true for other specialist knowledge in engineering, mathematics, and computer engineering. Students gain the ability to engage in continuing education and professional development, the ability to carry out independent research, to discover new knowledge, to prepare and conduct experiments, and to interpret data. The study enables the acquisition of knowledge and competencies needed for designing new systems, components, or processes, and to act effectively in the role of a team leader. The study programme is similar to those at higher education institutions abroad, but meeting the specific demands of the community and region in which the University of Rijeka, Faculty of Engineering operates. The study programme incorporates recommendations from the

programa, mobilnost pri studiranju i priznavanju diploma.

Na ovom studiju omogućena je specijalizacija u jednom od sljedećih područja:

- Konstruiranje i mehatronika
- Računarska mehanika i inženjerstvo
- Tehnološko-informatičko inženjerstvo
- Industrijsko inženjerstvo i management
- Termotehnika
- Procesno i energetsko strojarstvo
- Brodostrojarstvo
- Inženjerstvo materijala

DIPLOMSKI SVEUČILIŠNI STUDIJ BRODOGRADNJE

Na diplomskom sveučilišnom studiju brodogradnje osposobljavat će se budući stručnjaci koji će raditi na poslovima i zadacima projektiranja i konstruiranja različitih vrsta i tipova plovnih objekata, razvoja i vođenja tehnoloških procesa, poglavito gradnje i održavanja plovnih objekata i objekata morske tehnologije, zatim na poslovima klasifikacijskih i nadzornih institucija, te drugim poslovima u širem području brodogradnje i inženjerstva morske tehnologije, odnosno pomorstva.

Ovaj studijski program nudi specijalizaciju u sljedećim područjima:

- Projektiranje i konstrukcija plovnih objekata
- Tehnologija i organizacija brodogradnje

Studijski program slijedi preporuke iz Bolonjske deklaracije koje se odnose na način osiguranja kvalitete studijskog programa, mobilnosti pri studiranju te postupke priznavanja diploma.

DIPLOMSKI SVEUČILIŠNI STUDIJ ELEKTROTEHNIKE

Diplomskim sveučilišnim studijem elektrotehnike studenti stječu potrebna usko-specijalistička znanja iz navedenih područja te su time osposobljeni za obavljanje najsloženijih inženjerskih zadaća temeljenih na znanstvenom pristupu rješavanju problema. Stječu se nova specijalistička znanja iz elektrotehnike i sposobnost njegove primjene, kao i poznavanje i primjenu drugih specijalističkih znanja iz tehnike, matematike i računarstva. Studenti usvajaju sposobnost kontinuiranog obrazovanja i samoobrazovanja, sposobnosti samostalnog istraživanja, otkrivanja novih znanja, pripreme i izvođenja eksperimenata, te tumačenja podataka. Studijem se stječu znanja i kompetencije potrebne za projektiranje novih sustava, komponenata ili procesa, te učinkovito djelovanje u ulozi vođe tima. Studijski program sličan je programima studija na inozemnim visokim učilištima uz postizanje specifičnih zahtjeva sredine za koju se prvenstveno školuju kadrovi

Bologna Declaration that refer to programme quality assurance, mobility, and diploma recognition.

This study programme enables specialisation in one of the following areas:

- Mechanical Engineering Design and Mechatronics
- Computational Mechanics and Engineering
- Technology Computational Engineering
- Industrial Engineering and Management
- Thermal Engineering
- Process and Energy Engineering
- Marine Engineering
- Materials Engineering

GRADUATE UNIVERSITY STUDY OF NAVAL ARCHITECTURE

Graduate university study in Naval Architecture trains future experts who will work on jobs and tasks of designing and building different kinds and types of floating objects, developing and supervising technological processes, especially concerning construction and maintenance of floating objects and marine technology objects, jobs related to classification and inspection institutions, and other jobs in the broader field of naval architecture and marine technology engineering, that is, maritime affairs.

This study programme enables specialisation in the following areas:

- Design and Construction of Floating Objects
- Technology and Organization of Naval Architecture

The study programme follows recommendations from the Bologna Declaration that refer to programme quality assurance, mobility, and diploma recognition.

GRADUATE UNIVERSITY STUDY OF ELECTRICAL ENGINEERING

Graduate university study in Electrical Engineering enables students to acquire highly specialist knowledge in the field and to be trained to perform the most complex engineering tasks based on the scientific approach to problem-solving. New specialist knowledge is acquired in electrical engineering, and students are able to apply that knowledge; the same is true for other specialist knowledge in engineering, mathematics, and computer engineering. Students gain the ability to engage in continuing education and professional development, the ability to carry out independent research, to discover new knowledge, to prepare and conduct experiments, and to interpret data. The study enables the acquisition of knowledge

na Tehničkom fakultetu Sveučilišta u Rijeci. U studijski program ukomponirane su preporuke iz Bolonjske deklaracije koje se odnose na način osiguranja kvalitete studijskog programa, mobilnost pri studiranju i priznavanju diploma.

Na ovom studiju omogućena je specijalizacija u jednom od sljedećih područja:

- Automatika
- Elektroenergetika

DIPLOMSKI SVEUČILIŠNI STUDIJ RAČUNARSTVA

Diplomskim sveučilišnim studijem računarstva studenti stječu potrebna usko-specijalistička znanja iz navedenih područja te su time osposobljeni za obavljanje najsloženijih inženjerskih zadaća temeljenih na znanstvenom pristupu rješavanju problema. Studenti usvajaju sposobnost interdisciplinarnog pristupa integraciji sustava, obrade informacija i traženja inovativnih rješenja. Samostalno će projektirati, upravljati, analizirati problem i predlagati rješenja vezana uz razvoj sklopovske i programske podrške i umrežavanja sustava. Znat će učinkovito birati i primjenjivati odgovarajuće suvremene alate i metode iz struke na kompleksne inženjerske aktivnosti. Steći će znanja i vještine za projektiranje sustava, komponenata i procesa koji odgovaraju specifičnim potrebama određenih područja.

Studijski program sličan je programima studija na inozemnim visokim učilištima uz postizanje specifičnih zahtjeva sredine za koju se prvenstveno školuju kadrovi na Tehničkom fakultetu Sveučilišta u Rijeci. U studijski program ukomponirane su preporuke iz Bolonjske deklaracije koje se odnose na način osiguranja kvalitete studijskog programa, mobilnost pri studiranju i priznavanju diploma.

Na ovom studiju omogućena je specijalizacija u jednom od sljedeća dva područja:

- Programsko inženjerstvo
- Računalni sustavi

and competencies needed for designing new systems, components, or processes, and to act effectively in the role of a team leader. The study programme is similar to those at higher education institutions abroad, but meeting the specific demands of the community and region in which the University of Rijeka Faculty of Engineering operates. The study programme incorporates recommendations from the Bologna Declaration that refer to programme quality assurance, mobility, and diploma recognition.

This study programme enables specialisation in one of the following areas:

- Automation
- Power Engineering

GRADUATE UNIVERSITY STUDY OF COMPUTING

Graduate university study in Computing enables students to acquire highly specialist knowledge in the field and to be trained to perform the most complex engineering tasks based on the scientific approach to problem-solving. Students develop the ability of an interdisciplinary approach to system integration, information processing, and to the search for innovative solution. Student independently design, manage, and analyse problems and offer solutions related to the development of circuit and software support and system networks. They efficiently choose and apply modern tools and methods from the profession to complex engineering activities. They acquire knowledge and skills needed for designing systems, components, and processes that meet specific demands of a given field. The study programme is similar to those at higher education institutions abroad, but meeting the specific demands of the community and region in which the University of Rijeka, Faculty of Engineering operates. The study programme incorporates recommendations from the Bologna Declaration that refer to programme quality assurance, mobility, and diploma recognition.

This study programme enables specialisation in one of the following two areas:

- Software Engineering
- Computer Systems

Diplomski sveučilišni studiji

S	Strojarstvo			S	Brodogradnja			S	Elektrotehnika			S	Računarstvo		
	Predmet	N	B		Predmet	N	B		Predmet	N	B		Predmet	N	B
I	Inženjerska matematika	5	7	I	Inženjerska matematika	5	6	I	Numerička i stohastička matematika	4	6	I	Stohastička matematika	4	6
	Čvrstoća konstrukcija II	5	7		Čvrstoća broda	4	5		Upravljanje elektromotornim pogonima	4	6		Teorija informacija i kodiranje	4	6
	Nauka o toplini II	5	7		Brodska elektrotehnika	3	4		Kolegij izborne skupine	4	6		Izborni kolegij Z	8	12
	Kolegij izborne skupine	4	5		Metodologija gradnje plovnih objekata	4	5		Kolegij izborne skupine	4	6		Kolegij izborne skupine	4	6
	Kolegij izborne skupine	4	4		Računarske metode u brodogradnji	4	4		Kolegij izborne skupine	4	6				
					Kolegij izborne skupine	5	6								
II	Projekt I	2	5	II	Brodski sustavi	4	5	II	Projekt I	2	5	II	Inženjerstvo kompleksnih programskih sustava	6	7
	Slobodni kolegij I	4	5		Projekt I	2	5		Slobodni kolegij I	4	5		Projekt I		5
	Stručna praksa II		5		Slobodni kolegij I	4	5		Stručna praksa II		5		Stručna praksa II		5
	Izborni kolegij I	4	5		Stručna praksa II		5		Kolegij izborne skupine	4	5		Izborni kolegij LJ	4	6
	Kolegij izborne skupine	4	5		Izborni kolegij I	4	5		Kolegij izborne skupine	4	5		Kolegij izborne skupine	4	7
	Kolegij izborne skupine	4	5		Kolegij izborne skupine	4	5		Kolegij izborne skupine	4	5				
III	Projekt II	2	5	III	Osnivanje plovnih objekata I	4	5	III	Projekt II	2	5	III	Napredni operacijski sustavi	6	8
	Slobodni kolegij II	4	5		Projekt II	2	5		Slobodni kolegij II	4	5		Projekt II		5
	Kolegij izborne skupine	4	5		Slobodni kolegij II	4	5		Izborni kolegij I	4	4		Slobodni kolegij I	3	5
	Kolegij izborne skupine	4	5		Izborni kolegij II	4	5		Kolegij izborne skupine	4	5		Izborni kolegij Z	8	12
	Kolegij izborne skupine	4	5		Kolegij izborne skupine	4	5		Kolegij izborne skupine	4	6				
	Kolegij izborne skupine	4	5		Kolegij izborne skupine	4	5		Kolegij izborne skupine	5	5				
IV	Slobodni kolegij III	4	5	IV	Slobodni kolegij III	4	5	IV	Slobodni kolegij III	4	5	IV	Projektni management	2	3
	Kolegij izborne skupine	4	5		Izborni kolegij III	4	5		Kolegij izborne skupine	4	5		Slobodni kolegij II	3	5
	Kolegij izborne skupine	4	5		Kolegij izborne skupine	4	5		Kolegij izborne skupine	4	5		Izborni kolegij LJ	8	12
	Kolegij izborne skupine	3	5		Kolegij izborne skupine	3	5		Kolegij izborne skupine	4	5		Diplomski rad		10
	Diplomski rad		10		Diplomski rad		10		Diplomski rad		10				
Moduli	Konstruiranje i mehatronika			Moduli	Projektiranje i konstrukcija plovnih objekata			Moduli	Automatika			Moduli	Programsko inženjerstvo		
	Računarska mehanika i inženjerstvo				Tehnologija i organizacija brodogradnje				Elektroenergetika				Računalni sustavi		
	Tehnološko informatičko inženjerstvo														
	Industrijsko inženjerstvo i menadžment														
	Termotehnika														
	Procesno i energetsko strojarstvo														
	Brodostrojarstvo														
	Inženjerstvo materijala														

Graduate University Studies

S	Mechanical Engineering			S	Naval Architecture			S	Electrical Engineering			S	Computer Engineering		
	Course	N	B		Course	N	B		Course	N	B		Course	N	B
I	Mathematics for Engineers	5	7	I	Mathematics for Engineers	5	6	I	Numerical and Stochastic Mathematics	4	6	I	Stochastic Mathematics	4	6
	Strength of Materials II	5	7		Ship Strength	4	5		Control of Electrical Drives	4	6		Information Theory and Coding	4	6
	Thermodynamics II	5	7		Marine Electrical Engineering	3	4		Elective group course	4	6		Elective Course W	8	12
	Elective group course	4	5		Methodology of Ship Production	4	5		Elective group course	4	6		Elective group course	4	6
	Elective group course	4	4		Computational Methods in Naval Architecture	4	4		Elective group course	4	6				
					Elective group course	5	6								
II	Project I	2	5	II	Ship Systems	4	5	II	Project I	2	5	II	Engineering of Complex Software Systems	6	7
	Free Elective Course I	4	5		Project I	2	5		Free Elective Course I	4	5		Project I		5
	Professional Practice II		5		Free Elective Course I	4	5		Professional practice II		5		Professional practice II		5
	Elective Course I	4	5		Professional practice II		5		Elective group course	4	5		Elective CourseS	4	6
	Elective group course	4	5		Elective Course I	4	5		Elective group course	4	5		Elective group course	4	7
	Elective group course	4	5		Elective group course	4	5		Elective group course	4	5				
III	Project II	2	5	III	Ship Design I	4	5	III	Project II	2	5	III	Advanced Operating Systems	6	8
	Free Elective Course II	4	5		Project II	2	5		Free Elective Course II	4	5		Project II		5
	Elective group course	4	5		Free Elective Course II	4	5		Elective Course I	4	4		Free Elective Course I	3	5
	Elective group course	4	5		Elective Course II	4	5		Elective group course	4	5		Elective Course W	8	12
	Elective group course	4	5		Elective group course	4	5		Elective group course	4	6				
	Elective group course	4	5		Elective group course	4	5		Elective group course	5	5				
IV	Free Elective Course III	4	5	IV	Free Elective Course III	4	5	IV	Free Elective Course III	4	5	IV	Project Management	2	3
	Elective group course	4	5		Elective Course III	4	5		Elective group course	4	5		Free Elective Course II	3	5
	Elective group course	4	5		Elective group course	4	5		Elective group course	4	5		Elective Course S	8	12
	Elective group course	3	5		Elective group course	3	5		Elective group course	4	5		Graduate Work		10
	Graduate Work		10		Graduate Work		10		Graduate Work		10				
Modules	Mechanical Engineering Design and Mechatronics			Modules	Design and Construction of Floating Objects			Modules	Automation			Modules	Software Engineering		
	Computational Mechanics and Engineering				Technology and Organization of Naval Architecture				Power Engineering				Computer Systems		
	Technology Computational Engineering														
	Industrial Engineering and Management														
	Thermal Engineering														
	Process and Energy Engineering														
	Marine Engineering														
	Materials Engineering														

POSLIJEDIPLOMSKI SVEUČILIŠNI (DOKTORSKI) STUDIJI IZ PODRUČJA TEHNIČKIH ZNANOSTI, POLJA STROJARSTVA, BRODOGRADNJE, TEMELJNIH TEHNIČKIH ZNANOSTI I INTERDISCIPLINARNIH TEHNIČKIH ZNANOSTI I IZ POLJA ELEKTROTEHNIKE

Na Tehničkom fakultetu izvode se dva poslijediplomska sveučilišna (doktorska) studija iz tehničkih znanosti - polja strojarstva, brodogradnje, temeljnih tehničkih znanosti i interdisciplinarnih tehničkih znanosti te polja elektrotehnike.

Završetkom ovih studija student stječe stupanj doktora znanosti što podrazumijeva superiorno poznavanje određenog znanstvenog područja unutar tehničkih znanosti i dokazanu sposobnost originalnog znanstvenog istraživanja. Njegove kompetencije obuhvaćaju vrsno poznavanje literature i nerazjašnjenih problema iz određenog područja te sposobnost osmišljavanja i provođenja znanstvenoistraživačkog projekta do kraja, objavljivanja rezultata istraživanja te prezentiranja tih rezultata drugim znanstvenicima, izražavanja svojih stavova u prisutnosti eksperta u području (na kongresima, seminarima, gostovanjima na drugim institucijama itd.). Njegove osobine obuhvaćaju i želju za dijeljenjem svojega znanja i iskustva mlađim generacijama studenata, kritičnost, u prvom redu prema vlastitom istraživanju, ali i radu drugih te sposobnost prilagođavanja dolazećim promjenama.

Nakon završetka doktorskog studija otvaraju se brojne mogućnosti nastavka znanstveno-istraživačkog rada na matičnoj instituciji ili srodnim institucijama u Hrvatskoj ili inozemstvu, kao i postdoktorskog usavršavanja. Otvaraju se i mogućnosti zapošljavanja u javnom i privatnom sektoru, posebno u onim gospodarskim subjektima s kojima Fakultet ima razvijenu suradnju, ali i drugdje u Hrvatskoj i inozemstvu.

Doktorski studij sastoji se od:

- provedbe znanstvenoistraživačkog rada pod nadzorom i uz pomoć mentora, odnosno sumentora koja rezultira izradom doktorskog rada (90 ECTS bodova),
- polaganja obveznih i izbornih predmeta propisanih studijskim programom doktorskog studija (42 ECTS bodova),
- boravka na drugim domaćim ili inozemnim sveučilišnim ili znanstvenim institucijama u trajanju od najmanje 3 mjeseca (20 ECTS bodova),
- drugih aktivnosti koje obuhvaćaju prezentaciju znanstvenih rezultata na domaćim i međunarodnim znanstvenim skupovima, objavljivanje znanstvenih radova (28 ECTS bodova).

POSTGRADUATE UNIVERSITY (DOCTORAL) STUDIES IN THE AREA OF ENGINEERING SCIENCES, IN THE FIELDS OF MECHANICAL ENGINEERING, NAVAL ARCHITECTURE, FUNDAMENTAL ENGINEERING SCIENCES AND INTERDISCIPLINARY ENGINEERING SCIENCES AND IN THE FIELD OF ELECTRICAL ENGINEERING

At the Faculty of Engineering there are two postgraduate university (doctoral) studies in the area of Engineering Sciences, first one in the fields of Mechanical Engineering, Naval Architecture, Basic Engineering Sciences and Engineering Sciences and Interdisciplinary Engineering Sciences; and in the field of Electrical Engineering.

With the completion of the studies, the student gains the academic degree of Doctor of Science, has a superior knowledge of a particular scientific field within the engineering sciences and he will have proven to have the capability to and has proven to have original scientific research. His competences cover comprehension of literature and unsolved problems of a particular area and the ability to conduct a scientific project up to its completion, to publish the research results and to present these results to other scientists, the ability to express his opinion in the presence of experts in the research area (at conferences and similar gatherings). His characteristics include the desire to transfer his knowledge to the younger generations, criticism, in the first place towards his own work, but also towards the work of others and the ability to adapt to imminent changes.

Upon completion of the doctoral study, numerous possibilities for the continuation scientific work are present at the Faculty Engineering or other institutions in Croatia and abroad, as well as the possibility to continue education in postdoctoral study. Also, the possibility of finding an occupation in the public as well as in the private business sector becomes available (e.g., entities with whom the Faculty of Engineering has developed collaboration) as well as in other enterprises in Croatia and abroad.

The doctoral study consists of:

- scientific research work under the guidance and help of a mentor and possibly a co-mentor, which results in the completion of a doctoral thesis (90 ECTS credits),
- sitting examinations for all obligatory and elective courses prescribed by the curriculum of the doctoral study (42 ECTS credits),
- visiting other Croatian or foreign universities or scientific institutions in the duration of at least three months (20 ECTS credits),
- other activities that include the presentation of scientific research results at national or international scientific gatherings or the writing of scientific papers (28 ECTS credits).

Nastava doktorskog programa iz područja tehničkih znanosti, polja strojarstva, brodogradnje, temeljnih tehničkih znanosti i interdisciplinarnih tehničkih znanosti organizirana je u sedam modula:

1. Proizvodno strojarstvo
2. Termoenergetika
3. Računarska mehanika
4. Projektiranje i gradnja plovnih objekata
5. Konstruiranje u strojarstvu
6. Osiguranje kvalitete i vođenje tehničkih sustava
7. Ekološko inženjerstvo i zaštita okoliša

Nastava doktorskog programa iz područja tehničkih znanosti, polja elektrotehnike organizirana je u dva modula:

1. Elektroničko-informacijski sustavi
2. Elektroenergetika i nove tehnologije

The curriculum of the doctoral study the area of Engineering Sciences, in the fields of Mechanical Engineering, Naval Architecture, fundamental Engineering Sciences and Interdisciplinary Sciences comprises seven modules:

1. Production Technologies in Mechanical Engineering
2. Thermal Energy Engineering
3. Computational Mechanics
4. Design and Building of Naval Vessels
5. Mechanical Engineering Design
6. Quality Assurance and Technical System Management
7. Ecological Engineering and Environmental Protection

The curriculum of the doctoral study in the area of Engineering Sciences, in the field of Electrical Engineering comprises two modules:

1. Electronic and information systems
2. Power Engineering and New Technologies

Poslijediplomski sveučilišni (doktorski) studij							
Područje tehničke znanosti, polje strojarstvo, brodogradnja, temeljne tehničke znanosti i interdisciplinarne tehničke znanosti							
Zajednički predmeti	Metodologija znanstvenoistraživačkog rada						
	Matematičko modeliranje i numeričke metode						
	Metode optimizacije						
	Statističke metode i stohastički procesi						
Moduli	Proizvodno strojarstvo	Termoenergetika	Računarska mehanika	Projektiranje i gradnja plovnih objekata	Konstruiranje u strojarstvu	Osiguranje kvalitete i vođenje tehničkih sustava	Ekološko inženjerstvo i zaštita okoliša
Predmeti po modulima	Planiranje i vođenje proizvodnje	IP iz toplinskih znanosti	Elastomehanika i plastomehanika	Metodologija projektiranja plovnih objekata	IP iz hidrostatskih i pneumatskih prijenosnika	Upravljanje kvalitetom	IP iz zaštite okoliša
	IP iz konvencionalne obrade odvajanjem čestica	Numeričko modeliranje prijelaza topline	MKE i optimizacija konstrukcija	Pomorstvenost i upravljivost plovnih objekata	Modeliranje inženjerskih konstrukcija	Planiranje i vođenje proizvodnje	Opća ekologija
	Deformabilnost i suvremeno oblikovanje deformiranjem	Optimizacija energetskih procesa	Viskoelastičnost i viskoplastičnost	IP iz osnivanja plovnih objekata	Nauka o konstruiranju	Statistička kontrola procesa	Zaštita mora i priobalja
	IP iz nekonvencionalnih postupaka obrade	IP iz brodskih strojnih kompleksa	Stabilnost konstrukcija	Integralna tehnologija gradnje broda	IP iz konstrukcijskih elemenata	Projektiranje baze podataka	Kemija okoliša
	Razvojni i proizvodni menadžment	Termodinamička analiza procesa	Nelinearna analiza konstrukcija	IP iz metodologije gradnje plovnih objekata	Specijalni mehanički prijenosnici	Poslovno odlučivanje	Upravljanje održivim razvojem i zaštita okoliša
	CAM, CAP, CAD/NC-CIM	Eksperimentalne metode u toplinskoj tehnici i termoenergetici	Kontaktna mehanika	IP iz otpora plovnih objekata	Konstrukcija i optimizacija zupčastih prijenosnika	Modeli stohastičkih procesa informacija	Zaštita okoliša u energetici i procesnoj industriji
	Roboti i manipulatori	Termodinamika smjesa i toplinski uređaji	IP iz termomehanike	IP iz propulzije plovnih objekata	IP iz prijenosnika snage	Pouzdanost tehničkih sustava	Instrumentacija i analitičke tehnike u zaštiti okoliša
	IP iz fleksibilnih proizvodnih sustava	IP iz tehnike hlađenja i tehnike niskih temperatura	Vibracije i trajnost strojeva i kostrukcija	IP iz dinamike plovnih objekata	IP iz transportnih sredstava u industriji	Inteligentni sustavi	Okoliš i gospodarstvo
	Inteligentni proizvodni sustavi	IP iz izmjenjivača topline	Kinematika i dinamika robota	Projektiranje strukture plovnih objekata	Metoda rubnih elemenata	Mikroekonomija i konkurentnost	Zaštita okoliša u tehnici hlađenja
	Metode simulacije u proizvodnji	IP iz grijanja i klimatizacije	Zaštita od buke i vibracija strojeva i konstrukcija		Kontaktni problemi u analizi konstrukcijskih elemenata	Inženjerstvo kvalitete	Fizika atmosfere
	Optimizacija tehnoloških procesa	Obnovljivi izvori energije	Dinamika fluida		Principi konstrukcija visokih i ultravisokih preciznosti	Sigurnost tehničkih sustava	
	IP iz ispitivanja materijala	Racionalna potrošnja energije	Računarska mehanika fluida		Podatljivi elementi i mehanizmi		
	Toplinska obrada i inženjerstvo površina	Numeričko modeliranje procesa izgaranja	Hidrodinamika turbostrojeva				
	Kemija materijala	IP iz motora s unutarnjim izgaranjem	Turbulentno strujanje				
	Korozija i zaštita metala	Suvremene konstrukcije motora	Modeliranje nestacionarnog strujanja u cjevovodima				
	Mehanika prijeloma i umorljivost	Trajnost i pouzdanost termoenergetskih sustava					
	Procesi oštećivanja materijala	IP iz toplinskih turbostrojeva					
		IP iz brodskih energetskih postrojenja					

Postgraduate University (Doctoral) Study							
Area of Engineering Sciences, fields of Mechanical Engineering, Naval Architecture, Fundamental Engineering Sciences and Interdisciplinary Sciences							
Common courses	Methodology of Scientific Work and Research						
	Mathematical Modeling and Numerical Methods						
	Optimization Methods						
	Statistical Methods and Stochastic Processes						
Modules	Production Engineering	Thermal Energy Engineering	Computational Mechanics	Design and Building of Naval Vessels	Mechanical Engineering Design	Quality Assurance and Technical Systems Management	Ecological Engineering and Environmental Protection
Module courses	Production Planning and Control	Selected Chapters on Thermal Sciences	Elastomechanics and Plastomechanics	Ship's Design Methodology	Selected Chapters on Hydrostatic and Pneumatic Transmissions	Quality Management	Selected Chapters on Environment Protection
	Selected Chapters on Conventional Machining Processes	Numerical Modeling of Heat Transfer	FEM and Structural Optimization	Seakeeping and Manouvreability	Modelling of Engineering Structures	Production Planning and Control	General Ecology
	Formability and Modern Forming Technology	Optimization of Energy Processes	Viscoelasticity and Viscoplasticity	Selected Chapters on Ship's Design	Design Science	Statistical Process Control	Protection of Sea and Coastal Zone
	Selected Chapters on Non Conventional Machining Processes	Selected Topics of Marine Machinery Systems	Stability of Structures	Integrated Ship Production Technology	Selected Chapters on Elements of Mechanical Engineering	Design of Data Base	Environmental Chemistry
	Development and Operational Management	Thermodynamic Analysis of Processes	Nonlinear Structural Analysis	Shipbuilding Methodology Selected Topics	Special Mechanical Transmissions	Business Decision-making	Management of Sustainable Development and Environmental Protection
	CAM, CAP, CAD/NC-CIM	Experimental Methods in Heating and Thermal Energy Engineering	Contact Mechanics	Selected Chapters on Ship Resistance	Design and Optimization of Gear Transmissions	Models of Stochastic Information Processes	Environment Protection in Energy and Process Industry
	Robots and Manipulators	Thermodynamics of Mixtures and Thermal Devices	Selected Chapters on Thermomechanics	Selected Chapters on Ship Propulsion	Selected Chapters on Power Transmission	Reliability of Technical Systems	Instrumentation and Analytical Techniques in Environment Protection
	Selected Chapters on Flexible Manufacturing Systems	Selected Chapters on Refrigeration and Low-Temperature Refrigeration	Vibrations and Durability of Machines and Structures	Selected Chapters on Marine Dynamics	Selected Chapters on Industrial Transport Equipment and Devices	Intelligent Systems	Environment and Economics
	Intelligent Manufacturing Systems	Selected Chapters on Heat Exchangers	Kinematics and Dynamics of Robots	Ship Structural Design	Boundary Element Method	Microeconomics and Competitiveness	Enviromental Refrigeration
	Simulation Methods in Production	Selected Chapters on Heating and Air-Conditioning	Protection from Noise and Vibrations of Machines and Structures		Contact Problems in Analysis of Mechanical Engineering Elements	Quality Engineering	Atmospheric Physics
	Processes Plans Optimization	Renewable Energy Sources	Fluid Dynamics		Principles of High and Ultra-high Precision Devices	Safety of Technical Systems	
	Selected Chapters on Materials Testing	Rational Energy Consumption	Computational Fluid Mechanics		Compliant Elements and Mechanisms		
	Heat Treatment and Surface Engineering	Numerical Modeling of Combustion Process	Turbomachinery Hydrodynamics				
	Materials Chemistry	Selected Chapters on Internal Combustion Engines	Turbulent Flow				
	Corrosion and Metals Protection	Modern Engine Design	Unsteady Pipe Flow Modeling				
	Fracture Mechanics and Fatigue of Materials	Durability and Reliability of Thermal Energy Systems					
	Processes of Damaging of Materials	Selected Chapters on Thermal Turbomachines					
		Selected Chapters on Marine Energy Systems					

Poslijediplomski sveučilišni (doktorski) studij		
Područje tehničke znanosti, polje elektrotehnika		
Zajednički predmeti	Metodologija znanstvenoistraživačkog rada	
	Matematičko modeliranje i numeričke metode	
	Metode optimizacije	
	Statističke metode i stohastički procesi	
Moduli	Elektroničko-informacijski sustavi	Elektroenergetika i nove tehnologije
Predmeti po modulima	Analiza i obrada nestacionarnih signala	Modeli stohastičkih procesa informacija
	Elektromagnetsko modeliranje	Modeliranje sustava za distribuciju i potrošnju električne energije
	Fotoničke komponente	Pouzdanost tehničkih sustava
	Mjerenje i analiza kvalitete električne energije	Sustavi upravljanja sinkronim generatorima
	Mješovita obrada signala	Teorija informacija s primjenama
	Nelinearni sustavi automatskog upravljanja	Aktivne distribucijske mreže
	Ambijentalna inteligencija	Inteligentni elektroenergetski sustavi – Smart Grids
	Inteligentni sustavi	Izabrana poglavlja iz energetskih komponenti i sustava obnovljivih izvora energije
	Projektiranje digitalnih sustava	Nova energetska paradigma
	Uslužna robotika	
	Uvod u meko računarstvo i primjene	

Postgraduate University (Doctoral) Study		
Area of Engineering Sciences, Field of Electrical Engineering		
Common courses	Methodology of Scientific Work and Research	
	Mathematical Modelling and Numerical Methods	
	Optimization Methods	
	Statistical Methods and Stochastic Processes	
Modules	Electronic-Information Systems	Electric Power Systems and New Technologies
Module courses	Nonstationary Signal Analysis and Processing	Stochastic Information's Process Models
	Electromagnetic Modelling	Modelling of Electrical Power Distribution Systems
	Photonic Devices	Reliability of Technical Systems
	Measurement and Analysis of Electric Power Quality	Control of Synchronous Generators
	Mixed Signal Processing	Information Theory with Applications
	Nonlinear Control Systems	Active Distribution Networks
	Ambient Intelligence	Intelligent Power Systems - Smart Grids
	Intelligent Systems	Selected Chapters on Energy Components and Systems of Renewable Energy Sources
	Digital System Design	New Energy Paradigm
	Service Robotics	
	Introduction to Soft Computing and Applications	

PREDDIPLOMSKI STRUČNI STUDIJ STROJARSTVA

Preddiplomski stručni studij strojarstva ima za cilj osposobljavanje stručnjaka strojarstva za rad na izvršavanju složenih operativnih poslova kod razrade projekata strojarskih konstrukcija, odnosno složenih operativnih poslova planiranja, pripreme, unapređenja i kontrole tehnoloških i proizvodnih procesa i planiranja, organiziranja i vođenja proizvodnih, odnosno energetskih postrojenja. Pri tome je njihovo radno mjesto prvenstveno u pogonu, odnosno terenu, a u manjoj mjeri u uredu.

Odluči li se student za nastavak studija, on će biti moguć na onim ustanovama koje nude diplomski stručni studij strojarstva. Također, bit će moguć nastavak na diplomskom sveučilišnom studiju strojarstva Tehničkog fakulteta Sveučilišta u Rijeci prema posebnim uvjetima upisa koje određuje Fakultetsko vijeće.

PREDDIPLOMSKI STRUČNI STUDIJ BRODOGRADNJE

Preddiplomski stručni studij brodogradnje ima za cilj osposobljavanje stručnjaka brodogradnje za rad na izvršavanju složenih operativnih poslova kod razrade projekata plovnih objekata i objekata morske tehnologije i njihovih elemenata, odnosno složenih operativnih poslova planiranja, pripreme, unapređenja i kontrole procesa gradnje plovnih objekata. Pri tome je njegovo radno mjesto prvenstveno u proizvodnji, a u manjoj mjeri u uredu.

Odluči li se student za nastavak studija, on će biti moguć na onim ustanovama koje nude diplomski stručni studij brodogradnje. Također, bit će moguć nastavak na diplomskom sveučilišnom studiju brodogradnje Tehničkog fakulteta Sveučilišta u Rijeci prema posebnim uvjetima upisa koje određuje Fakultetsko vijeće.

PREDDIPLOMSKI STRUČNI STUDIJ ELEKTROTEHNIKE

Preddiplomski stručni studij elektrotehnike ima za cilj osposobljavanje stručnjaka elektrotehnike za sudjelovanje u projektiranju i konstruiranju elemenata postrojenja, za ispitivanje i održavanje električnih strojeva i uređaja, elektroničkih industrijskih uređaja i uređaja industrijske automatizacije, te industrijskih i elektroenergetskih postrojenja. Pri tome je njegovo radno mjesto prvenstveno u pogonu, odnosno terenu, a u manjoj mjeri u uredu.

Odluči li se student za nastavak studija, on će biti moguć na onim ustanovama koje nude diplomski stručni studij elektrotehnike. Također, bit će moguć nastavak na diplomskom sveučilišnom studiju elektrotehnike Tehničkog fakulteta Sveučilišta u Rijeci prema posebnim uvjetima upisa koje određuje Fakultetsko vijeće.

UNDERGRADUATE VOCATIONAL STUDY OF MECHANICAL ENGINEERING

The aim of the undergraduate vocational study in Mechanical Engineering is to train experts in mechanical engineering to carry out complex operational tasks in technical systems projects, that is, complex operational tasks of planning, preparing, improving, and controlling technological and production processes, and planning, organising, and overseeing production and power facilities. The job position is primarily in the plant room, in the field, and to a lesser extent, in the office. If students decide to continue their studies, they can do this at those institutions offering graduate vocational study in mechanical engineering. In addition, they can continue their studies at the graduate university study of mechanical engineering at the Faculty of Engineering in Rijeka in line with special admission requirements set by the Faculty Council.

UNDREGRADUATE VOCATIONAL STUDY OF NAVAL ARCHITECTURE

The aim of the undergraduate vocational study in naval architecture is to train experts in naval architecture to carry out complex operational tasks in the projects of floating objects and marine technology objects and their elements, that is, complex operational tasks of planning, preparing, improving, and controlling the process of building floating objects. The job position is primarily in production and to a lesser extent in the office. If students decide to continue their studies, they can do this at those institutions offering graduate vocational study in naval architecture. In addition, they can continue their studies at the graduate university study of naval architecture at the Faculty of Engineering in Rijeka in line with special admission requirements set by the Faculty Council.

UNDERGRADUATE VOCATIONAL STUDY OF ELECTRICAL ENGINEERING

The aim of the undergraduate vocational study in electrical engineering is to train experts in electrical engineering to participate in designing and building plant parts, to inspect and maintain electrical machines and devices, electronic industrial devices and industrial automation devices, and industrial and electric power plants. The job position is primarily in the plant room, in the field, and to a lesser extent, in the office. If students decide to continue their studies, they can do this at those institutions offering graduate vocational study in electrical engineering. In addition, they can continue their studies at the graduate university study of electrical engineering at the Faculty of Engineering in Rijeka in line with special admission requirements set by the Faculty Council.

Preddiplomski stručni studiji

S	Strojarstvo			S	Brodogradnja			S	Elektrotehnika		
	Predmet	N	B		Predmet	N	B		Predmet	N	B
I	Matematika I	5	7	I	Matematika I	5	7	I	Matematika I	5	7
	Mehanika I	5	7		Mehanika I	5	7		Fizika	4	6
	Materijali	4	6		Materijali	4	6		Osnove elektrotehnike ST I	5	8
	Osnove elektrotehnike	3	5		Osnove elektrotehnike	3	5		Materijali i tehnološki postupci	3	4
	Primjena računala ST	3	5		Primjena računala ST	3	5		Primjena računala ST	3	5
II	Matematika II	5	7	II	Matematika II	5	7	II	Matematika II	5	7
	Mehanika II	4	6		Mehanika II	4	6		Osnove elektrotehnike ST II	5	7
	Čvrstoća	4	6		Čvrstoća	4	6		Digitalna logika ST	4	6
	Tehničko crtanje	4	6		Tehničko crtanje	4	6		Mehanika i elementi konstrukcija ST	3	5
	Tehnologija obrade I	3	5		Plovni objekti	3	5		Tehničko dokumentiranje	3	5
III	Organizacija i ekonomika	3	4	III	Organizacija i ekonomika	3	4	III	Mjerenja u elektrotehnici ST	5	7
	Mehanika fluida ST	3	5		Mehanika fluida ST	3	5		Elekt. komp. i osnovni sklopovi	5	7
	Toplina	4	6		Toplina	4	6		Linearne električne mreže	4	7
	Tehnologija obrade II	4	6		Brodske forme ST	4	7		Mehatronika	4	6
	Elementi strojeva I	4	6		Zavarivanje	3	5		Strani jezik I	2	3
	Strani jezik I	2	3		Strani jezik I	2	3				
IV	Elementi strojeva II	4	6	IV	Hidrostatika broda	4	6	IV	Osnove energetske elektronike	5	7
	Obradni strojevi	3	5		Strukturni elementi broda	4	6		Osnove automatske regulacije	4	7
	Toplinski strojevi i uređaji I	3	5		Tehnologija brodogradnje I	3	5		Kolegij izborne skupine	5	8
	Strani jezik II	2	3		Elementi strojeva I BG	3	5		Strani jezik II	2	3
	Stručna praksa I		5		Strani jezik II	2	3		Stručna praksa I		5
	Kolegij izborne skupine	4	6		Stručna praksa I		5				
V	Mjerna tehnika ST	3	5	V	Mjerna tehnika ST	3	5	V	Organizacija i ekonomika	3	4
	Toplinski strojevi i uređaji II	3	5		Tehnologija brodogradnje II	5	6		Kolegij izborne skupine	5	7
	Hidraulički strojevi	3	5		Tehn. procesi gradnje i remonta broda	5	6		Kolegij izborne skupine	4	7
	Zavarivanje	3	5		Konstrukcija broda	4	6		Kolegij izborne skupine	4	6
	Kolegij izborne skupine	4	5		Oprema broda ST	4	7		Kolegij izborne skupine	4	6
	Kolegij izborne skupine	4	5								
VI	Slobodni kolegij	4	5	VI	Gradnja i održavanje malih plovnih objekata	4	5	VI	Slobodni kolegij	4	5
	Stručna praksa II		10		Slobodni kolegij	4	5		Stručna praksa II		10
	Kolegij izborne skupine	4	5		Stručna praksa II		10		Kolegij izborne skupine	4	5
	Završni rad		10		Završni rad		10		Završni rad		10

Undergraduate Vocational Studies

S	Mechanical Engineering			S	Naval Architecture			S	Electrical Engineering		
	Course	N	B		Course	N	B		Course	N	B
I	Mathematics I	5	7	I	Mathematics I	5	7	I	Mathematics I	5	7
	Mechanics I	5	7		Mechanics I	5	7		Physics	4	6
	Materials	4	6		Materials	4	6		Fundamentals of Electrical Eng. VO I	5	8
	Fundamentals of Electrical Engineering	3	5		Fundamentals of Electrical Engineering	3	5		Materials and Production Processes	3	4
	Applied Computing VO	3	5		Applied Computing VO	3	5		Applied Computing VO	3	5
II	Mathematics II	5	7	II	Mathematics II	5	7	II	Mathematics II	5	7
	Mechanics II	4	6		Mechanics II	4	6		Fundamentals of Electrical Eng. VO II	5	7
	Strength of Materials	4	6		Strength of Materials	4	6		Digital Logic VO	4	6
	Technical Drawing	4	6		Technical Drawing	4	6		Mechanics and Structural Elements VO	3	5
	Manufacturing Technology I	3	5		Marine Vessels	3	5		Technical Documenting	3	5
III	Organization and Economics	3	4	III	Organization and Economics	3	4	III	Measurements in Electrical Eng. VO	5	7
	Fluid Mechanics VO	3	5		Fluid Mechanics VO	3	5		Semiconductor Devices and Basic Microel. Circ	5	7
	Thermodynamics	4	6		Thermodynamics	4	6		Linear Electrical Circuits	4	7
	Manufacturing Technology II	4	6		Ship Hull Forms VO	4	7		Mechatronics	4	6
	Machine Elements I	4	6		Welding Engineering	3	5		Foreign Language I	2	3
	Foreign Language I	2	3		Foreign Language II	2	3				
IV	Machine Elements II	4	6	IV	Ship Hydrostatics	4	6	IV	Fundamentals of Power Electronics	5	7
	Machine Tools	3	5		Ship Structure	4	6		Fundamentals of Automatic Regulation	4	7
	Heat Engines and Devices I	3	5		Shipbuilding Technology I	3	5		Elective group course	5	8
	Foreign Language II	2	3		Machine Elements I NA	3	5		Foreign Language II	2	3
	Professional Practice I		5		Foreign Language II	2	3		Professional Practice I		5
	Elective group course	4	6		Professional Practice I		5				
V	Measuring Technology VO	3	5	V	Measuring Technology VO	3	5	V	Organization and Economics	3	4
	Heat Engines and Devices II	3	5		Shipbuilding Technology II	5	6		Elective group course	5	7
	Hydraulic Machines VO	3	5		Tech. Processes of Ship Production and Repair	5	6		Elective group course	4	7
	Welding Engineering	3	5		Ship Construction	4	6		Elective group course	4	6
	Elective group course	4	5		Ship Equipment VO	4	7		Elective group course	4	6
	Elective group course	4	5								
VI	Free Elective Course	4	5	VI	Small Craft Building and Maintenance	4	5	VI	Free Elective Course	4	5
	Professional Practice II		10		Free Elective Course	4	5		Professional Practice II		10
	Elective group course	4	5		Professional Practice II		10		Elective group course	4	5
	Final Work		10		Final Work		10		Final Work		10

4 dekanat dean's office

Sveučilište u Rijeci, Tehnički fakultet
University of Rijeka, Faculty of Engineering, Croatia

Vukovarska 58, 51000 Rijeka
Hrvatska | Croatia

www.riteh.uniri.hr | dekanat@riteh.hr

PRODEKANI | VICE-DEANS:

prof. dr. sc. / Prof. D. Sc. **Anica Trp**
nastava | academics

prof. dr. sc. / Prof. D. Sc. **Marko Čanađija**
znanstvena djelatnost | research activities

prof. dr. sc. / Prof. D. Sc. **Duško Pavletić**
poslovni odnosi | buisness affairs

POMOĆNICI DEKANICE | DEAN'S ASSISTANTS:

izv. prof. dr. sc. / Assoc. Prof. D. Sc. **Marina Franulović**

izv. prof. dr. sc. / Assoc. Prof. D. Sc. **Ivan Štajduhar**

izv. prof. dr. sc. / Assoc. Prof. D. Sc. **Neven Bulić**

DEKANICA | DEAN:

prof. dr. sc. / Prof. D. Sc.
Jasna Prpić-Oršić

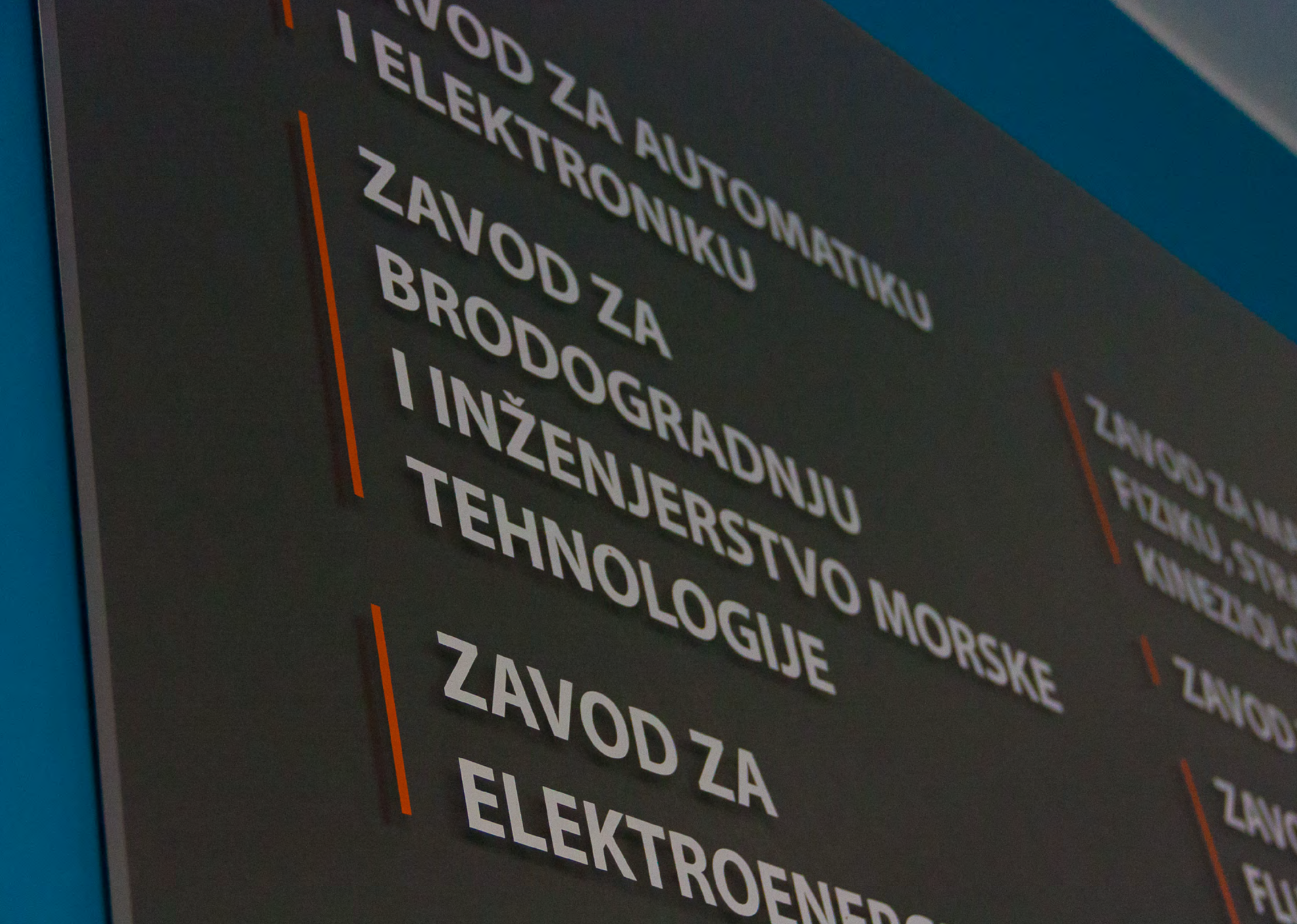
URED DEKANICE | DEAN'S OFFICE:

Sanja Prpić, dipl. oec. / grad. economist
voditeljica | head

Tomo Vergić, dipl. iur. / grad. in law.
glavni tajnik | secretary general

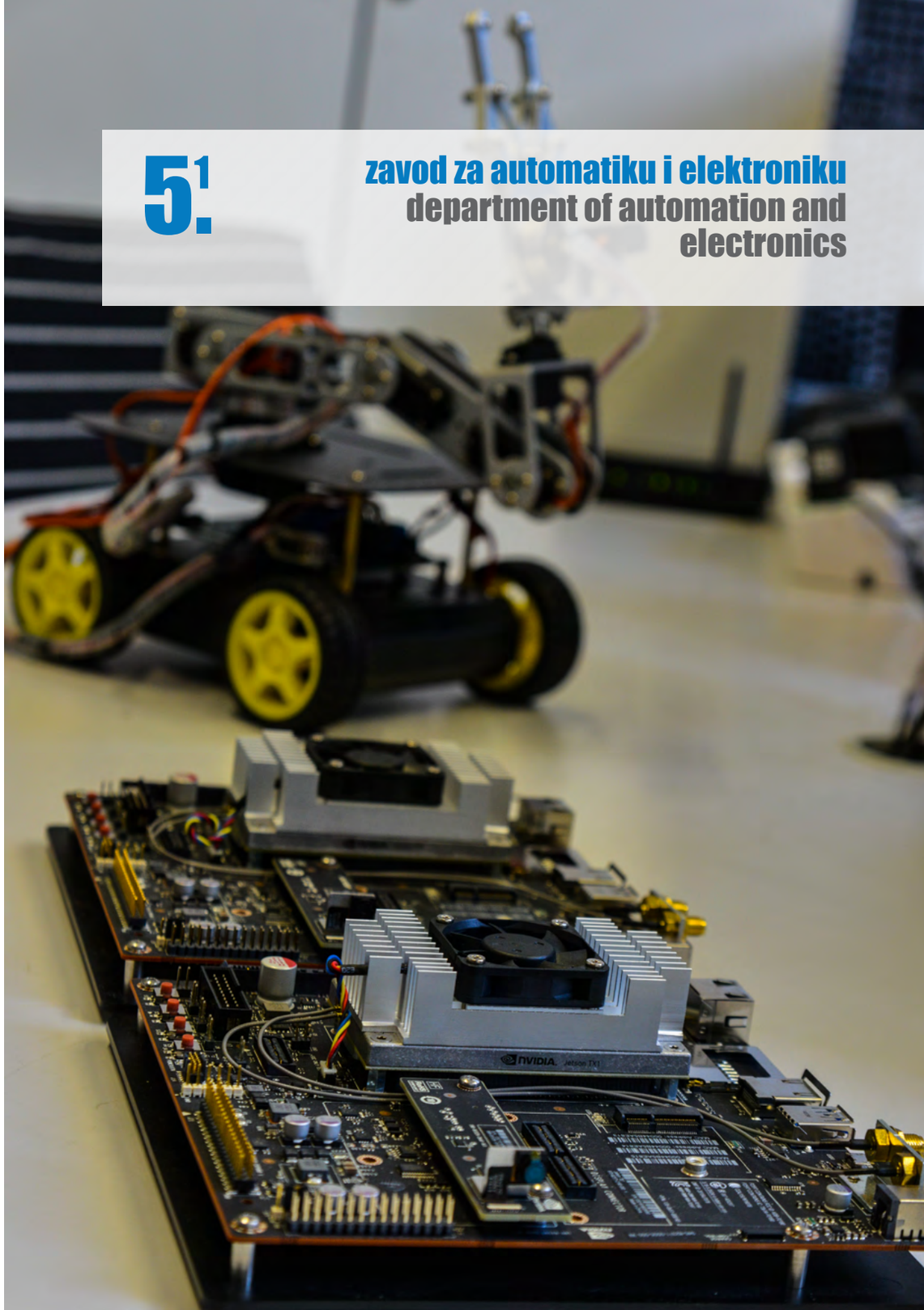
Marijana Burić Redžović
tajnica prodekana | vice dean secretary

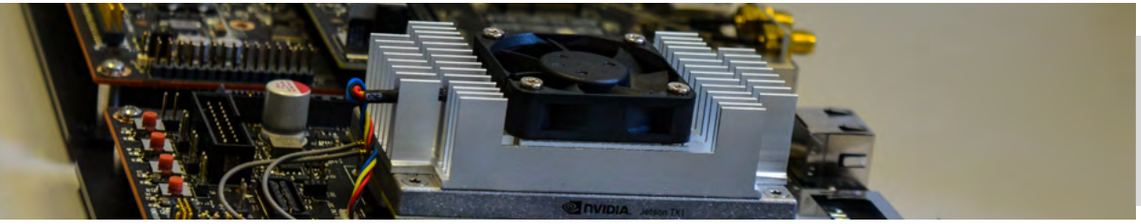
4. dekanat dean's office


VOD ZA AUTOMATIKU
I ELEKTRONIKU
ZAVOD ZA
BRODOGRADNJU
I INŽENJERSTVO MORSKE
TEHNOLOGIJE
ZAVOD ZA
ELEKTROENER

5 zavodi departments

5.1 zavod za automatiku i elektroniku department of automation and electronics





PREDSTOJNIK ZAVODA | **DEPARTMENT HEAD:**

Prof. dr. sc. / Prof. D. Sc. **Saša Vlahinić**

http://www.riteh.uniri.hr/ustroj/zavodi/zae/

djelatnici
faculty and staff

REDOVITI PROFESORI | PROFESSORS

Zlatan Car

umjetne inteligencije; inteligentni sustavi; robotika; CNC/NC obradni strojevi i robotika; kostrukcija i optimizacija alata i naprava; simulacija i optimizacija rada sustava i strojeva

artificial intelligence; intelligent systems; CNC/NC machines & robotics; design of tools & fixtures; modeling, simulation and optimization of systems and machines

Nino Stojković

analogna obrada signala; analogni filtri

analog signal processing; analog filters

Viktor Sučić

analiza i obrada signala

signal analysis and processing

Saša Vlahinić

mjerenja u elektrotehnici; mjerenja kvalitete električne energije; elektronička i virtualna instrumentacija

electrical measurements; power quality measurements; electronic and virtual instrumentation

IZVANREDNI PROFESORI | ASSOCIATE PROFESSORS

Vera Gradišnik

poluvodička elektronika; optoelektronika; poluvodički elementi; fotosenzori iz amorfnog silicija; tankoslojni fotosenzori u biotehnologiji; digitalna logika

semiconductor electronics; optoelectronics; semiconductor devices; amorphous silicon photosensors; thin film photosensors in biotechnology; digital logic

Miroslav Vrankić

digitalna obrada signala i slike; teorija valića; filtarski slogovi; asistivna tehnologija

digital signal and image processing; wavelets and filter banks; assistive technology

Neven Bulić

automatizacija

automation

POSLIJEDOKTORAND | POSTDOCTORAL RESEARCH ASSISTANT

Ivan Volarić

vremensko-frekvencijska obrada signala

time-frequency signal processing

ASISTENTI | ASSISTANTS

Nikola Turk

automatika; napredne upravljačke strukture za elektromotorne pogone

automation; advanced control structures for electrical drives

Goran Tovilović

analogna obrada signala; analogni filtri

analog signal processing; analog filters

Sebastijan Blažević

automatika

automation

Nikola Anđelić

automatika; umjetna inteligencija; molekularna dinamika; nanomehanika

automation; artificial intelligence; molecular dynamics; nanomechanics

Ivan Jurković

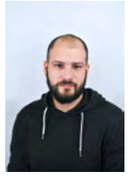
napredne kontrolne strukture za elektromotorne pogone

advanced control structures for electrical drives

Dominik Cikač

napredne kontrolne strukture za elektromotorne pogone

advanced control structures for electrical drives



Ivan Markovinović

obrada EEG signala; ICA (analiza nezavisnih komponenti)

EEG signal processing; ICA (independent component analyses)

Vedran Jurdana

obrada signala; vremensko-frekvencijska analiza signala

signal processing; time-frequency signal analysis

Nikola Lopac

elektromotorni pogoni; teorija upravljanja; automatizacija

electric drives; control theory; automation

Zoran Šverko

obrada EEG signala

EEG signal processing

VANJSKI SURADNICI | ASSOCIATES

Dario Matika

Ministarstvo obrane | University of Rijeka – Faculty of Maritime Studies

automatika
automation

nastava i znanost
education and science

Nastava se izvodi iz područja automatike, robotike, elektronike, mjerenja u elektrotehnici, mjerne instrumentacije te obrade signala.

CO: Program razlikovne edukacije za upis na diplomski sveučilišni studij elektrotehnike

Lectures in the field of automatic control, robotics, electronics, electrical measurements, instrumentation and signal processing.

Program of lifelong learning for admission to the graduate university study of electrical engineering.

KOLEGIJI NA PREDDIPLOMSKIM SVEUČILIŠNIM STUDIJIMA
| UNDERGRADUATE UNIVERSITY COURSES

• *Automatizacija*	• *Automation*
• *Automatsko upravljanje*	• *Automatic Control*
• *Digitalna logika*	• *Digital Logic*
• *Električne mreže*	• *Electrical Circuits*
• *Elektronika*	• *Electronics*
• *Elektronika I*	• *Electronics I*
• *Elektronika II*	• *Electronics II*
• *Elementi automatizacije postrojenja*	• *Elements of Plant Automation*
• *Mjerenja u elektrotehnici*	• *Electrical Measurements*
• *Modeliranje i simuliranje sustava*	• *System Modelling and Simulation*
• *Osnove regulacijske tehnike*	• *Basic of Automatic Control*
• *Računalom podržana mjerenja*	• *Computer Aided Measurement*
• *Signali i sustavi*	• *Signals and Systems*
• *Stručna praksa I*	• *Industrial Practice I*

KOLEGIJI NA DIPLOMSKIM SVEUČILIŠNIM STUDIJIMA
| GRADUATE UNIVERSITY COURSES

• *Analogna obrada signala*	• *Analog Signal Processing*
• *Asistivna tehnologija*	• *Assistive Technology*
• *Automatizacija postrojenja i procesa*	• *Automation of Plants and Processes*
• *Automatizirana instrumentacija*	• *Automatic Instrumentation*
• *Digitalna obrada signala*	• *Digital Signal Processing*
• *Digitalna obrada slike*	• *Digital Image Processing*
• *Industrijska robotika*	• *Industrial robotics*
• *Mehatronički sustavi*	• *Mechatronic Systems*
• *Optoelektronika*	• *Optoelectronics*
• *Osnove robotike*	• *Fundamentals of Robotics*
• *Primjena umjetne inteligencije*	• *AI Implementation*
• *Sustavi digitalnog upravljanja*	• *Digital Control Systems*
• *Sustavi kontrole*	• *Control Systems*
• *Stručna praksa II*	• *Industrial Practice II*
• *Evolucijska robotika*	• *Evolutionary Robotics*
• *Statistička analiza i obrada signala*	• *Statistical Signal Analysis and Processing*

KOLEGIJI NA PREDDIPLOMSKIM STRUČNIM STUDIJIMA
| UNDERGRADUATE VOCATIONAL COURSES

• *Automatizacija ST*	• *Automation ST*
• *Digitalna logika ST*	• *Digital Logic ST*
• *Elektroničke komponente i osnovni sklopovi*	• *Semiconductors Devices and Basic Electronic Circuits*

- *Linearne električne mreže*
- *Mehatronika*
- *Mjerenja u elektrotehnici ST*
- *Osnove automatske regulacije*
- *Linear Electrical Circuits*
- *Mechatronics*
- *Electrical Measurements ST*
- *Fundamentals of Automatic Regulation*

KOLEGIJI NA POSLIJEDIPLOMSKIM (DOKTORSKIM) SVEUČILIŠNIM STUDIJIMA
| POSTGRADUATE UNIVERSITY (DOCTORAL) COURSES

- *Analiza i obrada nestacionarnih signala*
- *Fotoničke komponente*
- *Mjerenje i analiza kvalitete električne energije*
- *Mješovita obrada signala*
- *Nelinearni sustavi automatskog upravljanja*
- *Ambijentalna inteligencija*
- *Projektiranje digitalnih sustava*
- *Pouzdanost tehničkih sustava*
- *Inteligentni proizvodni sustavi*
- *Roboti i manipulatori*
- *Nonstationary Signal Analysis and Processing*
- *Photonic Devices*
- *Measurement and Analysis of Electric Power Quality*
- *Mixed Signal Processing*
- *Nonlinear Control Systems*
- *Ambient Intelligence*
- *Digital System Design*
- *Reliability of Technical Systems*
- *Intelligent Manufacturing Systems*
- *Robots and Manipulators*

ZNANSTVENOISTRAŽIVAČKI RAD | SCIENTIFIC RESEARCH

- *Obrada signala*
  Signal Processing
- *Elektronika*
  Electronics
- *Mjerenje kvalitete električne energije*
  Power quality measurements
- *Robotika*
  Robotics
- *Umjetna inteligencija*
  Artificial intelligence
- *Automatizacija*
  Automation

PROJEKTI | PROJECTS

- *CEEPUS; CIII-HR-0108-06-1112 - Concurrent Product and Technology Development - Teaching, Research and Implementation of Joint Programs Oriented in Production and Industrial Engineering ; (EU projekt mobilnosti/voditelj projekta)*
  CEEPUS; CIII-HR-0108-06-1112 - Concurrent Product and Technology Development - Teaching, Research and Implementation of Joint Programs Oriented in Production and Industrial Engineering ; (EU mobility project; project manager)
- *CEEPUS; CIII-RO-0202-05-1112 - Implementation and utilization of e-learning systems in study area of production engineering in Central European Region; (EU projekt mobilnosti/suradnik na projektu)*
  CEEPUS; CIII-RO-0202-05-1112 - Implementation and utilization of e-learning systems in study area of production engineering in Central European Region; (EU mobility project; associate member)
- *CEEPUS; CIII-CZ-0201-04-1112 - Knowledge Bridge for Students and Teachers in Manufacturing Technologies; (EU projekt mobilnosti/suradnik na projektu)*

CEEPUS; CIII-CZ-0201-04-1112 - Knowledge Bridge for Students and Teachers in Manufacturing Technologies; (EU mobility project; associate member)

- *CEEPUS; CIII-PL-0007-07-1112 - Modern Methods of the Constitution and Measurement of Geometrical Surface Structure; (EU projekt mobilnosti/suradnik na projektu)*
  CEEPUS; CIII-PL-0007-07-1112 - Modern Methods of the Constitution and Measurement of Geometrical Surface Structure; (EU mobility project; associate member)
- *C140.106, Razvoj posebnih konstrukcija motora sa magnetskim ležajevima, upravljačke i energetske elektronike te njihove aplikacije u industriji, Područje4 - Pogoni i aktuatori, Neven Bulić, Karlo Radman 2014- (projekt Linz Center of Mechatronics, LCM GmbH), znanstvenoistraživački.*
  C140.106, Bearingless Reluctance Slice Motors, Area4 - Drives and Actuators, Neven Bulić, Karlo Radman, 2014- (Linz Center of Mechatronics, LCM GmbH project) Research and scientific project.
- *Q-grid, znanstveno-istraživački projekt financiran od strane industrije Danieli-Systec, Neven Bulić, 2014-2015.*
  Q-grid, R&D project financed by industry Danieli-Systec, Neven Bulić, 2014-2015.

PUBLIKACIJE | PUBLICATIONS

RADOVI U ČASOPISIMA | JOURNAL PAPERS

- *Anđelić, N.; Braut, S.; Pavlović, A.; Variation of natural frequencies by circular saw blade rotation, Tehnički vjesnik, ISSN: 1330-3651 (Print), ISSN: 1848-6339 (Online), 25, 10-17, 2018*

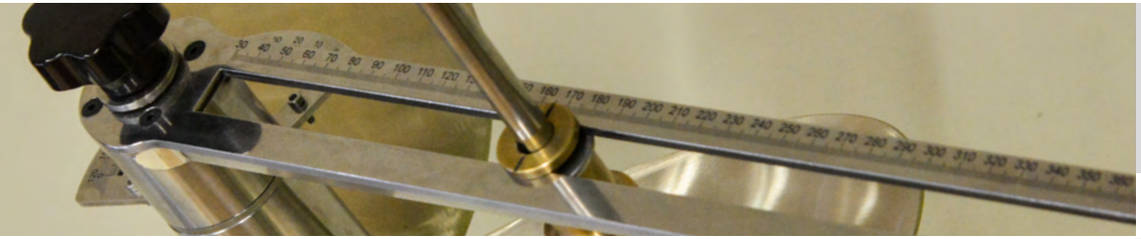
MEĐUNARODNI KONGRESI | INTERNATIONAL CONGRESSES

- *Volarić, I.; Sučić, V.; Localized Renyi Entropy Based Sparse TFD Reconstruction, Second International Balkan Conference on Communications and Networking 2018, 1, 1 - 5, 2018, Podgorica, Montenegro*
- *Volarić, I.; Sučić, V.; On the L0-Norm Based Sparse Time-Frequency Distribution Reconstruction, 2018 International Conference on Broadband Communications for Next Generation Networks and Multimedia Applications (CoBCom), 978-1-5386-4157-6, 1, 1 - 8, 2018, Graz, Austria*
- *Volarić, I.; Sučić, V.; Sparse TFD Reconstruction Using the Information on the Instantaneous Number of Signal Components, Proceedings of International Conference on Innovative Technologies IN-TECH 2018, 1, 1 - 4, 2018, Zagreb, Croatia*
- *Anđelić, N.; Blažević, S.; Car, Z.; Trajectory planning using genetic algorithm for three joints robot manipulator, Proceedings of the IN-TECH Conference 2018, ISSN: 0184-9069, 1, 25-28 2018, Jaromer, Czech Republic*
- *Mrzljak, V.; Blažević, S.; Anđelić, N.; Car, Z.; EXHAUST GAS EMISSIONS FROM TURBOCHARGED DIRECT INJECTION DIESEL ENGINE DURING THE FUEL MASS FLOW VARIATION, Proceedings of the IN-TECH Conference 2018, ISSN: 0184-9069, 1, 35-38 2018, Jaromer, Czech Republic*
- *Brnić, M.; Čondrić, E.; Blažević, S.; Anđelić, N.; Borović, E.; Car, Z.; Sepsis Prediction Using Artificial Intelligence Algorithms, Proceedings of the IN-TECH Conference 2018, ISSN: 0184-9069, 1, 47-50, 2018, Jaromer, Czech Republic*
- *Bogović, K.; Lorencin, I.; Anđelić, N.; Španjol, J.; Blažević, S.; Car, Z.; Artificial Intelligence-Based Method for Urinary Bladder Cancer Diagnostic, Proceedings of the IN-TECH Conference 2018, ISSN: 0184-9069, 1, 51-54, 2018, Jaromer, Czech Republic*

MEĐUNARODNA SURADNJA | INTERNATIONAL COLLABORATIONS

- *University of Queensland, Brisbane, Australija, Australia*
- *Elektrotehnički fakultet, Univerzitet Crne Gore, Podgorica, Crna Gora, Montenegro*
- *University in Prague Faculty Mechanical Engineering University, Republika Češka, Czech Republic*
- *Tomas Bata University in Zlin, Republika Češka, Czech Republic*
- *Techical University in Ostrava, Republika Češka, Czech Republic*
- *Vienna University of Technology, Austrija, Austria*
- *University in Miskolc, Mađarska, Hungary*
- *Budapest University of Technology and Economics, Mađarska, Hungary*
- *University of Žilina, Slovačka, Slovakia*
- *Poznan University of Technology, Poljska, Poland*
- *Kielce University of Technology, Poljska, Poland*
- *University of Ljubljana, Slovenija, Slovenia*
- *University of Novi Sad, Srbija, Serbia*
- *North University of Baia Mare, Rumunjska, Romania*
- *University of Kragujevac, Srbija, Serbia*
- *Danieli Automation, Italia, Italy*
- *Texas Instruments, USA, USA*
- *Linz Center of Mechatronics GmbH, Austrija, Austria*
- *Johannes Kepler Universität Linz, Austrija, Austria*

5.2 zavod za brodogradnju i inženjerstvo morske tehnologije
department of naval architecture and ocean engineering



PREDSTOJNIK ZAVODA | DEPARTMENT HEAD:

Prof. dr. sc. / Prof. D. Sc. **Roko Dejhalla**

http://www.riteh.uniri.hr/ustroj/zavodi/zbimt/

djelatnici
faculty and staff

REDOVITI PROFESORI | PROFESSORS

Bruno Čalić

brodske forme; plovnost i stabilitet broda; stabilitet broda u eksploataciji; osnivanje plovnih objekata; objekti morske tehnologije; projektiranje malih plovnih objekata

ship hull forms; buoyancy and stability of ships; ship stability in exploitation; ship design; ocean mobile and fixed structures; small craft design

Roko Dejhalla

otpor i propulzija plovnih objekata; brodski propulzori; gradnja i održavanje malih plovnih objekata; projektiranje malih plovnih objekata

ship resistance and propulsion; ship propulsion devices; small craft building and maintenance; small craft design

Nikša Fafandjel

metodologija gradnje i opremanja plovnih objekata; tehnologija i organizacija brodogradnje; osnivanje brodogradilišta i proizvodnih procesa; simulacijsko modeliranje brodograđevnih procesa; analiza tržišta; ugovaranje i tehnološko prognoziranje

ship production methodology and outfitting; shipbuilding technology and organisation; shipyard and production process design; shipyards' production processes simulation modelling; market analysis; contracting and technological forecasting

Jasna Prpić-Oršić

pomorstvenost; njihanje i opterećenje plovnih objekata na morskim valovima; modeliranje okoliša i okolišnih opterećenja; dinamika pomorskih objekata; vibracije broda

seakeeping; motions and sea loads of ships and off-shore structures; modeling of environment and environmental loads; marine structures dynamics; ship vibrations

Albert Zamarin

konstrukcija broda; čvrstoća broda; strukturna analiza broda; opterećenje plovnih objekata na morskim valovima; projektiranje strukture plovnih objekata; konstrukcija malih plovnih objekata

ship structure; ship strength; ship structural analysis; ship structural design; sea loads of ships and off-shore structures; small craft construction

IZVANREDNI PROFESORI | ASSOCIATE PROFESSORS

Marko Hadjina

metodologija gradnje i opremanja plovnih objekata; tehnologija i organizacija brodogradnje; osnivanje brodogradilišta i proizvodnih procesa; simulacijsko modeliranje brodograđevnih procesa; virtualna stvarnost; ugovaranje i tehnološko prognoziranje

ship production methodology and outfitting; shipbuilding technology and organisation; shipyard and production process design; shipyards; production processes simulation modelling; virtual reality; contracting and technological forecasting

Tin Matulja

gradnja i opremanje plovnih objekata; tehnologija i organizacija brodogradnje; osnivanje brodogradilišta i proizvodnih procesa; oprema plovnih objekata

ship production and outfitting; shipbuilding technology and organisation; shipyard and production process design; floating objects equipment and outfitting

DOCENTI | ASSISTANT PROFESSORS

Dunja Legović

otpor i propulzija plovnih objekata; dinamika broda; brodski propulzori; pomorstvenost plovnih objekata, brodske forme, osnivanje plovnih objekata, objekti morske tehnologije, zaštita okoliša

ship resistance and propulsion; ship dynamics; ship propulsion devices; seakeeping; ship hull forms; ship design; ocean mobile and fixed structures; environment protection

Anton Turk

plovnost i stabilitet broda; brodske forme; hidrostatika broda; stabilitet broda u eksploataciji; vibracije broda

seaworthiness and stability; ship hull forms; ship hydrostatics; ship stability in exploitation; ship vibrations

Damir Kolić

tehnologija i organizacija brodogradnje; vitka proizvodnja; tehnološki procesi i metodologija gradnje broda; IHOP, DFP, PWBS, grupna tehnologija; upravljanje projektima; rudarenje podacima

shipbuilding technology and organisation; lean manufacturing; technological processes and methodology of shipbuilding; IHOP, DFP, PWBS, group technology; project management; data mining

STRUČNI SURADNIK | ASSOCIATE

Natalija Vitali Maretić

na znanstvenom projektu Hrvatske zaklade za znanost (HRZZ)

VANJSKI SURADNICI | ASSOCIATES

Robert Grubiša
Brodograđevna industrija 3. MAJ | Shipbuilding industry 3. MAJ

osnivanje plovnih objekata
ship design

Željko Monjac
Brodograđevna industrija 3. MAJ | Shipbuilding industry 3. MAJ

tehnologija brodogradnje
shipbuilding technology

Branko Radil
Hrvatski registar brodova | Croatian Register of Shipping

konstrukcija broda
ship structures

Alan Klanac
Jadrolinija

strukturna analiza broda
ship structural analysis

Mirela Marin
M-Inženjering

osnivanje plovnih objekata
ship design

Romano Pičuljan
Pičuljan Marine

gradnja i održavanje malih plovnih objekata
small craft building and maintenance

nastava i znanost
education and science

Nastava iz područja: projektiranje plovnih objekata, tehnologija i organizacija brodogradnje, konstrukcija plovnih objekata, hidromehanika plovnih objekata.

CO: Program razlikovne edukacije za upis na diplomski sveučilišni studij brodogradnje.

Lectures in the field of: marine vessel design, technology and organization of shipbuilding, marine vessel construction, marine hydromechanics.

Program of lifelong learning for admission to the graduate university study of naval architecture.

KOLEGIJI NA PREDDIPLOMSKIM SVEUČILIŠNIM STUDIJIMA
| UNDERGRADUATE UNIVERSITY COURSES

- *Brodske forme* — *Ship Hull Forms*
- *Gradnja i održavanje malih plovnih objekata SV* — *Small Craft Building and Maintenance UN*
- *Hidrodinamika plovnih objekata I* — *Marine Hydrodynamics I*
- *Konstrukcija broda I* — *Ship Structure I*
- *Konstrukcija broda II* — *Ship Structure II*
- *Oprema broda* — *Ship Equipment*
- *Osnove dinamike broda* — *Basic Ship Dynamics*
- *Osnove gradnje broda* — *Basics of Ship Production*
- *Plovnost i stabilitet broda* — *Seaworthiness and Stability of the Ship*
- *Stručna praksa I* — *Industrial practice I*
- *Tehnologija brodogradnje* — *Shipbuilding Technology*
- *Tehnološki procesi brodogradnje* — *Technology Processes of Shipbuilding*
- *Uvod u plovne objekte* — *Introduction to Marine Vessels*

KOLEGIJI NA DIPLOMSKIM SVEUČILIŠNIM STUDIJIMA
| GRADUATE UNIVERSITY COURSES

- *Brodski propulzori* — *Ship Propulsion Devices*
- *Osnivanje brodogradilišta* — *Shipyard Design*
- *Čvrstoća broda* — *Ship Strength*
- *Dinamika pomorskih konstrukcija* — *Dynamics of Off Shore Structures*
- *Hidrodinamika plovnih objekata II* — *Marine Hydrodynamics II*
- *Konstrukcija malih plovnih objekata* — *Small Craft Construction*

- *Metodologija gradnje plovnih objekata* — *Methodology of Ship Production*
- *Objekti morske tehnologije* — *Ocean Mobile and Fixed Structures*
- *Oprema malih plovnih objekata* — *Small Crafts Equipment*
- *Opremanje i remont broda* — *Ship Outfitting and Repair*
- *Organizacija i poslovanje brodogradilišta* — *Shipyards Organisation and Management*
- *Osnivanje plovnih objekata I* — *Ship Design I*
- *Osnivanje plovnih objekata II* — *Ship Design II*
- *Pomorstvenost plovnih objekata* — *Seakeeping*
- *Projektiranje malih plovnih objekata* — *Small Craft Design*
- *Stabilitet broda u eksploataciji* — *Ship Stability in Exploitation*
- *Stručna praksa II* — *Industrial practice II*
- *Strukturna analiza broda* — *Ship Structural Analysis*
- *Tehnološki proces gradnje broda* — *Technological Process of Shipbuilding*
- *Ugovaranje plovnih objekata* — *Ship Negotiation Process*
- *Upravljanje projektima u brodogradnji* — *Project Management in Shipbuilding*
- *Vibracije broda* — *Ship Vibrations*

KOLEGIJI NA PREDDIPLOMSKIM STRUČNIM STUDIJIMA
| UNDERGRADUATE VOCATIONAL COURSES

- *Brodske forme ST* — *Ship Hull Forms VO*
- *Gradnja i održavanje malih plovnih objekata* — *Small Craft Building and Maintenance*
- *Hidrostatika broda* — *Ship Hydrostatics*
- *Konstrukcija broda* — *Ship Construction*
- *Oprema broda ST* — *Ship Equipment ST*
- *Osnivanje plovnih objekata* — *Ship Design*
- *Plovni objekti* — *Marine Vessels*
- *Stručna praksa I* — *Professional practice I*
- *Stručna praksa II* — *Professional practice II*
- *Strukturni elementi broda* — *Ship Structure*
- *Tehnologija brodogradnje I* — *Shipbuilding Technology I*
- *Tehnologija brodogradnje II* — *Shipbuilding Technology II*
- *Tehnološki procesi gradnje i remonta broda* — *Technological Processes of Shipbuilding and Repair*

KOLEGIJI NA POSLIJEDIPLOMSKIM (DOKTORSKIM) SVEUČILIŠNIM STUDIJIMA
| POSTGRADUATE UNIVERSITY (DOCTORAL) COURSES

- *Integralna tehnologija gradnje broda* — *Integrated Ship Production Technology*
- *Izabrana poglavlja iz metodologije gradnje plovnih objekata* — *Selected Topics in Floating Objects Production Methodology*
- *Metodologija projektiranja plovnih objekata* — *Methodology of Ship Design*
- *Izabrana poglavlja iz osnivanja plovnih objekata* — *Selected Topics in Ship Design*
- *Pomorstvenost i upravljivost plovnih objekata* — *Seakeeping and Manoeuvrability*
- *Izabrana poglavlja iz dinamike plovnih objekata* — *Selected Topics in Marine Dynamics*
- *Izabrana poglavlja iz otpora plovnih objekata* — *Selected Topics in Ship Resistance*
- *Izabrana poglavlja iz propulzije plovnih objekata* — *Selected Topics in Ship Propulsion*
- *Projektiranje strukture plovnih objekata* — *Ship Structural Design*

ZNANSTVENOISTRAŽIVAČKI RAD | SCIENTIFIC RESEARCH

- *Hidrodinamičko opterećenje i odziv pomorskih objekata na morskim valovima*
  Hydrodynamic loads and response of marine objects
- *Projektiranje strukture broda, nove tehnologije kod projektiranja i preinaka brodskih konstrukcija, tehnologičnost kod projektiranja i izrade brodskih konstrukcija*
  Ship structural design, new technologies in ship structural design and conversions, techologicality in ship structure design and construction

- *Otpor i propulzija plovnih objekata, hidrodinamičke optimizacije*
  Ship resistance and propulsion, hydrodynamic optimizations
- *Primjena naprednih tehnologija i metoda gradnje i opremanja plovnih objekata; organizacija brodograđevnog poslovnog i proizvodnog procesa; osnivanje i unapređenje brodogradilišta i proizvodnih procesa, primjena simulacijskog modeliranja, višekriterijskog odlučivanja i LEAN metodologije za unapređenje brodograđevnog procesa, analiza tržišta; ugovaranje i tehnološko prognoziranje*
  Application of advanced technology and methods in ship construction and outfitting; organization of shipbuilding business and production process, the establishment and improvement of the shipyards and manufacturing processes, the application of simulation modeling, multicriteria decision making and LEAN methodologies to improve the shipbuilding process, market analysis, contracting and technological forecasting

PROJEKTI | PROJECTS

- *Numeričko modeliranje hidrodinamičkog opterećenja i odziva pomorskih objekata, 13.09.1.1.05, Sveučilište u Rijeci, Jasna Prpić-Oršić, 2013-2017., znanstvenoistraživački*
  Numerical modeling of hydrodynamic loads and response of marine objects, 13.09.1.1.05, University of Rijeka, Jasna Prpić-Oršić, 2013.-2017., research and scientific project
- *Energetski učinkovita i sigurna eksploatacija broda (SHOPERA), FP7 projekt, Apostolos Papanikolaou (Jasna Prpić-Oršić), 2013.-, znanstvenoistraživački*
  Energy Efficient Safe SHip OPERAtion (SHOPERA), FP7 project Grant Agreement number 605221, Apostolos Papanikolaou (Jasna Prpić-Oršić), 2013.-, research and scientific project
- *Ekološki pristup projektiranju broda i planiranju optimalne rute (GASDORP) O-1673-2014, Hrvatska zaklada za znanost, Jasna Prpić-Oršić, 2014-2018, znanstvenoistraživački*
  Greener Approach to Ship Design and Optimal Route Planning (GASDORP) O-1673-2014, Croatian Science Foundation, Jasna Prpić-Oršić, 2014-2018, research and scientific project
- *Unapređenje metodologije projektiranja procesa gradnje broda, Potpora znanstvenim istraživanjima za 2013. g. Sveučilišta u Rijeci, broj potpore: 13.09.1.1.06. Voditelj istraživačkog tima: prof. dr. sc. Nikša Fafandjel, dipl. ing., 2013.-2017.*
  Improving the methodology of ship construction process design, Support for scientific research in 2013., University of Rijeka, No.: 13.09.1.1.06. Head of the research team: prof. dr. sc. Niksa Fafandjel, 2013.-2017.
- *Vitka analiza proizvodnih procesa brodogradilišta, Inicijalne potpore mladim istraživačima Sveučilišta u Rijeci, URBROJ: 2170-57-08-18-27, Damir Kolić, 2018.*
  Lean analysis of shipyard production processes, Initial grant to young researchers, University of Rijeka,No. 2170-57-08-18-27, Damir Kolić, 2018.

PUBLIKACIJE | PUBLICATIONS

RADOVI U ČASOPISIMA | JOURNAL PAPERS

- *Sasa, K.; Li-Feng L.; Faltinsen, O.M.; Sasaki, W.; Prpić-Oršić, J.; Kashiwagi, M.; Ikebuchi, T.; Development and validation of speed loss for a blunt-shaped ship in two rough sea voyages in the Southern Hemisphere Ocean Engineering, ISSN 0029-8018, 142, 577-596, 2017., Oxford, Velika Britanija*
- *Matulja, T.; Hadjina, M.; Expert Approach Methodology as Basis for Sailing Boat Outfitting Improvement – Case Study, Journal of Maritime & Transportation Sciences, ISSN 0554-6397 Special Edition, 155-166, 2017, Rijeka*
- *Stanić, V.; Fafandjel, N.; Matulja, T.; A Methodology for Improving Productivity of the Existing Shipbuilding Process Using Modern Production Concepts and the Ahp Method, Journal Brodogradnja, ISSN 0007-215X, 68, 37-56, 2017, Zagreb*

- *Tomić, B.; Turk, A.; Čalić, B.; Recent Advances in Damage Stability Assessment with Application on a Container Vessel, Journal of Maritime & Transportation Sciences, ISSN 0554-6397, Special Edition, 167-184, 2018, Rijeka*
- *Matulja, T.; Hadjina, M.; Rubeša, R.; Zamarin, A.; Hierarchical Ranking as Basis for Ship Outfitting Process Improvement, Journal Brodogradnja, ISSN 0007-215X, 69, 69-81, 2018, Zagreb*
- *Stanić, V.; Hadjina, M.; Fafandjel, N.; Matulja, T.; Toward shipbuilding 4.0 - an industry 4.0 changing the face of the shipbuilding industry, Journal Brodogradnja, ISSN 0007-215X, 69, 111-128, 2018, Zagreb*
- *Plenča, S.; Zamarin, A.; Structural Design of a Composite Trimaran, Journal of Maritime & Trasportation Sciences, ISSN 0554-6397, Special Edition, 71-88, 2018, Rijeka*
- *Brandić, V.; Kolić, D.; PWBS Best Practice Analysis of Two Shipyards, Journal of Maritime and Transportation Sciences, ISSN: 0554-6397, Special Edition, 47-57, 2018, Rijeka*
- *Sladić, S.; Kolić, D.; Šuljić, M.; Bidirectional DC/DC Power Converter for Hybrid Yacht Propulsion System, Journal of Maritime and Transportation Sciences, ISSN: 0554-6397, Special Edition, 133-142, 2018, Rijeka*
- *Dejhalla, R.; Legović, D.; Disposal of Worn Out Fiberglass Recreational Boats, Journal of Maritime and Transportation Sciences, ISSN: 0554-6397, Special Edition, 143-153, 2018, Rijeka*
- *Zahtila, A.; Zahtila, E.; Dejhalla, R.; Artificial Reefs - New Habitats of Marine Lifes, Journal of Maritime and Transportation Sciences, ISSN: 0554-6397, Special Edition, 105-112, 2018, Rijeka*

MEĐUNARODNI KONGRESI | INTERNATIONAL CONGRESSES

- *Kolić, D.; Sladić, S.; Stroch, R.L.; Lean IHOP Transformation of Shipyard Erection Block Construction, Proceedings of the Ship Production Symposium SNAME Maritime Convention 2017, 2017, Houston, Texas, USA*
- *Parunov, J.; Guedes Soares, C.; Hirdaris, S.; Lee, Y.; Liu, S.; Papanikolau, A.; Prpić-Oršić, J.; Rodrigues, M.; Ruponen, P.; Benchmark Study on Uncertainty Assessment in Numerical Predictions of Global Wave Loads in Damaged Ships, ISSC-ITTC Workshop on load uncertainties, 2017., Wuxi, Kina*
- *Valčić, M.; Prpić-Oršić, M.; Forbidden Zone Handling in Optimal Thrust Allocation of DP Vessels, IMAM 2017, ISBN 978-0-8153-7993-5, 1043-1050, 2017., Lisabon, Portugal*
- *Hadjina, M.; Matulja, T.; Jocić, D.; Brubnjak, F.; Methodology for Virtual Reality Design of Kvarner Guc Towards Preserving Croatian Shipbuilding Heritage, 7th International Pro Torpedo Annual Conference, ISSN 1848-4794, 126-128, 2018., Rijeka, Hrvatska*
- *Matulja, T.; Hadjina, M.; Katkhuda, D. E.; Methodology for Ecologically Sustainable Ship Surface Pre-Painting Process Selection Based on AHP Method, International Conference on Innovative Technologies, IN-TECH 2018, 2018., Zagreb, Hrvatska*
- *Čalić, B.; Kolić, D.; Development aspects of chosen underwater vehicles, Proceedings of the 23rd Symposium on Theory and Practice of Shipbuilding, In Memoriam prof. Leopold Sorta, 2018, Split*
- *Sladić, S.; Kolić, D.; Zigulic, R.; Bosich, D.; Robust Active Front End Approach in Crane Applications for Port Competitivenss 18th, International Conference on Environment and Electrical Engineering (EEEIC), ISBN 0-553-57777-8, 2018, Palermo, Italija*
- *Kolić, D.; Brandic, V.; Jaki, D.; Novak, L.; Gantt Chart Analysis to Improve Shipbuilding Panel Line Assembly, Proceedings of the 6th Annual International SOME Symposium (Ship Operations, Management and Economics), 2018, Atena, Grčka*

- *Dejhalla, R.; Kolić, D.; Majnaric, D.; Majnaric, I.; Andrun, M.; Tomašić, M.; Design and Development of Waterbikes at the Faculty of Engineering - University of Rijeka, Proceedings of the 6th Annual International SOME Symposium (Ship Operations, Management and Economics), 2018, Atena, Grčka*
- *Zamarin, A.; Rudan, S.; Plenča, S.; Collision Simulation of Composite Patrol High-speed Craft, Proceedings of the 23rd Symposium on Theory and Practice of Shipbuilding, In Memoriam prof. Leopold Sorta, 2018, Split*
- *Josefson, L.; Van Duin, S.; de Carvalho Pinheiro, B.; Yang, N.; Yu, L.; Zamarin, A.; Remes, H.; Roland, F.; Gaiotti, M.; Osawa, N.; Marie Horn, A.; Hyun Kim, M.; Mishra B.; Materials and Fabrication Technology - Committee V.3 Report, Proceedings of the 20th International Ship and Offshore Structures Congress (ISSC 2018), ISSC committee V.3, 2018, Liege, Belgium - Amsterdam, Netherlands*
- *Prpić-Oršić, J.; Sasa, K.; Valčić, M.; Faltinsen, O.M.; Energy Efficiency of Ship Under Real Weather Conditions, Proceedings of the 37th International Conference on Ocean, Offshore & Arctic Engineering OMAE18 , 1-7, 2018., Madrid, Španjolska*
- *Braidotti, L.; Prpić-Oršić, J.; Valcic, M.; Trincas, G.; Bucci, V.; Fuzzy Analytical Hierarchical Process to Assess Weights of Importance in Ship Operation Risk Assessment, The 19th International Conference on Ships and Maritime Research, ISBN 978-1-61499-869-3, 88-96, 2018., Trst, Italija*
- *Ogawa, Y.; Bai, W.; de Hauteclocque, G.; Dhavalikar, S.; Fang, C.; Fonseca, N.; Hänninen, S.; Johannessen, T.B.; Lien, V.; Morooka, C.; Mumm, H.; Prpić-Oršić, J.; Hyun Song, K.; Tian, C.; Uğurlu, B.; Wang, S.; Loads (Committee I.2), Proceedings of the 20th International Ship and Offshore Structures Congress (ISSC 2018), ISSC committee I.2: LOADS, ISSN 2543-0955 (print), ISSN 2543-0963 (online) , 101-170, 2018., Liege, Belgija*
- *Uran, V.; Doboviček, S.; Hadjina, M.; Perinić, M.; An Impact of PLM Systems on Collaboration Activities in Automotive Industry, 10th International Science Conference, Management of Technology, Step to Sustainable Production, MOTSP 2018, ISSN 1848-9591, 2018, Zagreb, Hrvatska*

MEĐUNARODNA SURADNJA | INTERNATIONAL COLLABORATIONS

- *AALTO University School of Engineering, Helsinki, Finska, Finland*
- *Norwegian University of Science and Technology, Center of Ships and Ocean Structures, Norwegian Center of Excelence, Trondheim, Norveška, Norway*
- *Technical University of Lisbon, Instituto Superior Tecnico, Lisabon, Portugal, Portugal*
- *University of Technology, Krakow/Krakov, Poljska, Poland*
- *University of Trieste, Department of Naval Architecture and Ocean Engineering, Trieste, Italija, Italy*
- *University of Washington, Department of Industrial and Systems Engineering, Seattle, SAD, USA*
- *University of Naples, Naples, Italija, Italy*
- *Columbia University, Department of Mechanical Engineering, New York City, SAD, USA*
- *University of Kobe, Japan, Japan*

5.3 zavod za elektroenergetiku
department of electric power systems

PREDSTOJNIK ZAVODA | DEPARTMENT HEAD:

Izv. prof. dr. sc. / Assoc. Prof. D. Sc.. **Dubravko Franković**

http://www.riteh.uniri.hr/ustroj/zavodi/zee/

djelatnici
faculty and staff

REDOVITI PROFESORI | PROFESSORS

Livio Šušnjić

električni strojevi; primjena MKE u području elektromagnetizma

electrical machines; FEM application in the electromagnetics

IZVANREDNI PROFESORI | ASSOCIATE PROFESSORS

Alfredo Višković

elektroenergetski sustavi; tržište električne energije; razvoj energetskih projekata

electric power systems; electricity markets; power generation project development

Dubravko Franković

elektroenergetski sustavi; elektrane; projektiranje; obnovljivi izvori energije

electric power systems; power plants; electrical design; renewable energy sources

Saša Sladić

energetska elektronika; elektromotorni pogoni; mehatronika; nove tehnologije i obnovljivi izvori energije

power electronic; electric drives; mechatronics; new technologies and renewable energy sources

DOCENTI | ASSISTANT PROFESSORS

Vedran Kirinčić

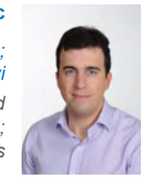
nadzor, zaštita i vođenje elektroenergetskog sustava; napredne mreže; električna postrojenja

power system monitoring; protection and control; smart grids; electric facilities

Rene Prenc

distribucijske elektroenergetske mreže; integracija distribuiranih izvora; optimizacija u EE mrežama; brodski elektroenergetski sustavi

electric power distribution networks; integration of distributed generation; optimization in electric power networks; ship power systems



VIŠI PREDAVAČI | SENIOR LECTURERS

Branka Dobraš

nadzor i vođenje elektroenergetskog sustava; modeliranje procesnih informacija; objektno orijentirano modeliranje

electric power system control; process information modelling; object oriented modeling

Marijana Živić-Đurović

kvaliteta električne energije; pouzdanost; mikromreže

quality of electricity supply; reliability; microgrids

POSLIJEDOKTORAND | POSTDOCTORAL RESEARCH ASSISTANT

Andrea Andrijašević

digitalna obrada signala govora; akustika prostora; elektroakustički pretvarač

digital processing of speech signals; room acoustics; electroacoustic transducers

ASISTENTI | ASSISTANTS

Vladimir Franki

elektroenergetski sustavi; tržište električne energije; razvoj energetskih projekata

electric power systems; electrical engineering fundamentals

Ingrid Sterpin

elektroenergetski sustav; vođenje sustava; napredne mreže

electric power system; power system control; smart-grid

Alen Jakoplić

elektrane; projektiranje; obnovljivi izvori energije

power plants; electrical design; renewable energy sources

VANJSKI SURADNICI | ASSOCIATES

Marin Antunović HOPS | HEP TSO
Dino Mađar HOPS | HEP TSO
Igor Majkić
Goran Klobučar
Vitomir Komen HEP ODS | HEP DSO
Ranko Lončarić
Neven Pavlović T-HT grupa | T-HT group
Tomislav Plavšić HEP OPS | HEP TSO
Srđan Skok
Vladimir Valentić HEP OPS | HEP TSO
Zoran Zbunjak HEP OPS | HEP TSO

nastava i znanost
education and science

Nastava se izvodi iz područja osnova elektrotehnike, elektroenergetike i elektrostrojarstva.

CO: Elektroenergetika

Lectures in the field of electrical engineering fundamentals, power engineering and electrical machines and drives.

LLL: Power Systems

KOLEGIJI NA PREDDIPLOMSKIM SVEUČILIŠNIM STUDIJIMA
| UNDERGRADUATE UNIVERSITY COURSES

- *Električna postrojenja* — *Electric Facilities*
- *Električni strojevi* — *Electrical Machines*
- *Elektroenergetske mreže* — *Electric Power Networks*
- *Elektromotorni pogoni* — *Electrical Drives*
- *Elektrotehnika R* — *Electrical Engineering R*
- *Energetska elektronika* — *Power Electronics*
- *Modeliranje procesnih informacijskih sustava* — *Modeling of process information systems*
- *Osnove elektrotehnike I* — *Fundamentals of Electrical Engineering I*
- *Osnove elektrotehnike II* — *Fundamentals of Electrical Engineering II*

KOLEGIJI NA PREDDIPLOMSKIM STRUČNIM STUDIJIMA
| UNDERGRADUATE VOCATIONAL COURSES

- *Brodska elektrotehnika* — *Ships Electrical Engineering*
- *Elektrane* — *Power Plants*
- *Elektroenergetski sustavi* — *Electric Power Systems*
- *Modeliranje procesne informatike električnih postrojenja* — *Modeling of Process Informatics in Power System*
- *Numerička analiza u elektromagnetizmu* — *Numerical Analysis in Electromagnetism*

- *Prijenos i distribucija električne energije* — *Transmission and Distribution of Electrical Energy*
- *Projektiranje električnih postrojenja* — *Electric Power Substation Design*
- *Elektromagnetizam* — *Electromagnetics*
- *Vođenje elektroenergetskog sustava* — *Power System Control*
- *Zaštita i automatika električnih postrojenja* — *Protection and Automation of Electrical Installations*
- *Urbani energetski sustavi* — *Urban Energy Systems*
- *Tehnika visokog napona* — *High Voltage Engineering*
- *Tržište električne energije* — *Electricity Market*

KOLEGIJI NA DIPLOMSKIM SVEUČILIŠNIM STUDIJIMA
| GRADUATE UNIVERSITY COURSES

- *Električne energetske mreže* — *Electrical Power Networks*
- *Elektroenergetska postrojenja* — *Electric Power Plants*
- *Elementi elektroenergetskih postrojenja* — *Electrical Power Facilities Equipment*
- *Izgradnja i održavanje elektroenergetskih postrojenja* — *Construction and Maintenance of Power Plants*
- *Osnove električnih strojeva* — *Fundamentals of Electrical Machines*
- *Osnove elektrotehnike* — *Fundamentals of Electrical Engineering*
- *Osnove elektrotehnike ST I* — *Fundamentals of Electrical Engineering ST I*
- *Osnove elektrotehnike ST II* — *Fundamentals of Electrical Engineering ST II*
- *Osnove energetske elektronike* — *Fundamentals of Power Electronics*
- *Osnove projektiranja elektroenergetskih postrojenja* — *Fundamentals of Electric Power Facilities Design*
- *Stručna praksa I* — *Professional practice I*
- *Stručna praksa II* — *Professional practice II*
- *Zaštita električnih postrojenja* — *Power System Protection*

KOLEGIJI NA POSLIJEDIPLOMSKIM (DOKTORSKIM) SVEUČILIŠNIM STUDIJIMA
| POSTGRADUATE UNIVERSITY (DOCTORAL) COURSES

- *Modeli stohastičkih procesa informacija* — *Models of Stochastic Information Processes*
- *Modeliranje sustava za distribuciju i potrošnju električne energije* — *Modeling of Electrical Power Distribution Systems*
- *Aktivne distribucijske mreže* — *Active Distribution Networks*
- *Inteligentni elektroenergetski sustavi – Smart Grids* — *Intelligent Power Systems - Smart Grids*
- *Izabrana poglavlja iz energetskih komponenti i sustava obnovljivih izvora energije* — *Selected Chapters on Energy Components and Systems of Renewable Energy Sources*
- *Nova energetska paradigma* — *New Energy Paradigm*

ZNANSTVENOISTRAŽIVAČKI RAD | SCIENTIFIC RESEARCH

- *Napredne mreže; Mikromreže; Modeliranje elektroenergetskog sustava u stvarnom vremenu; Nadzor, zaštita i upravljanje elektroenergetskog sustava u stvarnom vremenu; Sinkronizirana mjerenja*
  System Integrity protection Scheme; Smart Transmission Grid; Microgrids; Power System Modelling in Real Time; Wide Area Monitoring, Protection and Control of the Power System in Real Time; Synchronized Measurement
- *Estimacija stanja elektroenergetskog sustava; Nadzor, zaštita i upravljanje elektroenergetskog sustava u realnom vremenu; Tehnologija sinkroniziranih mjerenja fazora*
  Power System State Estimation; Wide Area Monitoring, Protection and Control of the Power System in Real Time; Synchronized Measurement Technology
- *Razvoj suvremenih učinskih DC/DC i DC/AC pretvarača*
  Design of modern power DC/DC and DC/AC converters

- *Obnovljivi izvori energije; Fotonaponski sustavi; Napredne mreže, Elektromobilnost*
  Renewable energy systems; Photovoltaic systems; Smart grid; Electromobility

PROJEKTI | PROJECTS

- *Numeričko modeliranje složenih elektromagnetskih pojava u transformatorima, Hrvatska zaklada za znanost, kolovoz 2014 - srpanj 2018., voditelj: Željko Štih, znanstveno-istraživački projekt*
  Numerical modelling of complex electromagnetics phenomena in transformers, Croatian Science Foundation, August 2014 - July 2018, project leader: Željko Štih, research and scientific project

PUBLIKACIJE | PUBLICATIONS

RADOVI U ČASOPISIMA | JOURNAL PAPERS

- *Prenc, R.; Vučetić, D.; Cuculić, A.; High Voltage Shore Connection in Croatia: Network configurations and formation of the connection point to the Utility power grid, Electric power systems research, 0378-7796, 157, 106-117, 2018, CH*
- *Strnad, I.; Prenc, R.; Optimal Sizing of Renewable Sources and Energy Storage in Low-Carbon Microgrid Nodes, Electrical engineering, 0948-7921, 100, 1661-1674, 2018, DE*
- *Cuculić, A.; Ćelić, J.; Prenc, R.; Solid State Transformers for Ship's Electrical Power System Journal of Maritime & Transportation Sciences 0554-6397, 54, 53-60, 2018, HR*
- *Lerga, J.; Kirinčić, V.; Franković, D.; Štajduhar, I.; Adaptive state estimator with intersection of confidence intervals based preprocessing, International Journal of Electrical Power & Energy Systems, 0142-0615, 102, 413-420, 2018, INOZEMSTVO*

MEĐUNARODNI KONGRESI | INTERNATIONAL CONGRESSES

- *Prenc, R.; Cuculić, A.; Capuder, T.; Guerrero, J. M.; Optimal siting and sizing of DG units for a MV network going through voltage transition, 2018 IEEE International Energy Conference (ENERGYCON), 2018, Limassol, Cyprus*
- *Kirinčić, V.; Franković, D.; Radulović, D.; Jakoplić, A.; Towards a low-carbon island society by strong implementation of electromobility, International Conference on Innovative Technologies (IN-TECH) 2019, 0184-9069, 169-172, 2018, Zagreb, Hrvatska*
- *Franković, D.; Rosanda, B.; Jakoplić, A.; Kirinčić, V.; Power supply system for railway applications, International Conference on Innovative Technologies (IN-TECH) 2020, 0184-9069, 161-164, 2018, Zagreb, Hrvatska*
- *Jakoplić, A.; Franković, A.; Kirinčić, V.; Sterpin, I.; Short-term solar forecasting based on sky images to enable PV integration, International Conference on Innovative Technologies (IN-TECH) 2021, 0184-9069, 165-167, 2018, Zagreb, Hrvatska*
- *Višković, A.; Šimunić, D.; Gajović, S.; Value innovation related to the world of scientific research on health, International Conference on Medical Physics, Medical Engineering and Informatics (IERI) 1742-7843, vol. 123, issue S3, 2018, Macau, China*

POZVANA PREDAVANJA | INVITED LECTURES

- *Franković, D.; Power supply system for railway applications, International Conference on Innovative Technologies (IN-TECH) 2020, 2018, Zagreb, Hrvatska*

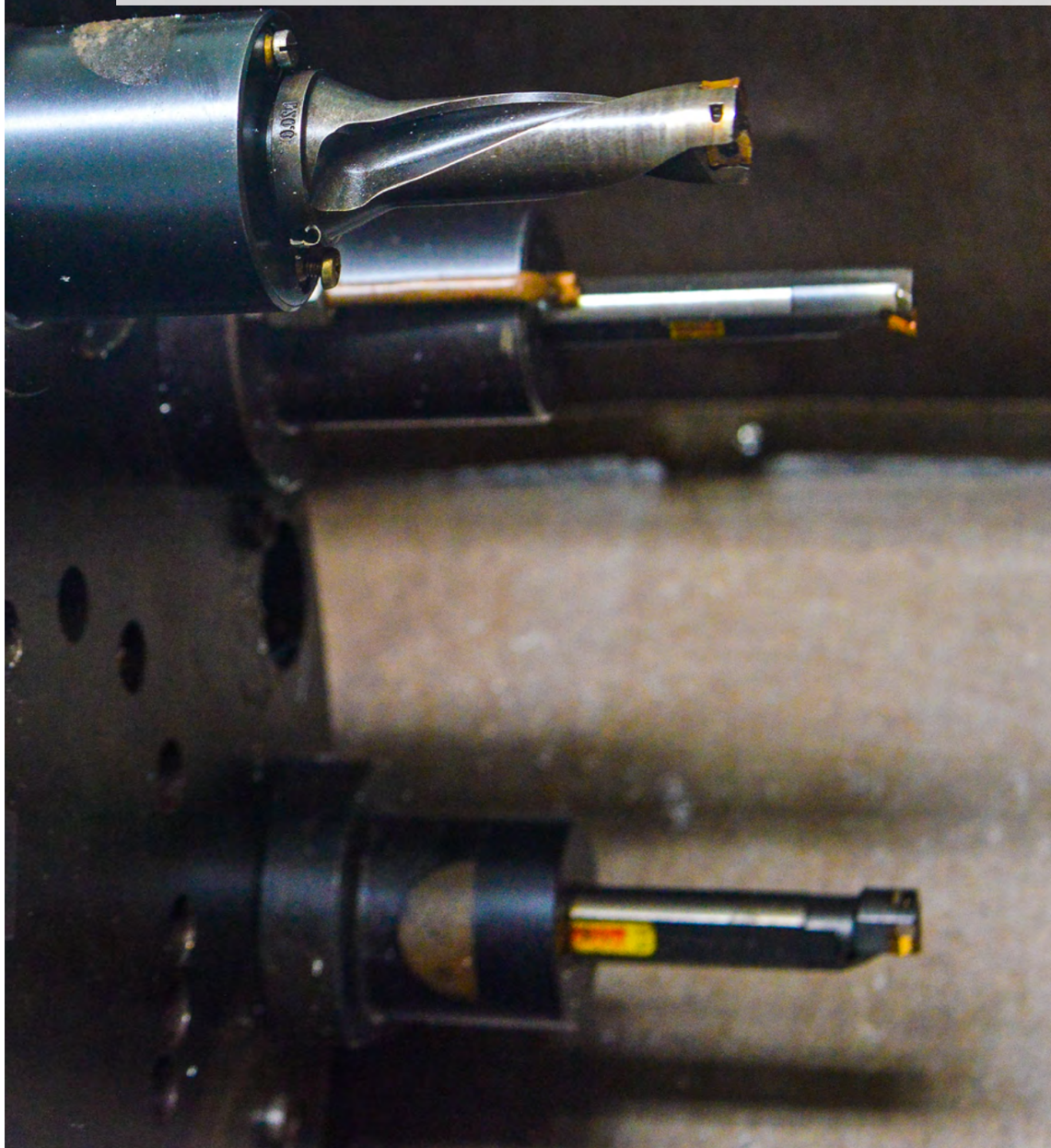
MEĐUNARODNA SURADNJA | INTERNATIONAL COLLABORATIONS

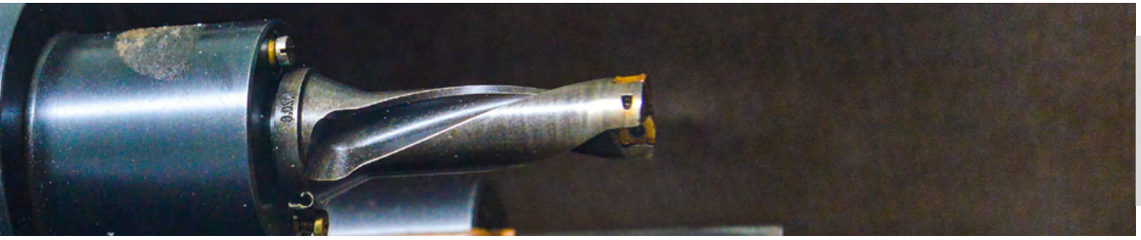
- *KIOS Research Center for Intelligent Systems and Networks, Cipar, Cyprus*
- *University of Cyprus, Electrical and Computer Engineering Department, Cipar, Cyprus*
- *The University of Manchester, The School of Electrical and Electronic Engineering, Velika Britanija, United Kingdom*
- *Quanta Technology, Sjedinjene Američke Države, United States of America*

5.4

zavod za industrijsko inženjerstvo i management

department of industrial engineering and management





PREDSTOJNIK ZAVODA | DEPARTMENT HEAD:

Prof. dr. sc. / Prof. D. Sc. **Tonči Mikac**

http://www.riteh.uniri.hr/ustroj/zavodi/ziim/

djelatnici
faculty and staff

REDOVITI PROFESORI | PROFESSORS

Goran Cukor

napredni obradni sustavi i tehnologije; modeliranje i optimiranje obradnih procesa

advanced manufacturing systems and technology; modelling and optimisation of machining processes

Milan Ikonić

proizvodno strojarstvo; projektiranje proizvodnih sustava; CIM; planiranje i upravljanje proizvodnjom; proizvodni management; projektni management; organizacija i ekonomika poslovnih sustava

production engineering; designing of manufacturing systems; CIM; production planning and control; production management; project management; organization of manufacturing and business systems

Tonči Mikac

proizvodno strojarstvo; projektiranje proizvodnih sustava; CIM; planiranje i upravljanje proizvodnjom; proizvodni management; projektni management; organizacija i ekonomika poslovnih sustava

production engineering; designing of manufacturing systems; CIM; production planning and control; production management; project management; organization of manufacturing and business systems

Duško Pavletić

upravljanje kvalitetom; osiguranje i nadzor kvalitete; sustavi kvalitete; zavarivačko inženjerstvo; spajanje materijala; mjeriteljstvo; mjerenje i kontrola kvalitete

quality management; quality assurance and control; quality systems; welding engineering; joining of materials; metrology; measurements and quality control

Mladen Perinić

projektiranje tehnoloških procesa; CAM, CAP, CAD/NC-CIM; modeliranje, simulacija i optimizacija tehnoloških procesa

process planning; CAM, CAP, CAD/NC-CIM; modeling, simulation and processes plans optimization

IZVANREDNI PROFESOR | ASSOCIATE PROFESSOR

Zoran Jurković

alatni strojevi i oprema; CAD/CAM/CAE; dizajn alata i naprava; modeliranje, simulacija i optimizacija procesa obrade; planiranje eksperimenta

machine tools & equipment; CAD/CAM/ CAE; design of tools and fixtures; modeling, simulation and optimization of machining processes; design of experiments

DOCENTI | ASSISTANT PROFESSORS

Samir Žic

proizvodno strojarstvo; planiranje i upravljanje proizvodnjom; organizacija i ekonomika poslovnih sustava; management i organizacijski razvoj

production engineering; production planning and control; organization and economics of business systems; management and organizational development

Sandro Doboviček

proizvodno strojarstvo; projektiranje proizvodnih sustava; fleksibilni i inteligentni sustavi; organizacija proizvodnje; proizvodni management; projektni management; CIM

production engineering; manufacturing system design; flexible and intelligent systems; organization of production; project management; production management; CIM

ASISTENTI | ASSISTANTS

Maja Forempoher Škuver

upravljanje kvalitetom; osiguranje i nadzor kvalitete; mjerenje i kontrola kvalitete

quality management; quality assurance and control; measurements and quality control

Graciela Šterpin Valić

upravljanje kvalitetom; osiguranje i nadzor kvalitete; mjerenje i kontrola kvalitete

quality management; quality assurance and control; measurements and quality control

Maja Marković

upravljanje kvalitetom; osiguranje i nadzor kvalitete; mjerenje i kontrola kvalitete

quality management; quality assurance and control; measurements and quality control

David Ištoković

projektiranje tehnoloških procesa; CAM, CAP, CAD/NC-CIM; modeliranje, simulacija i optimizacija tehnoloških procesa

process planning; CAM, CAP, CAD/NC-CIM; modeling, simulation and processes plans optimization

VANJSKI SURADNICI | ASSOCIATES

Marko Fabić
Klinički bolnički centar Rijeka
| Clinical Hospital Center Rijeka

održavanje
maintenance

Toni Vidolin
3. MAJ Brodogradilište d.d., Rijeka
| 3. MAJ Shipyard JSC, Rijeka

tehnologija zavarivanja
welding technology

Elso Kuljanić
HAZU

obrada skidanjem čestica
machining processes

nastava i znanost
education and science

Nastava iz područja: mjerne tehnike i sustava kvalitete, organizacije i operacijskog menadžment, proizvodne tehnologije, proizvodne opreme i robotike, projektiranja procesa.

Lectures in the field of: measuring technique and quality systems, organization and operational management, manufacturing technologies, manufacturing equipments and robotics, process planning.

KOLEGIJI NA PREDDIPLOMSKIM SVEUČILIŠNIM STUDIJIMA
| UNDERGRADUATE UNIVERSITY COURSES

- *Proizvodne tehnologije*
- *Mjerenja i kontrola kvalitete*
- *Osiguranje kvalitete*
- *Inženjerstvo kvalitete*
- *Zavarivanje I*
- *Proizvodni strojevi, alati i naprave*
- *Organizacija i ekonomika poslovnih sustava*
- *Planiranje i upravljanje proizvodnjom*
- *Tehnološki procesi*

- *Manufacturing Technologies*
- *Measurements and Quality Control*
- *Quality Assurance*
- *Quality Engineering*
- *Zavarivanje I*
- *Production Machines, Tools, Jigs and Fixtures*
- *Organization and Economics of Business Entity*
- *Production Planning and Management*
- *Technological Processes*

KOLEGIJI NA DIPLOMSKIM SVEUČILIŠNIM STUDIJIMA
| GRADUATE UNIVERSITY COURSES

- *Napredni proizvodni postupci*
- *Obrada odvajanjem čestica*
- *Tehnologija oblikovanja*
- *Mjerenje u proizvodnji*
- *Upravljanje kvalitetom*
- *Zavarivanje II*
- *Spajanje materijala*
- *CNC/NC obradni strojevi*
- *Organizacija proizvodnje*
- *Projektiranje proizvodnih sustava*
- *Računalom integrirana proizvodnja*
- *Proizvodni management*
- *Tehnička logistika*
- *Management i organizacijski razvoj*
- *Projektni management*
- *CAD/CAPP/CAM*
- *Projektiranje tehnoloških procesa*
- *Računalna simulacija proizvodnih procesa*
- *Održavanje*

- *Advanced Manufacturing Processes*
- *Metal Cutting Processes*
- *Metal Forming Technology*
- *Measurement in industry*
- *Quality Management*
- *Welding Engineering II*
- *Joining of materials*
- *CNC/NC Machine Tools*
- *Production Organization*
- *Designing of Production Systems*
- *Computer Integrated Manufacturing*
- *Production Management*
- *Technical Logistics*
- *Management and Organizational Development*
- *Project Management*
- *CAD/CAPP/CAM*
- *Process Planning*
- *Computer Simulation of Production Processes*
- *Maintenance*

KOLEGIJI NA PREDDIPLOMSKIM STRUČNIM STUDIJIMA
| UNDERGRADUATE VOCATIONAL COURSES

- *Tehnologija obrade I*
- *Tehnologija obrade II*
- *Mjerna tehnika ST*
- *Osiguranje kvalitete ST*
- *Zavarivanje*
- *Alati i naprave*
- *Obradni strojevi*
- *Organizacija i upravljanje proizvodnjom*
- *Proizvodni sustavi*
- *Organizacija i ekonomika*
- *Tehnološki procesi ST*

- *Manufacturing Technology I*
- *Manufacturing Technology II*
- *Measuring Technique ST*
- *Quality Assurance ST*
- *Welding Engineering*
- *Tools, Jigs and Fixtures*
- *Machine Tools*
- *Production Organization and Management*
- *Production systems*
- *Organization and Economics*
- *Technological Processes ST*

KOLEGIJI NA POSLIJEDIPLOMSKIM (DOKTORSKIM) SVEUČILIŠNIM STUDIJIMA
| POSTGRADUATE UNIVERSITY (DOCTORAL) COURSES

- *Deformabilnost i suvremeno oblikovanje deformiranjem*
- *Izabrana poglavlja iz nekonvencionalnih postupaka obrade*
- *Izabrana poglavlja iz konvencionalne obrade odvajanjem čestica*
- *Upravljanje kvalitetom*
- *Metode simulacije u proizvodnji*
- *Planiranje i vođenje proizvodnje*
- *IP iz fleksibilnih proizvodnih sustava*

- *Razvojni i proizvodni management*
- *CAM, CAP, CAD/NC-CIM*
- *Optimizacija tehnoloških procesa*

- *Formability and Modern Forming Technology*
- *Selected Chapters on Nonconventional Manufacturing Processes*
- *Selected Chapters on Conventional Metal Cutting Processes*
- *Quality Management*
- *Simulation Methods in Production*
- *Planning and Processing of Manufacture*
- *Selected Chapters from flexible production system*

- *Development and Operational Management*
- *CAM, CAP, CAD/NC-CIM*
- *Processes Plans Optimization*

5.4 zavod za industrijsko inženjerstvo i management department of industrial engineering and management

ZNANSTVENOISTRAŽIVAČKI RAD | SCIENTIFIC RESEARCH

- *Napredni obradni sustavi i tehnologije, tehnologija oblikovanja deformiranjem, modeliranje i optimiranje obradnih procesa, računalna simulacija proizvodnih procesa*
  Advanced manufacturing systems and technology, forming technology, modelling and optimisation of machining processes, computational simulation of production processes
- *Modeliranje, simulacija i optimizacija procesa obrade. Primjena umjetne inteligencije u upravljanju procesima obrade.*
  Modeling, simulation and optimization of manufacturing processes. Application of artificial intelligence in control of manufacturing processes.
- *Industrijsko inženjerstvo, upravljanje i osiguranje kvalitete, mjerenja i kontrola kvalitete, mjerenja u proizvodnji, spajanje materijala, zavarivanje*
  Industrial engineering, quality management, quality assurance, measurements and quality control, industrial measurements, joining of meterials, welding
- *Proizvodno strojarstvo; proizvodni sustavi; CIM, planiranje i upravljanje proizvodnjom, proizvodni management, organizacija poslovnih sustava*
  Production engineering, manufacturing systems, CIM, production planning and control, production management, organization of manufacturing and business systems

PROJEKTI | PROJECTS

- *Eksperimentalno istraživanje profilnog oblikovanja lima u cilju modeliranja i optimizacije tehnološkog procesa i modernizacije proizvodnog sustava, Federalno ministarstvo obrazovanja i nauke Bosne i Hercegovine, Zoran Jurković, 2016-2018, znanstvenoistraživački projekt..*
  Experimental research of sheet metal profiling with aim to modeling and optimization of technological process and modernize the production system, Federal Ministry of Education and Science of Bosnia and Herzegovina, Zoran Jurkovic, 2016-2018, research and scientific project.

PUBLIKACIJE | PUBLICATIONS

RADOVI U ČASOPISIMA | JOURNAL PAPERS

- *Botak, Z.; Balič, J.; Jurković, Z.; Optimising external turning tool choice using AHP and ELECTRE II methods; Tehnički vjesnik/Technical Gazette; ISSN 1330-3651; Vol. 24, No. 5; 1355-1360; 2017; Slavonski Brod*
- *Jurković, M.; Jurković, Z.; Buljan, S.; Obad, M.; An experimental and modelling approach for improving utilization rate of the cold roll forming production line, Advances in Production Engineering & Management, ISSN 1854-6250, Vol. 13, No. 1, 57-68, 2018, Maribor*

MEĐUNARODNI KONGRESI | INTERNATIONAL CONGRESSES

- *Borić, A.; Pepelnjak, T.; Jurković, Z.; Single Point Incremental Forming of Polymers – a review of process parameters, International Conference on Innovative Technologies - IN-TECH 2017, ISSN 0184-9069, 255-259, 2017, Ljubljana*
- *Nakić, I.; Ištoković, D.; Perinić, M.; Cukor, G.; Implementacija aditivne tehnologije u medicini, 7th International Conference Mechanical Technology and Structural Materials - MTSM, ISSN 2303-5668, 177-183, 2017, Split*
- *Hozdić, E.; Jurković, Z.; Cybernetization of Industrial Product-Service Systems in Network Environment, 4rd International Conference New Technologies – Development and Application – NT 2018, ISSN 2303-5668, 177-183, 2018, Mostar*

MEĐUNARODNA SURADNJA | INTERNATIONAL COLLABORATIONS

- *Università degli Studi di Udine, Facoltà di Ingegneria, Dipartimento di Ingegneria Elettrica, Gestionale e Meccanica (DIEGM), Italia, Italija, Italy*
- *University of Maribor, Faculty of Mechanical Engineering, Production Engineering Institute, Slovenija, Slovenia*
- *University of Kragujevac, Faculty of Engineering, Department for Production Engineering, Srbija, Serbia*
- *University of Novi Sad, Faculty of Technical Sciences, Department of Production Engineering, Srbija, Serbia*
- *University of Montenegro, Faculty of Mechanical Engineering, Podgorica, Crna Gora, Montenegro*
- *University of Banja Luka, Faculty of Mechanical Engineering, Bosna i Hercegovina, Bosnia & Herzegovina*
- *Ss. Cyril and Methodius University in Skopje, Faculty of Mechanical Engineering, Institute of Production Engineering and Management, Republika Makedonija, Republic of Macedonia*
- *Faculty of Mechanical Engineering, University of Zilina, Slovačka, Slovakia*
- *Poznan Politechnic, Technical University of Poznan, Poljska, Poland*
- *Technical University of Ostrava, Faculty of Mechanical Engineering, Department of Machining and Assembly, Češka, Czech republic*
- *University of Ljubljana, Faculty of Mechanical Engineering, Slovenija, Slovenia*

5.5 zavod za konstruiranje u strojarstvu
department of mechanical engineering design

PREDSTOJNIK ZAVODA | DEPARTMENT HEAD:

Prof. dr. sc. / Prof. D. Sc. **Neven Lovrin**

http://www.riteh.uniri.hr/ustroj/zavodi/zks/

djelatnici
faculty and staff

REDOVITI PROFESORI | PROFESSORS

Neven Lovrin

konstrukcijski elementi; mehanički prijenosnici snage; transportna sredstva u industriji; brodski palubni strojevi; tehnička logistika; inženjerska etika

machine elements; mechanical power transmissions; industrial transport equipment and devices; ship's deck machinery; technical logistics; engineering ethics

Boris Obsieger

konstrukcijski elementi; konstrukcijski elementi robota; prijenosnici snage; tribologija; metoda rubnih elemenata; numeričke metode u konstruiranju

machine elements; design elements of robots; power transmission; tribology; boundary elements method; numerical methods in mechanical engineering design

Saša Zelenika

precizno inženjerstvo; tehnologija mikrosustava; MEMS i NEMS; sustavi žetve energije; mjerni sustavi; konstrukcijski elementi; mehatronika

precision engineering; microsystems technologies; MEMS and NEMS; energy harvesting devices; measurement systems; machine elements; mechatronics

IZVANREDNI PROFESORI | ASSOCIATE PROFESSORS

Robert Basan

CAE; konstruiranje i oblikovanje proizvoda; razvoj proizvoda; ponašanje i zamor materijala; odabir materijala; mehatronika

CAE; systematic product design; behaviour and fatigue of materials; material selection; mechatronics

Marina Franulović

konstrukcijski elementi; konstruiranje; modeliranje ponašanja materijala

machine elements; design in mechanical engineering; modeling of material behaviour

DOCENTI | ASSISTANT PROFESSORS

Goran Gregov

prijenosnici snage; hidraulika i pneumatika; mehatronika

power transmissions; hydraulics and pneumatics; mechatronics

Sanjin Troha

inženjerska grafika; dokumentiranje; tehničko crtanje; oblikovanje pomoću računala; konstrukcijski elementi

engineering graphics; documenting; technical drawing; modelling by computer; machine elements

Kristina Marković

inženjerska grafika; dokumentiranje; tehničko crtanje; oblikovanje pomoću računala; konstrukcijski elementi; konstrukcijski elementi robota; precizno inženjerstvo

engineering graphics; documenting; technical drawing; modelling by computer; machine elements; robot elements design; precision engineering

Željko Vrcan

konstrukcijski elementi; mehanički prijenosnici snage; transportna sredstva u industriji, numeričke metode u konstruiranju

machine elements; mechanical power transmissions; industrial transport equipment and devices, numerical methods in engineering design

VIŠI ASISTENTI | SENIOR ASSISTANTS

Branimir Rončević

konstrukcijski elementi; konstrukcijski elementi robota; numeričke metode u konstruiranju

machine elements; design elements of robots; numerical methods in mechanical engineering design

POSLIJEDOKTORANDI | POSTDOCTORAL RESEARCH ASSISTANTS

Ervin Kamenar

precizno inženjerstvo; tehnologija mikrosustava; mehatronika; sustavi regulacije i upravljanja; sustavi žetve energije; mjerni sustavi; inženjerska grafika i dokumentiranje; oblikovanje pomoću računala

precision engineering; microsystems technologies; mechatronics; control systems; energy scavenging devices; measurement systems; engineering graphics and documenting; computer aided design

Tea Marohnić

inženjerska grafika; dokumentiranje; tehničko crtanje; oblikovanje pomoću računala; tehničko dokumentiranje; konstrukcijski elementi; konstruiranje

engineering graphics; documenting; technical drawing; modelling by computer; technical documenting; machine elements; design in mechanical engineering

ASISTENTI | ASSISTANTS

Petar Gljušćić

precizno inženjerstvo; sustavi žetve energije; konstrukcijski elementi; mjerni sustavi

precision engineering; energy harvesting devices; machine elements; measurement systems

Marko Perčić

inženjerska grafika; dokumentiranje; tehničko crtanje; oblikovanje pomoću računala; tehničko dokumentiranje; tehnologija nanosustava; tribologija

engineering graphics; documenting; technical drawing; modelling by computer; technical documenting; nanosystems technology; tribology

Stjepan Piličić

primjena numeričkih metoda u konstruiranju

application of numerical methods in engineering

Tea Arrigoni

precizno inženjerstvo; konstrukcijski elementi; mjerni sustavi

precision engineering; machine elements; measurement systems

Matej Gljušćić

konstrukcijski elementi; elementi strojeva; napredni materijali; modeliranje ponašanja materijala

machine elements design; machine elements; advanced materials; modeling of material behaviour

Maja Dundović

inženjerska grafika; tehničko crtanje; oblikovanje pomoću računala; konstrukcijski elementi; konstrukcijski elementi robota

engineering graphics; technical drawing; modelling by computer; machine elements; robot elements design

nastava i znanost
education and science

Nastava se izvodi iz područja: konstruiranje u strojarstvu, numeričke metode u konstruiranju, konstrukcijski elementi, mehanički prijenosnici snage, hidrostatski i pneumatski sustavi prijenosa snage i upravljanja, zupčani prijenosnici, tribologija, transportna sredstva u industriji, brodski palubni strojevi, tehnička logistika, mehatronika, precizno inženjerstvo, tehnologija mikrosustava, MEMS i NEMS, mjerni sustavi, inženjerska grafika i dokumentiranje, oblikovanje pomoću računala, inženjerska vizualizacija, metoda rubnih elemenata.

CO: Oblikovanje 3D modela

Lectures in the field of: design in mechanical engineering, numerical methods in design, machine elements, mechanical power transmissions, fluid power systems and control, gear transmissions, tribology, industrial transport equipment and devices, ship's deck machinery, technical logistics, mechatronics, precision engineering, microsystems technologies, MEMS and NEMS, measurement systems, engineering graphics and documenting, modelling by computer, engineering visualization, boundary element method.

LLL: 3D modelling

KOLEGIJI NA PREDDIPLOMSKIM SVEUČILIŠNIM STUDIJIMA
| UNDERGRADUATE UNIVERSITY COURSES

- *Inženjerska grafika* — *Engineering Graphics*
- *Inženjerska grafika i dokumentiranje* — *Engineering Graphics and Documenting*
- *Izborni projekt - Konstrukcijski elementi I* — *Elective project - Machine Elements Design I*
- *Izborni projekt - Konstrukcijski elementi II* — *Elective project - Machine Elements Design II*
- *Konstruiranje i oblikovanje* — *Designing and Product Shaping*
- *Konstrukcijski elementi I* — *Machine Elements Design I*
- *Konstrukcijski elementi II* — *Machine Elements Design II*
- *Oblikovanje pomoću računala* — *Modelling by Computer*
- *Osnove konstruiranja* — *Fundamentals of Mechanical Engineering Design*
- *Osnove konstrukcijskih elemenata* — *Fundamentals of Machine Elements Design*
- *Računalne vještine* — *Computer Skills*

KOLEGIJI NA DIPLOMSKIM SVEUČILIŠNIM STUDIJIMA
| GRADUATE UNIVERSITY COURSES

- *Brodski palubni strojevi* — *Ship's Deck Machinery*
- *CAE u razvoju proizvoda* — *CAE in Product Development*
- *Elektroničke komponente mehatroničkih sustava* — *Electronic components of mechatronic systems*
- *Elementi transportne tehnike* — *Elements of the Transport Technic*
- *Inženjerska vizualizacija* — *Engineering Visualization*
- *Komponente mehatroničkih sustava* — *Components of mechatronic systems*
- *Konstrukcijski elementi III* — *Machine Elements Design III*
- *Konstrukcijski elementi robota* — *Robot Elements Design*
- *Laboratorijske vježbe A* — *Laboratory exercises A*
- *Laboratorijske vježbe B* — *Laboratory exercises B*
- *Mehaničko ponašanje i odabir materijala* — *Mechanical behaviour and selection of materials*
- *Metodičko konstruiranje* — *Systematic Engineering Design*
- *Mikro- i nanoelektromehanički sustavi* — *Micro- and Nanoelectromechanical Systems*
- *Modeliranje hidraulike i pneumatike* — *Modelling of hydraulics and pneumatics*
- *Modeliranje mehatroničkih sustava* — *Modelling of mechatronic systems*

- *Numeričke metode u konstruiranju*
- *Numerical Methods in Mechanical Engineering Design*
- *Precizne konstrukcije i tehnologija mikrosustava*
- *Precision Engineering and Microsystems Technologies*
- *Prijenosnici snage*
- *Power Transmissions*
- *Projekt I - Inženjerska vizualizacija*
- *Project I - Engineering Visualization*
- *Projekt I - Konstrukcijski elementi III*
- *Project I - Machine Elements Design III*
- *Projekt I - Konstrukcijski elementi robota*
- *Project I - Robot Elements Design*
- *Projekt I - Prijenosnici snage*
- *Project I - Mechanical Power Transmissions*
- *Projekt I - Numeričke metode u konstruiranju*
- *Project I - Numerical Methods in Mechanical Engineering Design*
- *Projekt II – Elementi transportne tehnike*
- *Project II – Elements of the Transport Technic*
- *Projekt II - Modeliranje hidraulike i pneumatike*
- *Project II - Modelling of hydraulics and pneumatics*
- *Projekt II - Precizne konstrukcije i tehnologija mikrosustava*
- *Project II - Precision Engineering and Microsystems Technologies*
- *Tehnička logistika*
- *Technical Logistics*
- *Transportni sustavi*
- *Transport Systems*
- *Upravljanje mehatroničkim sustavima*
- *Control of Mechatronics Systems*

KOLEGIJI NA PREDDIPLOMSKIM STRUČNIM STUDIJIMA
| UNDERGRADUATE VOCATIONAL COURSES

- *Elementi strojeva I*
- *Machine Elements I*
- *Elementi strojeva I BG*
- *Machine Elements I NA*
- *Elementi strojeva II*
- *Machine Elements II*
- *Hidraulika i pneumatika*
- *Hydraulics and pneumatics*
- *Konstruiranje*
- *Mechanical Engineering Design*
- *Osnove mehatronike*
- *Fundamentals of Mechatronics*
- *Tehničko crtanje*
- *Technical Drawing*
- *Tehničko dokumentiranje*
- *Technical Documenting*

KOLEGIJI NA POSLIJEDIPLOMSKIM (DOKTORSKIM) SVEUČILIŠNIM STUDIJIMA
| POSTGRADUATE UNIVERSITY (DOCTORAL) COURSES

- *Izabrana poglavlja iz hidrostatskih i pneumatskih prijenosa*
- *Selected Chapters on Hydrostatic and Pneumatic Transmissions*
- *Izabrana poglavlja iz konstrukcijskih elemenata*
- *Selected Chapters on Machine Elements*
- *Izabrana poglavlja iz prijenosnika snage*
- *Selected Chapters on Power Transmission*
- *Izabrana poglavlja iz transportnih sredstava u industriji*
- *Selected Chapters on Industrial Transport Equipment and Devices*
- *Kontaktni problemi u analizi konstrukcijskih elemenata*
- *Contact Problems in Machine Elements Analyses*
- *Nauka o konstruiranju*
- *Design Science*
- *Principi konstrukcija visokih i ultravisokih preciznosti*
- *Principles of High and Ultra-High Precision Devices*
- *Specijalni mehanički prijenosnici*
- *Special Mechanical Transmissions*
- *Podatljivi elementi i mehanizmi*
- *Compliant Elements and Mechanisms*

ZNANSTVENOISTRAŽIVAČKI RAD | SCIENTIFIC RESEARCH

- *Hidrostatski pogoni, Pneumatski sustavi*
  Hydrostatic transimission, Pneumatic systems
- *Karakterizacija i numeričko modeliranje ponašanja materijala*
  Characterisation and numerical modelling of material behaviour
- *Konstrukcijsko strojarstvo*
  Mechanical engineering design

- *Kontaktni problemi u konstrukcijskim elementima*
  Contact problems in machine elements.
- *Modeliranje*
  Modelling
- *Precizno inženjerstvo: podatljivi mehanizmi, pozicioniranje ultravisokih preciznosti i točnosti, strukturna analiza, integracija u mehatroničke sustave, mjerne tehnike, oprema za sinkrotronsko zračenje*
  Precision engineering: compliant mechanisms, ultra-high precision positioning, structural analysis, integration into mechatronics devices, measurement techniques, equipment for synchrotron radiation
- *Prijenos energije i informacija u hidrauličkim i pneumatskim sustavima*
  The energy and information transmission in hydraulic and pneumatic systems
- *Procjena parametara materijala primjenom klasičnih metoda i neuronskih mreža*
  Estimation of material properties by means of classical methods and neural networks
- *Tehnologija mikro - i nanosustava: MEMS, manipulacija, montaža i pakiranje, skalirajući učinci, proizvodnja mikrostruktura, prikupljanje niskorazinske energije iz okoliša, tribologija*
  Micro- and nanosystems technologies: MEMS, handling, assembly and packaging, scaling effects, micro-fabrication, energy harvesting, tribology
- *Zamor materijala*
  Fatigue of materials
- *Zupčasti prijenosnici, planetarni prijenosi, evolventno ozubljenje s velikim stupnjem prekrivanja profila, transportni sustavi, inženjerska etika.*
  Gear transmissions, planetary gears, high transverse contact ratio gears, transport systems, engineering ethics
- *Ponašanje materijala*
  Behaviour of materials

PROJEKTI | PROJECTS

- *Karakterizacija i modeliranje ponašanja materijala i konstrukcija za inovativne primjene, Potpore znanstvenim istraživanjima na Sveučilištu u Rijeci, Robert Basan, 2014-2018*
  Characterization and modelling of materials and structures for innovative applications, Scientific support of University of Rijeka, Robert Basan, 2014-2018
- *Razvoj evolucijskih postupaka za karakterizaciju ponašanja bioloških tkiva - BIOMAT, Istraživački projekt Hrvatske zaklade za znanost IP-2014-09-4982, voditeljica Marina Franulović, 2015-2019*
  Development of evolutionary procedures for characterization of biological tissues behaviour - BIOMAT, Research project supported by Croatian Science Foundation IP-2014-09-4982, principal investigator Marina Franulović, 2015-2019
- *Razvoj evolucijskih metoda za identifikaciju parametara materijala, Inicijalna potpora za mlađe istraživače Sveučilišta u Rijeci, voditeljica Marina Franulović, 2014-2018*
  Development of evolutionary methods for material parameter identification, Initial scientific support of University of Rijeka, Marina Franulović, 2014-2018
- *Razvoj mehatroničkog uređaja za rehabilitaciju pacijenata sa smanjenom funkcionalnošću gornjih ekstremiteta, Moj ZABA start, 2018.*
  Mechatronics design of a full arm rehabilitation device, Moj ZABA start, 2018.

PUBLIKACIJE | PUBLICATIONS

RADOVI U ČASOPISIMA | JOURNAL PAPERS

- *Marković, K.; Zelenika, S.; Optimised cross-spring pivot configurations with minimised parasitic shifts and stiffness variations investigated via nonlinear FEA, Mechanics based design of structures and machines, 1539-7734, 45, 380-394, 2017., inozemstvo*
- *Marohnić, T.; Basan, R.; Estimation of cyclic behavior of unalloyed, low- alloy and high-alloy steels based on relevant monotonic properties using artificial neural networks, Materialwissenschaft und Werkstofftechnik, 0933-5137; 1521-4052, 49, 368-380, 2018., inozemstvo*

MEĐUNARODNI KONGRESI | INTERNATIONAL CONGRESSES

- *Franulović, M.; Marković, K.; Piličić, S.; Automation of material parameter identification of the soft tissues, Published abstracts -8th World Congress of Biomechanics, 2018, Dublin, Irska*
- *Franulović, M.; Marković, K.; Piličić, S.; Inverse problem coupled with the genetic algorithm procedure in modeling of biomaterials behavior, Published abstracts -13th World Congress on Computational Mechanics , 2018, New York, Sjedinjene Američke Države*
- *Kamenar, E.; Zelenika, S.; Characterisation of positioning performances of a mechatronics device actuated via a frictionless voice-coil actuator, Proceedings of the 18th EUSPEN International Conference, 978-0-9957751-2-1, 61-62, 2018, Cranfield, UK*
- *Perčić, M.; Zelenika, S.; Mezić, I.; Peter, R.; Krstulović, N.; Experimental approach to establishing a model of nanoscale friction, Proceedings of the 18th EUSPEN International Conference, 978-0-9957751-2-1, 63-64, 2018, Cranfield, UK*
- *Kamenar, E.; Korda, M.; Zelenika, S.; Mezić, I.; Maćešić, S.; Koopman-based model predictive control of a nanometric positioning system, Proceedings of the 18th EUSPEN International Conference, 978-0-9957751-2-1, 75-76, 2018, Cranfield, UK*
- *Piličić, S.; Marković, K.; Franulović, M.; Inverse Modelling for Material Parameters Identification of Soft Tissues Book of Abstracts, 15th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering and 3rd Conference on Imaging and Visualization, 978-989-99424-5-5, 1, 268., 2018, Lisabon, Portugal*
- *Arrigoni, T.; Schnurrer Luke Vrbanić, T.; Zelenika, S.; Kamenar, E.; Innovative mechatronics device for upper limb rehabilitation, Internatuional Central European ISPO Conference 2018, 2018, Portorož, Slovenija*
- *Basan, R.; Marohnić, T.; Multiaxial Fatigue Life Calculation Model for Engineering Components in Rolling-Sliding Contact, MATEC Web of Conferences, 2261-236X, 188, 1-8., 2018, Francuska / Ujedinjeno Kraljevstvo*
- *Basan, R.; Marohnić, T.; Franulović, M.; Possibilities of application of artificial neural networks for biological and nonconventional materials, Published abstracts - First International Conference on Materials, Mimicking and Manufacturing from and for the Bio Application, 2018, Milano, Italija*

POZVANA PREDAVANJA | INVITED LECTURES

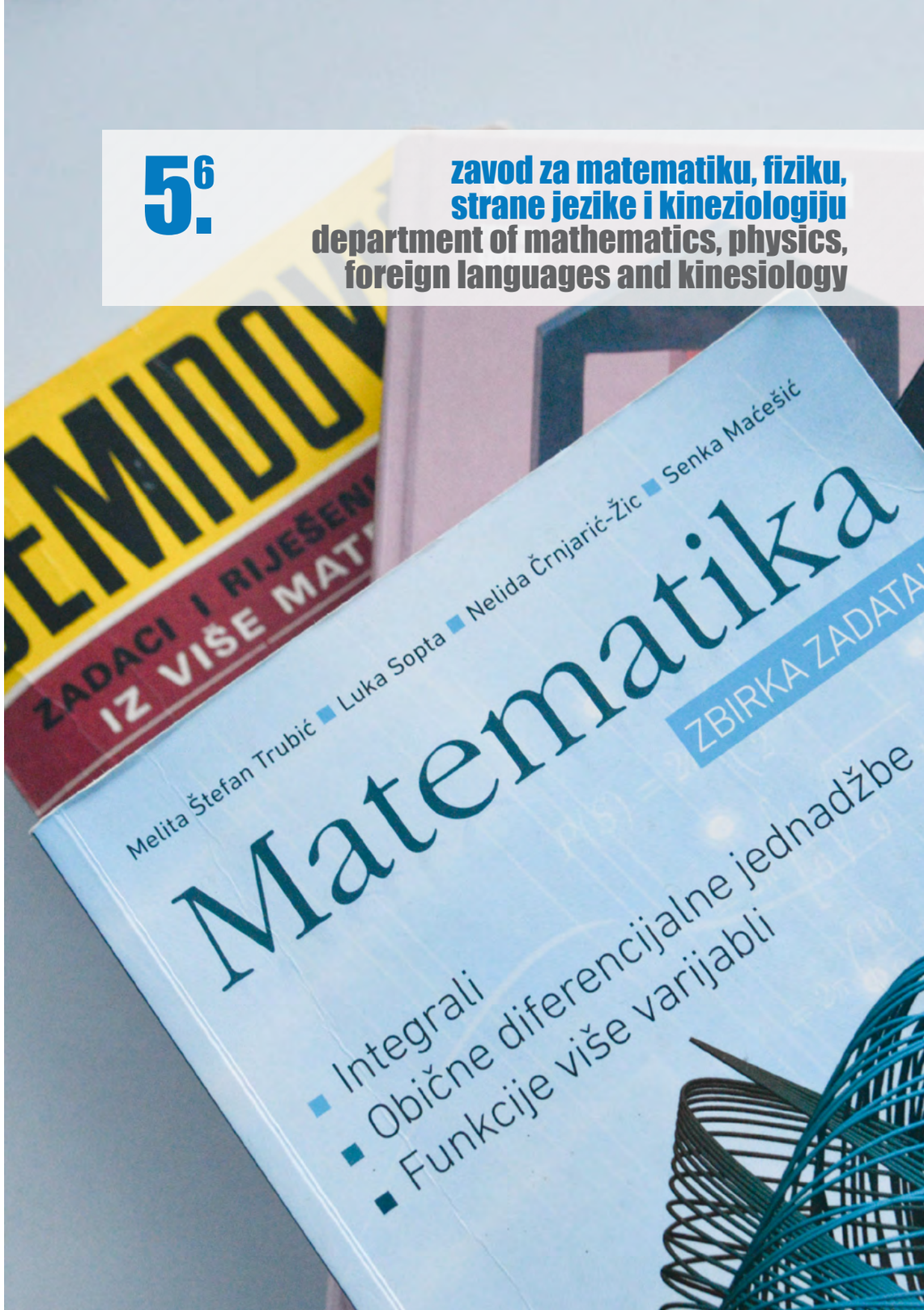
- *Basan, R.; From materials database to materials data/services oriented web-platform, MTECH 2017 - INTERNATIONAL CONFERENCE ON MATERIALS corrosion, heat treatment, testing and tribology, 2017, Zadar, Hrvatska*
- *Basan, R.; From simple empirical methods to artificial neural networks for estimation of cyclic and fatigue material parameters – An overview and outlook, 8th International Conference on Structural Engineering and Construction Management 2017, University of Peradenya, 2017, Kandy, Šri Lanka*

MEĐUNARODNA SURADNJA | INTERNATIONAL COLLABORATIONS

- *Brno University of Technology, Češka Republika, Czech Republic*
- *Elettra, Italija, Italy*
- *Faculty of Industrial Technology, Technical University - Sofia, Bugarska, Bulgaria*
- *Faculty of Mechanical Engineering, Technical University - Sofia, Bugarska, Bulgaria*
- *Fakultet strojarstva i brodogradnje, Sveučilište u Zagrebu, Hrvatska, Croatia*
- *Fakulteta za strojništvo, Univerza v Ljubljani, Slovenija, Slovenia*
- *Fakulteta za strojništvo, Univerza v Mariboru, Slovenija, Slovenia*
- *Mašinki fakultet, Univerzitet u Nišu, Srbija, Serbia*
- *University of Applied Sciences, GrazAustrija, Austria*
- *University of Chemical Technology and Metallurgy, Bugarska, Bulgaria*
- *University of Udine, Italija, Italy*
- *Moscow State Industrial University, Rusija, Russia*
- *Institut für Stahlbau und Werkstoffmechanik, Technische Universität Darmstadt, Njemačka, Germany*
- *Czech Technical University in Prague, Češka Republika, Czech Republic*

5.6

zavod za matematiku, fiziku, strane jezike i kineziologiju
department of mathematics, physics, foreign languages and kinesiology



PREDSTOJNICA ZAVODA | DEPARTMENT HEAD:

Prof. dr. sc. / Prof. D. Sc. **Nelida Črnjarić-Žic**

http://www.riteh.uniri.hr/ustroj/zavodi/zmfsjk/

djelatnici
faculty and staff

REDOVITI PROFESORI | PROFESSORS

Senka Maćešić

numerička matematika; znanstveno računanje; matematičko modeliranje; optimalno upravljanje; dinamički sustavi

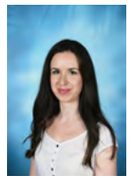
numerical mathematics; scientific computing; mathematical modelling; optimal control; dynamical systems

Nelida Črnjarić-Žic

numerička matematika; znanstveno računanje; računalne simulacije u tehnici; matematičko modeliranje; analiza podataka; dinamički sustavi

numerical mathematics; scientific computing; computer simulations in engineering; mathematical modelling; data analysis

DOCENTI | ASSISTANT PROFESSORS



Loredana Simčić

mikropolarni fluidi; kombinatorna i diskretna matematika

micropolar fluids; combinatorial and discrete mathematics

Tomislav Žic

fizika; astrofizika; fizika Sunca; magnetohidrodinamika (MHD); numeričko MHD modeliranje; koronini izbačaji mase; svemirska prognostika; modeliranje udarnih valovova u Sunčevoj atmosferi, koroni i međuplanetarnom prostoru

physics; solar physics; magnetohydrodynamics (MHD); numerical MHD modelling; coronal mass ejections; space weather; shock waves modelling in solar atmosphere, corona and interplanetary space

Ivan Dražić

parcijalne diferencijalne jednadžbe; mikropolarni fluidi; numerička analiza; statistička obrada podataka; metodika nastave matematike

partial differential equations; micropolar fluids; numerical analysis; statistical analysis; methodology of teaching mathematics

VIŠI PREDAVAČI | SENIOR LECTURERS

Elisa Velčić - Janjetić

njemački jezik i književnost; engleski jezik i književnost; jezik struke

german language and literature; english language and literature; professional language

Melita Štefan Trubić

numerička matematika; metodika nastave matematike

numerical mathematics; methodology of teaching mathematics

PREDAVAČI | LECTURERS

Vanja Čotić Poturić

matematika

mathematics

Anita Badurina

njemački jezik i književnost; engleski jezik i književnost; jezik struke

german language and literature; english language and literature; professional language

ASISTENTI | ASSISTANTS

Angela Bašić - Šiško

numerička matematika

numerical mathematics

Neven Varljen

primijenjena matematika

applied mathematics

VANJSKI SURADNICI | ASSOCIATES

Sanja Vranić
Učiteljski fakultet u Rijeci | Faculty of Teacher Education

Igor Lulić
Odjel za matematiku Sveučilišta | Department of Mathematics

Dejan Dešković
Odjel za matematiku Sveučilišta | Department of Mathematics

Sara Ban
Odjel za matematiku Sveučilišta | Department of Mathematics

Matteo Mravić
Odjel za matematiku Sveučilišta | Department of Mathematics

Biserka Draščić-Ban
Pomorski fakultet | Faculty of Maritime Studies

matematika

mathematics

Zdravko Lenac
Odjel za fiziku Sveučilišta | Department of Physics

Marijana Varošanec
Odjel za fiziku Sveučilišta | Department of Physics

Vedran Vujnović
Odjel za fiziku Sveučilišta | Department of Physics

Marta Žuvić
Odjel za biotehnologiju Sveučilišta | Department of Biotechnology

fizika

physics

nastava i znanost
education and science

Nastava matematičkih kolegija izvodi se za inženjere s odabranim poglavljima iz područja linearne algebre, matematičke analize, diferencijalnih jednadžbi, vjerojatnosti i statistike te numeričke i stohastičke matematike. Nastava fizikalnih kolegija izvodi se za inženjere s odbranim poglavljima iz moderne fizike i zaštite okoliša. Nastava engleskog i njemačkog jezika obuhvaća obrađivanje odabranih poglavlja iz područja strojarstva, brodogradnje, elektrotehnike i računarstva te usavršavanje stručnog vokabulara i gramatičkih struktura jezika tehnike.

Mathematical lectures for engineers with selected chapters in the fields of: linear algebra, mathematical analysis, differential equations, probability and statistics, numerical and stochastic mathematics. Phisics lectures for engineers with selcted chapters in modern physics and enviroment protection. The English and German Language courses of study cover the analysis of selected chapters in the field of Mechanical Engineering, Naval Architecture, Electrical Engineering and Computer Science as well as the enhancement of professional-technical vocabulary and grammar.

KOLEGIJI NA PREDDIPLOMSKIM SVEUČILIŠNIM STUDIJIMA
| UNDERGRADUATE UNIVERSITY COURSES

- *Matematika 1* — *Mathematics 1*
- *Matematika 2* — *Mathematics 2*
- *Inženjerska matematika ET* — *Engineering mathematics ET*
- *Inženjerska statistika* — *Statistics for engineers*
- *Inženjerska matematika R* — *Engineering mathematics R*
- *Uvod u modernu fiziku* — *Introduction to modern physics*
- *Fizika 1* — *Physics 1*
- *Fizika 2* — *Physics 2*
- *Engleski jezik I* — *English Language I*
- *Engleski jezik II* — *English Language II*
- *Njemački jezik I* — *German Language I*
- *Njemački jezik II* — *German Language II*
- *Tjelesna i zdravstvena kultura I* — *Physical and Health Education I*
- *Tjelesna i zdravstvena kultura II* — *Physical and Health Education II*

KOLEGIJI NA DIPLOMSKIM SVEUČILIŠNIM STUDIJIMA
| GRADUATE UNIVERSITY COURSES

- *Inženjerska matematika* — *Engineering mathematics*
- *Numerička i stohastička matematika* — *Numerical and stochastic mathematics*
- *Stohastička matematika* — *Stochastic mathematics*

KOLEGIJI NA PREDDIPLOMSKIM STRUČNIM STUDIJIMA
| UNDERGRADUATE VOCATIONAL COURSES

- *Matematika 1* — *Mathematics 1*
- *Matematika 2* — *Mathematics 2*
- *Fizika* — *Physics*
- *Engleski jezik I* — *English Language I*
- *Engleski jezik II* — *English Language II*
- *Njemački jezik I* — *German Language I*
- *Njemački jezik II* — *German Language II*
- *Tjelesna i zdravstvena kultura I* — *Physical and Health Education I*
- *Tjelesna i zdravstvena kultura II* — *Physical and Health Education II*

KOLEGIJI NA POSLIJEDIPLOMSKIM (DOKTORSKIM) SVEUČILIŠNIM STUDIJIMA
| POSTGRADUATE UNIVERSITY (DOCTORAL) COURSES

- *Statističke metode i stohastički procesi* — *Statistical Methods and Stochastic Processes*
- *Matematičko modeliranje i numeričke metode* — *Mathematical Modeling and Numerical Methods*
- *Metode optimizacije* — *Optimization Methods*
- *Izabrana poglavlja iz zaštite okoliša* — *Selected Topics on Environment Protection*
- *Instrumentacija i analitičke tehnike u zaštiti okoliša* — *Instrumentation and Analytical Techniques in Environment Protection*
- *Kemija okoliša* — *Environmental Chemistry*
- *Zaštita mora i priobalja* — *Protection of Sea and Coastal Zone*

ZNANSTVENOISTRAŽIVAČKI RAD | SCIENTIFIC RESEARCH

- *parcijalne diferencijalne jednadžbe, numerička matematika, matematičko modeliranje, optimizacija, operacijska istraživanja, statističke metode, kombinatorna i diskretna matematika; dinamički sustavi*
  partial differential equations, numerical mathematics, mathematical modeling, optimization, operational research, statistical methods, combinatorial and descrete mathematics; dynamical systems
- *zaštita okoliša, atomska i nuklearna fizika*
  environment protection, atomic and nuclear physics
- *interdisciplinarno znanstvenoistraživački pristup području antropologije i temama kulture (znanstvena grana anglistika, područje lingvistike); istraživanje pojma tehnike uopće kao i njegove prisutnosti u izabranim romanima njemačke književnosti weimarskog doba (1918.-1933.) (znanstvena grana germanistika, područje književnosti)*
  interdisciplinary scientific-research approach to the field of anthropology and cultural themes (the scientific branch of English studies, field Linguistics; research of the term technics and its presence in selected novels of the German literature of the Weimar period (1918-1933) (the scientific branch German studies, field Literature)
- *astrofizika, fizika Sunca: magnetohidrodinamika (MHD); numeričko modeliranje*
  astrophysics, solar physics; magnetohydrodinamics (MHD); numerical modelling

PROJEKTI | PROJECTS

- *DARPA projekt On a Data-Driven, Operator-Theoretic Framework for Space-Time Analysis of Process Dynamics", glavni istraživači Maria Fonoboreva i Igor Mezić, UCSB, suradnici Nelida Črnjarić-Žic, Senka Maćešić*
  DARPA project "On a Data-Driven, Operator-Theoretic Framework for Space-Time Analysis of Process Dynamics", principal investigators Maria Fonoberova and Igor Mezić, UCSB, collaborators Nelida Črnjarić-Žic, Senka Maćešić
- *Matematičko i numeričko modeliranje kompresibilnog mikropolarnog fluida, istraživanje uz potporu Sveučilišta, voditelj Nelida Črnjarić-Žic, suradnici Ivan Dražić, Loredana Simčić i Senka Maćešić*
  Mathematical and numerical modeling of compressible micropolar fluid, research supported by the University, principal investigator Nelida Črnjarić-Žic, collaborators Ivan Dražić, Loredana Simčić, and Senka Maćešić
- *Ekološko modeliranje u obalnom području Riječkog zaljeva, istraživanje uz potporu Sveučilišta, voditelj Lado Kranjčević, suradnice Nelida Črnjarić-Žic i Senka Maćešić*
  Ecological modeling in the Bay of Rijeka coastal area, research supported by the University, principal investigator Lado Kranjčević, collaborators Nelida Črnjarić-Žic and Senka Maćešić
- *Karakterizacija i modeliranje ponašanja materijala i konstrukcija za inovativne primjene, istraživanje uz potporu Sveučiišta, voditelj Robert Basan, suradnica Nelida Črnjarić-Žic*
  Characterization and modeling of materials and constructions behavior for innovative applications, research supported by the University, principal investigator Robert Basan, collaborator Nelida Črnjarić-Žic
- *Reciklirajući endosomalni putevi, istraživanje uz potporu Sveučiišta, voditeljica Gordana Blagojević-Zagorac, suradnik Senka Maćešić*
  Recycling endosomal paths, research supported by the University, principal investigator Gordana Blagojević-Zagorac, collaborator Senka Maćešić
- *Inicijalno-rubni problemi u istraživanju kompresibilnog mikropolarnog termoprovodljivog fluida, istraživanje uz potporu Sveučilišta, voditelj Ivan Dražić, suradnici Nelida Črnjarić-Žic i Loredana Simčić*
  Initial-boundary problems in the research of compressible micropolar and heat-conducting fluid, research supported by the University, principal investigator Ivan Dražić, collaborators Nelida Črnjarić-Žic, and Loredana Simčić
- *Istraživanje preduvjeta za implementaciju engleskoga kao jezika visokoškolske nastave, voditeljica Branka Drljača Margić, suradnica Elisa Velčić Janjetić*
  The study of the conditions for the implementation of English-medium instruction in higher education, principal researcher Branka Drljača Margić, collaborator Elisa Velčić Janjetić

PUBLIKACIJE | PUBLICATIONS

RADOVI U ČASOPISIMA | JOURNAL PAPERS

- *Mahmutefendić, H.; Blagojević Zagorac, G.; Maćešić, S.; Lučin, P.; Rapid Endosomal Recycling IntechOpen, 2018, DOI: 10.5772/intechopen.75685*
- *Piantschitsch, I.; Vršnak, B.; Hanslmeier, A.; Lemmerer, B.; Veronig, A.; Hernandez-Perez, A.; Čalogović, J.; Žic, T.; A Numerical Simulation of Coronal Waves Interacting with Coronal Holes. I. Basic Features, The Astrophysical Journal, "0004-637X (print); 1538-4357 (web)", 850:1, 88, 2017*
- *Dražić, I.; 3-D flow of a compressible viscous micropolar fluid model with spherical symmetry: a brief survey and recent progress, Reviews in Mathematical Physics, 0129-055X, 30:1830001, 1-17, 2018*
- *Dražić, I.; Simčić, L.; One-dimensional flow of a compressible viscous and heat-conducting micropolar fluid with homogeneous boundary conditions: a brief survey of the theory and recent progress, Global and Stochastic Analysis, 2248-9444, 5 (1), 45-55, 2018*
- *Dražić, I.; Homogeneous boundary problem for the compressible viscous and heat-conducting micropolar fluid model with cylindrical symmetry, Differential and Difference Equations with Applications 2017, Springer Proceedings in Mathematics & Statistics, 2194-1009, 230, 79-92, 2018*
- *Čeh, N.; Dražić, I.; Mujaković, N.; Gauss-Legendre-Radauova i Gauss-Legendre-Lobattova numerička integracija, Zbornik radova Građevinskog fakulteta Sveučilišta u Rijeci, 0350-8552, 19, 133-146, 2017*
- *Dražić, I.; Matematičko modeliranje u nastavnom procesu, Modeliranje i matematika - Zbornik radova, 978-953-56797-2-1, 83-95, 2017*
- *Dražić, I.; Krsnik, I.; Formula potpune vjerojatnosti i pripadne simulacije, Modeliranje i matematika - Zbornik radova, 978-953-56797-2-1, 210-219, 2017*
- *Dražić, I.; Jurasić, K.; Dugonjić, R.; Matematičko modeliranje strujnih krugova i linearni sustavi Modeliranje i matematika - Zbornik radova, 978-953-56797-2-1, 193-209, 2017*

MEĐUNARODNI KONGRESI | INTERNATIONAL CONGRESSES

- *Drljača Margić, B.; Velčić Janjetić, E.; What it takes to successfully implement English Medium Instruction: A case study, 5th International Conference Integrating Content and Language in Higher Education, 2017, Kopenhagen, Danska*
- *Velčić Janjetić, E.; Badurina, A.; Students' attitudes towards general English vs. technical English ratio in ESP classes, 3. međunarodna konferencija UNJSVU: Od teorije do prakse u jeziku struke, 2018, Zagreb*
- *Dražić, I.; Mathematical model for compressible viscous micropolar fluid flow, International conference on mathematics: "An Istanbul meeting for world mathematicians", 2018, Istanbul, Turska*
- *Dražić, I.; Simčić, L.; Shear flow for compressible viscous micropolar fluid flow, "Ninth conference on Applied Mathematics and Scientific Computing", 2018, Šibenik*
- *Črnjarić-Žic, N.; Maćešić, S.; Mezić, I.; Spectral properties of the stochastic Koopman operator and its numerical approximations, Ninth Conference on Applied Mathematics and Scientific Computing, 2018, Šibenik, Hrvatska*
- *Maćešić, S.; Črnjarić-Žic, N.; Mezić, I.; Non-autonomous Koopman operator family spectrum, Ninth Conference on Applied Mathematics and Scientific Computing, 2018, Šibenik, Hrvatska*

POZVANA PREDAVANJA | INVITED LECTURES

- *Dražić, I.; Matematičko modeliranje u nastavnom procesu, Kongres: Metodika nastave matematike u osnovnoj i srednjoj školi - Modeliranje i matematika, 2017, Pula, Hrvatska*

MEĐUNARODNA SURADNJA | INTERNATIONAL COLLABORATIONS

- *University of Santa Barbara, California, SAD, USA*

5.7

zavod za materijale
department of materials science and engineering

PREDSTOJNIK ZAVODA | DEPARTMENT HEAD:

Doc. dr. sc. / Assist. Prof. D. Sc. Dario Iljkić

http://www.riteh.uniri.hr/ustroj/zavodi/zm/

djelatnici
faculty and staff

DOCENTI | ASSISTANT PROFESSORS

Dario Iljkić

materijali; tehnologija materijala; materijali i tehnološki postupci; postupci toplinske obrade; metalni materijali; ljevarstvo; ispitivanje materijala i analiza loma

materials; technology of material; materials and technological processes; processes of heat treatment; metallic materials; casting; materials testing and fracture analysis

Sunčana Smokvina - Hanza

materijali; tehnologija materijala; postupci toplinske obrade; materijali i tehnološki postupci; ispitivanje materijala i analiza loma; karakterizacija materijala; zaštita materijala

materials; technology of material; processes of heat treatment; materials and technological processes; materials testing and fracture analysis; materials characterisation; materials protection

ASISTENTI | ASSISTANTS

Lovro Štic

materijali; tehnologija materijala; postupci toplinske obrade; materijali i tehnološki postupci; zaštita materijala

materials; technology of material; processes of heat treatment; materials and technological processes; materials protection

Lovro Liverić

materijali; tehnologija materijala; postupci toplinske obrade; materijali i tehnološki postupci

materials; technology of material; processes of heat treatment; materials and technological processes

Andrej Borić

termalni procesi materijala

thermal processes of materials

VANJSKI SURADNICI | ASSOCIATES

Domagoj Rubeša
FH JOANNEUM, University of Applied Sciences, Graz

mehanika materijala; mehanika prijeloma i umorljivost; selekcija materijala; procesi oštećivanja materijala

materials mechanics; fracture mechanics and fatigue of materials; materials selection; processes of damaging of materials

Neven Tomašić
RENETEH Ogulin d.o.o.

materijali; tehnologija materijala; materijali i tehnološki postupci; postupci toplinske obrade; metalni materijali

materials; technology of material; materials and technological processes; processes of heat treatment; metallic materials

Leszek Adam Dobrzanski
Silesian University of Technology, Gliwice

materijali; tehnologija materijala; materijali i tehnološki postupci; metalni materijali; nemetalni materijali; zaštita materijala; ljevarstvo; karakterizacija materijala; mehanika materijala; toplinska obrada i inženjerstvo površina; mehanika prijeloma i umorljivost; ispitivanje materijala; selekcija materijala; procesi oštećivanja materijala; kemija materijala; korozija i zaštita metala

materials; technology of material; materials and technological processes; metallic materials; nonmetal materials; materials protection; casting; materials characterisation; materials mechanics; heat treatment and surface engineering; fracture mechanics and fatigue of materials; materials testing; materials selection; processes of damaging of materials; materials chemistry; corrosion and metals protection

Vojteh Leskovšek
IMT Ljubljana

karakterizacija materijala; toplinska obrada i inženjerstvo površina; mehanika prijeloma i umorljivost

materials characterisation; heat treatment and surface engineering; fracture mechanics and fatigue of materials

Robert Danzer
Institut für Struktur- und Funktionskeramik

keramički i kompozitni materijali

ceramics and composite materials

nastava i znanost
education and science

Nastava se izvodi iz područja materijala, tehnologije materijala, materijala i tehnoloških postupaka, karakterizacije materijala, metalnih materijala, nemetalnih materijala, zaštite materijala, mehaničkog ponašanja i odabira materijala, termalnih procesa materijala, ispitivanja materijala i analize loma, procesa oštećivanja materijala, kemije materijala, korozije i zaštite metala.

Lectures in the field of materials, technology of materials, materials and technological processes, materials characterisation, metallic materials, nonmetal materials, materials protection, mechanical behaviour and selection of materials, thermal processes of materials, materials testing and fracture analysis, processes of damaging of materials, materials chemistry, corrosion and metals protection.

KOLEGIJI NA PREDDIPLOMSKIM SVEUČILIŠNIM STUDIJIMA
| UNDERGRADUATE UNIVERSITY COURSES

- *Materijali I*
- *Materijali II*
- *Tehnologija materijala*
- *Izborni projekt - Materijali I*
- *Izborni projekt - Materijali II*
- *Karakterizacija materijala*
- *Postupci toplinske obrade*

- *Materials I*
- *Materials II*
- *Technology of Material*
- *Elective project - Materials I*
- *Elective project - Materials II*
- *Materials Characterisation*
- *Processes of Heat Treatment*

KOLEGIJI NA DIPLOMSKIM SVEUČILIŠNIM STUDIJIMA
| GRADUATE UNIVERSITY COURSES

- *Metalni materijali*
- *Nemetalni materijali*
- *Zaštita materijala*
- *Projekt I - Zaštita materijala*
- *Projekt I - Metalni materijali*
- *Ispitivanje materijala i analiza loma*
- *Termalni procesi materijala*
- *Projekt II - Termalni procesi materijala*
- *Mehaničko ponašanje i odabir materijala*

- *Metallic Materials*
- *Nonmetallic Materials*
- *Materials Protection*
- *Project I - Materials Protection*
- *Project I - Metallic Materials*
- *Materials Testing and Fracture Analysis*
- *Thermal Processes of Materials*
- *Project II - Thermal Processes of Materials*
- *Mechanical Behaviour and Selection of Materials*

KOLEGIJI NA PREDDIPLOMSKIM STRUČNIM STUDIJIMA
| UNDERGRADUATE VOCATIONAL COURSES

- *Materijali*
- *Materijali i tehnološki postupci*

- *Materials*
- *Materials and Technological Processes*

KOLEGIJI NA POSLIJEDIPLOMSKIM (DOKTORSKIM) SVEUČILIŠNIM STUDIJIMA
| POSTGRADUATE UNIVERSITY (DOCTORAL) COURSES

- *Procesi oštećivanja materijala*
- *Mehanika prijeloma i umorljivost*
- *Korozija i zaštita materijala*
- *Toplinska obrada i inženjerstvo površina*
- *Izabrana poglavlja iz ispitivanja materijala*

- *Processes of Damaging of Materials*
- *Fracture Mechanics and Fatigue of Materials*
- *Corrosion and Metals Protection*
- *Heat Treatment and Surface Engineering*
- *Selected Chapters on Material Testing*

ZNANSTVENOISTRAŽIVAČKI RAD | SCIENTIFIC RESEARCH

- *Znanstvenoistraživački rad iz znanstvenog područja tehničke znanosti, znanstvenih polja strojarstvo i temeljne tehničke znanosti, znanstvenih grana proizvodno strojarstvo i materijali.*
  Research and development activities in the scientific area of Technical Sciences, scientific fields of Mechanical Engineering and Fundamental Engineering Sciences, scientific branches of Mechanical Production Engineering and Materials

PROJEKTI | PROJECTS

- *Optimiziranje i modeliranje termalnih procesa materijala, HRZZ - Hrvatska zaklada za znanost, Dario Iljkić, 2014 - 2018, znanstvenoistraživački.*
  Optimisation and modelling of thermal processes of materials, HRZZ - Croatian science foundation, Dario Iljkić, 2014 - 2018, research and scientific project.

- *Računalno optimiranje parametara termalnih procesa obrade metala, Sveučilište u Rijeci, Dario Iljkić, 2013 -, znanstvenoistraživački.*
  Computer optimization of parameters of thermal processes of metal, University of Rijeka, Dario Iljkić, 2013 -, research and scientific.

PUBLIKACIJE | PUBLICATIONS

RADOVI U ČASOPISIMA | JOURNAL PAPERS

- *Smokvina Hanza, S.; Dabo, D.; Characterization of Cast Iron Using Ultrasonic Testing, HDKBR info, 1847-9340, 18, 3-7, 2017., Zagreb*

MEĐUNARODNI KONGRESI | INTERNATIONAL CONGRESSES

- *Smoljan, B.; Iljkić, D.; Smokvina Hanza, S.; Štic, L.; Borić, A.; Senčič, B.; Vertnik, R.; Numerical modelling and simulation of controlled cooling of hot rolled steel, Mechanical Technology and Structural Materials, 1847-7917, 133-140, 2017., Split*

- *Smoljan, B.; Iljkić, D.; Smokvina Hanza, S.; Štic, L.; Borić, A.; Rubeša, D.; Prediction of steel properties during controlled cooling of hot rolled steel, Proceedings of International Conference on Materials, Corrosion, Heat Treatment, Testing and Tribology 2017, MTECH 2017, 2584-4334, 1-8, 2017., Zadar*

- *Smoljan, B.; Iljkić, D.; Smokvina Hanza, S.; Štic, L.; Borić, A.; Mathematical modeling of thermal processing of metal alloys Proceedings of the Silver Jubilee International Scientific Conference on "Achievements in Mechanical and Materials Engineering" AMME`2017, 2017., Wisla, Poljska*

- *Smoljan, B.; Iljkić, D.; Senčič, B.; Vertnik, R.; Numerical model of controlled cooling of steel hot rolled bars, Proceedings of the 29th ASM Heat Treating Society Conference & Exposition, "Heat Treat 2017", 2017., Columbus, SAD*

- *Iljkić, D.; Smoljan, B.; Mauro, M.; Smokvina Hanza, S.; Štic, L.; Vratović, G.; An activation of electroless process of ni-p depositing on austenitic stainless steel, Proceedings of 27th INTERNATIONAL CONFERENCE ON METALLURGY AND MATERIALS - METAL 2018, 2018. Brno, Češka*

- *Smoljan, B.; Iljkić, D.; Smokvina Hanza, S.; Štic, L.; Borić, A.; Jokić, M.; Senčič, B.; Vertnik, R.; Mathematical modelling of controlled cooling and properties of hot rolled steel, IOP Conference Series: Materials Science and Engineering, 1757-8981, 393, 2018., Novi Sad, Srbija*

- *Smoljan, M.; Iljkić, D.; Smokvina Hanza, S.; Jokić, M.; Štic, L.; Computer simulation of mechanical properties and distortions during the quenching of steel Proceedings of ModTech 2018 International Conference - Modern Technologies in Industrial Engineering, 2018, Constanta, Rumunjska*

- *Smoljan, B.; Iljkić, D.; Štic, L.; Smokvina Hanza, S.; Gržinić, L.; Vratović, G.; Numerical modelling of welded joints propertiesProceedings of International Conference MATRIB 2018, MATERIALS, TRIBOLOGY, RECYCLING, 2018., Vela Luka*

- *Smoljan, B.; Iljkić, D.; Smokvina Hanza, S.; Gržinić, L.; Jokić, M.; Vratović, G.; Štic, L.; An Application of Jominy test results in Computer Simulation of Steel Quenching Proceedings of THERMEC'2018, International Conference on PROCESSING & MANUFACTURING OF ADVANCED MATERIALS, Processing, Fabrication, Properties, Applications, 2018., Pariz, Francuska*

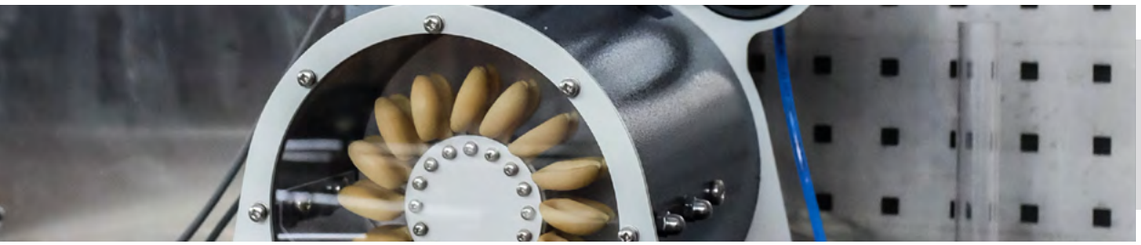
POZVANA PREDAVANJA | INVITED LECTURES

- *Smoljan, B.; Iljkić, D.; Smokvina Hanza, S.; Štic, L.; Gržinić, L.; Vratović, G.; Computer simulation of controlled cooling of continues casted and rolled steel bar, 17th INTERNATIONAL FOUNDRYMEN CONFERENCE - Hi-tech casting solution and knowledge based engineering, 2018., Opatija, Hrvatska*

MEĐUNARODNA SURADNJA | INTERNATIONAL COLLABORATIONS

- *Faculty of Mechanical Engineering, State University of Campinas, Campinas, Brazil, Brasil*
- *Faculty of Mechanical Engineering, University of Ljubljana, Ljubljana, Slovenija, Slovenia*
- *Institute of Metals and Technology, Ljubljana, Slovenija, Slovenia*
- *John von Neumann Faculty of Informatics, Obuda University, Mađarska, Hungary*
- *Materials Engineering, Silesian University of Technology in Gliwice, Gliwice, Poljska, Poland*

5.8 zavod za mehaniku fluida i računarsko inženjerstvo
department of fluid mechanics and computational engineering



PREDSTOJNIK ZAVODA | DEPARTMENT HEAD:

Izv. prof. dr. sc. / Assoc. Prof. D. Sc. **Lado Kranjčević**

http://www.riteh.uniri.hr/ustroj/zavodi/zmfri/

djelatnici
faculty and staff

IZVANREDNI PROFESORI | ASSOCIATE PROFESSORS

Lado Kranjčević

numeričko modeliranje otvorenih vodotoka; modeliranje strujanja fluida u mreži cjevovoda; paralelno računanje

open channel flow numerical modelling; pipe network modelling; parallel computing

Zoran Čarija

analiza i optimizacija hidrauličkih sustava; analiza i optimizacija strujanja u hidroturbinama; strujanje sa slobodnom površinom

hydraulic systems analysis and optimization; hydroturbine flow analysis and optimization; free surface fluid flow

Siniša Družeta

analiza i optimizacija hidrauličkih sustava; strujanje u otvorenim vodotocima; optimizacijske metode

hydraulic systems analysis and optimization; open channel flow; optimizaton methods

Jerko Škifić

hidraulički tranzijenti; analiza i optimizacija hidrauličkih sustava; programiranje tehničkih aplikacija

hydraulic transients; hydraulic systems analysis and optimization; technical software development

DOCENT | ASSISTANT PROFESSOR

Stefan Ivić

programiranje tehničkih aplikacija; polaganje cjevovoda; optimizacija

technical software development; pipe laying; optimization

ASISTENTI | ASSISTANTS

Luka Grbčić

hibridno 2D/3D modeliranje strujanja sa slobodnom površinom; VOF 3D modeliranje; optimizacija; programiranje; paralelno računanje

hybrid 2D/3D free surface flow modeling; VOF 3D modeling; optimisation; programming; parallel computing

Ivana Lučin

3D modeliranje u računalnoj mehanici fluida; programiranje

3D modelling in CFD; programming

nastava i znanost
education and science

Nastava iz područja: mehanika fluida, hidraulički strojevi, računalne metode, numeričko modeliranje, optimizacija.

CO: Primjena računarskih metoda

Lectures in the field of: fluid mechanics, hydraulic machines, computational methods, numerical modeling, optimization.

LLL: Applied Computational Methods

KOLEGIJI NA PREDDIPLOMSKIM SVEUČILIŠNIM STUDIJIMA
| UNDERGRADUATE UNIVERSITY COURSES

- *Računalne aplikacije u inženjerstvu* — *Computer Applications in Engineering*
- *Uvod u računarstvo* — *Introduction to Computer Science*
- *Mehanika fluida* — *Fluid Mechanics*
- *Računarske metode* — *Computational Methods*
- *Hidraulički strojevi* — *Hydraulic Machines*
- *Računalne simulacije u tehnici* — *Computer Simulations in Engineering*
- *Računarsko inženjerstvo* — *Computational Engineering*
- *Programiranje* — *Programming*
- *Računalna grafika* — *Computer Graphics*

KOLEGIJI NA DIPLOMSKIM SVEUČILIŠNIM STUDIJIMA
| GRADUATE UNIVERSITY COURSES

- *Dinamički sustavi* — *Dynamic Systems*
- *Dinamika fluida* — *Fluid Dynamics*
- *Modeliranje u tehnici* — *Models in Engineering*
- *Numeričko modeliranje hidrauličkih strojeva* — *Numerical Modeling of Hydraulic Machines*

- *Optimizacije u tehnici*
- *Primjena paralelenog računanja*
- *Primjena računalne grafike*
- *Programiranje tehničkih aplikacija*
- *Računarska mehanika fluida*
- *Računarske metode u brodogradnji*
- *Vizualizacija i priprema računalnih simulacija*
- *Programiranje: skriptni jezici*

- *Optimization in Technics*
- *Applied Parallel Computing*
- *Applied Computer Graphics*
- *Programming of Technical Applications*
- *Computational Fluid Dynamics*
- *Computational Methods in Naval Engineering*
- *Visualisation and setup of computer simulations*
- *Programming: Script languages*

KOLEGIJI NA PREDDIPLOMSKIM STRUČNIM STUDIJIMA
| UNDERGRADUATE VOCATIONAL COURSES

- *Hidraulički strojevi ST*
- *Mehanika fluida ST*

- *Hydraulic Machines ST*
- *Fluid Mechanics ST*

KOLEGIJI NA POSLIJEDIPLOMSKIM SVEUČILIŠNIM (DOKTORSKIM) STUDIJIMA
| POSTGRADUATE UNIVERSITY (DOCTORAL) COURSES

- *Dinamika fluida*
- *Hidrodinamika turbostrojeva*
- *Turbulentno strujanje*
- *Računarska mehanika fluida*
- *Modeliranje nestacionarnog strujanja u cjevovodima*

- *Fluid Dynamics*
- *Hydrodynamics of Turbomachines*
- *Turbulent Flow*
- *Computational Fluid Mechanics*
- *Unsteady Pipe Flow Modeling*

ZNANSTVENOISTRAŽIVAČKI RAD | SCIENTIFIC RESEARCH

- *Strujanje u priobalnom području*
  Coastal flow
- *Strujanje u otvorenim vodotocima*
  Open channel flow
- *Analiza i optimizacija hidrauličkih sustava*
  Hydraulic systems analysis and optimization
- *Hidraulički tranzijenti*
  Hydraulic transients
- *Strujanje u cjevovodima*
  Pipe flow
- *Optimizacijske metode*
  Optimization methods
- *Hibridno 2D/3D modeliranje strujanja sa slobodnom površinom*
  Hybrid 2D/3D free surface flow modeling

PROJEKTI | PROJECTS

- *Družeta, S.; Sopta, L.; Marušić, J.; Škifić, J.; Grbčić, L.; Analitički model funkcije SN Valtura s analizom pojave vodnog udara u najnepovoljnijim uvjetima iz prijedloga rješenja, Tehnički fakultet Sveučilišta u Rijeci, 2018.*
  Družeta, S.; Sopta, L.; Marušić, J.; Škifić, J.; Grbčić, L.; Analytical model of SN Valtura's function with the analysis of the occurrence of water hammer in the most unfavorable conditions from the solution proposal, Faculty of Engineering, Rijeka, 2018.
- *Kranjčević, L.; Vidučić, D.; Arbula D.; Lujo, R.; Unaprijeđenje računalnog sustava Sveučilišta u Rijeci ISVURI 2018 , Tehnički fakultet Rijeka, 2018.*
  Kranjčević, L.; Vidučić, D.; Arbula D.; Lujo, R.; University of Rijeka Computer System Upgrade ISVURI 2018, Faculty of Engineering Rijeka, 2018.

- *DARPA projekt On a Data-Driven, Operator-Theoretic Framework for Space-Time Analysis of Process Dynamics", glavni istraživači Maria Fonoboreva i Igor Mezić, UCSB, suradnici Nelida Črnjarić-Žic, Senka Maćešić i Stefan Ivić*
  DARPA project "On a Data-Driven, Operator-Theoretic Framework for Space-Time Analysis of Process Dynamics", principal investigators Maria Fonoberova and Igor Mezić, UCSB, collaborators Nelida Črnjarić-Žic, Senka Maćešić ans Stefan Ivić
- *Ekološko modeliranje u obalnom području Riječkog zaljeva, istraživanje uz potporu Sveučilišta, voditelj Lado Kranjčević, suradnice Nelida Črnjarić-Žic i Senka Maćešić*
  Ecological modeling in the Bay of Rijeka coastal area, research supported by the University, principal investigator Lado Kranjčević, collaborators Nelida Črnjarić-Žic and Senka Maćešić

PUBLIKACIJE | PUBLICATIONS

RADOVI U ČASOPISIMA | JOURNAL PAPERS

- *Ivić, S.; Mrša Haber, I.; Legović, T.; Lagrangian coherent structures in the Rijeka Bay current field, Acta Adriatica, 0001-5113, 58, 3, 373-390, 2017*
- *Tomić, D.; Skala, K.; Kranjčević, L.; Pirkić, B.; Stifter, S.; Smit, I.; Evaluation of the Efficacy of Cancer Drugs by Using the Second Largest Eigenvalue of Metabolic Cancer Pathways, Journal of Computer Science & Systems Biology, 0974-7230, 11, 240-248, 2018*

MEĐUNARODNA SURADNJA | INTERNATIONAL COLLABORATIONS

- *Technische Universität München, Ingenieurfakultät Bau Geo Umwelt, Njemačka, Germany*
- *University of Santa Barbara, California, SAD, USA*

5.9

zavod za računarstvo
department of computer engineering

PREDSTOJNICA ZAVODA | DEPARTMENT HEAD:

Izv. prof. dr. sc. / Assoc. Prof. D. Sc. Tihana Galinac Grbac

http://www.riteh.uniri.hr/ustroj/zavodi/zr/

djelatnici
faculty and staff

REDOVITI PROFESORI | PROFESSORS

Ivo Ipšić

umjetna inteligencija; raspoznavanje uzoraka; govorne tehnologije
artificial intelligence; pattern recognition; speech technologies

IZVANREDNI PROFESORI | ASSOCIATE PROFESSORS

Miroslav Joler

bežične komunikacije; antene; računalni elektromagnetizam; pametna odjeća
wireless communications; antennas; computational electromagnetics; smart clothing

Tihana Galinac Grbac

programsko inženjerstvo, meko računarstvo, inženjerski menadžment, informacijsko-komunikacijske tehnologije
software engineering; soft computing; engineering management; information-communication technologies

Kristijan Lenac

mobilna robotika; operacijski sustavi; razvoj algoritama; ugradbeni sustavi; blockchain
mobile robotics; operating systems; algorithm development; embedded systems; blockchain

Ivan Štajduhar

umjetna inteligencija; strojno učenje
artificial intelligence; machine learning

Mladen Tomić

digitalna obrada signala i slike; teorija valića; filtarski slogovi
digital signal and image processing; wavelets; filter banks

DOCENTI | ASSISTANT PROFESSORS

Jonatan Lerga

digitalna obrada signala; teorija informacija; kodrianje; vremensko-frekvencijska analiza signala
digital signal processing; informtion theory; coding; time-frequency signal analysis

Dražen Brščić

interaktivna robotika; mobilna robotika; inteligentni prostori
human-robot interaction; mobile robotics; intelligent spaces

Sandi Ljubić

interakcija čovjeka i računala; mobilne aplikacije; inženjerstvo upotrebljivosti
human-computer interaction (HCI); mobile applications; usability engineering

POSLIJEDOKTORANDI | POSTDOCTORAL RESEARCH ASSISTANTS

Damir Arbula

bežične mreže osjetila; raspodjeljeni algoritmi; lokalizacija
wireless sensor networks; distributed algorithms; localization

Goran Mauša

umjetna inteligencija; meko računarstvo; predviđanje programskih pogrešaka
artificial intelligence; soft computing; software defect prediction

ASISTENTI | ASSISTANTS

Diego Sušanj

obrada slike; bežične mreže osjetila; ugradbeni sustavi

image processing; wireless sensor networks; embedded systems

Franko Hržić

umjetna inteligencija; strojno učenje

artificial intelligence; machine learning

Luka Batistić

pozicioniranje u zatvorenom prostoru

indoor positioning

Ana Vranković

programsko inženjerstvo; strukturalna analiza sustava

software engineering; structural system analysis

VANJSKI SURADNICI | ASSOCIATES

Renato Filjar

postupci određivanja položaja,navigacije i vremenskog usklađivanja obrada signala; ionosferski učinci na tehnološke sustave: usluge zasnovane na lokaciji; programski određen radio

positioning, navigation and timing (PNT) methods and systems; Signal processing; Space weather and ionospheric effects on technological systems; Location Based Services (LBS); Software-Defined Radio (SDR)

Emil Rubinić

Igor Majkić

Ivan Ivakić

Vjeran Tuhtan

Edi Grbac

Predrag Domijan

građa računala

computer architecture

nastava i znanost
education and science

KOLEGIJI NA PREDDIPLOMSKIM SVEUČILIŠNIM STUDIJIMA
| UNDERGRADUATE UNIVERSITY COURSES

Algoritmi i strukture podataka	*Algorithms and Data Structures*
Baze podataka	*Database Systems*
Digitalna logika	*Digital Logic*
Građa računala	*Computer Architecture*
Operacijski sustavi	*Operating Systems*
Uvod u umjetnu inteligenciju	*Introduction to Artificial Intelligence*
Programsko inženjerstvo	*Software Engineering*
Programiranje	*Programming*
Računalne mreže	*Computer Networks*
Razvoj web aplikacija	*Web Applications Development*
Ugradbeni računalni sustavi	*Embedded Systems*
Uvod u objektno orijentirano programiranje	*Introduction to Object Oriented Programming*
Programska podrška u inženjerstvu	*Computer Software in Engineering*
Natjecateljsko programiranje	*Competitive programming*
Racunalne vjestine I	*Computing Skills i*
Programiranje I	*Programming I*
Programiranje II	*Programming II*

KOLEGIJI NA DIPLOMSKIM SVEUČILIŠNIM STUDIJIMA
| GRADUATE UNIVERSITY COURSES

Bežične mreže osjetila	*Wireless Sensor Networks*
Komunikacija čovjek-stroj	*Human-Machine Interaction*
Mobilne komunikacije	*Mobile Communications*
Napredni algoritmi i strukture podataka	*Advanced Algorithms and Data Structures*
Napredne računalne mreže	*Advanced Computer Networks*
Objektno orijentirano programiranje	*Object Oriented Programming*
Programiranje ugradbenih sustava	*Embedded Systems Programming*
Računalna obrada govora i jezika	*Computer Speech and Language Processing*
Mikrovalno inženjerstvo	*Microwave Engineering*
Razvoj mobilnih aplikacija	*Mobile Applications Development*
Teorija informacija i kodiranje	*Information Theory and Coding*
Inženjerstvo kompleksnih programskih sustava	*Complex Software Systems Engineering*
Usluge zasnovane na lokaciji	*Location-Based Services*
Napredna korisnička sučelja	*Advanced User Interfaces*
Mobilna robotika	*Mobile Robotics*
Programski određen radio	*Software-Defined Radio*
Analiza računalnih i komunikacijskih sustava	*Computer and communication system analysis*
Strojno učenje	*Machine Learning*

KOLEGIJI NA PREDDIPLOMSKIM STRUČNIM STUDIJIMA
| UNDERGRADUATE VOCATIONAL COURSES

Informacije i komunikacije	*Information and Communication*
Primjena računala ST	*Applied Computing ST*
Računalne mreže ST	*Computer Networks ST*
Svjetlovodne mreže	*Optical Networks*
Telekomunikacijski uređaji i mreže	*Telecommunication Devices and Networks*

ZNANSTVENOISTRAŽIVAČKI RAD | SCIENTIFIC RESEARCH

- *Bežične mreže osjetila, raspodijeljeni algoritmi*
  Wireless sensor networks, distributed algorithms
- *Programsko inženjerstvo, informacijsko-komunikacijske tehnologije*
  Software engineering, information-communication technologies
- *Računalna obrada govora i jezika, raspoznavanje uzoraka*
  Speech processing and pattern recognition
- *Nosive antene, bežični prijenos snage, samougodljivi sustavi, pametna odjeća*
  Wearable antennas, wireless power transfer, self-adaptive systems, smart clothing
- *Mobilna robotika, autonomni sustavi, interakcija čovjeka i računala, blockchain*
  Mobile robotics, autonomous systems, human computer interaction, blockchain
- *Digitalna obrada signala, teorija informacija, kodirnje, vremensko-frekvencijska analiza signala, primjene obrade signala*
  Digital signal processing, information theory, coding, time-frequency signal analysis, signal processing applications
- *Digitalna obrada signala, adaptivni wavelet algoritmi*
  Digital signal processing, adaptive wavelet algorithms
- *Inženjerstvo upotrebljivosti, prediktivno modeliranje i vrednovanje, univerzalni pristup*
  Usability engineering, predictive modeling and evaluation, universal access
- *Analiza slike, računalom potpomognuto dijagnosticiranje, strojno učenje*
  Image analysis, computer aided diagnosis, machine learning
- *Meko računarstvo, programsko inženjerstvo*
  Soft computing, software engineering
- *Interaktivna robotika, mobilna robotika, inteligentni prostori*
  Human-robot interaction, mobile robotics, intelligent spaces
- *Obrada slike, bežične mreže osjetila, ugradbeni sustavi*
  Image processing, wireless sensor networks, embedded systems

PROJEKTI | PROJECTS

- *Galinac Grbac, T.; Programski sustavi u evoluciji: analiza i inovativni pristupi pametnom upravljanju, Hrvatska Zaklada za Znanost, UIP-2014-09-7945, uspostavni istraživački projekt*
  Galinac Grbac, T.; Evolving Software Systems: Analysis and Innovative Approaches for Smart Management (EVOSOFT), Croatian Science Foundation, UIP-2014-09-7945, Tihana Galinac Grbac, 2015 - 2018, instalation research grant
- *Galinac Grbac, T.; Međunarodna suradnja u računarstvu, CEEPUS, CIII-HU-0019-13-1718-M-109157*
  Galinac Grbac, T.; International Cooperation in Computer Science, CEEPUS, CIII-HU-0019-13-1718-M-109157
- *Galinac Grbac, T.; Pouzdana mreža Internetskih usluga temeljanja na samoupravljanju, COST Action IC 1304, voditelj za HR: Tihana Galinac Grbac, 2013-2017,znanstveno-istraživački.*
  Galinac Grbac, T.; Autonomous Control for a Reliable Internet of Services, COST Action, project no. IC1304, MC Cro: Tihana Galinac Grbac, 2013-2017.
- *Galinac Grbac, T.; Analiza i inovativni pristupi razvoju, upravljanju i primjeni kompleksnih softverskih sustava; Sveučilište u Rijeci; 58.384,02; 2013 - 2017, Tihana Galinac Grbac, znanstveno-istraživački.*

Galinac Grbac, T.; Analysis and innovative approaches to management and application of complex software systems, University of Rijeka, 58.384,02;2013-2017, Tihana Galinac Grbac, research and scientific project

- *Joler, M.; Studija utjecaja proreza na ponašanje rezonantnih frekvencija mikrotrakastih antena. Sveučilište u Rijeci, znanstveno-istraživački. Voditelj projekta.*
  Joler, M.; A study of the Slot Effects on the Behavior of Resonant Frequencies of Microstrip Antennas. Funded by: University of Rijeka, Croatia. Scientific research. Principal Investigator.
- *Lerga, J.; "Implementacija vremensko-frekvencijskih i drugih naprednih algoritama u analizi biomedicinskih signala". Znanstveni projekt financiran od strane Sveučilišta u Rijeci. Glavni istraživač.*
  Lerga, J.; "Implementation of time-frequency and other advanced algorithms for biomedical signal analysis". A scientific project funded by the University of Rijeka. Principal investigator.
- *Brščić, D.; "Interakcija ljudi i robota u stvarnim i virtualnim okruženjima". Znanstveni projekt financiran od strane Sveučilišta u Rijeci. Glavni istraživač.*
  Brščić, D.; "Human-robot Interaction in Real and Virtual Environments". A scientific project funded by the University of Rijeka. Principal investigator.
- *Ipšić, I.; "Prirodna i višemodalna komunikacija čovjek stroj". Znanstveni projekt financiran od strane Sveučilišta u Rijeci. Glavni istraživač.*
  Ipšić, I.; "Natural and multimodal man machine communication". A scientific project funded by the University of Rijeka. Principal investigator.
- *Štajduhar, I.; Lerga, J.; "COST Action CA17137, COST Association, Mreža za gravitacijske valove, geofiziku i strojno učenje"*
  Štajduhar, I.; Lerga, J.; "COST Action CA17137, COST Association, A network for Gravitational Waves, Geophysics and Machine Learning"
- *Štajduhar, I.; CEEPUS međunarodna suradnja CIII-AT-0042-00-1819 "Image Processing, Information Engineering & Interdisciplinary Knowledge Exchange"*
  Štajduhar, I.; CEEPUS international collaboration network CIII-AT-0042-00-1819 "Image Processing, Information Engineering & Interdisciplinary Knowledge Exchange"
- *Štajduhar, I.; "Nadzor gibanja prsnog koša pri radioterapiji primjenom postupaka strojnog učenja", bilateralni projekt Hrvatska-Slovenija (FMF Ljubljana)*
  Štajduhar, I.; "Thorax motion management in radiotherapy using machine learning techniques", bilateral project Croatia-Slovenia (FMF Ljubljana)
- *Lenac, K.; "Delekometna 3D percepcija u stvarnom vremenu" - PoC6 - HAMAG BICRO. Voditelj projekta.*
  Lenac, K.; "Long range 3D perception in real-time" - PoC6 - HAMAG BICRO
- *Lenac, K.; "WTS - sustav za automatizirano praćenje prijevoza i odlaganja otpada", suradnja s privredom. Voditelj projekta.*
  Lenac, K.; "WTS - Waste Tracking System"
- *Brščić, D., Arbula D.; Interaktivni tečaj za automatsko upravljanje, Erasmus+ Key Action 2: Cooperation for innovation and the exchange of good practices, 2018-1-SI01-KA203-047081, 2018-2021, partner na projektu*
  Brščić, D., Arbula D.; Interactive Course for Control Theory, Erasmus+ Key Action 2: Cooperation for innovation and the exchange of good practices, 2018-1-SI01-KA203-047081, 2018-2021, project partner

PUBLIKACIJE | PUBLICATIONS

KNJIGE | BOOKS

- *Van der Mei, R.; Van den Berg, H.; Ganchev, I.; Tutschku, K.; Leitner, P.; E. Lassila, P.; Burakowski, W.; Liberal, F.; Arvidsson, Å.; Hobetafeld, T.; Wac, K.; Melvin, H.; Galinac Grbac, T.; Haddad, Y.; Key, P.; State of the Art and Research Challenges in the Area of Autonomous Control for a Reliable Internet of Services. Autonomous Control for a Reliable Internet of Services - Methods, Models, Approaches, Techniques, Algorithms, and Tools., Lecture Notes in Computer Science 10768, Springer , ISBN 978-3-319-90414-6, 2018, Ch. 1 in Ivan Ganchev, Robert D. van der Mei, Hans van den Berg, ed. "Autonomous Control for a Reliable Internet of Services"*
- *Cardellini, V.; Galinac Grbac, T.; Nardelli, M.; Tanković, N.; Linh Truon, H.; "QoS-Based Elasticity for Service Chains in Distributed Edge Cloud Environments. Autonomous Control for a Reliable Internet of Services - Methods, Models, Approaches, Techniques, Algorithms, and Tools., Lecture Notes in Computer Science 10769", Springer, ISBN 978-3-319-90414-72018, Ch. 8 in Ivan Ganchev, Robert D. van der Mei, Hans van den Berg, ed. "Autonomous Control for a Reliable Internet of Services"*
- *Cardellini, V.; Galinac Grbac, T.; Kassler, A.; Kathiravelu, P.; Lo Presti, F.; Marotta, A.; Nardelli, M.; Veiga, L.; "Integrating SDN and NFV with QoS-Aware Service Composition. Autonomous Control for a Reliable Internet of Services - Methods, Models, Approaches, Techniques, Algorithms, and Tools., Lecture Notes in Computer Science 10769", Springer, ISBN 978-3-319-90414-8, 2018, Ch. 9 in Ivan Ganchev, Robert D. van der Mei, Hans van den Berg, ed. "Autonomous Control for a Reliable Internet of Services"*

RADOVI U ČASOPISIMA | JOURNAL PAPERS

- *Zanlungo, F.; Yücel, .; Brščić, D.; Kanda, T.; Hagita, N.; Intrinsic group behaviour: Dependence of pedestrian dyad dynamics on principal social and personal features, PLoS One, ISSN: 1932-6203, 11(12), 1-26, 2017*
- *Lerga, J.; Saulig, N.; Mozetič, V.; Algorithm Based On the Short-Term Rényi Entropy And IF Estimation For Noisy EEG Signals Analysis, Computers in biology and medicine, ISSN: 0010-4825, 80, 1-13, 2017*
- *Šegon, G.; Lerga, J.; Sučić, V.; Improved LPA-ICI-Based Estimators Embedded in a Signal Denoising Virtual Instrument, Signal Image and Video Processing, ISSN: 1863-1711, 11 (2), 211-218, 2017*
- *Volarić, I.; Lerga, J.; Sučić, V.; A Fast Signal Denoising Algorithm Based on the LPA-ICI Method for Real- Time Applications, Circuits systems and signal processing, ISSN: 0278-081X, 36 (11) 4653-4669, 2017*
- *Lerga, J.; Kirinčić, V.; Franković, D.; Štajduhar, I.; Adaptive State Estimator With Intersection of Confidence Intervals Based Preprocessing, International journal of electrical power & energy systems, ISSN: 0142-0615, 102 (1), 413-420, 2018*
- *Lerga, J.; Mancić, I.; Peić, H.; Brščić, D.; An Adaptive Method Based on the Improved LPA-ICI Algorithm for MRI Enhancement, Imaging science journal, ISSN: 1368-2199, 66 (6), 372-381 2018*
- *Lerga, J.; Grbac, E.; Sučić, V.; Saulig, N.; Adaptive Methods for Video Denoising Based on the ICI, FICI, and RICI Algorithms, Tehnički vjesnik, ISSN: 1330-3651, 25 (1), 1-6, 2018*
- *Mandić, I.; Peić, H.; Lerga, J.; Štajduhar, I.; Denoising of X-ray Images Using the Adaptive Algorithm Based on the LPA-RICI Algorithm, Journal of Imaging, ISSN: 2313-433X, 4 (2), 1-15, 2018*
- *Joler, M.; Boljkovac, M.; A Sleeve-Badge Circularly Polarized Textile Antenna, IEEE Transactions on Antennas and Propagation, ISSN: 0018-926X, 66 (3), 1576-1579, 2018*

POZVANA PREDAVANJA | INVITED LECTURES

- *Jeričević, Ž.; Truncated Least Squares: How Good Is the Approximation?, 11th Annual Baska GNSS Conference, 2017, Baška, Hrvatska*
- *Lerga, J.; Nonstationary Signal Processing - Methods And Applications, Institute of Informatics, University of Szeged, 2018, Szeged, Mađarska*
- *Štajduhar, I.; Hands-on Guide to Machine Learning Application, 26th Summer School on Image Processing, SSIP 2018, 2018, Graz, Austria*
- *Galinac Grbac, T.; Program structures and fault behaviour in complex systems, Ceepus projekt 'International Cooperation in Computer Science', 2018, Maribor, Slovenija*
- *Galinac Grbac, T.; Programming of Management and Orchestration of Virtualized Network Resources, The three "CO" (Composability, Comprehensibility, Correctness) Winter School, 2018, Košice, Slovačka*
- *Lenac, K.; Blockchain use in navigation systems, 12th Annual RIN GNSS Baška Conference, 2018, Baška, Hrvatska*
- *Lenac, K.; Blockchain technology, IEEE Elevate - AlumniTFR, 2018, Rijeka, Hrvatska*

MEĐUNARODNI KONGRESI | INTERNATIONAL CONGRESSES

- *Brščić, D.; Zanlungo F.; Kanda, T.; Modelling of Pedestrian Groups and Application to Group Recognition, Proceedings of MIPRO MSB - Modelling System Behaviour Conference, ISBN: 978-953-233-093-9, 452-457, 2017, Opatija, Hrvatska*
- *Lerga, J.; Saulig, N.; Lerga, R.; Štajduhar, I.; TFD Thresholding In Estimating The Number of EEG Components And The Dominant IF Using The Short-Term Rényi Entropy, 10th International Symposium on Image and Signal Processing and Analysis - ISPA 2017, ISBN 978-1-5090-4011-7, 80-85, 2017, Ljubljana, Slovenija*
- *Lerga, J.; Saulig, N.; Lerga, R.; Milanović, Ž.; Effects of TFD Thresholding On EEG Signal Analysis Based On The Local Rényi Entropy, 2nd International Multidisciplinary Conference on Computer and Energy Science SpliTech 2017, ISBN 978-953-290-071-2, 1-6, 2017, Split, Hrvatska*
- *Saulig, N.; Milanović, Ž.; Lerga, J.; Griparić, K.; On the Selection of the Proper Number of Classes in TFD Segmentation for Extraction of Useful Information Content from Noisy Signals 3rd International Conference on Smart and Sustainable Technologies Splitech 2018, 1-5, 2018, Split, Hrvatska*
- *Hržić, F.; Jansky, V.; Sušanj, D.; Gulan, G.; Kožar, I. and D.; Jeričević Ž.; Information entropy measures and clustering improve edge detection in medical X-ray images, 41st International Convention on Information and Communication Technology, Electronics and Microelectronics (MIPRO), ISBN: 978-953-233-095-3, 164 - 166, 2018, Opatija, Hrvatska*
- *Batistić, L.; Tomić, M.; "Overview of Indoor Positioning System Technologies", 41st International Convention on Information and Communication Technology, Electronics and Microelectronics (MIPRO), ISBN: 978-953-233-095-3 , 473-478 2018, Opatija, Hrvatska*
- *Hržić, F.; Sušanj, D.; Lenac, K.; Optimal Beacon Positioning for Indoor Drone Navigation, 12th Annual RIN GNSS Baška Conference, 2018, Baška, Hrvatska*
- *Miletić, M.; Vukušić, M.; Mauša, G.; Galinac Grbac, T.; Relationship Between Design and Defects for Software in Evolution, 6th workshop on Software Quality Analysis, Monitoring, Improvement, and Applications (SQAMIA 2017), ISSN 1613-0073, 10:1 – 10:10, 2017, Beograd, Srbija*

- *Mauša, G.; Galinac Grbac, T.; The Stability of Threshold Values for Software Metrics in Software Defect Prediction, "7th International Conference on Model and Data Engineering (MEDI 2017), Part of the Lecture Notes in Computer Science, vol 10563", "ISBN 978-3-319-66853-6", 81-95, 2017, Barcelona, Španjolska*
- *Mauša, G.; Kalafatović, D.; Giralt, E.; Galinac Grbac, T.; Decision Support System for Combinatorial Peptide Libraries, The 1st European PhD and Postdoc Symposium - ENABLE, Symposium 2017, 119, 2017, Barcelona, Španjolska*
- *Miletić, M.; Vukušić, M.; Mauša, G.; Galinac Grbac, T.; Cross-release code churn impact on effort-aware software defect prediction, 41st International Convention on Information and Communication Technology, Electronics and Microelectronics (MIPRO), ISBN: 978-953-233-095-3, 1460-1466, 2018, Opatija, Hrvatska*
- *Mohović, M.; Mauša, G.; Galinac Grbac, T.; Using Threshold Derivation of Software Metrics for Building Classifiers in Defect Prediction, 7th workshop on Software Quality Analysis, Monitoring, Improvement, and Applications (SQAMIA 2018), ISSN 1613-0073, 11:1 – 11:9, 2018, Novi Sad, Srbija*
- *Vranković, A.; Galinac Grbac, T.; Preparation for replicating empirical study of a selection method for software reliability growth models, Book of Extended Abstracts - My First Conference 2017., str. 54-55, 2017, Rijeka, Hrvatska*
- *Babić, S. G.; Galinac Grbac, T.; Lerga, J.; Community Structure of a Complex Software-System in Evolution, 41st International Convention on Information and Communication Technology, Electronics and Microelectronics (MIPRO), ISBN: 978-953-233-096-0, 1467-1471, 2018, Opatija, Hrvatska*
- *Vranković, A.; Galinac Grbac, T.; Blašković, B.; A case study on reliable Erlang communication in open platforms based on Scribble, 41st International Convention on Information and Communication Technology, Electronics and Microelectronics (MIPRO), ISBN: 978-953-233-096-1, 1472-1475, 2018, Opatija, Hrvatska*
- *Lenac, K.; Blockchain use in navigation systems, 12th Annual RIN GNSS Baška Conference*
- *Lenac, K.; Cuzzocrea, A.; Mumolo, E.; An Effective and Efficient Hybrid Scan Matching Algorithm for Mobile Object Applications, The 32nd ACM SIGAPP Symposium On Applied Computing, " ISBN: 978-1-4503-4486-9, doi: 10.1145/3019612.3019720"*

MEĐUNARODNA SURADNJA | INTERNATIONAL COLLABORATIONS

- *Galinac Grbac, T.; Institute of Informatics, Faculty of elecrical engineering and computer science, University of Maribor Slovenia, Slovenija, Slovenia*
- *Galinac Grbac, T.; Department of Mathematics and Informatics, Faculty of Sciences, University of Novi Sad, Srbija, Serbia*
- *Galinac Grbac, T.; Faculty of Informatics, Eötvös Loránd University, Mađarska, Hungary*
- *Lenac, K.; University of Trieste, Trieste, Italy, Italija, Italy*
- *Lenac, K.; AIBS Lab S.r.l., Trieste, Italy, Italija, Italy*
- *Štajduhar, I.; Faculty of Mathematics and Physics, University of Ljubljana, Slovenia, Slovenija, Slovenia*
- *Štajduhar, I.; Jožef Stefan Institute, Slovenia, Slovenija, Slovenia*
- *Mauša, G.; Faculty of electrical engineering, computing and informatics, University of Maribor, Slovenia, Slovenija, Slovenia*
- *Mauša, G.; Institute for research in biomedicine, Barcelona, Spain, Španjolska, Spain*
- *Lerga, J.; Institute of Informatics, University of Szeged, Mađarska, Hungary*
- *Štajduhar, I.; Medical University Graz, Graz, Austrija, Austria*

5.10 zavod za tehničku mehaniku
department for engineering mechanics

PREDSTOJNIK ZAVODA | DEPARTMENT HEAD:

Prof. dr. sc. / Prof. D. Sc. Roberto Žigulić

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djelatnici
faculty and staff

REDOVITI PROFESORI | PROFESSORS

Josip Brnić

statika; čvrstoća konstrukcija; teorija elastičnosti i plastičnosti; metoda konačnih elemenata; eksperimentalna mehanika; optimizacija konstrukcija; mehanika grešaka i loma

statics; strength of materials; theory of elasticity and plasticity; finite element method; experimental mechanics; optimization of structures; failure and fracture mechanics

Marko Čanađija

termomehanika; eksperimentalna mehanika; statika; metoda konačnih elemenata; nanomehanika

thermomechanics; experimental mechanics; statics; finite element method; nanomechanics

Roberto Žigulić

kinematika; dinamika; dinamika strojeva i robota; mehatronika; eksperimentalna mehanika

kinematics; dynamics; dynamics of robots and machines; mechatronics; experimental mechanics

Sanjin Braut

kinematika; dinamika; vibracije; eksperimentalna mehanika; trajnost strojeva i konstrukcija; dinamika rotora

kinematics; dynamics; vibration; experimental mechanics; durability of machines and structures; rotordynamics

Domagoj Lanc

čvrstoća; elasto-plastomehanika; stabilnost konstrukcija; kompozitne konstrukcije

strength of materials; elasto-plastomechanics; structural stability; composite structures

DOCENTI | ASSISTANT PROFESSORS

Marino Brčić

statika; čvrstoća konstrukcija; mehanika i elementi konstrukcija, laboratorijske vježbe; eksperimentalna ispitivanja u mehanici konstrukcija i strojeva; nanomehanika

statics; strength of materials; mechanics and structural elements; experimental methods in mechanics; nanomechanics

Sanjin Kršćanski

statika; čvrstoća konstrukcija; mehanika i elementi konstrukcija; trajnost strojeva i konstrukcija; laboratorijske vježbe

statics; strength of materials; mechanics and structural elements; durability of machines and structures; laboratory exercises

Igor Pešić

statika; čvrstoća konstrukcija; mehanika i elementi konstrukcija; laboratorijske vježbe

statics; strength of materials; mechanics and structural elements; laboratory exercises

Goranka Štimac Rončević

kinematika; dinamika; regulacija; aktivni magnetski ležajevi

kinematics; dynamics; control; active magnetic bearings

Ante Skoblar

kinematika; dinamika; vibracije; akustika

kinematics; dynamics; vibration; acoustics

POSLIJEDOKTORAND | POSTDOCTORAL RESEARCH ASSISTANT

Neven Munjas

statika; čvrstoća konstrukcija; mehanika i elementi konstrukcija; laboratorijske vježbe

statics; strength of materials; mechanics and structural elements; laboratory exercises

ASISTENTI | ASSISTANTS

Damjan Banić

čvrstoća; elasto-plastomehanika; stabilnost konstrukcija; kompozitne konstrukcije

strength of materials; elasto-plastomechanics; structural stability; composite structures

Sandra Kvaternik

na znanstvenom projektu Hrvatske zaklade za znanost (HRZZ)

VANJSKI SURADNICI | ASSOCIATES

Franc Kosel
Fakulteta za Strojništvo, Univerza v Ljubljani, Ljubljana, Slovenija
| Faculty of Mechanical Engineering, University of Ljubljana, Ljubljana, Slovenia

tehnička mehanika; čvrstoća; elastoplastomehanika

engineering mechanics; strength of materials; elasto-plastomechanics

Goran Turkalj
Sveučilište u Rijeci
| University of Rijeka

čvrstoća konstrukcija; elasto-plastomehanika; stabilnost konstrukcija; računarska analiza konstrukcija

strength of materials; elasto-plastomechanics; structural stability; computational structural analysis

Goran Vukelić
Pomorski fakultet, Sveučilište u Rijeci
| Faculty of Maritime Studies, University of Rijeka

statika; čvrstoća konstrukcija; eksperimentalna mehanika; metoda konačnih elemenata; mehanika loma

statics; strength of materials; experimental mechanics; finite element analysis; fracture mechanics

Stojan Kravanja
Fakulteta za gradbeništvo, Univerza v Mariboru, Maribor, Slovenija
| Faculty of Civil Engineering, University of Maribor, Maribor, Slovenia

tehnička mehanika; optimizacija konstrukcija

engineering mechanics; structural optimization

Goran Vizentin
Pomorski fakultet, Sveučilište u Rijeci
| Faculty of Maritime Studies, University of Rijeka

statika; čvrstoća konstrukcija

statics; strength of materials

nastava i znanost
education and science

Nastava se izvodi iz područja primijenjene mehanike što uključuje analitičku, računalnu i eksperimentalnu mehaniku. Prema sadržaju razmatranja ovdje spadaju: statika, čvrstoća konstrukcija, stabilnost konstrukcija, mehanika konstrukcija, optimizacija konstrukcija, konačnoelementna analiza, tankostjene konstrukcije, računalna analiza konstrukcija, kompozitne konstrukcije, eksperimentalna ispitivanja u mehanici konstrukcija i strojeva, termomehanika, kontaktna mehanika, kinematika, dinamika, vibracije; akustika, regulacija i upravljanje dinamičkim sustavima; trajnost strojeva i konstrukcija; mehatronika, itd...

CO: Mehanika

Courses are runing in the field of applied mechanics and includes analyticall, computational and experimental mechanics. According to the content of consideration, here belong: statics, strengt of materials, structural stability, structural mechanics, optimization of structures, finite element analysis, thin-walled structures, computational analysis of structures, composite structures, experimental testing of structures and machines, termomechanics, contact mechanics, kinematics, dynamics, vibrations, vibroacustics, dynamic system control, durability of machines and structures; mechatronics, etc.

LLL: Mechanics

KOLEGIJI NA PREDDIPLOMSKIM SVEUČILIŠNIM STUDIJIMA
| UNDERGRADUATE UNIVERSITY COURSES

Statika	*Statics*
Čvrstoća konstrukcija I	*Strength of Materials I*
Osnove primjene metode konačnih elemenata	*Introduction to Finite Element Method (FEM)*
Čvrstoća konstrukcija	*Strength of Materials*
Računarska analiza konstrukcija	*Computational Structural Analysis*
Mehanika i elementi konstrukcija	*Mechanics and Structural Elements*
Kinematika	*Kinematics*
Dinamika	*Dynamics*

KOLEGIJI NA DIPLOMSKIM SVEUČILIŠNIM STUDIJIMA
| GRADUATE UNIVERSITY COURSES

Čvrstoća konstrukcija II	*Strength of Materials II*
Metoda konačnih elemenata čvrstih tijela	*Finite Element Method of Solids*
Optimalni dizajn konstrukcija	*Optimization of Structures*
Eksperimentalna ispitivanja u mehanici konstrukcija i strojeva	*Experimental Testing in Mechanics of Structures and Machines*
Termomehanika	*Thermomechanics*
Elasto i plastomehanika	*Elasto and Plastomechanics*
Stabilnost konstrukcija	*Structural Stability*
Tankostjene konstrukcije	*Thin-Walled Structures*
Dinamika strojeva i robota	*Dynamics of Machines and Robots*
Eksperimentalna ispitivanja u mehanici konstrukcija i strojeva	*Experimental Testing in Mechanics of Structures and Machines*
Regulacija i upravljanje dinamičkim sustavima	*Dynamic Systems Control*
Simulacija dinamičkih sustava	*Simulation of Dynamic System*
Trajnost strojeva i konstrukcija	*Durability of Machines and Structures*
Vibracije	*Vibration*
Mehanika kompozita	*Mechanics of Composites*

KOLEGIJI NA PREDDIPLOMSKIM STRUČNIM STUDIJIMA
| UNDERGRADUATE VOCATIONAL COURSES

- *Mehanika I*
- *Mehanika i elementni konstrukcija ST*
- *Čvrstoća*
- *Mehanika II*

- *Mechanics I*
- *Mechanics and Structual Elements ST*
- *Strength of Materials*
- *Mechanics II*

KOLEGIJI NA POSLIJEDIPLOMSKIM SVEUČILIŠNIM (DOKTORSKIM) STUDIJIMA
| POSTGRADUATE UNIVERSITY (DOCTORAL) COURSES

- *Elastomehanika i plastomehanika*
- *MKE i optimizacija konstrukcija*
- *IP iz termomehanike*
- *Kontaktna mehanika*
- *Nelinearna analiza konstrukcija*
- *Stabilnost konstrukcija*
- *Vibracije i trajnost strojeva i konstrukcija*
- *Kinematika i dinamika robota*
- *"Zaštita od buke i vibracija strojeva i konstrukcija"*
- *Viskoelastičnost i viskoplastičnost*
- *Metodologija znanstvenoistraživačkog rada*

- *Elastomechanics and Plastomechanics*
- *FEM and Optimization of Structures*
- *Advanced Thermomechanics*
- *Contact mechanics*
- *Nonlinear Structural Analysis*
- *Structural Stability*
- *Vibrations and Durability of Machines and Structures*
- *Kinematics and Dynamics of Robots*
- *Protection against Noise and Vibration of Machines and Structures*
- *Viscoelasticity and Viscoplasticity*
- *Methodology of Scientific Work and Research*

ZNANSTVENOISTRAŽIVAČKI RAD | SCIENTIFIC RESEARCH

- *Primijenjena mehanika: računalna mehanika, eksperimentalna mehanika, mehanika grešaka i loma konstrukcija, optimalni dizajn konstrukcija, stabilnost konstrukcija, vibracije, vibroakustika, dinamika strojeva i konstrukcija, dinamika rotora, mehatronika, termomehanika, nanomehanika, integritet konstrukcija*
  Applied mechanics: computational mechanics, experimental mechanics, failure and fracture mechanics of structures, optimal structural design, structural stability, vibrations, vibroacoustics, dynamics of structures and machines, rotor dynamics, mechatronics, thermomechanics, nanomechanics, structural integrity.

PROJEKTI | PROJECTS

- *Procjena ponašanja konstrukcija u graničnim uvjetima rada, Hrvatska zaklada za znanost, 2014 - 2018, Josip Brnić*
  Assessment of structural behaviour in limit state operating conditions, Hrvatska zaklada za znanost, znanstvenoistraživački, 2014 - 2018, Josip Brnić
- *Modeliranje i vibracijska dijagnostika rotacijskih strojeva, OJ 221 MT 146, Inicijalna potpora za mlade istraživače, Sveučilište u Rijeci, Sanjin Braut.*
  Modeling and vibration diagnosis of rotating machines, OJ 221 MT 146, Initial support for young researchers, University of Rijeka, Sanjin Braut.
- *Redukcija vibracija i buke rotacijskih strojeva, OJ 213 MT 118, Potpora za istraživački tim s najmanje 5 istraživača, Sveučilište u Rijeci, Roberto Žigulić.*
  Reduction of vibrations and noise of the rotational machines, OJ 213 MT 118, Support for the research team with min. 5 researchers, University of Rijeka, Roberto Žigulić.
- *Numerička analiza odziva konstrukcija i eksperimentalna istraživanja svojstava materijala, OJ 203 , Sveučilište u Rijeci, Josip Brnić*
  Numerical analysis of structural response and experimental investigations of material properties, OJ 203, University of Rijeka, Josip Brnić.

- *Razvoj numeričkih modela za analizu stabilnosti deformacijskih formi grednih konstrukcija, Sveučilište u Rijeci, Goran Turkalj, od 2013.*
  Development of numerical models for stability analysis of beam-type structure deformation modes, University of Rijeka, since 2013.
- *I. Eksperimentalna istraživanja svojstava materijala portala i II. Analiza izvedenog stanja i procjena mehaničkog ponašanja dijela rasklopnog postrojenja 110 kV u EVP Vrata, Brnić, J., Čanađija, M., Lanc, D., Brčić, M., Turkalj, G.*
  I. Experimmental investigations of the material properties of the portal and II. Structural analysis and estimation of mechanical behaviour of the part of 110 KV plant in EVP Vrata
- *Konačnoelementno modeliranje laminatno kompozitnih konstrukcija grednog tipa, OJ11222, Sveučilište u Rijeci, Domagoj Lanc, od 2014.*
  Finite element modeling o flaminated composite beam-type structurs,OJ11222, University of Rijeka, Domagoj Lanc, since 2014.
- *Mehanizmi očvršćivanja i žilavosti Mg2(SixSn1-x) faze u finozrnatim Mg-Sn-Si-Al-Zn-Sb(-Sr) slitinama, bilateralni projekt Hrvatska - Kina, 2018 - 2018, Marko Čanađija*
  Strengthening and Toughening Mechanisms of Mg2(SixSn1-x) Phase in Fine-grained Mg-Sn-Si-Al-Zn-Sb(-Sr) alloys, bilateral project Croatia - China, 2018 - 2019, Marko Čanađija

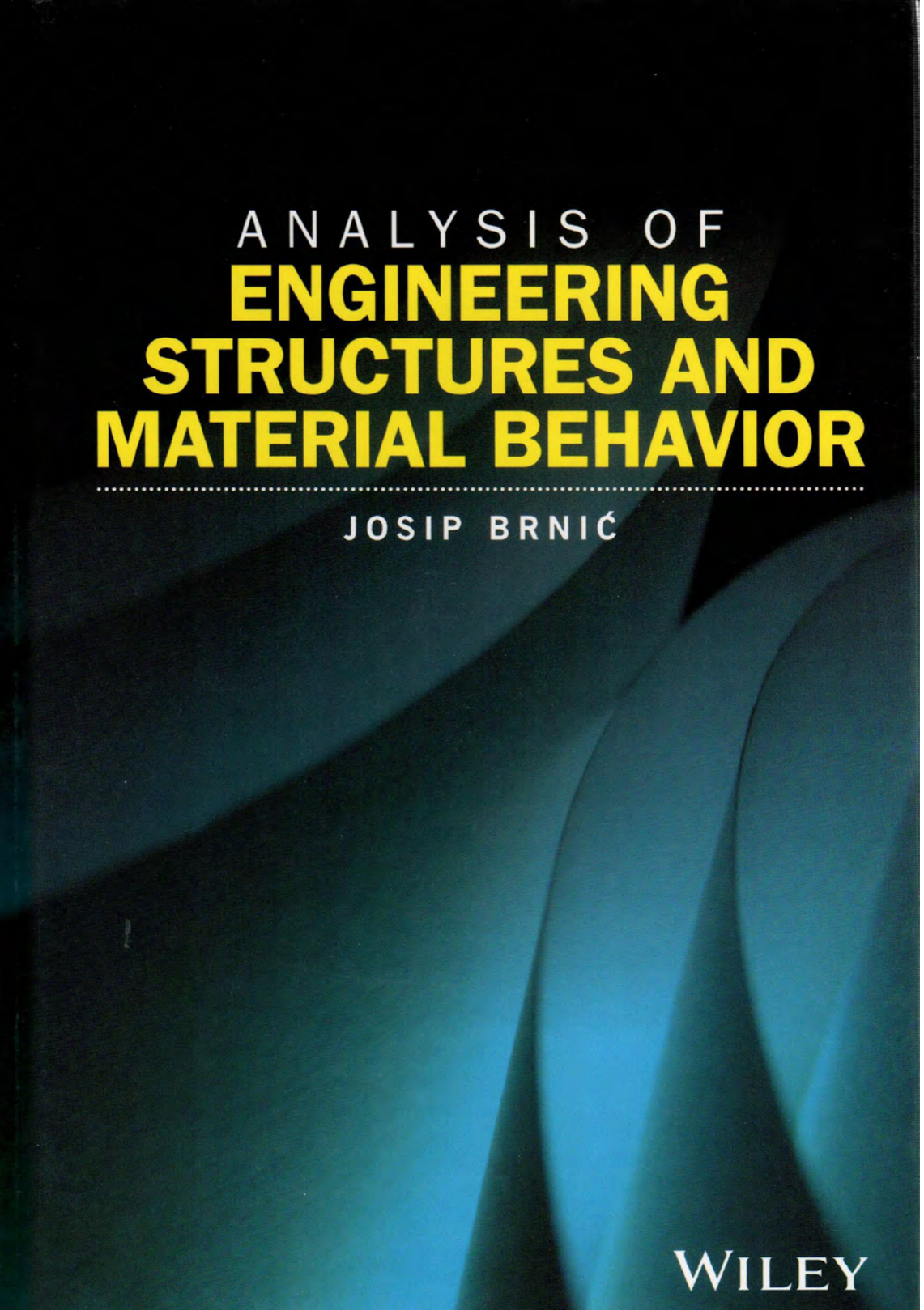
PUBLIKACIJE | PUBLICATIONS

KNJIGE | BOOKS

- *Brnić, J.; Analysis of Engineering Structures and Material Behavior Wiley & Sons Ltd, 978-1-119-32907-7, 2018, Chichester*

RADOVI U ČASOPISIMA | JOURNAL PAPERS

- *Barretta, R.; Čanađija, M.; Luciano, R.; Marotti de Sciarra, F.; Stress-Driven Modeling of Nonlocal Thermoelastic Behavior of Nanobeams, International Journal of Engineering Science 0020-7225, 126, 53-97, 2018*
- *Barretta, R.; Čanađija, M.; Feo, L.; Luciano, R.; Marotti de Sciarra; F.; Penna, R.; Exact solutions of inflected functionally graded nano-beams in integral elasticity, Composites Part B - Engineering, 1359-8368, 142, 273-286, 2018*
- *Barretta, R.; Brčić, M.; Čanađija, M.; Luciano, R.; Marotti de Sciarra, F.; Application of Gradient Elasticity to Armchair Carbon Nanotubes: Size Effects and Constitutive Parameters Assessment European Journal of Mechanics, A/Solids, 0997-7538, 65, 1-13, 2017*
- *Brčić, M.; Čanađija, M.; Brnić, J.; Influence of imperfections on double walled carbon nanotube mechanical properties, Materials Today: Proceedings, 2214-7853, 5, 17397 - 17403, 2018*
- *Brnić, J.; Brčić, M.; Kršćanski, S.; Lanc, D.; Niu, J.; Wang, P.; Steel 51CrV4 under high temperatures, short- time creep and high cycle fatigue, Journal of constructional steel research 0143-974X, 147, 468-476, 2018*
- *Turkalj, G.; Lanc, D.; Banić, D.; Brnić, J.; Vo, Thuc P.; A shear-deformable beam model for stability analysis of orthotropic composite semi-rigid frames, Composite structures, 0263-8223 189, 648-660, 2018*
- *Kvaternik, S.; Turkalj, G.; Lanc, D.; Analysis of flexure, torsion and buckling of thin-walled frames with a focus on the joint warping behaviour, Transactions of FAMENA, 1333-1124, 41, (4), 1-10, 2017*
- *Štimac Rončević, G.; Rončević, B.; Skoblar, A.; Braut, S.; A Comparative Evaluation of Some Solution Methods in Free Vibration Analysis of Elastically Supported Beams, Journal of the Polytechnic of Rijeka, 1848-1299, 6, 285-298, 2018*



POZVANA PREDAVANJA | INVITED LECTURES

- *Čanađija, M.; Design errors and finite element analysis – how to find them?, Civil and Environmental Forensic Engineering – Winter School, 2017, Montegrotto Terme (PD), Italija*
- *Čanađija, M.; Singlescale and Multiscale Thermoplasiticity, Predavanje u sklopu Hrvatskog društva za mehaniku, 2018, Sv. u Rijeci, Građevinski fakultet, Rijeka, Hrvatska*

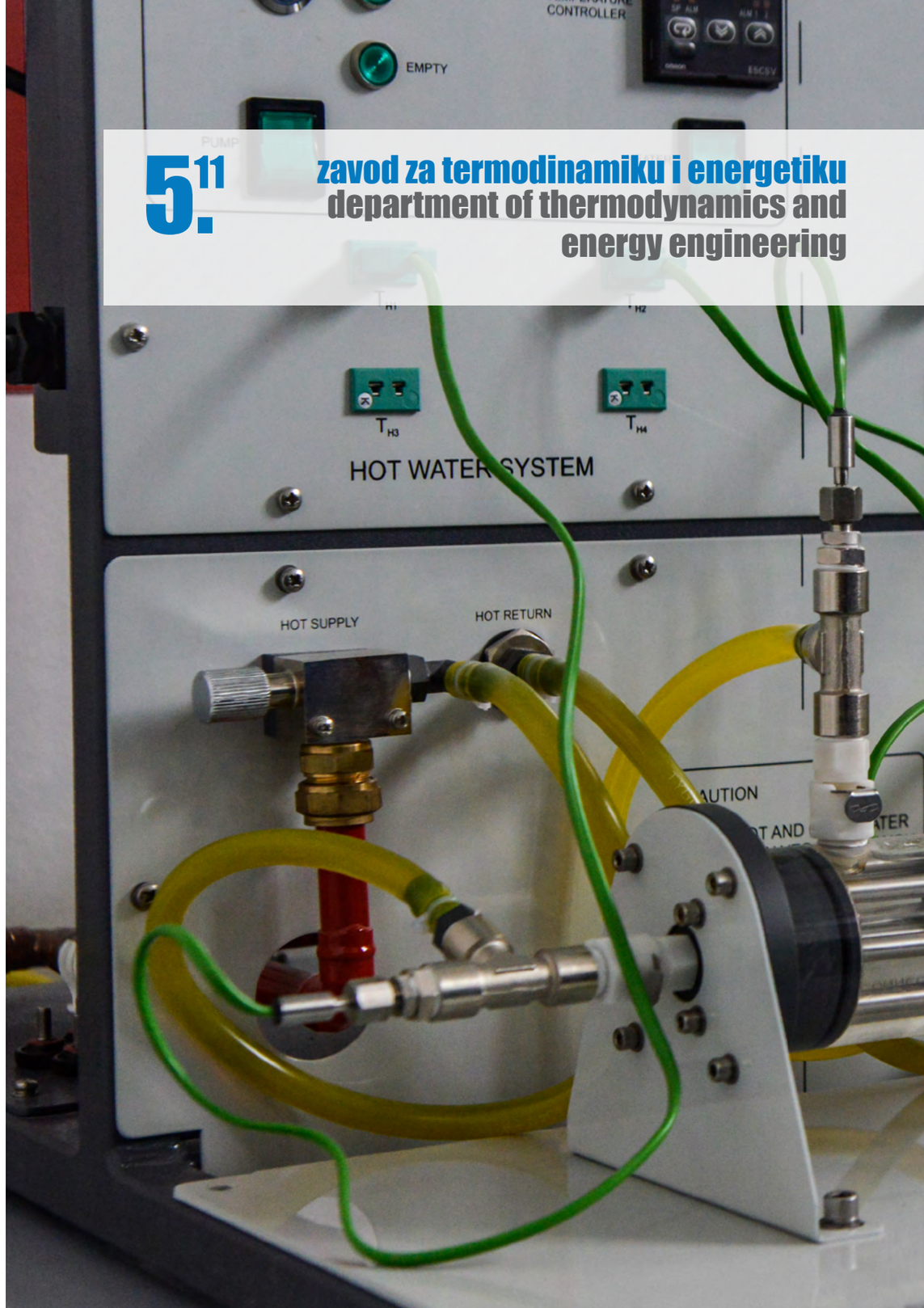
MEĐUNARODNI KONGRESI | INTERNATIONAL CONGRESSES

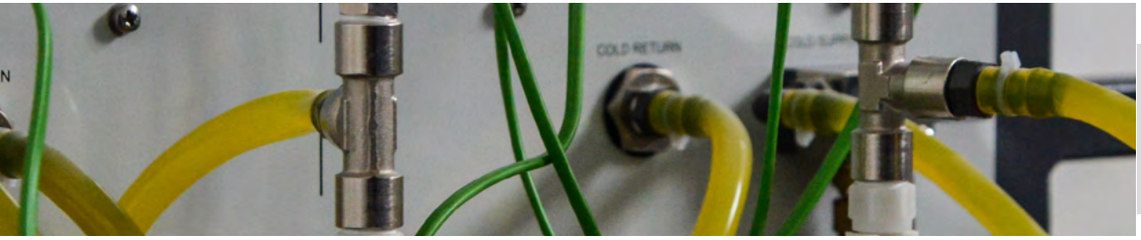
- *Braut, S.; Žigulić, R.; Štimac Rončević, G.; Skoblar, A.; Mirković, M.; Bulić, N., Rotor-stator partial rub detection based on Teager-Huang transform, 10th International Conference on Rotor Dynamics – IFToMM 2018978-3-319-99272-3, 2, 252-264, 2018, Rio de Janeiro, Brazil*
- *Bunčić, N.; Budimir, M.; Čanađija, M.; Exploring Possibilities of Detection of Submillimeter Defects Using Ultrasound Inspection Technique, 12th International Conference of the Croatian Nuclear Society 978-953-48100-1-9, 58-59, 2018, Zadar, Hrvatska*
- *Brčić, M.; Čanađija, M.; Brnić, J.; Imperfections in carbon nanotubes structure and their impact on the basic mechanical properties, 2nd International Conference on Materials Engineering and Nano Sciences, 1757-899X / 1757-8981, 30-34, 2018, Hong Kong*
- *Lanc, D.; Turkalj, G.; Kvaternik, S.; Pešić, I.; BUCKLING ANALYSIS OF THERMALLY LOADED FG BOX BEAMS, 8th International conference- Thin walled structures, 978-989-20-8665-1, 1-10, 2018, Lisabon, Portugal*
- *Banić, D.; Turkalj, G.; Lanc, D.; Large displacement analysis of laminated composite frames considering shear deformation effects, 4th International Conference on Mechanics of Composites MECHCOMP4, Madrid, Spain, July 9-12, 2018., ISSN 2421-2822, 14697, 2018, Madrid, Španjolska*
- *Lanc, D.; Kršćanski, S.; Turkalj, G.; Creep buckling analysis of the functionally graded beam, 5th International Conference on Mechanics of Composites MECHCOMP4, Madrid, Spain, July 9-12, 2018. ISSN 2421-2822, 14581, 2018,Madrid, Španjolska*
- *Turkalj, G.; Lanc, D.; Banić, D.; Kvaternik, S.; Finite element analysis of thin-walled functionally graded open section beams exposed to thermal loading, 6th International Conference on Mechanics of Composites MECHCOMP4, Madrid, Spain, July 9-12, 2018., ISSN 2421-2822, 14806, 2018, Madrid, Španjolska*
- *Vukelić, G.; Brnić, J.; "USING EXPERIMENTAL AND NUMERICAL CHARACTERIZATION IN COMPARING MARINE EXHAUST SYSTEM STAINLESS STEELS, 6th European Conference on Computational Mechanics (ECCM 6), 7th European Conference on Computational Fluid Dynamics (ECFD 7), 2018, Glasgow, UK*
- *Brnić, J.; Vukelić, G.; "EXPERIMENTAL DETERMINATION OF MATERIAL MECHANICAL PROPERTIES AND MODELING OF MATERIAL BEHAVIOR IN SPECIAL ENVIRONMENTAL CONDITIONS", 6th European Conference on Computational Mechanics (ECCM 6), 7th European Conference on Computational Fluid Dynamics (ECFD 7), 2018, Glasgow, UK*

MEĐUNARODNA SURADNJA | INTERNATIONAL COLLABORATIONS

- *Civil Engineering Faculty, University of Maribor,Slovenija, Slovenia*
- *Institute of Mechanics Department of Mechanical Engineering TU Dortmund, Njemačka, Germany*
- *School of Materials Science and Engineering, Henan Polytechnic University, Kina, China*
- *Harbin Institute of Technology, School of Materials Science and Engineering, Kina, China*
- *University of Bologna, Italija, Italia*
- *Faculty of Engineering - University of Kragujevac, Srbija, Serbia*
- *Faculty of Mechanical Engineering - University of Montenegro, Crna Gora, Montenegro*
- *Faculty of Mechanical Engineering, University of Ljubljana, Slovenija, Slovenia*
- *Institute of Materials and Welding, Graz University of Technology, Austrija, Austria*
- *Faculty of Engineering and Environment, Northumbria University, Newcastle upon Tyne, Velika Britanija, United Kingdom*
- *L'Università degli Studi di Napoli Federico II, Naples, Italija, Italy*
- *Lappeenranta University of Technology, Finska, Finland*

5.11 zavod za termodinamiku i energetiku department of thermodynamics and energy engineering





PREDSTOJNIK ZAVODA | DEPARTMENT HEAD:

Prof. dr. sc. / Prof. D. Sc. **Branimir Pavković**

http://www.riteh.uniri.hr/ustroj/zte/

djelatnici
faculty and staff

REDOVITI PROFESORI | PROFESSORS

Tomislav Mrakovčić

brodski energetski sustavi; brodski pogonski sustavi; brodski pomoćni strojevi; numeričko modeliranje prijenosa topline i tvari

marine energy systems; marine propulsion systems; marine auxiliary machinery; numerical modeling of heat and mass transfer

Branimir Pavković

tehnika hlađenja; mjerenja u termotehnici; kompresori; procesna oprema; dizalice topline; energetska učinkovitost; obnovljivi izvori energije

refrigeration; thermal measurements; compressors; process equipment; heat pumps; energy efficiency; renewable energy sources

Anica Trp

termodinamika; izmjenjivači topline; numeričko modeliranje prijenosa topline i tvari; obnovljivi izvori energije

thermodynamics; heat exchangers; numerical modeling of heat and mass transfer; renewable energy sources

Kristian Lenić

termodinamika; izmjenjivači topline; numeričko modeliranje prijenosa topline i tvari; obnovljivi izvori energije

thermodynamics; heat exchangers; numerical modeling of heat and mass transfer; renewable energy sources

IZVANREDNI PROFESORI | ASSOCIATE PROFESSORS

Tomislav Senčić

toplinski strojevi i uređaji; goriva, maziva i voda

thermal machines; fuels, lubricants and water

Igor Wolf

termotehnička oprema i sustavi; toplinska ugodnost; kvaliteta zraka u prostoru; obnovljivi izvori energije; središnji sustavi nadzora i upravljanja u zgradama

thermo-technical equipment and systems; thermal comfort; indoor air quality; renewable energy sources; building management systems

DOCENTI | ASSISTANT PROFESSORS

Igor Bonefačić

termodinamika; numeričko modeliranje procesa izgaranja, prijenosa topline i tvari, obnovljivi izvori energije

thermodynamics; numerical modelling of combustion, heat and mass transfer, renewable energy sources

Viktor Dragičević

energetski i procesni uređaji, inženjerstvo zaštite okoliša

energy and process facilities, environmental engineering

Paolo Blecich

termodinamika; numeričko modeliranje prijelaza topline i izmjene tvari; obnovljivi izvori energije; plinska tehnika

thermodynamics; numerical modelling of heat and mass transfer; renewable energy sources; gas engineering

Ozren Bukovac

motori s unutranjim izgaranjem; termodinamika: toplinski strojevi; numeričko modeliranje; neuronske mreže

internal combustion engines; thermodynamics; heat engines; numerical modeling; neural networks

Vedran Mrzljak

motori s unutarnjim izgaranjem; termodinamika; toplinski strojevi; toplinske turbine; energetska postrojenja; numeričko modeliranje

internal combustion engines; thermodynamics; heat engines; heat turbines; energy plants; numerical modeling

Vladimir Glažar

termoenergetska postrojenja; energetski sustavi; grijanje i klimatizacija; inženjerska vizualizacija

thermal power plants; energy systems; heating and air condtitioning systems; engineering visualization

POSLIJEDOKTORANDI | POSTDOCTORAL RESEARCH ASSISTANTS

Boris Delač

tehnika hlađenja; mjerenja u termotehnici; kompresori; procesna oprema; dizalice topline

refrigeration; thermal measurements; compressors; process equipment; heat pumps

ASISTENTI | ASSISTANTS

Mateo Kirinčić

termodinamika; izmjenjivači topline; numeričko modeliranje prijenosa topline i tvari; obnovljivi izvori energije

thermodynamics; heat exchangers; numerical modeling of heat and mass transfer; renewable energy sources

Fran Torbarina

termodinamika; izmjenjivači topline; numeričko modeliranje prijenosa topline i tvari; obnovljivi izvori energije

thermodynamics; heat exchangers; numerical modeling of heat and mass transfer; renewable energy sources

Vedran Medica - Viola

motori s unutarnjim izgaranjem; termodinamika; toplinski strojevi; toplinske turbine; energetska postrojenja; numeričko modeliranje

internal combustion engines; thermodynamics; heat engines; heat turbines; energy plants; numerical modeling

VANJSKI SURADNICI | ASSOCIATES

Katarina Knafelj
KD Čistoća d.o.o.

goriva, maziva i voda
fuels, lubricants and water

Bojan Jurdana
KD Čistoća d.o.o.

plinska tehnika
gas technology

nastava i znanost
education and science

Nastava iz područja znanstvenih polja strojarstva, temeljnih i interdisciplinarnih tehničkih znanosti, znanstvenih grana procesnog energetskog strojarstva, brodskog strojarstva, termodinamike, energetike i inženjerstva okoliša, Energetski sistemi; Energetska postrojenja; Energetska oprema, uređaji i strojevi; Zaštita okoliša; Procesno inženjerstvo.

CO: Program stručnog osposobljavanja osoba koje provode energetske preglede i/ili energetsko certificiranje zgrada s jednostavnim tehničkim sustavom (Modul 1)
Program stručnog osposobljavanja osoba koje provode energetske preglede i/ili energetsko certificiranje zgrada sa složenim tehničkim sustavom (Modul 2)

Lectures in the field of scientific fields of Mechanical Engineering, Fundamental and Interdisciplinary Engineering Sciences, the scientific branches of Process Energy Engineering, Marine Engineering, Thermodynamics, Energy Engineering and Environmental Engineering, Energy systems; Power plants; Energy equipment, facilities and engines; Environmental protection, Process engineering.

CO: Education of persons who are to perform energy audits and/or energy certification of buildings with a simple technical system (Module 1)
Education of persons who are to perform energy audits and/or energy certification of buildings with a complex technical system (Module 2)

KOLEGIJI NA PREDDIPLOMSKIM SVEUČILIŠNIM STUDIJIMA | UNDERGRADUATE UNIVERSITY COURSES

• *Toplinski strojevi i uređaji*	• *Thermal machine and devices*
• *Izvori energije*	• *Energy Sources*
• *Nauka o toplini I*	• *Thermodynamics I*
• *Termodinamika BG*	• *Thermodynamics NA*
• *Termodinamika i energetika*	• *Thermodynamics and Energy Engineering*
• *Energetski sustavi*	• *Energy systems*
• *Tehnika grijanja*	• *Heating Systems*
• *Brodski pomoćni strojevi*	• *Marine Auxiliary Machinery*

KOLEGIJI NA DIPLOMSKIM SVEUČILIŠNIM STUDIJIMA | GRADUATE UNIVERSITY COURSES

• *Goriva i maziva*	• *Fuels and lubricants*
• *Nauka o toplini II*	• *Thermodynamics II*
• *Numeričko modeliranje u termodinamici*	• *Numerical Modelling in Thermodynamics*
• *Plinska tehnika*	• *Gas Engineering*
• *Tehnički izmjenjivači topline*	• *Heat Exchangers*
• *Termodinamika smjesa*	• *Thermodynamics of Mixtures*
• *Energetski i procesni uređaji*	• *Energy and process facilities*
• *Termoenergetska postrojenja*	• *Thermal energy plants*
• *Energetska postrojenja*	• *Power plants*
• *Inženjerstvo zaštite okoliša*	• *Environmental engineering*
• *Procesno inženjerstvo*	• *Process engineering*
• *Automatizacija i regulacija u sustavima klimatizacije*	• *HVAC Control Systems*
• *Brodski termotehnički sustavi*	• *Marine HVAC&R Systems*
• *Obnovljivi izvori energije*	• *Renewable Energy Sources*
• *Toplinska mjerenja*	• *Thermal Measurements*
• *Brodski energetski uređaji*	• *Ship Energy Facilities*
• *Brodski sustavi*	• *Ship Systems*

- *Toplinske turbine*
- *Kompresori*
- *Tehnika hlađenja*
- *Laboratorijske vježbe u termotehnici*
- *Oprema procesnih postrojenja*

- *Heat turbines*
- *Compressors*
- *Refrigeration*
- *Laboratory Practice in Thermal Engineering*
- *Process Plants Equipment*

KOLEGIJI NA PREDDIPLOMSKIM STRUČNIM STUDIJIMA
| UNDERGRADUATE VOCATIONAL COURSES

- *Toplinski strojevi i uređaji 2*
- *Toplina*
- *Energetika u procesnoj industriji*
- *Zaštita okoliša i radne sredine*
- *Tehnološki procesi u procesnoj industriji*
- *Grijanje i klimatizacija*
- *Brodski sustavi, pomoćni strojevi i uređaji*
- *Toplinski strojevi i uređaji 1*

- *Thermal machines and devices 2*
- *Thermodynamics*
- *Energetics in process industry*
- *Environmental and working space protection*
- *Technological processes in process industry*
- *Heating and Air-Conditioning Systems*
- *Ship Systems and Auxiliaries*
- *Thermal machines and devices 1*

KOLEGIJI NA POSLIJEDIPLOMSKIM SVEUČILIŠNIM (DOKTORSKIM) STUDIJIMA
| POSTGRADUATE UNIVERSITY (DOCTORAL) COURSES

- *Eksperimentalne metode u toplinskoj tehnici i termoenergetici*
- *Izabrana poglavlja iz toplinskih znanosti*
- *Izabrana poglavlja iz izmjenjivača topline*
- *Numeričko modeliranje prijelaza topline*
- *Termodinamička analiza procesa*
- *Termodinamika smjesa i toplinski uređaji*
- *Izabrana poglavlja iz grijanja i klimatizacije*
- *Obnovljivi izvori energije*
- *Izabrana poglavlja iz brodskih energetskih postrojenja*
- *Izabrana poglavlja iz brodskih strojnih kompleksa*
- *Izabrana poglavlja iz tehnike hlađenja i tehnike niskih temperatura*
- *Zaštita okoliša u tehnici hlađenja*

- *Experimental Methods in Thermal and Power Engineering*
- *Selected Topics on Thermal Sciences*
- *Selected Topics on Heat Exchangers*
- *Numerical Modeling of Heat Transfer*
- *Thermodynamic Analysis of Processes*
- *Thermodynamics of Mixtures and Thermal Devices*
- *Selected Topics on Heating and Air-Conditioning*
- *Renewable Energy Sources*
- *Selected Chapters on Marine Energy Systems*
- *Selected Chapters on Marine Machinery Systems*
- *Selected Chapters on Refrigeration and Low - Temperature Refrigeration*
- *Environmental Refrigeration*

ZNANSTVENOISTRAŽIVAČKI RAD | SCIENTIFIC RESEARCH

- *Istraživanja na toplinskim aparatima i uređajima, izmjenjivačima topline i toplinskim spremnicima koja obuhvaćaju teorijska i laboratorijska istraživanja prijelaza topline, prijenosa mase te izmjene topline pri promjeni faza; istraživanja i optimizacija sustava grijanja i klimatizacije te sustava za korištenje obnovljivih izvora energije; istraživanja na području rashladne tehnike koja obuhvaćaju kompresijske i apsorpcijske rashladne uređaje i dizalice topline; istraživanja u području energetske učinkovitosti i optimizacija termotehničkih sustava grijanja, hlađenja i klimatizacije; istraživanja utjecaja parametara vlažne pare na proces erozije rotorskih lopatica toplinskih turbina; istraživanja erozije korozije protočnog dijela parnih turbina; istraživanja mogućnosti smanjenja emisije štetnih tvari motora s unutarnjim izgaranjem uz zadržavanje niske specifične potrošnje goriva te s ciljem povećanja specifične snage i pouzdanosti u preuzimanju naglih opterećenja snage kod motora s prednabijanjem; istraživanja iz brodskog strojarstva s ciljem optimalnog i energetski racionalnog vođenja brodskih pogonskih sustava; istraživanja na području optimizacije energetskih procesa; istraživanja na području smanjenja emisija štetnih sastojaka iz energetskih i procesnih postrojenja.*
  Research on heat devices, heat exchangers and heat storages which encompass theoretical and laboratory research of heat and mass transfer, as well as heat transfer during phase change processes; research and optimization of heating and cooling systems, as well as of renewable energy systems; research into the field of refrigeration which embraces compression and absorption cooling devices and heat pumps; research into energy efficiency and optimization of HVAC&R systems; research into influence of wet steam parameters on the erosion process of rotor turbine blades; research into erosion - corrosion in the flowing part of steam turbines; research into reducing pollution species emission of internal combustion engines while retaining low specific fuel consumption and aiming at increasing specific power and reliability by sudden overload of a super charged engine; research to field of marine engineering aiming at the optimizing ships power plant control; investigation into optimization of energy processes; investigation into the field of emission reduction from energy and process facilities.
- *Optimizacija energetskih sistema; Zaštita okoliša u energetskim postrojenjima*
  Optimisation of energy systems; Environmental protection in energy plants
- *Članovi Zavoda uključeni su u rad istraživačkog projekta financiranog od Hrvatske zaklade za znanost pod nazivom Povećanje energetske učinkovitosti izmjenjivača topline (HEXENER) voditeljice prof. dr. sc. Anice Trp. Tijekom prve godine trajanja projekta, u Laboratoriju za toplinska mjerenja uspostavljen je ispitni sustav za provedbu eksperimentalnog istraživanja utjecaja geometrije na izmjenu topline, s ugrađenim mjernim osjetnicima i davačima. U ispitnu zonu ugrađen je lamelni izmjenjivač topline s mikrokanalima na kojem je proveden niz mjerenja.*
  The members of the Department are involved in the work of a research project financed by the Croatian Science Foundation entitled Enhancement of the heat exchanger energy efficiency (HEXENER), project leader D. Sc. Anica Trp. During the first year of the project, a test system for experimental research of the influence of heat exchanger geometry on heat transfer, equipped with measurement sensors and senders, has been established. The microchannel fin-and-tube heat exchanger has been integrated into the test zone and a set of measurements have been carried out.

PROJEKTI | PROJECTS

- *Povećanje energetske učinkovitosti izmjenjivača topline (HEXENER), istraživački projekt financiran od Hrvatske zaklade za znanost, 2017.-2021., voditeljica projekta prof. dr. sc. Anica Trp.*
  Enhancement of the heat exchanger energy efficiency (HEXENER), research project financed by the Croatian Science Foundation, 2017-2021, project leader Prof. D. Sc. Anica Trp.
- *Istraživanje i razvoj komponenata i sustava obnovljivih izvora energije, potpora znanstvenim istraživanjima Sveučilišta u Rijeci, voditeljica prof. dr. sc. Anica Trp.*
  Research and development of the renewable energy sources components and systems, support for scientific research, University of Rijeka, head prof. D. Sc. Anica Trp.
- *Primijenjena istraživanja trigeneracijskih sustava s dizalicama topline koje rade s prirodnim radnim tvarima, potpora znanstvenim istraživanjima Sveučilišta u Rijeci, voditelj prof. dr. sc. Branimir Pavković.*
  Applied research of trigeneration system with heat pumps that operate with natural refrigerants, support for scientific research, University of Rijeka, head prof. D. Sc. Branimir Pavković.
- *Izrada satnih prosječnih vrijednosti meteoroloških podataka za referentne lokacije u Republici Hrvatskoj za Ministarstvo graditeljstva i prostornog uređenja, stručni projekt, voditelj prof. dr. sc. Branimir Pavković*
  Creation of hourly weather data for reference locations in Republic of Croatia for Ministry of construction and physical planning, professional project, head prof. D. Sc. Branimir Pavković.
- *Izrada projektnog zadatka za referentne zgrade za Ministarstvo graditeljstva i prostornog uređenja, stručni projekt, voditelj prof. dr. sc. Branimir Pavković*
  Creation of project task for reference buildings for Ministry of construction and physical planning, professional project, head prof. D. Sc. Branimir Pavković.

PUBLIKACIJE | PUBLICATIONS

KNJIGE | BOOKS

- *Senčić, T.; Toplinski strojevi i uređaji: zbirka zadataka, Tehnički fakultet, Sveučilište u Rijeci 978-953-6326-98-3, 2018., Rijeka, prvo izdanje*

RADOVI U ČASOPISIMA | JOURNAL PAPERS

- *Delač, B.; Pavković, B.; Lenić, K.; Design, monitoring and dynamic model development of a solar heating and cooling system, Applied thermal engineering, ISSN 1359-4311, 142, 489-501 2018, London*
- *Medica-Viola, V.; Pavković, B.; Mrzljak, V.; Numerical model for on-condition monitoring of condenser in coal-fired power plants, International Journal of Heat and Mass Transfer, ISSN: 0017-9310, 117, 912-923, 2018, London*
- *Mrzljak, V.; Poljak, I.; Medica-Viola, V.; Thermodynamical analysis of high-pressure feed water heater in steam propulsion system during exploitation, Brodogradnja: Teorija i praksa brodogradnje i pomorske tehnike, ISSN 1845-5859, 68 (2), 45-61, 2017, Zagreb*
- *Mrzljak, V.; Poljak, I.; Medica-Viola, V.; Energy and Exergy Efficiency Analysis of Sealing Steam Condenser in Propulsion System of LNG Carrier, Naše more, ISSN 1848-6320, 64 (1), 20-25, 2017, Dubrovnik*
- *Janković, Z.; Sierre Atienza, J.; Cerdeira Perez, F.; Pavković, B.; Analysis of the impact of different operating conditions on the performance of a reversible heat pump with domestic hot water production, International journal of refrigeration (0140-7007) 86 (2018), 86, 282-291, 2018., London*
- *Mrzljak, V. ; Senčić, T. ; Žarković, B. Turbogenerator steam turbine variation in developed power: analysis of exergy efficiency and exergy destruction changeModelling and Simulation in Engineering ISSN: 1687-5591 2018 1-12 2018. Kairo*
- *Mrzljak, V. ; Prpić-Oršić, J. ; Senčić, T.; Change in Steam Generators Main and Auxiliary Energy Flow Streams During the Load Increase of LNG Carrier Steam Propulsion System, Pomorstvo: journal of maritime studies, ISSN: 1332-0718, 32 (1), 121-131, 2018., Rijeka*
- *Mrzljak, V.; Prpić-Oršić, J.; Poljak, I.; Energy Power Losses and Efficiency of Low Power Steam Turbine for the Main Feed Water Pump Drive in the Marine Steam Propulsion System Pomorski zbornik, ISSN: 0554-6397, 54 (1), 37-51, 2018., Rijeka*
- *Mrzljak, V.; Poljak, I.; Žarković, B.; Exergy Analysis of Steam Pressure Reduction Valve in Marine Propulsion Plant on Conventional LNG Carrier, Naše more: znanstveni časopis za more i pomorstvo, ISSN: 0469-6255, 65 (1), 24-31, 2018., Dubrovnik*

MEĐUNARODNI KONGRESI | INTERNATIONAL CONGRESSES

- *Glažar, V.; Trp, A.; Lenić, K.; Kirinčić, M.; Experimental Analysis of Air-Water Heat Exchanger with Microchannel Coil Exposed to Different Working Parameters, EuroSun 2018 / ISES, Conference Proceedings (2018) - 12th International Conference on Solar Energy for Buildings and Industry, September 2018., 2018*
- *Mrzljak, V.; Poljak, I.; Ignition Delay In Quasi-Dimensional Numerical Model For Simulation Of Diesel Engine In Cylinder Process, Proceedings of International Conference on Innovative Technologies, IN-TECH 2017, ISSN: 0184-9069, 1, 5-8, 2017., Ljubljana, Slovenija*
- *Mrzljak, V.; Žarković, B.; Prpić-Oršić, J.; Marine Slow Speed Two-Stroke Diesel Engine - Numerical Analysis Of Efficiencies And Important Operating Parameters, International Scientific*

Conference Industry 4.0, Proceedings – 2017, ISSN: 2535-0153, 1, 65-68, 2017., Sofija, Bugarska

- *Mrzljak, V.; Žarković, B.; Poljak, I.; Diesel Engine Exhaust Gas Emissions Investigation By Using Measurement Data And Numerical Analysis, International Scientific Conference Industry 4.0 Proceedings – 2017, ISSN: 2535-0153, 1, 61-64, 2017., Sofija, Bugarska*
- *Mrzljak, V.; Žarković, B.; Poljak, I.; Energy And Exergy Analysis Of Sea Water Pump For The Main Condenser Cooling In The Lng Carrier Steam Propulsion System, International Scientific Conference Mathematical Modeling 2017 Proceedings, ISSN: 2535-0978, 1, 92-95, 2017., Sofija, Bugarska*
- *Mrzljak, V.; Poljak, I.; Jurić, A.; Exergy Efficiency And Exergy Destruction Change Of Low Power Steam Turbine With One Curtis Stage During The Variation In Developed Power, International Scientific Conference - High Technologies. Business. Society - 2018 - Proceedings, ISSN: 2535-0005, 1, 56-59 2018., Sofija, Bugarska*
- *Mrzljak, V.; Prpić-Oršić, J.; Žarković, B.; Mean Pressure Of Mechanical Losses Equation For Marine Slow Speed Two-Stroke Diesel Engine, International Scientific Conference - High Technologies. Business. Society - 2018 - Proceedings, ISSN: 2535-0005, 1, 60-63, 2018., Sofija, Bugarska*
- *Mrzljak, V.; Prpić-Oršić, J.; Poljak, I.; Comparison Of Fuel Costs Between Coges And Diesel-Electric Propulsion Systems For Conventional Passenger Cruiser Propulsion, International Scientific Conference - Technics. Techologies. Education. Safety. 2018 - Proceedings, ISSN: 2535-0315, 1, 129-132, 2018., Sofija, Bugarska*
- *Mrzljak, V.; Poljak, I.; Žarković, B.; Change In Operating Parameters Of Turbocharged Direct Injection Diesel Engine During The Injected Fuel Mass Flow Variation, International Scientific Conference - Machines. Technologies. Materials - 2018 - Winter Session - Proceedings , ISSN: 2535-0021, 1, 23-26, 2018., Sofija, Bugarska*
- *Mrzljak, V.; Senčić, T.; Prpić-Oršić, J.; Energy Efficiency And Energy Power Losses Of The Turbo-Generator Steam Turbine From Lng Carrier Propulsion System, International Scientific Conference - Machines. Technologies. Materials - 2018 - Winter Session - Proceedings, ISSN: 2535-0021, 1, 27-30, 2018., Sofija, Bugarska*
- *Mrzljak, V.; Poljak, I.; Žarković, B.; Air Cooled Direct Injection Diesel Engine Main Operating Parameters Analysis During The Change In Rotational Speed, Xi International Conference For Young Researchers - Technical Sciences. Industrial Management - 2018 - Proceedings, ISSN: 2535-0196, 1, 33-36, 2018., Sofija, Bugarska*
- *Mrzljak, V.; Žarković, B.; Naturally Aspirated Gasoline Engine Upgrade With Turbocharger - Numerical Investigation Of Change In Operating Parameters, Xxvi International Scientific Conference - Trans & Motauto '18 - Proceedings, ISSN: 1313-5031, 1, 60-63, 2018., Sofija, Bugarska*
- *Mrzljak, V.; Žarković, B.; Prpić-Oršić, J.; Liquid Fuel Temperature, Pressure And Injection Rate Influence On Injector Nozzle Reynolds Number And Contraction Coefficient, Xxvi International Scientific Conference - Trans & Motauto '18 - Proceedings, ISSN: 1313-5031, 1, 64-67, 2018., Sofija, Bugarska*
- *Pavković, B.; Delač, B.; Hourly Weather Data For Reference Locations In Croatia, 9th International Natural Gas, Heat and Water Conference, 2018., Osijek, Hrvatska*

POZVANA PREDAVANJA | INVITED LECTURES

- *Delač, B.; Pavković, B.; Lenić, K.; Analiza složenih tehničkih GVIK sustava korištenjem dinamičkog modeliranja, "PLIN 2017 - 15. skup o prirodnom plinu, toplini i vodi; 8. međunarodni skup o prirodnom plinu, toplini i vodi", 2017, Osijek , Hrvatska*
- *Mrakovčić, T.; Numerical modelling of internal combustion engines at Faculty of Engineering University of Rijeka - Croatia, "Znanstveno usavršavanje u okviru prjekta HRZZ Greener Approach to Ship Design and Optimal Route Planning (CSF, Project no. 8722)", 2018, Kobe, Japan*

MEĐUNARODNA SURADNJA | INTERNATIONAL COLLABORATIONS

- *ASHRAE – American Society of Heating, Refrigerating and Air-Conditioning Engineers, California Institute of Technology, SAD, USA*
- *California Institute of Technology, SAD, USA*
- *Dipartimento di fisica tecnica, Universita' degli studi di Padova, Italija, Italy*
- *Dipartimento di energetica, Universita' degli studi di Trieste, Italija, Italy*
- *Dipartimento di energetica, Politecnico di Milano, Italija, Italy*
- *EAEC – European Automobile Engineers Cooperations, Austrija, Austria*
- *Ente per le Nuove tecnologie, l'Energia e l'Ambiente, ENEA, Roma, Italija, Italy*
- *EURAMMON - a joint initiative by companies, institutions and individuals committed to increasing the use of natural refrigerants, Frankfurt, Njemačka, Germany*
- *Faculty of Chemistry and Chemical Engineering, University of Maribor, Slovenija, Slovenia*
- *Faculty of Mechanical Engineering, University of Ljubljana, Slovenija, Slovenia*
- *Faculty of Mechanical Engineering, University of Maribor, Slovenija, Slovenia*
- *FH Joanneum, University of Applied Sciences, Graz, Austrija, Austria*
- *FISITA – International Federation of Automotive Engineering Societes, Ujedinjeno Kraljevstvo United Kingdom*
- *GRETh, Bâtiment Lynx, SavoieTechnolac, Le Bourget du Lac – Cedex, Francuska, France*
- *Institute of Energy Technology, ETH Zürich, Švicarska, Switzerland*
- *Institut für angewandte Thermo- und Fluiddynamik, Fakultät Maschinenbau, Hochschule Mannheim, Njemačka, Germany*
- *Institute for Resource Efficient and Sustainable Systems, Graz University of Technology, Austrija, Austria*
- *International Institute of Refrigeration, Paris, Francuska, France*
- *ISES – The International Solar Energy Society, Freiburg, World Organisation, Germany/ Njemačka ISES Europe Freiburg, Njemačka, Germany*
- *Laboratory for Heating, Sanitary and Solar Technology, University of Ljubljana, Slovenija, Slovenia*
- *REHVA - Federation of European Heating, Ventilation and Air Conditioning Associations, Brussels, Belgija, Belgium*
- *Research and Development Center, Compagnie Industrielle d'Aplications Thermiques (CIAT),*

Culoz, Francuska, France

- *Szent Istvan University, Gödollo, Mađarska, Hungary*
- *Universität in Kassel, Njemačka, Germany*
- *KOBE UNIVERSITY, Faculty of Maritime Sciences, Japan, Japan*

5.12 akademici i profesori emeritusi
academics and professors emeritus

Ivan Katavić

professor emeritus

professor Emeritus

Elso Kuljanić

professor emeritus, Akademik HAZU

professor Emeritus, HAZU academician

Špiro Milošević

professor emeritus

professor Emeritus

Julijan Dobrinić

professor emeritus

professor Emeritus

Božidar Križan

professor emeritus

professor Emeritus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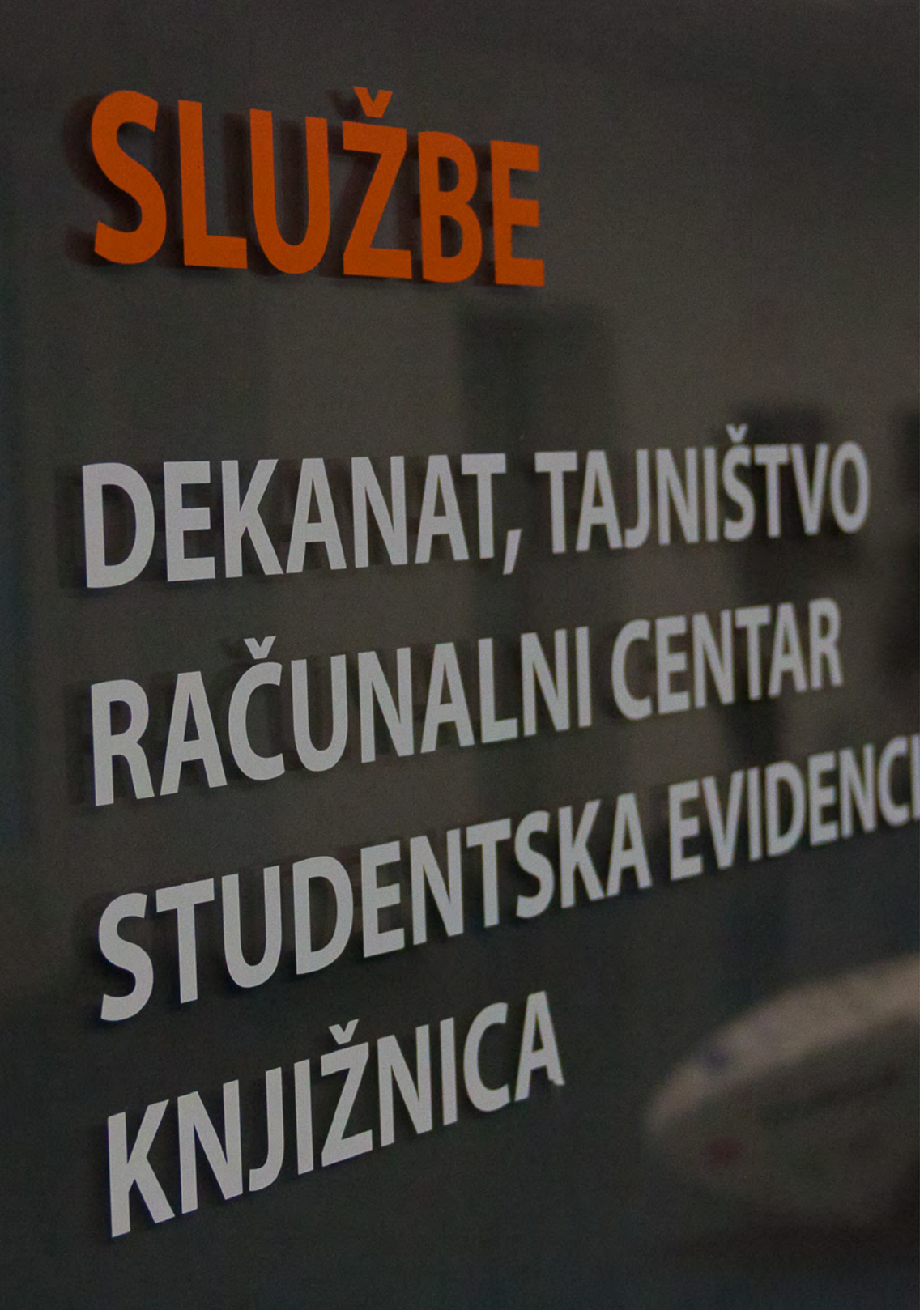
CADCAM
GROUP



6 stručne službe
professional and administrative staff

6.1 knjižnica library

VODITELJICA | HEAD:

Prof. i dipl. knjižničarka / prof., grad. librarian **Marta Lončarević**

http://www.riteh.uniri.hr/ustroj/knjiznica

Marta Lončarević prof. i dipl. knjižničarka prof., grad. librarian

mr. sc. **Mario Šlosar-Brnelić** dipl. knjižničar grad. librarian

Knjižnica Tehničkog fakulteta Sveučilišta u Rijeci dio je znanstvene, istraživačke i obrazovne djelatnosti Fakulteta. Obavlja poslove oblikovanja i izgradnje knjižničnog fonda (nabava, stručna obrada), pružanja knjižničnih usluga korisnicima (posudba i korištenje građe, informacijsko-edukacijsku djelatnost) te ostale poslove koji proizlaze iz tih procesa.

Korisnici knjižnice su redovni i izvanredni studenti, nastavno osoblje i stručni suradnici Fakulteta, ali i ostali članovi šire društvene zajednice koji se bave znanstvenim i stručnim radom, a usluge knjižnice koriste po posebnim uvjetima. Knjižnica funkcionira kao informacijsko, izobrazbeno i komunikacijsko središte. Nalazi se u prizemlju zgrade Fakulteta, gdje su na 403 m2, na dvije etaže, smještene čitaonica, računalna čitaonica te otvoreni i zatvoreni fond.

Čitaonica se sastoji od trideset i tri mjesta za učenje i korištenje prijenosnih računala s priključcima na mrežu. Računalna čitaonica ima dvadeset i četiri mjesta s osam računala namijenjenih istraživanju i učenju; preko njih studenti imaju pristup bazama podataka i katalozima svih knjižnica. Nedavnom modernizacijom knjižničnoga sustava, Knjižnica je integrirana u knjižnični sustav Sveučilišta u Rijeci, dodano je niz novih funkcionalnosti i usluga i omogućeno je pretraživanje svih baza kroz jedan sustav. Pomoću Discovery servisa, jedinstvenog sučelja za pretraživanje, omogućeno je pretraživanje skupnog kataloga Sveučilišta čime i kataloga svih knjižnica Sveučilišta, pretplaćenih baza podataka dostupnih na Fakultetu i Sveučilištu u Rijeci, portala znanstvenih časopisa RH HRČAK i drugih odabranih znanstvenih izvora u slobodnom pristupu na internetu. Knjižnica je uključena u projekt Centra za online baze podataka čime su znanstveni i stručni časopisi dostupni našim korisnicima.

Knjižnični fond Knjižnice je svojim sadržajem i obimom prilagođen znanstveno-istraživačkom programu rada na Fakultetu. Kontinuirano se dopunjava, obnavlja i osuvremenjuje pri čemu se težište stavlja na nabavu literature iz tehničkih znanosti, elektrotehnike, brodogradnje, računarstva. Početkom 2018. godine, knjižnični fond iznosi oko 22000 svezaka omeđenih publikacija te tridesetak naslova domaćih i stranih periodičkih publikacija. Uz klasičnu posudbu tiskane građe, pridaje se pažnja i pretraživanju i odabiru relevantne građe prema individualnim potrebama korisnika kao i njihovoj edukaciji za samostalno pretraživanje izvora informacija. Knjižnica, prema zahtjevima korisnika, vrši usluge i međuknjižnične posudbe.

Uključeni smo u sustav upravljanja kvalitetom ISO 9001.

The Library of the Faculty of Engineering, University of Rijeka is a part of the scientifc, research and educational activities of the Faculty. It performs tasks of designing and construction of the library collection (procurement, expertise) the provision of library services to users (loan and the use of materials, information and educational activities) and other matters arising from these processes.

The Library is used by full and part-time students, faculty and professional staff of the Faculty but also by other members of the wider community engaged in scientifc and professional work who use the library facilities under special conditions. Therefore, the library functions as a media, education and communication center. It is located on the ground floor of the Faculty, namely on two floors covering 403 m2 where there are situated a Reading Room, computer Reading Room, Open and Closed-End Fund. The Reading Room consists of thirty-three places for learning and using laptop computers with connections to the network. The Computer Reading Room has twenty four places with eight computers intended for research and learning; through them, students have access to licensed databases and catalogs of all libraries.

With recent modernization of the library system, the Library has been integrated into the library system of the University of Rijeka, a number of new features and services have been added and searches over databases through one system enabled. Using the Discovery Service as a unifed search interface, it is now possible to search not only over the Union University Catalogue but also over the catalogs of all the libraries of the University, subscribed databases available on the Faculty and the University of Rijeka, the central portal of Croatian scientific journals named RH HRČAK and other selected scientifc resources freely accessible on the Internet. The library is also included in the project of the Center for online databases making thus all scientifc and professional journals available to our customers.

The library fund of the Library is in its funding sources, contents and scope adjusted to scientifc research program at the Faculty. It has been continuously complementing, renewing and modernizing whereby the emphasis has been placed on the acquisition of literature in engineering sciences, electrical engineering, naval architecture and computing. In early 2018 the library fund covered about 22000 volumes of monographs and thirty titles of domestic and foreign periodicals. However, apart from lending the classic printed materials, due attention is also given to the search and selection of relevant material for individual search of sources of information according to the individual needs of users as well as their education. The Library provides services and interlibrary loans meeting thus the requirements of their users.

It is also worth pointing out that the Library and its members are involved in the quality management system ISO 9001 standard.

6.2 računalni centar computer center

VODITELJ | HEAD:

Domagoj Crljenko, dipl. ing. graduate engineer

http://www.riteh.uniri.hr/ustroj/rc/

Domagoj Crljenko, dipl. ing. graduate engineer

voditelj

head

Siniša Vukotić

tehnički suradnik

associate

Tatjana Škorjanc, dipl. ing. graduate engineer

stručni suradnik

associate

Damir Koščić, dipl. ing. graduate engineer

stručni suradnik

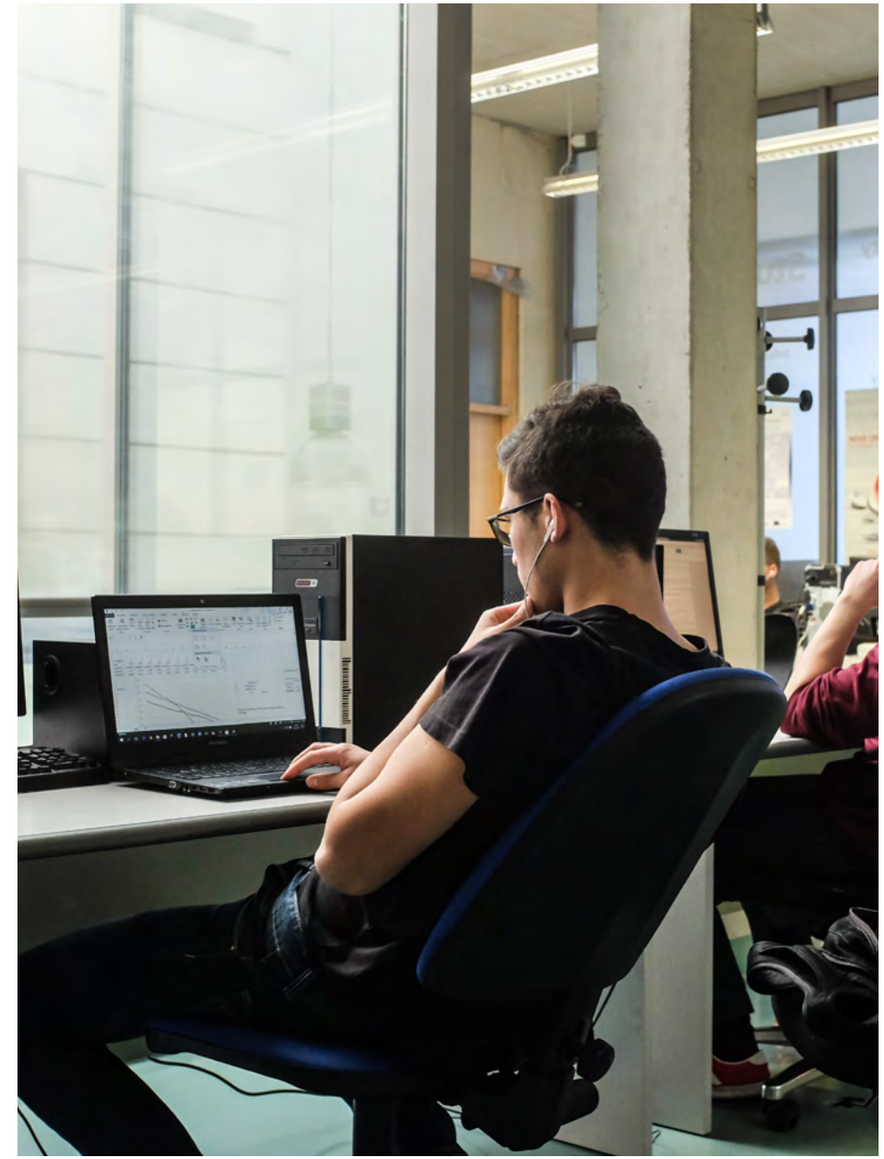
associate

RAČUNALNI KABINETI

- *Računalni kabinet 1: 20 + 1 računalo*
- *Računalni kabinet 2: 20 + 1 računalo*
- *Računalni kabinet 3: 20 + 1 računalo*
- *Računalni kabinet 4: 16 + 1 računalo*
- *Računalni kabinet 5: 10 + 1 računalo*
- *Računalni kabinet 6: 20 + 1 računalo*
- *Računalni kabinet 7: 20 + 1 računalo*
- *Računalni kabinet 8: 20 + 1 računalo*

COMPUTER CLASSROOMS

- *Computer Classroom 1: 20 + 1 computers*
- *Computer Classroom 2: 20 + 1 computers*
- *Computer Classroom 3: 20 + 1 computers*
- *Computer Classroom 4: 16 + 1 computers*
- *Computer Classroom 5: 10 + 1 computers*
- *Computer Classroom 6: 20 + 1 computers*
- *Computer Classroom 7: 20 + 1 computers*
- *Computer Classroom 8: 20 + 1 computers*



6.3 financijska služba accounting division

VODITELJICA | HEAD:

Ana Mirković Pavlović, mag. oec. grad. economist

http://www.riteh.uniri.hr/ustroj/strucne-sluzbe/fs/

Financijska služba obavlja financijske i računovodstvene poslove. Financijska služba vodi računa o zakonitosti financijskog poslovanja, obavlja sve isplate vezane uz plaće, autorske honorare i ugovore o djelu, kontrolira, obračunava i isplaćuje putne naloge, plaća račune u tuzemstvu i inozemstvu, knjiži na računima glavne knjige sve poslovne događaje, sastavlja prijedlog financijskog plana Fakulteta te mjesečne, tromjesečne, polugodišnje i godišnje izvještaje, kontaktira s Ministarstvom znanosti i obrazovanja, Sveučilištem u Rijeci, Poreznom upravom, FINA-om, Revizijom, bankama i usklađuje svoje poslovanje i izvještaje s tim subjektima iz okruženja.

The accounting division performs financial and accounting activities. Specifically, it takes into account the legality of the financial business and performs all payments related to salaries, author`s fees and work contracts. Furthermore, the accounting division controls, calculates and pays travel orders, pays domestic and foreign accounts, records all business events in the ledger accounts, compiles the proposal of the Faculty's financial plan as well as the monthly, quarterly, semi-annual and annual reports. It also maintains contact with the Ministry of Science and Education, the University of Rijeka, the Tax Office, the Financial Administration, the Audit, the banks and it coordinates its own business and reports with all these entities from the area.

Ana Mirković Pavlović, mag. oec. grad. economist

voditeljica

head

Karolina Kaštelan, dipl. oec. grad. economist

računovodstveni poslovi

financial activities

Ana Šutalo, struc. spec. oec. spec. grad. economist

računovodstveni poslovi

financial activities

Iva Spajić Zubčić, dipl. oec. grad. economist

računovodstveni poslovi

accounting activities

Višnja Valčić, dipl. oec. grad. economist

financijski poslovi

financial activities

Ariana Gregur, dipl.oec. grad. economist

financijski poslovi

financial activities

6.4 služba nabave i komercijale procurement and commerciale office

VODITELJ | HEAD:

Robert Mohorić, dipl. oec. grad. economist

http://www.riteh.uniri.hr/ustroj/strucne-sluzbe/skn/

Robert Mohorić, dipl. oec. grad. economist

voditelj

head

Bruna Martinović,
mag. oec. grad. economist

ekonom za inventar

inventory economist

Mladen Ostrogović,
mag. oec. grad. economist

ekonom za potrošni materijal

economist for consumables

Ana Činko

pripravnica

apprentice

Služba obavlja poslove komercijale, nabave i ekonomata. Vodi poslove u vezi nabave roba, usluga i radova, izradom plana nabave robe, usluga i radova za tekuću godinu, priprema i provodi postupke odabira godišnjih dobavljača, vodi evidenciju nabave male i velike vrijednosti, administrativno provodi postupke nabave prema Zakonu o javnoj nabavi, priprema dokumentaciju ovisno o načinu nabave, kontaktira s dobavljačima, sudjeluje u pripremanju odluka i prijedloga ugovora, pohranjuje cjelokupnu dokumentaciju o nabavi, preuzima naručenu robu, vodi evidenciju o sitnom inventaru, osnovnim sredstvima i potrošnom materijalu, radi na izradi, održavanju i unapređenju baza podataka Službe te održava i unapređuje sustav kontrole kvalitete u Službi.

Skriptarnica je u zakupu firme TEHNIČAR COPYSERVIS d.o.o., Zagreb.

This office performs commercial, procurement and economic services. It runs services connected with the procurement of goods and services, prepares and implements the procedures for the annual selection of suppliers, contracts with suppliers, receives ordered goods, keeps records of small inventories, basic resources and consumables, works on the office's databases and maintains and improves the system of quality control of its services.

The copy shop is leased by the firm TEHNIČAR COPYSERVIS ltd, Zagreb.

6.5 služba općih i kadrovskih poslova general and personnel office

VODITELJICA | HEAD:

Lenka Štajduhar, oec. **economist**

http://www.riteh.uniri.hr/ustroj/strucne-sluzbe/sokp/

Lenka Štajduhar, oec. economist

voditeljica opće i kadrovske službe

general and personnel office head

Lidija Petričić

administrativna tajnica

administrative secretary

Snježana Mikuličić

voditeljica kadrovskih poslova

personnel operation manager

TAJNICE ZAVODA | DEPARTMENT SECRETARY:

Natalija Forgić

Lovorka Malinić

Dragica Jurin

Tijana Ćupurdija

Željka Gulić

SPREMAČICE | CLEANING STAFF:

Dragica Alempić

Marica Gnjatović

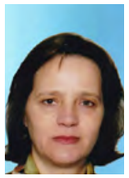
Lidija Antunović

Marina Djaković

Snježana Ban

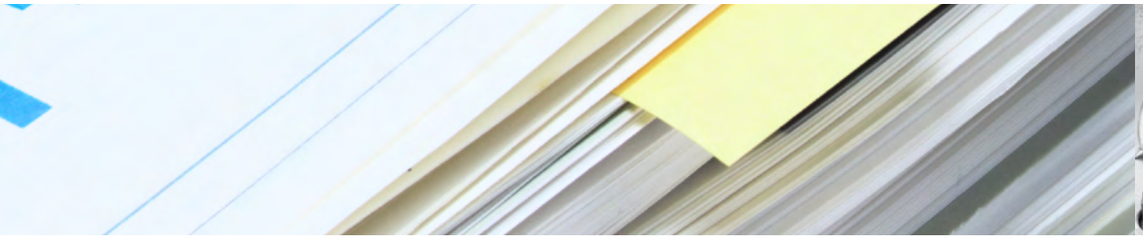
Patricija Vukić

Mirjana Košpić



Julijana Nenadović

6.6 služba studentske evidencije
student's registar and affairs office



VODITELJ | HEAD:

Žarko Burić, mag. ing.

http://www.riteh.uniri.hr/ustroj/strucne-sluzbe/sse/

Žarko Burić, mag. ing.

voditelj

office head

Antonela Ćaleta

voditelj ostalih ustrojstvenih jedinica

head of other organizational units

Darko Vidučić

stručni savjetnik ISVU

ISVU Advisor

Tanja Veljčić

administrativna tajnica

administrative secretary

Adriana Muždeka

referent

referent

Tina Kažić

pripravnik

apprentice

Služba studentske evidencije Fakulteta obavlja sve poslove vezane uz potrebe studenata. Zaprima i obrađuje dokumentaciju za razredbeni postupak, obavlja upis studenata u prvu i u više studijske godine, priprema dokumentaciju studenata za završni ili diplomski ispit, organizira promocije završenih studenata, prima i izdaje razne zahtjeve, uvjerenja i potvrde, izrađuje izvješća prostručne analize za potrebe Fakulteta te vodi potrebnu korespondenciju i daje izvješća zainteresiranim strankama.

The students' Registar and Affairs Office is in charge of all the issues pertaining to students' needs. It collects and manages documentation for the admission exams, manages the enrolment of students to all the study years, prepares students' documents for the graduation exams, organizes the commencement of graduates, receives and delivers various requests and certificates, produces reports and analyses as per Faculty need, manages the necessary correspondence and gives reports to interested parties.

6.7 tehnička služba
tehnical and maintenance services

VODITELJ | HEAD:

Goran Bakotić, struč. spec. ing. sec.

http://www.riteh.uniri.hr/ustroj/strucne-sluzbe/tehnicka-sluzba/

Goran Bakotić, struč. spec. ing. sec.

voditelj

office head

Bernardo Badurina, bacc.ing.

Nevio Poniš, dipl. ing.

Josip Jurasić

Andrej Miljuš

DOMARI - KUĆEPAZITELJI | MAJOR - DOMO

Dražen Tadejević

Boris Šegota

Tehnička služba obavlja poslove održavanja, zaštite na radu i zaštite od požara. U sastavu Tehničke službe su i laboranti koji pod nadzorom nastavnika sudjeluju u pripremi, odnosno izvedbi dijela nastave.

The Tehnical and Maintenance Services perform activities pertaining to maintenance, work safety and fire protection. Involved in the Technical Services are also laboratory tehnicians that, under supervision of teaching staff, participate in the preparation of performing parts of lectures.


SAMSUNG

7 studentske aktivnosti
student activities

7.1 studentski zbor tehničkog fakulteta
student council at the faculty of engineering

Studentski zbor Tehničkog fakulteta u Rijeci je najviše predstavničko tijelo studenata unutar Fakulteta. Rad Studentskog zbora definiran je Statutom Studentskog zbora – u kojemu su navedene i sljedeće zadaće:

- biranje studentskog predstavnika u Skupštinu pri Studentskom zboru Sveučilišta u Rijeci,
- biranje studentskih predstavnika u radna tijela Fakulteta te sudjelovanje u radu i odlučivanju tih tijela,
- briga o kvaliteti života studenata, a posebice o kvaliteti studijskog procesa, studentskom standardu, ostvarivanju studentskih prava i drugim pitanjima važnima za studente Fakulteta,
- predlaganje nadležnim tijelima Fakultetima plan financiranja studentskih aktivnosti,
- poticanje izvannastavnih aktivnosti studenata Fakulteta,
- obavljanje drugih poslova od interesa za studente Fakulteta.

Studentski zbor je u akademskoj godini 2017./2018. brojao ukupno 34 člana (17 predstavnika i 17 zamjenika) koji su se birali u 5 izbornih jedinica.

Tijekom akademske godine 2017./2018., Studentski zbor uspješno je proveo 16 projekata čime je ostvario stopostotnu izvršenost projekata prijavljenih na Natječaj Studentskog zbora Sveučilišta u Rijeci za financiranje studentskih programa u 2018. godini i Natječaj „Studentski sport“.

Kumulativna vrijednost svih navedenih projekata iznosi 226.051,65 kn. U realizaciji projekata pomogla su brojna poduzeća, institucije i organizacije koje su prepoznale naš potencijal te su svojim velikodušnim donacijama i suradnjom

The Student Council of the Faculty of Engineering in Rijeka is the highest representative body of the students within the Faculty whose work is defined by the Statute of the Student Council where the following activities are mentioned:

- election of the students` representative for the Student Council of the University of Rijeka,
- election of student representatives who are actively involved in the work of the Faculty Council pariticipating in decision making,
- care of the quality of students' lives, especially the quality of study programmes, the student standard, the realisation of students' rights, and other issues of relevance for the students of the Faculty,
- proposing the funding plan for students` activities to the competent authorities,
- promoting extracurricular activities of the students of the Faculty,
- any other activity of interest for the students of the Faculty.

During the 2017/2018 academic year, the Student Council had 34 active members (17 representatives and 17 deputies) in 5 constituencies.

During the 2017/2018 academic year, the Student Council succesfully carried out 16 projects, thus achieving the goal of absolute completion of all projects applied in tenders of the Student Council of Rijeka University for financing student programmes in 2018 as well as the tender „Student Sports“.

The cummulative value of all mentioned projects was 226,051.65 kuna. The tremendeous success achieved wouldn't be possible without financial and organisational aid provided by the

omogućili ovaj izvanredni rezultat. Iako zahvalni svima, moramo izdvojiti sve djelatnike i članove uprave Tehničkog fakulteta u Rijeci, Studentski zbor Sveučilišta u Rijeci, Riječki športski sveučilišni savez, Rockwool, Coadria, AITAC, Grad Rijeka, Elcon, IAESTE LoRi i IEEE SB Rijeka.

businesses, institutions and organisations that have recognized our potential. Whilst greatful to everyone included in our projects, we feel obliged to point out the successful cooperation we had with the staff and members of the Faculty, the Student Council of the University of Rijeka, the University Sports Association of Rijeke, Rockwool, Coadria, AITAC, the City of Rijeka, Elcon, IAESTE LoRi and IEEE SB Rijeka.

članovi studentskog zbora po izbornim jedinicama
members, listed by electorial wards

I PREDDIPLOMSKI SVEUČILIŠNI STUDIJ STROJARSTVA I BRODOGRADNJE
I UNDERGRADUATE UNIVERSITY STUDY OF MECHANICAL ENGINEERING AND NAVAL ARCHITECTURE

PREDSTAVNIK | REPRESENTATIVE	ZAMJENIK | DEPUTY
• *Grigor Dumbović*	• *Lovre Botunac*
• *Ivan Golik*	• *Patrik Kolarić*
• *Marko Mesarić (potpredsjednik / vicepresident)*	• *Filip Hozajn*
• *Maša Stanković*	• *Elena Miletić*
• *Marin Smilović*	• *Luka Bandov*

II PREDDIPLOMSKI STUDIJI RAČUNARSTVA I ELEKTROTEHNIKE
II UNDERGRADUATE STUDIES OF COMPUTER AND ELECTRICAL ENGINEERING

PREDSTAVNIK | REPRESENTATIVE	ZAMJENIK | DEPUTY
• *Denis Mijolović (predsjednik / president)*	• *Mia Grgurić*
• *Endi Miletić*	• *Dino Negovanović*
• *Gordan Nekić*	• *Dino Ilić*
• *Nika Žafran*	• *Noel Stanišić*
• *Ivana Žužić*	• *Marko Njirjak*

III DIPLOMSKI SVEUČILIŠNI STUDIJ STROJARSTVA I BRODOGRADNJE
III GRADUATE UNIVERSITY STUDY OF MECHANICAL ENGINEERING AND NAVAL ARCHITECTURE

PREDSTAVNIK | REPRESENTATIVE	ZAMJENIK | DEPUTY
• *Ivana Gašpert*	• *Filip Sironić*
• *Petra Gugleta (tajnica / secretary)*	• *Andrej Raguzin*
• *Šimun Rogoznica*	• *Antonio Mogorović*

IV DIPLOMSKI SVEUČILIŠNI STUDIJ RAČUNARSTVA I ELEKTROTEHNIKE
IV GRADUATE UNIVERSITY STUDY OF ELECTRICAL ENGINEERING AND COMPUTER ENGINEERING

PREDSTAVNIK | REPRESENTATIVE	ZAMJENIK | DEPUTY
• *Franko Hržić (blagajnik / treasurer)*	• *Samir Jugo*
• *Erik Smoljan*	• *Toni Polonijo*

V POSLIJEDIPLOMSKI DOKTORSKI STUDIJ
V POSTGRADUATE DOCTORAL STUDY

PREDSTAVNIK | REPRESENTATIVE	ZAMJENIK | DEPUTY
• *Damjan Banić*	• *Sandra Kvaternik*
• *Diego Sušanj*	• *Luka Batistić*

7.1 studentski zbor tehničkoga fakulteta student council at the faculty of engineering

7.2 ieee sb rijeka

IEEE studentski ogranak Sveučilišta u Rijeci nastao je 2006. godine kao jedan od studentskih ogranaka unutar Hrvatske sekcije IEEE. Cilj mu je okupljanje studenata iz različitih područja tehničkih znanosti i organizacija raznovrsnih događanja. Zbog toga se pod okriljem Ogranka održavaju predavanja iz područja tehničkih znanosti, natjecanja, radionice i razna druženja čime se studentima omogućuju razmjene ideja i iskustava, sklapanje niza korisnih poznanstava ali i nerazdvojnih prijateljstava. Sve to vodi boljoj umreženosti i napretku na privatnom i poslovnom planu svake osobe.

Za svoj rad osvojili smo „Regional Exemplary Student Branch Award“ nagradu koja je samo potvrda našega truda.

Studentski ogranak u Rijeci otvorio je i dva podogranka te društva unutar IEEE-a. Podogranci koji djeluju u sklopu ogranka su Computer Society (CS), a čine ga uglavnom studenti računarstva, i Power and Energy Society (PES) koji okuplja studente elektrotehnike i energetike, uz koje imamo i aktivno Young Professionals (YP) društvo.

Studentski ogranak provodi brojne aktivnosti svake godine.

Organizirane aktivnosti

Od 2015. godine provodimo Pripremni seminar iz programiranja i održava se u zadnjem tjednu rujna, prije samog početka akademske godine. Cilj seminara je upoznavanje studenata prve godine studija na Tehničkom fakultetu u Rijeci s osnovnim znanjem iz programiranja. Na taj način studenti su spremniji pristupiti zadacima s kojima se susreću već u prvom semestru. Seminar je održan i ove godine u suradnji sa Zavodom za Računarstvo Tehničkog fakulteta, pod vodstvom članova Studentskog ogranka Rijeka.

Uz sva stručna predavanja koja organiziramo, prije par godina započeli smo s novim formatom predavanja pod nazivom „Success stories“. Pozivamo uspješne poslovne ljude s riječkog područja koji su po završetku studija postigli značajne rezultate na poslovnom i znanstvenom području, ali i dalje djeluju na našem području i promiču znanost, aktivno sudjeluju u edukaciji novog kadra i zapošljavaju mlade inženjere. Do sada smo organizirali pet takvih predavanja. U 2018. godini ugostili smo dr.sc. Dražena Brščića koji se, nakon godina rada na robotici u Japanu, vratio u Rijeku i trenutno radi na Tehničkom fakultetu.

Svake godine se trudimo organizirati predavanja u kojima promoviramo nove i zanimljive tehnologije. U 2018. godini, u sklopu IEEE Elevate

IEEE University of Rijeka Student Branch was created in 2006 as one of the student branches within Croatian IEEE section. Its goal is to bring together students from different fields of engineering sciences and organise various events. For this reason, lectures are held under the aegis of the Branch in the field of the engineering sciences, as well as competitions, workshops and various gatherings. This allows students to exchange ideas and experiences, make a series of useful acquaintances but also establish inseparable friendships. All this leads to better networking and progress on the private and business level of every person. For our work we were awarded with “Regional Exemplary Student Branch Award” which proves our great effort.

The student branch in Rijeka has opened two IEEE subbranches and organisations within IEEE. The subbranches are Computer Society (CS), whose members are mostly students of computer engineering, and Power and Energy Society (PES), which gathers students electrical and power engineering, as well as the Young Professionals (YP) society.

Our student branch carries out numerous activities each year, some of which will be shown below.

Organised activities

Since 2015 we have organised an Introductory Programming Seminar that takes place in the last week of September, prior to the beginning of the academic year. The objective of the seminar is to introduce first-year students of the Faculty of Engineering in Rijeka with basic knowledge of programming. In this way, students are more willing to approach the tasks they are facing in the first semester. The seminar was held this year in cooperation with the Department of Computer Engineering of the Faculty of Engineering and led by the members of the Rijeka Student Branch.

In addition to all professional lectures that we organise, a few years ago we started a new format of lectures called “Success Stories”. We invite people from the area of Rijeka who have achieved significant results in their business and scientific field, but they are still working in our area promoting science and actively participating in education of new staff and employing young engineers. So far, we have organised five lectures. In 2018 we hosted D.Sc. Dražen Braščić, who after years of work in robotics in Japan, returned to Rijeka where he currently works at the Faculty of Engineering.

Every year we try to organise lectures where we promote new and interesting technologies.

programa, organizirali smo vrlo posjećeno predavanje na temu „Blockchain technology“ kojega je održao izv. prof. dr. sc. Kristijan Lenac. Organizirali smo i druga manja predavanja firmi, poput CROZ i RAD-COM, koje su predstavile zanimljive tehnologije na kojima rade, djeluju u našoj regiji i aktivno zapošljavaju nove kadrove.

Computer Society, kao podogranak našeg ogranka u Rijeci, u suradnji s IEEE-om, Studentskim zborom Tehničkog fakulteta i Studentskim zborom Sveučilišta u Rijeci u srpnju 2018. g. organizirao je, prvi u Hrvatskoj, Computer Society Congress (CSC), dvodnevni kongres namijenjen studentima računarstva i IT-a. Na kongresu je prvoga dana bilo predavanje o etici u razvoju pametnih sustava i AI-a, održana je radionica o mogućnostima nakon završetka fakulteta pa je održano predavanje o Europskim fondovima koji potiču pokretanje vlastitih projekata i firmi. Prezentirani su uspješni projekti financirani tim fondovima. Do kraja dana je održana i radionica Microbita, na kojoj su se prisutni imali priliku poigrati se s mikro-računalima. Drugi dan su bila predstavljena natjecanja u sklopu IEEE-a te smo posjetili muzeju starih računala i informatičke opreme, Peek&Poke. Na kongresu su, osim sudionika iz Rijeke, prisustvovali članovi IEEE-a iz Zagreba.

Natjecanja

IEEE organizira natjecanja za svoje studentske članove. Najpopularnije natjecanje je IEEEXtreme, globalno timsko natjecanje u 24-satnom

In 2018, we organised the lecture “Blockchain technology” within the IEEE Elevate program, which was held by Assoc. Prof. D.Sc. Kristijan Lenac. In addition to this highly attended lecture, we also organised smaller lectures from companies such as CROZ and RAD-COM which presented the interesting technologies they work on, and as a plus they work in our region and actively employ new staff.

In July 2018, the Computer Society as our subbranch in Rijeka, in cooperation with IEEE, the Student Council of the Faculty of Engineering and the Student Council of the University of Rijeka, organised the first Computer Society Congress (CSC) in Croatia, a two-day congress designed for students of computer engineering and IT. On the first day of its programme a lecture on ethics in development of smart systems and AI and a workshop about the possibilities students have after graduation were held. Afterwards, a lecture was given, focusing on European funds with the aim to encourage the launch of startup projects and companies. Moreover, successful projects funded by these funds were presented. By the end of the day, a Microbit workshop was held where the participants had the opportunity to play with these microcomputers. On the second day of the congress, IEEE competitions were presented and later on a visit to the museum of old computers and computer equipment, Peek & Poke, was organised. The congress was attended by IEEE members from Zagreb and students from University of Rijeka.

programiranju. Održava se jednom godišnje, najčešće u listopadu. Kako bi timovi imali što bolje uvjete za rad, ogranak im svake godine pripremi zajedničku prostoriju na Tehničkom fakultetu gdje uz računalnu imaju pristup i ostaloj potrebnoj opremi. U zadnje dvije godine se uz IEEEXtreme promiče još jedno IEEE natjecanje: IEEE MadC, natjecanje u izradi mobilnih aplikacija. Već dvije godine naši članovi su dio tima ambasadora koji promiču natjecanje, nude edukaciju i sami se natječu. Osim natjecanja u organizaciji IEEE-a, članovi ogranka su na Tehničkom fakultetu u ožujku 2018. g. organizirali Google Hash Hub i osigurali prostor za Google Hash natjecatelje.

Suradnja

IEEE Studentski ogranak Sveučilišta u Rijeci aktivno surađuje s ostalim ograncima u Hrvatskoj i unapređuje kvalitetu i sadržaj aktivnosti na razini Hrvatske sekcije IEEE-a. Osim što blisko surađujemo s ostalim članovima IEEE-a, na lokalnoj razini surađujemo s brojnim drugim studentskim udrugama, organizacijama, fakultetima i firmama. Rezultat suradnje je bolja umreženost naših članova s drugim aktivnim grupama, ali i bolji i kvalitetniji sadržaj koji imamo ponuditi studentima, bolja promocija aktivnosti i veća posjećenost. Neke od naših suradnji kroz prošlu i ovu godinu su s Microsoft Community - Developer User Group Rijeka s kojima smo pripremili par zanimljivih radionica za studente računarstva i IT-a, suradnja sa Studentskim zborom Tehničkog fakulteta i Studentskim zborom Sveučilišta u Rijeci s kojima smo, između ostalog, organizirali i Computer Society kongres, Alumni Tehničkog fakulteta s kojima smo organizirali stručna predavanja i predstavljanja firmi, udrugom SUPEUS, Riteh Dron Team i ostalima.

Ostale aktivnosti

Osim naših aktivnosti, članovi imaju priliku posjetiti i brojne aktivnosti koje organiziraju drugi ogranci u Hrvatskoj. Svake su godine to kongresi poput Zagreb energy congress (ZEC), IEEE TOPWeek, kongres studenata i mladih profesionalaca Hrvatske (CroSYP), a pozvani smo i na kongrese na razini Regije 8 kao što su Central European Student and Young Professional Congress (CEuSYP) i IEEE Region 8 Student & Young Professional Congress (R8 SYP). Primjer regionalnog kongresa kojega su posjetili predstavnici Ogranka je R8 SYP 2018 u Portu (Portugal) gdje se okupilo preko 400 studenata i mladih profesionalaca iz cijele Europe, Afrike i dijela Azije. Ovakvi susreti su, osim za stvaranje novih poznanstava, korisni i za razmjenu iskustva u vođenju Ogranaka i sekcije.

Competitions

IEEE organises competitions for its student members. The most popular competition is IEEEXtreme, a global team competition in 24-hour programming. It is held annually, mostly in October and for years our members have been participating in it. In order for the teams to have the best working conditions, each year we organise a common room at the Faculty of Engineering where they have access to computer and other equipment and we also provide them with food and drinks. Along with IEEEXtreme we promote another IEEE competition, the IEEE MadC, a mobile application development competition. Our members have been part of the team of ambassadors for two year, promoting competition, offering education and also competing on their own. In addition to the IEEE competitions, in March 2018 the members of the branch of the Faculty of Engineering organised the Google Hash Hub and ensured the premises for Google Hash competitors.

Cooperation

IEEE Student Branch of Rijeka University is actively working with other branches in Croatia on improving the quality and content of activities at the Croatian level of the IEEE section. In addition to working closely with other IEEE members, we cooperate locally with many other student associations, organisations, faculties and businesses. The result of our collaboration is better networking of our members with other active groups but it also improves the content that we can offer our students, we get better promotion of activities and greater attendance. Some of our associates over the last year were Microsoft Community Developer User Group Rijeka with whom we have prepared a couple of interesting workshops for computing and IT students. We have cooperated with the Student Council of the Faculty of Engineering and the Student Council of the University of Rijeka with whom we organised the Computer Society Congress, Alumni of the Faculty of Engineering with whom we organised professional lectures and presentations, but also with SUPEUS, Riteh Dron Team and others.

Other activities

In addition to the activities we organise, our members have the opportunity to participate in numerous activities organised by other branches in Croatia. Every year we attend congresses such as the Zagreb Energy Congress (ZEC), IEEE TOPWeek, the Croatian Students and Young Professionals congress (CroSYP) and we are also invited to congresses at the Region 8 level such as the Central European Student and Young Professional Congress (CEUSYP) and IEEE Region 8 Student & Young Professional

Promocija

Upoznavanje studenata s radom Studentskog ogranka i IEEE-a aktivnost je od posebne važnosti. Kao neprofitna volonterska udruga, aktivnosti koje se organiziraju ovise o vremenu i volji članova ogranka pa je za opstanak i nastavak rada ogranka potrebno imati aktivno članstvo. Najbolja promocija našega rada je kroz aktivnosti koje organiziramo, ali postoji i poseban dan početkom listopada kada se na razini IEEE-a promovira cjelokupni rad organizacije. IEEE Day u 2017. godini proslavili smo dvodnevim programom u kojemu smo studentima prikazali dosadašnji uspjeh ogranka i sekcije, ali se organizirao i dodatni sadržaj kojemu je cilj bio privući nove članove.

Sve naše aktivnosti pronađite na našoj Facebook stranici (www.facebook.com/ieeesbrijeka) te službenoj IEEE stranici Hrvatske sekcije (www.ieee.hr) gdje objavljujemo najave novih događaja kao i slike i osvrte na održane aktivnosti.

Congress (R8 SYP). An example of a regional congress visited by representatives of our branch was R8 SYP 2018 in Porto, Portugal, where over 400 students and young professionals from all over Europe, Africa and Asia were gathered. Such encounters are, besides creating great friendships, useful for sharing experiences in running the Student branches and Sections.

Promotion

Introducing the students with the work of our Student branch as well as with the activities of IEEE is of great importance. As a non-profit volunteer association, the activities that are organised depend on the time and will of its members, thus for further existence and continuation of its work it is necessary to have an active membership. The best promotion of our work is through the activities we organise, but there is also a special day in early October when IEEE promotes the overall work of the organisation. On IEEE Day 2017 we organised a two-day programme where our members had shown the success of the branch and section, but also organised additional content aimed at attracting new members.

Find all our activities on our Facebook page (www.facebook.com/ieeesbrijeka) and on the official IEEE page of the Croatian section (www.ieee.hr) where we post announcements of new and upcoming events and photos and reviews of past activities.

7.3 iaeste

IAESTE (The International Association for the Exchange of Students for Technical Experience) najveća je svjetska udruga za razmjenu studenata tehničkih i prirodnih znanosti. Udruga je utemeljena 1948. godine na Imperial College of London i danas organizirano djeluje u više od 90 zemalja diljem svijeta. U Hrvatskoj djeluje još od 1952. godine, a od 1992. g. kao međunarodna udruga za razmjenu stručnih praksi tehničkih i prirodnih znanosti IAESTE Croatia.

Udruga već godinama uspješno djeluje i na Sveučilištu u Rijeci, i to zahvaljujući volonterskom radu svojih članova. Od osnivanja 1952. godine, više od 1400 hrvatskih studenata dobilo je priliku svoju stručnu praksu odraditi u inozemstvu dok je u Hrvatsku, na stručnu praksu, primljeno više od 1300 studenata iz cijeloga svijeta.

Posljednjih desetak godina više od 400 studenata hrvatskih sveučilišta dobilo je priliku otići na stručnu praksu u inozemstvo posredstvom udruge IAESTE, od čega više od 60 studenata Tehničkog fakulteta Sveučilišta u Rijeci. Naši su studenti na stručnom usavršavanju bili u Portugalu, Njemačkoj, Mađarskoj, Velikoj Britaniji, Nizozemskoj, Grčkoj, Finskoj, Kazahstanu, Indiji, Japanu, Švedskoj, itd. Pružena im je prilika vidjeti i upoznati nove zemlje i kulture te stjecati ne samo praktična životna iskustva, već i prijateljstva.

U istom je razdoblju lokalni odbor Rijeka ugostio više od 20 stranih studenata koji su na stručnom usavršavanju boravili na riječkom području. Za strane i naše studente svakog se ljeta organiziraju druženja i putovanja pod nazivom GETT (Get together days). Studenti Tehničkog fakulteta, članovi udruge, također su aktivni sudionici mnogobrojnih međunarodnih susreta, kongresa i seminara.

U listopadu 2016. organizirali smo CEC (Central European Convention) u Gradu Krku gdje smo ugostili preko 250 članova IAESTE organizacije iz centralne Europe. CEC je trodnevna manifestacija edukativnog karaktera kojoj je cilj unaprjeđenje i poboljšanje rada Lokalnih odbora.

IAESTE (The International Association for the Exchange of Students for Technical Experience) is the largest international association for the exchange of students of engineering and natural sciences. The association was founded in 1948 at the Imperial College of London and today operates in more than 90 countries around the world. In Croatia it has been active since 1952, and since 1992 it has developed into the international association for the exchange of professional practices from the field of engineering and natural sciences IAESTE Croatia.

The association has also been successfully working at the University of Rijeka, thanks to the volunteer work of its members. Since its foundation in 1952, more than 1,400 Croatian students have been given the opportunity to do their professional practice abroad, while more than 1,300 students from across the world have been admitted to professional practice in Croatia.

Over the last ten years, more than 400 students from Croatian universities have been given the chance to go abroad and do their professional practice there through IAESTE Association, of whom more than 60 students were from the Faculty of Engineering of Rijeka University. Our students have been trained in Portugal, Germany, Hungary, the United Kingdom, the Netherlands, Greece, Finland, Kazakhstan, India, Japan, Sweden, etc. They have the opportunity to meet and get acquainted with new cultures and new countries, and acquire not only practical life experiences but also make friendships.

In the same period, the local board of Rijeka hosted more than 20 foreign students who stayed in vocational training in the area of Rijeka. For both foreign and home students each summer, social gatherings and trips (called GETT – get together days) are organized. Students of the Faculty of Engineering, members of the association, are also active participants in many international meetings, congresses and seminars.

In October 2016, we organised CEC (Central European Convention) in the City of Krk where we hosted over 250 members of the IAESTE Central European Organisation. The CEC is a three-day event of educational character aimed at enhancing and improving the work of Local boards.

IAESTE HRVATSKA
new experience today, new expert tomorrow
iaestecroatia

7.4 STEM games

Projekt pod nazivom RITEH STEM GAMES omogućio je studentima Tehničkog fakulteta u Rijeci odlazak na međunarodno natjecanje STEM Games. Ono se održalo u Poreču od 08. do 13. svibnja 2018. godine. Na njemu se okupilo više od tisuću najboljih studenata iz STEM područja koji su se natjecali u znanju i sportu. Glavni cilj natjecanja bilo je ukorijeniti zdravi stil života, potaknuti timski duh, ostvariti nova poznanstva, razviti disciplinu i stvoriti radne navike. Naši studenti pokazali su izrazitu volju i trud tijekom čitavog natjecanja, a vjerujemo da ni zabave nije nedostajalo.

Osvrćući se na dio natjecanja u znanju, moramo pohvaliti naš tim za Technology Arenu, namijenjenu studentima i studenticama računarstva. Studentice su tijekom prva dva dana natjecanja ostvarile odlično 3. i 4. mjesto, dok su zadnji dan natjecanja, tijekom rješavanja konačnog zadatka, ostvarile vrlo dobro 7. mjesto, od ukupno dvadesetak timova. Pohvale idu i studentima iz Engineering tima koji su završili na ukupno 14. mjestu. Natjecatelji u znanju bili su iznimno zadovoljni konceptom natjecanja i tipom projektnih zadataka koji su im bili postavljeni.

Sportska natjecanja održala su se u čak devet sportova. U ovom dijelu moramo pohvaliti kros i veslačku ekipu koje su dale sve od sebe pa su u ukupnom poretku ostvarili zapažene rezultate. Najhvaljeniji i zasigurno najveseliji uspjeh ostvarila je RITEH muška futsal ekipa koja je u napetoj završnici izborila brončanu medalju.

Ovom prilikom zahvaljujemo svima koji su nam ustupili svoje vrijeme i pružili pomoć u realizaciji projekta. Studenti željno iščekuju i već se pripremaju za sljedeće natjecanje. Nadamo se sudjelovanju većeg broja studenata i djelatnika fakulteta te ostvarivanju još boljih rezultata.

The project RITEH STEM GAMES has enabled students of the Faculty of Engineering in Rijeka to attend the international competition STEM Games. It was held in Poreč from 8 to 13 May 2018. More than a thousand of the best STEM students gathered there and competed in knowledge and sports. The main goal of the competition was to emphasize the importance of a healthy lifestyle and team spirit, as well as to gain new acquaintances, develop discipline and create work habits. Our students showed a great will and effort throughout the competition, and we believe that there was no lack of entertainment.

Reflecting on the part of the competition in knowledge, we have to praise our Technology Arena team. During the first two days of the competition, the students achieved the excellent 3rd and 4th place, while during the final task on the last day of the competition they gained a very good 7th place in a total of 20 teams. Praise is due to students of the Engineering team who finished in the 14th place. The competitors in the field of knowledge were extremely satisfied with the concept of the competition and the type of project assignments they had been given.

Sports competitions were held in nine sports. In this part we have to boast the cross and rowing team who did their best and achieved remarkable results in the overall order. The most valued and surely the best result was achieved by the RITEH men's futsal team, who won the bronze medal in an intense finish.

On this occasion, we would like to thank everyone who gave us their time and assistance in the realization of the project. The students are eagerly awaiting and are already preparing for the next competition. We hope to participate in a larger number of students and faculty members and achieve even better results.

7.5 riteh racing team

RITEH RACING TEAM SEZONA 2018.

Sezona 2017./2018. za Riteh Racing Team bila je puna izazova. U manje od godinu dana, pod visokim pritiskom i unutar rokova, uspjeli smo napraviti vozilo te otići na dva natjecanja. Tim se proširio i obogatio znanjem i iskustvom.

Za Riteh Racing Team sezona 2018. bila je sezona u kojoj se dokazalo da team funkcionira pod visokim pritiscima. Dokazalo se da je team sposoban u manje od godinu dana priskrbiti sredstva te od nule napraviti auto s kojim će nastupati u nadolazećoj sezoni.

FS ITALY 2018. RICCARDOPALETTI CIRCUIT IN VARANO DE' MELEGARI

Dvotjedna razmjena znanja, upoznavanje novih ljudi, novih mjesta i kampiranja započela je 10. srpnja 2018. godine u Italiji, točnije u Varano de Melegari.

Dio ekipe krenuo je 10. srpnja, u utorak prema Italiji gdje smo kasno navečer postavili dio kampa i upoznali susjede.

Prvi dan, 11. srpnja, započeo je dolaskom ostatka ekipe, registracijom članova na stazi i pregledom našeg pita. Slaganje pita i dovoz formule bio je prema određenom rasporedu kojega se svaka ekipa morala pridržavati. Na nas je red došao poslijepodne, kada smo dovezli sve stvari potrebne za rad na stazi i u slučaju potrebe mijenjanja dijelova na formuli. U 21 sat započela je ceremonija otvaranja natjecanja nakon čega je uslijedila tradicionalna „Welcome Pasta Party" u blizini kampa. Tijekom večere bilo je posebno napeto jer se pratilo svjetsko nogometno prvenstvo. Pobjedu Hrvatske nad Engleskom proslavili smo pjesmom, a pridružile su nam se i ostale ekipe.

RITEH RACING TEAM 2018 SEASON

The 2017/2018 season was full of challenges. In less than a year, under high pressure and within the given deadlines, we managed to make a car from nothing and went to two competitions. The team expanded and enriched itself in knowledge and experience, proving that it can work well and successfully under high pressure.

FS ITALY 2017 RICCARDO PALETTI CIRCUIT IN VARANO DE' MELEGARI

The two-week exchange of knowledge, acquaintance with new people, new places and camping began on July 10, 2018, in Italy, more precisely in Varano de` Melegari.

A part of the team went on Tuesday, 10th July, to Italy. Late in the evening, most of the camp was set up to meet the neighbors and prepare for the next day's competition.

On the first day, 11th July, the competition started with the arrival of the rest of the team, the registration of the members on the track and the examination of our pit. Organizing the pit and delivering formula was done according to a specific schedule that each team had to adhere to. Our turn came in the afternoon when we brought all the things needed to work on the track and everything that was needed in case something needs to be changed on formula. At 9:00 pm the opening ceremony started, followed by a traditional "Welcome Pasta Party" near the camp. During the dinner, it was particularly tense because the world championship in soccer took place. We celebrated the victory of Croatia over England with a song, which was joined by other teams as well.

Drugi dan, 12. srpnja, započeo je pripremom za tehnički pregled. Dok smo ga čekali, odvijao se i Business Presentation Event na kojem nas je predstavljala kolegica Anita. Na tehnički smo stigli među zadnjima, predvečer. Zbog raznih mana na autu, koje se nisu provjerile, često su nas vraćali u pit zbog čega nismo ni stigli proći tehnički pregled. U 21 sat staza se zatvorila te smo morali napustiti stazu i nastaviti sutra.

Trećega dana, 13. srpnja, bili smo prvi u redu za tehnički. Na formuli se redom rješavalo sve što je trebalo, brzo i uz veliki pritisak. U 12 sati u našem je pitu započeo Cost Event. Prezentaciju i Cost report održala je kolegica Valentina. Uslijedio je Design Event na kojem su prisustvovali Matija Momčilović, David Mihoci, Filip Bratoš, Dean Lakošeljac, Mario Batistić, Matteo Samsa i Mihael Peršak. Svaki od njih bio je s jednim sucem i raspravljao o konstrukcijskim predno-

The second day, 12th July, began with the preparation for a technical review. While waiting for the technical review, the Business Presentation Event took place, were our team member Anita represented. We made it to technical review by the end of the day, but due to various failures that had not been previously checked, the formula was several times returned to the pit. We couldn't fix the failure till 21:00 o'clock when the track was closing so we were bound to leave the track for the night and return to the camp.

On the third day, 13th July, we were the first team in the morning for technical review. Swiftly and under great pressure, we fixed all the failures on the formula. At 12:00 o'clock the Cost Event started in our pit. The Presentation and the Cost Report itself were held by our team member Valentina. After the presentation, there was a lunch break, after which followed the Design Event.

stima i manama. Nakon Design Eventa položen je tehnički pregled, tilt također, a masa auta, s obzirom na prijašnju, smanjena je za 20 kilograma. Poteškoće su se javile na noise testu, ali uz pomoć susjeda iz Srbije i taj problem se tijekom dana pokušao riješiti. Radili smo do 22 sata u pitu kako bismo odstranili poteškoće na autu i bili spremni za noise test. Navečer je uslijedila zajednička panoramska fotografija.

Četvrti dan je noise test položen te se trkom krenulo na Acceleration Event i Brake Test na kojima se nije javio niti jedan problem. Otišli smo na Skid pad koji je trajao do 13 sati. Iako smo stigli prije isteka vremena, u redu je bilo previše auta

Matija Momčilović, David Mihoci, Filip Bratoš, Dean Lakošeljac, Mario Batistić, Matteo Samsa and Mihael Peršak were in the team for presenting the judges our construction of the formula and its own advantages and disadvantages. After the Design Event, the technical review continued. After passing the technical review, the Tilt Test followed. The mass of the formula itself was reduced by 20 kilograms in comparison to the previous formula RRC4. Problems came up with the noise test, but with the help of our neighbors from Serbia, this problem was solved by the end of the day. The evening followed by a common panoramic photo. We worked until 22:00 in the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i drugu godinu zaredom Skid pad disciplina nije odvožena. Nakon ručka uslijedio je Autocross koji je odlučio poredak auta za sutrašnji Endurence.

Peti dan, 15. srpnja, uslijedio je Endurence. Na autu se radilo cijelo jutro. Uz pomoć Joanneum Racing Teama riješile su se još pokoje poteškoće. Naš red je došao poslije ručka i prije kiše. Do prve izmjene vozača sve se činilo odličnim, međutim nakon zamjene vozača, drugi vozač nije bio u mogućnosti prešaltati brzine nakon čega je sudac zaustavio auto. Sa zaustavljanjem auta završio je naš Endurence, neuspješno. Bez riječi smo se pripremili za odlazak; ostao nam je dan i pol za sređivanje auta. Čekala nas je Mađarska.

Formula Student East, Zalaegerszeg

Nakon dolaska s prvog natjecanja u garaži smo počeli ispravljati pogreške na autu. Imali smo na raspolaganju dan i pol, kako se ne bi ponovila situacija iz Italije.

17. srpnja ponovo je otišla prva ekipa i složila kamp te se upoznala s mjestom. Ove godine smo prvi put nastupili na Formula Student East natjecanju u Mađarskoj.

Sljedeći dan, u ranim jutarnjim satima, stigao je drugi dio ekipe dok je treći i posljednji dio stigao poslijepodne. Odmah se išlo na registriranje ekipe i na pripremu pita. Organizacija je bila znatno bolja nego u Italiji, a i samo natjecanje je jače. Bilo je više timova s vrha svjetskih ljestvica iz formula student svijeta. Predvečer je bila „Team Welcome Presentation“ gdje se predstavio cijeli projekt oko Zala Zone. Nakon pozdrava vratili smo se u kamp i družili se s drugim timovima.

19. srpnja, u 8 i 30 sati, započeo je tehnički pit to solve the problems with the car and to be ready for the noise test scheduled for the next day.

On the fourth day, 14th July, we passed the noise test and moved on to the Acceleration Event and Brake Test, successfully completing them. After lunch, the Autocross followed, which determined the cars` sequence for the next day`s Endurance.

The fifth day, 15th July, the Endurance followed. We were working on the formula the whole morning. With the help of the Joanneum Racing Team, some other difficulties were solved. After lunch and before the rain, it was our turn for the Endurance race. All seemed to be great until the replacement of the first driver, after which the second driver was unable to shift gears. The judge stopped the formula and our Endurance ended unsuccessfully. Without a word, everyone went to the camp to pack things up and to go home. In the next day and a half, we worked on the formula to improve the results for our next competition. Hungary was waiting for us.

Formula Student East, Zalaegerszeg

Returning from the first competition, we started correcting problems on our car and optimizing it for the FS East. We had only a day and a half for it so that the situation in Italy would not happen again.

On 17th July, the first team reached the place and fully arranged the camp and they familiarized themselves with the place. This year was the first time we participated in the Formula Student East competition in Hungary.

On the next day, 18th July, the second part of the

pregled na kojega smo odmah poletjeli i uspjeli ga riješiti već u prvom danu, bez vraćanja u pit. Sada se dalo već lakše disati i raditi pripreme za daljnji tijek natjecanja. Poslijepodne je uslijedilo panoramsko slikanje i zatvaranje pitova.

Izjutra se čekalo na otvaranje staze za probne vožnje. Prije ručka uslijedio je Cost and Manufacturing Event te odmah nakon toga i Engineering Design Event. Nakon eventova krenulo se na probnu vožnju s autom. Poslijepodne je uslijedio Acceleration i Skid Pad s kojim smo bili i više nego zadovoljni pošto se stiglo sve riješiti na vrijeme. Tijekom disciplina s autom održao se i Business event nedaleko od staze.

Ujutro, 21. srpnja, pripremili smo auto i krenuli na testne vožnje. Poslijepodne je uslijedio Autocross, disciplina koja je, kao i u Italiji, odlučila poredak auta za Endurence idućeg dana.

22. srpnja došli smo na red za Endurence nakon ručka, nadajući se najboljem. Prva vožnja s prvim vozačem prošla je u zadovoljavajućim razmjerima. Problem se javio kod zamjene vozača. Auto nije htio upaliti. Nakon nekoliko pokušaja paljenja auta, Endurence je za nas bio završen. Unatoč neuspjehu gledali smo pozitivnu stranu. Pogledali su se najjači timovi na disciplini Endurence. Zatim nas je sve, još i za vrijeme trajanja Endurencea, pokosila kiša tako da je cijela staza plivala. Uspjeli smo se povući u grad na suho i navečer se vratiti u kamp gdje su bili ostali timovi kako bismo se još jednom okupili i razmijenili dojmove i znanje.

23. srpnja, izjutra, počeli smo spremati kamp i zaputili smo se prema Rijeci.

team arrived in the early hours while the third and final part arrived in the afternoon. We immediately went to register the team and to prepare the pit. We were a lot better organized than in Italy and this competition was much stronger. There were more teams from the top world rankings from the Formula Student world than in Italy. The “Team Welcome Presentation” followed in the evening, where the entire project was presented around Zala Zone. After the greeting, we went back to the camp and hang out with other teams.

On 19th July, at 8:30, a technical review began, which we passed without any complications. Now we felt relieved and could continue working and preparing for the competition. In the afternoon, a panoramic photography was taken and the pits were closed.

On the following day, 20th July, we were waiting for the test drive to open in the morning. Before lunch, the Cost and Manufacturing Event took place and immediately afterwards the Engineering Design Event. After these events, the track was opened for the test drives were we tested our car before the main events. In the afternoon, the Acceleration and Skidpad disciplines were on a schedule. We were very satisfied with the results since everything could be done in time. During the dynamic disciplines, the Business Event was held near the track.

On 21st July, the car was prepared in the morning and we went straight for a test drive. In the afternoon, the Autocross followed, a discipline, which like in Italy, decided the order of the cars for the endurance on the next day.

On 22nd July, after lunch the Endurance started. We hoped for the best. The first drive with our first driver was satisfying. The Problem arose with the replacement of the drivers. The car wouldn’t start. After several attempts to start the car, the endurance was over for us. Despite the failure, the positive side was viewed. We had the chance to watch the strongest teams in the endurance discipline. Then all of a sudden, the rain started falling and the whole track was swimming in the water. We were able to go to town and dry ourselves and then go back to the camp in the evening. In the camp, we gathered together and exchanged impressions and knowledge.

On 23rd July, we packed the camp in the morning and went back home.

7.6 adria hydrofoil team

Adria Hydrofoil Team (AHT) čini skupina studenata Tehničkog i Pomorskog fakulteta u Rijeci. Projekt je pokrenut u listopadu 2015. godine na inicijativu dijela studenata iz RITEH Waterbike tima. Primarni cilj tima je projektiranje, gradnja i istraživanje hidrokrilnih i inovativnih formi plovila kao i razvitak novih tehnologija prijevoza putnika i dobara za potrebe međunarodnog natjecanja inovacija "HydroContest".

Prema koncepciji natjecanja, stavljen je naglasak na inovativnost pri razvoju novih tehnologija u brodogradnji i pomorstvu, poput primjene električne propulzije i hidrokrilne tehnologije, a samim time u središtu je i zaštita okoliša prilikom koje dolazi do smanjenja emisija CO2 te ostalih stakleničkih plinova. Natjecanje se izvodi u tri discipline od kojih svaka predstavlja potencijalni način usavršavanja budućeg prijevoza: prijevoz lakog i teškog tereta koji simuliraju prijevoz putnika i dobara te jednosatna utrka izdržljivosti čime se provjerava projektna brzina i doplov s obzirom na ograničeni kapacitet baterije. Prema pravilima natjecanja, plovilo mora biti pogonjeno električnom propulzijom i upravljivo pomoću radio prijemnika - predajnika, s postavljenim dimenzijskim ograničenjem 2,5 m x 2,5 m x 2 m. AHT je od svog osnutka do danas uspješno sagradio tri plovila koja su sudjelovala na međunarodnim natjecanjima.

Sudjelovanjem u ovom projektu studenti stječu prva iskustva u struci jer prolaze sve faze: od osmišljanja i projektiranja do konačne realizacije projekta. Rad na ovom projektu omogućuje studentima stjecanje konkretnih znanja i vještina na područjima tehničkih i ekonomskih znanosti kao i primjenu teorijskih znanja stečenih na fakultetu.

Za potrebe ovogodišnjeg natjecanja održanog u francuskom St. Tropezu, izgrađeno je novo hidrokrilno plovilo "IHC" I „TORPEDO".

Na natjecanju u rujnu 2018. g. prijavljeno je bilo 14 zemalja i 32 tima iz cijelog svijeta s ukupno 52 plovila. Adria Hydrofoil je s plovilima u ukupnom poretku u svijetu zauzeo 3. mjesto u kategoriji prijevoza teškog i 9. mjesto u prijevozu lakog tereta. Ovo je ujedno i najbolji rezultat tima u kratkoj povijesti i velik uspjeh za studente brodogradnje na svjetskoj razini. Radom i entuzijamnom pokazali smo kako se razbijaju sve barijere i granice.

Adria Hydrofoil Team (AHT) is a team of students of the Faculty of Engineering and Faculty of Maritime Studies in Rijeka. The project was launched in October 2015 on the initiative of some students from the RITEH Waterbike Team. The primary objective of the team is to project, build and research hydrofoil and innovative forms of vessels as well as the development of new passenger and goods transport technologies for the needs of the international competition in innovation "HydroContest".

According to the concept of the competition, the emphasis is on innovation in the development of new technologies in shipbuilding and maritime affairs, such as the application of electric propulsion and hydrofoil technology, as well as environmental protection by reducing CO2 emissions and other greenhouse gases. The competition is performed in three disciplines, each of which represents a potential way of improving future transportation: the transportation of light and heavy load that simulates passenger and goods transport, and one-hour endurance race, which checks the project speed and streaming due to the limited battery capacity. According to the rules of the competition, the vessel must be driven by electric propulsion and navigated by a radio receiver - transmitter, with the dimension limitation of 2.5m x 2.5m x 2m. Since its beginnings, AHT has successfully built two vessels that have participated in international competitions. By participating in this project, students gain their first experience in the profession as they pass all stages: from designing and projecting to the final realisation of the project. Working on this project enables students to acquire specific knowledge and skills in the areas of technical and economic sciences as well as the application of theoretical knowledge acquired at the faculty.

For this year's competition held in St. Tropez, new hydrofoil vessels "IHC" and "TORPEDO" were built.

At the competition in September 2018, 14 countries and 32 teams from all over the world with 52 vessels participated. Adria Hydrofoil took the 3rd place in the category of transportation of heavy loads and the 9th place in the category of transportation of light loads of the whole world. This is also the best result of the AHT in its short history and a huge success for all of the shipbuilding students on the world level. With our work and enthusiasm we showed that no obstacle is hard enough.

Članovi ovog povijesnog tima bili su:

Voditelj projekta i pilot:
Ljubomir Pozder (RITEH)
Voditelj komunikacija:
Filip Karadžić (EFRI)
Voditelj logistike
Alan Obrstar (PFRI)
Vanjski suradnik
Boris Tomić (AITAC d.o.o.)
Voditelj elektronike:
Ivan Jokić
Voditelj programiranja:
Marin Vidaković Lipovac
Mentor projekta:
prof. dr. sc. Roko Dejhalla
Na projektu je tijekom akademske godine radilo dvadesetak studenta.

Members of this historical team were:

Team manager and pilot:
Ljubomir Pozder (RITEH)
Communication manager:
Filip Karadžić (EFRI)
Logistics officer:
Alan Obrstar (PFRI)
External associate:
Boris Tomić (AITAC d.o.o.)
Head of the Electronic team:
Ivan Jokić
Head of programming:
Marin Vidaković Lipovac
Mentor of the project:
prof. dr. sc. Roko Dejhalla
Around 20 students worked on this project during the 2017/2018 academic year.

Izvrstan rad Adria Hydrofoil tima i ove godine su prepoznali i podržali mnogobrojni sponzori i donatori poput IHC Engineering Croatia, AITAC-a, Alarm Automatika, Brodogradilište "Dalmont", Schrack Technik, IZIT i dr. bez kojih se projekt ne bi mogao realizirati. Studentski zbor Sveučilišta u Rijeci najviše je pomogao u razvoju i financiranju projekta, a zatim Tehnički i Pomorski fakultet u Rijeci. Mentor projekta je prof. dr. sc. Roko Dejhalla

Prostor za izradu i testiranje plovila ustupio nam je „Veslački klub Jadran".

Adria Hydrofoil Team možete pratiti na službenoj stranici tima (http://adriahydrofoil.uniri.hr) ili na društvenim mrežama poput Facebooka, Instagrama, itd.

The excellent work of the Adria Hydrofoil team was this year again recognized and supported by many sponsors and donators such as IHC Engineering Croatia, AITAC-a, Alarm Automatika, Shipyard "Dalmont", Schrack Technik, IZIT and others without whom the project would not have been realized. The students committee of the University of Rijeka helped the most in the development and financing of the project as well as the Faculty of Engineering and Faculty of Maritime Studies in Rijeka. The mentor of the project is Prof. D.Sc. Roko Dejhalla.

The space needed for making and testing the vessels was provided by the "Rowing club Jadran".

You can follow Adria Hydrofoil Team on the team's official website (http://adriahydrofoil.uniri.hr) or social networks such as Facebook, Instagram and etc.

7.7 riteh drone team

Riteh Drone Team je studentski projekt koji djeluje pod mentorstvom izv. prof. Kristijana Lenca i asistenta Diega Sušnja te već drugu godinu zaredom radi na ostvarenju projekata vezanih za bespilotne letjelice. Riteh Drone Team osnovali su krajem lipnja 2016. godine tri studenta: Domagoj Poljančić, Gordan Nekić i Franko Hržić.

Rad Riteh Drone Teama fokusira se na istraživanje i razvoj tehnologija vezanih za procesiranje i prikupljanje podataka pomoću bespilotnih letjelica, razna snimanja te praćenje trenutnih zakonskih regulativa vezanih uz bespilotne letjelice u Hrvatskoj. Kako je ovaj tim još relativno nov i u začecima, kroz ovu smo se godinu posvetili ponajviše snimanju i suradnji s ostalim timovima na Fakultetu te proučavanju zakonskih akata i normi.

Posebna suradnja ostvarena je s Riteh Racing timom za koji je snimljeno dosta videosadržaja u svrhu promocije njihovog rada i zajedničke suradnje timova na Fakultetu. U suradnji s ostalim zavodima na Fakultetu, uspješno smo pomogli u realizaciji nabave bespilotne letjelice, a svoju smo letačku opremu obogatili za još jedan dron, DJI Inspire, s mnogo dodatne opreme.

Kako bismo ostali u toku s najnovijim zbivanjima, tehnologijama i zakonskim regulativama, neki od naših članova posjetili su „Drone Fest“, održan sredinom ožujka u Zagrebu. Sve prikupljene informacije, posebice o zakonskim regulativama, bile su vrlo korisne za rad tima jer su dobivene smjernice o budućnosti bespilotnih letjelica.

Trenutno se radi na nekoliko studentskih projekata i regrutiranju novih članova te realizaciji i sakupljanju svih potrebnih dozvola kako bi tim i dalje mogao bezbrižno funkcionirati i raditi.

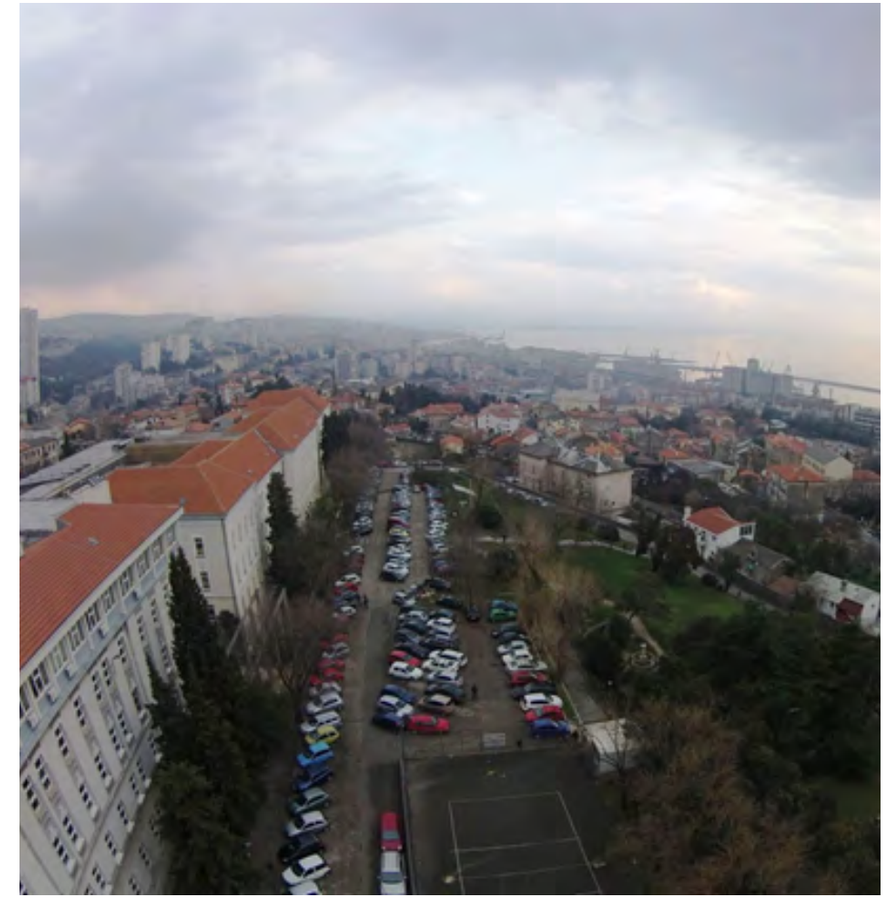
Riteh Drone Team is a student project which works under the mentorship of Assoc. Prof. Kristijan Lenac and Assistant Diego Sušanj, and for the second year in a row it has been working on the realization of projects related to unmanned aerial vehicles. Riteh Drone Team was founded by three students at the end of June 2016: Domagoj Poljančić, Gordan Nekić and Franko Hržić.

Riteh Drone Team's work focuses on research and development of technologies related to processing and collecting data using unmanned aerial vehicles, various recordings and following current legal regulations related to unmanned aerial vehicles in Croatia. As this team is still relatively new and in its beginnings, throughout this year we have mostly dedicated ourselves to record and collaborate with other teams from the Faculty as well as to study legal acts and norms.

A special co-operation was achieved with the Riteh Racing team for which a lot of video content was recorded with the purpose of promoting their work and team collaboration at the Faculty. In cooperation with other departments at the Faculty, we have successfully assisted in the realization of the purchase of an unmanned aerial vehicle and our flight equipment was enriched by another drone, DJI Inspire, with many accessories.

To keep up with the latest happenings, technologies and legal regulations, some of our members visited the Drone Fest, held in the middle of March in Zagreb. All gathered information, especially about legal regulations, was very useful for the work of the team itself, where guidelines were given about what to expect in the future of unmanned aerial vehicles.

Currently we are working on several student projects, recruitment of new members and the realization and compilation of all required permits so that the team can function and work successfully.




PHANTOM
STANDARD

7.8 riteh waterbike team

RITEH Waterbike Team (RWT) osnovala je grupa studenata brodogradnje Tehničkog fakulteta u Rijeci 1999. g., radi sudjelovanja na International Waterbike Regatta (IWR). Prva regata je održana 1980. godine u Hannoveru. Isprva je to bio skup studenata s raznih njemačkih sveučilišta te viših škola koji su svoje druženje nastojali upotpuniti natjecanjem u granama znanosti i tehnologijama koje najbolje poznaju. Time započinju prva natjecanja plovila na nožni pogon. Uključivanjem sveučilišta iz Nizozemske, regata poprima internacionalni karakter pa je 1988. godine održana prva regata izvan granica Njemačke.

Vodocikl (engl. Waterbike)

Plovilo je pokretano isključivo snagom ljudskih mišića dviju osoba. Prema pravilima IWR, vodocikli ne smiju biti duži od šest metara, širina im ne smije biti veća od dužine, gaz ne smije prelaziti 1,5 metara i ne smiju se koristiti elektronička pomagala na pogonu. Pobjednik natjecanja je plovilo koji skupi najmanje negativnih bodova u sedam disciplina:

- sprint 100 m,
- slalom 100 m,
- ubrzanje 10 m,
- naprijed - stop - natrag 50 m,
- maraton (1 h),
- vuča o stup na kojoj se mjeri prosječna vrijednost sile koju može proizvesti brodski vijak na vodociklu u periodu od 30 sekundi,
- utrka iznenađenja (ne boduje se za ukupni poredak, osim u slučaju istog broja bodova).

Na plovilu su moguće korekcije i izmjene dijelova između disciplina. Svi dijelovi korišteni na početku natjecanja fizički moraju ostati na vodociklu do završetka svih disciplina.

Područje rada RWT usko je vezano za tehničku struku (strojarstvo i brodogradnja), ekološki prihvatljive tehnologije i promociju zdravog života studenata. RWT je najstariji studentski tim na Tehničkom fakultetu kroz koji je prošlo više desetaka studenata, danas uspješnih inženjera i uglednih ljudi iz brodograđevne i strojarske struke.

RWT se bavi projektiranjem i izradom vodocikala. To je inovativno i ekološki prihvatljivo plovilo pokretano snagom ljudskih mišića najviše dvoje natjecatelja. Studenti moraju projektirati i izraditi

RITEH Waterbike Team (RWT) was founded by a group of naval architecture students at the Faculty of Engineering in Rijeka in 1999 to participate in the International Waterbike Regatta (IWR). The first regatta was held in Hannover in 1980. At first, it was a set of students from various German universities and higher schools who sought to complement their companionship with competitions in the fields of science and technology they were best acquainted with. This is where the first competitions of the nautical vessels started from. With the involvement of the Netherlands, the regatta gains an international status, so in 1988, the first regatta was held outside the borders of Germany.

Waterbike

The vessels are driven exclusively by the leg muscular strength of two people. According to the IWR rules, the waterbikes must not be longer than six meters and their width should not be wider than their length, the draught should not exceed 1.5 meters and no electronic aids must be used as their propelling force. The one with the least negative points wins the contest in seven disciplines as follows:

- 100m Sprint,
- 100m Slalom,
- Acceleration (10 m),
- 50m Forward - Stop - Backward,
- Marathon (1 h),
- Bollard Pull Performance is used to measure the mean value of the force that is to be produced by the marine screw of the waterbike for a period of 30 seconds,
- Surprise Race (will not be evaluated and change your overall performance score, except in case of the same number of points),

All parts needed for varios changes are to be corrected and done on board during all races.

However, all the parts used at the beginning of the competition have to remain onboard until the end of all disciplines.

The RWT field is closely related to the engineering profession (mechanical engineering and naval architecture), environmentally friendly technologies and the promotion of a healthy student life. RWT is the oldest student team at the Faculty of Engineering where dozens of

plovilo na fakultetu uz rukovođenje mentora i voditelja tima, počevši od razvitka koncepta vodocikla, preko njegove izrade i naposljetku samog natjecanja, a sve to uz racionalno korištenje financijskih sredstava te organizaciju cjelokupnog projekta. Ne postoje stroga pravila o izgledu vodocikla, stoga su izvedbe inovativne i ovise o znanju, tehničkim mogućnostima i spremnosti ekipe.

Radeći na projektu vodocikla, studenti praktično primjenjuju teorijska znanja stečena na fakultetu. Kako bi se kvalitetno pristupilo projektu izrade vodocikla, primjenjuju se integralna brodograđevna znanja poput plovnosti i stabiliteta, hidrodinamike i konstrukcije plovila. Rad u timu isključivo je volonterskog karaktera, a sredstva za rad studenti prikupljaju samostalno, traženjem sponzorstava i donacija. Pored toga, studenti se uče vještinama organizacije, financija, marketinga, logistike i timskog rada, važnih pri budućem zapošljavanju.

Kroz povijest je izgrađeno pet vodocikala: Esmeralda, Zvizda, Kajzer, Šijun i Tramontana. Šijun je ostvario najznačajnije rezultate kroz kratku povijest tima. U nastavku je prikazan razvoj i napredak vodocikala kroz povijest.

Vodocikl – Tramontana
(hladan, suh vjetar koji se spušta s planina sjevernoga Sredozemlja i jadranskoga priobalja)

Godina gradnje: 2017./18.

Konstrukcija: jednotrupac, kombinacija staklenih vlakna i karbona

Pogon i propulzija: azipodni propulzor

Duljina: 5,80 m / Širina: 0,6 m / Masa: 32 kg / Gaz: 0,15 m.

students have earned their degrees who are nowadays known as successful graduate and post graduate engineers and distinguished people in the field of naval architecture and mechanical engineering.

RWT is involved in designing and manufacturing watercrafts which are innovative and environmentally friendly vessels powered only by the muscular strength of two competitors. Vessels are to be designed and built at the faculty by students but guided by expert mentors and team leaders, the process of which starts from the development of the concept of a water bike, and its creation to the very competition, all being supported by the rational use of financial resources and organization of the entire project. There are no strict requirements for the appearance of water bikes, therefore, the performances are innovative and depend on knowledge, technical capabilities and team's readiness.

By designing the watercraft project, students put into practice their theoretical knowledge acquired at the faculty. In order to have a qualitative approach to the waterbike project, integral parts of shipbuilding and naval architectural knowledge are employed, such as seaworthiness, stability, hydrodynamics and the construction of the vessel. Teamworks are solely undertaken on a volunteer basis, and funds for the work are raised by students independently, by seeking sponsorships and donations. In addition, students are taught the skills of organization, finance, marketing, logistics and teamwork, which are important for future employment.

So far, four waterbikes have been built: Esmeralda, Zvizda, Kajzer and Šijun. It was the latest vessel which achieved the most significant results in a brief period of time of teamworking.

7.8 riteh waterbike team

Vodocikl - Šijun (tornado, pijavica)

Godina gradnje: 2013. Trupovi: karbon – aramid, staklena vlakna.

Konstrukcija: aluminijska konstrukcija s nosačima. Pogon i propulzija: azipodni propulzor (pedale i lanci za bicikle - prijenos na poluosovine, ulaz u multiplikator - mehanički prijenosnik -kardan.

Duljina: 5,10 m / Širina: 2,10 m / Masa: 35 kg / Gaz: 0,12 m.

Maksimalna brzina: 9 čvorova.

Najbolji plasman : 2016. g. IWR Vienna, 4. mjesto.

Vodocikl - Kajzer (car, imperator)

Godina gradnje: 2010. Trupovi: dvotrupac - karbonska vlakna, drvo, poliuretanska pjena
Konstrukcija: aluminijska konstrukcija s uzdužnim i poprečnim nosačima. Pogon i propulzija: pedale i lanci za bicikle – prijenos na poluosovine, multiplikator - mehanički prijenosnik, vratilo s osloncem u skroku pod kutem od 23 stupnjeva – brodski vijak.

Duljina: 5,20 m / Širina: 1,85 m /Masa: 75 kg / Gaz: 0,1 m.

Brzina: 6 čvorova.

Najbolji plasman: 2013. g. IWR Duisburg, 12. mjesto.

Vodocikl – Zvizda

Godina gradnje: 2009. Trupovi: dvotrupac – stakloplastika (preinaka kajaka jednosjeda).
Konstrukcija: aluminijska konstrukcija s poprečnim nosačima.

Pogon: pedale i lanci za bicikle – prijenos na poluosovine, multiplikator - mehanički prijenosnik, kutni prijenosnik – brodski vijak.

Duljina: 5,10 m / Širina: 1,60 m / Masa: 83 kg / Gaz: 0,12 m Brzina: 5 čvorova.

Najbolji plasman: 2010. g. IWR Szczecin, 11. mjesto.

Vodocikl – Esmeralda

Godina gradnje: 1998. Trupovi: jednotrupac – stakloplastika.

Konstrukcija: stakloplastika.

Pogon: pedale i lanci za bicikl, multiplikator - vratilo pod kutem spojeno na skrok – brodski vijak.

Duljina: 4,9 m / Širina: 1,2 m / Masa: 90 kg / Gaz: 0,2 m Brzina: 6 čvorova.

Ovogodišnja regata, 39. po redu, održana je u Zagrebu od 23. do 27. svibnja. U Zagrebu se natjecalo preko 200 članova posada uglednih europskih sveučilišta s 39 različitih vodocikala. RWT, zbog tehničkih problema, nije takmičarski sudjelovao u natjecanju.

Below is the development and progression of waterbikes through history.

Waterbike – Tramontana
(is a classical name for a northern wind)

The year of construction: 2017/18

Construction: Monohull, carbonat with epoxy resign.

Drive and propulsion: azymuth propulsion (pedals and chains for bicycles – shaft transmission, input to multiplier - mechanical gearbox - cardan.)

Length: 5.80 m / Width: 0.6 m / Weight: 32 kg / Draught: 0.15 m.

Waterbike - Šijun (tornado, leech)

The year of construction: 2013

Hulls: Carbon Aramid, Glass Fiber.

Construction: Aluminum structure with support girders.

Drive and propulsion: azymuth propulsion (pedals and chains for bicycles – shaft transmission, input to multiplier - mechanical gearbox - cardan.)

Length: 5.10 m / Width: 2.10 m / Weight: 35 kg / Draught: 0.12 m.

Maximum speed: 9 knots.

Best Placement: 2016 IWR Vienna, 4th place.

Waterbike - Kajzer (emperor)

The year of construction: 2010.

Hulls: two hulled - carbon fiber plastics, wood, polyurethane foam.

Construction: aluminum construction with longitudinal and transverse girders. Driveshaft angle and propulsion: pedals and bicycle chains – semi – shaft transmission , multiplier - mechanical gearbox, a 23 degree strut shaft - boat screw.

Length: 5.20 m / Width: 1.85 m / Weight: 75 kg / Draught: 0.1 m.

Speed: 6 knots.

Best Placement: 2013 IWR Duisburg, 12th place.

Waterbike – Zvizda

The year of construction: 2009.

Hulls: two hulled - fiberglass (a modification of the single seat kayak).

Construction: aluminum construction with transverse support girders.

Drive: pedals and bicycle chains, semi – shaft transmission, multiplier - mechanical gearbox, angle gear - screw.

Length: 5.10 m / Width: 1.60 m / Weight: 83 kg /

7.8 riteh waterbike team

Tim je krenuo s projektiranjem novoga plovila još 2017. godine. Uz projektiranje i pripremu projekta izrade jednotrupca, izrađen je set od 6 vijaka tehnologijom 3D printanja, te naknadnim presvlačenjem karbonom. Svaki vijak je prilagođen vožnji pojedine discipline.

Novoizgrađeni vodocikl Tramontana izrađen je većinom od karbona i epoksi smole i jedan je od najlakših plovila na regati. Plovilo će uz sitne dorade nastupati na regati u Hamburgu 2019. godine.

Ove godine u tim je bilo aktivno uključeno 11 studenata Tehničkog fakulteta sa studijskih smjerova brodogradnje (6) i strojarstva (5). RITEH Waterbike Team činili su Adrijan Lisac, Darin Majnarić, Davor Penava, Dora Vojnić, Filip Tremski, Ivor Majnarić, Mario Božičević, Petar Listčić, Tin Bošković, Tonko Bošković, Helena Mičetić (dio sezone) i vanjski suradnik Mihovil Tomašić. Mentor tima je prof. dr. sc. Roko Dejhalla.

Medijska vidljivost projekta:

Službena web stranica:
http://ritehwaterbike.uniri.hr/

Facebook stranice:
facebook.com/RitehWaterbikeTeam/
facebook.com/studirajbrodogradnjuurijeci/

Twitter:
twitter.com/ritehwaterbike

Youtube kanal:
youtube.com/channel/
UCf2jkY0kpoakgUogCIjvH4A

Draught: 0.12 m. Speed: 5 knots.

Best Placement: 2010 IWR Szczecin, 11th Place.

Waterbike - Esmeralda

The year of construction: 1998

Hulls: monohull - fiberglass.

Construction: fiberglass.

Drive: pedals and chains for bicycles, multiplier – right angle strut shaft - screw.

Length: 4.9 m / Width: 1.2 m / Weight: 90 kg / Draughtt: 0.2 m Speed: 6 knots.

The 39th annual regatta was held in Zagreb from 23 to 27 May. Over 270 members of eminent European universities competed with their 39 various waterbikes. Due to technical problems, RWT did not compete.

The team started designing a new vessel in 2017. Apart from designing and projecting the monohull , a set of 6 screws was manufactured using 3D printing technology followed by carbon coating. Each screw is adapted to a particular discipline race.

The new built waterbike Tramontana is made of carbon and epoxy, and is one of the lightest vessels on the regatta. The boat will be operational for the regatta in Hamburg 2019.

11 students of the Faculty of Engineering from courses (6 from naval architecture and 5 from mechanical engineering) have been actively involved in this year's team. Members of the RITEH Waterbike Team are: Adrijan Lisac, Darin Majnarić, Davor Penava, Dora Vojnić, Filip Tremski, Ivor Majnarić, Mario Božičević, Petar Listčić, Tin Bošković, Tonko Bošković, part of the year Helena Mičetić and external associate Mihovil Tomašić. The team mentor is Prof. D.Sc. Roko Dejhalla.

Media Visibility of the Project:

Official website:
http://ritehwaterbike.uniri.hr/

Facebook pages:
facebook.com/RitehWaterbikeTeam
facebook.com/studirajbrodogradnjuurijeci/

Twitter:
twitter.com/ritehwaterbike

Youtube channel:
youtube.com/channel/
UCf2jkY0kpoakgUogCIjvH4A

7.9 riteh web team

Riteh Web Team je grupa studenata koji pod vodstvom doc. dr. sc. Damira Arbule i doc. dr. sc. Sandija Ljubića rade na projektima vezanim uz web tehnologije. Osnovni ciljevi rada tima su razmjena iskustava i znanja među studentima te mentorski rad kroz redovne sastanke i radionice, code reviewove, a ponajprije stjecanje iskustva u izradi web aplikacija: od ideje, prikupljanja specifikacija, osmišljavanja arhitekture i razvoja do produkcijske razine i puštanja u rad. Korisnici web aplikacija su većinom zaposlenici Fakulteta, Sveučilišta te sami studenti.

Tim je osnovan krajem 2014. godine, a inicijalno je okupljen oko tri projekta: sustava za upravljanje sadržajem weba Tehničkog fakulteta koji je u produkciji već četiri godine, s prosječnih 12000 jedinstvenih korisnika mjesečno, web aplikacije za automatiziranu evaluaciju programa na predmetima kao što su Programiranje te Algoritmi i strukture podataka, a koja se odnedavno koristi i na jednom kolegiju na FER-u te sustava Navindo za navigaciju u zatvorenim prostorima.

Web aplikacije koje razvijaju članovi tima teže korištenju najmodernijih tehnologija i razvojnih metoda. Tim koristi agilne metode razvoja web aplikacija, a većina aplikacija razvija se u programskom jeziku Python i Django radnom okviru koji omogućuje brz razvoj i pragmatičan dizajn.

Kroz rad tima nastale su brojne zanimljive web aplikacije, od kojih se, osim već spomenutih, može izdvojiti Ticketing sustav, odnedavno u produkciji. Koriste ga zaposlenici Tehničkog fakulteta, specifično za potrebe rada Tehničke službe i

Riteh Web Team is a group of students lead by Assist. Prof. D.Sc. Damir Arbula and Assist. Prof. D. Sc. Sandi Ljubić working on projects related to web technologies. The main goals of the team's work are exchanging experience and knowledge among students and mentored work through meetings and workshops, code reviews and, most importantly, gaining experience in web application development: from the idea, assembling specifications, designing the architecture to the production level and finally creating a release. The users of the team's apps are mainly the Faculty and University employees and the students themselves.

The team was founded in late 2014 and it initially focused on three projects: (1) web content management system for the Faculty of Engineering website, which has been in production for 4 years already, averaging 12,000 unique visitors per month, (2) web application for automated evaluation of programs for classes such as Programming and Algorithms and Data Structures, recently used for a class at FER Zagreb also, and (3) Navindo system for indoor navigation.

Web applications developed by team members strive to use the latest technologies and development methods. The team uses agile methods of web applications development. Applications are mostly developed using Python programming language and Django framework which makes fast development and pragmatic design possible.

Računalnog centra. Ticketing sustav omogućuje zaposlenicima fakulteta prijavu određenog problema nakon čega ga preuzimaju službe Tehničkog fakulteta zadužene za rješavanje čiji agenti tijekom rješavanja kroz sustav mogu komunicirati i obavijestiti sve zainteresirane strane o trenutnom stanju problema i postupku rješavanja.

Mnogi studenti uključuju se u rad tima kroz projekte i završne i diplomske radove u kojima imaju prilike raditi na stvarnim problemima, u najnovijim tehnologijama uz mentoriranje profesora i starijih studenata koji su u timu već više godina. Studenti na taj način stječu vrijedno radno iskustvo koje mogu istaknuti u svojim životopisima.

Kvaliteta studenata koji su članovi tima dokazana je kroz njihov uspjeh na prošlogodišnjem Combisovom try{code}catch hackathonu gdje su osvojili drugu nagradu. Članovi nagrađenog tima bili su Ivan Ćelić, Simone Herak, Dino Ilić, i Arian Skoki.

Pojedini članovi tima sudjelovali su na Natjecanju timova studenata informatičara hrvatskih sveučilišta 2016. i 2017. g. Obje godine po jedan tim s našeg fakulteta kvalificirao se na Central Europe Regional Contest (CERC) gdje je predstavljao Sveučilište u Rijeci. U ACM-ovom slijedu studentskih natjecanja nakon CERC-a se nalazi još samo svjetsko natjecanje.

Studenti su se pripremali za natjecanja u grupi Algoriteh koja se počela sastajati 2016. godine, na inicijativu studenata Dina Ilića i Franka Hržića, uz vodstvo doc. dr. sc. Damira Arbule. Članovi Algoriteha, osim na ACM-ovim natjecanjima, stečene sposobnosti nastoje pokazati i na ostalim natjecanjima, kao što su Google Code Jam, Google Hash Code i Codeforces online natjecanja.

As a result of the team's work, many interesting web applications have been made. Apart from the aforementioned, we can point out the Ticketing system, which has recently been put into production. It is used by the employees of the Faculty of Engineering, specifically for the needs of different offices. The Ticketing system allows the Faculty employees to enter a specific problem whereupon the office in charge solves the problem. Moreover, the agents of the Ticketing system can communicate through the system while solving the problem and can notify all the interested parties about the current state of the problem and the procedure to solve it.

Many students take part in the team's work through projects, bachelors' and masters' theses through which they have an opportunity to work on real problems, using the latest technologies, mentored by professors and older students who have been members of the team for many years. In the process they gain valuable work experience which can be pointed out in their resumes.

The quality of student members of the team has been proven through their success on the last year's Combis try{catch} hackathon where they won the second prize. The members of the awarded team were: Ivan Ćelić, Simone Herak, Dino Ilić, i Arian Skoki.

Some of the team's members participated in the university collegiate programming contest in 2016 and 2017. Both years one team from our faculty qualified for the Central Europe Regional Contest (CERC), where it represented the University of Rijeka. In ACM series of student contests after CERC, there is only the world finals contest.

The students have been preparing for competitions in Algoriteh group, which started to organise meetings in 2016, at the initiative of the students Dino Ilić and Franko Hržić, lead by Assoc. Prof. D. Sc. Damir Arbula. Apart from ACM competitions, Algoriteh members also strive to show the knowledge they gained on other competitions, such as Google Code Jam, Google Hash Code and Codeforces online competitions.

7.10 akademski sport - uspjesi sportaša
academic sport - achievements of athletes

U sklopu sportskih aktivnosti na Tehničkom fakultetu u Rijeci osnovana je sportska studentska udruga RITEH Sport koju vode studenti s Tehničkog fakulteta.

Predsjednik udruge: Ljubomir Pozder

Tajnik udruge: Daniel Ivaničić

Zamjenik predsjednika: Marko Mesarić

U radu udruge uvelike su pomogli studenti Matej Beriša i Ena Badžek, kao i svi sportaši i sportašice.

U natjecanjima Unisport lige, Tehnički fakultet u akademskoj godini 2017./2018. postigao je zapažene rezultate:

Pobjednik Unsiport lige 2017./2018. – Muška konkurencija

Tehnički fakultet

Najbolji sportaš Sveučilišta u Rijeci 2017./2018.

Daniel Ivaničić

Najbolji sportaš UniSportRI lige 2017./2018.

Daniel Ivaničić

3. mjesto „STEM GAMES“ Poreč
FUSTAL RITEH

Rezultati po sportovima Unisport lige:

Futsal (Ž) *– 2. mjesto*

Košarka *– 1. mjesto (M), 2. mjesto (Ž)*

Rukomet *– 3. mjesto (M), 3. mjesto (Ž)*

Odbojka *– 2. mjesto (M), 1. mjesto (Ž)*

Cageball *– 2. mjesto (M), 2. mjesto (Ž)*

Squash *– 2. mjesto (M), 3. mjesto (Ž)*

Cross *– 1. mjesto (M)*

Badminton *– 1. mjesto – pojedinačno/parovi (M), 2.mjesto – pojedinačno/parovi (Ž)*

Šah *– 2. mjesto (M)*

Pikado *– 3. mjesto (M)*

Stolni tenis *– 1. mjesto pojedinačno (M), 2. mjesto parovi (M), 3. mjesto parovi (Ž)*

Tenis *– 1. mjesto pojedinačno/parovi (M)*

Plivanje ekipno *– 1. mjesto (M), 4. mjesto (Ž)*

Atletika ekipno *– 1. mjesto (M), 2. mjesto (Ž)*

Košarka 3na3 *– 2. mjesto (M), 1. mjesto (Ž)*

U ukupnom poretku Unisport lige 2017./2018. Tehnički fakultet je završio na 2. mjestu.

Turniri:

RITEH futsal *osvojio je 2. mjesto na turniru „Jama Kup 2018“. Najbolji igrač turnira prograšen je Ante Rašić (Tehnički fakultet).*

As part of sports activities at the Faculty of Engineering in Rijeka, the sports students association RITEH Sport was founded which is led by its students.

President of the association: Ljubomir Pozder

Secretary of the association: Daniel Ivaničić

Deputy president: Marko Mesarić

The work of the association was greatly assisted by students Matej Beriša, Ena Badžek as well as by all the male and female athletes. In the Unisport League competitions, the Faculty of Engineering got remarkable results in the 2017/2018 academic year:

Faculty of Engineering – ***the winner of the 2017/2018 Unisport League– male competition***

The best athlete of the University of Rijeka in 2017/2018

Daniel Ivaničić (Faculty of Engineering)

The best athlete of the 2017/2018 Unisport League

Daniel Ivaničić (Faculty of Engineering)

*Futsal RITEH –****3rd place at the STEM GAMES in Poreč***

Results in each sport of the Unisport League:

Futsal (F) *– 2nd place*

Basketball *– 1st place (M), 2nd place (F)*

Handball *– 3rd place (M), 3rd place (F)*

Volleyball *– 2nd place (M), 1st place (F)*

Cageball *– 2nd place (M), 2nd place (F)*

Squash *– 2nd place (M), 3rd place (F)*

Cross *– 1st plce (M)*

Badminton *– 1st place – individually/ in pairs (M), 2nd place - – individually/ in pairs (Ž)*

Chess *– 2nd place (M)*

Darts *– 3rd place (M)*

Table-tennis *– 1st place individually (M), 2nd place in pairs (M), 3rd place in pairs (F)*

Tennis *– 1st place - individually/ in pairs (M),*

Swimming (team) *– 1st place (M), 4th place (F)*

Athletics (team) *– 1st place (M), 2nd place (F)*

Basketball 3 on 3 *– 2nd place (M), 1st place (F)*

In the overall ranking of the 2017/2018 Unisport League, the Faculty of Engineering achieved the 2nd place.

Tournament:

RITEH futsal *got the 2nd place in the Jama Cup 2018 contest. The best player was Ante Rašić (Faculty of Engineering).*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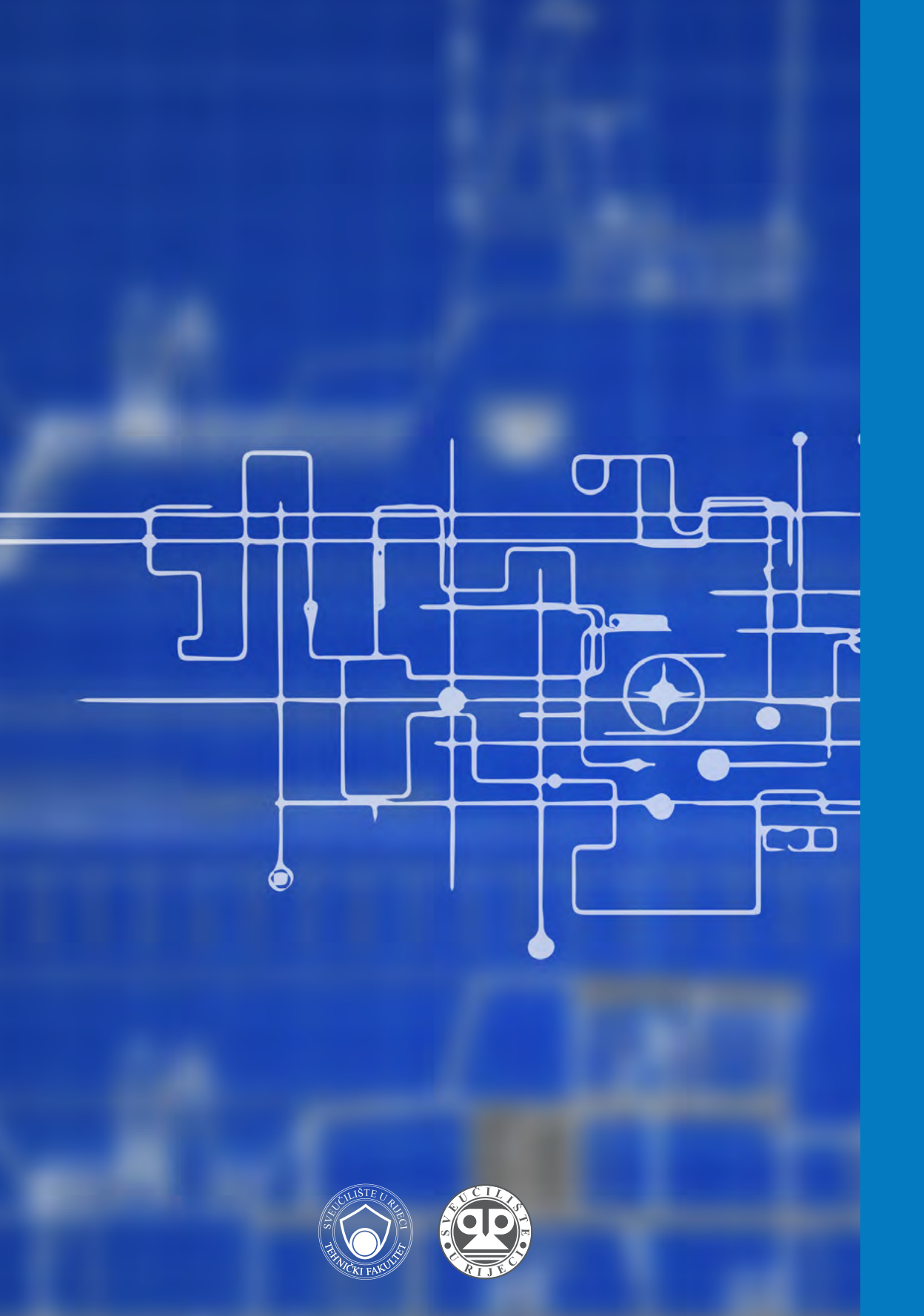
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