ISSN 1846-9795

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

2018./2019.

GODIŠNJAK TEHNIČKOG FAKULTETA

ANNUAL REPORT OF THE FACULTY OF ENGINEERING

Sveučilište u Rijeci
University of Rijeka

2018./2019.
2018/2019

Sveučilište u Rijeci
Tehnički fakultet

University of Rijeka
Faculty of Engineering

ISSN 1846-9795

GODIŠNJAK TEHNIČKOG FAKULTETA SVEUČILIŠTA U RIJECI 2018./2019.
ANNUAL REPORT OF THE FACULTY OF ENGINEERING UNIVERSITY OF RIJEKA 2018/2019

UDK / UDC: 378.662 (497.5 Rijeka)(058)

God. / Vol. 12
Str. / P. 1-250 Rijeka, 2019.

IZDAVAČ | PUBLISHER:
Sveučilište u Rijeci, Tehnički fakultet
/ University of Rijeka, Faculty of Engineering

GLAVNI UREDNIK | EDITOR-IN-CHIEF:
doc. dr. sc. / Assist. Prof. D. Sc. Sanjin Kršćanski

ZAMJENICA UREDNIKA | DEPUTY EDITOR:
doc. dr. sc. / Assist. Prof. D. Sc. Loredana Simčić

UREDNIČKI ODBOR | EDITORIAL BOARD:
prof. dr. sc. / Prof. D. Sc. Jasna Prpić-Oršić; prof. dr. sc. / Prof. D. Sc. Duško Pavletić; doc. dr. sc. / Assist. Prof. D. Sc. Sanjin Kršćanski; doc. dr. sc. / Assist. Prof. D. Sc. Loredana Simčić; Diego Sušanj; Damjan Banić; Luka Grbčić

LEKTURA | PROOFREADING:
Marta Lončarević, prof., dipl. knjižničarka / Prof., Grad. Librarian (hrvatski / Croatian);
mr. sc. / M. Sc. Elisa Velčić Janjetić, v. pred / Sen. Lect (engleski / English),
Anita Badurina, pred. / Lect (engleski / English)

PRIJELOM | LAYOUT DESIGN:
Lea Grgurić

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
www.riteh.uniri.hr

UČESTALOST IZLAŽENJA | PUBLISHED:
Jednom godišnje / Annually

TISAK | PRINTED BY:
TEHNIČAR-COPYSERVIS d.o.o.

NAKLADA | EDITION:
400 primjeraka / pcs.

sadržaj contents

predgovor dekanice
dean's preface

Dragi prijatelji Tehničkog fakulteta!

Predstavljajući vam Godišnjak posvećen pedeset i devetoj godini postojanja i djelovanja Tehničkoga fakulteta Sveučilišta u Rijeci, htjela bih prije svega naglasiti kako se sa zadovoljstvom možemo osvrnuti na postignuća naših djelatnika i studenata tijekom akademske godine 2018./2019. Uz brojne aktivnosti, Tehnički fakultet je nastavio jačati svoju prepoznatljivost u brojnim međunarodnim i regionalnim organizacijama, unaprjeđivati odnose s partnerskim dionicima i poticati različite vidove suradnje s velikim brojem ustanova i tvrtki u zemlji, kao i diljem svijeta.

U ovogodišnjem smo Godišnjaku pobrojali najvažnije aktivnosti naših djelatnika i studenata, kao i postignuća ostvarena tijekom akademske godine 2018./2019. 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 i 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 2018./2019. uloženo je gotovo četiri milijuna kuna u nabavku nove laboratorijske opreme, razvoj računalne infrastrukture i održavanje prostora Fakulteta.

Svekolike promjene zahtijevaju povremena ozbiljna promišljanja gdje smo i kuda idemo. Fakultet je u prethodnom razdoblju, osim samoanalize, napravio i druge analize stanja te usvojio viziju i misiju. Pred nama je određivanje strateških ciljeva i strateškog plana čime želimo izraditi dokument koji će nam jasnije odrediti ciljeve i mjere kojima ćemo unaprijediti Fakultet u budućnosti.

Dear Friends of the Faculty of Engineering!

Introducing the Annual Report dedicated to the fifty-ninth year of the existence and work of the Faculty of Engineering of the University of Rijeka, I would first like to emphasize that we are pleased to look back on the achievements of our staff and students during the 2018/2019 academic year. In addition to numerous activities, the Faculty of Engineering has continued strengthening its visibility in various international and regional organisations, improving relationships with partner stakeholders as well as encouraging various forms of cooperation with a large number of institutions and companies in the country and abroad.

In this year's Annual Report we have listed the most important activities of our staff and students as well as the achievements accomplished during the 2018/2019 academic year. Thanks to the results of the 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 2018/2019 academic year, nearly four million kunas were invested in purchasing new laboratory equipment, developing computer infrastructure and in the maintenance of the Faculty premises.

All changes require occasional serious reflection on where we are and where we are going. In the previous period, the Faculty, besides the self-analysis, made other analyses of the situation

Prošla je akademska godina bila obilježena brojnim događanjima, od kojih treba izdvojiti sljedeće: odluka o reakreditaciji naših sveučilišnih preddiplomskih i diplomskih studija od strane Agencije za znanost i visoko obrazovanje potvrdila je kako su naši studiji usklađeni s najnaprednijim europskim normama; intenzivni pripremni rad na primjeni Hrvatskog klasifikacijskog okvira za naše sveučilišne studijske programe i na razvoju, unapređenju i provedbi stručne prakse; intenzivni pripremni rad na internacionalizaciji naših studija. U ovoj je akademskoj godini održan i izbor dekana za razdoblje od akademske godine 2019./2020. do 2021./2022. Za novoga dekana izabran je prof. dr. sc. Duško Pavletić. Koristim ovu prigodu kako bih mu još jednom čestitala na izboru za ovu časnu i odgovornu dužnost. Njemu i njegovim suradnicima želim sve najbolje u daljnjem radu.

I ove smo akademske godine, ohrabreni vrlo pozitivnim prošlogodišnjim iskustvima, organizirali JobFair, sajam poslova koji očekuju naše buduće inženjere. Odaziv tvrtki, kao i sve veći interes za JobFair, pokazatelji su velikog interesa hrvatskih i stranih tvrtki za našim kadrovima. 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 i upoznavanje sa životom i radom naših studenata na fakultetu. Po prvi smo puta, uoči Dana otvorenih laboratorija, ugostili i ravnatelje srednjih škola koje smo upoznali s djelatnostima našeg Fakulteta, našim aktivnostima i mogućnostima studiranja na našim studijima.

Na našim internetskim stranicama našu znanstvenu djelatnost dodatno smo istaknuli kroz Znanstvenu izložbu. Istraživanja naših znanstvenika predstavili smo kroz fotografije i tako pokušali dočarati svu ljepotu i raznolikost znanstvenoga rada u području tehničkih znanosti. Poticaj je bilo odvijanje Festivala znanosti Sveučilišta u Rijeci, ali vjerujem da će ova izložba ostati stalna postava našega fakulteta kojoj će svaki naš budući znanstveni projekt udahnuti novi život. O našoj znanstvenoj živosti svjedoče ugovori za 27 sveučilišnih projekata i jedan projekt Hrvatske zaklade za znanost potpisani u ovoj akademskoj godini.

Kako sve ono što radimo nije ostalo nezapaženo, potvrđuju i ovogodišnje istaknute nagrade i priznanja našim nastavnicima: profesoru emeritusu dr. sc. Josipu Brniću dodijeljena je državna nagrada za znanost u kategoriji Nagrada za životno djelo u području tehničkih znanosti; profesoru emeritusu akademiku Elsu Kuljaniću dodijeljena je Nagrada za životno djelo Primorsko-goranske županije; CEEPUS mreža voditelja prof. dr. sc. Zlatana Cara ocijenjena je kao treća najbolja na razini cjelokupnog CEEPUS programa; doc. dr. sc. Jonatan Lerga dobitnik je nagrade Zaklade Sveučilišta u Rijeci u kategoriji Znanstvenici, a za područje Tehničkih i biotehničkih znanosti; izv. prof. dr. sc. Kristijan Lenac i Nikola Anđelić, asist. dobitnici su nagrade za nastavnu izvrsnost za ak. god. 2018./2019. koju dodjeljuje Sveučilište u Rijeci.

Kako u nastavi i u znanosti, tako su se naši nastavnici i studenti tradicionalno istaknuli i u sportu. Na 21. Riječkoj regati u mornarskom veslanju, u organizaciji Pomorskog fakulteta iz Rijeke, ekipa Tehničkog fakulteta sudjelovala je u raznim kategorijama, osvojivši peto u ženskoj i šesto mjesto u muškoj kategoriji.

Studentice i studenti našega fakulteta ostvarili su zapažene rezultate na međunarodnom natjecanju STEM Games 2019. održanom u Poreču. Natjecale su se znanstvene i sportske ekipe, a najveći uspjeh postigle su ženska futsal ekipa i šahovska ekipa.

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

Naši studentski timovi tradicionalno obogaćuju našu lepezu djelatnosti svojim brojnim aktivnostima. Članovi Riteh Racing Teama organizirali su natjecanje Rimac FS Alpe Adria 2019. na kartodromu Bura u Šmriki na kojemu su osvojili prvo mjesto u utrci izdržljivosti.

Naš Drone Team održao je brojne edukacije učenika srednjih škola o korištenju bespilotnih letjelica, a osnovana je i trkaća sekcija koja će se u narednom razdoblju posvetiti pripremama za utrke dronova. Naš najmlađi tim, Riteh Web Team, radi na brojnim projektima od kojih su najznačajniji: unaprjeđenje sustava za upravljanje sadržajem fakultetske web stranice, razvoj modula web sjedišta za strukturirani prikaz unutarnjih prostora Fakulteta u obliku mape s mogućnostima pretrage i navigacije i razvoj sustava za digitaliziranu provedbu postupka nabave prema poslovnoj politici Tehničkog fakulteta.

O svemu prethodno navedenom može se čitati u ovome Godišnjaku koji svjedoči o mnogobrojnim ostvarenim zadaćama i aktivnostima naših djelatnika i studenata.

and adopted its vision and mission. Defining strategic goals and a strategic plan are ahead of us, and we want to produce a document that will more clearly determine our goals and measures that will improve the Faculty in the future.

The previous academic year was marked by numerous events, of which the following should be mentioned: the decision for the re-accreditation of our undergraduate and graduate university studies by the Agency of Science and Higher Education confirmed that our studies are in line with the most advanced European standards; intensive preparatory work on the application of the Croatian Classification Framework for our university study programmes as well as on the development, improvement and implementation of professional practice; intensive preparatory work on the internationalisation of our studies. The election of the Dean for the academic year 2019/2020 to 2021/2022 was also held. Prof. D. Sc. Duško Pavletić was elected to be the new Dean. I take this opportunity to once again congratulate him on this election for such an honourable and responsible duty. I wish him and his associates all the best in their future work.

Also this academic year, encouraged by the very positive experiences of last year, we organised the JobFair, a job fair that awaits our future engineers. The response of the companies as well as a great interest for this year's JobFair, indicate the high demand of Croatian and foreign companies for our staff. The Job Fair was organised on the same day as the Day of Open Laboratories of the Faculty of Engineering, where third-grade high school students were able to participate actively in experimental teaching and were able to get acquainted with the life and work of our students at the Faculty. For the first time, on the Day of Open Laboratories, we also hosted high school principals who were introduced with the work of our Faculty, our activities and our study opportunities.

On our website, we have further highlighted our scientific activity through the Science Exhibition. We presented our scientists' research through photographs, trying to evoke the beauty and diversity of scientific work in the field of engineering sciences. The Science Festival of the University of Rijeka encouraged this event, but I believe that this exhibition will remain a permanent exhibition of our faculty, to which each of our future scientific projects will contribute. Our scientific vibrancy is evidenced by contracts for 27 university projects and one project by the Croatian Science Foundation signed this academic year.

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. Emeritus D. Sc. Josip Brnić was awarded with the National Science Award in the category of Lifetime Achievement Award in the field of Engineering Sciences; Prof. Emeritus Academician Elso Kuljanić was awarded the Lifetime Achievement Award of the Primorsko-Goranska county. The CEEPUS network run by its leader Prof. D. Sc. Zlatan Car was evaluated as the third best on the level of the entire CEEPUS programme; Assist. Prof. Jonatan Lerga won the Award of the Foundation of the University of Rijeka in the category of scientists in the fields of engineering and biotechnological sciences; Assoc. Prof. D. Sc. Kristijan Lenac and assistant Nikola Anđelić won the Excellence in Teaching Award for the 2018/2019 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. At the 21st 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 fifth place in the female category and the sixth place in the male category.

Students of our faculty achieved stunning results in the STEM Games 2019 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 female futsal team and the chess team.

The team of runners of the Faculty participated again in the business race B2run and, in the category of medium enterprises, won the second place. The team also won the first place for the best three female runners as well as the single second place in the female and male category.

Our student teams have traditionally enriched our range of activities with their many activities. The members of the Riteh Racing Team organised the Rimac FS Alpe Adria 2019 Competition at the Bura Cartridge in Šmrika, where they won the first place in the endurance race.

Our Drone Team hosted a number of high school student trainings on the use of unmanned aerial vehicles and a racing section has been set up that will focus on preparing for drone racing in the coming period. Our youngest team, the Riteh Web Team, is working on a number of projects, the most significant of which are: upgrading

Koristim ovu prigodu da svim djelatnicima i studentima čestitam pedeset i devetu obljetnicu Fakulteta i zahvalim im na doprinosu u 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, predvodio doc. dr. sc. Sanjin Kršćanski, a uz njega su je činili doc. dr. sc. Loredana Simčić te asistenti Damjan Banić, Diego Sušanj i Luka Grbčić, zahvaljujem na velikom trudu uloženom u pripremu i uređenje cjelokupne građe.

U Rijeci 30. rujna 2019.

Dekanica
Prof. dr. sc. Jasna Prpić-Oršić

the Faculty's content management system, developing a website module for structured representation of the Faculty's internal spaces in the form of a map with search and navigation capabilities, and developing a system for a digitized implementation procurement procedure according to the business policy of the Faculty of Engineering.

All of the above can be read in this Annual Report, which presents many accomplished tasks and activities of our staff and students.

I would like to use this opportunity to congratulate all the staff and the students on the 59th 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, Assistants Damjan Banić, Diego Sušanj and Luka Grbčić. Thank you for the effort you invested in the preparation of the material and the edition of this Annual Report.

In Rijeka, 30th September 2019

Dean
Prof. D. Sc. Jasna Prpić-Oršić

1 opće informacije general information

Tehnički fakultet Sveučilišta u Rijeci stožerna je visokoškolska i znanstveno-istraživačka 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 objedinjuje danas djelatnost 11 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 179 zaposlenika 83 ih je u znanstveno-nastavnim, 7 u nastavnim i 40 u suradničkim zvanjima, 3 je zaposlenika na projektima Hrvatske zaklade za znanost, a 45 je djelatnika u administrativnim i stručnim službama. Jedan je djelatnik 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 programe na

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 179 employees, 83 are in teaching-research, 7 in teaching and 40 in associate positions, 3 members of staff work on projects funded by the Croatian Science Foundation, and 45 work in the administrative and professional services. One employee is on a professional training. The Faculty engages a large number of external associates. The Faculty offers undergraduate and graduate university study programmes in mechanical engineering, naval

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, interdisciplinarnih tehničkih znanosti te računarstva.

Do sada je na Tehničkom fakultetu u Rijeci diplome steklo 142 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), 1357 magistra inženjera (od čega 593 strojarstva, 113 brodogradnje, 498 elektrotehnike i 153 računarstva), 1884 sveučilišnih prvostupnika inženjera (od čega 923 strojarstva, 139 brodogradnje, 542 elektrotehnike i 280 računarstva) te 610 stručnih prvostupnika inženjera (od čega 245 strojarstva, 48 brodogradnje i 317 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 (18.10.2018., 16.1.2019. i 21.5.2019.) pri čemu je sakupljeno 148 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.

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, Interdisciplinary Engineering Sciences and Computer Sciences.

So far, the Faculty of Engineering in Rijeka has delivered 142 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 1357 Master Engineers (593 Mechanical Engineering, 113 Naval Architecture, 498 Electrical Engineering and 153 Computer Engineering), 1884 University Bachelor Engineers (923 Mechanical Engineering, 139 Naval Architecture, 542 Electrical Engineering and 280 Computer Engineering) as well as 610 Vocational Bachelor Engineers (245 Mechanical Engineering, 48 Naval Architecture and 317 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 2018, January 16 2019 and May 21 2019), where 148 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.

GLAVNI TAJNIK
Tomo VERGIĆ

DEKANAT
DEKANICA
Prof. dr. sc. Jasna PRPIĆ-ORŠIĆ

PRODEKANI
Prof. dr. sc. Marko ČANAĐIJA Prof. dr. sc. Duško PAVLETIĆ Prof. dr. sc. Anica TRP

POMOĆNICI DEKANICE
Izv. prof. dr. sc. Neven BULIĆ Prof. dr. sc. Marina FRANULOVIĆ Izv. prof. dr. sc. Ivan ŠTAJDUHAR

ZAVOD ZA AUTOMATIKU I ELEKTRONIKU
PREDSTOJNIK
Prof. dr. sc. Saša VLAHINIĆ
Katedra za mjerne sustave
VODITELJ
Prof. dr. sc. Nino STOJKOVIĆ
Katedra za signale i sustave
VODITELJ
Prof. dr. sc. Viktor SUČIĆ
Katedra za elektroniku, robotiku i automatiku
VODITELJ
Prof. dr. sc. Zlatan CAR

ZAVOD ZA BRODOGRADNJU I INŽ. MORSKE TEHNOLOGIJE
PREDSTOJNIK
Prof. dr. sc. Roko DEJHALLA
Katedra za otpor i propulziju broda
VODITELJ
Prof. dr. sc. Roko DEJHALLA
Katedra za projektiranje plovnih objekata
VODITELJ
Doc. dr. sc. Anton TURK
Katedra za tehnologiju i organizaciju brodogradnje
VODITELJ
Izv. prof. dr. sc. Marko HADJINA
Katedra za dinamiku plovnih objekata
VODITELJICA
Prof. dr. sc. Jasna PRPIĆ-ORŠIĆ
Katedra za konstrukciju plovnih objekata
VODITELJ
Prof. dr. sc. Albert ZAMARIN

ZAVOD ZA ELEKTROENERGETIKU
PREDSTOJNIK
Izv. prof. dr. sc. Dubravko FRANKOVIĆ
Katedra za električne strojeve i pogone
VODITELJ
Prof. dr. sc. Livio ŠUŠNJIĆ
Katedra za opću elektrotehniku
VODITELJ
Doc. dr. sc. Vedran KIRINČIĆ
Katedra za el. postrojenja i elektroenergetske sustave
VODITELJ
Izv. prof. dr. sc. Dubravko FRANKOVIĆ

ZAVOD ZA INDUSTRIJSKO INŽENJERSTVO I MANAGEMENT
PREDSTOJNIK
Prof. dr. sc. Tonči MIKAC
Katedra za mjernu tehniku i sustave kvalitete
VODITELJ
Prof. dr. sc. Duško PAVLETIĆ
Katedra za organizaciju i operacijski management
VODITELJ
Prof. dr. sc. Tonči MIKAC
Katedra za proizvodnu opremu i robotiku
VODITELJ
Prof. dr. sc. Zoran JURKOVIĆ
Katedra za proizvodne tehnologije
VODITELJ
Prof. dr. sc. Goran CUKOR
Katedra za projektiranje procesa
VODITELJ
Prof. dr. sc. Mladen PERINIĆ

ZAVOD ZA KONSTRUIRANJE U STROJARSTVU
PREDSTOJNIK
Prof. dr. sc. Neven LOVRIN
Katedra za inženjersku grafiku
VODITELJICA
Doc. dr. sc. Kristina MARKOVIĆ
Katedra za konstruiranje i precizno inženjerstvo
VODITELJ
Prof. dr. sc. Saša ZELENIKA
Katedra za konstrukcijske elemente
VODITELJICA
Prof. dr. sc. Marina FRANULOVIĆ
Katedra za prijenosnike snage i transportna sredstva
VODITELJ
Prof. dr. sc. Neven LOVRIN

ZAVOD ZA MATEMATIKU FIZIKU, STR. JEZ. I KINEZIOLOGIJU
PREDSTOJNICA
Prof. dr. sc. Nelida ČRNJARIĆ-ŽIC
Katedra za primijenjenu matematiku i fiziku
VODITELJ
Doc. dr. sc. Ivan DRAŽIĆ
Katedra za strane jezike i kineziologiju
VODITELJICA
Mr. sc. Elisa VELČIĆ-JANJETIĆ, v. pred.

ZAVOD ZA MATERIJALE
PREDSTOJNIK
Doc. dr. sc. Dario ILJKIĆ
Katedra za inženjerstvo materijala
VODITELJ
Doc. dr. sc. Dario ILJKIĆ
Katedra za strukturu i svojstva materijala
VODITELJICA
Doc. dr. sc. Sunčana SMOKVINA HANZA

ZAVOD ZA MEHANIKU FLUIDA I RAČUNARSKO INŽENJERSTVO
PREDSTOJNIK
Prof. dr. sc. Lado KRANJČEVIĆ
Katedra za mehaniku fluida i hidrauličke strojeve
VODITELJ
Prof. dr. sc. Zoran ČARIJA
Katedra za računarsko inženjerstvo
VODITELJ
Izv. prof. dr. sc. Siniša DRUŽETA

ZAVOD ZA RAČUNARSTVO
PREDSTOJNIK
Doc. dr. sc. Jonatan LERGA
Katedra za komunikacijske sustave
VODITELJ
Prof. dr. sc. Miroslav JOLER
Katedra za programsku podršku
VODITELJ
Doc. dr. sc. Sandi LJUBIĆ
Katedra za inteligentne računalne sustave
VODITELJ
Prof. dr. sc. Ivo IPŠIĆ

ZAVOD ZA TEHNIČKU MEHANIKU
PREDSTOJNIK
Prof. dr. sc. Roberto ŽIGULIĆ
Katedra za čvrstoću konstrukcija
VODITELJ
Prof. dr. sc. Goran TURKALJ
Katedra za dinamiku strojeva
VODITELJ
Prof. dr. sc. Sanjin BRAUT
Katedra za mehaniku tijela
VODITELJ
Prof. dr. sc. Marko ČANAĐIJA

ZAVOD ZA TERMODINAMIKU I ENERGETIKU
PREDSTOJNIK
Prof. dr. sc. Branimir PAVKOVIĆ
Katedra za termodinamiku i termotehniku
VODITELJICA
Prof. dr. sc. Anica TRP
Katedra za tehniku hlađenja
VODITELJ
Prof. dr. sc. Branimir PAVKOVIĆ
Katedra za brodsko strojarstvo
VODITELJ
Prof. dr. sc. Tomislav MRAKOVČIĆ
Katedra za procesno energetsko strojarstvo i zaštitu okoliša
VODITELJ
Doc. dr. sc. Vladimir GLAŽAR

Organizacijska struktura Fakulteta - zavodi i katedre

SECRETARY GENERAL
Tomo VERGIĆ

DEAN'S OFFICE
DEAN
Prof. D. Sc. Jasna PRPIĆ-ORŠIĆ

VICE-DEANS
Prof. D. Sc. Marko ČANAĐIJA Prof. D. Sc. Duško PAVLETIĆ Prof. D. Sc. Anica TRP

DEAN'S ASSISTANTS
Assoc. Prof. D. Sc. Neven BULIĆ Prof. D. Sc. Marina FRANULOVIĆ Assoc. Prof. D. Sc. Ivan ŠTAJDUHAR

DEPARTMENT OF AUTOMATION AND ELECTRONICS
DEPARTMENT HEAD
Prof. D. Sc. Saša VLAHINIĆ
Chair of Measuring Systems
HEAD
Prof. D. Sc. Nino STOJKOVIĆ
Chair of Signals and Systems
HEAD
Prof. D. Sc. Viktor SUČIĆ
Chair of Electronics, Robotics and Automation
HEAD
Prof. D. Sc. Zlatan CAR

DEPT. OF NAVAL ARCHITECTURE AND OCEAN ENGINEERING
DEPARTMENT HEAD
Prof. D. Sc. Roko DEJHALLA
Chair of Resistance and Propulsion of the Ship
HEAD
Prof. D. Sc. Roko DEJHALLA
Chair of Vessel Design
HEAD
Assist. Prof. D. Sc. Anton TURK
Chair of Technology and Organisation of Naval Architecture
HEAD
Assoc. Prof. D. Sc. Marko HADJINA
Chair of the Vessel Dynamics
HEAD
Prof. D. Sc. Jasna PRPIĆ-ORŠIĆ
Chair of Vessel Construction
HEAD
Prof. D. Sc. Albert ZAMARIN

DEPARTMENT OF ELECTRIC POWER ENGINEERING
DEPARTMENT HEAD
Assoc. Prof. D. Sc. Dubravko FRANKOVIĆ
Chair of Electrical Engines and Drives
HEAD
Prof. D. Sc. Livio ŠUŠNJIĆ
Chair of Electrical Engineering
HEAD
Assist. Prof. D. Sc. Vedran KIRINČIĆ
Chair of Electric Facilities and Power Systems
HEAD
Assoc. Prof. D. Sc. Dubravko FRANKOVIĆ

DEPARTMENT OF INDUSTRIAL ENGINEERING AND MANAGEMENT
DEPARTMENT HEAD
Prof. D. Sc. Tonči MIKAC
Chair of Measurment Techniques and Quality Systems
HEAD
Prof. D. Sc. Duško PAVLETIĆ
Chair of Organisation and Operational Management
HEAD
Prof. D. Sc. Tonči MIKAC
Chair of Production Equipment and Robotics
HEAD
Prof. D. Sc. Zoran JURKOVIĆ
Chair of Production Technologies
HEAD
Prof. D. Sc. Goran CUKOR
Chair of Process Planning
HEAD
Prof. D. Sc. Mladen PERINIĆ

DEPARTMENT OF MECHANICAL ENGINEERING DESIGN
DEPARTMENT HEAD
Prof. D. Sc. Neven LOVRIN
Chair of Engineering Graphics
HEAD
Assist. Prof. D. Sc. Kristina MARKOVIĆ
Chair of Construction and Precision Engineering
HEAD
Prof. D. Sc. Saša ZELENIKA
Chair of Construction Elements
HEAD
Prof. D. Sc. Marina FRANULOVIĆ
Chair of Power Transmissions and Industrial Transport Equipment and Devices
HEAD
Prof. D. Sc. Neven LOVRIN

DEPT. OF MATHS, PHYSICS, FOREIGN LANGUAGES AND KINESIOLOGY
DEPARTMENT HEAD
Prof. D. Sc. Nelida ČRNJARIĆ-ŽIC
Chair of Applied Mathematics and Physics
HEAD
Assist. Prof. D. Sc. Ivan DRAŽIĆ
Chair of Foreign Languages and Kinesiology
HEAD
M. Sc. Elisa VELČIĆ-JANJETIĆ, sen.lect

DEPARTMENT OF MATERIAL SCIENCE AND ENGINEERING
DEPARTMENT HEAD
Assist. Prof. D. Sc. Dario ILJKIĆ
Chair of Material Engineering
HEAD
Assist. Prof. D. Sc. Dario ILJKIĆ
Chair of Structure and Material Properties
HEAD
Assist. Prof. D. Sc. Sunčana SMOKVINA HANZA

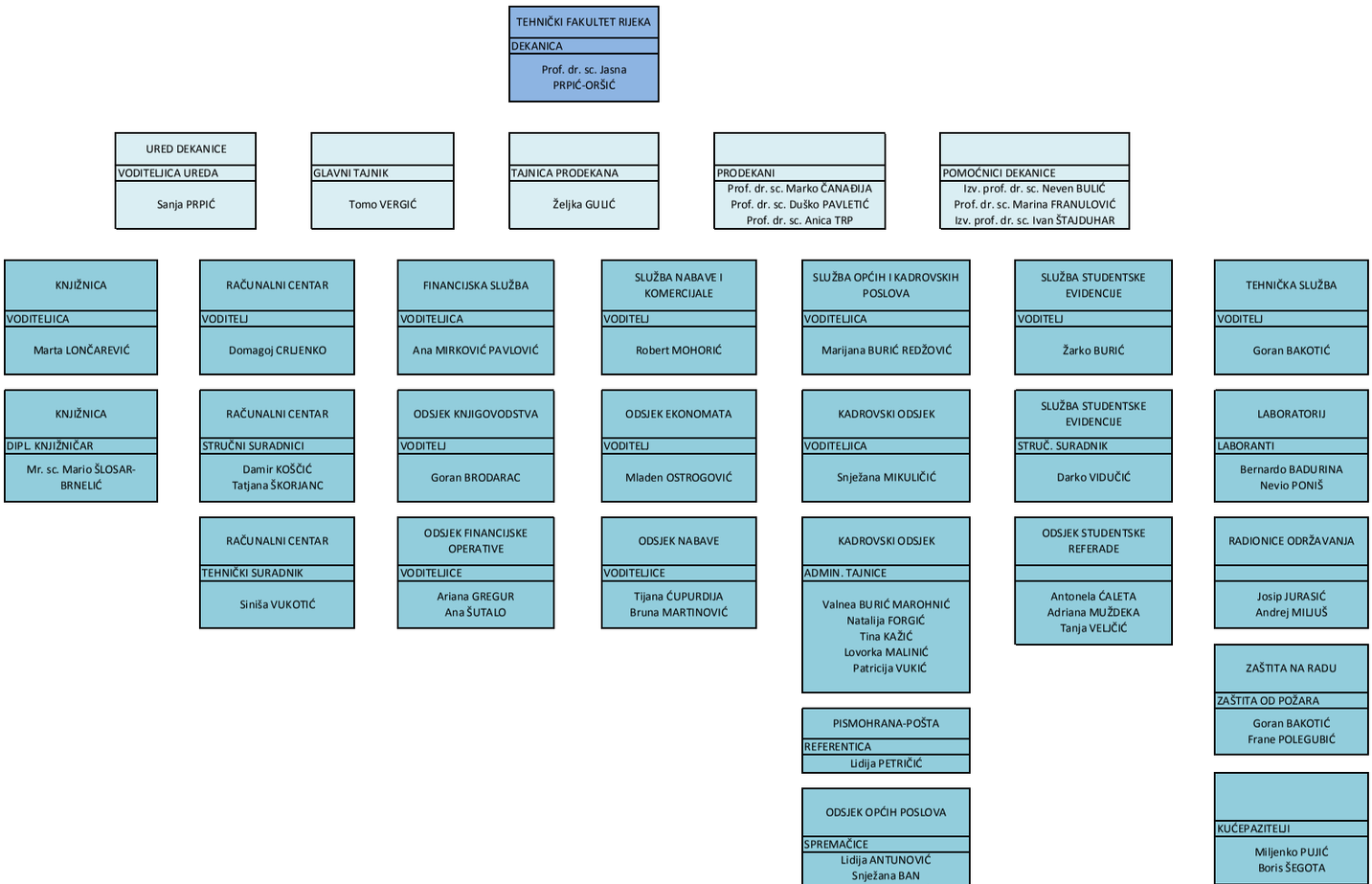
DEPARTMENT OF FLUID MECHANICS AND COMPUTATIONAL ENGINEERING
DEPARTMENT HEAD
Prof. D. Sc. Lado KRANJČEVIĆ
Chair of Fluid Mechanics and Hydraulic Engines
HEAD
Prof. D. Sc. Zoran ČARIJA
Chair of Computational Engineering
HEAD
Assoc. Prof. D. Sc. Siniša DRUŽETA

DEPARTMENT OF COMPUTER ENGINEERING
DEPARTMENT HEAD
Assist. Prof. D. Sc. Jonatan LERGA
Chair of Communication Systems
HEAD
Prof. D. Sc. Miroslav JOLER
Chair of Software Engineering
HEAD
Assist. Prof. D. Sc. Sandi LJUBIĆ
Chair of Intelligent Computing Systems
HEAD
Prof. D. Sc. Ivo IPŠIĆ

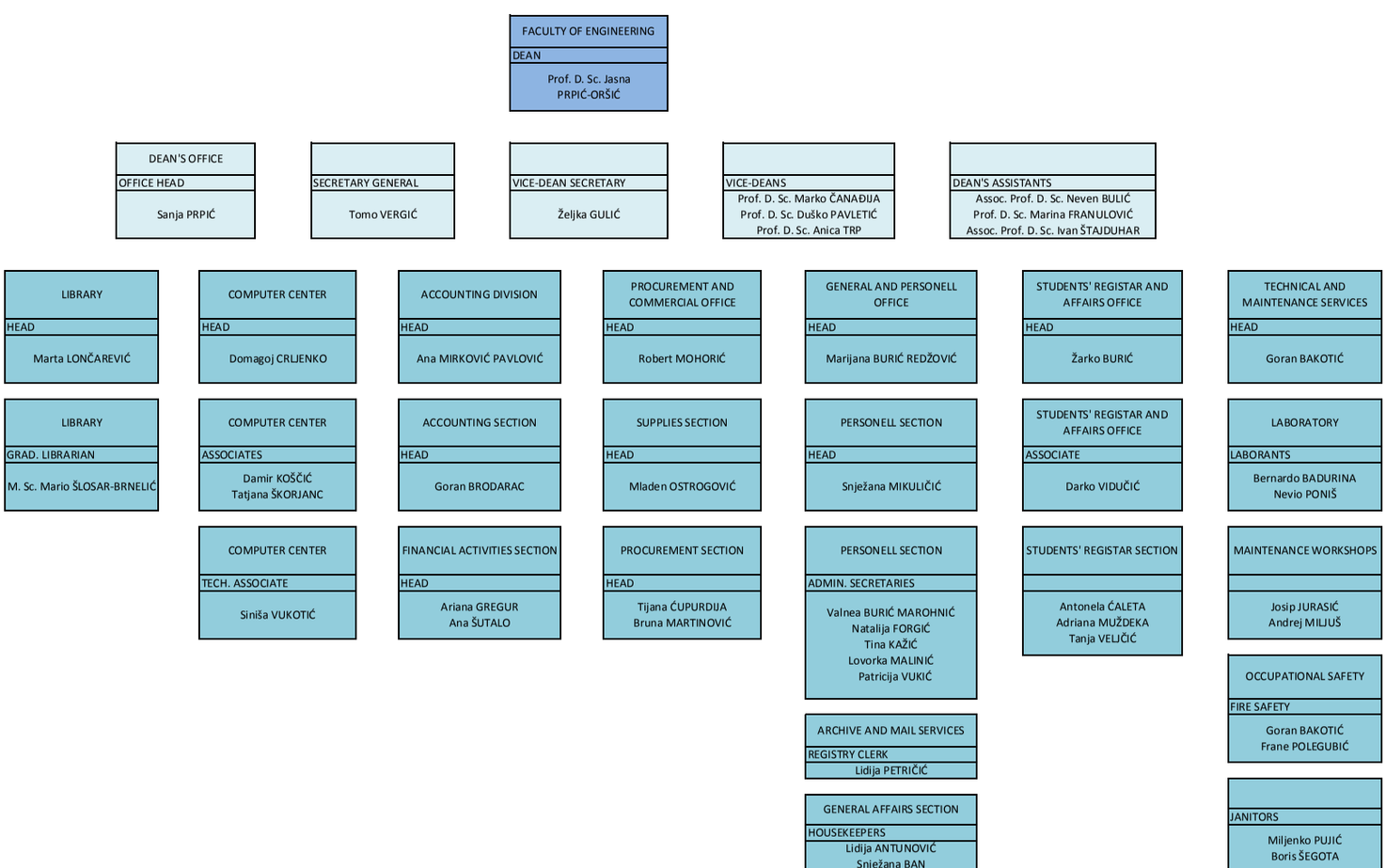
DEPARTMENT OF ENGINEERING MECHANICS
DEPARTMENT HEAD
Prof. D. Sc. Roberto ŽIGULIĆ
Chair of Structural Analysis
HEAD
Prof. D. Sc. Goran TURKALJ
Chair of Machine Dynamics
HEAD
Prof. D. Sc. Sanjin BRAUT
Chair of Solid Mechanics
HEAD
Prof. D. Sc. Marko ČANADIJA

DEPARTMENT OF THERMODYNAMICS AND ENERGY ENGINEERING
DEPARTMENT HEAD
Prof. D. Sc. Branimir PAVKOVIĆ
Chair of Thermodynamics and Thermotechnics
HEAD
Prof. D. Sc. Anica TRP
Chair of Refrigeration
HEAD
Prof. D. Sc. Branimir PAVKOVIĆ
Chair of Marine Engineering
HEAD
Prof. D. Sc. Tomislav MRAKOVČIĆ
Chair of Process Energy Engineering and Enviroment Protection
HEAD
Assist. Prof. D. Sc. Vladimir GLAŽAR

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 2018./2019.
the faculty in the academic year 2018/2019

2.1 opće informacije
general information

Na Tehničkom fakultetu tijekom akademske godine 2018./2019. u različitim fazama studija aktivno je studiralo 2154 studenata, a svoj studij u tom razdoblju uspješno je završilo 184 magistra inženjera, 225 sveučilišnih prvostupnika i 84 stručnih prvostupnika. U istoj je akademskoj godini na našem Fakultetu četvero kandidata obranilo 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 2018./2019. uloženo je gotovo četiri milijuna kuna u nabavku nove laboratorijske opreme i razvoj računalne infrastrukture te održavanje prostora Fakulteta.

U prosincu 2018. godine, ministrica znanosti i obrazovanja Fakultetu je izdala Potvrdu kojom se potvrđuje da Fakultet ispunjava uvjete za obavljanje djelatnosti visokog obrazovanja i znanstvene djelatnosti. Potvrda je izdana na temelju pozitivne akreditacijske preporuke Agencije za znanost i visoko obrazovanje donesene u postupku reakreditacije Fakulteta te uz prethodno mišljenje Akreditacijskog savjeta Agencije.

Kao i prethodnih godina, Fakultet je tijekom ak. god. 2018./2019. uložio više od milijun kuna vlastitih novčanih sredstava u nabavku opreme s ciljem osuvremenjivanja i unaprjeđenja nastavnih aktivnosti.

Na Fakultetu su tijekom travnja, svibnja i lipnja 2019. godine održane pripreme za ispit iz A razine matematike na državnoj maturi, za maturante kojima su studiji Tehničkog fakulteta bili prvi ili drugi izbor. Pripreme u trajanju od 40 nastavnih sati održali su nastavnici i asistenti Fakulteta. Program priprema bio je prilagođen ispitnom katalogu državne mature iz matematike.

Kao i prethodnih godina, krajem rujna 2019. održano je uvodno predavanje za studente prvih godina 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.

In the 2018/2019 academic year 2154 students studied actively at the Faculty of Engineering, of whom 184 earned the master's degree, 225 the university bachelor's degree and 84 the vocational bachelor's degree. In the same year, four candidates defended their 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 2018/2019 academic year, more than four million kunas was invested in the purchase of new laboratory equipment, the development of computer infrastructure and the maintenance of the Faculty premises.

In December 2018, the Minister of Science and Education issued a Certificate to the Faculty confirming that the Faculty meets the requirements for pursuing higher education and scientific activities. The certificate was issued on the basis of a positive accreditation recommended by the Agency for Science and Higher Education and which was issued during the process of the Faculty's re-accreditation and prior opinion of the Accreditation Council of the Agency.

As in previous years, during the 2018/2019 academic year the Faculty invested more than one million kunas from its own funds for the purchase of equipment in order to modernise and improve the teaching activities.

In April, May and June 2019, the Faculty organised preparations for the A-level exam in Mathematics for the school-leaving examination for students who opted for the Faculty of Engineering as their first or second choice. The preparations consisting of 40 teaching hours were held by teachers and assistants of the Faculty. The preparation program was in line with the exam catalogue of the school-leaving examination in mathematics.

As in previous years, at the end of September 2019, an introductory lecture was held for students of the 1st year of undergraduate university studies, where students who started their studies were provided with basic information

Tijekom akademske godine 2018./2019. na Tehničkom fakultetu se odvijao znanstvenoistraživački rad u okviru 37 znanstvenih projekata, od čega 3 znanstvena projekta Hrvatske zaklade za znanost, 2 EU projekta, 27 projekata financiranih od strane Sveučilišta u Rijeci, 2 bilateralna projekta i 3 istraživačka projekta s gospodarstvom.

Tijekom akademske godine 2018./2019. , 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 2018./2019., putem Erasmusa, naši studenti ostvarili su deset studijskih mobilnosti te pet mobilnosti u svrhu obavljanje stručne prakse. Istovremeno smo ugostili sedmero dolaznih stranih studenata. Dva su naša profesor realizirala odlaznu mobilnost u svrhu usavršavanja a mi smo ugostili jednog profesora sa svrhom održavanja nastave te dvojicu na usavršavanju.

Suradnja s gospodarstvom kao i s drugim znanstvenim i obrazovnim ustanovama iznimno je bitan segment djelatnosti Fakulteta. Stoga je i u akademskoj godini 2018./2019. 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.

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 2018/2019 academic year, scientific research work was carried out within the framework of 37 scientific projects, of which three were projects of the Croatian Science Foundation, two were EU projects, 27 projects were funded by the University of Rijeka, two bilateral projects and three research projects with the economy.

During the 2018/2019 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 Erasmus+ bilateral agreements with universities from Austria, Cyprus, the Czech Republic, Finland, France, Italy, Lithuania, Hungary, Poland, Portugal, Romania, Slovenia, Serbia and Sweden. In the 2018/2019 academic year, ten of our students used the study mobility programme and five used it for professional practice, while at the same time we welcomed seven foreign students. Two of our teachers used the mobility for professional development, while we hosted one foreign teacher who used the mobility to hold lectures and two for their professional development.

The collaboration with the economy as well as with other scientific and educational institutions is an extremely important domain of the Faculty's activities. Therefore, in the 2018/2019 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.

2.2 studenti nagrađeni u ak. godini 2018./2019.
awarded students in the 2018/2019 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.	Leona Petrc	89%	89%	60
	2.	Sanja Bjelobradić	92%	88%	120
Elektrotehnika/ Electrical Engineering	1.	Dean Krbavac	96%	96%	60
	2.	Karlo Severinski	88%	87%	120
Računarstvo/ Computing	1.	Lucija Žužić	99%	99%	60
	2.	Marina Banov	94%	93%	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	Marko Mirković	92%
Elektrotehnika/ Electrical Engineering	Antonio Žerjav	85%
Računarstvo/ Computing	Mateja Napravnik	95%

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.	Anja Mirić	99%	99%	60
Brodogradnja/ Naval architecture	1.	Marin Smilović	90%	90%	60
Elektrotehnika/ Electrical Engineering	1.	Petra Kokotović	91%	91%	60
Računarstvo/ Computing	1.	Marko Njirjak	98%	98%	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	Martin Zlatić	94%
Brodogradnja/ Naval Architecture	Karlo Stilinović	82%
Elektrotehnika/ Electrical Engineering	Damjan Kazalac-Miljan	90%
Računarstvo/ Computing	Dino Ilić	94%

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	
Strojarstvo/ Mechanical Engineering	2.	Daniela Dansy Dujmić	81%	76%	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	Karlo Prikratki	84%
Elektrotehnika/ Electrical Engineering	Dario Škaron	88%

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 jedan od rijetkih medija 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 i Građevinskog fakulteta Sveučilišta u Rijeci (2011.g.), 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, professora emeritusa (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. Neven Munjas, doc. dr. sc. Boris Delač, doc. dr. sc. Ivan Volarić, doc. dr. sc. Kristina Marković, assist. Fran Torbarina, te dr. sc. Ivica Androjić i assist. 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 Engineering Review, temeljem SCIMAGO kategorizacije rangiranja časopisa, u 2018. 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 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 (2011) of Engineering Review, 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, Professor emeritus. 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 successfully 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. Neven Munjas, Assist. Prof. Boris Delač, D. Sc., Assist. Prof. Ivan Volarić, D. Sc, Assist. Prof. Kristina Marković, D. Sc., Assist. Fran Torbarina, as well as D. Sc. Ivica Androjić and Assist. 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 SCImago categorization of the journals for 2018 year, Engineering Review 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.

Predsjednik ALUMNI TFR je doc. dr. sc. Vedran Kirinčić, dipl. ing., potpredsjednici su: doc. dr. sc

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

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., prof. dr. sc. Jasna Prpić-Oršić, ujedno i dekanica Tehničkoga fakulteta, 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. 2018./2019., realizirane su sljedeće aktivnosti:

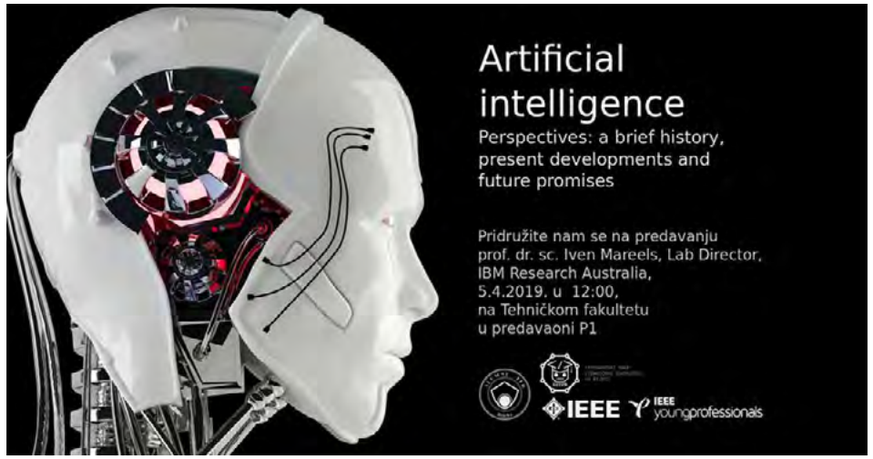
Croatia and worldwide, to promote the reputation of the engineering profession and establish and develop cooperation with similar organizations at home and abroad.

The ALUMNI TFR board is comprised of: Assis. Prof. D.Sc. Vedran Kirinčić, M.Eng.,chairman, vice chairmen Assis. Prof. D. Sc. Jonatan Lerga, M.Eng. and Danko Venturini, M.Eng., including secretary Assis. Prof. D. Sc. Rene Prenc, M.Eng. The current members include:

Assoc. Prof. D. Sc. Robert Basan, M.Eng., Prof. D. Sc. Bernard Franković, M.Eng., Assis. Prof. D. Sc. Vladimir Glažar, M.Eng., Assis. Prof. D. Sc. Vedran Kirinčić, M.Eng., D. Sc. Serđo Klapčić, M.Eng., Prof. D. Sc. Božidar Križan, M.Eng., Assis. 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., Prof. D. Sc Jasna Prpić-Oršić, M.Eng. and Dean of the Faculty of Engineering, 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 2018/2019 academic year, the following activities were realized by the ALUMNI TFR:

- *19. 12. 2018. u suorganizaciji s IEEE Studentskim ogrankom i Studentskim Zborom Tehničkog fakulteta Sveučilišta u Rijeci održano je predavanje dr. sc. Gorana Glavaša s University of Mannheim, na temu "Cars, Drivers, Vehicles, and Wheels: Specializing Distributional Word Vectors for Lexico-Semantic Relations".*
  19.12.2018 in cooperation with the IEEE Student branch and Student council of the Faculty of Engineering of the University of Rijeka, ALUMNI TFR organized a lecture „Cars, Drivers, Vehicles, and Wheels: Specializing Distributional Word Vectors for Lexico-Semantic Relations“ by Assis. Prof. D. Sc. Goran Glavaš, M.Eng. from the University of Mannheim.
- *05. 4. 2019. u suorganizaciji s IEEE Young Professionals Hrvatska, Studentskim zborom i IEEE Studentskim ogrankom Sveučilišta u Rijeci održano je predavanje prof. dr. sc. Iven Mareels, Lab Director, IBM Research Australia na temu: "Artificial intelligence – Perspectives: a brief history, present developments and future promises".*
  05.04.2019 in cooperation with the IEEE Young Professionals Croatia, Student council and the IEEE Student branch of the University of Rijeka, ALUMNI TFR organized a lecture „Artificial intelligence – Perspectives: a brief history, present developments and future promises“ by Prof. D. Sc. Iven Mareels, M.Eng., Lab Director, IBM Research Australia.
- *15. 4. 2019. održan je sastanak Predsjedništva i Skupštine Alumni kluba Tehničkog fakulteta u Rijeci.*
  15.04.2019 the meeting of Presidency and the General Assembly of ALUMNI TFR took place.


Artificial intelligence
Perspectives: a brief history, present developments and future promises
Pridružite nam se na predavanju
prof. dr. sc. Iven Mareels, Lab Director,
IBM Research Australia,
5.4.2019. u 12:00,
na Tehničkom fakultetu
u predavaoni P1
IEEE
IEEE youngprofessionals


Cars, drivers, vehicles and wheels:
Specializing Distributional Word Vectors for Lexico-Semantic Relations
doc.dr.sc. Goran Glavaš, University of Mannheim
19.12.2018., 12:00
u informatičkoj učionici I1 na Tehničkom fakultetu Sveučilišta u Rijeci
IEEE

2.5 doktorske disertacije obranjene u akademskoj godini 2018./2019.
doctoral dissertations defended in academic year 2018/2019

IME I PREZIME | NAME AND SURNAME:
Igor Poljak

POLJE | SCIENTIFIC FIELD:
Strojarstvo / Mechanical Engineering

NAZIV RADA | TITLE:
Termodinamička analiza parnoturbinskog postrojenja tankera za prijevoz ukapljenog plina
Thermodynamic analysis of steam turbine plant of LNG tanker for transport of liquified natural gas

MENTORI | SUPERVISORS:
prof. dr. sc. / Prof. D. Sc. Tomislav Mrakovčić
doc. dr. sc. / Assist. Prof. D. Sc. Vedran Mrzljak

DATUM OBRANE | DATE OF DEFENCE:
16.11.2018.

Sažetak:

U doktorskoj disertaciji provedena je energijska i eksergijska analiza brodskog parnoturbinskog postrojenja tankera za prijevoz ukapljenog plina. Za potrebe termodinamičke analize izvršena su mjerenja u pogonu pri realnim uvjetima rada postrojenja brodskom mjernom opremom. Analiza Rankineovog regenerativnog ciklusa obuhvaća sljedeće osnovne komponente: glavnu pogonsku turbinu, turbogeneratore, vakuumski kondenzator, evaporator, kondenzator brtvene pare, niskotlačni zagrijač napojne vode, otplinjač, napojnu pumpu i pogonsku turbinu napojne pumpe, visokotlačni zagrijač napojne vode te generatore pare. Pored osnovnih komponenti parnoturbinskog postrojenja, obuhvaćene su i pomoćne komponente u koje se svrstavaju ventilatori zraka generatora pare, glavna pumpa kondenzata, pomoćna pumpa kondenzata te redukcijske stanice. Na osnovi učinkovitosti rada pojedinih komponenti predložena su rješenja koja bi mogla utjecati na povećanje eksploatacijske učinkovitosti istih čime bi se moglo doprinjeti povećanju učinkovitosti cijelog postrojenja. Pored termodinamičke analize navedenih komponenti, prikazana je analiza CO2 emisija generatora pare kao i analiza potrošnje tekućeg goriva i prirodnog plina. Predstavljena je ukupna energijska i eksergijska učinkovitost analiziranog parnoturbinskog postrojenja, kao i analiza toplinskih tokova prema pojedinim komponentama u pogonu. Ukupna učinkovitost postrojenja uspoređena je sa stacionarnim postrojenjima srednjih snaga. Za potrebe optimizacije izvedene su jednadžbe stanja vodene pare i vode koje opisuju specifičnu entalpiju i specifičnu entropiju kao funkcije tlaka i temperature. Optimizacija obuhvaća dvije komponente: otplinjač i mlaki zdenac. Optimizacijski parametri podešeni su prema stvarnim pogonskim uvjetima bez ulaska u integritet odnosno fizičku promjenu komponente. Predložena optimalna rješenja obrazložena su na pogonskoj razini, kako bi bila primjenjiva u praksi.

Summary:

In this doctoral thesis it is carried out energy and exergy analysis of marine ship propulsion plant of LNG tanker. For the thermodynamic analysis purposes necessary measurements in the steam plant have been conducted at real running conditions with ships measuring equipment. Rankine regenerative cycle analysis comprises following basic components: main propulsion turbine, turbogenerators, vacuum condenser, evaporator, sealing steam condenser, low pressure feed water heater, deaerator, feed water pump and steam turbine drive of feed water pump, high pressure feed water heater and steam generators. Beside of main steam chain components, following auxiliary components have been included: steam generator's forced draught fans, main condensate pump, auxiliary condensate pump and pressure reducing valves. With regard to efficiency, proposed solutions may affect enrichment of the each observed steam component. Steam generators CO2 emissions along with heavy fuel oil and LNG consumption was analyzed and discussed. It is presented overall energy and exergy efficiency of whole analyzed marine steam plant along with analysis of energy and exergy flows to each component. Overall efficiency of marine steam plant is compared with medium power stationary steam plants. For the optimization purposes, it was presented equations of state for steam and water, which describes enthalpy and entropy as a function of two variables i.e. pressure and temperature. Optimization includes two steam plant components: deaerator and hot well. Optimization parameters are adjusted to indulge real plant conditions without physical change of components. Proposed optimal solutions are explained at an exploitation level in order to be applicable to the plant.

IME I PREZIME | NAME AND SURNAME:
Ivana Melnjak

POLJE | SCIENTIFIC FIELD:
Interdisciplinarne tehničke znanosti / Interdisciplinary Engineering Sciences

NAZIV RADA | TITLE:
Mogućnost zbrinjavanja otpadnog tonerskog praha u betonskoj industriji
The possibility of waste toner powder recycling in concrete industry

MENTORI | SUPERVISORS:
izv. prof. dr. sc. / Assoc. Prof. D. Sc. Aleksandra Anić Vučinić
prof. dr. sc. / Prof. D. Sc. Goran Kniewald

DATUM OBRANE | DATE OF DEFENCE:
17.06.2019.

Sažetak:

U području recikliranja otpadnih tonerskih spremnika i iskorištavanja otpadnog tonerskog praha (OTP) kao sirovine u skladu sa zahtjevima kružnog gospodarstva postoji vrlo mali broj istraživanja i publiciranih znanstvenih radova. Stoga je svrha ovog doktorskog rada utvrditi mogućnost i opravdanost korištenja OTP kao sirovine u inovativnim proizvodima betonske industrije u skladu sa zahtjevima kružnog gospodarstva, čime bi se zatvorio proces

Summary:

The field of waste toner cartridges recycling and usage of waste toner powder (WTP) as raw material in accordance with postulates of circular economy is poorly investigated with small number of published scientific papers. Therefore, the aim of this doctoral thesis is to determine the posibility and justification of using WTP as a raw material in innovative concrete products in accordance with the requirements of the circular economy, thus closing the recycling process of

recikliranja otpadnih tonerskih spremnika. U provedenim istraživanjima je do 10% finog agregata (pijesak) u betonu zamijenjeno s mješavinom OTP i kalcijevog karbonata iz mehaničke obrade otpadnih tonerskih spremnika. Ispitivanja upotrebljivosti dobivenih betonskih proizvoda provedena su na laboratorijskoj i industrijskoj razini. Uspješnost postupka valorizirana je kroz inženjersku i ekološku analizu. Inženjerskom analizom utvrđen je utjecaj na tehnička svojstva betona, dok su ekološkom analizom utvrđeni ekološki učinci zamjene agregata. Kao najuspješniji rezultati s tehničkog i ekološkog aspekta pokazali su se betoni sa 1, 3 i 5% zamjene agregata mješavinom OTP i kalcijevog karbonata. Testovima izluživanja potvrđena je sigurnost dobivenih betonskih proizvoda za okoliš, budući da su potencijalno opasne komponente prisutne u OTP uspješno inkapsulirane. Analizom životnog vijeka proizvoda je utvrđena značajna mogućnost i opravdanost korištenja OTP-a kao sekundarne sirovine u betonskoj industriji. Na ovaj se način dobiva proizvod s dodanom vrijednosti i otpad se pretvara u sirovinu. Na kraju svog životnog vijeka ovakva vrsta proizvoda mogu se zbrinuti na odlagalištu inertnog odnosno neopasnog otpada ili naći neku drugu uporabu, kao na primjer reciklirani agregat u cestogradnji.

waste toner cartridges. In the experiments up to 10% of fine aggregate (sand) in concrete was replaced with mixture of WTP and additive that remains from mechanical treatment of waste toner cartridges. Testing of the usability of the obtained concrete products was carried out at laboratory and industrial level. The success of the process is valorized through engineering and ecological analysis. Engineering analysis determined the impact on technical properties of concrete, while ecological analysis determined the ecological effects of aggregate replacement. As the most successful results from the technical and ecological aspect, are concrete with 1 and 3 and 5% of the aggregate replacement with mixture of WTP and additive. The leaching test confirmed the safety of the obtained concrete product for the environment, since the potentially dangerous components present in the WTP were successfully encapsulated. With life cycle analysis of product significant potential and justification for the use of WTP as secondary raw material in the concrete production industry was determined. Through this research a value-added products are obtained and waste is turned into raw material. At their end-of-life this products can be disposed off on landfill of inert or non-hazardous waste or find another use, such as a recycled aggregate in road construction.

IME I PREZIME | NAME AND SURNAME:
Francesco Mauro

POLJE | SCIENTIFIC FIELD:
Brodogradnja / Naval Architecture

NAZIV RADA | TITLE:
Unapređenje održavanja pozicije plovnog objekta u ranoj fazi projekta
Enhanced station keeping analysis in early design stage of offshore vessels

MENTOR | SUPERVISOR:
prof. dr. sc. / Prof. D. Sc. Jasna Prpić-Oršić

DATUM OBRANE | DATE OF DEFENCE:
02.07.2019.

Sažetak:

U ranoj fazi projektiranja, za vršenje procjene dinamičkog pozicioniranja (DP) na raspolaganju su dva različita pristupa: kvazi-statička predviđanja i dinamičke simulacije. Pri izvođenju ove vrste proračuna obično se nameću dva ključna problema: alokacija poriva i procjena odstupanja od željene pozicije. Te se teme više odnose na aspekte kontrole nego na samo projektiranje broda. Detaljna analiza glavnih aspekata DP-a s hidrodinamičkog stajališta dovodi do mogućeg poboljšanja kvalitete predviđanja DP-a u ranoj fazi projektiranja.

Summary:

In the early design stage, two different approaches are at disposal to perform Dynamic Positioning (DP) predictions: quasi-steady predictions or dynamic simulations. To carry out this kind of calculations, typically the main issues are the thrust allocation and the position error estimation. These topics are more related to control theory rather than to naval architecture. A detailed analysis of the main aspects of DP from the hydrodynamic point of view leads to possible quality improvement of early design stage DP predictions. Besides, evaluating DP

Osim toga, ocjenjivanje sposobnosti DP-a uz pomorstvenost plovnog objekta dovest će do boljeg određivanja stvarne operativnosti broda te omogućiti uspoređivanje mogućih alternativa dizajna kako bi se odabrala bolja konfiguracija za brod koji se projektira. Cilj ove disertacije je poboljšati standardne postupke procjene DP-a, pridajući veći značaj hidrodinamičkim aspektima koji su uključeni u određivanje sposobnosti održavanja pozicije plovnog objekta. Detaljna definicija okolišnog opterećenja te razvoj i provedba poboljšanih postupaka alokacije poriva omogućit će ne samo dobivanje pouzdanih predviđanja DP-a, već i indikacije kako poboljšati sposobnost održavanja pozicije plovnog objekta. Konačni cilj istraživanja je definiranje indeksa operativnosti za plovni objekt, uzimajući u obzir oba kriterija vezana za sposobnost održavanja pozicije i kretanje broda. Poboljšanja procjene utjecaja okoliša uz detaljniji fokus na ponašanje propelera tijekom operacija DP-a, dovode do određivanja poboljšanih postupaka alokacije poriva pogodnih za proučavanje različitih konfiguracija propulzora za isto plovilo. Evaluacija globalnog indeksa operativnosti pomaže projektantima vrednovati različita rješenja imajući višekriterijski pogled na DP tematiku uključujući sposobnost održavanja pozicije i aspekte pomorstvenosti plovnog objekta.

ability combined with seakeeping quality of the vessel will lead to a better determination of the real operability of an offshore unit and will allow comparing possible design alternatives with the aim of selecting the better configuration for a ship under design. The purpose of this thesis is to enhance the standard DP evaluation procedures, giving more importance to the hydrodynamic aspects involved in the determination of the station-keeping ability of an offshore unit. A detailed definition of the environmental loads and the development and implementation of enhanced thrust allocation procedures will allow not only to obtain reliable DP predictions but also to obtain indications how to improve the station-keeping ability of a vessel. The final target of the research is the definition of a combined operability index for an offshore vessel, considering both criteria related to station-keeping and ship motions. The enhancements on environmental forces estimation together with a more detailed focus on the propeller behaviour during DP operations leads to the determination of enhanced thrust allocation procedures, suitable to study different thruster configurations for the same vessel. The evaluation of a global operability index helps designers to rank different solutions, having a multi-criteria vision on the DP thematic, including both station-keeping and seakeeping aspects.

IME I PREZIME | NAME AND SURNAME:
Jakov Batelić

POLJE | SCIENTIFIC FIELD:
Strojarstvo / Mechanical Engineering

NAZIV RADA | TITLE:
Prilog povećanju pouzdanosti sustava mlinova TE Plomin 2
Contribution to research on increasing mill system reliability of the Plomin 2 thermal power plant

MENTOR | SUPERVISOR:
prof. dr. sc. / Prof. D. Sc. Dario Matika

DATUM OBRANE | DATE OF DEFENCE:
15.07.2019.

Sažetak:

Općenito se može navesti da je učinkovit i ekonomičan onaj tehnički sustav koji uspješno vrši svoju funkciju uz najniže ukupne troškove (troškove nabave, troškove održavanja, troškove amortizacije itd.). Sagledavajući životni ciklus jednog takvog složenog tehničkog sustava kao što je termoelektrana TE Plomin 2, ukupni se troškovi mogu znatno umanjiti ako se odgovarajuća pozornost pravodobno posveti eksploatacijskoj pouzdanosti i pogodnosti održavanja njezinih podsustava. Zbog

Summary:

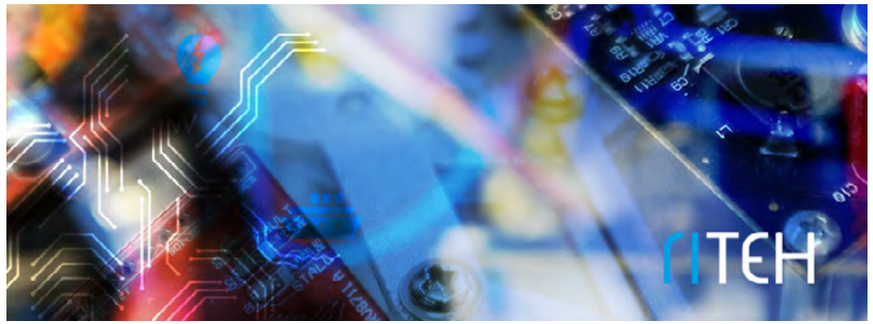
It can be generally specified that a technical system is effective and profitable if it successfully performs its function with lowest total costs (procurement costs, maintenance costs, depreciation costs etc.). Taking into consideration the life cycle of a complex technical system such as the Plomin 2 thermal power plant, total costs can be significantly reduced if due and timely attention is paid to exploitation reliability and maintainability of its subsystems. Because of the complexity of the thermal power

kompleksnosti same termoelektrane, istraživanje čiji se rezultati predstavljaju u ovoj doktorskoj disertaciji bilo je usmjereno na sustav mlinova za ugljen. U cilju prethodno navedenog, istražen je učinak sanacijskog održavanja na točku ekonomičnosti održavanja na primjeru sustava mlinova u TE Plomin 2. U svrhu navedenog, razvijen je model kojim se procjenjuje doprinos sanacijskog održavanja na točku ekonomičnosti održavanja iz dva aspekta, pri čemu prvi predstavlja doprinos sanacijskog održavanja na eksploatacijsku pouzdanost i ukupne troškove održavanja promatranog tehničkog sustava, dok drugi aspekt predstavlja doprinos sanacijskog održavanja na optimizaciju vremena provedbe preventivnog održavanja za promatrani tehnički sustav. U skladu s time, bilo je nužno analizirati složeni tehnički sustav u kojem je zastupljena provedba sanacijskog održavanja uz postojanje relevantne baze podataka o karakterističnim događajima na temelju kojih je postavljen i statistički potvrđen numerički model kao podloga pri određivanju točke ekonomičnosti održavanja.

plant itself, this research was focused on the coal mill system, and this doctoral thesis serves to present its results. For the aforementioned purpose, the effect of remedial maintenance without downtime on optimal maintenance point was examined on the example of the TE Plomin 2 mill system. Therefore, a model was developed to evaluate the contribution of remedial maintenance without downtime on optimal maintenance point from two aspects. The first aspect represents the contribution of remedial maintenance without downtime to exploitation reliability and total maintenance costs of the observed technical system, while the second aspect signifies the contribution of remedial maintenance without downtime to the optimisation of implementation time needed to perform the preventive maintenance in the case of the technical system that is observed. Consequently, it was necessary to analyse the complex technical system that incorporates the implementation of remedial maintenance without downtime with the existence of a relevant database of characteristic events, the events being the basis for establishing and statistically confirming the numerical model used for determining the optimal maintenance point.

2.6 aktivnosti, zbivanja i konferencije
activities, events and conferences

2.6.1 znanstvena izložba RITEHSciExpo 2019
scientific exhibition RITEHSciExpo 2019



Znanstvena izložba RITEHSciExpo 2019 održana je u on-line okružju u okviru održavanja Festivala znanosti od 8. - 13. 4. 2019. godine.

Kako bi se javno prezentirali i vizualno istaknuli rezultati istraživanja i aktivnosti na brojnim znanstvenim projektima koji se provode na Tehničkom fakultetu u Rijeci, iskorištena je prilika održavanja Festivala znanosti 2019 u Rijeci. Za ovu priliku je izrađeno web - okružje na kojem je prezentiran 21 trenutno aktivan znanstveni projekt. Izložba daje uvid u široki spektar istraživačkih tema, od strojnog učenja primijenjenog na razna područja znanosti i digitalnu analizu signala, inovativnih rješenja u području razvoja konstrukcija, ponašanju i karakterizaciji inovativnih materijala i struktura uz numeričko modeliranje odziva konstrukcija i strojeva, u izazovima u području energetske učinkovitosti i obnovljivih izvora energije, kao i ekološke učinkovitosti broda i slično. Kroz sliku i riječ istaknuta su postavljena istraživačka pitanja, kao i planirani način suočavanja s izazovima, praćenjem najnovijih trendova u postupcima i metodologiji za ostvarenje postavljenih ciljeva istraživanja. Izložba je zatim prešla u stalni postav s mogućnošću proširenja u narednom periodu i predstavlja platformu za znanstvenu prepoznatljivost istraživača, kao i naše institucije.

The RITEHSciExpo 2019 was held in an online environment within the framework of the Science Festival from 8 to 13 April 2019

The Science Festival 2019 in Rijeka offered an opportunity to publicly present and visually emphasise the research results and activities carried out within various scientific projects at the Faculty of Engineering in Rijeka. A web environment was created for the occasion, where 21 currently active scientific projects were presented. The exhibition gives an insight into a wide range of research topics, ranging from machine learning applied to different fields of science and digital analysis of signals, innovative solutions in the field of structural development, behaviour and characterisation of innovative materials and structures along with numerical modelling of the response of constructions and machines, challenges in energy efficiency and renewable energy sources as well as environmental efficiency of ships and similar. Through pictures and words research questions were highlighted as well as the planned way of facing challenges, keeping up with the latest trends in procedures and methodology for achieving the set research goals. The exhibition has become a permanent one with the potential to expand in the following period and it represents a platform for the scientific recognitions of researchers as well as our institutions.

2.6.2 europska noć istraživača 2019
european researchers' night 2019

27. rujna 2019. u Rijeci je održana Europska noć istraživača. Europska noć istraživača je inicijativa koja se provodi u cijeloj Europi uz financijsku potporu Europske komisije. Cilj navedene inicijative je popularizacija znanosti te upoznavanje javnosti s radom znanstvenika, poticanje mladih za budući odabir znanstvene karijere. Europska Noć istraživača se tradicionalno održava zadnjeg petka u rujnu diljem cijele Europe. Projekt u Hrvatskoj provodi osamnaest partnera: Sveučilište u Zagrebu, Sveučilište u Splitu, Sveučilište u Rijeci, Sveučilište u Puli, Sveučilište u Zadru, Sveučilište u Dubrovniku, Sveučilište Sjever, Hrvatsko katoličko sveučilište, Institut Ruđer Bošković, Institut za društvena istraživanja u Zagrebu, Državni zavod za intelektualno vlasništvo, Hrvatska zaklada za znanost, British Council, Staroslavenski institut, Mediteranski institut za istraživanje života i Institut za jadransku kulturu i melioraciju krša, a u 2019. godini manifestacija se održala u Osijeku, Rijeci, Splitu i Zagrebu. U Rijeci je sudjelovalo 9 sastavnica riječkog Sveučilišta, a Tehnički fakultet je sudjelovao kroz 3 istraživačke postaje: Virtualna (VR) i proširena (AR) stvarnost, Tehnološka rješenja za pametnu Rijeku i Fotodiode, biosenzori, led i sunčane ćelije – zašto i za što?

U sklopu provedenih aktivnosti posjećene su i neke osnovne škole: Ivana Gorana Kovačića u Vrbovskom te Kozala i „Fran Franković" u Rijeci.

On 27 September 2019 the European Researchers' Night was held in Rijeka. The European Researchers' Night is an initiative implemented throughout Europe with the financial support of the European Commission. The aim of the initiative is to popularise science and familiarise the public with the work of scientists as well as to encourage the young for the future choice of their scientific career. The European Researchers' Night is traditionally held last Friday in September throughout Europe. The project is carried out in Croatia by eighteen partners: the University of Zagreb, the University of Split, the University of Rijeka, the University of Pula, the University of Zadar, the University of Dubrovnik, the University Sjever, the Croatian Catholic University, the Ruđer Bošković Institute, the Institute for Social Research in Zagreb, the State Institute for Intellectual Property, the Croatian Science Foundation, the British Council, the Old Slavic Institute, the Mediterranean Institute for Life Research and the Institute for Adriatic Crops and Karst Reclamation, and in 2019 the manifestation was held in Osijek, Rijeka, Split and Zagreb. Nine constituents of the University of Rijeka participated in Rijeka, and the Faculty of Engineering took part in three research stands: Virtual (VR) and augmented (AR) reality, Technological solutions for a smart Rijeka and Photodiodes, biosensors, LED and solar cells – why and what for?

As part of the activities, some elementary scho-

Posjećenost navedenih postaja i prezentacija u osnovnim školama je bila izvrsna, a mnoga su djeca i mladi tom prilikom rekli: „I ja ću doći studirati kod vas!“

Popis sudionika s Tehničkog fakulteta:

Postaja Virtualna (VR) i proširena (AR) stvarnost

- Doc. dr. sc. Kristina Marković – voditeljica
- Prof. dr. sc. Marina Franulović
- Doc. dr. sc. Željko Vrcan
- Asistentica Maja Dundović
- Asistent David Liović
- Asistent Matej Gljušćić

Postaja Tehnološka rješenja za pametnu Rijeku

- Prof. dr. sc. Saša Zelenika – voditelj
- Doc. dr. sc. Ervin Kamenar
- Asistent Marko Perčić
- Asistent Tomislav Bazina

Postaja Fotodiode, biosenzori, LED i sunčane ćelije zašto i za što?

- Izv. prof. dr. sc. Vera Gradišnik – voditeljica
- Mr. sc. Marijana Živić Đurović
- Studentica Katarina Tolja
- Student Darko Gumbarević

ols were visited: Ivan Goran Kovačić in Vrbovsko and Kozala as well as Fran Franković in Rijeka. The attendance at these stands and presentations in elementary schools was excellent and many children and young people said on this occasion: “I will study at your Faculty!”

List of participants from the Faculty of Engineering:

Stand Virtual (VR) and augmented (AR) reality

- Assist. Prof. D. Sc. Kristina Marković – leader
- Prof. D. Sc. Marina Franulović
- Assist. Prof. D. Sc. Željko Vrcan
- Assistant Maja Dundović
- Assistant David Liović
- Assistant Matej Gljušćić

Stand Technological solutions for a smart Rijeka

- Prof. D. Sc. Saša Zelenika – leader
- Assist. Prof. D. Sc. Ervin Kamenar
- Assistant Marko Perčić
- Assistant Tomislav Bazina

Stand Photodiods, biosensors, LED and solar cells – why and what for?

- Assoc. Prof. D. Sc. Vera Gradišnik – leader
- Mr. Sc. Marijana Živić Đurović
- Student Katarina Tolja
- Student Darko Gumbarević

2.6.3 GNSS konferencija 2019
GNSS conference 2019

U suradnji s Kraljevskim institutom za navigaciju (The Royal Institute of Navigation) iz Londona, UK, te Pomorskim fakultetom Sveučilišta u Rijeci i Fakultetom prometnih znanosti Sveučilišta u Zagrebu, Tehnički fakultet u Rijeci organizirao je tradicionalnu 13. godišnju konferenciju o satelitskoj navigaciji i njoj srodnim disciplinama Baška GNSS Conference. Konferencija je održana u Baški, na otoku Krku, od 12. – 15. svibnja 2019.

Baška GNSS konferencija 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 Tehničkoga 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 Tehničkoga fakulteta u Rijeci.

Tehnički fakultet u Rijeci predstavio se 2019. godine s nizom znanstvenih radova zaposlenika i studenata predstavljenih na konferenciji koji će, nakon obavljenog postupka međunarodne recenzije, biti objavljeni do kraja godine u Zborniku 13th Baška GNSS Conference. Više od 80 sudionika iz svih krajeva svijeta, s izuzetkom Australije, upoznalo se s više od 30 predstavljenih znanstvenih radova. Odlukom posebnog odbora, Nagrada za najbolji studentski rad ove je godine dodijeljena Silviu Šimuniću, studentu diplomskog studija računarstva Tehničkoga fakulteta u Rijeci.

In collaboration with 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 Faculty of Engineering in Rijeka organized the 13th annual Baška GNSS Conference held in Baška on the island of Krk from 12th to 15th May 2019.

Baška GNSS Conference brings 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 M. Sc. inf. et math MRIN, was head of the Conference Program this year, external associate of the Faculty of Engineering Rijeka.

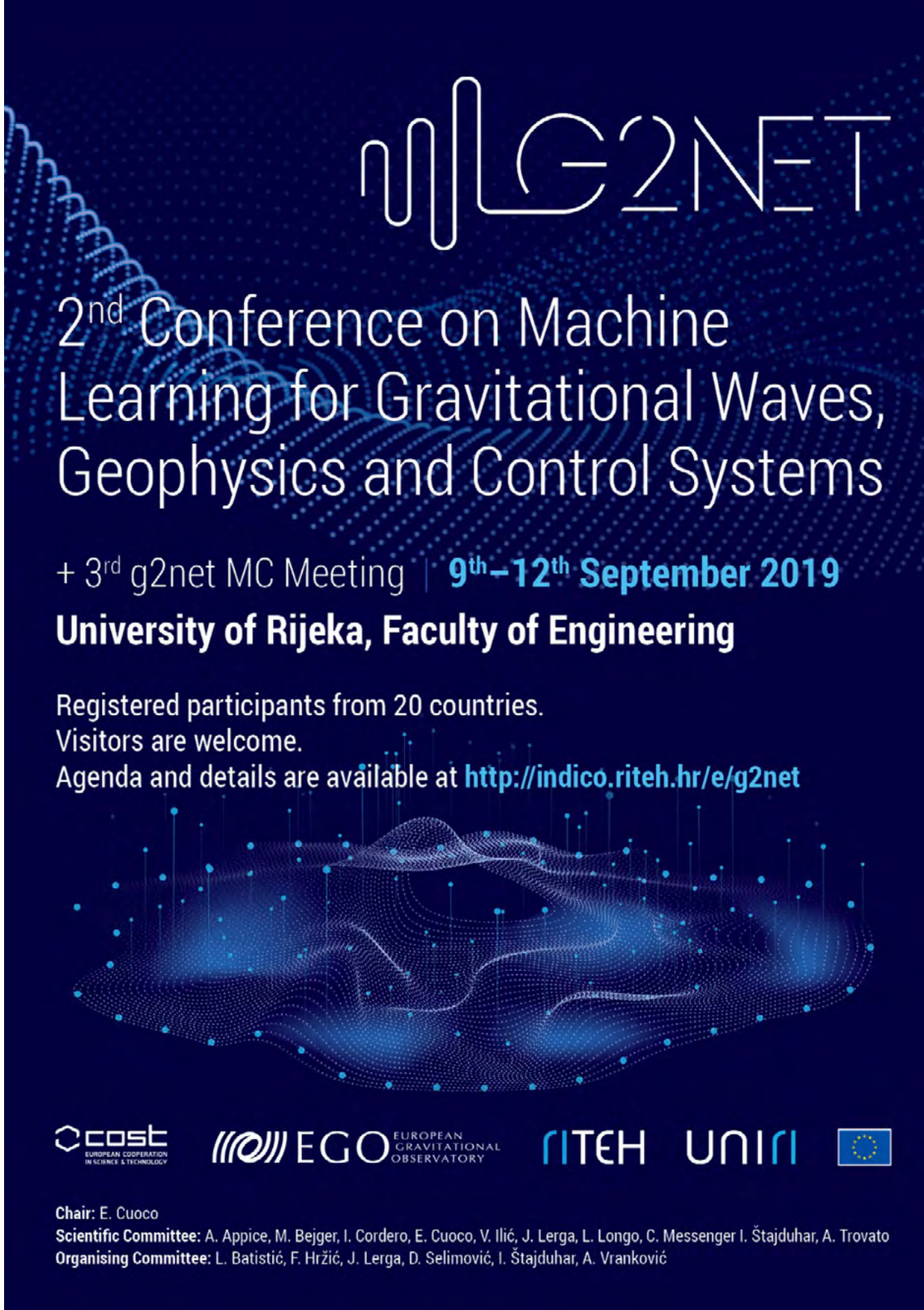
The Faculty of Engineering introduced itself in this year's conference with a series of scientific papers of employees and students presented at the conference. They will be published by the end of the year following the international reviews in the Proceedings of the 13th Annual Baška GNSS Conference. More than 80 participants from all over the world, with the exception of Australia, were introduced with more than 30 scientific papers. By the decision of the Special Committee, this year's Best Student Award was given to Silvio Šimunić, graduate student of Computer Engineering at the Faculty of Engineering.

2.6.4 2. konferencija o strojnom učenju u području gravitacijskih valova, geofizike i kontrolnim sustavima

the 2nd conference on machine learning for gravitational waves, geophysics and control systems

Na Tehničkom fakultetu u Rijeci, 11. i 12. rujna 2019. g., održan je znanstveni skup „2nd Conference on Machine Learning for Gravitational Waves, Geophysics and Control Systems". Na skupu su sudjelovali znanstvenici iz dvadeset europskih zemalja i prezentirali su najnovija istraživanja vezana uz korištenje umjetne inteligencije u analizi i obradi podataka iz astronomije, geofizike i seizmologije. Posebna je pozornost bila usmjerena na primjenu strojnog učenja u detekciji gravitacijskih valova koje je teorijski predvidio Albert Einstein još 1916. godine, a eksperimentalno su dokazani 2015. godine. Ovo otkriće, za koje je dodijeljena Nobelova nagrada 2017. godine, predstavlja veliku prekretnicu u području fizike. S druge strane, u području računarstva kroz proteklih nekoliko godina ostvaren je izniman napredak u umjetnoj inteligenciji i dubokom učenju. Znanstvenici, kako je to pokazano na skupu, vjeruju da će razvijene računalne tehnike uskoro pronaći mnoge druge implementacije, uključujući i primjene u svakodnevnom životu.

A scientific meeting entitled "2nd Conference on Machine Learning for Gravitational Waves, Geophysics and Control Systems" took place at the Faculty of Engineering in Rijeka, on September 11th and 12th 2019. Researchers from 20 European countries participated in the event and presented the most recent work connected to the use of artificial intelligence in the analysis and processing of astronomy, geophysics and seismology data. Special attention was directed to the application of machine learning for detection on gravitational waves, which were theoretically postulated by Albert Einstein in 1916 and were experimentally proven in 2015. This discovery, for which a Nobel Prize was awarded in 2017, represents a significant milestone in the field of physics. On the other hand, the field of computer science has advanced considerably in the last few years, especially in artificial intelligence and deep learning. As it was shown at the meeting, researchers believe that the developed computing techniques will soon find other implementations, involving also everyday life applications.



2.6.5 my first conference 2019

U zajedničkoj organizaciji Tehničkog, Građevinskog i Pomorskog fakulteta Sveučilišta u Rijeci, 12. rujna 2019. godine održana je treća konferencija za doktorande iz područja Tehničkih znanosti. Naziv konferencije je My First Conference i održana je na engleskom jeziku. Osim pozvanog predavača, sudjelovalo je i 27 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 interdisciplinarnim 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 third conference for Ph.D. students in the field of engineering sciences was held on 12 September 2019. The name of the conference is My First Conference and it was held in English. In addition to an invited lecturer, 27 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.

2.6.6 HRZZ projekti
HRZZ projects

NAZIV PROJEKTA | PROJECT TITLE:
SUSTAV POTPORE ODLUČIVANJU ZA ZELENIJU I SIGURNIJU PLOVIDBU BRODOVA - DESSERT
DECISION SUPPORT SYSTEM FOR GREEN AND SAFE SHIP ROUTING - DESSERT

Glavna istraživačica

prof. dr. sc. Jasna Prpić – Oršić,
Tehnički fakultet, Sveučilište u Rijeci, Hrvatska

Članovi istraživačkog tima

prof. dr. sc. Odd Magnus Faltinsen,
Norveško Sveučilište znanosti i tehnologije, Trondheim, Norveška

prof. dr. sc. Kenji Sasa,
Kobe University, Zavod za pomorstvo, Kobe, Japan

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

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

doc. dr. sc. Jonatan Lerga,
Tehnički fakultet, Sveučilište u Rijeci, Hrvatska

doc. dr. sc. Vedran Mrzljak,
Tehnički fakultet, Sveučilište u Rijeci, Hrvatska

doc. dr. sc. Marko Valčić,
Tehnički fakultet, Sveučilište u Rijeci, Hrvatska

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

doc. dr. sc. Srđan Žuškin,
Pomorski fakultet, Sveučilište u Rijeci, Hrvatska

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

Principal investigator

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

Research team members

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

Prof. D. Sc. Kenji Sasa,
Kobe University, Department of Maritime Sciences, Kobe, Japan

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

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

Assist. Prof. D. Sc. Jonatan Lerga,
Faculty of Engineering, University of Rijeka, Croatia

Assist. Prof. D. Sc. Vedran Mrzljak,
Faculty of Engineering, University of Rijeka, Croatia

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

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

Assist. Prof. D. Sc. Srđan Žuškin,
Faculty of Maritime Studies, University of Rijeka, Croatia

Natalija Vitali, PhD student,
Faculty of Engineering, University of Rijeka, Croatia

Sažetak projekta

Cilj istraživanja u okviru projekta Sustav potpore odlučivanju za zeleniju i sigurniju plovidbu brodova (DESSERT) je razvoj učinkovitog sustava potpore odlučivanju (Decision Support System - DSS) kapetanima broda, kao i zapovjednicima stroja, a koji bi doprinio ”zelenijoj” i sigurnijoj plovidbi brodova. Krajnji učinak takvog DSS bilo bi svođenje ljudske pogreške na što manju mjeru, odnosno pružanje maksimalno vjerodostojnih podataka i smjernica odgovornim osobama na brodu tijekom plovidbe kako bi se smanjilo onečišćenje okoliša i kako bi ljudi i teret bili što sigurniji.

Istraživanja vezana uz razvoj DSS-a odvijat će se u dva osnovna smjera: energetski učinkovitija plovidba uz smanjenje emisije stakleničkih plinova i povećanje sigurnosti plovidbe s aspekta izbjegavanja sudara

Cilj je razviti sustav potpore odlučivanju na brodu uzimajući u obzir projektantsku, strojarsku i pomorsku ekspertizu u cilju stvaranja sigurnog i ekološki učinkovitog ili "zelenijeg" broda i plovidbe. Projektni tim sastoji se od znanstvenika, stručnjaka u brodogradnji, strojarstvu, pomorskom inženjerstvu i računarstvu, a koji omogućuju multidisciplinarno rješavanje ovog problema.

Project summary

The research goal in the framework of the project Decision Support System for Green and Safe Ship Navigation (DESSERT) is the development of an effective Decision Support System (DSS) for captains as well as for machine commanders, which would contribute to "greener" and safer navigation of ships. The ultimate effect of such a DSS would be the reduction of human errors to a minimum, i.e. offering the most credible data and guidelines to authorised people on board during navigation in order to reduce the environmental pollution and increase people and cargo safety.

Research related to the development of DSS will take place in two main directions: energy-efficient navigation along with the reduction of greenhouse gas emissions as well as an increase in navigation safety so as to avoid collisions.

The objective is to develop a decision support system on board taking into account design, mechanical and maritime expertise in order to create a safe and environmental friendly or “greener” ship and navigation. The project team consists of scientists, experts in naval architecture, mechanical engineering, marine engineering and computer engineering, which allows a multidisciplinary approach to problem solving.

NAZIV PROJEKTA | PROJECT TITLE:
POVEĆANJE ENERGETSKE UČINKOVITOSTI IZMJENJIVAČA TOPLINE - HEXENER
ENHANCEMENT OF THE HEAT EXCHANGER ENERGY EFFICIENCY - HEXENER

Glavna istraživačica

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

Članovi istraživačkog tima

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

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

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

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

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

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

doc. dr. sc. Boris Delač,
Tehnički fakultet, Sveučilište u Rijeci, Hrvatska

Josip Batista, poslijediplomant,
Tehnički fakultet, Sveučilište u Rijeci, Hrvatska

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

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

Principal investigator

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

Members of the research team

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

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

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

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

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

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

Assist. Prof. D. Sc. Boris Delač,
Faculty of Engineering, University of Rijeka, Croatia

Josip Batista, Ph. D. student,
Faculty of Engineering, University of Rijeka, Croatia

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

Fran Torbarina, Ph. D. student,
Faculty of Engineering, University of Rijeka, 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 možemo smatrati posebnim tipom izmjenjivača. Znanstvenoistraživački 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.

Project summary

The research topic of the project is the enhancement of 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 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:

RAZVOJ EVOLUCIJSKIH POSTUPAKA ZA KARAKTERIZACIJU PONAŠANJA BIOLOŠKIH TKIVA - BIOMAT

DEVELOPMENT OF EVOLUTIONARY PROCEDURES FOR CHARACTERIZATION OF BIOLOGICAL TISSUES BEHAVIOR - BIOMAT

Glavna istraživačica

prof. dr. sc. Marina Franulović,
Tehnički fakultet, Sveučilište u Rijeci, Hrvatska

Principal investigator

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

Članovi istraživačkog tima

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

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

doc. dr. sc. Tea Marohnić,
Tehnički fakultet, Sveučilište u Rijeci, Hrvatska

Research team members

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

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

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

Assist. Prof. D. Sc. Tea Marohnić,
Faculty of Engineering, University of Rijeka, Croatia

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

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

Senad Omerović, PhD student,
Faculty of Mechanical Engineering, University of Ljubljana, Slovenia

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

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, 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, razvijena je 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, razvila se procedura složenog genetskog algoritma te njegovi operatori, uz primjenu adekvatne funkcije cilja optimizacijskog

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 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 been 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 also have been developed, by applying the appropriate objective function for the optimization procedure. The procedure has been automated by using the appropriate

postupka. Sam postupak je automatiziran primjenom adekvatnih matematičkih i numeričkih postupaka. Ovaj projekt 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 2018-2019

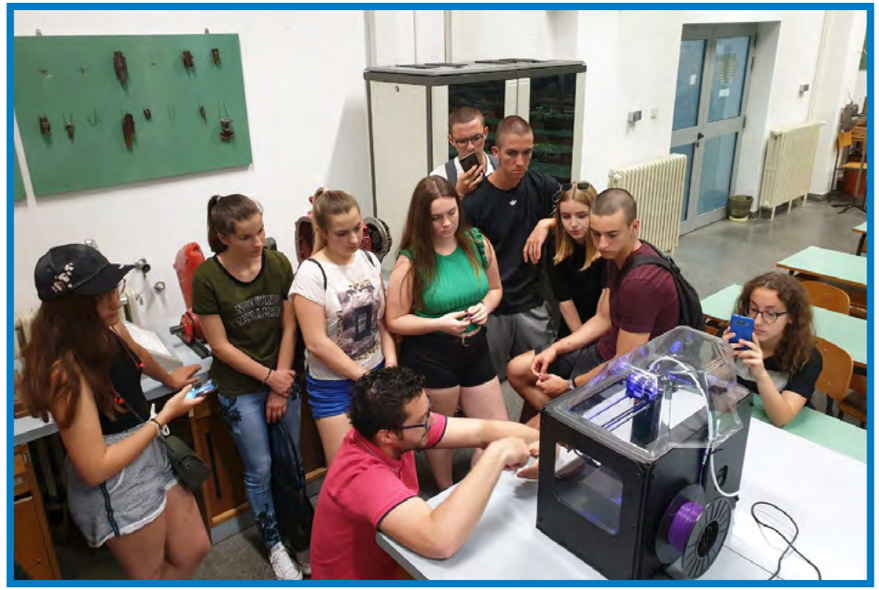
Obzirom na rezultate istraživanja u prethodnom trogodišnjem periodu (2015. - 2018.), vezanih uz klasifikaciju prikladnih materijalnih modela i ocjenu njihove primjenjivosti na simulaciju ponašanja odabranih materijala, te s obzirom na dostupnost alata za simulaciju ponašanja materijala, izvršena je analiza primjenjivosti postojećih konačnih elemenata, procedura za njihovu primjenu i prilagodba uvjetima primjene radi povećanja njihove efikasnosti. Nadalje, za proširenje metodologije i razvoj sustava u cilju identifikacije parametara nekonvencionalnih i inovativnih materijala na osnovi kojih će se sustav dalje razvijati i validirati i verificirati, potrebni su detaljni rezultati eksperimentalnih ispitivanja u različitim uvjetima. Stoga se tijekom provedbe projekta kontinuirano vršilo prikupljanje i sistematizacija rezultata ispitivanja nekonvencionalnih materijala. Izrađeno je izvješće koje predstavlja sistematičan pregled osnova konstitutivnog modeliranja i ponašanja materijala i naprednu klasifikaciju inovativnih materijala temeljenu na tim rezultatima. Konačno, provedbom projekta prema predviđenom radnom planu, a u smislu razvoja automatiziranog sustava za identifikaciju parametara biomaterijala, izrađeno je vlastito programsko rješenje za tu proceduru i postavljeno je na web stranicu projekta. 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.

mathematical and numerical methods. This project proposed setting innovative foundations in the interdisciplinary field of engineering sciences and biomedicine, allowing the connection of members of the proposed scientific groups and ensuring their international visibility and contributing to the overall development of the field of material research.

Project activities in the period 2018-2019

The previous three-year period (2015-2018) was related to the classification of suitable material models and the assessment of their applicability to the simulation of material behavior, as well as the availability of tools for simulation of material behavior. Considering the results of the research in that period, an analysis of the applicability of the existing finite elements and procedures for their application and also adaptation to the conditions applications has been performed with the goal to increase their efficiency. Furthermore, in order to extend the methodology and develop the system in order to identify the parameters of unconventional and innovative materials on the basis of which the system will be further developed, validated and verified, detailed results of experimental testing under different conditions are required. Therefore, during the implementation of the project, the collection and systematization of test results of unconventional materials were continuously collected and analysed. A report has been produced, which presents a systematic review of the foundations of constitutive material modeling and behavior of analysed materials, and also an advanced classification of innovative materials based on these results. Finally, by implementing the project according to the foreseen work plan, and in terms of developing an automated system for identifying the parameters of biomaterials, own software solution for this procedure was created and placed on the project website. 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.

2.6.7 6. ljetna škola CAD modeliranja
the 6th CAD modelling summer school



Tehnički fakultet Sveučilišta u Rijeci, u suradnji s Prvom sušačkom hrvatskom gimnazijom u Rijeci, organizirao je 6. ljetnu školu CAD modeliranja, održanu od 17. do 19. lipnja 2019. godine. Glavni ciljevi bili su stjecanje osnovnih znanja potrebnih za oblikovanje i interpretaciju inženjerske grafike korištenjem 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 u Rijeci učenicima srednjih škola, posebno polaznicima gimnazijskih programa.

PROGRAM RADA

Kroz predavanja i praktični rad polaznici su se upoznali s osnovama CAD tehnika za izradu 2D i 3D geometrijskih modela. Na radionici je korišten programski paket za izradu parametarskih modela i tehničke dokumentacije CATIA V5□6R2016 (Dassault Systèmes). Na kraju rada škole kandidatima je prezentirana oprema koja služi za brzu izradu prototipova metodom 3D tiskanja kao i sama mogućnost primjene formirane baze podataka 3D CAD modela nastale modeliranjem u programskom paketu CATIA ili korištenjem 3D skenera.

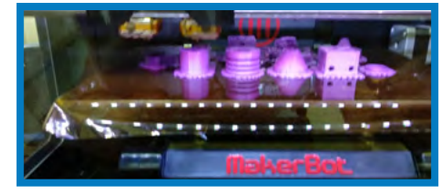
The Faculty of Engineering of the University of Rijeka in collaboration with the First Croatian Grammar School of Sušak in Rijeka organized The 6th Summer School in CAD Modelling, which was held from 17th to 19th June 2019. The workshop aimed to enable the participants to acquire the basic knowledge needed for the design and interpretation of the engineering graphics using computers, as well as to appreciate the significance and role of graphics in visualization and documentation. An additional objective for the organization of the Summer School was the popularization of science and promotion of the Faculty of Engineering of the University of Rijeka to high school students, especially those attending grammar school programs.

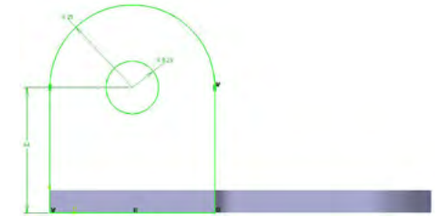
PROGRAM OF THE SCHOOL

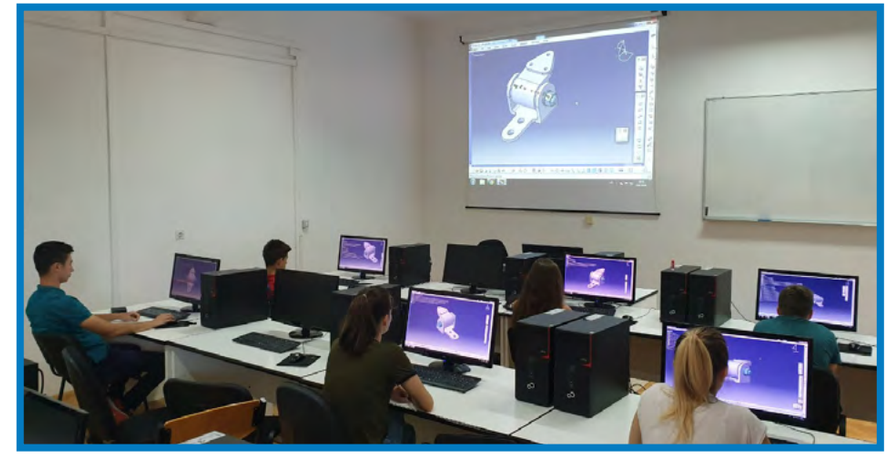
Through lectures and practical work, the participants were acquainted with the basics of CAD techniques for creating 2D and 3D geometric models. The participants have been familiarized with the CATIA V5-6R2016 (Dassault Systèmes) programming environment for the creation of parametric models and technical documentation. At the end of the workshop, they were presented with rapid prototyping equipment (3D printer) and also with the possibility to apply the data-

PREDAVAČI

Kao organizatori i predavači u radu škole od 2014. godine sudjeluju doc. dr. sc. Vladimir Glažar, doc. dr. sc. Goran Gregov i doc. dr. sc. Ervin Kamenar. Školu je do danas uspješno završilo oko 110 polaznika iz srednjih škola iz Rijeke i okolice.







base of the 3D CAD models which were modeled in the CATIA modeling environment or obtained using the 3D scanner.

LECTURERS

As of 2014, Assist. Prof. D. Sc. Vladimir Glažar, Assist. Prof. D. Sc. Goran Gregov and Assist. Prof. D. Sc. Ervin Kamenar have participated in the activity of the School as organizers and lecturers. Moreover, about 110 participants have attended the School up to date, mainly high school students from Rijeka and the surrounding areas.

2.6.8 2. ljetna škola programiranja u pythonu
the 2nd python programming summer school

Tehnički fakultet Sveučilišta u Rijeci organizirao je 2. ljetnu školu Python programiranja, održanu od 17. do 19. lipnja 2019. godine. Glavni cilj bio je upoznati polaznike s osnovama programiranja sveprisutnim programskim jezikom Python, potrebnim u inženjerstvu kao i u pripremama za preddiplomski studij na STEM području. Uz učenje o Python programiranju, srednjoškolcima je promoviran Tehnički fakultet u Rijeci kao mogući izbor nastavka edukacije.

PROGRAM RADA

Kroz predavanja i uz izravan rad na računalima u informatičkom kabinetu, polaznici su upoznati s osnovama programiranja (tipovi podataka, funkcije, matematičke operacije), samostalno su pisali kraće računalne programe i naučili osnove vizualizacije i animacije. Ljetnu školu programiranja u Pythonu uspješno je pohađalo šesnaest pristupnika iz Srednje škole za elektrotehniku i računalstvo, Srednje talijanske škole, Srednje škole Andrije Ljudevita Adamića, Prve sušačke gimnazije, Ekonomske škole Mije Mirkovića, Tehničke škole i Gimnazije Andrije Mohorovičića. Polaznicima su dodijeljene i diplome o prisustvu Ljetnoj školi programiranja u Pythonu.

ORGANIZATOR I PREDAVAČ

Organizator 2. ljetne škole Python programiranja je red. prof. dr. sc. Lado Kranjčević, a predavanja je održao asistent Ante Sikirica sa Zavoda za Mehaniku fluida i Računarsko inženjerstvo.

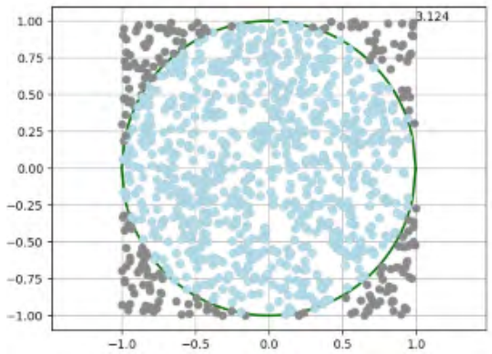
The Faculty of Engineering of the University of Rijeka organized The 2nd Python Programming Summer School, which was held from 17th to 19th June 2019. The main goal of the workshop was to get the participants better acquainted with the basics of the popular programming language Python which is needed in engineering and serves as a good introduction to various undergraduate studies in the STEM fields. Along with learning about Python programming, the Faculty of Engineering was promoted to participants as a possible choice for continuing their education.

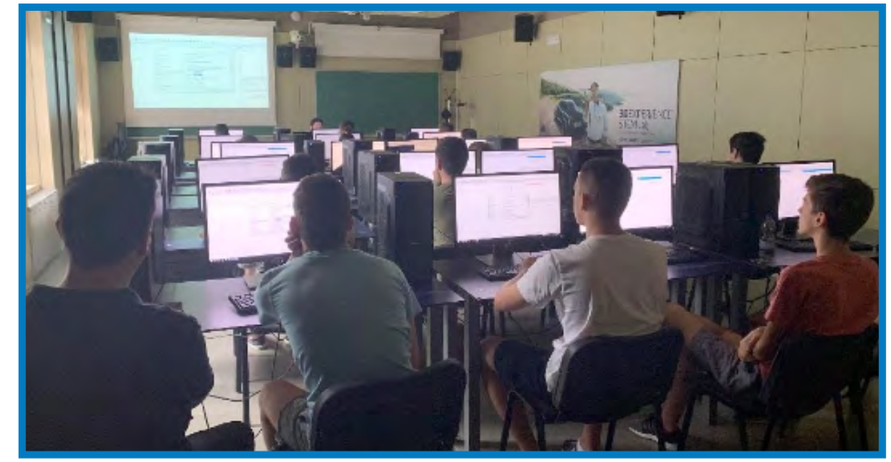
PROGRAM OF THE SCHOOL

Through lectures including a direct usage of PCs in the IT classroom, the participants were thought the basics of programming (data types, functions, mathematical operations) and they have independently coded their own short computer programs; additionally, the participants were thought the basics of data visualization and animations. 16 high school students successfully participated in the 2nd Python Programming Summer School. They came from the High school for Electrical Engineering and Computing, Italian High School, Andrija Ljudevit Adamić High School, The First Croatian Grammar School of Sušak, High School for Economics Mijo Mirković, Technical High School and Andrija Mohorovičić Grammar School. Participants were given diplomas as a certificate of attendance at the 2nd Python Programming Summer School.

ORGANIZER AND LECTURER

The organizer of the 2nd Python Programming Summer school was Prof. D. Sc. Lado Kranjčević and the lecturer was assistant Ante Sikirica from the Department of Fluid Mechanics and Computational Eengineering.





2.6.9 21. regata u mornarskom veslanju
the 21st international sailor rowing regatta

Organizacijski uspjeh Pomorskog fakulteta i sportski uspjeh Tehničkog fakulteta na 21. međunarodnoj regati u mornarskom veslanju

28. svibnja 2019. g. održana je 21. međunarodna regata u mornarskom veslanju u organizaciji Pomorskog fakulteta. Početak regate su obilježili snažni pljuskovi, a odluka organizatora o nastavku natjecanja, usprkos nepovoljnog vremena, pokazala se ispravnom jer je veći dio takmičenja protekao bez kiše.

Sudjelovanje većeg broja ekipa i zgusnut raspored natjecanja praćen čestim pljuskovima nedvojbeno je bio organizacijski izazov za sve ekipe, a posebno za organizatora. Ipak, natjecanje je nastavljeno pri čemu je utrku Pomorskog i Učiteljskog fakulteta u ženskoj konkurenciji obilježio snažan pljusak koji nimalo nije omeo natjecateljice. U uzbudljivoj završnici slavile su, očekivano, natjecateljice s Pomorskog fakulteta, a utrku pa i cijelu regatu je obilježila izuzetna požrtvovnost natjecateljica Učiteljskog fakulteta čiji je napredak od prošlogodišnje regate iznenadio mnoge. Natjecateljice Tehničkog fakulteta, s manjim brojem veslačica, teško su se nosile s tako snažnom konkurencijom te su završile na petom mjestu.

Muška studentska ekipa je bila podjednako uspješna završivši na 6. mjestu, što je približno na polovici ljestvice sudionika u najjačoj kategoriji regate. Ekipa iz Trsta je bila uspješnija, a sam vrh ljestvice su podijelile ekipe s Lošinja.

Odluka Tehničkog fakulteta o nastupu s tri ekipe također se pokazala dobrom jer je fakultet, upravo u posljednjoj kategoriji, ostvario najveći uspjeh. U kategoriji od devet ekipa, sačinjenih od natjecatelja različitih dobnih skupina, upravo je ekipa Tehničkog fakulteta pokazala najveću izdržljivost poboljšavajući svoje rezultate u svakom narednom plovu.

Ovogodišnje finale, baš kao i finala u protekle dvije godine, bili su ogledi Pomorskog i Tehničkog fakulteta. Ove godine je pobjedu u El clasicu tijesno odnio Tehnički fakultet, dok je Pomorski fakultet bio uspješniji u svim ostalim kategorijama.

Pobjedi Tehničkog fakulteta pridonijeli su mnogobrojni sudionici ekipa.

Natjecanje je obilježio humanitarni karakter, a završeno je podjelom medalja i vatrometom.

Organizational success of the Faculty of Maritime Studies and sports success of the Faculty of Engineering at the 21st International Sailor Rowing Regatta

On 28 May 2019, the 21st International Sailor Rowing Regatta was organized by the Faculty of Maritime Studies. The start of the regatta was marked by heavy showers, and despite the bad weather, the organizers' decision to continue the competition proved to be correct, as most of the competition was without rain.

The participation of a large number of teams and a tight schedule of the competitions accompanied by frequent showers was undoubtedly an organizational challenge for all teams, and especially for the organizer. However, the competition continued and the race of the Faculty of Maritime Studies and Faculty of Teacher Education in the female category were marked by heavy rain, which did not disturb the competitors. In the exciting finale, the female competitors from the Faculty of Maritime Studies unsurprisingly celebrated. The female competitors from the Faculty of Teacher Education showed outstanding dedication and their progress from last year's regatta was a big surprise. The female competitors from the Faculty of Engineering, with fewer rowers, barely handled such a strong competition and finished in the fifth place.

The male student team was equally successful, reaching the sixth place, which was approximately in the middle of the list of participants in the strongest category of the regatta. The team from Trieste was more successful, and the top of the rankings was shared by the teams from the island of Lošinj.

The decision of the Faculty of Engineering to perform with three teams also proved to be good because the Faculty, in the last category, achieved the greatest success. In the category of nine teams, made up of competitors belonging to different age groups, it was the team of the Faculty of Engineering that showed the greatest endurance, improving their results in each successive performance. This year's finale, just like the finales of the past two years, was the confrontation between the Faculty of Maritime Studies and the Faculty of Engineering. This year, the victory in El classic was closely taken by the Faculty of Engineering, while the Faculty of Maritime Studies was more successful in all other categories.

Numerous team participants contributed to the victory of the Faculty of Engineering.

The competition had a humanitarian character, and ended with medal awarding and fireworks.

2.6.10 b2run 2019

Tehnički fakultet osvojio je 2. mjesto na utrci B2Run

RITEH RUN TEAM sudjelovao je 23. 5. 2019. g. u poslovnoj utrci B2run. U utrci su sudjelovali: Valnea Burić Marohnić, Roko Dejhalla, Marina Franulović (kapetanica), Igor Lulić, Kristina Marković, Maja Marković, Tea Marohnić, Tomislav Senčić i Sunčana Smokvina Hanza.

U kategoriji srednjih poduzeća u kojoj je sudjelovalo 33 tima, Tehnički fakultet je osvojio drugo mjesto, a prvo mjesto za najbrži ženski tim.

Pojedinačno, u ženskoj kategoriji za srednja poduzeća, Sunčana Smokvina Hanza bila je druga, kao i Tomislav Senčić drugi u muškoj kategoriji.

The RITEH RUN TEAM participated in the B2Rrun, the business running race in Rijeka on 23 May 2019. The members of the team were: Valnea Burić Marohnić, Roko Dejhalla, Marina Franulović (captain), Igor Lulić, Kristina Marković, Maja Marković, Tea Marohnić, Tomislav Senčić and Sunčana Smokvina Hanza.

In the category of medium-sized enterprises involving 33 teams, the Faculty of Engineering won the second place and the first place for the fastest female team.

Additionaly, Sunčana Smokvina Hanza was the second fastest runner in the female category, as well as Tomislav Senčić in the male category.

2.6.11 studentski završni i diplomski radovi
student undergraduate and graduate theses

IME I PREZIME | NAME AND SURNAME:
Karlo Prikratki

Preddiplomski stručni studij strojarstva
/ Undergraduate Vocational Study Of Mechanical Engineering

NAZIV RADA | TITLE:
Eksperimentalna analiza torzijske krutosti poluosovine formule student
Experimental Analysis Of Torsional Stiffness Of A Drive Shaft Of Formula Student

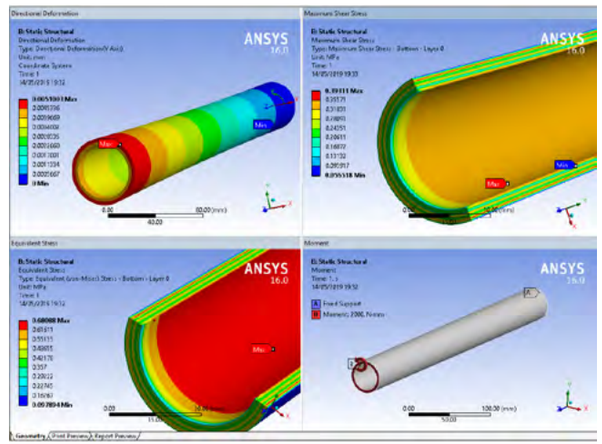
MENTORI | SUPERVISORS:
Doc. dr. sc. / Assist. Prof. D. Sc. Sanjin Kršćanski
Prof. dr. sc. / Prof. D. Sc. Marko Čanađija

Sažetak:

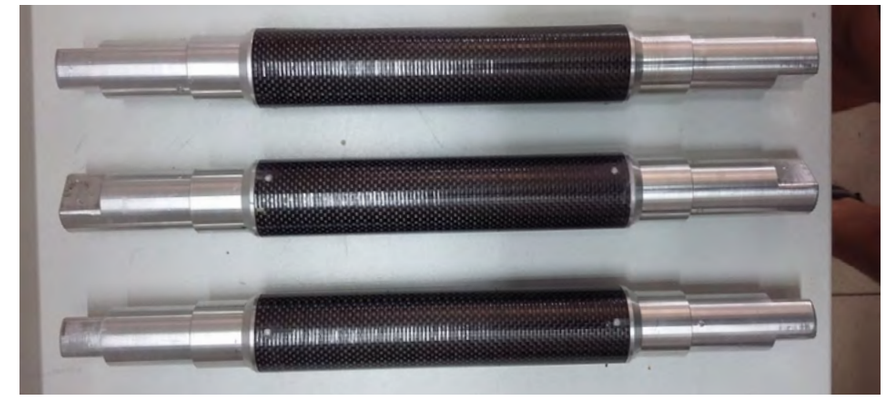
Ovim završnim radom definiran je postupak izrade kompozitne poluosovine i njenoga testiranja na prikladnoj napravi. Rad obuhvaća sve smjernice za simulaciju i izbor karbonske cijevi, izbor ljepila, pripremu površina za lijepljenje te načine lijepljenja. Korišteno ljepilo je bilo Loctite EA 9497, a komponente su spajane metodom ubrizgavanja. Izračunom je dobiven maksimalni okretni moment kojim je poluosovina opterećena i o tome je ovisila konstrukcija poluosovine. Opisana je izrada naprave za eksperimentalno testiranje torzijske krutosti te način njenog funkcioniranja. Testiranjem su dobiveni različiti rezultati za različite zazore na aluminijskim čahurama. Za korišteno ljepilo najboljim se pokazao zazor od 0,2 mm. Takav lijepljeni spoj izdržao je okretni moment od 531 Nm.

Summary:

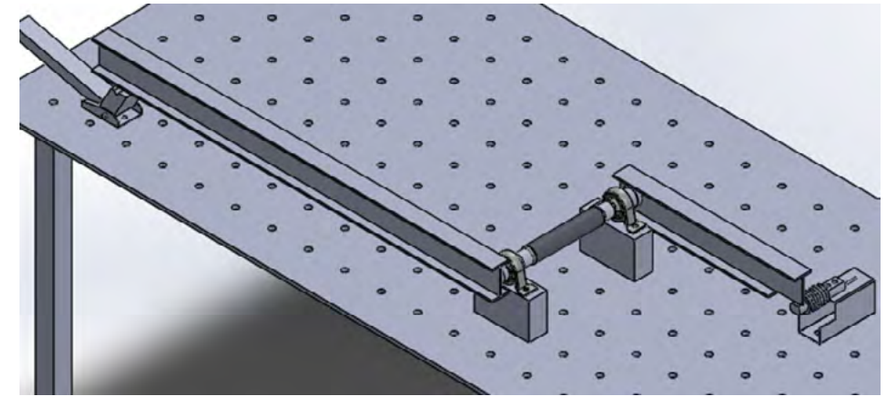
This final thesis defines the procedure of composite driveshaft production and testing on a suitable device. The thesis includes all the guidelines for the simulation and selection of the carbon fibre tube, adhesive selection, surface treatment and adhesive application. The components were glued together with the injection method using the adhesive Loctite EA 9497. The required maximum torque was calculated and a shaft was loaded and constructed according to this value. The design of the device for the experimental testing of torsional rigidity and the method of its design were described. Testing yielded different results for different gaps of aluminium bushings. The most suitable gap for the mentioned adhesive was 0.2 mm. The glued joint withstood a maximum torque of 531 Nm.



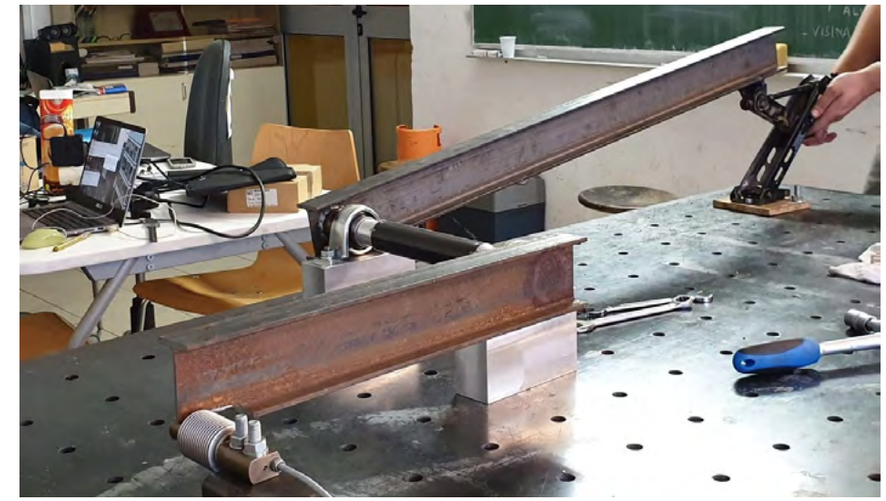
Simulacija torzijski opterećene karbonske cijevi u ANSYS-u
/ Simulation of torsionally loaded carbon fiber tube in ANSYS



Testne poluosovine
/ Test half-shafts



Testna naprava za testiranje torzijske čvrstoće i krutosti
/ Test device for testing torsional strength and rigidity



Testiranje poluosovine
/ Half-shaft testing

IME I PREZIME | NAME AND SURNAME:
Julian Žmak

Preddiplomski sveučilišni studij strojarstva
/ Undergraduate University Study Of Mechanical Engineering

NAZIV RADA | TITLE:
Analiza dinamike sustava ovjesa formule student
Dynamic Analysis Of The Formula Student Car Suspension Systems

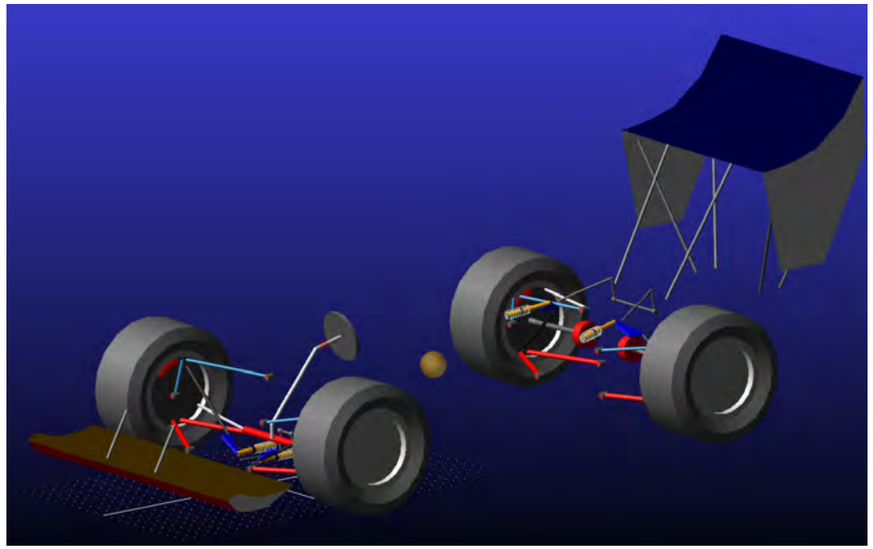
MENTOR | SUPERVISOR:
Prof. dr. sc. / Prof. D. Sc. Sanjin Braut

Sažetak:

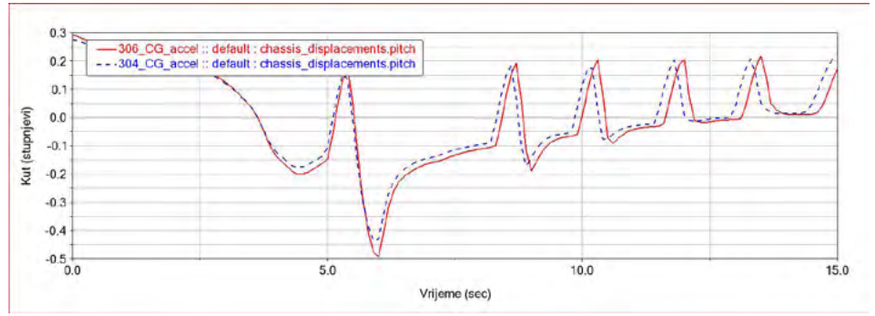
U ovom radu analiziran je određeni broj utjecajnih parametara na dinamiku vozila u cilju poboljšanja vozljivosti i upravljivosti bolida Formule Student. Početna razrada parametara prikazana je analitičkim jednadžbama te je dan teorijski uvid u ključne komponente koje utječu na dinamiku vozila. Daljnja i složenija razrada parametara provedena je kroz simulacije u programskom paketu MSC ADAMS/Car te je analiziran utjecaj pneumatika te mase i visine vozača na svojstva vozila. Dobivanjem opterećenja iz simulacija provedena je topološka analiza komponente upright u programskom paketu Abaqus sa ciljem smanjenja mase.

Summary:

This paper analyzes a number of impact parameters on vehicle dynamics in order to improve the agility and maneuverability of the Formula Student car. Initial parameter elaboration is presented with analytical equations and a theoretical insight is given into key components that affect the dynamics of the vehicle. Further and more complex parameter elaboration was carried out through simulations in the MSC ADAMS / Car program package and analysis of the tire, weight and height of the driver on the vehicle characteristics. By gaining the load from the simulations, the topological analysis of upright was performed in the Abaqus program package for the purpose of mass reduction.



Model ovjesa formule RRC5.1 u ADAMS/Car-u
/ Formula RRC5.1 suspension model in ADAMS/Car



Zakret šasije oko poprečne osi
/ Chassis pitch displacements

IME I PREZIME | NAME AND SURNAME:
Tomislav Bazina

Diplomski sveučilišni studij strojarstva
/ Graduate University Study Of Mechanical Engineering

NAZIV RADA | TITLE:
Primjena strojnog vida u dimenzionalnoj kontroli proizvoda
Machine Vision Application In Workpieces Dimensional Control

MENTORI | SUPERVISORS:
Prof. dr. sc. / Prof. D. Sc. Zoran Jurković
Prof. dr. sc. / Prof. D. Sc. Duško Pavletić

Sažetak:

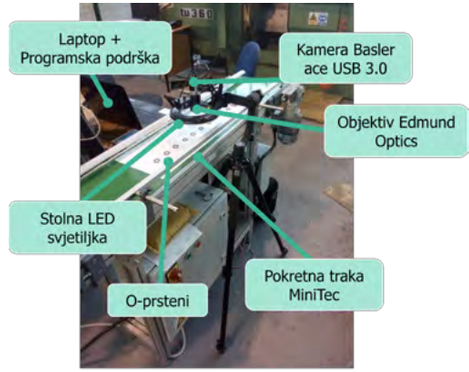
U prvom dijelu rada je predložen automatizirani optički sustav kontrole dimenzija O-prstena. Opisane su mjerene veličine O-prstena te komponente, kalibracija i postavljanje optičkog sustava. Predstavljena je i programska podrška mjernog sustava, izrađena pomoću programskog jezika Python i programskih paketa otvorenog koda. Prikazan je način korištenja grafičkog sučelja programskog rješenja i pojašnjeni su algoritmi kalibracije, mjerenja i predobrade digitalnih slika.

U drugom dijelu rada je prikazan postupak mjerenja O-prstena mikrometarskim vijkom i pomoću optičkog mjernog sustava. Sposobnost oba sustava je analizirana primjenom Six Sigma metodologije. Ispitana je osjetljivost optičkog mjernog sustava na kvalitetu kalibracije. Automatizirani i ručni mjerni sustav su uspoređeni pomoću statističkih pokazatelja ponovljivosti i obnovljivosti te intraklasnog koeficijenta korelacije. Na kraju su predložene mjere povećanja kvalitete optičkog mjernog sustava.

Summary:

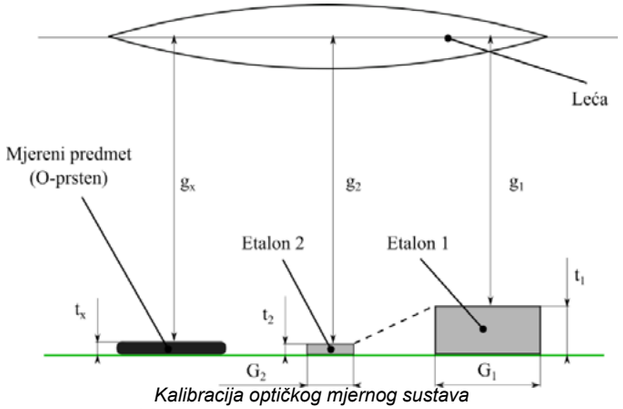
In the first section of the thesis, an automated visual inspection system for O-ring measurement is proposed. Measured O-ring features are also defined as well as optical system components, calibration and setup are described. Measurement system software solution, developed using the Python programming language and the open-source software is also introduced. Instructions for using software solution graphical interface are presented and the algorithms for calibration, measurement and digital image preprocessing are defined.

The second part of the thesis presents methods for measuring the O-ring using micrometer and the optical measurement system. The capability of each system is analyzed using the Six Sigma methodology. Optical measurement system sensitivity to the calibration is examined. Automated and manual measurement systems were compared by means of repeatability and reproducibility and intraclass correlation coefficient. Finally, measures to increase the quality of the optical measurement system are proposed.

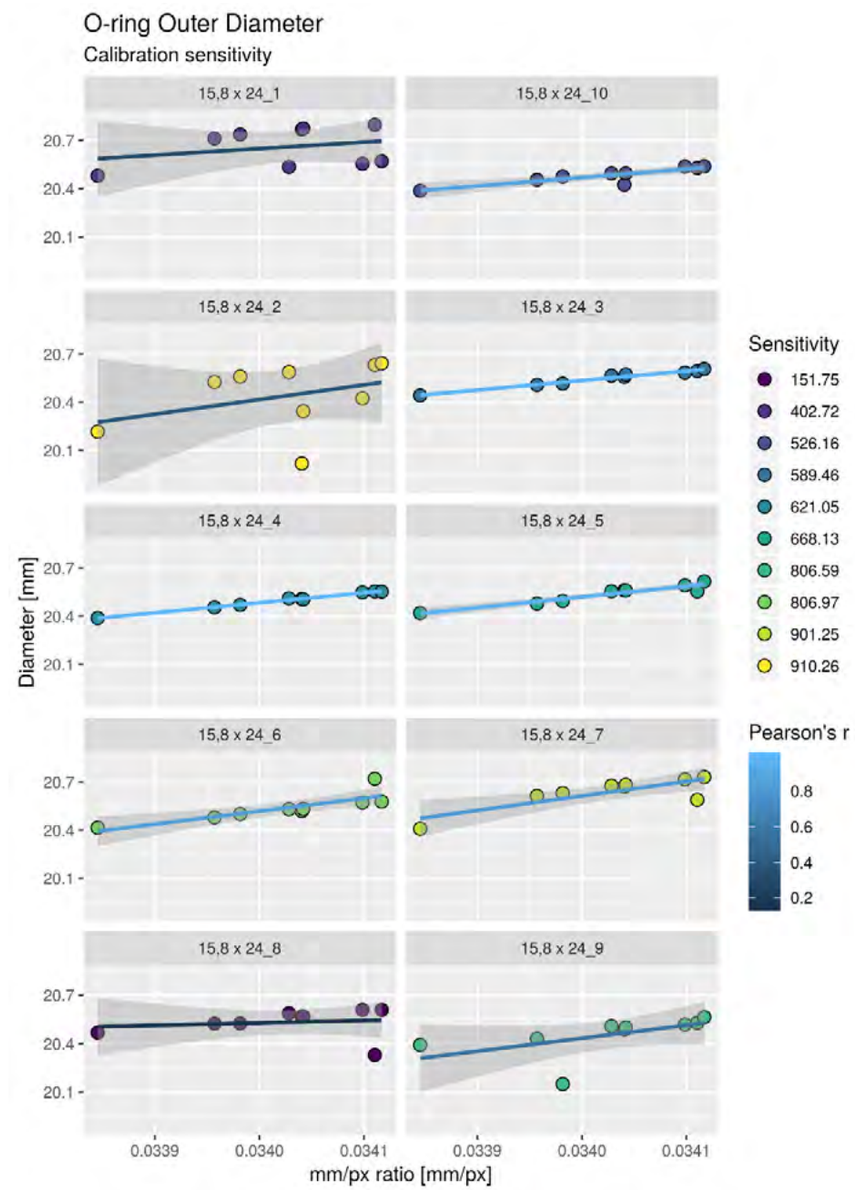


Komponente optičkog mjernog sustava
/ Optical measurement system components

Vizualizacija mjernog algoritma
/ Measurement algorithm visualization



Kalibracija optičkog mjernog sustava
/ Optical measurement system calibration



Osjetljivost izmjerenih vrijednosti veličine vanjskog promjera O-prstena na kvalitetu kalibracije
/ Sensitivity of measured O-ring outer diameter values to the calibration quality

IME I PREZIME | NAME AND SURNAME:
Darin Majnarić

Diplomski sveučilišni studij brodogradnje
/ Graduate University Study Of Naval Architecture

NAZIV RADA | TITLE:
Podešavanje krutosti uranjajućeg hidrokrila kod interakcije fluida i strukture
Stiffness adjustment of surface-piercing hydrofoils within fluid-structure interaction

MENTOR | SUPERVISOR:
Prof. dr. sc. / Prof. D. Sc. Albert Zamarin, dipl. ing.

Sažetak:

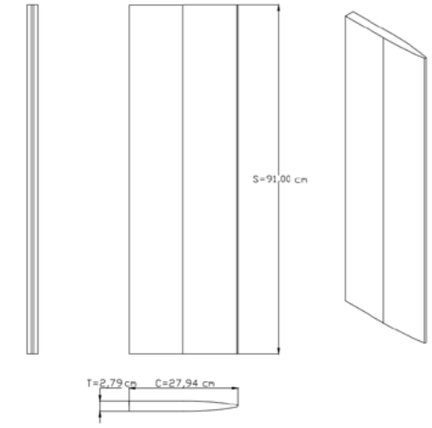
U radu su predstavljeni rezultati numeričkih analiza interakcije fluida i strukture provedenih na dva različita modela hidrokrila (Model 1 i Model 2). Analize su provedene za nehrđajući čelik, aluminij i kompozitni materijal za Model 1, a materijal Modela 2 je kompozit s aluminijskim ojačanjem. Modeli su analizirani za tri različita ulazna kuta (10, 20, 30 stupnjeva) i za svaki od kuteva testirane su različite brzine (2, 4 i 6 m/s). Svi testovi provedeni su prvo za potpuno uronjeno hidrokrilo te zatim za hidrokrilo uronjeno do haza h. Opisana numerička analiza provedena je kako bi se podesila krutost hidrokrila prema radnim opterećenjima. Dvosmjerna analiza interakcije fluida i strukture je korištena kako bi se povezalo FEM i CFD rješavače. Prikazani rezultati bazirani su na 44 analize sa kojima su testirani svi planirani uvjeti rada hidrokrila. Numerička analiza pokazala je povezanost između čvrstoće materijala (odziva stukture) i hidrodinamičkoga opterećenja. Osim navedenog, prema provedenim analizama Modela 2 dana su predviđanja za najkvalitetnije postavljanje ojačanja hidrokrila.

Summary:

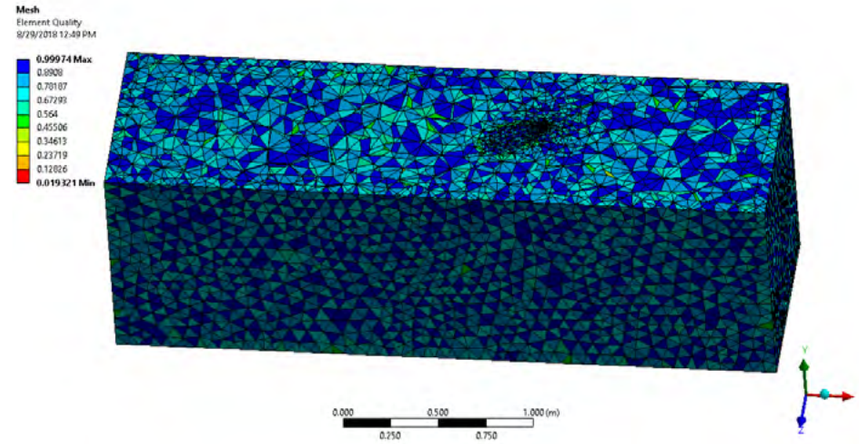
This paper presents results from numerical analyses of the fluid and structure interaction of two different hydrofoil models (Model 1 and Model 2). Analyses were performed with stainless steel, aluminium and composite materials for Model 1, while Model 2 was created from a composite with aluminium reinforcement. Models were analysed for three different angles of attack (10, 20 30 degrees) and for each of the angles three different speeds were tested (2,4 and 6 m/s). The whole set of analyses was run first for the entirely submerged hydrofoil and afterwards for the hydrofoil immersed to the draft h. The described numerical analysis was performed in order to adjust the stiffness of the hydrofoils based on different operational loads. A two-way fluid-solid interaction analysis was used in order to combine FEM and CFD solvers. The presented results are based on 44 analyses with which all the planned conditions of the hydrofoil operation were tested. The numerical analysis showed correlation between stiffness of the material (structural response) and hydrodynamic loading. Besides, based on the analysis of Model 2 future predictions for the best placement of reinforcement for the hydrofoils were given.

Hidrokrilni model	Model 1		Model 2
Materijal	Aluminij	Nehrđajući čelik	Kompozit sa aluminijskom trakom
Tetiva, cm	27.94	27.94	28.58
Površina presjeka na vodnoj liniji, cm^2	58.8	58.8	60.6
Volumen, m^3	0.006	0.006	0.006112
Ukupna površina m^2	0.55134	0.55134	0.55201

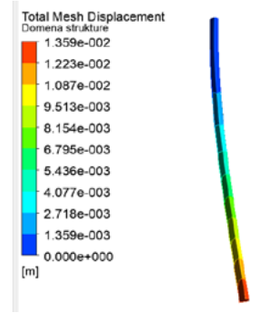
Geometrijske karakteristike hidrokrila Modela 1, Modela 2 i pripadajućih testiranih materijala
/ Hydrofoil Model 1 and Model 2 materials and geometric characteristics



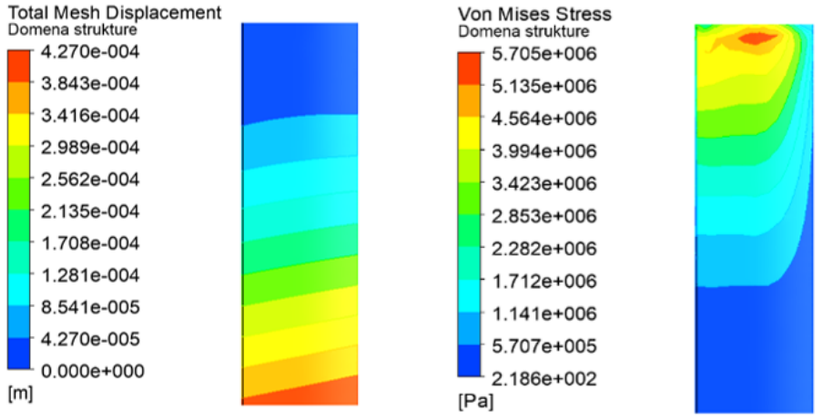
Prikaz nacrta kotiranoga hidrokrila Modela 1
/ Hydrofoil Model 1 structure drawings



Kvaliteta mreže domene fluida
/ Fluid domain mesh quality



Prikaz deformacije hidrokrila pri kutu otklona od 30 stupnjeva i brzini pritjecanja fluida od 6 m/s
/ Hydrofoil structure deformation at 30 deg angles of attack and speed of 6 m/s



Prikaz raspodjele deformacije (lijevo) i naprezanja (desno) za kut otklona od 10 stupnjeva i brzinu pritjecanja fluida od 2 m/s.
/ Distrubution of deformations (left) and stresses (right) for angles of attack of 10 deg and speed of 2 m/s

IME I PREZIME | NAME AND SURNAME:
Lino Josip Novak

Diplomski sveučilišni studij brodogradnje
/ Graduate University Study Of Naval Architecture

NAZIV RADA | TITLE:
Idejni projekt broda za prijevoz pitke vode za opskrbu vodom hrvatskih otoka
Preliminary design of a water carrier ship for croatian island water supply

MENTOR | SUPERVISOR:
Prof. dr. sc. / Prof. D. Sc. Roko Dejhalla, dipl. ing.

Sažetak:

U ovom diplomskom radu napravljen je idejni projekt broda za prijevoz pitke vode kojom bi se opskrbljivali hrvatski otoci. Analiza opskrbe hrvatskih otoka pitkom vodom ukazala je na nezadovoljavajuće stanje na naseljenim i povremeno naseljenim otocima te česte nestašice pitke vode. Osim što negativno utječu na gospodarski razvoj otoka, nestašica pitke vode dodatno otežava i svakodnevni život otočana, pogotovo u ljetnim mjesecima kada su nestašice češće. Poseban problem uočen je na otocima koje pitkom vodom opskrbljuju brodovi vodonosci. U Hrvatskoj postoje četiri takva broda, prosječne starosti preko šezdeset godina, koji često ne uspijevaju na vrijeme i u dovoljnoj količini podmiriti potrebe otoka za pitkom vodom. Dakle, obnavljanje i pojačavanje flote svakako je nešto o čemu bi trebalo razmisliti. Zbog toga se pristupilo izradi idejnog projekta za brod vodonosac kojim bi se omogućila sigurnija opskrba otoka pitkom vodom.

Projekt je podijeljen u dva kruga. U prvom krugu određuju se osnovne karakteristike broda, proračunava struktura i masa te se radi proračun otpora. U drugom krugu naglasak je na modeliranju forme, odabiru brodskog motora i detaljnijim proračunima. Projekt završava preliminarnim proračunom trima i stabiliteta za četiri zadana stanja krcanja koji zadovoljavaju postavljene kriterije. U izradi projekta korišteni su razni brodograđevni računalni programi kojima se modeliralo strukturu, definiralo skladišne prostore i načine krcanja, napravilo proračun trima i stabiliteta te se proračunala snaga ukupnog otpora broda.

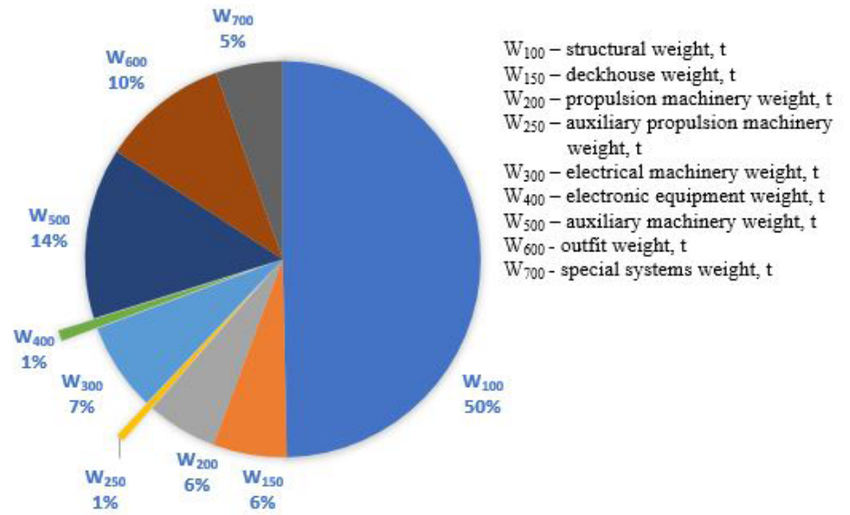
Summary:

In the present master thesis the preliminary design of a ship for the transport of drinking water which would supply Croatian islands was made. They analysis of the drinking water supply for Croatian islands indicated the unsatisfactory situation on inhabited and occasionally inhabited islands and frequent shortages of drinking water. Apart from negatively affecting the economic development of the islands, it further complicates the everyday life of the islanders, especially in the summer months when shortages are more frequent. A particular problem was spotted on islands which are supplied with drinkable water by water carriers. There are four such ships in Croatia, with an average age of over sixty years, which often fail to meet the drinking water requirements of the island on time and in sufficient quantity. Therefore, rebuilding and enhancing the fleet is definitely something to consider. That is why the preliminary design of a water carrier was made which would enable a more secure supply of drinking water to the islands.

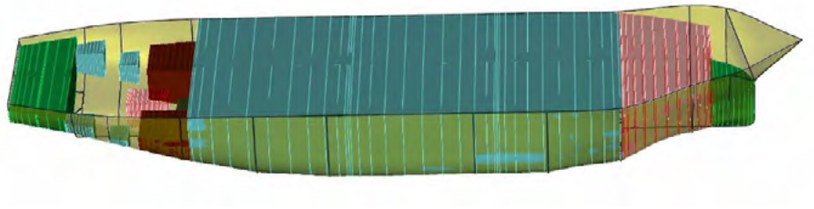
The project is divided into two phases. In the first phase, the basic characteristics of the ship are determined, the ship structure and mass are calculated and the resistance calculations are done. In the second phase, the emphasis is laid on the hull shape modeling, engine selection and other detailed calculations. The project ends with a preliminary calculation of the trim and stability for four default loading conditions that meet the set criteria. In the design process various shipbuilding computer programs were used for the structure modeling, defining the tank volumes and ways of loading, calculation of trim and stability as well as the structure evaluation and the ship resistance.

Length over all	42,0 m
Length between perpendiculars	38,5 m
Breadth	10,0 m
Draught	3,7 m
Water-tanks capacity	900 m^3

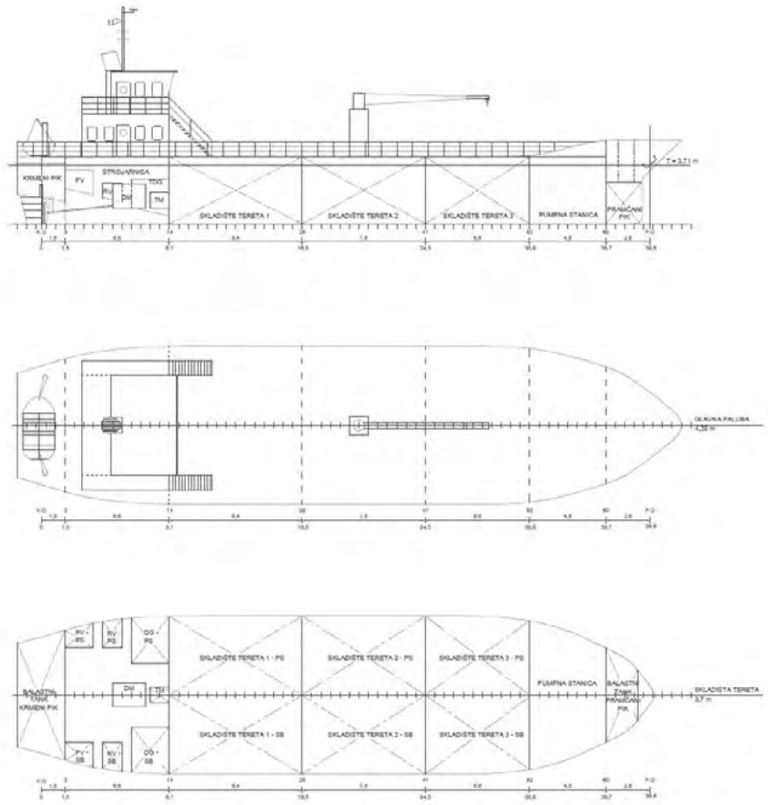
Glavne dimenzije
/ General particulars



Udjeli pojedinih masa u masi praznog opremljenog broda
/ Shares of individual masses in the total mass of a light-ship



Model broda s definiranim tankovima
/ Ship model with defined tanks



Opći plan
/ General arrangement

IME I PREZIME | NAME AND SURNAME:
Borna Juriša

Diplomski sveučilišni studij elektrotehnike
/ Graduate University Study Of Electrical Engineering

NAZIV RADA | TITLE:
Analiza i karakterizacija naponskih propada u distribucijskoj mreži
Analysis And Characterization Of Voltage Sags In Distribution Systems

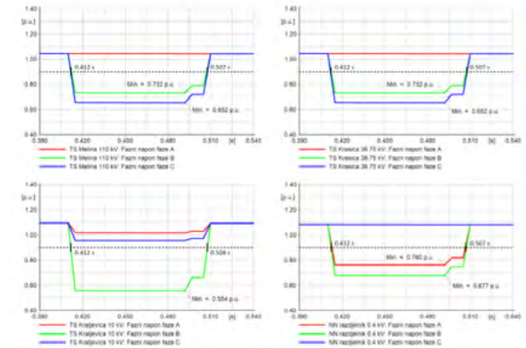
MENTOR | SUPERVISOR:
Izv. prof. dr. sc. / Assoc. Prof. D. Sc. Dubravko Franković

Sažetak:

Naponski propadi su privremena smanjenja efektivne vrijednosti napona nakon čega slijedi njen brz oporavak u kratkom vremenskom razdoblju. Najčešće su posljedica poprečnih kvarova u elektroenergetskim mrežama te su njen sastavni dio, gdje se u većini slučajeva radi o slučajnim i nepredvidivim događajima. U uvodnom dijelu ovog diplomskog rada obradila su se temeljna načela i karakteristike naponskih propada. Definicija, uzroci i postojeće klasifikacije su detaljno objašnjene te se ukratko dotaknuo i utjecaj naponskih propada na električne uređaje. Propagiranje naponskih propada prema nižim naponskim razinama kao njihova najvažnija sposobnost je zasebno obrađena pomoću ABC klasifikacije te uz prethodna saznanja omogućava odlično razumijevanje odrađenih računalnih simulacija. Svi proračuni su napravljeni koristeći programski alat DigSilent PowerFactory 2018 uz matematički model izrađen po uzoru na stvaran dio elektroenergetske mreže Republike Hrvatske. U modelu su upotrijebljene prijenosne i distribucijske naponske razine kako bi se mogao promatrati utjecaj jednopolnih, dvopolnih i tropolnih naponskih propada na krajnje potrošače u niskonaponskoj mreži ovisno o različitim mjestima kvarova.

Summary:

Voltage sags are temporary reductions in RMS voltage followed by its quick recovery within a short period of time. They are most often the result of short circuits in power systems and are an intrinsic part of it, where in most cases they are accidental and unforeseeable events. In the introductory part of this master thesis the fundamentals and voltage sags characteristics are dealt with. The definition, the causes and the existing classifications are explained in detail and the impact of voltage sags on electrical devices is briefly touched. Propagation of voltage sags to lower voltage levels as their most important ability is separately treated using the ABC classification and, with previous knowledge, provides an excellent understanding of the computer simulations performed. All calculations are made using the DigSilent PowerFactory 2018 software tool, along with a mathematical model inspired by an actual part of the Republic of Croatia's power grid. In the model, transmission and distribution voltage levels are used to monitor the impact of single-phase, two-phase and threephase voltage sags on end consumers in low voltage networks depending on the different fault locations.



Naponski propadi za slučaj dvofaznog kratkog spoja bez dodira sa zemljom
/ Voltage sags for the case of two-phase short circuit without earth contact

IME I PREZIME | NAME AND SURNAME:
Mateo Martinčić

Diplomski sveučilišni studij elektrotehnike
/ Graduate University Study Of Electrical Engineering

NAZIV RADA | TITLE:
Integracija distribuiranog izvora električne energije u elektroenergetski sustav
Integration Of A Distributed Generation Unit In The Electric Power System

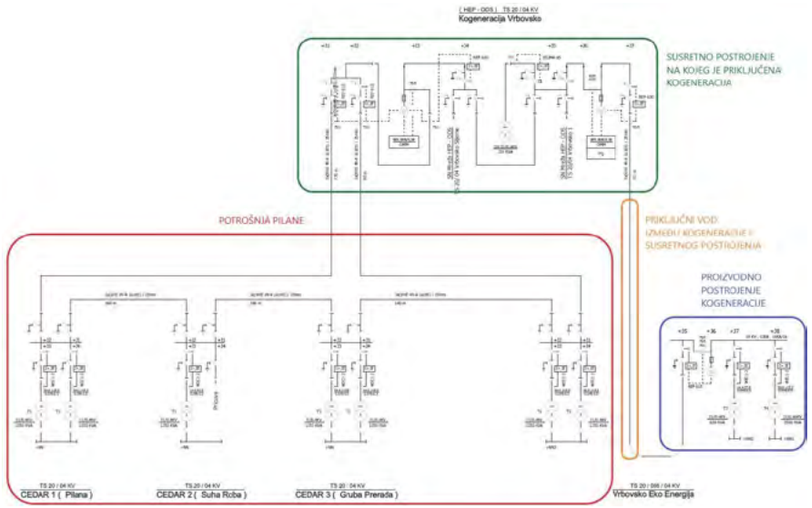
MENTOR | SUPERVISOR:
Doc. dr. sc. / Assist. Prof. D. Sc. Rene Prenc

Sažetak:

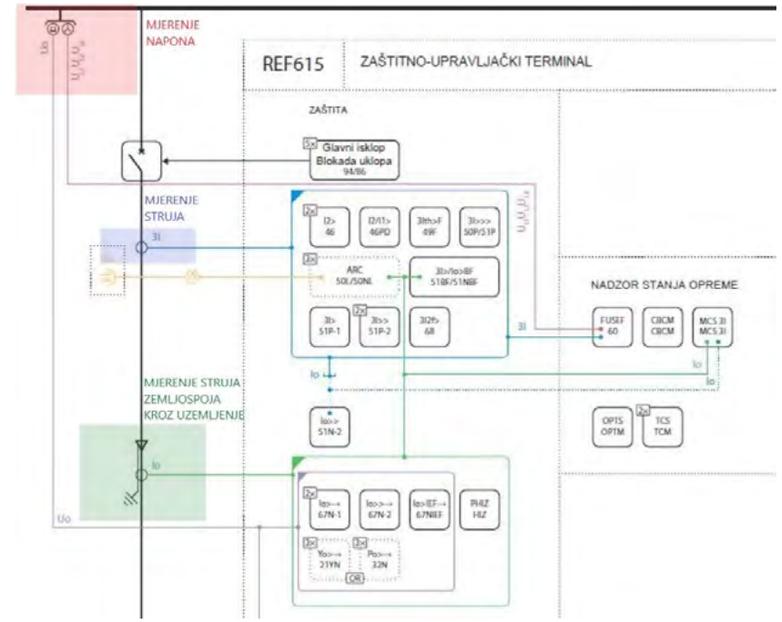
U ovom radu govori se o priključenju distribuirane proizvodnje na distribucijsku mrežu elektroenergetskog sustava. U prvom dijelu rada naznačeni su razlozi povećanja interesa za distribuiranom proizvodnjom i sam povijesni razvoj. Dalje su opisani tehnički uvjeti i zahtjevi priključenja distribuirane proizvodnje na elektroenergetsku mrežu. Opisana je zaštita distribucijskog sustava sa distribuiranom proizvodnjom, te je navedena njezina realizacija i postupci podešenja iste. U zadnjem dijelu rada opisani su načini kompenzacije jalove snage i sam utjecaj kompenzacije na prilike u elektroenergetskom sustavu, valni oblik napona i struje, te njen utjecaj na mrežno tonfrekventno upravljanje. Sve navedeno potkrijepljeno je primjerom priključenja kogeneracijskog postrojenja Vrbovsko Eko Energija d.o.o. na distribucijsku mrežu elektroenergetskog sustava.

Summary:

This paper discusses the connection of the distributed energy source to the distribution electrical system. The first part of the paper outlines the reasons for the increased interest in distributed energy sources and its historical development. The technical conditions and requirements for connection of distributed production to the electricity grid are described in the second chapter. The protection of the power system is described and its realization and adjustment procedures are given. The last part of the paper describes the methods of reactive power compensation and the impact of compensation on the conditions in the power system, the waveform of voltage and current, and impact on the network harmonic distortion. All of the above is exemplified by the connection of the cogeneration plant Vrbovsko Eko Energija d.o.o. to the Croatian distribution network.



Prikaz priključenja kogeneracije na susretno postrojenje i vlastita potrošnja
/ Single-line diagram of the cogeneration connection to the distribution network



Prikaz funkcija numeričkog releja REF 615
/ Function overview of numerical relay REF 615

IME I PREZIME | NAME AND SURNAME:
Gabrijela Szabo

Diplomski sveučilišni studij elektrotehnike
/ Graduate University Study Of Electrical Engineering

NAZIV RADA | TITLE:
Unaprijeđeni robotski sustav za slaganje rubikove kocke implementiran na Arduinu
Arduino-Based Advanced Robotic System For Solving Rubik's Cube

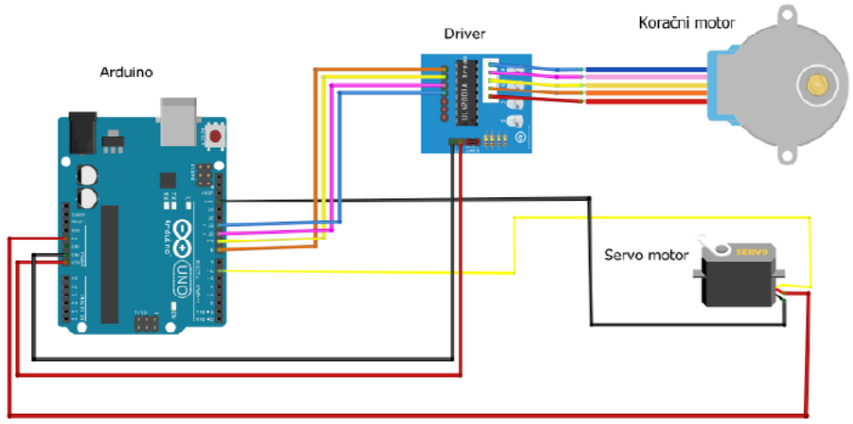
MENTOR | SUPERVISOR:
Doc. dr. sc. / Assis. Prof. D. Sc. Jonatan Lerga

Sažetak:

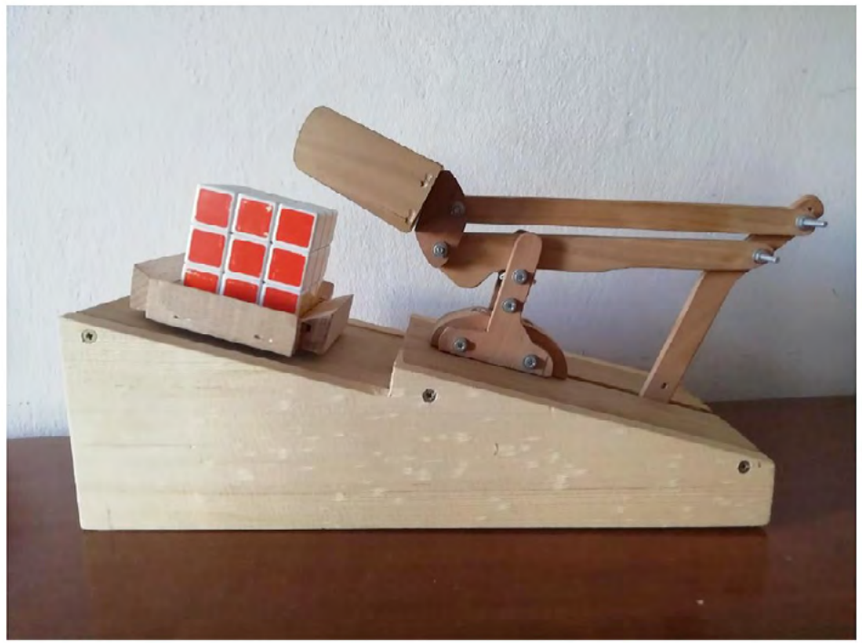
Tema ovoga diplomskoga rada je prototip robota koji slaže Rubikovu kocku. Robot se sastoji od robotske ruke i postolja za kocku. Upravljanje robotom ostvareno je uz pomoć Arduina koji pokreće jedan servo i jedan koračni motor. U internetsku aplikaciju Online Rubik's Cube Solver upisuje se stanje kocke, a aplikacija izračunava najkraći algoritam za slaganje kocke u ovisnosti o trenutnom stanju kocke. Dobiveni algoritam se prosljeđuje u Arduino te robot slaže kocku prema unesenim instrukcijama.

Summary:

The theme of this master's thesis is a prototype of a robot for solving the Rubik's Cube. The robot consists of a robotic arm and a pedestal for the cube. The robot is controlled by Arduino which runs one servo and one step motor. Once the current state of the Rubik's Cube is imported to the online application Rubik's Cube Solver, the application calculates the shortest algorithm for sorting the cube in dependence of the current state of the cube. The obtained algorithm is forwarded to Arduino and the robot solves the cube according to the obtained instructions.



Pojednostavljena električna shema upravljanja robotom
/ Simplified electric circuit for the robot control



Prototip robota za slaganje Rubikove kocke
/ A prototype of the robot for solving the Rubik's cube

IME I PREZIME | NAME AND SURNAME:
Danijela Jurac

Preddiplomski sveučilišni studij računarstva
/ Undergraduate University Study Of Computing

NAZIV RADA | TITLE:
Kodovi za strojno očitavanje
Machine-Readable Codes

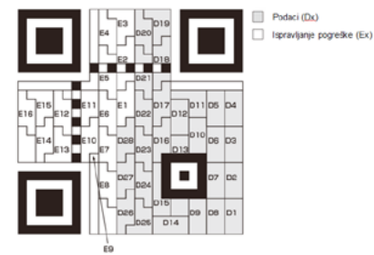
MENTOR | SUPERVISOR:
Doc. dr. sc. / Assis. Prof. D. Sc. Jonatan Lerga

Sažetak:

Barkod je osnovni kod za strojno očitavanje koji se koristi za označavanje proizvoda. Najpoznatija vrsta je UPC barkod. Sastoji se od linearnog uzorka i dvanaestoznamenkastog niza. Prvih pet znamenki predstavlja oznaku proizvođača, drugih pet predstavlja oznaku proizvoda, a jedna je oznaka sustava. Znamenka provjere koristi se za provjeru ispravnosti skeniranog barkoda. U radu je opisana njegova struktura, način kodiranja i očitavanje podataka. Od naprednijih kodova najvažniji je QR kod. Osnovna sastavna jedinica se naziva modul, a skupine modula zajedno čine uzorke koji su odgovorni za različite funkcije koda. Osim po svom prepoznatljivom izgledu, kod se ističe i velikim kapacitetom pohrane, sposobnosti ispravljanja pogrešaka te lakoćom očitavanja. U radu su ukratko objašnjeni način rada i nekoliko pristupa za povećanje njegovog kapaciteta koji se odnose na uporabu boja i kompresiju podataka. Postoji nekoliko vrsta QR koda od kojih svaka posjeduje specifične značajke koje su im omogućile različite primjene. Od ostalih kodova, u ovom radu su navedeni mCode, Trillcode, HCCB, Ultracode i BeeTagg kao jedni od naprednijih kodova za strojno očitavanje.

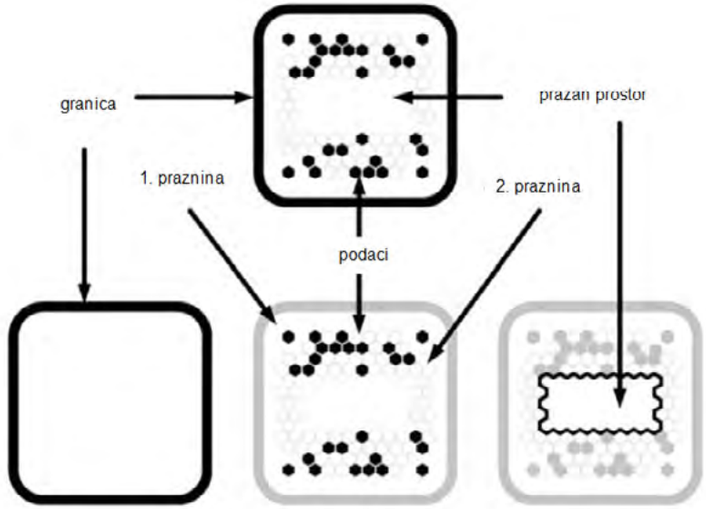
Summary:

Barcode is a basic machine-readable code used for marking products. The best known type of barcode is UPC. It consists of linear patterns and a 12-digit string. The first five digits represent the manufacturer's code, the next five represent the product code, one is used as a number system character while the check digit is used for error detection. This thesis describes its structure and the method of coding and reading data. Of the more advanced codes, the QR code is the most important. Its basic structural component is called module. Groups of modules together create patterns that are responsible for various code functions. In addition to its distinctive appearance, the code also stands out for its large storage capacity, error correcting capabilities and easy reading. This thesis briefly explains how the QR code works, as well as some methods for increasing its capacity related to the use of color and data compression. There are several types of QR codes with specific features enabling them to be applied differently. Among the other codes, in this thesis mCode, Trillcode, HCCB, Ultracode and BeeTagg are listed as some of the more advanced machine-readable codes.



Struktura QR koda
/ Structure of the QR code

Višeslojni QR kod u boji
/ Multi-layer colored QR code



Struktura BeeTagg koda
/ Structure of the BeeTagg code

IME I PREZIME | NAME AND SURNAME:
Toni Negulić

Diplomski sveučilišni studij računarstva
/ Graduate University Study Of Computing

NAZIV RADA | TITLE:
Implementacija blockchain čvora na Raspberry PI računalu
Implementation Of Blockchain Node On Raspberry Pi

MENTOR | SUPERVISOR:
Izv. prof. dr. sc. / Assoc. Prof. D. Sc. Kristijan Lenac

Sažetak:

U ovom radu opisani su procesi i tehnologije korištene u razvoju sustava za naplatu baziranog na Dash kriptovaluti. Sustav je namijenjen za ugradnju u prodajne aparate koji koriste MDB protokol. Središnji dio sustava je Raspberry Pi ugradbeno računalo čija je svrha upravljanje procesom kupovine. Raspberry Pi je propisno osiguran i pripremljen za rad u produkciji. Sustav za naplatu implementiran je u četiri koraka: grafičko korisničko sučelje, logika prodaje i kupovine, komunikacija s aparatom i proces plaćanja. Svi hardverski i softverski zahtjevi te koraci za ponovnu izvedbu projekta navedeni su i opisani u radu. U sklopu rada izrađena je web aplikacija za praćenje statistika vezanih uz transakcije i stanje aparata. U budućnosti, ovakav sustav može se koristiti u raznim izvedbama naplate od aparata za prodaju do naplate parkinga i cestarina.

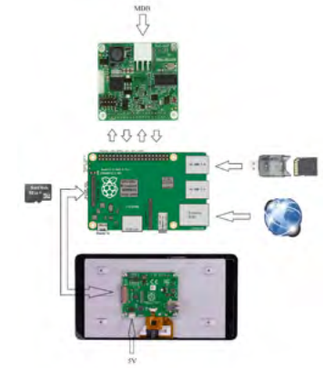
Summary:

In this paper, we described the process and technologies used in the development of the payment system based on Dash cryptocurrency. The system is developed for embedding vending machines that use MDB protocol. The central part of the system is a Raspberry Pi embedded computer with the main purpose of controlling a vending process. Raspberry Pi is properly secured and prepared for working in production. The system is implemented in four main steps: graphical user interface, vending logic, machine communication, and payment process. All hardware and software requirements and steps for recreation of this project are described in this paper. Additionally, a web application was developed for purposes of tracking statistical data. In the future, this system can be used in different payment applications from vending machines to parking and toll payment.

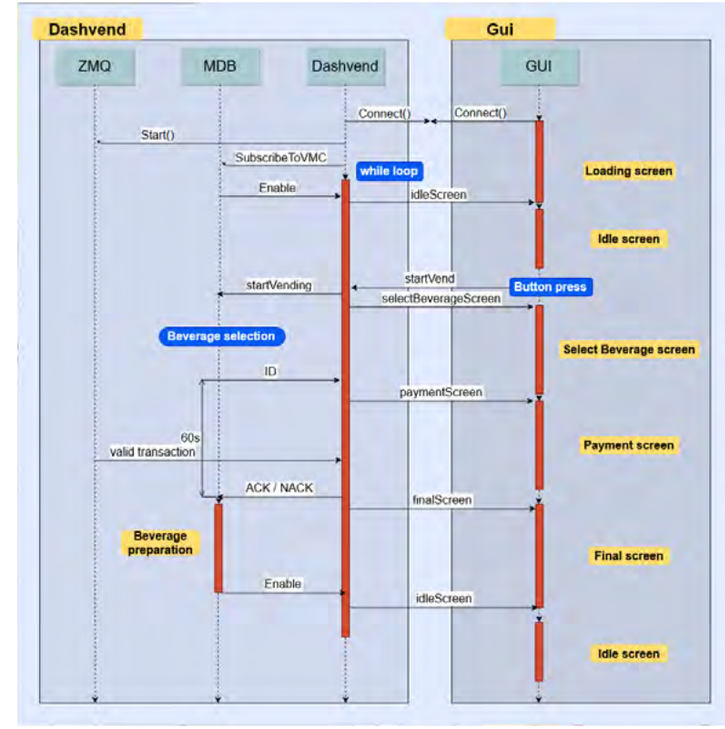
Ključne riječi: Dash, Raspberry Pi, kriptovalute, blockchain, ugradbeni sustavi, web aplikacija, aparat za prodaju

Keywords: Dash, Raspberry Pi, cryptocurrency, blockchain, embedded systems, web app, vending machine

DashVend – aparat za tople napitke na kojem je omogućeno plaćanje Dash kriptovalutom
/ DashVend – vending machine for hot drinks that supports payments using Dash cryptocurrency



Shema spajanja sklopovlja
/ Hardware components and connections



Slijedni dijagram interakcije s korisnikom u procesu kupovine
/ Sequence diagram for user interaction during a purchase

IME I PREZIME | NAME AND SURNAME:
Luka Štimac

Diplomski sveučilišni studij računarstva
/ Graduate University Study Of Computing

NAZIV RADA | TITLE:
Unos teksta na mobilnim uređajima korištenjem kontinuiranih i diskretnih dodirnih gesti zasnovanih na grafemima
Text Entry on Mobile Devices using Continuous and Discrete Grapheme-Based Touch Gestures

MENTOR | SUPERVISOR:
doc. dr. sc. / Assist. Prof. D. Sc. Sandi Ljubić

Sažetak:

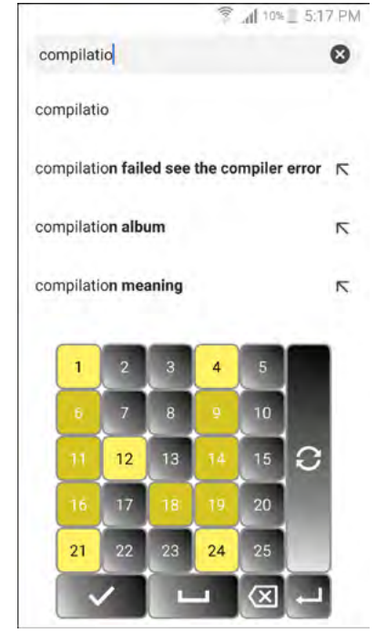
U ovome radu modelirane su i implementirane dvije eksperimentalne metode unosa teksta za mobilne uređaje sa zaslonima osjetljivima na dodir. Obje metode unosa teksta zasnivaju se na oblikovanju grafema, a razlikuju se primarno po tipu dodirnih gesti u izvršavanju interakcije. Metoda KDI podrazumijeva diskretne dodirne geste, pri čemu korisnik za unos pojedinog slova mora slijedno aktivirati više različitih točaka koje u interaktivnoj mreži tvore odgovarajući grafem. KDI obuhvaća dva modaliteta rada: u jednome se za unos slova zahtijeva isključivo točna kombinacija aktiviranih točaka (*Standard*), dok se u drugome dodatno očekuje i njihov ispravan redoslijed prema pravilima pisanja grafema (*Forced*). Druga razvijena metoda unosa teksta zasniva se na kontinuiranim dodirnim gestama (KCI), kod koje korisnik na dijelu zaslona izravno oblikuje grafem koji se zatim klasificira pomoću modela neuronske mreže. Korišteni klasifikator u tipkovnici KCI izveden je iz *MobileNet* konvolucijske neuronske mreži trenirane na skupu podataka EMNIST, koristeći programski okvir *TensorFlow*.

Svi modaliteti tipkovnica KDI i KCI komparativno su vrednovani u kontroliranom eksperimentu s dvadeset ispitnih korisnika. Rezultati testiranja pokazali su da je unos teksta značajno učinkovitiji uz korištenje metode KCI, nasuprot obje verzije metode KDI (*Standard* i *Forced*). Oblikovanje grafema kontinuiranim dodirom pokazalo se očekivano intuitivnijim pristupom, dok je koncept diskretnih dodira, primarno zbog potrebe za učenjem odgovarajućih sekvenci, izazvao veći mentalni napor i višu razinu frustracije.

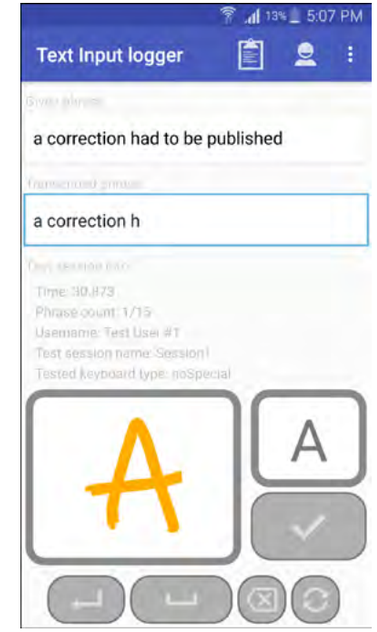
Summary:

In this thesis, two experimental text entry methods for mobile touchscreen devices are modeled and implemented. Both text entry methods are based on the grapheme shaping, and differ primarily by the type of used touch gestures. The KDI method involves discrete touch gestures for entering a particular letter, wherein the user must activate a certain touch-point sequence that represents an appropriate grapheme in the touch-interactive network. KDI encompasses two operation modalities: *Standard* – which requires only the exact combination of touchpoints in a given sequence and *Forced* – which additionally assumes correct order in activating such a sequence, according to the standard writing rules. The second text entry method – KCI – is based on continuous touch gestures, allowing the user to directly draw the grapheme, which is then classified using a neural network model. The classifier used in KCI virtual keyboard is derived from the *MobileNet* convolution neural network trained on the EMNIST data set, using the *TensorFlow* programming framework.

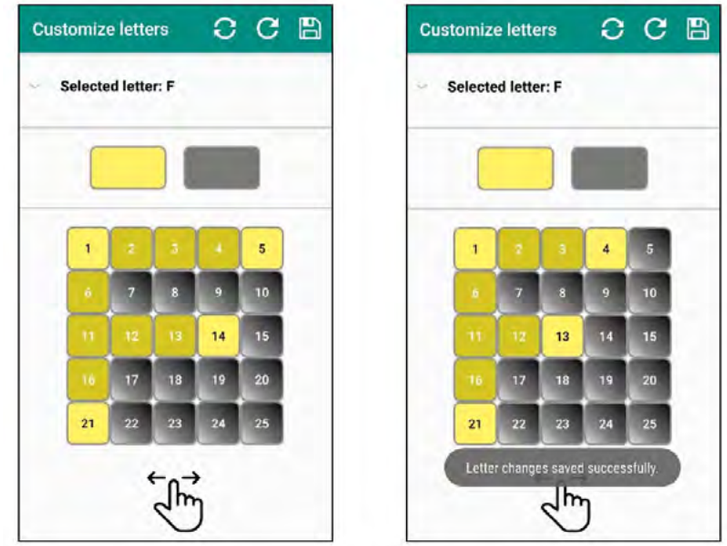
All mentioned text entry methods were comparatively evaluated in a controlled experiment with twenty users. The obtained results have shown that the text entry is significantly more efficient with the KCI method than both versions of the KDI (*Standard and Forced*). Shaping graphemes using continuous touch gestures was expectedly shown to be a more intuitive approach. On the other hand, the concept utilizing discrete touch gestures caused greater mental effort and higher levels of frustration, primarily due to the need for learning the appropriate grapheme sequences.



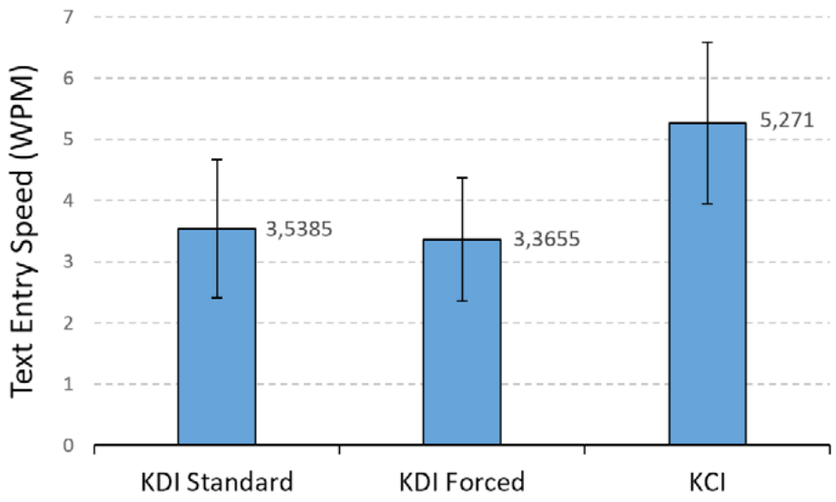
Unos ključne riječi u Google Search widgetu pomoću metode KDI
/ Keyword entry in Google Search widget using KDI method



Unos teksta korištenjem metode KCI – zadatak transkripcije u aplikaciji Text Input Logger
/ Text entry using KCI method – transcription task in Text Input Logger application



Primjer prilagodbe metode KDI: izmjena slijeda aktivacijskih točaka za slovo F
/ KDI method adaptation example: changing the sequence of activation points for letter F



Rezultati testiranja metoda unosa teksta: metrika WPM
/ Text entry methods testing results: WPM metric

IME I PREZIME | NAME AND SURNAME:
Patricija Zubalić

Diplomski sveučilišni studij računarstva
/ Graduate University Study Of Computing

NAZIV RADA | TITLE:
Algoritmi za prepoznavanja lica
Face Recogntion Algorithms

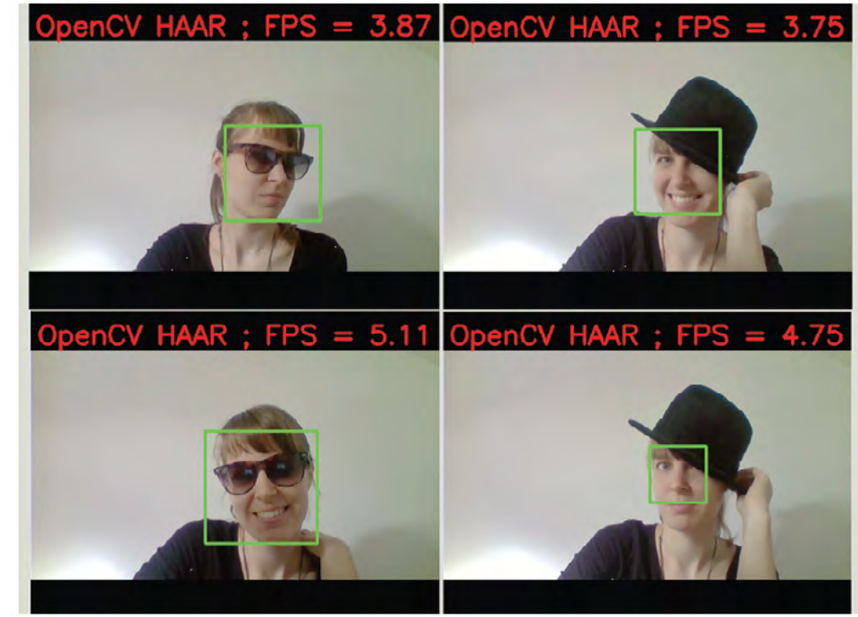
MENTOR | SUPERVISOR:
Doc. dr. sc. / Assis. Prof. D. Sc. Jonatan Lerga

Sažetak:

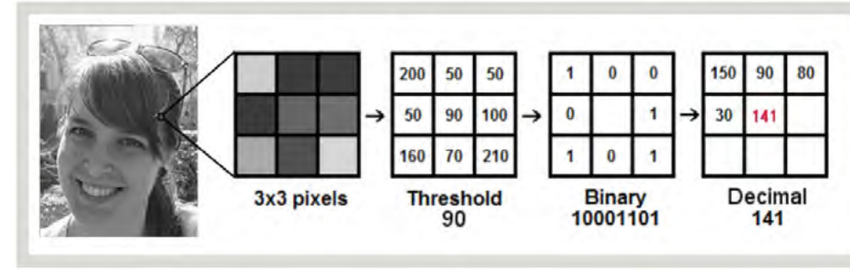
U ovome diplomskome radu detaljno su opisane faze treniranja i testiranja Viola-Jones algoritma za detekciju lica. Detekcija lica prvi je korak neophodan za daljnje prepoznavanje lica. Nakon detekcije lica slijedi izračun karakterističnih značajki lica potrebnih za identifikaciju. Algoritam histograma lokalnih binarnih značajki (engl. local binary patterns histograms) jedan je od algoritama za prepoznavanje lica opisanih u ovome radu. Algoritam je dostupan unutar knjižnice OpenCV koja se također koristi za računalni vid i strojno učenje. Prednost ovog algoritma, u odnosu na ostale slične postupke, efikasno je prepoznavanje lica, čak i u uvjetima lošeg ili promjenjivog osvjetljenja, kako je pokazano u ovome radu.

Summary:

This master's thesis thoroughly explains the training and testing procedures of the Viola-Jones algorithm for face detection. Face detection is the first step necessary for the face recognition. Namely, face detection is followed by the calculation of personal face features required for the identification. Local binary patterns histograms is one of the algorithms for face recognition described in this thesis. The algorithm is provided by the OpenCV library which is also used in computer vision and machine learning. An advantage of this method, when compared to other similar approaches, is its efficient face detection in poor or varying illumination conditions as it is shown in the thesis.



Testiranje učinkovitosti algoritma za detekciju lica
/ Testing the efficiency of the face detection algorithm



Računanje vrijednosti centralnog piksela za histograme lokalnih binarnih značajki
/ Calculating the value of central pixel for local binary patterns histograms


Smart
Creativity
Study
INTERNET 10.0
10. godina CARNetove korisničke konferencije
Budi uvijek @home koristi
1-41
SAMSUNG
SAMSUNG

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 Engineer of Mechanical Engineering
Brodogradnja	Sveučilišni prvostupnik inženjer brodogradnje	Naval Architecture	University Bachelor Engineer of Naval Architecture
Elektrotehnika	Sveučilišni prvostupnik inženjer elektrotehnike	Electrical Engineering	University Bachelor Engineer of Electrical Engineering
Računarstvo	Sveučilišni prvostupnik inženjer računarstva	Computing	University Bachelor Engineer of Computing

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	Computing	Master of Computing

POSLIJEDIPLOMSKI SVEUČILIŠNI (DOKTORSKI) STUDIJ 3-godišnji (180 ECTS)		POSTGRADUATE DOCTORAL STUDY 3 years (180 ECTS)	
Studij	Naziv	Study	Title
Strojarstvo	Doktor znanosti, područje Tehničkih znanosti	Mechanical Engineering	Doctor of Science in the field of Engineering Sciences
Temeljne tehničke znanosti		Basic Engineering Sciences	
Brodogradnja		Naval Architecture	
Interdisciplinarne tehničke znanosti		Interdisciplinary Engineering Sciences	
Elektrotehnika		Electrical Engineering	
Računarstvo		Computer Science	

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 Engineer of Mechanical Engineering
Brodogradnja	Stručni prvostupnik inženjer brodogradnje	Naval Architecture	Bachelor Engineer of Naval Architecture
Elektrotehnika	Stručni prvostupnik inženjer elektrotehnike	Electrical Engineering	Bachelor Engineer 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		Programska podrška u inženjerstvu	4	6		Programiranje I	4	6	
	Primjena računalau inženjerstvu	3	4		Primjena računalau 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	
	Termodinamika 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 elektronika	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	Computing			
	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		Computer Software in 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	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 Electronics	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 Subject	4	4		Elective Subject 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 Subject 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 Elective Subject I	3	4		Elective group course	5	7		Intoduction to Artificial Intelligence	4	5	
	Organization and Economics of Business Syste	3	4		Free Elective Subject II	3	4		Free Elective Subject	3	4		Free Elective Subject	3	4	
	Free Elective Subject	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 subjects of 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 COMPUTING

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 ships, developing and supervising technological processes, especially concerning construction and maintenance of ships 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 Ships
- Technology and Organization of Shipbuilding

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 and competencies needed for designing new

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

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	Computing		
	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 subject	4	6		Elective subject W	8	12
	Elective group subject	4	5		Methodology of Ship Production	4	5		Elective group subject	4	6		Elective group subject	4	6
	Elective group subject	4	4		Computational Methods in Naval Architecture	4	4		Elective group subject	4	6				
					Elective group subject	5	6								
II	Project I	2	5	II	Ship Systems	4	5	II	Project I	2	5	II	Complex Software Systems Engineering	6	7
	Free Elective Subject I	4	5		Project I	2	5		Free Elective Subject I	4	5		Project I		5
	Professional Practice II		5		Free Elective Subject I	4	5		Professional practice II		5		Professional practice II		5
	Elective Subject I	4	5		Professional practice II		5		Elective group subject	4	5		Elective subject S	4	6
	Elective group subject	4	5		Elective subject I	4	5		Elective group subject	4	5		Elective group subject	4	7
	Elective group subject	4	5		Elective group subject	4	5		Elective group subject	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 Subject II	4	5		Project II	2	5		Free Elective Subject II	4	5		Project II		5
	Elective group subject	4	5		Free Elective Subject II	4	5		Elective subject I	4	4		Free Elective Subject I	3	5
	Elective group subject	4	5		Elective subject II	4	5		Elective group subject	4	5		Elective subject W	8	12
	Elective group subject	4	5		Elective group subject	4	5		Elective group subject	4	6				
	Elective group subject	4	5		Elective group subject	4	5		Elective group subject	5	5				
IV	Free Elective Subject III	4	5	IV	Free Elective Subject III	4	5	IV	Free Elective Subject III	4	5	IV	Project Management	2	3
	Elective group subject	4	5		Elective subject III	4	5		Elective group subject	4	5		Free Elective Subject II	3	5
	Elective group subject	4	5		Elective group subject	4	5		Elective group subject	4	5		Elective subject S	8	12
	Elective group subject	3	5		Elective group subject	3	5		Elective group subject	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, INTERDISCIPLINARNIH TEHNIČKIH ZNANOSTI, ELEKTROTEHNIKE I RAČUNARSTVA

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

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 DOCTORAL STUDIES IN THE FIELD OF ENGINEERING SCIENCES, IN THE SUBJECTS OF MECHANICAL ENGINEERING, NAVAL ARCHITECTURE, FUNDAMENTAL ENGINEERING SCIENCES, INTERDISCIPLINARY ENGINEERING SCIENCES, ELECTRICAL ENGINEERING AND COMPUTER SCIENCE

At the Faculty of Engineering there are three postgraduate doctoral studies in the field of Engineering Sciences, first one in the subjects of Mechanical Engineering, Naval Architecture, Basic Engineering Sciences and Interdisciplinary Engineering Sciences; second one in the subject of Electrical Engineering, and the third one in the subject of Computer Science.

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

Nastava doktorskog programa iz područja tehničkih znanosti, polja računarstva organizirana je unutar modula Računarstvo.

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

The curriculum of the doctoral study in the area of Engineering Sciences, in the field of Computer Science comprises the module Computer Science.

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	Mikorekonomija 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 materijala	Trajnost i pouzdanost termoenergetskih sustava					
	Procesi oštećivanja materijala	IP iz toplinskih turbostrojeva					
		IP iz brodskih energetskih postrojenja					

Postgraduate Doctoral Study							
Field of Engineering Sciences, subjects of Mechanical Engineering, Naval Architecture, Fundamental Engineering Sciences and Interdisciplinary Sciences							
Common courses	Methodology of Scientific Work and Research						
	Mathematical Modelling and Numerical Methods						
	Optimization Methods						
	Statistical Methods and Stochastic Processes						
Modules	Production Technologies in Mechanical 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	Planning and Processing of Manufacture	Selected Topics on Thermal Sciences	Elastomechanics and Plastomechanics	Methodology of Ship Design	Selected Chapters on Hydrostatic and Pneumatic Transmissions	Quality Management	Selected Topics on Environment Protection
	Selected Chapters on Conventional Machining Processes	Numerical Modeling of Heat Transfer	FEM and Optimization of Structures	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 Topics in Ship Design	Design Science	Statistical Process Control	Protection of Sea and Coastal Zone
	Selected Chapters on Nonconventional Machining Processes	Selected Topics of Marine Machinery Systems	Structural Stability	Integrated ship Production Technology	Selected Chapters on Machine Elements	Design of Data Base	Environmental Chemistry
	Development and Operational Management	Thermodynamic Analysis of Processes	Nonlinear Structural Analysis	Selected Topics on Floating Objects Production Methodology	Special Mechanical Transmissions	Business Decision-making	Management of Sustainable Development and Environmental Protection
	CAM, CAP, CAD/NC-CIM	Experimental Methods in Thermal and Power Engineering	Contact Mechanics	Selected Topics in Ship Resistance	Design and Optimization of Gear Transmissions	Models of Stochastic Information Processes	Environment Protection in Energetics and Process Industry
	Robots and Manipulators	Thermodynamics of Mixtures and Thermal Devices	Advanced Thermomechanics	Selected Topics in Ship Propulsion	Selected Chapters on Power Transmission	Reliability of Technical Systems	Instrumentation and Analytical Techniques in Environment Protection
	Selected Chapters on Flexible Production Systems	Selected Chapters on Refrigeration and Low-Temperature Refrigeration	Vibrations and Durability of Machines and Structures	Selected Topics in 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 Against Noise and Vibrations of Machines and Structures		Contact Problems in Machine Elements Analyses	Quality Engineering	Physics of the atmosphere
	Processes Plans Optimization	Renewable Energy Sources	Fluid Dynamics		Principles of High and Ultra-high Precision Devices	Safety of Technical Systems	
	Selected Chapters on Material testing	Rational Energy Consumption	Computational Fluid Mechanics		Compliant Elements and Mechanisms		
	Heat Treatment and Surface Engineering	Numerical Modeling of Combustion Process	Hydrodynamics of Turbomachines				
	Material 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 Doctoral Study		
Field of Engineering Sciences, subject 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	

Poslijediplomski sveučilišni (doktorski) studij	
Područje tehničke znanosti, polje računarstvo	
Zajednički predmeti	Metodologija znanstvenoistraživačkog rada
	Matematičko modeliranje i numeričke metode
	Metode optimizacije
	Statističke metode i stohastički procesi
Moduli	Računarstvo
Predmeti po modulima	Teorija informacija s primjenama
	Primijenjeno strojno učenje
	Oblikovanje i vrednovanje naprednih interaktivnih sustava
	Odabrana poglavlja iz komunikacijskih mreža
	Računalna percepcija
	Nosivo računarstvo
	Inteligentni sustavi
	Uslužna robotika
	Uvod u meko računarstvo i primjene

Postgraduate Doctoral Study	
Field of Engineering Sciences, subject of Computer Science	
Common courses	Methodology of Scientific Work and Research
	Mathematical Modelling and Numerical Methods
	Optimization Methods
	Statistical Methods and Stochastic Processes
Modules	Computer Science
Module courses	Information Theory with Applications
	Applied Machine Learning
	Advanced Interactive Systems Design and Evaluation
	Selected Chapters from Communication Networks
	Computer Perception
	Wearable Computing
	Intelligent Systems
	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 ships and marine technology objects and their elements, that is, complex operational tasks of planning, preparing, improving, and controlling the process of building ships. 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 Engineering 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 Engineering 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 Engineering 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		Technological Processes of Ship Production and Re	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:

prof. dr. sc. / 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

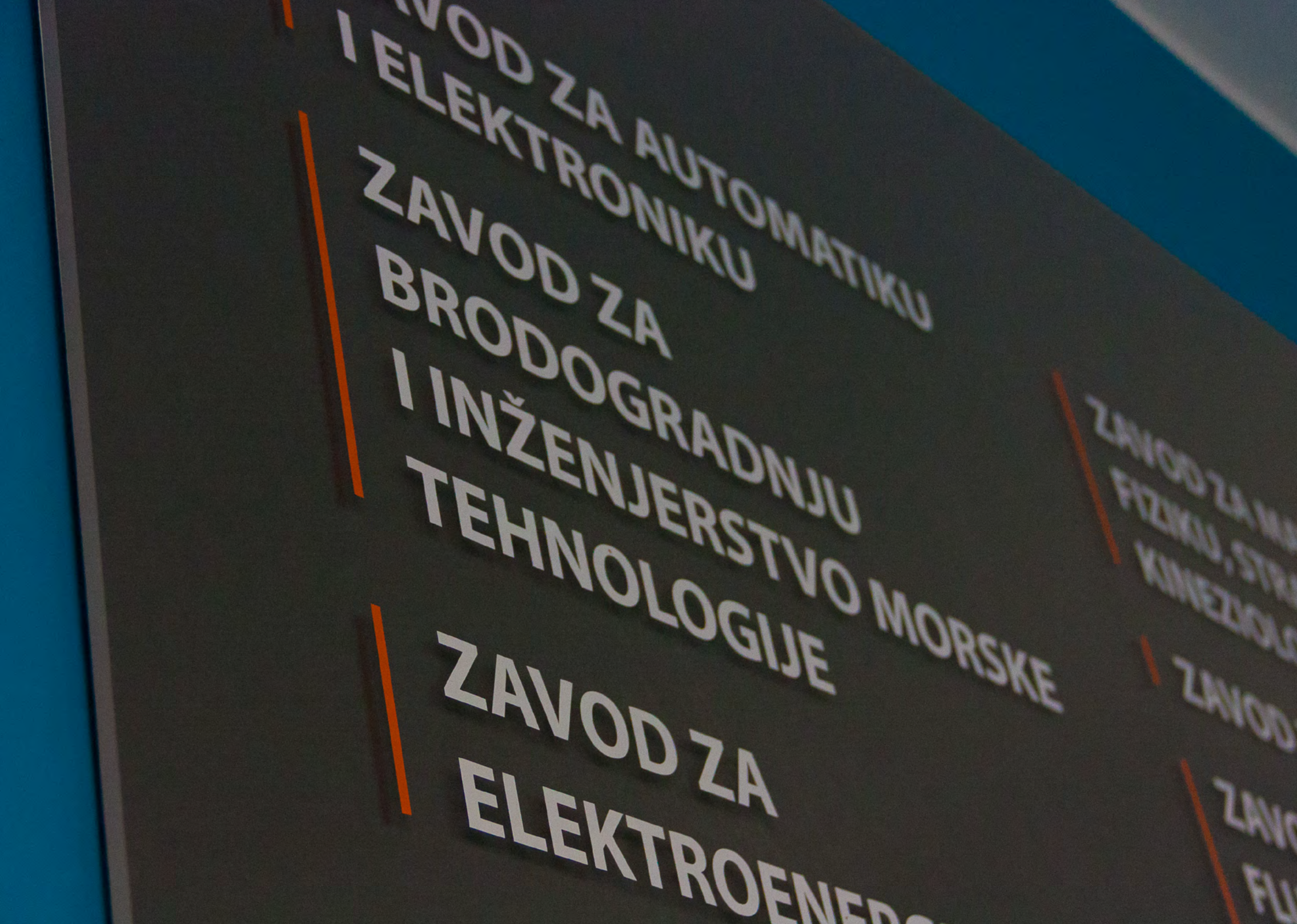
URED DEKANICE | DEAN'S OFFICE:

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

Tomo Vergić, dipl. iur. / Grad.Law.
glavni tajnik | secretary general

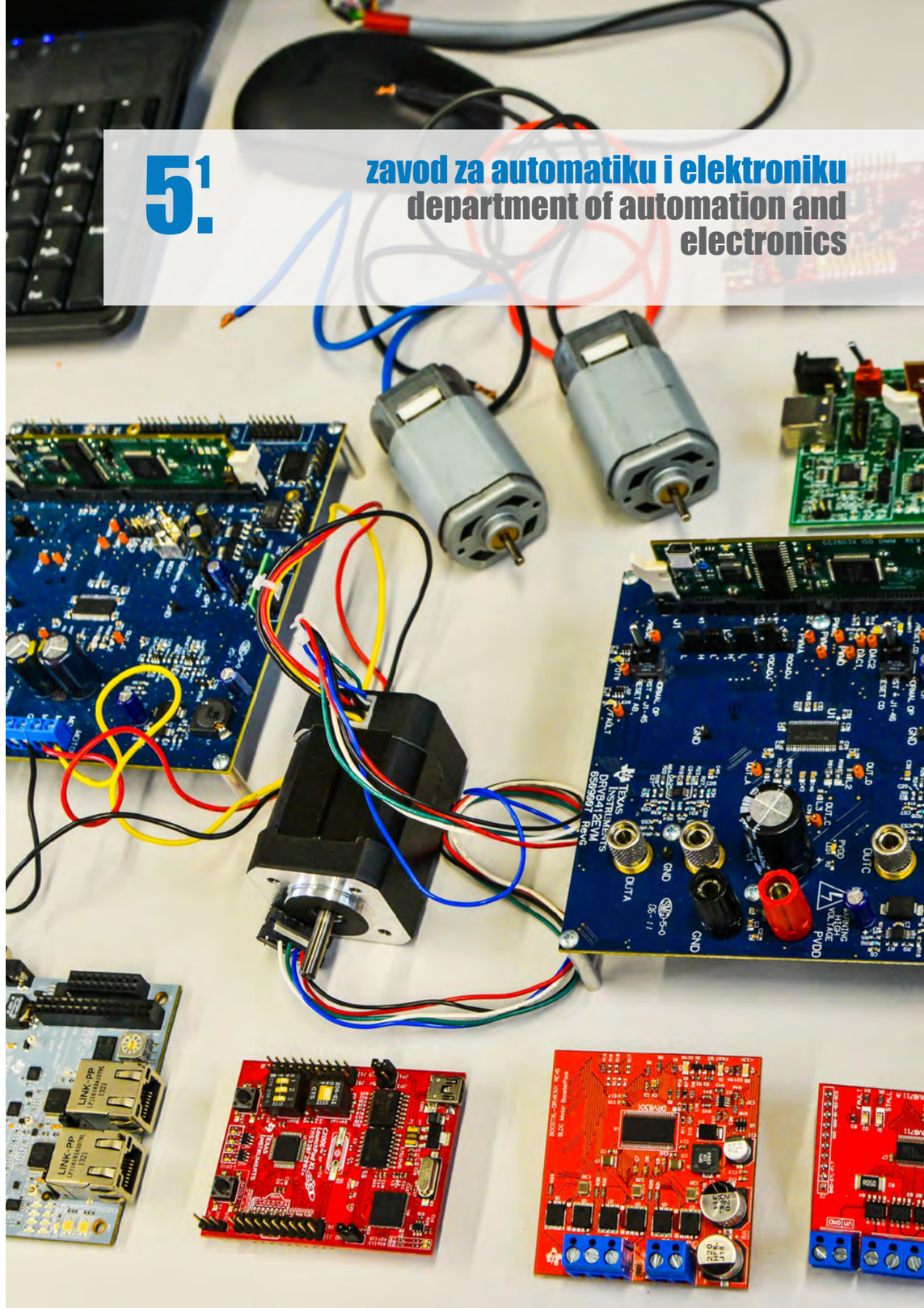
Željka Gulić, mag. oec
tajnica prodekana | vice dean secretary

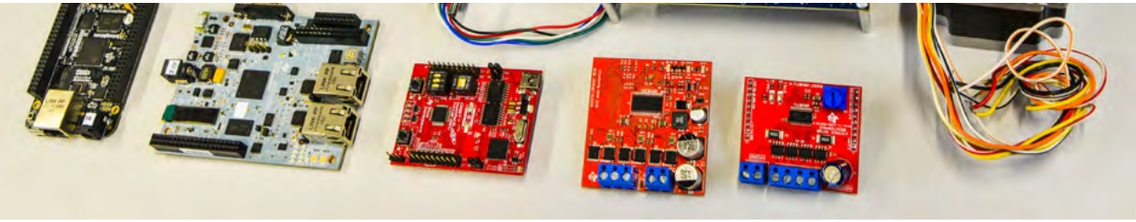
4 dekanat dean's office


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





djelatnici
faculty and staff

PREDSTOJNIK ZAVODA | DEPARTMENT HEAD:

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

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

electrical measurements; power quality measurements; electronic and virtual instrumentation

REDOVITI PROFESORI U TRAJNOM ZVANJU | TENURED 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

REDOVITI PROFESORI | PROFESSORS

Viktor Sučić

analiza i obrada signala

signal analysis and processing

Miroslav Vrankić

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

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

IZVANREDNI PROFESORI | ASSOCIATE PROFESSORS

Neven Bulić

automatizacija

automation

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

DOCENT | ASSISTANT PROFESSOR

Ivan Volarić

vremensko-frekvencijska obrada signala; obrada prorijeđenih signala

time-frequency signal processing; sparse signal processing

ASISTENTI | ASSISTANTS

Nikola Anđelić

automatika, umjetna inteligencija, molekularna dinamika, nanomehanika

automation; artificial intelligence; molecular dynamics; nanomechanics

Sebastijan Blažević

automatika

automation

Dominik Cikač

automatizacija

automation

Vedran Jurdana

vremensko-frekvencijska obrada signala, statistička analiza signala

time-frequency signal processing, statistical signal analysis

Nikola Lopac

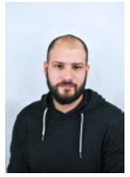
elektromotorni pogoni, teorija upravljanja, automatizacija

electric drives; control theory; automation

Ivan Lorencin

umjetna inteligencija; automatika

artificial intelligence; automation



Ivan Markovinović

obrada EEG signala, sučelje mozak-računalo, ICA

EEG signal processing, brain-computer interface, ICA

Zoran Šverko

obrada EEG signala, neurofeedback

EEG signal processing, neurofeedback

Nikola Turk

automatika

automation

VANJSKI SURADNICI | ASSOCIATES

Dario Matika

Ministarstvo obrane

automatika

automation

nastava i znanost
education and science

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

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*

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, Dominik Cikać, Nikola Turk, Nikola Lopac, 2014- (projekt Linz Center of Mechatronics, LCM GmbH), znanstvenoistraživački.*
  C140.106, Bearingless Reluctance Slice Motors, Area4 - Drives and Actuators, Neven Bulić, Dominik Cikać, Nikola Turk, Nikola Lopac, 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, Dominik Cikać, Nikola Turk, 2014-.*
  Q-grid, R&D project financed by industry Danieli-Systec, Neven Bulić, Dominik Cikać, Nikola Turk, 2014-.
- *Napredne metode i tehnologije u znanosti o podatcima i kooperativnim sustavima (DATACROSS), Znanstveni centar izvrsnosti za znanost o podatcima i kooperativne sustave, Sveučilište u Zagrebu, Zagreb, Hrvatska*
  Advanced Methods and Technologies in Data Science and Cooperative Systems (DATACROSS), Centre of Research Excellence for Data Science and Advanced Cooperative Systems, University of Zagreb, Zagreb, Croatia
- *Rekonstrukcija vremensko-frekvencijske distribucije iz komprimirano uzorkovane domene neodređenosti analiziranog signala, Sveučilište u Rijeci, Rijeka, Hrvatska*
  Time-Frequency Distribution Reconstruction from the Signal Compressively Sensed Ambiguity Function, University of Rijeka, Rijeka, Croatia
- *HAMAG-BICRO, Program provjere inovativnog koncepta, Multisenzorni neurofeedback sustav za osobe s poremećajem iz spektra autizma, Vlahinić Saša, 2019.*
  HAMAG-BICRO, Proof of Concept Programme, Multisensory neurofeedback system for persons with autism spectrum disorder, Vlahinić Saša, 2019.
- *Znanstvena potpora Sveučilišta u Rijeci, „Razvoj inteligentnog ekspertnog sustava za online dijagnostiku raka mokraćnog mjehura“, potpore 2018., Zlatan Car, Ivan Lorencin*
  University of Rijeka Scientific Support, "Development of an intelligent expert system for online diagnosis of bladder cancer", grants 2018., Zlatan Car, Ivan Lorencin
- *Erasmus + KA2 Call, Development and Implementation of System for Performance Evaluation for Serbian HEIS and Systems - PESHES, Multilateral International Project, Zlatan Car, Ivan Lorencin*
  Erasmus + KA2 Call, Development and Implementation of System for Performance Evaluation for Serbian HEIS and Systems - PESHES, Multilateral International Project, Zlatan Car, Ivan Lorencin
- *Danube Transnational Program, "High-Performance Computing for Effective Innovation in the Danube Region", Multilateral International Project, Zlatan Car, Ivan Lorencin*
  Danube Transnational Program, "High-Performance Computing for Effective Innovation in the Danube Region", Multilateral International Project, Zlatan Car, Ivan Lorencin

PUBLIKACIJE | PUBLICATIONS

RADOVI U ČASOPISIMA | JOURNAL PAPERS

- *Lopac, N.; Bulić, N.; Vrkić, N.; Sliding Mode Observer-Based Load Angle Estimation for Salient-Pole Wound Rotor Synchronous Generators, Energies, ISSN: 1996-1073, 12 (9), 1-22, 2019*
- *Lopac, N.; Šegon, G.; Bulić, N.; Application of a model-based design tool X2C in induction machine vector control, Engineering review, ISSN: 1849-0433, 39 (1), 90-104, 2019*
- *Jurdana, V.; Bulić, N.; Gruber, W.; Topology Choice and Optimization of a Bearingless Flux-Switching Motor with a Combined Winding Set Machines, ISSN: 2075-1702, 6 (4), 2018*
- *Volarić, I.; Sučić, V.; Sparse time–frequency distributions based on the ℓ1 -norm minimization with the fast intersection of confidence intervals rule, Signal Image and Video Processing, ISSN: 1863-1703, 13 (3), 499-506, 2019*
- *Kirinčić, V.; Čeperić, E.; Vlahinić S.; Lerga, J.; Support Vector Machine State Estimation, Applied artificial intelligence, ISSN: 0883-9514, 33 (6), 517-530, 2019*
- *Lorencin, I.; Anđelić, N.; Mrzljak, V.; Car, Z.; Exergy analysis of marine steam turbine labyrinth (gland) seals, Pomorstvo, ISSN: 1846-8438, 33 (1), 76 - 83, 2019, Rijeka*
- *Blažević, S.; Mrzljak, V.; Anđelić, N.; Car, Z.; Comparison of Energy Flow Stream and Isentropic Method for Steam Turbine Energy Analysis, Acta Polytechnica, ISSN: 1805-2363, 59 (2), 109 - 125, 2019, Prague, Czech Republic*
- *Mrzljak, V.; Anđelić, N.; Poljak, I.; Orović J.; Thermodynamic analysis of marine steam power plant pressure reduction valves, Pomorski zbornik, ISSN: 1848 - 9052, 56 (1), ruj.30, 2019,Rijeka*
- *Anđelić, N.; Car, Z.; Čanađija, M.; NEMS Resonators for Detection of Chemical Warfare Agents Based on Graphene Sheet, Mathematical Problems in Engineering, ISSN: 1563-5147, 1 sij.23 2019*
- *Wei, Y.; Hiraga, M.; Ohkura, K.; Car, Z.; Autonomous task allocation by artificial evolution for robotic swarms in complex tasks, Artificial Life and Robotics, ISSN: 1614-7456, 24 (1), 127-134 2019, Japan*
- *Lorencin, I.; Anđelić, N.; Mrzljak, V.; Car, Z.; Marine Objects Recognition Using Convolutional Neural Networks, Naše More, ISSN: 1848-6320, 66 (3), 2019, Dubrovnik*
- *Wei, Y.; Xiaotong, N.; Hiraga, M.; Ohkura, K.; Car, Z.; Developing End-to-end Control Policies for Robotic Swarms using Deep Q-Learning, Journal of Advanced Computational Intelligence and Intelligent Informatics, ISSN: 1343-0130, 23 (5), 2019, Japan*

MEĐUNARODNI KONGRESI | INTERNATIONAL CONGRESSES

- *Lopac, N.; Bulić, N.; Estimation of the induction motor stator current frequency, Proceedings of International Conference on Innovative Technologies, IN-TECH 2018, ISSN: 0184-9069, 1,183-186, 2018, Zagreb, Hrvatska*
- *Šverko, Z.; Stojković, N.; Vlahinić, S.; Markovinović, I.; Noise Improvement for Different BP Filter Designs, Croatian Society for Information and Communication Technology, Electronics and Microelectronics – MIPRO 42nd, 2019., ISSN 1847-3946, 1, 126-131, 2019, Opatija, Hrvatska*
- *Volarić, I.; Sučić, V.; Bokelmann, G.; Sparse Time-Frequency Distribution Calculation with an Adaptive Thresholding Algorithm, 11th Int'l Symposium on Image and Signal Processing and Analysis (ISPA 2019), 2019, Dubrovnik, Croatia*
- *Volarić, I.; Sučić, V.; Adaptive Thresholding Scheme for the l1-norm based Time-Frequency*

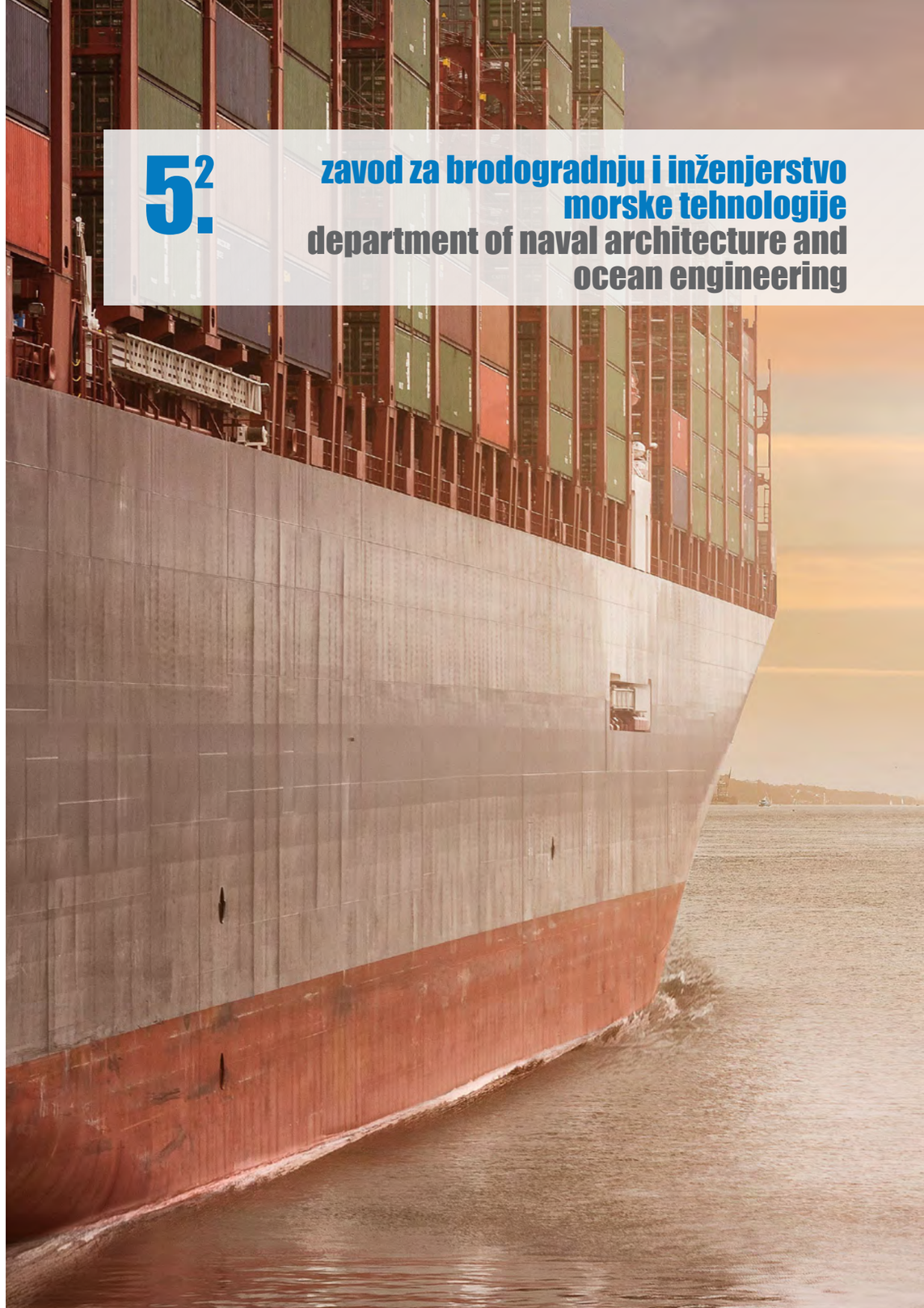
Domain Reconstruction, Proceedings of International Conference on Innovative Technologies IN-TECH 2019, 2019, Belgrade, Serbia

- *Sučić, V.; Volarić, I.; Bokelmann, G.; Bras, R.; A Novel Approach for Signal Sparse Time-Frequency Representations, CTBT: Science and Technology Conference, 2019, Vienna, Austria*
- *Mrzljak, V.; Žarković, B.; Prpić- Oršić, J.; Anđelić, N.; Numerical analysis of in-cylinder pressure and temperature change for naturally aspirated and upgraded gasoline engine, XXVII INTERNATIONAL SCIENTIFIC CONFERENCE trans & MOTAUTO '19 - PROCEEDINGS, Scientific technical union of mechanical engineering "Industry-4.0", ISSN: 2535 - 0161, 1,95 - 98 2019, Varna, Bugarska*
- *Mrzljak, V.; Car, Z.; Kudlaček, J.; Anđelić, N.; Lorencin, I.; Blažević, S.; Analysis of two methods for steam turbine developed power calculation in Industry 4.0, Technological forum 2019, 1,1-8 2019, Prague, Czech Republic*
- *Lorencin, I.; Car, Z.; Kudlaček, J.; Mrzljak, V.; Anđelić, N.; Blažević, S.; Estimation of Combined Cycle Power Plant Power Output Using Multilayer Perceptron Variations, Technological forum 2019, 1, 1-8, 2019, Prague, Czech Republic*
- *Mrzljak, V.; Orović, J.; Poljak, I.; Lorencin, I.; Exergy analysis of steam turbine governing valve from a super critical thermal power plant, XXVII INTERNATIONAL SCIENTIFIC CONFERENCE trans & MOTAUTO'19 Scientific technical union of mechanical engineering "Industry-4.0", ISSN: 2535 - 0161, 1, 99-102, 2019, Varna, Bugarska*
- *Anđelić, N.; Čanađija, M.; Car, Z.; NEMS Resonator for Detection of Chemical Warfare Agents Based on Single Layer Graphene Sheet, Proceedings of International Conference of Innovative Technologies IN-TECH 2019, ISSN: 0184-9069, 1, 1-4, 2019, Beograd, Republika Srbija*
- *Anđelić, N.; Lorencin, I.; Mrzljak, V.; Car, Z.; Friction Modeling of Robot Manipulator Joints Proceedings of International Conference of Innovative Technologies IN-TECH 2019, ISSN: 0184-9069, 1, 1-4, 2019, Beograd, Republika Srbija*
- *Lorencin, I.; Barišić, B.; Anđelić, N.; Španjol, J.; Car, Z.; Comparison of Edge Detectors for Urinary Bladder Cancer Diagnostic, Proceedings of International Conference of Innovative Technologies IN-TECH 2019, ISSN: 0184-9069, 1, 1-4, 2019, Beograd, Republika Srbija*
- *Mrzljak, V.; Orović, J.; Poljak, I.; Anđelić, N.; EXERGY ANALYSIS OF HIGH-PRESSURE FEED WATER HEATING SYSTEM AT THREE POWER PLANT LOADS, Proceedings of International Conference of Innovative Technologies IN-TECH 2019, ISSN: 0184-9069, 1, 1-4,2019, Beograd, Republika Srbija*
- *Mrzljak, V.; Orović, J.; Poljak, I.; Lorencin, I.; THE CHANGE IN EXERGY EFFICIENCIES AND LOSSES OF LOW-POWER STEAM TURBINE WITH STEAM EXTRACTIONS AT THREE LOADS, Proceedings of International Conference of Innovative Technologies IN-TECH 2019 ISSN: 0184-9069, 1, 1-4, 2019, Beograd, Republika Srbija*

MEĐUNARODNA SURADNJA | INTERNATIONAL COLLABORATIONS

- *RMIT University, Melbourne,Australija, Australia*
- *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, SAD, USA*
- *Linz Center of Mechatronics GmbH, Austrija, Austria*
- *Johannes Kepler Universität Linz, Austrija, Austria*
- *Hiroshima University, Japan, Japan*



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

djelatnici
faculty and staff

PREDSTOJNIK ZAVODA | DEPARTMENT HEAD:

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

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

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

REDOVITA PROFESORICA U TRAJNOM ZVANJU | TENURED PROFESSOR

Jasna Prpić-Oršić

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

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

REDOVITI PROFESOR | PROFESSOR

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; 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; 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

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

Dunja Legović

otpor i propulzija plovnih objekata; dinamika broda; brodski propulzori; pomorstvenost plovnih objekata; brodske forme; zaštita okoliša

ship resistance and propulsion; ship dynamics; ship propulsion devices; seakeeping; ship hull forms; environment protection

Anton Turk

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

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

Marko Valčić

dinamika i pomorstvenost plovnih objekata; objekti morske tehnologije; odobalne operacije; vođenje i upravljanje plovnim objektima; dinamičko pozicioniranje; autonomna navigacija

ship dynamics and seakeeping; ocean mobile and fixed structures; offshore operations; guidance and control of marine vehicles; dynamic positioning; autonomous navigation

ASISTENT | ASSISTANT

Davor Bolf

konstrukcija broda; čvrstoća broda; strukturna analiza broda; konstrukcija malih plovnih objekata

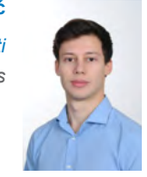
ship structure, ship strength; ship structural analysis; small craft construction

STRUČNI SURADNICI | ASSOCIATES

Darin Majnarić

EU projekti

EU projects



Lino Josip Novak

EU projekti

EU projects

Natalija Vitali Maretić

HRZZ projekt

HRZZ project

Sara Volarić

EU projekti - administratorica

EU projects - administrator

VANJSKI SURADNICI | ASSOCIATES

Mirela Marin
Brodogradilište Viktor Lenac | Shipyard Viktor Lenac
osnivanje plovnih objekata
ship design

Ivan Margić
AITAC d.o.o.
osnivanje plovnih objekata
ship design

Željko Monjac
Brodograđevna industrija 3. MAJ | Shipbuilding industry 3. MAJ
tehnologija brodogradnje
shipbuilding technology

Alan Klanac
Adriatic Fast Ferries d.o.o.
strukturna analiza broda
ship structural analysis

Branko Radil
Hrvatski registar brodova | Croatian Register of Shipping
konstrukcija broda
ship structures

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: shipdesign, technology and organization of shipbuilding, ship 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*
- *Uvod u vođenje i upravljanje plovnim objektima* — *Introduction to guidance and control of marine vehicles*

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* — *Offshore structures and vehicles*
- *Odobalne operacije* — *Offshore operations*
- *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*

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*
- *Izabrana poglavlja iz dinamike plovnih objekata*
- *Izabrana poglavlja iz otpora plovnih objekata*
- *Izabrana poglavlja iz propulzije plovnih objekata*
- *Projektiranje strukture plovnih objekata*
- *Seakeeping and Manoeuvrability*
- *Selected Topics in Marine Dynamics*
- *Selected Topics in Ship Resistance*
- *Selected Topics in Ship Propulsion*
- *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
- *Primjena kompozitnih materijala na pomorskim konstrukcijama, analiza sudara malih kompozitnih plovila*
  Application of composite materials on marine structures, Small composites crafts collision analysis
- *Utjecaj opterećenja okoliša na značajke sustava dinamičkog pozicioniranja plovnih objekata*
  The impact of environmental loads on the characteristics of dynamic positioning systems for marine vessels

PROJEKTI | PROJECTS

- *Nesigurnosti procjene brzine broda u pri realnim vremenskim uvjetima, uniri-tehnic-18-18 1146, Sveučilište u Rijeci, Jasna Prpić-Oršić, 2018. -, znanstvenoistraživački*
  Uncertainties of ship speed loss evaluation under real weather conditions, uniri-tehnic-18-18 1146, University of Rijeka, Jasna Prpić-Oršić, 2018.-, research and scientific project
- *Sustav potpore odlučivanju za zeleniju i sigurniju plovidbu brodova (DESSERT) IP-2018-01-3739, Hrvatska zaklada za znanost, Jasna Prpić-Oršić, 2018-2022, znanstvenoistraživački*
  DEcision Support System for green and safE ship RouTing (DESSERT) IP-2018-01-3739, Croatian Science Foundation, Jasna Prpić-Oršić, 2018-2022
- *Unapređenje metodologije projektiranja i gradnje broda prema konceptu Industrija 4.0; Potpora znanstvenim istraživanjima za 2018. g. Sveučilišta u Rijeci, Voditelj istraživačkog tima: prof. dr. sc. Albert Zamarin, dipl. ing., 2018.-2021.*
  Development of Methodology for Ship Design and Production towards Industry 4.0. Concept; Support for scientific research in 2018., University of Rijeka, Head of the research team: prof. dr. sc. Albert Zamarin, 2018.-2021.

- *Utjecaj opterećenja okoliša na značajke sustava dinamičkog pozicioniranja plovnih objekata. Šifra projekta: uniri-tehnic-18-266. Financiranje: Sveučilište u Rijeci. Voditelj: Marko Valčić. Trajanje: 2018.-2020. Vrsta projekta: znanstveno-istraživački projekt.*
  The impact of environmental loads on the characteristics of dynamic positioning systems for marine vessels. Project ID: uniri-tehnic-18-266. Funding: University of Rijeka. Head: Marko Valčić. Period: 2018-2020. Project type: research project.
- *Maritime Environment-friendly TRanspOrt systems (METRO), 2014 - 2020 Interreg V-A Italy - Croatia CBC Programme, razdoblje: 01,01.2019.- 30,06,2021., voditelj (Riteh): prof. dr. sc. Roko Dejhalla*
  Maritime Environment-friendly TRanspOrt systems (METRO), 2014 - 2020 Interreg V-A Italy - Croatia CBC Programme, period: January 1, 2019.- June 30, 2021, head (Riteh): prof. Roko Dejhalla
- *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

KNJIGE | BOOKS

- *Valčić, M.; Prpić-Oršić, J.; Vučinić, D.; "Application of Pattern Recognition Method for Estimating Wind Loads on Ships and Marine Objects. In: Vučinić, D., Rodrigues Leta, F., Janardhanan, S. (Eds.), Advances in Visualization and Optimization Techniques for Multidisciplinary Research - Trends in Modelling and Simulations for Engineering Applications." Springer Nature Switzerland AG, "ISSN 2195-4356 (print), ISSN 2195-4364 (electronic), ISBN 978-981-13-9806-3" 2020 Singapore, Poglavlje u knjizi.*

RADOVI U ČASOPISIMA | JOURNAL PAPERS

- *Farkas, A.; Degiuli, N.; Martić, I.; Dejhalla, R.; Numerical and Experimental Assessment of Nominal Wake for a Bulk Carrier, "Journal of Marine Science and Technology / Official Journal of the Japan Society of Naval Architects and Ocean Engineers (JASNAOE)", ISSN: 0948-4280 (Print) 1437-8213 (Online) doi:10.1007/s00773-018-0609-4, 1-13, 2018, New York, USA*
- *Vettor, R.; Prpić-Oršić, J.; Guedes Soares, C.; Impact of Wind Loads on Long-Term Fuel Consumption and Emissions, Journal of Naval Architecture and Shipbuilding Industry (Journal Brodogradnja), ISSN: 0007-215X, 69 (4), 1-16, 2018, Zagreb, Hrvatska*
- *Sasa, K.; Takeuchi, K.; Chen, C.; Faltinsen, O.M.; Prpić-Oršić, J.; Valčić, M.; Mrakovčić, T.; Herai, N.; Evaluation of Speed Loss in Bulk Carriers with Actual Data from Rough Sea Voyages Ocean Engineering, ISSN 0029-8018, 187(106162), 1-19, 2019, Oxford, United Kingdom, USA*

MEĐUNARODNI KONGRESI | INTERNATIONAL CONGRESSES

- *Prpić-Oršić, J.; Sasa, K.; Valčić, M.; Faltinsen, O. M.; Energy efficiency of ship under real weather conditions, 37th International Conference on Ocean, Offshore & Arctic Engineering, OMAE 2018, 1-7, 2018., Madrid, Spain*
- *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 NAV 2018 ISBN 978-1-61499-869-3, 88-96, 2018. Trieste, Italy*
- *Mauro, F.; Braidotti, L.; Prpić-Oršić, J.; Extreme loads estimation using genetic algorithm approach, MARSTRUCT 2019, ISBN 978-0-367-27809-0, 2019., Dubrovnik, Croatia*
- *Zamarin, A.; Rudan, S.; Plenča, S.; Collision Simulation of Composite Patrol High-speed Craft Book of proceedings of the 23rd Symposium on the Theory and Practice of Shipbuilding [in*

memoriam prof. Leopold Sorta], ISBN: 978-953-290-085-9 , 1, 121-139, 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 Intenational Ship and Offshore Structures Congress ISSC 2018, ISSN2543-0955, 2, 143-192, 2018, Amsterdam, Netherlands*
- *Gotoh, K.; Kim, E.; Kolić, D.; Shen, W.; Andrić, J.; Jelovica, J.; Krause, M.; Committee 3. Materials and Fabrication Technology (Floor Discussers)Proceedings of the 20th International Ship and Offshore Structures Congress (ISSC 2018) M.L. Kaminski and P. Rigo (Eds.) Vol. 3, ISBN 978-1-61499-862-4, 3, 3-17, 2018., Liege, Belgium; Amsterdam, Netherlands*
- *Yoshihiro, K.; Kolić, D.; Morooka, C.; Horn, A.M.; Committee 8. Subsea Technology (Floor Discussers), Proceedings of the 20th International Ship and Offshore Structures Congress (ISSC 2018) M.L. Kaminski and P. Rigo (Eds.) Vol. 3 ISBN 978-1-61499-862-4, 3, 3-17, 2018., Liege, Belgium; Amsterdam, Netherlands*
- *Čalić, B.; Kolić, D.; Air Weight and Air Buoyancy Influences on Total Ship Buoyancy, Proceedings of the SNAME Maritime Convention 2018, 2018., Providence, RI, USA*
- *Kolić, D.; Kurtović, F.; LNG vs Scrubber Technology in Future Green Ships, Proceedings of the 2nd International Conference on Smart and Green Technology for Shipping and Maritime Industries, 2019., Glasgow, Scotland, UK*

POZVANA PREDAVANJA | INVITED LECTURES

- *Prpić-Oršić, J.; Sasa, K.; Valčić, M.; Uncertainties of Ship Speed Loss Estimation, The 4th International Symposimum of Maritime Sciences, ISMS 2019, 2019,Kobe, Japan*
- *Valčić, M.; Prpić-Oršić, J.; Derivative free optimal thrust allocation in ship dynamic positioning based on direct search algorithms, "13th International Conference on Marine Navigation and Safety of Sea Transportation - TransNav 2019", 2019, Gdynia, Poljska*
- *Prpić-Oršić, J.; Faltinsen, O.M.; Valčić, M.; Sasa, K.; Decision support system for green and safe ship routing, 13th Baška GNSS Conference, 2019, Baška, otok Krk, Hrvatska*
- *Brčić, D.; Filjar, R.; Kos, S.; Valčić, M.; On modification possibilities of the Klobuchar model for the area of Northern Adriatic based on ionospheric maps, 13th Baška GNSS Conference 2019 Baška, otok Krk,Hrvatska*
- *Šakan, D.; Žuškin, S.; Valčić, M.; Pavletić, D.; Challenges of adaptive coastal voyage planning 13th Baška GNSS Conference, 2019, Baška, otok Krk, Hrvatska*

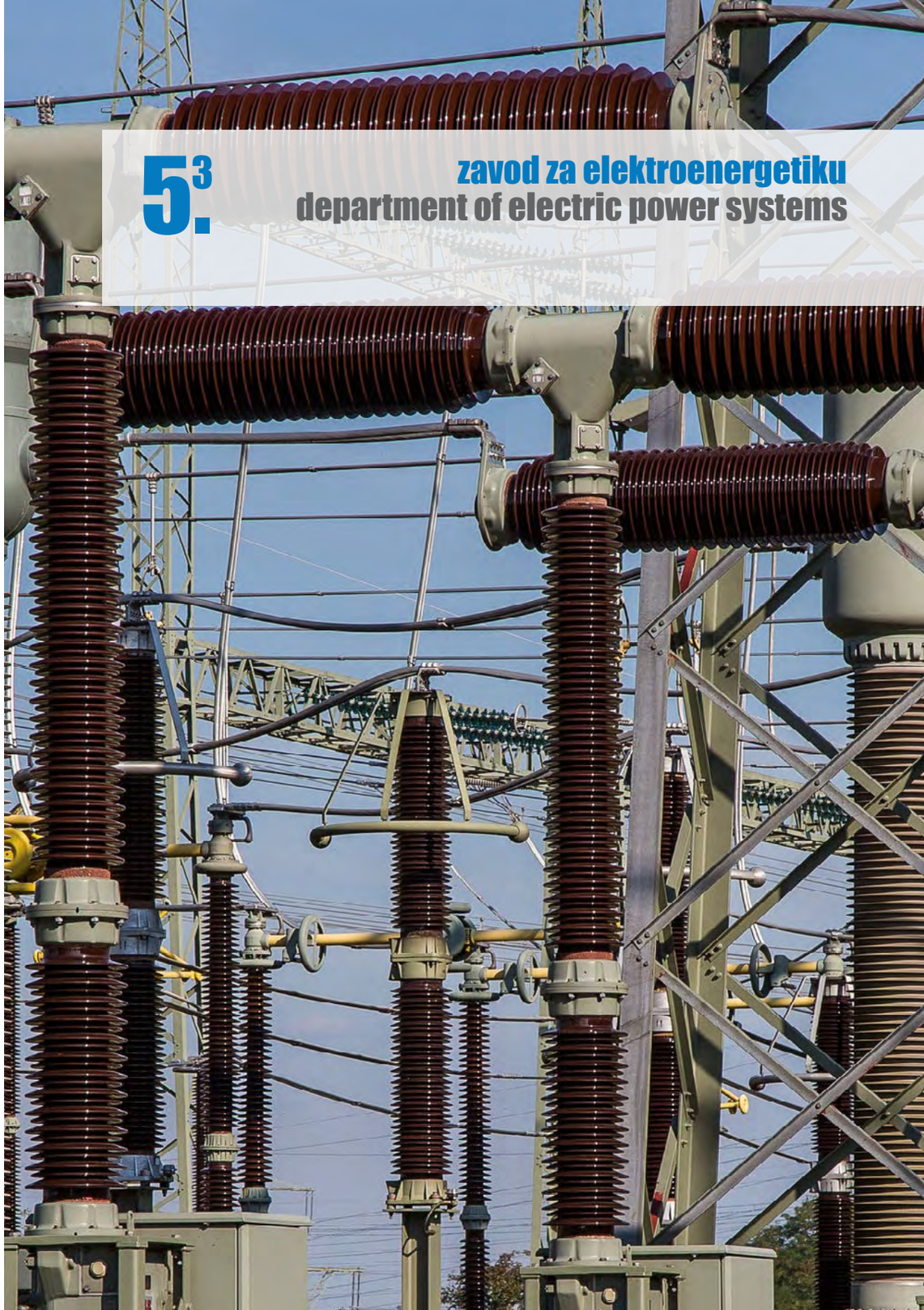
MEĐUNARODNA SURADNJA | INTERNATIONAL COLLABORATIONS

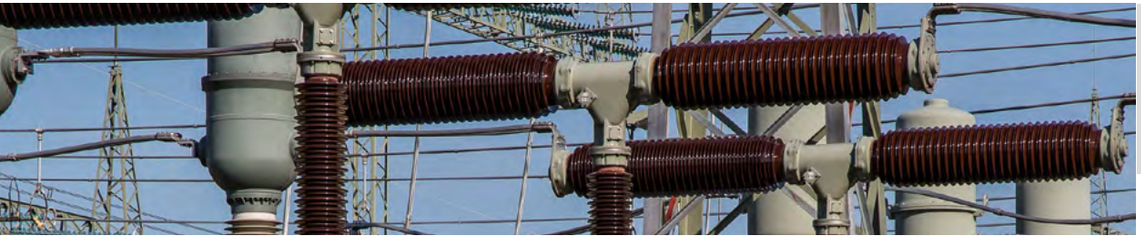
- *AALTO University School of Engineering, Helsinki, Finska, Finland*
- *Norwegian University of Science and Technology, Center of Ships and Ocean Structures, Norwegian Center of Excelence, Trondheim, Norveška, Norway*
- *Technical University of Lisbon, Instituto Superior Tecnico, Lisabon, Portugal, Portugal*
- *University of 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*
- *University of Ljubljana, Faculty of Maritime Studies and Transport, Portorož, Slovenija, Slovenia*
- *Chalmers University of Technology, Švedska, Sweden*

5^3.

zavod za elektroenergetiku
department of electric power systems





djelatnici
faculty and staff

PREDSTOJNIK ZAVODA | DEPARTMENT HEAD:

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

elektroenergetski sustavi; elektrane; projektiranje; obnovljivi izvori energije; fotonaponske elektrane

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

REDOVITI PROFESOR U TRAJNOM ZVANJU | TENURED PROFESSOR

Livio Šušnjić

električni strojevi; primjena MKE u području elektromagnetizma

electrical machines; FEM application in the electromagnetics

IZVANREDNI PROFESORI | ASSOCIATE PROFESSORS

Saša Sladić

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

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

Alfredo Višković

elektroenergetski sustavi; tržište električne energije; razvoj energetskih projekata

electric power systems; electricity markets; power generation project development

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

ektroenergetski sustavi, projektiranje, distribuirani izvori

electric power systems; electrical design; distributed generation

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

Alen Jakoplić

elektroenergetski sustavi; projektiranje; elektrane

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

Ingrid Sterpin

elektroenergetski sustav; vođenje sustava; napredne mreže

electric power system; power system control; smart-grid

VANJSKI SURADNICI | ASSOCIATES

Marin Antunović HOPS | HEP TSO
Dino Mađar HOPS | HEP TSO
Vitomir Komen HEP ODS | HEP DSO
Vladimir Valentić HEP OPS | HEP TSO
Zoran Zbunjak HEP OPS | HEP TSO

Goran Klobučar
Ranko Lončarić
Igor Majkić Tehnička škola Rijeka

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*
Teorijska elektrotehnika	*Theoretical Electrical Engineering*
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

- *Automatsko vođenje elektroenergetskog sustava; 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*
  Renewable energy systems, Photovoltaic systems, Smart grid

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.; Strnad, I.; Tomas, V.; Planning of Active Distribution Networks in Croatia, Tehnički vjesnik: znanstveno-stručni časopis tehničkih fakulteta Sveučilišta u Osijeku, 1330-3651, 25,1867-1878, 2018, Hrvatska*
- *Cuculić, A.; Vučetić, D.; Prenc, R.; Ćelić, J.; Analysis of Energy Storage Implementation on Dynamically Positioned Vessels, Energies, 1996-1073, 12, 2019, Basel, Switzerland*
- *Kirincic, V.; Ceperic, E.; Vlahinic, S.; Lerga, J.; Support Vector Machine State Estimation, Applied Artificial Intelligence, 0883-9514, 33, 517-530, 2019, inozemstvo*
- *Sladic, S.; Nedeljković, D.; A New Active Power Photovoltaic System for Residential Applications, Engineering review, 1330-9587, 38, 1-10, 2018, Hrvatska*
- *Sladić, S.; Poljak, A.; Bulić, N.; Towards the new energy storage system for conventional cars Engineering review, 1330-9587, 38, 261-267, 2018, Hrvatska*
- *Franki, V.; Višković, A.; Šapić, A.; Carbon capture and storage retrofit: Case study for Croatia Energy Sources, Part A: Recovery, Utilization and Environmental Effects, Print ISSN: 1556-7036 Online ISSN: 1556-7230, 41, sij.13, 2019*

MEĐUNARODNI KONGRESI | INTERNATIONAL CONGRESSES

- *Kirincic, V.; Frankovic, D.; Radulovic, D.; Jakoplic, A.; Towards a low-carbon island society by strong implementation of electromobility, International Conference on Innovative Technologies (IN-TECH), 169-172, 2018, Zagreb, Hrvatska*
- *Franković, D.; Bulić, N.; Jakoplić, A.; Rosanda, B.; Reefer container power supply and supervision system onboard railway wagons, V international scientific congress Innovations, 66-69, 2019, Varna, Bulgaria*
- *Jakoplić, A.; Franković, D.; Kirinčić, V.; Havelka, J.; Short-term photovoltaic power forecasting using cloud tracking methods, MEDPOWER, 978-953-184-249-5, 1-1, 2018, Dubrovnik, Hrvatska*
- *Franković, D.; Rosanda, B.; Jakoplić, A.; Kirinčić, V.; Power supply system for railway applications, Proceedings of International Conference on Innovative Technologies, 161-164, 2018, Zagreb, Hrvatska*
- *Jakoplić, A.; Franković, D.; Kirinčić, V.; Sterpin, I.; Short-term solar forecasting based on sky images to enable PV integration, Proceedings of International Conference on Innovative Technologies, 165-167, 2018, Zagreb, Hrvatska*
- *Plavšić, T.; Valentić, V.; Franković, D.; Hydro Pumped Storage Power Plants perspectives in SEERC Region Second South East European Regional CIGRÉ Conference, 1-9, 2018, Kyiv, Ukrajina*

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

djelatnici
faculty and staff

PREDSTOJNIK ZAVODA | DEPARTMENT HEAD:

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

REDOVITI PROFESORI U TRAJNOM ZVANJU | TENURED PROFESSORS

Goran Cukor

napredni obradni sustavi i tehnologije; modeliranje i optimiranje obradnih procesa

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

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

REDOVITI PROFESORI | PROFESSORS

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

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

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

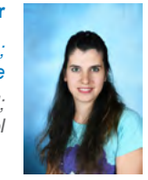
Samir Žic

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

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

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

Maja Marković

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

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

Graciela Šterpin Valić

napredni proizvodni sustavi i tehnologije; alatni strojevi i oprema; modeliranje i optimiranje obradnih procesa

advanced manufacturing systems and technology; machine tools and equipment; modeling and optimization of machining processes

PROFESOR EMERITUS | PROFESSOR EMERITUS

Elso Kuljanić

Akademik HAZU

HAZU academician

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

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* — *Manufacturing Technologies*
- *Mjerenja i kontrola kvalitete* — *Measurements and Quality Control*
- *Osiguranje kvalitete* — *Quality Assurance*
- *Inženjerstvo kvalitete* — *Quality Engineering*
- *Zavarivanje I* — *Zavarivanje I*
- *Proizvodni strojevi, alati i naprave* — *Production Machines, Tools, Jigs and Fixtures*
- *Organizacija i ekonomika poslovnih sustava* — *Organization and Economics of Business Entity*
- *Planiranje i upravljanje proizvodnjom* — *Production Planning and Management*
- *Tehnološki procesi* — *Technological Processes*

KOLEGIJI NA DIPLOMSKIM SVEUČILIŠNIM STUDIJIMA
| GRADUATE UNIVERSITY COURSES

- *Ljevarstvo* — *Foundry*
- *Napredni proizvodni postupci* — *Advanced Manufacturing Processes*
- *Obrada odvajanjem čestica* — *Metal Cutting Processes*
- *Tehnologija oblikovanja* — *Metal Forming Technology*
- *Mjerenje u proizvodnji* — *Measurement in industry*
- *Upravljanje kvalitetom* — *Quality Management*
- *Zavarivanje II* — *Welding Engineering II*
- *Spajanje materijala* — *Joining of materials*
- *CNC/NC obradni strojevi* — *CNC/NC Machine Tools*
- *Organizacija proizvodnje* — *Production Organization*
- *Projektiranje proizvodnih sustava* — *Designing of Production Systems*
- *Računalom integrirana proizvodnja* — *Computer Integrated Manufacturing*
- *Proizvodni management* — *Production Management*

- *Tehnička logistika* — *Technical Logistics*
- *Management i organizacijski razvoj* — *Management and Organizational Development*
- *Projektni management* — *Project Management*
- *CAD/CAPP/CAM* — *CAD/CAPP/CAM*
- *Projektiranje tehnoloških procesa* — *Process Planning*
- *Računalna simulacija proizvodnih procesa* — *Computer Simulation of Production Processes*
- *Održavanje* — *Maintenance*
- *Fleksibilni i inteligentni sustavi* — *Flexible and intelligent systems*
- *Industrijska robotika* — *Industrial robotics*

KOLEGIJI NA PREDDIPLOMSKIM STRUČNIM STUDIJIMA
| UNDERGRADUATE VOCATIONAL COURSES

- *Tehnologija obrade I* — *Manufacturing Technology I*
- *Tehnologija obrade II* — *Manufacturing Technology II*
- *Mjerna tehnika ST* — *Measuring Technique ST*
- *Osiguranje kvalitete ST* — *Quality Assurance ST*
- *Zavarivanje* — *Welding Engineering*
- *Alati i naprave* — *Tools, Jigs and Fixtures*
- *Obradni strojevi* — *Machine Tools*
- *Organizacija i upravljanje proizvodnjom* — *Production Organization and Management*
- *Proizvodni sustavi* — *Production systems*
- *Organizacija i ekonomika* — *Organization and Economics*
- *Tehnološki procesi ST* — *Technological Processes ST*

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

- *Deformabilnost i suvremeno oblikovanje deformiranjem* — *Formability and Modern Forming Technology*
- *Izabrana poglavlja iz nekonvencionalnih postupaka obrade* — *Selected Chapters on Nonconventional Manufacturing Processes*
- *Izabrana poglavlja iz konvencionalne obrade odvajanjem čestica* — *Selected Chapters on Conventional Metal Cutting Processes*
- *Upravljanje kvalitetom* — *Quality Management*
- *Metode simulacije u proizvodnji* — *Simulation Methods in Production*
- *Planiranje i vođenje proizvodnje* — *Planning and Processing of Manufacture*
- *IP iz fleksibilnih proizvodnih sustava* — *Selected Chapters from flexible production system*
- *Razvojni i proizvodni management* — *Development and Operational Management*
- *CAM, CAP, CAD/NC-CIM* — *CAM, CAP, CAD/NC-CIM*
- *Optimizacija tehnoloških procesa* — *Processes Plans Optimization*

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

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

- *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

- *Primjena tehnologija inkrementalnog oblikovanja u individualnoj proizvodnji izradaka iz naprednih polimernih materijala, uniri-tehnic-18-100-1235, istraživačka potpora Sveučilišta u Rijeci, Zoran Jurković, 2018-2020, znanstvenoistraživački projekt.*
  Application of incremental forming technologies in individual production of parts from advanced polymer materials, uniri-tehnic-18-100-1235, University of Rijeka, Zoran Jurkovic, 2018-2020, research and scientific project.
- *Razvoj metodologije projektiranja i postupka umjeravanja rekonfigurabilnog mjernog sustava, Sveučilište u Rijeci, Duško Pavletić, 2018.-2021., znanstvenoistraživački projekt.*
  Design principles and calibration method of reconfigurable inspection system, University of Rijeka, Duško Pavletić, 2018.-2021., research and scientific project.
- *Istraživanje alternativnih tehnika hlađenja-podmazivanja za održivu strojnu obradu teško obradivih materijala, uniri-tehnic-18-293, istraživačka potpora Sveučilišta u Rijeci, Goran Cukor, 2018.-2021., znanstvenoistraživački projekt.*
  Investigation of alternative cooling-lubrication techniques for sustainable machining of difficult-to-cut materials, uniri-tehnic-18-293, University of Rijeka, Goran Cukor, 2018-2021, research and scientific project.
- *Napredne metode simulacije operativne pripreme planiranja proizvodnje, Sveučilište u Rijeci, Mladen Perinić, 2018.-2021., znanstvenoistraživački projekt.*
  Advanced methods of simulating the operational preparation of production planning, University of Rijeka, Mladen Perinić, 2018-2021, research and scientific project.

PUBLIKACIJE | PUBLICATIONS

KNJIGE | BOOKS

- *Kondić, Ž.; Maglić, L.; Pavletić, D.; Samardžić, I.; Kvaliteta 1 – fenomen, povijest, gurui, pogledi, načela, statistika, Sveučilišni udžbenik, Sveučilište J.J. Strossmayera u Osijeku, Sveučilište Sjever, Sveučilište u RijeciISBN 978-953-6048-81-6, 2018, Varaždin, Prvo izdanje*
- *Kondić, Ž.; Maglić, L.; Pavletić, D.; Samardžić, I.; Kvaliteta 2 – mjeriteljstvo, normizacija, ustroj, funkcioniranje, statistička kontrola kvalitete, Sveučilišni udžbenik, Sveučilište J.J. Strossmayera u Osijeku, Sveučilište Sjever, Sveučilište u Rijeci, ISBN 978-953-6048-83-0, 2019, Varaždin, Prvo izdanje*
- *Kondić, Ž.; Maglić, L.; Pavletić, D.; Samardžić, I.; Kvaliteta 3 – nadzori, logistika, poboljšanja, poslovna izvrsnost, troškovi, Sveučilišni udžbenik, Sveučilište J.J. Strossmayera u Osijeku, Sveučilište Sjever, Sveučilište u Rijeci, ISBN 978-953-6048-84-7, 2020, Varaždin, Prvo izdanje*

RADOVI U ČASOPISIMA | JOURNAL PAPERS

- *Kostadin, T.; Cukor, G.; Jurković, Z.; Influence of Cutting Fluids on the Corrosion Resistance of X20Cr13 Martensitic Stainless Steel, International Journal of Electrochemical Science, ISSN 1452-3981, Vol. 13, No. 12, 11986-11999, 2018., Beograd*
- *Kostadin, T., Cukor, G., Mihalić, T. Primjena ekoloških načela u obradi metala odvajanjem čestica, Sigurnost, ISSN 0350-6886, Vol. 61, No. 2, 85-93, 2019., Zagreb*
- *Uran, V.; Pavletić, D.; Doboviček, S.; An Approach to the Capability Analysis of a Multi-spindle Machining Centre, Engineering Review, ISSN 1330-9587Vol. 37, Issue 1, 86 - 97, 2018, Rijeka*

- *Santoši, Ž.; Budak, I.; Šokac, M.; Pavletić, D.; Bridging the Symmetry-related Gap between Physical and Digital Sculpting by Application of Reverse Engineering Modeling, FME Transactions, ISSN 2406-128X, Vol. 47, No. 2, 304-309, 2019, Novi Sad*
- *Jurković, Z.; Cukor, G.; Brezočnik, M.; Brajković, T.; A comparison of machine learning methods for cutting parameters prediction in high speed turning process, Journal of Intelligent Manufacturing ISSN 0956-5515, Vol. 29, No. 8, 1683-1693, 2018, Springer US*
- *Babič, M.; Prsić, D.; Jurković, Z.; Lajos, B.; Ipšić-Martinčić, S.; Lhotská, L.; Ocampo, L.; A Novel Method for Statistical Pattern Recognition Using the Network Theory and a New Hybrid System of Machine Learning, Materiali in tehnologije / Materials and technology, ISSN 1580-2949, Vol. 53, No. 1, 95-100, 2019, Ljubljana*
- *Ištoković, D.; Perinić, M.; Doboviček, S.; Bazina, T.; Simulation framework for determining the order and size of the product batches in the flow shop: A case study, Advances in Production Engineering & Management, ISSN 1854-6250, Vol. 14, No. 2, 166-176, 2019, Maribor*
- *Brajković, T.; Perinić, M.; Ikonić, M.; Production planning and optimization of work launch orders using genetic algorithm, Tehnički vjesnik/Technical Gazette, ISSN 1848-6339, Vol. 25, No. 5 1278-1285, 2018, Slavonski Brod*

MEĐUNARODNI KONGRESI | INTERNATIONAL CONGRESSES

- *Kostadin, T.; Cukor, G.; Environmentally friendly machining, 7th International Professional and Scientific Conference "Occupational Safety and Health", ISSN 2623-6435, 496-501, 2018., Karlovac*
- *Randić, M.; Pavletić, D.; Bevandić, I.; Impact of welding methods on toe radius in welded joint, XXIII. simpozij Teorija i praksa brodogradnje in memoriam prof. Leopold Sorta, ISBN: 978-953-290-085-9, 286-292, 2018, Split*
- *Mujkanović, A.; Pavletić, D.; Šterpin Valić, G.; Forempoher Škuver, M.; Inverse measurement method for intake and exhaust manifold of cylinder head, 8th International Conference Mechanical Technology and Structural Materials 2018, ISSN 1847-7917, 141-147, 2018, Split*
- *Salopek, G.; Dunđer, M.; Perinić, M.; Ištoković, D.; Jurković, Z.; Marković, M.; Advantages of additive manufacturing in production of gears for planetary reducers, 8th International Conference Mechanical Technology and Structural Materials - MTSM ISSN 1847-7917, 167-172, 2018.,Split*

POZVANA PREDAVANJA | INVITED LECTURES

- *Pavletić, D.; Randić, M.; Effect of Welding Parameters on Weld Quality for High-Strength Steel Used at Low Temperature (EH36), The 4th International Symposium of Maritime Sciences,2019, Kobe, Japan*

MEĐUNARODNA SURADNJA | INTERNATIONAL COLLABORATIONS

- *Università degli Studi di Udine, Facoltà di Ingegneria, Dipartimento di Ingegneria Elettrica, Gestionale e Meccanica (DIEGM), 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*
- *University of Ljubljana, Faculty of Mechanical Engineering, Slovenija, Slovenia*

5.5 zavod za konstruiranje u strojarstvu department of mechanical engineering design

djelatnici
faculty and staff

PREDSTOJNIK ZAVODA | **DEPARTMENT HEAD:**

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

REDOVITI PROFESOR U TRAJNOM ZVANJU | TENURED PROFESSOR

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

REDOVITA PROFESORICA | PROFESSOR

Marina Franulović

konstrukcijski elementi; mehaničke konstrukcije

machine elements; mechanical design of machine components

IZVANREDNI PROFESOR | ASSOCIATE PROFESSOR

Robert Basan

računalom podržano inženjerstvo (CAE); metodičko konstruiranje proizvoda; ponašanje i zamor materijala; odabir materijala; konstruiranje i oblikovanje proizvoda

computer aided engineering (CAE); systematic product design; behaviour and fatigue of materials; material selection; design in mechanical engineering

DOCENTI | ASSISTANT PROFESSORS

Goran Gregov

prijenosnici snage; hidraulika i pneumatika; mehatronika

power transmissions; hydraulics and pneumatics; mechatronics

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

Kristina Marković

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

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

Tea Marohnić

ponašanje i zamor materijala; inženjerska grafika; tehničko crtanje; oblikovanje pomoću računala; CAE; metodičko konstruiranje; konstruiranje i oblikovanje proizvoda

behaviour and fatigue of materials; engineering graphics; technical drawing; modelling by computer; CAE; systematic product design; design in mechanical engineering

Sanjin Troha

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

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

Željko Vrcan

konstrukcijski elementi; mehanički prijenosnici snage; transportna sredstva u industriji; mjerenje buke

machine elements; mechanical power transmissions; industrial transport equipment and devices; noise measurement

ASISTENTI | ASSISTANTS

Tomislav Bazina

precizno inženjerstvo; konstrukcijski elementi; mjerni sustavi; mehatronika

precision engineering; machine elements; measurement systems; mechatronics

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

Matej Gljuščić

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

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

Petar Gljuščić

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

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

David Liović

konstrukcijski elementi; napredni materijali; modeliranje ponašanja materijala

machine elements design; advanced materials; modeling of material behaviour

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

PROFESOR EMERITUS | PROFESSOR EMERITUS

Božidar Križan

konstrukcijski elementi; konstruiranje i oblikovanje proizvoda

machine elements; systematic product 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*
- *Izborni projekt - Konstruiranje i oblikovanje* — *Elective Project - Designing and Product Shaping*
- *Konstruiranje i oblikovanje* — *Designing and Product Shaping*
- *Konstrukcijski elementi I* — *Machine Elements Design I*
- *Konstrukcijski elementi II* — *Machine Elements Design II*
- *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 robota* — *Robot Elements Design*
- *Laboratorijske vježbe A* — *Laboratory exercises A*
- *Laboratorijske vježbe B* — *Laboratory exercises B*
- *Prijenosnici snage* — *Power Transmissions*
- *Mehaničke konstrukcije* — *Mechanical Design of Machine Components*
- *Mehatronički sustavi* — *Mechatronics Systems*
- *Metodičko konstruiranje* — *Systematic Engineering Design*
- *Mikro- i nanoelektromehanički sustavi* — *Micro- and Nanoelectromechanical Systems*
- *Modeliranje hidrauličkih i pneumatskih sustava* — *Modelling of hydraulics and pneumatics systems*

- *Modeliranje mehatroničkih sustava*
- *Numeričke metode u konstruiranju*
- *Precizne konstrukcije i tehnologija mikrosustava*
- *Projekt I - Inženjerska vizualizacija*
- *Projekt I - Mehaničke konstrukcije*
- *Projekt I - Konstrukcijski elementi robota*
- *Projekt I - Prijenosnici snage*
- *Projekt I - Metodičko konstruiranje*
- *Projekt II - CAE u razvoju proizvoda*
- *Projekt II - Elektroničke komponente mehatroničkih sustava*
- *Projekt II – Elementi transportne tehnike*
- *Projekt II - Modeliranje hidraulike i pneumatike*
- *Projekt II - Precizne konstrukcije i tehnologija mikrosustava*
- *Tehnička logistika*
- *Trajnost strojeva i konstrukcija*
- *Transportni sustavi*
- *Upravljanje mehatroničkim sustavima*

- *Modelling of mechatronic systems*
- *Numerical Methods in Mechanical Engineering Design*
- *Precision Engineering and Microsystems Technologies*
- *Project I - Engineering Visualization*
- *Project I - Mechanical Design of Machine Components*
- *Project I - Robot Elements Design*
- *Project I - Mechanical Power Transmissions*
- *Project I - Systematic Engineering Design*
- *Project II - CAE in Product Development*
- *Project II - Electronic components of mechatronic systems*
- *Project II – Elements of the Transport Technic*
- *Project II - Modelling of hydraulics and pneumatics*
- *Project II - Precision Engineering and Microsystems Technologies*
- *Technical Logistics*
- *Durability of Machines and Structures*
- *Transport Systems*
- *Control of Mechatronics Systems*

KOLEGIJI NA PREDDIPLOMSKIM STRUČNIM STUDIJIMA
| UNDERGRADUATE VOCATIONAL COURSES

- *Elementi strojeva I*
- *Elementi strojeva I BG*
- *Elementi strojeva II*
- *Hidraulika i pneumatika*
- *Konstruiranje*
- *Mehatronika*
- *Osnove mehatronike*
- *Podatljivi elementi i mehanizmi*
- *Tehničko crtanje*
- *Tehničko dokumentiranje*

- *Machine Elements I*
- *Machine Elements I NA*
- *Machine Elements II*
- *Hydraulics and pneumatics*
- *Mechanical Engineering Design*
- *Mechatronics*
- *Fundamentals of Mechatronics*
- *Compliant Elements and Mechanisms*
- *Technical Drawing*
- *Technical Documenting*

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

- *Izabrana poglavlja iz hidrostatskih i pneumatskih prijenosa*
- *Izabrana poglavlja iz konstrukcijskih elemenata*
- *Izabrana poglavlja iz prijenosnika snage*
- *Izabrana poglavlja iz transportnih sredstava u industriji*
- *Kontaktni problemi u analizi konstrukcijskih elemenata*
- *Modeliranje inženjerskih konstrukcija*
- *Nauka o konstruiranju*
- *Oblikovanje pomoću računala*
- *Principi konstrukcija visokih i ultravisokih preciznosti*
- *Specijalni mehanički prijenosnici*
- *Podatljivi elementi i mehanizmi*

- *Selected Chapters on Hydrostatic and Pneumatic Transmissions*
- *Selected Chapters on Machine Elements*
- *Selected Chapters on Power Transmission*
- *Selected Chapters on Industrial Transport Equipment and Devices*
- *Contact Problems in Machine Elements Analyses*
- *Modelling of Engineering Structures*
- *Design Science*
- *Modelling by Computer*
- *Principles of High and Ultra-High Precision Devices*
- *Special Mechanical Transmissions*
- *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
- *Mjerenje buke*
  Noise measurement

PROJEKTI | PROJECTS

- *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

- *Karakterizacija i istraživanje ponašanja naprednih materijala za strojarske komponente, projekt Sveučilišta u Rijeci, voditeljica Marina Franulović, 2018-2021*
  Characterization and behavior research of advanced materials for mechanical components, Project of University of Rijeka, Marina Franulović, 2018-2021
- *Mjerenje, modeliranje i kompenzacija trenja kod visokopreciznih sustava: od makrometarske do nanometarske razine, inicijalna potpora Sveučilišta u Rijeci, voditelj Ervin Kamenar, 2018-2019*
  Measuring, modelling and compensating friction in high-precision devices: from macro- to nanometric scale, University of Rijeka installation grant, Ervin Kamenar, 2018-2019
- *Inovativne mehatroničke konstrukcije za pametna tehnološka rješenja, znanstveni projekt Sveučilišta u Rijeci, voditelj Saša Zelenika, 2019-2022*
  Advanced mechatronics devices for smart technological solutions, University of Rijeka scientific project, Saša Zelenika, 2019-2022
- *Razvoj mehatroničkog uređaja za rehabilitaciju pacijenata sa smanjenom funkcionalnošću gornjih ekstremiteta, Moj ZABA start, voditelj Saša Zelenika, 2018*
  Mechatronics design of a full arm rehabilitation device, Moj ZABA start, Saša Zelenika, 2018
- *Istraživanje i razvoj prediktivnih modela ponašanja konstrukcijskih materijala temeljenih na metodama strojnog učenja, Potpore znanstvenim istraživanjima na Sveučilištu u Rijeci, voditelj Robert Basan, 2018-2020*
  Research and development of machine learning-based predictive models of design relevant materials, Support for Research at the University of Rijeka, principal investigator Robert Basan, 2018-2020

PUBLIKACIJE | PUBLICATIONS

RADOVI U ČASOPISIMA | JOURNAL PAPERS

- *Kamenar, E.; Zelenika, S.; Issues in validation of pre-sliding friction models for ultra-high precision positioning, Proceedings of the Institution of Mechanical Engineers. Part C, Journal of Mechanical Engineering Science, 0954-4062, 233, 997-1006, 2019., inozemstvo*
- *Perčić, M.; Zelenika, S.; Mezić, I.; Peter, R.; Krstulović, N.; An experimental methodology for the concurrent characterization of multiple parameters influencing nanoscale friction, Friction 2223-7690, 2019., inozemstvo*
- *Basan, R.; Marohnić, T.; Multiaxial fatigue life calculation model for components in rolling-sliding line contact with application to gears Fatigue & fracture of engineering materials & structures 1460-2695, 42 (7), 1478-1493, 2019., inozemstvo*

MEĐUNARODNI KONGRESI | INTERNATIONAL CONGRESSES

- *Gljušćić, P.; Zelenika, S.; Kamenar, E.; Characterisation of Performances of Thermoelectric Generators for Energy Harvesting Applications Proceedings of the 29th DAAAM International Symposium, 978-3-902734-20-4, 25-30, 2018, Beč, Austrija*
- *Gljušćić, P.; Zelenika, S.; Coupled Electromechanical Numerical Modelling of Piezoelectric Vibration Energy Harvesters, Proceedings of the 29th DAAAM International Symposium, 978-3-902734-20-4, 9-15, 2018, Beč, Austrija*
- *Arrigoni, T.; Zelenika, S.; Kamenar, E.; Schnurrer-Luke-Vrbanić, T.; Design of the Prototype of a Full Arm Mechatronics Rehabilitation Device, Proceedings of the 29th DAAAM International Symposium, 978-3-902734-20-4, 16-24, 2018, Beč, Austrija*
- *Kamenar, E.; Perčić, M.; Zelenika, S.; From nanometric to meso-scale characterisation of friction using nanoindentation, Proceedings of the 19th EUSPEN International Conference, 978-0-9957751-4-5, 72-73, 2019, Cranfield, UK*

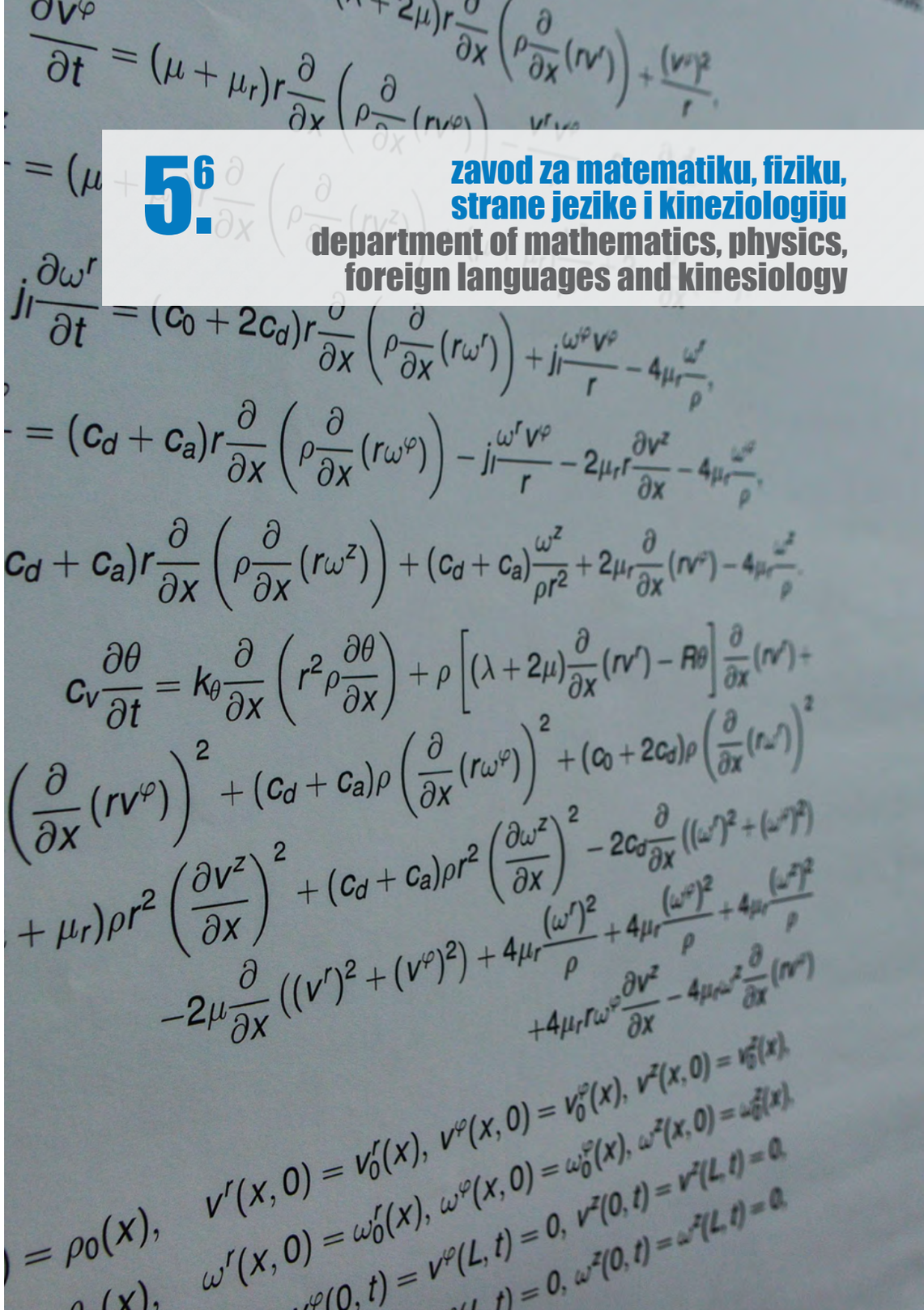
- *Kamenar, E.; Perčić, M.; Zelenika, S.; Šarić, I.; Jardas, D.; Gljušćić, P.; LFM Characterization of TiO2 Films on a Nanoindenter, Proceedings of the 36th Danubia-Adria Symposium on Advances in Experimental Mechanics, 2019, Plzeň, Češka*
- *Gljušćić, P.; Zelenika, S.; Franulović, M.; Miniaturized Wearable Broadband Energy Harvesters, Proceedings of the 36th Danubia-Adria Symposium on Advances in Experimental Mechanics, 2020, Plzeň, Češka*
- *Marković, K.; Franulović, M.; Analyses of soft tissues behaviour using FEM, Publications - 2nd International Conference on Materials Research & Nanotechnology, 2019, Rim, Italija*
- *Franulović, M.; Marković, K.; Herceg, Z.; Stress-strain response in gears tooth root due to low cycle fatigue, 6th International Conference on Power Transmission BAPT2019 Proceedings, 2019, Varna, Bugarska*
- *Franulović, M.; Marković, K.; Genetic algorithm in material model calibration for biomaterials behavior simulation, Published abstracts - 24 Congress of the European Society of Biomechanics, 2019, Beč, Austrija*
- *Basan, R.; Marohnić, T.; Smokvina Hanza, S.; Overview of existing approaches and methods for estimation of cyclic and fatigue parameters of materials, Conference Proceedings of 20th International Conference on Materials MATRIB 2019, 2459-5608, 42-51, 2019, Vela Luka, Hrvatska*
- *Marohnić, T.; Basan, R.; Franulović, M.; A comparison of conventional and machine-learning based methods for estimation of materials' parameters of cyclic strain hardening behavior, Published abstracts - European Congress and Exhibition on Advanced Materials and Processes EUROMAT 2019, 2019, Stockholm, Švedska*
- *Troha, S.; Stefanović-Marinović, J.; Rončević, B.; Anđelković, B.; Milovančević, M.; Marković, K.; An application of multicriteria optimization in selection of the two-speed two-carrier planetary gear trains, 9th International Scientific Conference- IRMES 2019, 978-86-6335-061-8, 2019, Kragujevac, Srbija*

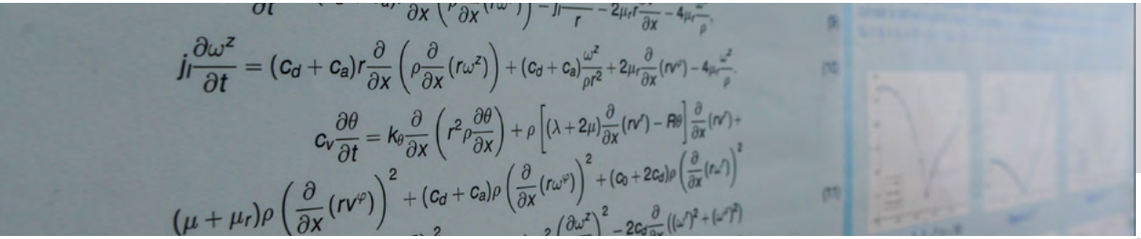
MEĐUNARODNA SURADNJA | INTERNATIONAL COLLABORATIONS

- *Elettra, Italija, Italy*
- *Faculty of Industrial Technology, Technical University - Sofia, Bugarska, Bulgaria*
- *Faculty of Mechanical Engineering, Technical University - Sofia, Bugarska, Bulgaria*
- *Fakulteta za strojništvo, Univerza v Ljubljani, Slovenija, Slovenia*
- *Fakulteta za strojništvo, Univerza v Mariboru, Slovenija, Slovenia*
- *Mašinski fakultet, Univerzitet u Nišu, Srbija, Serbia*
- *University of Applied Sciences, Graz, Austrija, 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*
- *Brno University of Technology, Češka Republika, Czech Republic*

- *Politecnico di Torino, Italija, Italy*
- *University of Trieste, Italija, Italy*
- *Istituto Officina dei Materiali (IOM) of the Italian National Research Council (CNR), Italija,Italy*
- *Mid Sweden University, Švedska, Sweden*
- *University of California Santa Barbara, Department of Mechanical Engineering, Kalifornija, SAD CA, USA*

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





djelatnici
faculty and staff

PREDSTOJNICA ZAVODA | DEPARTMENT HEAD:

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

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

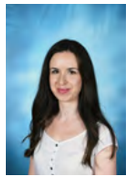
numerical mathematics; scientific computing; computer simulations in engineering; mathematical modelling; data analysis

DOCENTI | ASSISTANT PROFESSORS

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



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 valova 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

VIŠI PREDAVAČI | SENIOR LECTURERS

Melita Štefan Trubić

numerička matematika; metodika nastave matematike

numerical mathematics; methodology of teaching mathematics

Elisa Velčić - Janjetić

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

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

PREDAVAČI | LECTURERS

Anita Badurina

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

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

Vanja Čotić Poturić

metodika nastave matematike

methodology of teaching mathematics

Igor Lulić

matematika

mathematics

ASISTENTI | ASSISTANTS

Angela Bašić - Šiško

numerička matematika

numerical mathematics

Neven Varljen

primijenjena matematika

applied mathematics

PROFESOR EMERITUS | PROFESSOR EMERITUS

Julijan Dobrinić

fizika; zaštita okoliša

physics; environmental protection

VANJSKI SURADNICI | ASSOCIATES

Marijana Varošanec
Odjel za fiziku Sveučilišta u Rijeci
| Department of Physics, University of Rijeka
fizika
physics

Senka Maćešić
Sveučilište u Rijeci | University of Rijeka

Sara Ban
Odjel za matematiku Sveučilišta u Rijeci
| Department of Mathematics, University of Rijeka

Dejan Dešković
Odjel za matematiku Sveučilišta u Rijeci
| Department of Mathematics, University of Rijeka

Matteo Mravić
Odjel za matematiku Sveučilišta u Rijeci
| Department of Mathematics, University of Rijeka

Bojan Ostić
Odjel za matematiku Sveučilišta u Rijeci
| Department of Mathematics, University of Rijeka

matematika
mathematics

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 moderme fizike i zašitete 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, didaktika nastave matematike*
  partial differential equations, numerical mathematics, mathematical modeling, optimization, operational research, statistical methods, combinatorial and descrete mathematics, dynamical systems, didactic of mathematics
- *zaštita okoliša, atomska i nuklearna fizika*
  environment protection, atomic and nuclear physics
- *njemački i engleski jezik kao jezik struke; istraživanje uvjeta za implementaciju engleskoga jezika kao jezika poučavanja u visokom školstvu*
  German and English as languages for specific purposes (LSP), the study of the conditions for the implementation of English-medium Instruction (EMI) in higher education
- *astrofizika, fizika Sunca: magnetohidrodinamika (MHD); numeričko modeliranje*
  astrophysics, solar physics; magnetohydrodinamics (MHD); numerical modelling

PROJEKTI | PROJECTS

- *DARPA projekt "Physics of Artificial Inteligence", glavni istraživači Maria Fonoberova, Ryan Mohr i Igor Mezić, UCSB, suradnici Nelida Črnjarić-Žic, Senka Maćešić*
  DARPA projekt "Physics of Artificial Inteligence", principal investigators Maria Fonoberova, Ryan Mohr and Igor Mezić, UCSB, collaborators Nelida Črnjarić-Žic, Senka Maćešić

- *"Inicijalno-rubni problemi u istraživanju kompresibilnog mikropolarnog termoprovodljivog fluida", istraživanje uz potporu Sveučilišta u Rijeci, voditelj Ivan Dražić, suradnici Nelida Črnjarić-Žic, Loredana Simčić*
  "Mathematical and numerical modeling of compressible micropolar fluid", research supported by the University, principal investigator Ivan Dražić, collaborators Nelida Črnjarić-Žic, Loredana Simčić

- *"Analiza matematičkih modela mehanike fluida i tehničkih sustava pomoću podacima vođenih algoritama za Koopmanov operator", istraživanje uz potporu Sveučilišta u Rijeci, voditeljica Nelida Črnjarić-Žic, suradnici Senka Maćešić, Ivan Dražić, Loredana Simčić, Angela Bašić-Šiško*
  "Analysis of mathematical models of fluid mechanics and technical systems using data-driven algorithms for Koopman operator", research supported by the University of Rijeka, principal investigator Nelida Črnjarić-Žic, collaborators Senka Maćešić, Ivan Dražić, Loredana Simčić, Angela Bašić-Šiško

PUBLIKACIJE | PUBLICATIONS

RADOVI U ČASOPISIMA | JOURNAL PAPERS

- *Maćešić S.; Črnjarić-Žic N.; Mezić I.; Koopman Operator Family Spectrum for Non- autonomous Systems, SIAM, Journal on applied dynamical systems, 1332-300817, (4), 2478-2515, 2018*
- *Huang, L.; Dražić, I.; Large-time behavior of solutions to the 3-D flow of a compressible viscous micropolar fluid with cylindrical symmetry, Mathematical Methods in the Applied Sciences, 0170-4214, 41 (17), 7888-7905, 2018*
- *Dražić, I.; Dimensionless formulation for the one-dimensional compressible flow of the viscous and heat-conducting micropolar fluid Physics & Astronomy International Journal, 2576-4543, 2 (5), 420-423, 2018*
- *Dražić, I.; Črnjarić-Žic N.; Simčić L.; A shear flow problem for compressible viscous micropolar fluid: derivation of the model and numerical solution, Mathematics and computers in simulation 0378-4754, 162, 249-267, 2019*
- *Velčić Brumnjak, S.; Rakovac, I.; Papež Kinkela, D.; Bukal, K.; Šestan, B.; Tulić, V.; Velčić Janjetić, E.; Sotošek Tokmadžić, V.; Postoperative Regional Analgesia is Effective in Preserving Perforin-Expressing Lymphocytes in Patients after Total Knee Replacement Medical Sci Monitor e-ISSN 1643-3750, 24, 5320-5328, 2018*
- *Huang, L.; Dražić, I.; Exponential stability for the compressible micropolar fluid with cylinder symmetry in R^3, Journal of Mathematical Physics, 0022-2488, 60 (021507), 1-14, 2019*
- *Dražić, I.; Mujaković, N.; Local existence of the generalized solution for three-dimensional compressible viscous flow of micropolar fluid with cylindrical symmetry, Boundary value problems, 1687-2770, 2019 (16), 1-25, 2019*
- *Velčić Janjetić, E.; Badurina A.; Students' Attitudes towards General English vs. Technical English Ratio in ESP Classes, Conference Proceedings, III. International Conference From Theory to Practice in Language for Specific Purposes, 1849-9279, 3, 364-380, 2019*

MEĐUNARODNI KONGRESI | INTERNATIONAL CONGRESSES

- *Črnjarić-Žic N.; Maćešić S.; Mezić I.; Data-driven predictions of dynamical systems in healthcare Equadiff 2019, 2019, Leiden, Nizozemska*
- *Dražić, I.; Non-homogeneous boundary problems for one dimensional flow of the compressible viscous and heat-conducting micropolar fluid, ICDDEA 2019, 2019, Lisabon, Portugal*

- *Dražić, I.; 1-D flow of a p-th power viscous micropolar and heat-conducting fluid, Equadiff 2019, 2019, Leiden, Nizozemska*
- *Velčić Janjetić, E.; Badurina A.; Implementing Alternative Assessment in ESP Classes, UNJSVU, III. International Conference From Theory to Practice in Language for Specific Purposes, 2019, Zagreb, Croatia*
- *Drljača Margić, B.; Velčić Janjetić, E.; Necessary prerequisites for the effective implementation of English-medium instruction: A case study, HDPL, 33rd International Conference, Meaning in language - from individual to collective, 2019, Rijeka, Croatia*
- *Simčić L.; Dražić I.; Some properties of a generalized solution for shear flow of a compressible viscous micropolar fluid model, International Conference on Differential & Difference Equations and Applications, 2019, Lisabon, Portugal*

POZVANA PREDAVANJA | INVITED LECTURES

- *Črnjarić-Žic N.; Stochastic Koopman operator and the numerical approximations of its spectral objects, Institute of Pure and Applied Mathematics – Operator Theoretic Methods in Dynamic Data Analysis and Control, workshop, 2019, Los Angeles, SAD*
- *Maćešić S.; Data-driven algorithms for nonautonomous Koopman operator, Institute of Pure and Applied Mathematics – Operator Theoretic Methods in Dynamic Data Analysis and Control, workshop, 2019, Los Angeles, SAD*
- *Črnjarić-Žic N.; Stochastic Koopman Operator and the Numerical Approximations of its Spectral Objects, University of Ljubljana, Faculty of Mathematics and Physics, Algebra and functional analysis seminar, 2019, Ljubljana, Slovenija*

MEĐUNARODNA SURADNJA | INTERNATIONAL COLLABORATIONS

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

5.7

zavod za materijale
department of materials science and engineering

djelatnici
faculty and staff

PREDSTOJNIK ZAVODA | DEPARTMENT HEAD:

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

DOCENTICA | ASSISTANT PROFESSOR

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

Andrej Borić

termalni procesi materijala

thermal processes of materials

Lovro Liverić

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

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

Lovro Štic

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

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

PROFESOR EMERITUS | PROFESSOR EMERITUS

Ivan Katavić

VANJSKI SURADNICI | ASSOCIATES

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

Robert Danzer
Institut für Struktur- und Funktionskeramik

keramički i kompozitni materijali

ceramics and composite materials

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

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

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

- *Optimiranje 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 - 2018, znanstvenoistraživački.*
  Computer optimization of parameters of thermal processes of metal, University of Rijeka, Dario Iljkić, 2013 - 2018, research and scientific.

PUBLIKACIJE | PUBLICATIONS
RADOVI U ČASOPISIMA | JOURNAL PAPERS

- *Borić, A.; Kalendová, A.; Urbanek, M.; Pepelnjak, T.; Characterisation of Polyamide (PA)12 Nanocomposites with Montmorillonite (MMT) Filler Clay Used for the Incremental Forming of Sheets, Polymers, 2073-4360, 11 (8), 2019., Švicarska*
- *Garašić, I.; Jurica, M.; Iljkić, D.; Barišić, A.; Determination of ballistic properties on ARMOX 500T steel welded joint, Engineering Review, 2379-1365 39 (2), 186-196, 2019., Rijeka*
- *Stanić, D.; Špada, V.; Iljkić, D.; Influence of natural aging on the mechanical properties of high pressure die casting (HPDC) EN AC 46000-AlSi9Cu3(Fe) Al alloy Materials Testing, 0025-5300 61 (5), 448-454, 2019., Njemačka*
- *Smoljan, B.; Iljkić, D.; Smokvina Hanza, S.; Jokić, M.; Štic, L.; Borić, A.; Mathematical Modeling and Computer Simulation of Steel Quenching Materials Performance and Characterization, 2379-1365, 8 (2), 17-36, 2019., SAD*

MEĐUNARODNI KONGRESI | INTERNATIONAL CONGRESSES

- *Smoljan, B.; Iljkić, D.; Smokvina Hanza, S.; Štic, L.; Jokić, M.; Numerical modelling of welding of martensitic steel, Mathematical Modelling of Weld Phenomena - selected peer reviewed papers from the 12th International Seminar Numerical Analysis of Weldability, 2410-0544, 167-179, 2018., Graz - Seggau, Austrija*
- *Iljkić, D.; Gržinić, L.; Vratović, G.; Aktivacija austenitnog nehrđajućeg čelika za postupak bestrujnoga nanošenja Ni-P prevlake, 8th International conference – Mechanical Technologies and Structural Materials 2018, MTSM2018, 1847-7917, 71-77, 2018., Split*

POZVANA PREDAVANJA | INVITED LECTURES

- *Smoljan, B.; Iljkić, D.; Smokvina Hanza S.; Prediction of working stress of quenched and tempered steel and cast steel specimen, 18th International Foundrymen Conference - Coexistence of material science and sustainable technology in economic growth, 2019., Sisak, Hrvatska*

MAĐUNARODNA SURADNJA | INTERNATIONAL COLLABORATIONS

- *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

djelatnici
faculty and staff

PREDSTOJNIK ZAVODA | DEPARTMENT HEAD:

Prof. dr. sc. / Prof. D. Sc. **Lado Kranjčević**

strujanje u mreži cjevovoda; strujanje u otvorenim vodotocima; paralelno programiranje

pipe network flow; open channel flow; parallel programming

REDOVITI PROFESOR | PROFESSOR

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

IZVANREDNI PROFESORI | ASSOCIATE PROFESSORS

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; strojno učenje

3D modelling in CFD; machine learning

Ante Sikirica

3D modeliranje u računalnoj mehananici fluida; turbostrojevi; programiranje

3D modelling in CFD; turbomachinery; 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* — *Optimization in Technics*
- *Primjena paralelenog računanja* — *Applied Parallel Computing*
- *Primjena računalne grafike* — *Applied Computer Graphics*
- *Programiranje tehničkih aplikacija* — *Programming of Technical Applications*
- *Programiranje tehničkih aplikacija II* — *Programming of Technical Applications II*
- *Računalom podržano mjerenje* — *Computer Aided Measuring*
- *Računalna mehanika fluida* — *Computational Fluid Dynamics*
- *Upoznavanje industrijskih postrojenja* — *Insight to Industrial Facilities*
- *Računarske metode u brodogradnji* — *Computational Methods in Naval Engineering*

KOLEGIJI NA PREDDIPLOMSKIM STRUČNIM STUDIJIMA
| UNDERGRADUATE VOCATIONAL COURSES

- *Hidraulički strojevi ST* — *Hydraulic Machines ST*
- *Mehanika fluida ST* — *Fluid Mechanics ST*

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

- *Dinamika fluida* — *Fluid Dynamics*
- *Hidrodinamika turbostrojeva* — *Hydrodynamics of Turbomachines*
- *Turbulentno strujanje* — *Turbulent Flow*
- *Modeliranje onečišćenja zraka* — *Air Quality Modeling*
- *Računalna mehanika fluida* — *Computational Fluid Mechanics*
- *Modeliranje strujanja sa slobodnom površinom* — *Free Surface Flow Modeling*
- *Modeliranje nestacionarnog strujanja u cjevovodu* — *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
- *Predikcija mikrobiološke kakvoće vode upotrebom strojnog učenja*
  Microbiological water quality prediction using machine learning

PROJEKTI | PROJECTS

- *Ivić, S.; Praćenje područja u izmijenjivim uvjetima pomoću bespilotnih letjelica - Inicijalna potpora za mlađe istraživače, Tehnički fakultet Sveučilišta u Rijeci, 2018/2019.*
  Ivić, S; Area coverage in changing conditions with Unmanned Aerial Vehicles - Young Researchers Grant, University of RIjeka, Faculty of Engineering, 2018/2019.
- *Kranjčević, L.; Razvoj hibridnog 2D/3D modela za učinkovito modeliranje strujanja u rijekama, jezerima i morima - projekt uz potporu Sveučilišta, Tehnički fakultet Sveučilišta u Rijeci, 2018/2019.*

Hybryd 2D/3D model development for efficient flow modelling in rivers, lakes and oceans - project supported by University of Rijeka, Faculty of Engineering University of Rijeka, 2018/19

- *Škifić, J.; Istraživanje I razvoj softwarea Neptune, Faza 2, SAIPEM 2018.*
  Škifić, J.; Neptune Software Research and Development Project, Phase 2, SAIPEM

PUBLIKACIJE | PUBLICATIONS

RADOVI U ČASOPISIMA | JOURNAL PAPERS

- *Šrajbek, M.; Kovač, I.; Novotni-Horčička, N.; Kranjčević, L.; Assessment of average contributions of point and diffuse pollution sources to nitrate concentration in groundwater by nonlinear regression, Environmental Engineering and Management Journal, 2019., Environmental Engineering and Management Journal, 1582-9596, 21 (12), 3387-3400, 2019*
- *Grbčić, L.; Kranjčević, L.; Lučin, I.; Čarija, Z.; Experimental and numerical investigation of mixing phenomena in double-Tee junctions Water, 2073-4441, 11(6), 1198, 2019, MDPI Switzerland*
- *Tomić, D.; Skala, K.; Kranjčević, L.; Pirkić, B.; Štifter, S.; Šmit, 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, 3, 240-248, 2018*
- *Kranjčević, L.; Grbčić, L.; Čarija, Z.; Šrajbek, M.; ANALYSIS OF WELL FIELD NITRATES POLLUTION DISTRIBUTION IN AGRICULTURAL AREA, Annals of DAAAM & Proceedings 29, 1726-9679, 1, 1053-1058, 2018, Beč, Austrija*
- *Čarija, Z.; Lučin, I.; Lučin, B.; Grbčić, L.; INVESTIGATION OF NUMERICAL SIMULATION PARAMETERS ON FLUID FLOW AROUND TRASH-RACKS, Annals of DAAAM & Proceedings, 29, 1726-9679, 1, 1046-1052, 2018, Beč, Austrija*
- *Zeng, H.; Grbčić, L.; Lučin, I.; Kranjčević, L.; MESH CREATION FOR REALISTIC TERRAIN CASES FOR SHALLOWFOAM-2D OPENFOAM SOLVER, Annals of DAAAM & Proceedings 29, 1726-9679, 1, 1065-1070, 2018, Beč, Austrija*
- *Lučin, I.; Kranjčević, L.; Čarija, Z.; Mogorović, A.; EXPERIMENTAL SETUP OF FLUID MIXING IN DOUBLE TEE JUNCTIONS, Annals of DAAAM & Proceedings 29, 1726-9679, 1, 1059-1064, 2018, Beč, Austrija*
- *Bosner, T.; Crnković, B.; Škifić, J.; Application of CCC–Schoenberg operators on image resampling, BIT Numerical Mathematics, 0006-3835, 1, 1–27, 2019, Lund, Švedska*
- *Ivić, S.; Andrejčuk, A.; Družeta, S.; Autonomous control for multi-agent non-uniform spraying Applied Soft Computing, 1568-4946, 1, 742-760, 2019, Amsterdam, Nizozemska*

MEĐUNARODNI KONGRESI | INTERNATIONAL CONGRESSES

- *Numerička analiza kvalitete tople vode u cilju kontrole rizika razvoja legionele, 7. hrvatska konferencija o vodama -„Hrvatske vode u zaštiti okoliša i prirode“, 978-953-7672-19-5, 1, 1113-1120, 2019, Zagreb - Lado Kranjčević, Hanal Salamun, Siniša Družeta, Luka Grbčić*
- *Predicting the effectiveness of multi-drug cancer therapies, 42nd International Convention on Information and Communication Technology, Electronics and Microelectronics, MIPRO 2019 - Proceedings, 8757131, 1, 375-380, 2019, Zagreb - Drasko Tomic, Boris Pirkic, Karolj Skala, Lado Kranjčević*

MEĐUNARODNA SURADNJA | INTERNATIONAL COLLABORATIONS

- *Technische Universität München, Ingenieurfakultät Bau Geo Umwelt, Njemačka, Germany*


5.9
zavod za računarstvo
department of computer engineering
left: 50%;
transform: tr
width: 400px;
padding: 40px;
background:
box-sizing: bo
box-shadow: 0
border-radius:
}
.box h2{
margin: 0 0 30p
padding: 0;
color: #fff;
text-align: cent
}
.box h3{
margin: 0 0 10px;
padding: 0;
color: #fff;
text-align: center
}
.box .inputBox{
position: relative

djelatnici
faculty and staff

PREDSTOJNIK ZAVODA | DEPARTMENT HEAD:

Doc. dr. sc. / Assist. Prof. D. Sc. Jonatan Lerga

digitalna obrada signala; vremensko-frekvencijska analiza signala; teorija informacija; kodiranje

digital signal processing; time-frequency signal analysis; information theory; coding

REDOVITI PROFESOR U TRAJNOM ZVANJU | TENURED PROFESSOR

Ivo Ipšić

umjetna inteligencija; raspoznavanje uzoraka; govorne tehnologije
artificial intelligence; pattern recognition; speech technologies

REDOVITI PROFESOR | PROFESSOR

Miroslav Joler

antene; visokofrekvencijska elektronika; bežične komunikacije; računalni elektromagnetizam; rekonfigurabilni sklopovi

antennas; high-frequency electronics; wireless communications; computational electromagnetics; reconfigurable circuits

IZVANREDNI PROFESORI | ASSOCIATE PROFESSORS

Kristijan Lenac

mobilna robotika; operacijski sustavi; razvoj algoritama; ugradbeni sustavi

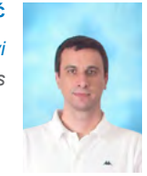
mobile robotics; operating systems; algorithm development; embedded systems

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

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

Sandi Ljubić

interakcija čovjeka i računala; mobilne aplikacije; inženjerstvo upotrebljivosti
human-computer interaction (HCI); mobile applications; usability engineering

ASISTENTI | ASSISTANTS

Luka Batistić

interakcija čovjeka i računala; digitalna obrada signala
human-computer interaction (HCI); digital signal processing

Franko Hržić

umjetna inteligencija; strojno učenje
artificial intelligence; machine learning

Alen Salkanović

interakcija čovjeka i računala; mobilne aplikacije

human-computer interaction (HCI); mobile applications

Denis Selimović

vremensko-frekvencijska analiza signala; teorija informacija

time-frequency signal analysis; information theory

Diego Sušanj

obrada slike; bežične mreže osjetila; ugradbeni sustavi

image processing; wireless sensor networks; embedded systems

Ana Vranković

vremensko-frekvencijska analiza signala; teorija informacija

time-frequency signal analysis; information theory

STRUČNI SURADNIK | ASSOCIATE

Domagoj Pinčić

mobilna robotika, strojno učenje, obrada slike

mobile robotics, machine learning, image processing

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*
- *Natjecateljsko programiranje* — *Competitive programming*
- *Operacijski sustavi* — *Operating Systems*
- *Programiranje* — *Programming*
- *Programiranje I* — *Programming I*
- *Programiranje II* — *Programming II*
- *Programska podrška u inženjerstvu* — *Computer Software in Engineering*
- *Programsko inženjerstvo* — *Software Engineering*
- *Računalne vještine* — *Computing Skills*

- *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*
- *Uvod u umjetnu inteligenciju* — *Introduction to Artificial Intelligence*

KOLEGIJI NA DIPLOMSKIM SVEUČILIŠNIM STUDIJIMA
| GRADUATE UNIVERSITY COURSES

- *Analiza računalnih i komunikacijskih sustava* — *Computer and Communication System Analysis*
- *Bežične mreže osjetila* — *Wireless Sensor Networks*
- *Inženjerstvo kompleksnih programskih sustava* — *Complex Software Systems Engineering*
- *Komunikacija čovjek-stroj* — *Human-Machine Interaction*
- *Mikrovalno inženjerstvo* — *Microwave Engineering*
- *Mobilna robotika* — *Mobile Robotics*
- *Mobilne komunikacije* — *Mobile Communications*
- *Napredna korisnička sučelja* — *Advanced User Interfaces*
- *Napredne računalne mreže* — *Advanced Computer Networks*
- *Napredni algoritmi i strukture podataka* — *Advanced Algorithms and Data Structures*
- *Objektno orijentirano programiranje* — *Object Oriented Programming*
- *Programiranje ugradbenih sustava* — *Embedded Systems Programming*
- *Programski određen radio* — *Software-Defined Radio*
- *Računalna obrada govora i jezika* — *Computer Speech and Language Processing*
- *Razvoj mobilnih aplikacija* — *Mobile Applications Development*
- *Strojno učenje* — *Machine Learning*
- *Teorija informacija i kodiranje* — *Information Theory and Coding*
- *Usluge zasnovane na lokaciji* — *Location-Based Services*

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
- *Računalna obrada govora i jezika, raspoznavanje uzoraka*
  Speech processing and pattern recognition
- *Nosive antene; pametna odjeća; rekonfigurabilni sklopovi*
  Wearable antennas; smart clothing; reconfigurable circuits
- *Mobilna robotika, autonomni sustavi, interakcija čovjeka i računala*
  Mobile robotics, autonomous systems, human computer interaction
- *Digitalna obrada signala, vremensko-frekvencijska analiza signala, primjene obrade signala*
  Digital signal processing, time-frequency signal analysis, signal processing applications
- *Inženjerstvo upotrebljivosti, prediktivno modeliranje i vrednovanje, univerzalni pristup*
  Usability engineering, predictive modeling and evaluation, universal access

- *Primijenjeno meko računarstvo, programsko inženjerstvo*
  Applied soft computing, software engineering
- *Strojno učenje, računalom potpomognuto dijagnosticiranje, analiza slike*
  Machine learning, computer aided diagnosis, image analysis
- *Digitalna obrada signala, adaptivni wavelet algoritmi*
  Digital signal processing, adaptive wavelet algorithms
- *Obrada slike, bežične mreže osjetila, ugradbeni sustavi*
  Image processing, wireless sensor networks, embedded systems
- *Vremensko-frekvencijska analiza signala, informacijske mjere*
  Time-frequency signal analysis, information measures
- *Interakcija čovjeka i računala; mobilne aplikacije*
  Human-computer interaction (HCI); mobile applications
- *Obrada slike, strojno učenje*
  Image processing, machine learning
- *Interakcija čovjeka i računala, digitalna obrada signala*
  Human-computer interaction (HCI), digital signal processing
- *Strojno učenje, računalom potpomognuto dijagnosticiranje*
  Machine learning, computer aided diagnosis

PROJEKTI | PROJECTS

- *Joler: Razvoj pametne jakne. Sveučilište u Rijeci, znanstveno-istraživački. Voditelj projekta.*
  Joler: Smart Jacket Development. Funded by: University of Rijeka, Croatia. Scientific research. Principal Investigator.
- *Ipšić:"Prirodna i višemodalna komunikacija čovjek stroj". Znanstveni projekt financiran od strane Sveučilišta u Rijeci. Glavni istraživač.*
  Ipšić:"Natural and multimodal man machine communication". A scientific project funded by the University of Rijeka. Principal investigator.
- *CEEPUS mreža "International Cooperation in Computer Science". Lokalni koordinator: J. Lerga*
  CEEPUS network "International Cooperation in Computer Science". Local coordinator: J. Lerga.
- *CEEPUS mreža CIII-AT-0042 "Image Processing, Information Engineering & Interdisciplinary Knowledge Exchange". Lokalni koordinator: I. Štajduhar.*
  CEEPUS network CIII-AT-0042 "Image Processing, Information Engineering & Interdisciplinary Knowledge Exchange". Local coordinator: I. Štajduhar.
- *"DEcision Support System for green and safE ship RouTing". Znanstveni projekt financiran od Hrvatske zaklade za znanost. Voditeljica: J. Prpić-Oršić. Suradnik: J. Lerga et al.*
  "DEcision Support System for green and safE ship RouTing". A scientific project funded by the Croatian Science Foundation. Principal investigator: J. Prpić-Oršić. Researchers: J. Lerga et al.
- *"Computer-Aided Digital Analysis and Classification of Signals". Znanstveni projekt financiran od strane Sveučilišta u Rijeci. Voditelj projekta: J. Lerga. Suradnici: I. Štajduhar et al.*
  "Computer-Aided Digital Analysis and Classification of Signals". A scientific project funded by the University of Rijeka. Principal investigator: J. Lerga. Researchers: I. Štajduhar et al.
- *"Razvoj postupaka temeljenih na strojnom učenju za prepoznavanje bolesti i ozljeda iz medicinskih slika". Znanstveni projekt financiran od strane Sveučilišta u Rijeci, uniri-tehnic-18-15. Voditelj projekta: I. Štajduhar. Suradnici: J. Lerga, D. Brščić, D. Miletić, M. Milanič, E. Sorantin, M. Urschler, R. Jeraj, T. Manojlović, F. Hržić.*
  "Development of Machine-Learning-Based Techniques for Illness and Injury Detection in Medical Images". A scientific project funded by the University of Rijeka, uniri-tehnic-18-15. Principal investigator: I. Štajduhar. Researchers: J. Lerga, D. Brščić, D. Miletić, M. Milanič, E. Sorantin, M. Urschler, R. Jeraj, T. Manojlović, F. Hržić.

- *"A Network for Gravitational Waves, Geophysics and Machine Learning". EU COST znanstveni projekt, CA17137. Istraživači: J. Lerga, I. Štajduhar et al.*
  "A Network for Gravitational Waves, Geophysics and Machine Learning". EU COST scientific project, CA17137. Researchers: J. Lerga, I. Štajduhar et al.
- *"Nadzor gibanja prsnog koša pri radioterapiji primjenom postupaka strojnog učenja". Bilateralni hrvatsko-slovenski znanstveni projekt. Suvoditelji projekta: I. Štajduhar i R. Jeraj. Suradnici: M. Milanič, U. Simončič, M. Turk, A. Marin, J. Stergar, L. Rogelj, J. Lerga, A. Andrijašević, M. Mamula, F. Hržić, T. Manojlović.*
  "Thorax Motion Supervision in Radiotherapy Using Machine Learning Techniques". A bilateral Croatian-Slovenian scientific project. Co-principal investigators: I. Štajduhar i R. Jeraj. Researchers: M. Milanič, U. Simončič, M. Turk, A. Marin, J. Stergar, L. Rogelj, J. Lerga, A. Andrijašević, M. Mamula, F. Hržić, T. Manojlović.
- *Brščić, Arbula, Ljubić, Batistić, Vranković: Interaktivni tečaj za automatsko upravljanje, Erasmus+ Key Action 2: Cooperation for innovation and the exchange of good practices, 2018-1-SIO1-KA203-047081, 2018-2021, partner na projektu*
  Brščić, Arbula, Ljubić, Batistić, Vranković: Interactive Course for Control Theory, Erasmus+ Key Action 2: Cooperation for innovation and the exchange of good practices, 2018-1-SIO1-KA203-047081, 2018-2021, project partner
- *Tomić: "Multisenzorni neurofeedback sustav za osobe s poremećajem iz spektra autizma", Program provjere inovativnog koncepta za poduzetnike (POC), Hrvatska agencija za malo gospodarstvo, inovacije i investicije, suradnik na projektu*
  Tomić: "Multisensory neurofeedback system for persons with autism spectrum disorder", Proof of concept program (POC), Croatian Agency for SMEs, Innovations and Investments
- *"Focusing Education On Composability, Comprehensibility And Correctness Of Working Software", ERASMUS+ Key Action 2: Cooperation for innovation and the exchange of good practices, 2017-1-SK01-KA203-035402, partner na projektu, lokalni koordinator: G. Mauša*
  "Focusing Education On Composability, Comprehensibility And Correctness Of Working Software", ERASMUS+ Key Action 2: Cooperation for innovation and the exchange of good practices, 2017-1-SK01-KA203-035402, project partner, local coordinator: G. Mauša
- *"Adaptacija više-ciljnog genetskog programiranja za rješavanje složenih kombinatornih problema", projekt inicijalne potpore mladim istraživačima Sveučilišta u Rijeci, broj 18.10.2.1.01, voditelj projekta: G. Mauša*
  "Adapting multi-objective genetic programming for solving complex combinatorial problems", initial support project for young researcher from University of Rijeka, grant number 18.10.2.1.01, principal investigator: G. Mauša
- *"Empirijska usporedba pristupa temeljenih na strojnom učenju za otkrivanje problematičnog programskog koda", hrvatsko – slovenskom bilateralnom projektu koda financiranom od strane Ministarstva znanosti i obrazovanja, voditelji projekta: M. Heričko i T. Galinac Grbac, suradnik: G. Mauša et al.*
  "An empirical comparison of machine learning based approaches for code smell detection", croatian - slovenian bilateral project funded by the Croatian Ministry of sceince and education, principal investigators: M. Heričko and T. Galinac Grbac, researcher: G. Mauša et al.
- *Dig IT - Izrada standarda zanimanja i standarda kvalifikacija u djelatnostima računarstva (UP.03.1.1.03.0061). Stručnjaci: I. Štajduhar, S. Ljubić, G. Mauša.*
  Dig IT - Development of occupational standards and standard of qualifications in computer science (UP.03.1.1.03.0061). Experts: I. Štajduhar, S. Ljubić, G. Mauša.

PUBLIKACIJE | PUBLICATIONS

RADOVI U ČASOPISIMA | JOURNAL PAPERS

- *Saulig, N.; Lerga, J.; Milanović, Ž.; Ioana, C.; Extraction of Useful Information Content from Noisy Signals Based on Structural Affinity of Clustered TFDs' Coefficients IEEE Transactions on Signal Processing, ISSN: 1053-587X, 67 (12), 3154-3167, 2019, inozemstvo*
- *Kirinčić, V.; Čeperić, E.; Vlahinić, S.; Lerga, J.; Support Vector Machine State Estimation, Applied Artificial Intelligence, ISSN: 0883-9514, 33 (6), 517-530, 2019, inozemstvo*
- *Hržić, F.; Štajduhar, I.; Tschauner, S.; Sorantin, E.; Lerga, J.; Local-Entropy Based Approach for X-Ray Image Segmentation and Fracture Detection, Entropy, ISSN: 1099-4300, 21 (4), 1-18, 2019, inozemstvo*
- *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, inozemstvo*
- *Lerga, J.; Mandić, 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, inozemstvo*
- *Lerga, J.; Grbac, E.; Sucic, 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, inozemstvo*
- *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, inozemstvo*
- *Kalafatovic, D.; Mauša, G.; Todorovski, T.; Giralt, E.; Algorithm-supported, mass and sequence diversity-oriented random peptide library design, Journal of Cheminformatics, ISSN: 1758-2946, 11 (25), 1 - 15, 2019, inozemstvo*
- *Joler, M.; Berkarić, .; Klen, V.; Testing an Arduino-based Approach for Full-Duplex Voice Communication and Body-Parameter Sensing Electronics for Use with Smart Clothing, International Journal of Antennas and Propagation, ISSN: 1687-5869, vol. 2019, Article ID 8598912, 8 pages (online) , 2019, inozemstvo*

POZVANA PREDAVANJA | INVITED LECTURES

- *Jonatan Lerga, Introduction to Time-Frequency Distributions with Applications in Signal Processing, University of Maribor, Faculty of Electrical Engineering and Computer Science, 2019 Maribor, Slovenija*
- *Jonatan Lerga, Computer-Aided Decision Support Systems in Medicine, University of Maribor, Faculty of Electrical Engineering and Computer Science, 2019, Maribor, Slovenija*
- *Jonatan Lerga, Computer-Aided Biomedical Signal Analysis, Vasile Goldis Western University of Arad, Faculty of Medicine, 2019, Arad, Rumunjska*
- *Jonatan Lerga, Data-Driven Adaptive Filtering with Applications, University of Szeged, Institute of Informatics, 2019, Szeged, Mađarska*
- *Jonatan Lerga, Computer-Aided Signal Analysis: Methods and Applications, Johannes Kepler University Linz, Institute of Signal Processing, 2019, Linz, Austrija*
- *Jonatan Lerga, Nonstationary Signal Processing – Methods and Applications, University of Szeged, Institute of Informatics, 2018, Szeged, Mađarska*

- *Ivan Štajduhar, Everything you never wanted to know about machine learning, but were forced to find out, 27th Summer School on Image Processing, SSIP 2019, 2019, Temišvar, Rumunjska*
- *Ivan Štajduhar, Umjetna inteligencija u medicini, Rijeka tehnologije 2018, Rijeka, Hrvatska*
- *Ivan Štajduhar, Towards data-driven approaches for medical image analysis, Biofizikalni seminar u organizaciji Društva biofizičara Slovenije i Laboratorija za biofiziku (Institut Jožef Stefan), 2018, Ljubljana, Slovenija*
- *Dražen Brščić, Interackija ljudi i robota u javnim prostorima, Rijeka tehnologije, 2018, Rijeka, Hrvatska*
- *Goran Mauša, Software Defect Prediction, Eötvös Loránd University, Faculty of Informatics, 2019, Budimpešta, Mađarska*
- *Miroslav Joler, Towards a Smart Jacket: Integration of Electronics Challenge, 18th International Conference on Sensor Networks and Signal Processing (SNSP 2018), Xi'an, China, October 28-31, 2018, 2018, Xi'an, China*
- *Miroslav Joler, Some Cases of Antenna Research for Modern Communications, Seminar Series for Masters students from universities in Bratislava, Slovakia, Vienna, Austria, and Brno, Czech Republic, 2019, Brno, Češka Republika*
- *Miroslav Joler, Overview of Some Antenna and Mobile Communication-minded Research at the University of Rijeka, Brno University of Technology, Faculty of Electical Engineering and Communication Technologies, Department of Radio Electronics, 2019, Brno, Češka Republika*

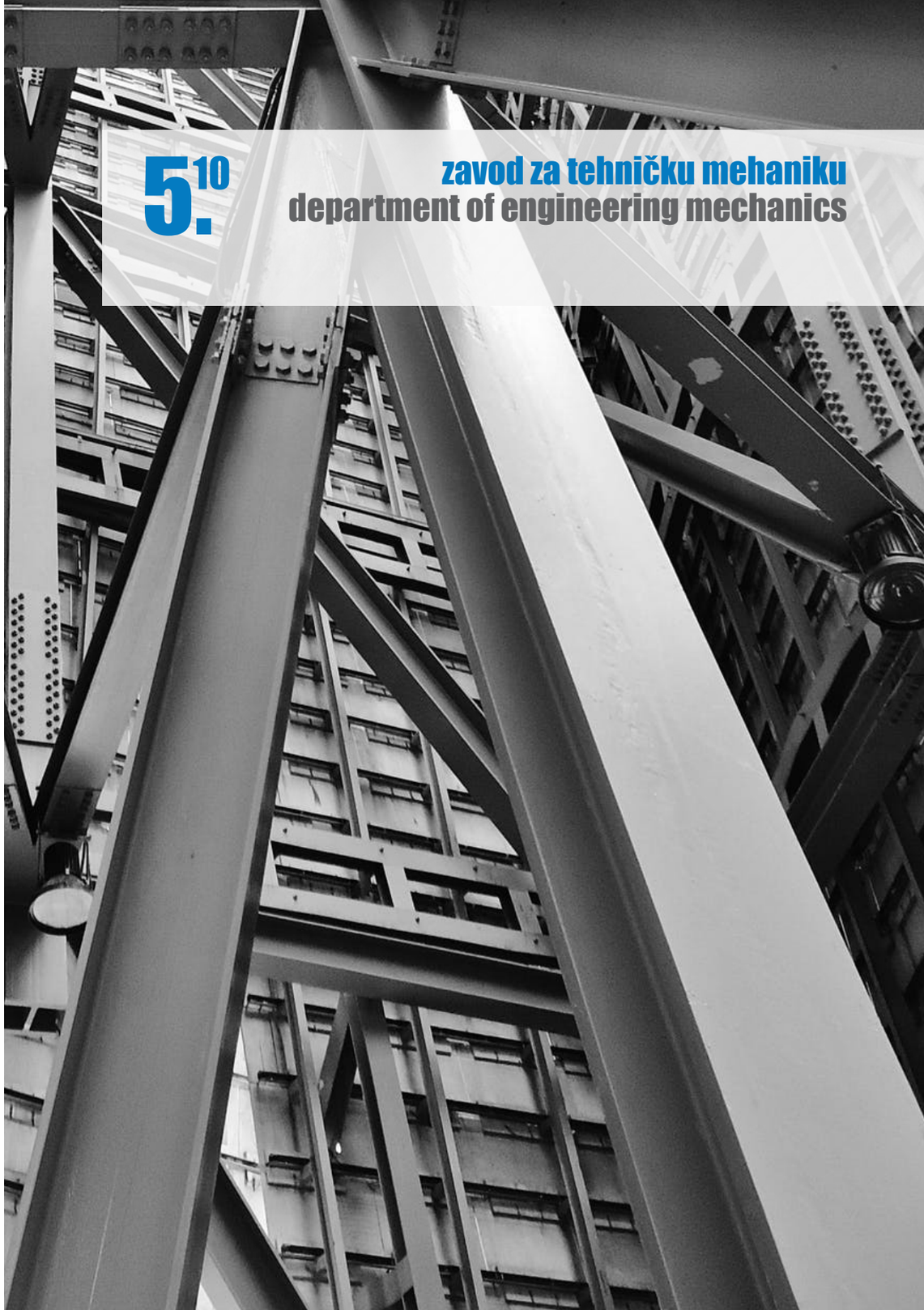
MEĐUNARODNI KONGRESI | INTERNATIONAL CONGRESSES

- *Lerga J.; Saulig, N.; Žuškin, M.; Panjkota, A.; Denoising Accuracy of Adaptive ICI-Based Estimators With Regards to Sampling Rate, 2019 4th International Conference on Smart and Sustainable Technologies (SpliTech) ISBN: 978-953-290-091-0, 1-6, 2019, Split, Hrvatska*
- *Grbac Babić, S.; Galinac Grbac, T.; Lerga, J.; Community structure of a complex software-system in evolution, 2018 41st International Convention on Information and Communication Technology, Electronics and Microelectronics (MIPRO), ISBN: 978-953-233-095-3, 1467-1471, 2018, Opatija, 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 2018 3rd International Conference on Smart and Sustainable Technologies (SpliTech), ISBN: 978-953-290-083-5, 1-5, 2018, Split, Hrvatska*
- *Gradišnik, M.; Beranič, T.; Karakatič, S.; Mauša, G.; Adapting God Class thresholds for software defect prediction: A case study, 2019 43rd International Convention on Information, Communication and Electronic Technology (MIPRO), ISSN: 2623-8764, 1537 - 1542, 2019, Opatija, Hrvatska*
- *Gradišnik, M.; Karakatič, S.; Mauša, G.; Beranič, T.; Heričko, M.; Možnosti vpeljave umetne inteligence v proces razvoja programske opreme, 26. konferenca Dnevi slovenske informatike, 1 - 6, 2019, Portorož, Slovenija*

MEĐUNARODNA SURADNJA | INTERNATIONAL COLLABORATIONS

- *Lenac: University of Trieste, Trieste, Italija, Italy*
- *Lenac: AIBS Lab S.r.l., Trieste, Italija, Italy*
- *Štajduhar: Faculty of Mathematics and Physics, University of Ljubljana, Slovenija, Slovenia*

- *Štajduhar: Jožef Stefan Institute, Ljubljana, Slovenija, Slovenia*
- *Štajduhar, Hržić: Medical University of Graz, Austrija, Austria*
- *Mauša: Faculty of electrical engineering, computing and informatics, University of Maribor, Slovenija, Slovenia*
- *Mauša: Institute for research in biomedicine, Barcelona, Španjolska, Spain*
- *Lerga: University of Maribor, Faculty of Electrical Engineering and Computer Science, Maribor, Slovenija, Slovenia*
- *Lerga: University of Szeged, Institute of Informatics, Szeged, Mađarska, Hungary*
- *Lerga: Johannes Kepler University Linz, Institute of Signal Processing, Linz, Austrija, Austria*
- *Lerga: University of Montenegro, Podgorica, Crna Gora, Montenegro*
- *Štajduhar: FH Joanneum, Graz, Austrija, Austria*
- *Joler: Brno University of Technology, Brno, Češka Republika, Czech Republic*



5.10 zavod za tehničku mehaniku
department of engineering mechanics

djelatnici
faculty and staff

PREDSTOJNIK ZAVODA | DEPARTMENT HEAD:

Prof. dr. sc. / Prof. D. Sc. Roberto Žigulić

kinematika; dinamika; dinamika strojeva i robota; mehatronika; eksperimentalna mehanika

kinematics; dynamics; dynamics of robots and machines; mechatronics; experimental mechanics

REDOVITI PROFESORI U TRAJNOM ZVANJU | TENURED PROFESSORS

Marko Čanađija

termomehanika; eksperimentalna mehanika; statika; metoda konačnih elemenata; nanomehanika

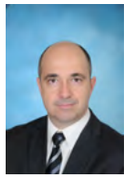
thermomechanics; experimental mechanics; statics; finite element method; nanomechanics

Goran Turkalj

čvrstoća konstrukcija; elasto-plastomehanika; stabilnost konstrukcija; računarska analiza konstrukcija

strength of materials; elasto-plastomechanics; structural stability; computational structural analysis

REDOVITI PROFESORI | PROFESSORS



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

IZVANREDNI PROFESOR | ASSOCIATE PROFESSOR

Marino Brčić

statika; čvrstoća konstrukcija; mehanika i elementi konstrukcija; laboratorijske vježbe; eksperimentalna ispitivanja u mehanici konstrukcija i strojeva; metoda konačnih elemenata; nanomehanika

statics; strength of materials; mechanics and structural elements; experimental methods in mechanics; finite element method; nanomechanics

DOCENTI | ASSISTANT PROFESSORS

Sanjin Kršćanski

statika; čvrstoća konstrukcija; mehanika i elementi konstrukcija; trajnost strojeva i konstrukcija; eksperimentalna mehanika; mehanika loma; laboratorijske vježbe

statics; strength of materials; mechanics and structural elements; durability of machines and structures; experimental mechanics; fracture mechanics; laboratory execises

Igor Pešić

statika; čvrstoća konstrukcija; mehanika i elementi konstrukcija; kompozitne konstrukcije; laboratorijske vježbe

statics; strength of materials; mechanics and structural elements; composite structures; laboratory exercises

Ante Skoblar

kinematika; dinamika; vibracije; akustika

kinematics; dynamics; vibration; acoustics

Goranka Štimac Rončević

kinematika; dinamika; regulacija; aktivni magnetski ležajevi

kinematics; dynamics; control; active magnetic bearings

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

statika; čvrstoća konstrukcija; stabilnost konstrukcija; računarska analiza konstrukcija; kompozitne konstrukcije; laboratorijske vježbe

statics; strength of materials; mechanics and structural elements; computational structural analysis; structural stability; composite structures; laboratory execises

Sandra Kvaternik

čvrstoća konstrukcija; stabilnost konstrukcija; računarska analiza konstrukcija; kompozitne konstrukcije; laboratorijske vježbe

strength of materials; mechanics and structural elements; computational structural analysis; structural stability; composite structures; laboratory execises

PROFESOR EMERITUS | PROFESSOR EMERITUS

Josip Brnić

statika; čvrstoća konstrukcija; teorija elastičnosti i plastičnosti; eksperimentalna mehanika; mehanika grešaka i loma

statics; strength of materials; theory of elasticity and plasticity; experimental mechanics; failure and fracture mechanics

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

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

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

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, i.t.d.

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.

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	*Mechanics I*
Mehanika i elementi konstrukcija ST	*Mechanics and Structual Elements ST*
Čvrstoća	*Strength of Materials*
Mehanika II	*Mechanics II*

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

Elastomehanika i plastomehanika	*Elastomechanics and Plastomechanics*
MKE i optimizacija konstrukcija	*FEM and Optimization of Structures*
IP iz termomehanike	*Advanced Thermomechanics*
Kontaktna mehanika	*Contact mechanics*
Nelinearna analiza konstrukcija	*Nonlinear Structural Analysis*
Stabilnost konstrukcija	*Structural Stability*
Vibracije i trajnost strojeva i konstrukcija	*Vibrations and Durability of Machines and Structures*
Kinematika i dinamika robota	*Kinematics and Dynamics of Robots*
Zaštita od buke i vibracija strojeva i konstrukcija	*Protection against Noise and Vibration of Machines and Structures*
Viskoelastičnost i viskoplastičnost	*Viscoelasticity and Viscoplasticity*

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

- *Istraživanje, analiza i modeliranje ponašanja konstrukcijskih elemenata opterećenih pri sobnoj i povišenim temperaturama, Sveučilište u Rijeci, uniri-technic-18-42, Josip Brnić, od 2018.*
  Investigation, analysis and modeling the behavior of structural elements stressed at room temperature and high temperatures, University of Rijeka, uniri-technic-18-42, Josip Brnić, since 2018.
- *Numeričko modeliranje FG kompozitnih konstrukcija grednog tipa, Sveučilište u Rijeci, uniri-technic-18-139, Domagoj Lanc, od 2018.*
  Numerical modeling of FG composite beam-type structures, University of Rijeka, uniri-technic-18-139, Domagoj Lanc, since 2018.
- *Konačnoelementni modeli za analizu nelinearnog odziva tankostjenih grednih konstrukcija, Sveučilište u Rijeci, uniri-technic-18-107, Goran Turkalj, od 2018.*
  Finite element models for nonlinear analysis of thin-walled beam-type structure, University of Rijeka, uniri-technic-18-107, Goran Turkalj, since 2018.
- *Nelinearno dinamičko ponašanje rotacijskih strojeva, uniri-tehnic-18-225, Sveučilište u Rijeci, Sanjin Braut, od 2019.*
  Nonlinear dynamic behavior of rotating machines,uniri-tehnic-18-225, University of Rijeka, Sanjin Braut, since 2019.
- *Mehaničko ponašanje nanostruktura, Sveučilište u Rijeci, uniri-tehnic-18-37, Marko Čanađija, od 2018.*
  Mechanical behaviour of nanostructures, uniri-technic-18-37, Marko Čanađija, since 2018.
- *Numerička analiza i eksperimentalna istraživanja svojstava nanokompozitnih struktura, Sveučilište u Rijeci, OJ 11232, Marino Brčić, 2018.*
  Numerical analysis and experimental investigation of nanocomposite structures properties, University of Rijeka, OJ 11232, Marino Brčić, 2018.

PUBLIKACIJE | PUBLICATIONS

RADOVI U ČASOPISIMA | JOURNAL PAPERS

- *Čanađija, M.; Munjas, N.; Brnić, J.; Thermodynamically Consistent Homogenization In Finite Strain Thermoplasticity, International Journal for Multiscale Computational Engineering, doi:10.1615/intjmultcompeng.2019026320, 17, 99-120, 2019*
- *Barretta, R.; Čanađija, M.; Marotti de Sciarra, F.; Nonlocal integral thermoelasticity: a thermodynamic framework for functionally graded beams, Composite structures, doi:10.1016/j.compstruct.2019.111104, 225, 2019*
- *Barretta, R.; Čanađija, M.; Marotti de Sciarra, F.; Modified Nonlocal Strain Gradient Elasticity for Nano-Rods and Application to Carbon Nanotubes, Applied Sciences-Basel, doi.org/10.3390/app9030514, 9, 2019*
- *Brnić, J.; Brčić, M.; Kršćanski, S.; Lanc, D.; Chen, S.; Uniaxial fatigue, creep and stress-strain responses of steel 30CrNiMo8, Steel and composite structures, doi:10.12989/scs.2019.31.4.409, 31, 409-416, 2019*
- *Brnić, J.; Brčić, M.; Kršćanski, S.; Lanc, D.; Chen, S.; Uniaxial fatigue, creep and stress-strain responses of steel 30CrNiMo8, Steel and composite structures, 1229-9367, 31, 409-416, 2019*

- *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*
- *Štimac Rončević, G.; Rončevič, B.; Skoblar, A.; Žigulić; R.; "Closed form solutions for frequency equation and mode shapes of elastically supported Euler-Bernoulli beams", Journal of Sound and Vibration, 0022-460X, 457, 118-138, 2019*

POZVANA PREDAVANJA | INVITED LECTURES

- *Lanc, D.; Beam model for buckling analysis of structures, Dipartimento di Ingegneria Meccanica e Aerospaziale, Politechnico di Torino, 2018, Torino, Italija*
- *Štimac Rončević, G.; Rončevič, B.; Skoblar, A.; Braut, S.; "Avoidance of numerical singularities in free vibration analysis of Euler-Bernoulli beams using Green functions", "6th International Conference on Applied, Numerical and Computational Mathematics (ICANCM '18)", 2018, Dubrovnik, Hrvatska*

MEĐUNARODNI KONGRESI | INTERNATIONAL CONGRESSES

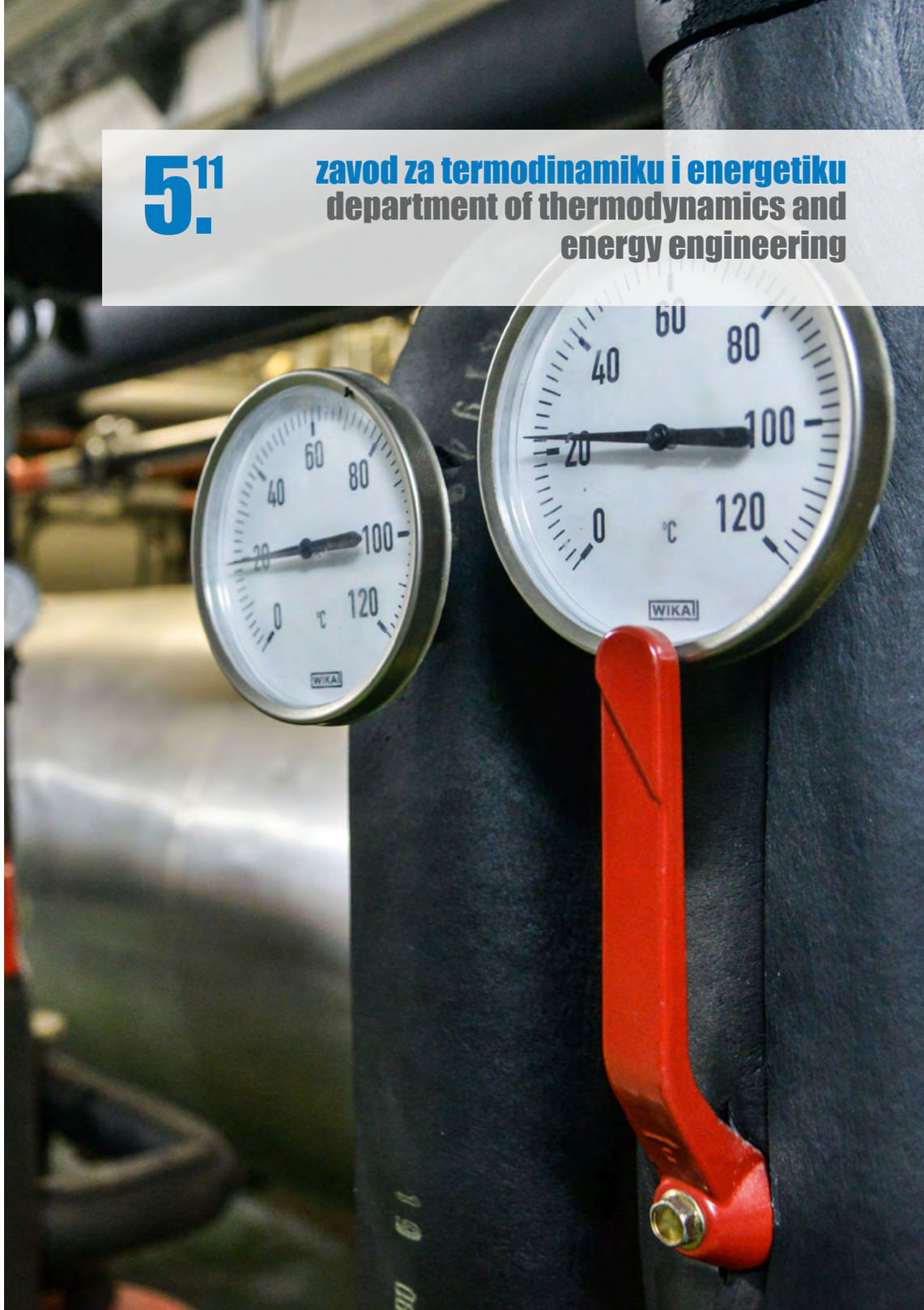
- *Brčić, M.; Čanađija, M.; Brnić, J.; Equivalent Beam Model Of Single Walled Carbon Nanotube With Imperfections, "3rd International Conference on Materials Engineering and Nano Sciences; ICMENS 2019", 2019, Hiroshima, Japan*
- *Banić, D.; Turkalj, G.; Lanc, D.; Kvaternik, S.; Shear deformable beam model for stability analysis of beam type structures with composite cross sections, 5th International Conference on Mechanics of Composites MECHCOMP 2019, Book of Abstracts, 30, 2018, Lisabon, Portugal*
- *Kvaternik, S.; Lanc, D.; Turkalj, G.; Banić, D.; Beam model for thermal buckling analysis of thin-walled functionally graded open section beams, 5th International Conference on Mechanics of Composites MECHCOMP 2019, Book of Abstracts, 135, 2018, Lisabon, Portugal*
- *Lanc, D.; Turkalj, G.; Kršćanski, S.; Behaviour of axially loaded FG column in creep regime 5th International Conference on Mechanics of Composites MECHCOMP 2019, Book of Abstracts, 135, 2018, Lisabon, Portugal*
- *Lanc, D.; Turkalj, G.; Kvaternik, S.; Pešić, I.; Buckling analysis of thermally loaded FG box beams, Proceedings of eight international conference- Thin walled structures, 978-989-20-8665-1, 1-10, 2018, Lisabon, Portugal*
- *Štimac Rončević, G.; Rončevič, B.; Skoblar, A.; Braut, S.; "Avoidance of numerical singularities in free vibration analysis of Euler-Bernoulli beams using Green functions", WSEAS transactions on applied and theoretical mechanics, 1991-8747, 13, 117-122, 2018*
- *Cazin, D.; Braut, S.; Božić, Ž.; Žigulić, R.; Elastic Plastic Transient Mechanical Analysis And Lcf Assesment Of The Demining Tool Tiller, 3rd International Conference on Structural Integrity and Durability, 2584-3907, 1-2, 2019, Zagreb, Hrvatska*

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*
- *Dipartimento di Ingegneria Meccanica e Aerospaziale, Politechnico di Torino, Italija, Italy*

5.11 zavod za termodinamiku i energetiku department of thermodynamics and energy engineering



djelatnici
faculty and staff

PREDSTOJNIK ZAVODA | DEPARTMENT HEAD:

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

REDOVITI PROFESORI U TRAJNOM ZVANJU | TENURED 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

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

REDOVITI PROFESOR | PROFESSOR

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

tehnika grijanja; sustavi ventilacije i klimatizacije; obnovljivi izvori energije; središnji nadzorni i upravljački sustavi; energetska učinkovitost; mjerenja u termotehnici

hvac systems; renewable energy sources; central management and control systems; energy efficiency; thermal measurements

DOCENTI | ASSISTANT PROFESSORS

Paolo Blecich

termodinamika; numeričko modeliranje prijelaza topline i izmjene tvari; obnovljivi izvori energije

thermodynamics; numerical modelling of heat and mass transfer; renewable energy sources

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

Ozren Bukovac

motori s unutranjim izgaranjem; termodinamika; toplinski strojevi; numeričko modeliranje; neuronske mreže

internal combustion engines; thermodynamics; heat engines; numerical modeling; neural networks

Boris Delač

tehnika hlađenja; mjerenja u termotehnici; kompresori; procesna oprema; dizalice topline

refrigeration; thermal measurements; compressors; process equipment; heat pumps

Viktor Dragičević

energetski sustavi; energetski i procesni uređaji; inženjerstvo zaštite okoliša

energy systems; energy and process facilities; environmental engineering

Vladimir Glažar

termodinamika; izmjenivači topline; numeričko modeliranje prijenosa topline i tvari; energetska postrojenja; inženjerska vizualizacija

thermodynamics; heat exchangers; numerical modeling of heat and mass transfer; energy plants; engineering visualization

Vedran Mrzljak

motori s unutranjim izgaranjem; termodinamika; toplinski strojevi; toplinske turbine; energetska postrojenja; numeričko modeliranje

internal combustion engines; thermodynamics; heat engines; heat turbines; energy plants; numerical modeling

ASISTENTI | ASSISTANTS

Josip Batista

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

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

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

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

PROFESOR EMERITUS | PROFESSOR EMERITUS

Špiro Milošević

VANJSKI SURADNICI | ASSOCIATES

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 strojarsva, 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*
- *Termodinamika I* — *Thermodynamics I*
- *Termodinamika BG* — *Thermodynamics NA*
- *Termodinamika i energetika* — *Thermodynamics and Energy Engineering*
- *Energetski sustavi* — *Heating Systems*
- *Tehnika grijanja* — *Energy systems*
- *Brodski pomoćni strojevi* — *Marine Auxiliary Machinery*

KOLEGIJI NA DIPLOMSKIM SVEUČILIŠNIM STUDIJIMA | GRADUATE UNIVERSITY COURSES

- *Goriva, maziva i voda* — *Fuels, lubricants and water*
- *Termodinamika 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 power plants*
- *Energetska postrojenja* — *Power plants*
- *Inženjerstvo zaštite okoliša* — *Environmental engineering*
- *Procesno inženjerstvo* — *Process engineering*
- *Tehnika klimatizacije i automatska regulacija* — *Air Conditioning and Automation 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*
- *Računalno modeliranje sustava u termotehnici i termoenergetici*

- *Heat turbines*
- *Compressors*
- *Refrigeration*
- *Laboratory Practice in Thermal Engineering*
- *Process Plants Equipment*
- *Numerical Modeling of HVAC & Thermal Power Systems*

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 Topics Marine Energy Systems*
- *Selected Topics of 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 fl owing 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.*
  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.

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.
- *Akumulacija i izmjena toplinske energije u sustavima obnovljivih izvora energije, potpora znanstvenim istraživanjima Sveučilišta u Rijeci, voditeljica prof. dr. sc. Anica Trp.*
  Thermal energy storage and heat transfer in a renewable energy systems, support for scientific research, University of Rijeka, head prof. D. Sc. Anica Trp.
- *Optimizacija dizalica topline i rashladnih sustava koji koriste radne tvari niskog utjecaja na globalno zatopljenje korištenjem numeričkih simulacija, potpora znanstvenim istraživanjima Sveučilišta u Rijeci, voditelj prof. dr. sc. Branimir Pavković.*
  Optimization of heat pumps and refrigeration systems with low global warming potential refrigerants using numerical simulation, support for scientific research, University of Rijeka, head prof. D. Sc. Branimir Pavković.
- *Razvoj i primjena metoda optimizacije lamelnih izmjenjivača topline s mikrokanalima, Inicijalna potpora za mlađe istraživače Sveučilišta u Rijeci, voditelj doc.dr. sc. Vladimir Glažar, 2018-2019.*
  Development and application of the heat exchanger with microchannel coil optimization methods, Inital scientific support of University of Rijeka, Vladimir Glažar, 2018-2019.

PUBLIKACIJE | PUBLICATIONS

RADOVI U ČASOPISIMA | JOURNAL PAPERS

- *Mrzljak, V.; Low power steam turbine energy efficiency and losses during the developed power variation, Tehnički glasnik - Technical Journal, SSN: 1846-6168, 12 (3), 174-180 , 2018, Varaždin*
- *Mrzljak, V.; Žarković, B.; Numerical analysis of the fuel spray packages penetration and gas inflow from quasi-dimensional DI diesel engine numerical model, Zbornik Veleučilišta u Rijeci / Journal of the Polytechnic of Rijeka, ISSN: 1848-1299, 7 (1), 335-357, 2019, Rijeka*
- *Mrzljak, V.; Poljak, I.; Prpić-Oršić, J.; Exergy analysis of the main propulsion steam turbine from marine propulsion plant, Brodogradnja / Shipbuilding, ISSN: 0007-215X, 70 (1), 59-77, 2019, Zagreb*

- *Mrzljak, V.; Poljak, I.; Energy Analysis of Main Propulsion Steam Turbine from Conventional LNG Carrier at Three Different Loads, Naše more : znanstveni časopis za more i pomorstvo ISSN: 0469-6255, 66 (1), 10-18, 2019, Dubrovnik*
- *Mrzljak, V.; Anđelić, N.; Poljak, I.; Orović, J.; Thermodynamic analysis of marine steam power plant pressure reduction valves, Pomorski zbornik, ISSN: 0554-6397, 56 (1), 9-30, 2019, Rijeka*
- *Orović, J.; Mrzljak, V.; Poljak, I.; Efficiency and Losses Analysis of Steam Air Heater from Marine Steam Propulsion Plant, Energies, ISSN: 1996-1073, 11 (11), 1-18, 2018, Basel, Švicarska*
- *Lorencin, I.; Anđelić, N.; Mrzljak, V.; Car, Z.; Exergy analysis of marine steam turbine labyrinth (gland) seals, Pomorstvo: scientific journal of maritime research, ISSN: 1332-0718, 33 (1), 76-83 2019, Rijeka*
- *Blažević, S.; Mrzljak, V.; Anđelić, N.; Car, Z.; Comparison of energy flow stream and isentropic method for steam turbine energy analysis, Acta Polytechnica, ISSN: 1210-2709, 59 (2), 109-125, 2019, Prag, Republika Češka*
- *Lorencin, I.; Anđelić, N.; Mrzljak, V.; Car, Z.; Marine Objects Recognition Using Convolutional Neural Networks, Naše more: znanstveni časopis za more i pomorstvo, ISSN: 0469-6255, 66 (3), 2019, Dubrovnik*
- *Đurđević, D.; Blecich, P.; Jurić, Ž.; Energy Recovery from Sewage Sludge: The Case Study of Croatia, Energies, 1996-1073, 12, 1927-1946, 2019, Basel, Švicarska*
- *Mađerić, D.; Pavković, B.; Lenić, K.; An Experimental Research on Energy Efficiency of a Beverage Cooler with the Latent Heat Storage Applied thermal engineering, 1359-4311, 148 270-277, 2019, London, UK*
- *Senčić, T.; Mrzljak, V.; Blecich, P.; Bonefačić, I.; 2D CFD Simulation of Water Injection Strategies in a Large Marine Engine, Journal of Marine Science and Engineering, EISSN 2077-1312, 7(9), 1-18, 2019, Basel, Švicarska*
- *Sasa. K.; Takeuchi. K.; Chen. C.; Faltinsen. O.M.; Prpić-Oršić. J.; Valčić. M.; Mrakovčić. T.; Herai. N.; Evaluation of speed loss in bulk carriers with actual data from rough sea voyages, Ocean Engineering, ISSN 0029-8018, 187, 1-19, 2019, London, UK*

MEĐUNARODNI KONGRESI | INTERNATIONAL CONGRESSES

- *Mrzljak, V.; Orović, J.; Poljak, I.; Čulin, J.; Exergy analysis of two water pumps from steam power plant at four different loads, IV INTERNATIONAL SCIENTIFIC CONFERENCE INDUSTRY 4.0 - Summer Session - 2019 - PROCEEDINGS, ISSN: 2535-0153, 1, 65-68, 2019, Sofija, Bugarska*
- *Mrzljak, V.; Orović, J.; Poljak, I.; Čulin, J.; The ambient temperature influence on deaerator exergy efficiency and exergy losses, IV INTERNATIONAL SCIENTIFIC CONFERENCE INDUSTRY 4.0 - Summer Session - 2019 - PROCEEDINGS, ISSN: 2535-0153, 1, 69-72, 2019, Sofija, Bugarska*
- *Mrzljak, V.; Orović, J.; Poljak, I.; Knežević, V.; Exergy analysis of low-pressure condensate heating system from cogeneration power plant, VII INTERNATIONAL SCIENTIFIC CONFERENCE - ENGINEERING. TECHOLOGIES. EDUCATION. SECURITY. 2019 - PROCEEDINGS - VOLUME 1, ISSN: 2535-0315, 1, 12-15, 2019, Sofija, Bugarska*
- *Mrzljak, V.; Orović, J.; Poljak, I.; Kocijel, L.; Exergy analysis of wet cooling tower at various loads and ambient temperatures, VII INTERNATIONAL SCIENTIFIC CONFERENCE - ENGINEERING. TECHOLOGIES. EDUCATION. SECURITY. 2019 - PROCEEDINGS - VOLUME 1, ISSN: 2535-0315, 1, 16-19, 2019, Sofija, Bugarska*
- *Mrzljak, V.; Orović, J.; Poljak, I.; Lorencin, I.; Exergy analysis of steam turbine governing valve*

from a super critical thermal power plant, XXVII INTERNATIONAL SCIENTIFIC CONFERENCE trans & MOTAUTO '19 - PROCEEDINGS, ISSN: 1313-5031, 1, 99-102, 2019, Sofija, Bugarska

- *Mrzljak, V.; Poljak, I.; Orović, J.; Prpić-Oršić, J.; Influence of the ambient temperature change on steam pressure reduction valve exergy destruction and exergy efficiency, NTERNATIONAL SCIENTIFIC CONFERENCE MACHINES. TECHNOLOGIES. MATERIALS 2019 - winter session - Volume 1 - PROCEEDINGS, ISSN: 2535-0021, 1, 26-29, 2019, Sofija, Bugarska*
- *Mrzljak, V.; Poljak, I.; Orović, J.; Prpić-Oršić, J. ; Numerical analysis of real open cycle gas turbine, INTERNATIONAL SCIENTIFIC CONFERENCE HIGH TECHNOLOGIES. BUSINESS. SOCIETY 2019 - Volume 1 - PROCEEDINGS ISSN: 2535-0005, 1, 51-54, 2019, Sofija, Bugarska*
- *Mrzljak, V.; Poljak, I.; Orović, J.; Prpić-Oršić, J.; Thermodynamical analysis of heat exchange and fuel consumption in marine re-heat steam generator INTERNATIONAL SCIENTIFIC CONFERENCE HIGH TECHNOLOGIES. BUSINESS. SOCIETY 2019 - Volume 1 - PROCEEDINGS, ISSN: 2535-0005, 1, 55-58, 2019, Sofija, Bugarska*
- *Mrzljak, V.; Poljak, I.; Prpić-Oršić, J.; Numerical analysis of turbo-generator steam turbine energy efficiency and energy power losses change during the variation in developed power NTERNATIONAL SCIENTIFIC CONFERENCE MACHINES. TECHNOLOGIES. MATERIALS 2019 - winter session - Volume 1 - PROCEEDINGS, ISSN: 2535-0021, 1, 22-25, 2019, Sofija, Bugarska*
- *Mrzljak, V.; Žarković, B.; Prpić-Oršić, J.; Air cooling influence on the performance and characteristics of turbocharged direct injection gasoline engine, INTERNATIONAL CONFERENCE TECHNICAL SCIENCES. INDUSTRIAL MANAGEMENT 2019 - PROCEEDINGS, ISSN: 2535-0196, 1, 3-6, 2019, Sofija, Bugarska*
- *Mrzljak, V.; Žarković, B.; Prpić-Oršić, J.; Anđelić, N.; Numerical analysis of in-cylinder pressure and temperature change for naturally aspirated and upgraded gasoline engine, XXVII INTERNATIONAL SCIENTIFIC CONFERENCE trans & MOTAUTO '19 - PROCEEDINGS ISSN: 1313-5031, 1, 95-98, 2019, Sofija, Bugarska*
- *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 International Conference on Innovative Technologies, IN-TECH 2018, ISSN: 0184-9069, 1, 35-38, 2018, Zagreb*
- *Mrzljak, V.; Perić, G.; Prpić-Oršić, J.; Gas turbine upgrade with heat regenerator – numerical analysis of advantages and disadvantages, Third International Scientific Conference-Winter Session-"Industry 4.0 2018" , ISSN: 2535-0153, 2, 184-187, 2018, Sofija, Bugarska*
- *Mrzljak, V.; Senčić, T.; Banovac, A.; The influence of fuel thermodynamical properties and injection rate on injector contraction coefficient and Reynolds number – numerical analysis Proceedings of International Conference on Innovative Technologies, IN-TECH 2018, ISSN: 0184-9069, 1, 17-20, 2018, Zagreb*
- *Mrzljak, V.; Taletović, H.; Orović, J.; Poljak, I.; Steam re-heating process influence on energy efficiency and losses of two-cylinder steam turbine, Proceedings of International Conference on Innovative Technologies, IN-TECH 2019, ISSN: 0184-9069, 1, 1-4, 2019, Jaromer, Republika Češka*
- *Mrzljak, V.; Orović, J.; Poljak, I.; Anđelić, N.; Exergy analysis of high-pressure feed water heating system at three power plant loads, Proceedings of International Conference on Innovative Technologies, IN-TECH 2019, ISSN: 0184-9069, 1, 1-4, 2019, Jaromer, Republika Češka*
- *Mrzljak, V.; Orović, J.; Poljak, I.; Lorencin, I.; The change in exergy efficiencies and losses of*

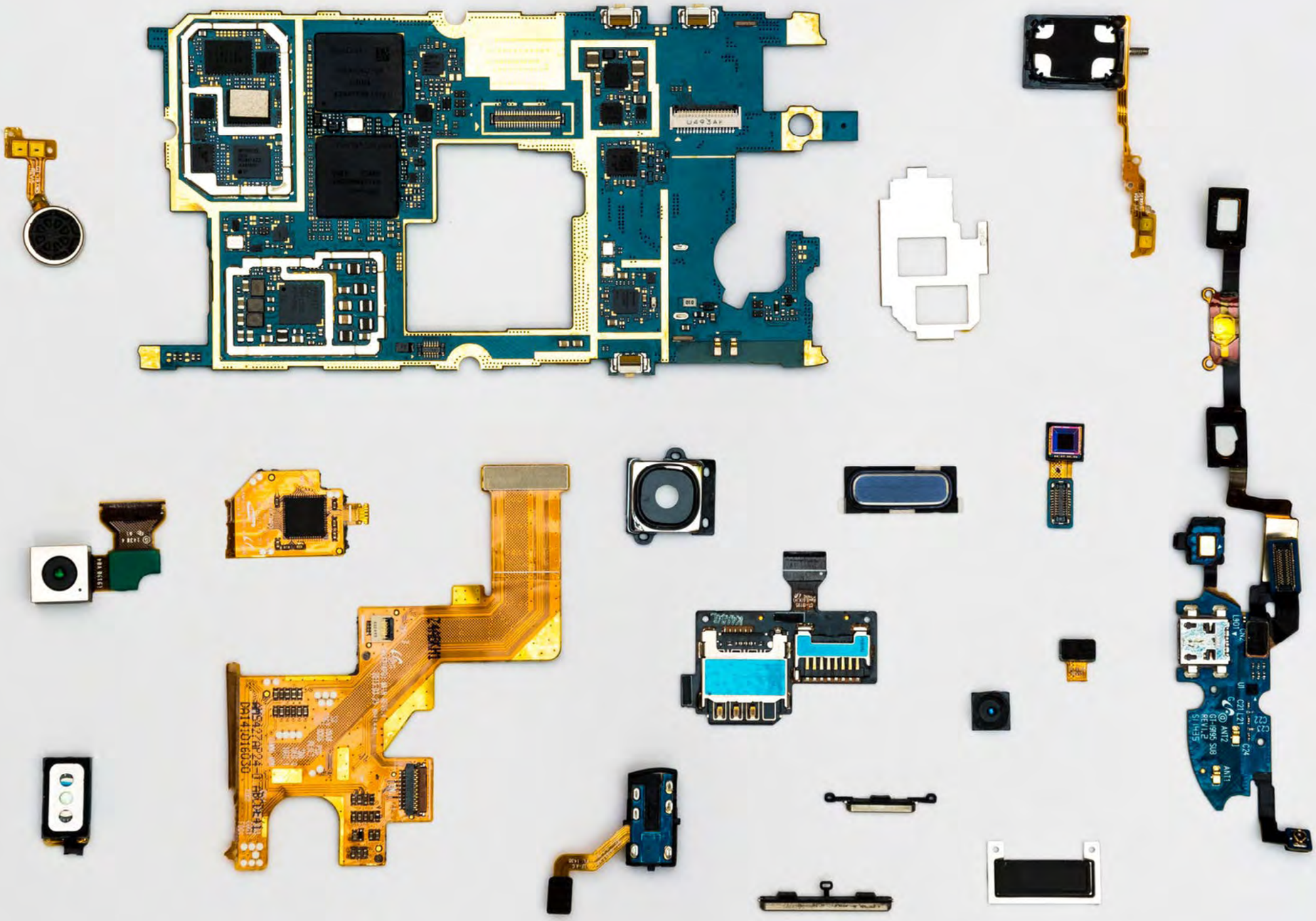
low-power steam turbine with steam extractions at three loads, Proceedings of International Conference on Innovative Technologies, IN-TECH 2019 ISSN: 0184-9069, 1, 1-4, 2019, Jaromer, Republika Češka

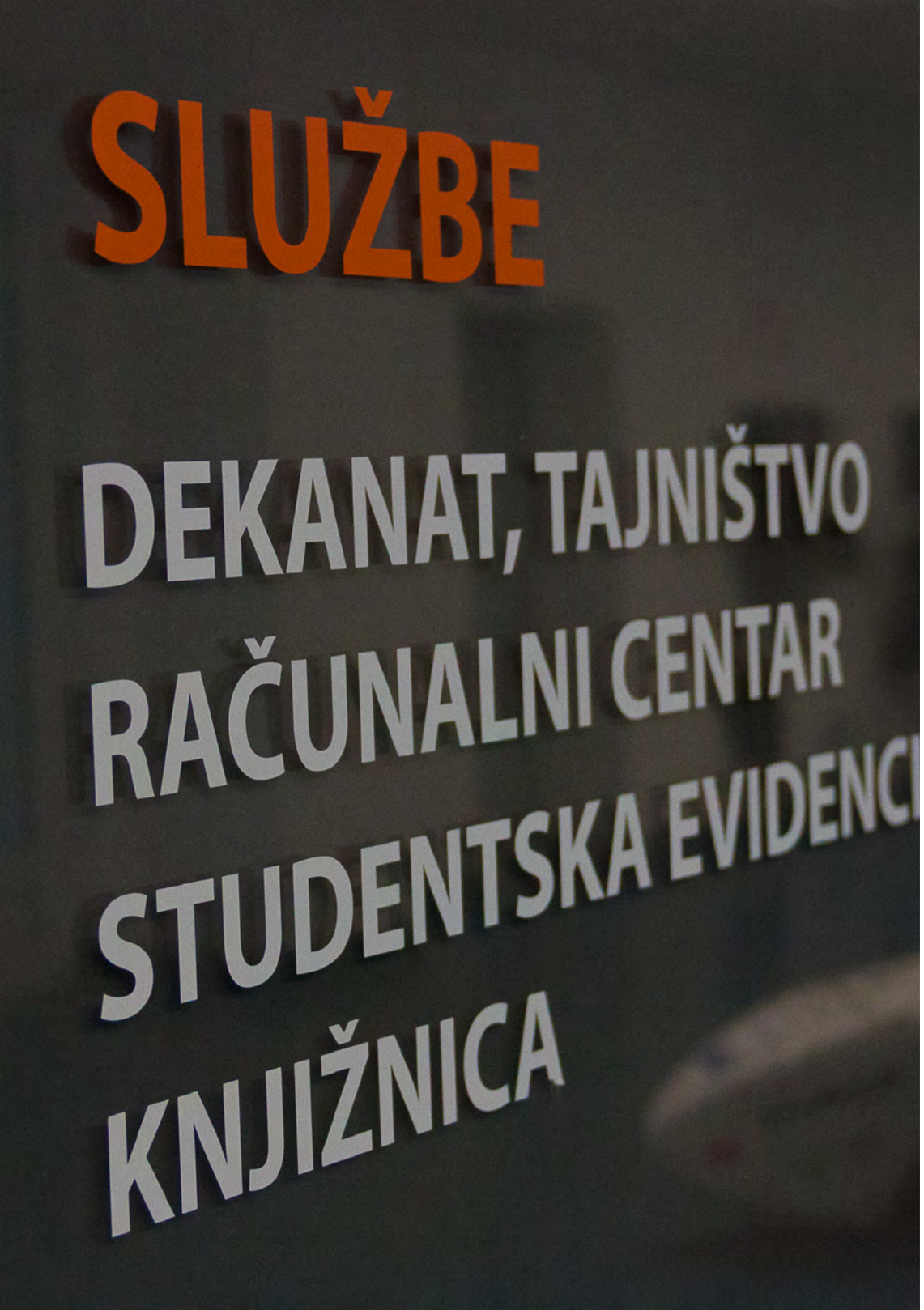
- *Anđelić, N.; Lorencin, I.; Mrzljak, V.; Car, Z.; Friction Modeling of Robot Manipulator Joints Proceedings of International Conference on Innovative Technologies, IN-TECH 2019, ISSN: 0184-9069, 1, 1-4, 2019, Jaromer, Republika Češka*
- *Mrzljak, V.; Car, Z.; Kudlaček, J.; Anđelić, N.; Lorencin, I.; Blažević, S.; Analysis of two methods for steam turbine developed power calulation in Industry 4.0, Technological forum 2019, 1, 1-8, 2019, Prag, Republika Češka*
- *Lorencin, I.; Car, Z.; Kudlaček, J.; Mrzljak, V.; Anđelić, N.; Blažević, S.; Estimation of Combined Cycle Power Plant Power Output Using Multilayer Perceptron Variations, Technological forum 2019, 1, 1-8, 2019, Prag, Republika Češka*
- *Blecich, P.; Trp, A.; Lenić, K.; Batista, J.; The Effects of Airflow Nonuniformity on Fin-and-Tube Heat Exchangers: An Experimental Study, Proceedings of the 14th International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics (HEFAT 2019), 978-1-77592-191-2, 1416-1421, 2019, Pretoria, Južna Afrika*
- *Blecich, P.; Trp, A.; Lenić, K.; Calculation Method for Fin-and-Tube Heat Exchangers Operating with Nonuniform Airflow, Proceedings of the 8th International conference on Energy and Sustainability, 1743-3541, 2019, Southampton, Engleska*
- *Glažar, V.; Mrzljak, V.; Gubić, T.; Thermodynamic analysis of combined cycle power plant Proceedings HEFAT 2019, 14th International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics, ISBN: 978-1-77592-191-2, 1, 1473-1478, 2019, Wicklow, Ireland*
- *Glažar, V.; Trp, A.; Lenić, K.; Microchannel heat exchanger air side heat transfer analysis and optimization, Proceedings HEFAT 2019, 14th International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics, ISBN: 978-1-77592-191-2, 1, 978-983, 2019, Wicklow, Ireland*
- *Glažar, V.; Trp, A.; Lenić, K.; Torbarina, F.; Numerical analysis of heat transfer in air-water heat exchanger with microchannel coil, E3S conference proceedings - The 3rd International Conference on Power, Energy and Mechanical Engineering (ICPEME 2019) eISSN: 2267-1242 95, 1-7, 2019, Prague, Czech Republic*

MEĐUNARODNA SURADNJA | INTERNATIONAL COLLABORATIONS

- *ASHRAE – American Society of Heating, Refrigerating and Air-Conditioning Engineers. 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*





6 stručne službe
professional and administrative staff

6.1 knjižnica library

Marta Lončarević prof. i dipl. knjižničarka prof., grad. librarian

voditeljica

head

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 znanstvenoistraživačkom 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 22,000 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

Domagoj Crljenko, dipl. ing. M.Eng.

voditelj
head

Damir Koščić, dipl. ing. M.Eng.

stručni suradnik
associate

Tatjana Škorjanc, dipl. ing. M.Eng.

stručni suradnik
associate

Siniša Vukotić

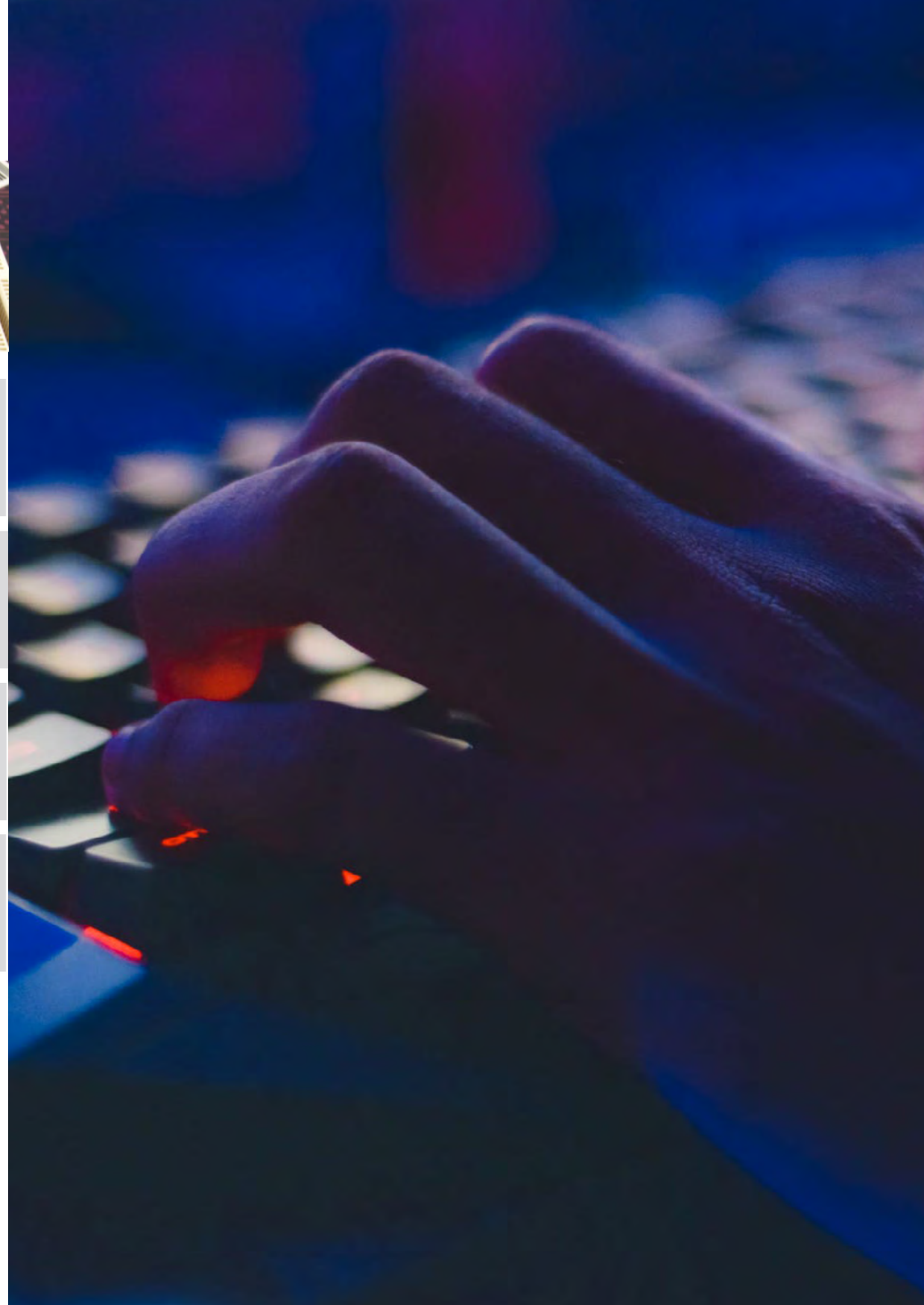
tehnički suradnik
associate

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

Ana Mirković Pavlović, mag. oec. grad. economist

voditeljica

head

Goran Brodarac, mag. oec. grad. economist

računovodstveni poslovi

accounting activities

Ariana Gregur, dipl.oec. grad. economist

financijski poslovi

financial activities

Iva Spajić Zubčić, dipl. oec. grad. economist

računovodstveni poslovi

accounting activities

Ana Šutalo, struc. spec. oec. spec. grad. economist

financijski poslovi

financial activities

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.

6.4 služba nabave i komercijale procurement and commerciale office

Robert Mohorić, dipl. oec. grad. economist

voditelj
head

Tijana Ćupurdija,
mag. oec. grad. economist

ekonom za inventar
inventory economist

Bruna Martinović,
mag. oec. grad. economist

ekonom za inventar
inventory economist

Mladen Ostrogović,
mag. oec. grad. economist

ekonom za potrošni materijal
economist for consumables

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.

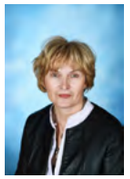
6.5 služba općih i kadrovskih poslova general and personnel office

Marijana Burić Redžović, dipl. iur. Grad.Law.

voditeljica opće i kadrovske službe
general and personnel office head

Snježana Mikuličić

voditeljica kadrovskih poslova
personnel operation manager



Lidija Petričić

administrativna tajnica
administrative secretary

TAJNICE ZAVODA | DEPARTMENT SECRETARY:

Valnea Burić Marohnić, mag. cult.

Natalija Forgić

Tina Kažić, struč. spec. eoc.

Lovorka Malinić

Patricija Vukić

SPREMAČICE | CLEANING STAFF:

Lidija Antunović

Snježana Ban

Marina Djaković

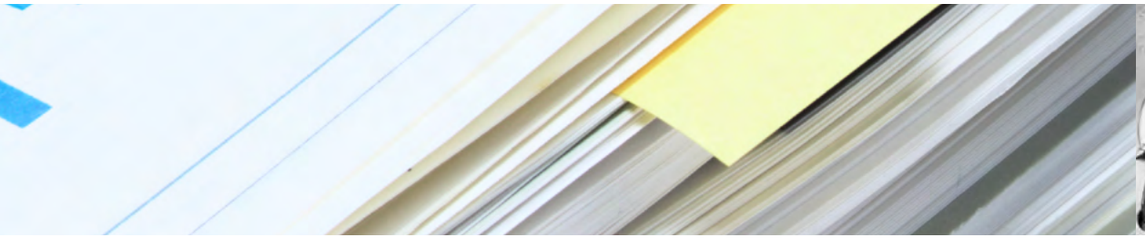
Marica Gnjatović

Valentina Kajfeš

Mirjana Košpić

Julijana Nenadović

6.6 služba studentske evidencije
student's registar and affairs office



Žarko Burić, mag. ing. M.Eng.

voditelj
head

Antonela Ćaleta

voditelj ostalih ustrojstvenih jedinica
head of other organizational units

Tanja Veljčić

voditelj odsjeka III
head of department III

Adriana Muždeka

voditelj ostalih ustrojstvenih jedinica
head of other organizational units

Darko Vidučić

stručni savjetnik ISVU
ISVU Advisor

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

Goran Bakotić,
struč. spec. ing. sec.

voditelj
head

Josip Jurasić

Frane Polegubić

Bernardo Badurina,
bacc.ing. Bacc.Eng.

Andrej Miljuš

Nevio Poniš,
dipl. ing. M.Eng.

DOMARI - KUĆEPAZITELJI | MAJOR - DOMO

Miljenko Pujić

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.

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 2018./2019. brojao ukupno 36 člana (18 predstavnika i 18 zamjenika) koji su se birali u 3 izborne jedinice.

Tijekom akademske godine 2018./2019., Studentski zbor uspješno je proveo 14 od 18 projekata prijavljenih na Natječaj Studentskog zbora Sveučilišta u Rijeci za financiranje studentskih programa u 2019. godini i Natječaj „Studentski sport“.

Kumulativna vrijednost svih projektnih aktivnosti iznosi 172.454,21 kn. U realizaciji projekata pomogla su brojna poduzeća, institucije i organizacije koje su prepoznala naš potencijal, te su svojim velikodušnim donacijama i suradnjom omogućili ovaj izvanredni rezultat. Iako zahvalni svima, moramo izdvojiti sve djelatnike i članove

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 2018/2019 academic year, the Student Council had 36 active members (18 representatives and 18 deputies) in 3 constituencies.

During the 2018/2019 academic year, the Student Council succesfully carried out 14 out of 18 projects applied in tenders of the Student Council of Rijeka University for financing student programmes in 2019 as well as the tender “Student Sports“.

The cummulative value of all mentioned projects was 172,454.21 kuna. The tremendeous success achieved wouldn't be possible without financial and organisational aid provided by the businesses, institutions and organisations that have recognized our potential. Whilst greatful to everyone included in our projects, we feel

uprave Tehničkog fakulteta u Rijeci, Studentski zbor Sveučilišta u Rijeci, Riječki športski sveučilišni savez, Palfinger, Elcon, AITAC, NAVIS, IAESTE LoRi i IEEE SB Rijeka.

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, Palfinger, Elcon, AITAC, NAVIS, 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
• *Ante Rašić*	• *Bruno Belobrajdić*
• *Daniel Ivaničić*	• *Franko Antić*
• *Ivan Knezović*	• *Daniel Žgomba*
• *Filip Hadrović-Pavišić*	• *Antun Lukić*
• *Marin Smilović*	• *Luka Bandov*
• *Maša Stanković*	• *Elena Miletić*
• *Petra Gugleta (tajnica)*	• *Andrej Raguzin*
• *Silvano Drpić*	• *Filip Bratoš*

II PREDDIPLOMSKI SVEUČILIŠNI I DIPLOMSKI SVEUČILIŠNI STUDIJ ELEKTROTEHNIKE I RAČUNARSTVA I PREDDIPLOMSKI STRUČNI STUDIJ ELEKTROTEHNIKE
II UNDERGRADUATE AND GRADUATE STUDIES OF ELECTRICAL AND COMPUTER ENGINEERING AND UNDERGRADUATE VOCATIONAL STUDIES OF ELECTRICAL ENGINEERING

PREDSTAVNIK | REPRESENTATIVE	ZAMJENIK | DEPUTY
• *Denis Mijolović (predsjednik / president)*	• *Mia Grgurić*
• *Erik Smoljan (pravobranitelj / pleader)*	• *Roko Katalinić*
• *Ivan Jokić*	• *Antonio Hrastovčak*
• *Luka Vukonić (potpredsjednik / vice president)*	• *Marin Vidaković-Lipovac*
• *Romario Novak*	• *Damjan Batinić*
• *Sven Celin*	• *Azra Subašić*
• *Toni Polonijo*	• *Tibor Jaklin*
• *Vito Medved*	• *Josipa Raspor*

III POSLIJEDIPLOMSKI SVEUČILIŠNI (DOKTORSKI) STUDIJ
III POSTGRADUATE DOCTORAL STUDIES IN THE AREA OF ENGINEERING SCIENCES

PREDSTAVNIK | REPRESENTATIVE	ZAMJENIK | DEPUTY
• *Damjan Banić*	• *Sandra Kvaternik*
• *Maja Marković*	• *David Ištoković*

7.2 IEEE studentski ogranak sveučilišta u rijeci
IEEE university of rijeka student branch

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 te organizacija raznovrsnih događanja. Zbog toga se pod okriljem Ogranka održavaju predavanja iz područja tehničkih znanosti, natjecanja, radionice i razna druženja. Time se studentima omogućuje razmjena 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 smo osvojili „Regional Exemplary Student Branch Award“ nagrade 2017. i 2019. godine koje su samo potvrda našeg vrijednog rada.

Studentski ogranak u Rijeci je tijekom godina otvorio i dva podogranka te društva unutar IEEE-a. Podogranci koji djeluju u sklopu ogranka su Computer Society (CS) kojeg čine 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, neke od kojih će biti predstavljene u nastavku.

Organizirane aktivnosti

Od 2015. godine provodimo Pripremni seminar iz programiranja koji se održava 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 u godini organiziramo, prije par godina smo započeli s novim formatom predavanja pod nazivom „Success stories“. Pozivamo ljude s riječkog područja koji su po završetku studija svojim radom postigli veliki uspjeh na poslovnom i znanstvenom području, ali i dalje djeluju na našem području i promiču znanost, aktivno sudjeluju u edukaciji novog kadra i u konačnici zapošljavaju mlade inženjere. Do sada smo organizirali pet takvih predavanja.

Svake godine se trudimo organizirati predavanja u kojima promoviramo nove i zanimljive tehnologije. U 2019. godini smo tako u suradnji sa Alumni klubom organizirali predavanje na temu „Artificial Intelligence“ kojega je održao dr. sc. Iven Mareels. Osim tog visoko posjećenog predavanja, organizirali smo i druga manja predavanja, također u suradnji sa Alumni klubom, kao što je „Cars, Drivers, Vehicles, and Wheels: Specializing Distributional Word Vectors for Lexi-

The IEEE Student Branch of the University of Rijeka was established in 2006 as one of the student branches within the Croatian IEEE Section. It aims to bring together students from various fields of engineering sciences and organize various events. Therefore, under the auspices of the Branch, lectures are held in the field of engineering sciences, competitions, workshops and various gatherings. This allows students to exchange ideas and experiences, make a number of useful acquaintances, but also inseparable friendships. All of this leads to better networking and progress on each person's private and business plan. For our work we have won the "Regional Exemplary Student Branch Award" in 2017 and 2019, which is just a confirmation of our valuable work.

Over the years, the Student Branch in Rijeka has opened two IEEE subbranches and organizations within IEEE. The sub-branches operating within the branch are the Computer Society (CS), which is made up mainly of computer engineering students and the Power and Energy Society (PES), which brings together students of electrical and power engineering, as well as the Young Professionals (YP) society.

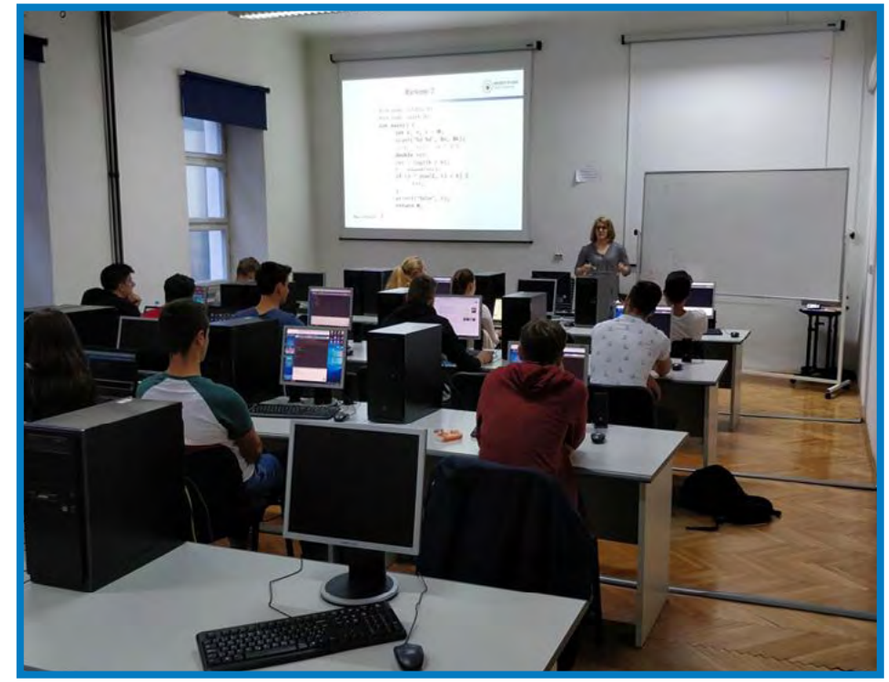
The Student Branch conducts a number of activities each year, some of which will be presented below.

Organized activities

Since 2015, we have been conducting a Preparatory Seminar on Programming, which takes place in the last week of September, just before the start of the academic year. The aim of the seminar is to acquaint the students of the first year of study at the Faculty of Engineering in Rijeka with basic knowledge in programming. In this way, students are more prepared to approach the tasks they are facing in the first semester. The seminar was held again 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.

With all the professional lectures we organize in the year, a few years ago we started with a new lecture format called "Success Stories". We invite people from the area of Rijeka who have achieved great success in the business and scientific field, but they are still active in our field and promote science, actively participate in the education of new staff and ultimately employ young engineers. So far, we have organized five such lectures.

Every year we try to organize lectures in which we promote new and interesting technologies. In 2019, in cooperation with the Alumni Club, we organized a lecture on "Artificial Intelligence", which was held by D. Sc. Iven Mareels. In addition to this highly attended lecture, we also organized



co-Semantic Relations“ koje je održao doc. dr. sc. Goran Glavaš.

IEEE studentski ogranak Sveučilišta u Rijeci u suradnji s IEEE-om, Studentskim zborom Tehničkog fakulteta i Studentskim zborom Sveučilišta u Rijeci u rujnu 2019. organizirao je kongres Croatian Students and Young Professionals (CroSYP), dvodnevni kongres namijenjen studentima računarstva i članovima IEEE-a. Kongres je u svojem programu prvog dana imao predavanje pod nazivom „Blockchain“ kojega je održao izv. prof. dr. sc. Kristijan Lenac, a ostala predavanja su održali gosti sa Sveučilišta u Ljubljani: „Research focus in the Computer Vision Laboratory“ kojega je održao Peter Peer, „Using Ears to Recognize Persons“ kojeg je održao Žiga Emeršič i „Auditory perception model and mapping in visual space“ kojega je održao B. Klemenc. Drugi dan su bile predstavljene aktivnosti ogranaka iz Osijeka i Zagreba kroz prošlu godinu te je održano predavanje IEEE Young Professionals i Student Activity Committee. Cijelom kongresu su, osim sudionika iz Rijeke, prisustvovali članovi IEEE-a iz Zagreba i Osijeka te gosti sa Sveučilišta u Ljubljani.

Natjecanja

IEEE organizira natjecanja za svoje studentske članove. Najpopularnije natjecanje je IEEEXtreme, globalno timsko natjecanje u 24-satnom programiranju. Održava se jednom godišnje, najčešće u listopadu, i već godinama se naši članovi natječu. Kako bi timovi imali što bolje uvjete za rad, ogranak im svake godine pripremi zajedničku prostoriju na Tehničkom fakultetu gdje, uz računalnu opremu, imaju pristup ostaloj potrebnoj opremi, nakon čega slijedi mala zakuska. U zadnje se dvije godine, uz IEEEXtreme, promiče još jedno IEEE natjecanje: IEEE MadC,

other smaller lectures in collaboration with the Alumni Club such as "Cars, Drivers, Vehicles, and Wheels: Specializing in Distributional Word Vectors for Lexico-Semantic Relations" held by Assist. Prof. D. Sc. Goran Glavaš.

The IEEE Student Branch of the University of Rijeka, in cooperation with the IEEE, the Student Council of the Faculty of Engineering and the University of Rijeka, organized the conference Croatian Students and Young Professionals (CroSYP) in September 2019, a two-day conference intended for computer engineering students and IEEE members. On the first day of the conference Assoc. Prof. Kristijan Lenac held a lecture entitled "Blockchain", and other lectures were given by guests from the University of Ljubljana: "Research focus in the Computer Vision Laboratory" by Peter Peer, "Using Ears to Recognize Persons" by Žiga Emeršič and "Auditory perception model and mapping in visual space" held by Bojan Klemenc. On the second day, the activities of the Osijek and Zagreb branches were presented throughout the last year and a lecture was given by IEEE Young Professionals and the Student Activity Committee. The entire conference was attended by IEEE members from Zagreb and Osijek, as well as guests from the University of Ljubljana.

Competitions

IEEE organizes competitions for its student members. The most popular competition is IEEEXtreme, a global team competition in 24-hour programming. It is held once a year, usually in October and for years our members have been competing. In order for the teams to have the best possible working conditions, every year their branch prepares a common room at the Faculty of Engineering, where with

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 veljači 2019. 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 na unapređenju kvalitete i sadržaja 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 ljudi, ali i bolji i kvalitetniji sadržaj kojega nudimo studentima, bolja promocija aktivnosti i veća posjećenost. Neke od naših suradnji kroz prošlu i ovu godinu su sa Studentskim zborom Tehničkog fakulteta i Studentskim zborom Sveučilišta u Rijeci s kojima sm,o među ostalim, organizirali i Croatian Students and Young Professional kongres, Alumni Tehničkog fakulteta s kojima smo organizirali stručna predavanja i Riteh Dron Team i ostalima.

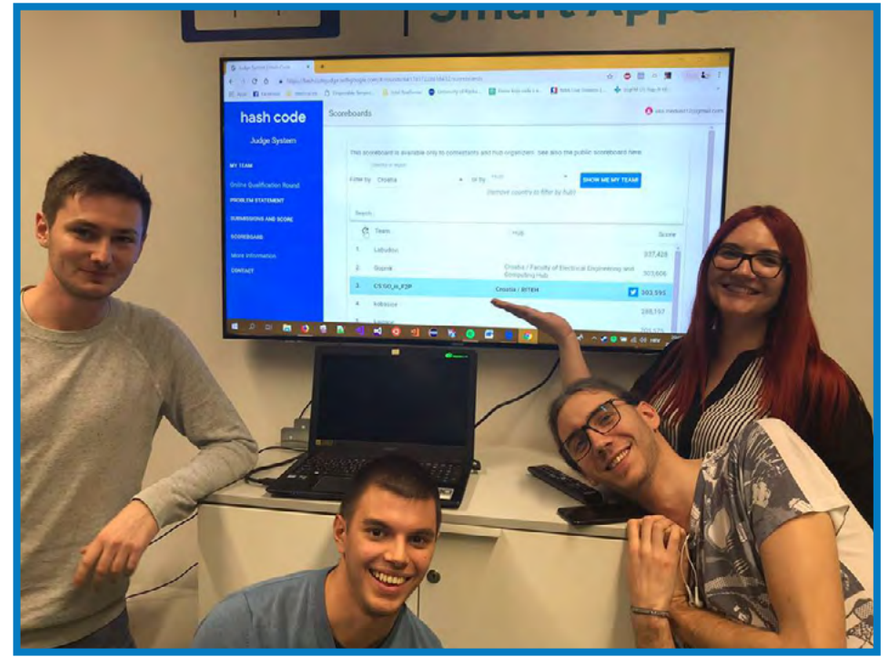
Ostale aktivnosti

Osim aktivnosti koje organiziramo, naši članovi imaju priliku posjetiti brojne aktivnosti koje su

the computer equipment they have access to other necessary equipment, and we also provide them with food and drink. In the last two years, another IEEE competition has been promoted with IEEEXtreme, and that is IEEE MadC, a mobile application development competition. For two years our members have been part of a team of ambassadors who promote the competition, offer education and compete on their own. In addition to competing with IEEE, members of the branch organized a Google Hash Hub at the Faculty of Engineering in February 2019 and provided space for Google Hash competitors.

Collaboration

IEEE Student Branch of the University of Rijeka is actively cooperating with other branches in Croatia and improving the quality and content of activities at the level of the Croatian IEEE Section. In addition to working closely with other IEEE members, we also collaborate locally with numerous other student associations, organizations, colleges and companies. The result of the collaboration is better networking of our members with other active groups of people, but also better and better quality content that we have to offer students, better promotion of activities and greater attendance. Some of our collaborations over the past year and this year have been with the Student Council of the Faculty of Engineering and the Student Council of the University of Rijeka, with whom we have



organizirali drugi ogranaci u Hrvatskoj. Svake godine to su kongresi poput Zagreb energy congress (ZEC), IEEE TOPWeek, a pozvani smo i na kongrese na razini Regije 8 kao što su Central European Student and Young Professional Congress (CEuSYP). Primjer regionalnog kongresa kojega su posjetili predstavnici Ogranka je CEuSYP 2019. u Novom Sadu (Srbija) gdje su se okupili studenti i mladi profesionalci iz cijele Europe. Ovakvi susreti su, osim za stvaranje odličnih poznanstava, korisni i za razmjenu iskustva u vođenju Ogranaka i sekcije.

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 ogranaka te je, za opstanak i nastavak rada ogranka, prije svega 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 2018. godini proslavili smo štandom u predvorju fakulteta na kojem su bili studenti volonteri koji su upoznavali studente s radom IEEE-a, a cilj je 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, slike i osvrte na održane aktivnosti.

organized, among other things, the Croatian Students and Young Professional conference, Alumni of the Faculty of Engineering with whom we organized professional lectures and the Riteh Dron Team and others.

Other activities

In addition to the activities we organize, our members have the opportunity to visit numerous activities organized by other branches in Croatia. Each year, we have congresses such as the Zagreb Energy Congress (ZEC), IEEE TOPWeek, and we are invited to regional level 8 congresses such as the Central European Student and Young Professional Congress (CEuSYP). An example of a regional congress visited by representatives of the Branch is CEuSYP 2019 in Novi Sad (Serbia), where students and young professionals from all over Europe gathered. In addition to making great acquaintances, such meetings are also useful for sharing experience in running Branches and sections.

Promotion

Introducing students to the work of the Student Branch and IEEE is an activity of particular importance. As a non-profit volunteer association, the activities that are organized depend on the time and the will that the members of the branch have, and therefore, in order to survive and continue operating the branch, it is necessary to have an active membership. The best promotion of our work is through the activities we organize, but there is also a special day in early October when the overall work of the organization is promoted at the IEEE level. In 2018, we celebrated IEEE Day with a booth in the faculty lobby where student volunteers introduced students with the work of IEEE and aimed to attract new members.

Find all our activities on our Facebook page (www.facebook.com/ieeesbrijeka) and the official IEEE page of the Croatian Section (www.ieee.hr), where we publish announcements of new events and pictures and review of the activities held.

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 5000 hrvatskih studenata dobilo je priliku svoju stručnu praksu odraditi u inozemstvu dok je u Hrvatsku, na stručnu praksu, primljeno više od 2000 studenata iz cijeloga svijeta. Posljednjih desetak godina više od 600 studenata hrvatskih sveučilišta dobilo je priliku otići na stručnu praksu u inozemstvo posredstvom udruge IAESTE, od čega više od 90 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

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 5,000 Croatian students have been given the opportunity to do their professional practice abroad, while more than 2,000 students from across the world have been admitted to professional practice in Croatia. Over the last ten years, more than 600 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 90 students were from the Faculty of Engineering of Rijeka University. Our students have been trained in Portugal, Germany, Hungary, the United Kingdom, the Net-

iskustva, već i prijateljstva. U istom je razdoblju lokalni odbor Rijeka ugostio više od 50 stranih studenata koji su na stručnom usavršavanju boravili na riječkom području. Za strane i naše studente svakoga se ljeta organiziraju druženja i putovanja pod nazivom GETT (Get together days). Ove godine GETT je bio održan u Rijeci. Odazvao se veliki broj stranih studenata koji su u to vrijeme bili na praksi baš u Hrvatskoj. Također, održani su projekti poput "Skokić - edukacijski vikend IAESTE Rijeka", odlazak na sajam poslova u Graz pod nazivom "Teconomy", prisustvovanje CEC konferenciji u Neumu i dr. CEC je trodnevna manifestacija edukativnog karaktera kojoj je cilj unaprjeđenje i poboljšanje rada Lokalnih odbora.

Studenti Tehničkog fakulteta, članovi udruge, također su aktivni sudionici mnogobrojnih međunarodnih susreta, kongresa i seminara.

herlands, 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 50 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. This year GETT was hosted in Rijeka with a large number of foreign students who at that time had their practice in Croatia. Also, this year, IAESTE Rijeka organized the "Jump - educational weekend", took part in the job fair "Teconomy" in Graz, participated in the Central European Conference in Neum, etc. The CEC is a three-day event of educational character aimed at enhancing and improving the work of Local boards.

The students of the Faculty of Engineering, members of the association, are also active participants in many international meetings, congresses and seminars.

7.4 STEM games

Ekipe Fakulteta nastupile su u dvije znanstvene arene. U areni Technology nastupile su dvije ekipe Fakulteta, zauzevši 8. i 14. mjesto u konkurenciji dvadesetak ekipa. U areni Engineering, ekipa Fakulteta zauzela je izvrsno 4. mjesto u konkurenciji dvadeset ekipa. Za tim su nastupili Mislav Selec, koji je jedini imao iskustva s prošlogodišnjih igara, i novi članovi - Leo Benulić, Sven Celin, Marino Štiglić i Branko Vrbetić.

U sportskim natjecanjima, Fakultet su predstavljale muška ekipa u veslanju na ergometrima zauzevši 8. mjesto, muška ekipa u krosu osvojivši izvrsno 3. mjesto, za što su nagrađeni peharom i brončanim medaljama, s pojedinačno najboljim trkačem na igrama Danielom Ivaničićem, muška i ženska ekipa u odbojci na pijesku koje su obje ušle u četvrtfinale i tu tijesno izgubile uz veliku borbu, muška ekipa u stolnom tenisu koja je također izgubila u četvrtfinalu, muška ekipa u futsalu, također poražena u četvrtfinalu na šesterce , košarkaška ekipa koja je natjecanje završila u grupi i šahovska ekipa koja je zauzela 5. mjesto uz pojedinačno 2. mjesto koje je osvojio Sandro Šafar. Malonogometna (futsal) ženska ekipa je u skupini ostala neporažena, ali je ispala na osnovu slabije gol razlike.

Broj sudionika studenata Fakulteta povećao se u odnosu na prve igre. Sudjelovalo je 12 studenata u arenama znanja, 53 studenta i studentica

Faculty teams have performed in two scientific arenas. Two teams from the Faculty competed in the Technology arena, taking the 8th and 14th place out of twenty teams. In the Engineering arena, the Faculty team took an excellent 4th place out of twenty teams. The team was composed of 5 members: Mislav Selec, who was the only one who had experience from last year's games, and new members Leo Benulić, Sven Celin, Marino Štiglić and Branko Vrbetić.

In sports competitions, the Faculty was represented by the male rowing team on ergometers, achieving the 8th place, the male cross team won the excellent 3rd place for which they were awarded the cup and bronze medals, with the individual best runner at the games Daniel Ivaničić, male and female beach volleyball teams who both entered the quarterfinals and lost after a tight match, the male table tennis team also lost in the quarterfinals, the male futsal team also lost in the quarterfinals after penalties, the basketball team that finished in the group stage and chess team that won the 5th place with the individual 2nd place won by Sandro Šafar. The female futsal team remained undefeated in the group, but lost because of a goal difference.

This year, the number of students of the Faculty participating increased compared to the first games. Twelve students participated in the arenas

u sportskim natjecanjima i 4 studenta iz organizacije i ostalih aktivnosti što je ukupno 69 studenata i studentica Fakulteta. Prema rezultatima, vidljiv je napredak: imamo 2 izvrsna pojedinačna rezultata, osvojeno 3. mjesto u krosu i nekoliko četvrtfinala gdje je trebalo i malo sreće za prolazak u borbu za medalje. Ekipa Engineering arene napravila veliki iskorak na predstavljanju svojega rješenja u znanju osvajanjem 4. mjesta, uz najveći broj bodova od svih ekipa zadnjeg dana.

of knowledge, 53 students in sports competitions and 4 students in organization and other activities, which gives a total of 69 students of the Faculty. According to the results, progress can be noticed: we have 2 excellent individual results, won 3rd place in cross and several quarter-finals where it took a little luck to get into the fight for medals. The team in the Engineering Arena stood out presenting their solution in knowledge winning the 4th place, with the highest score of all teams on the last day.

7.5 riteh racing team

Protekla sezona započela je zajedničkim sastankom na kojem su definirani planovi za sezonu 2019. Zbog lakše organizacije i kvalitetnijeg načina raspodjele poslova, tim smo podijelili na podtimove. Fokus sezone bio je na razvijanju vlastitog telemetrijskog sustava i nabavi podataka o gumama. Iako je plan razviti novi bolid RRC6, sezonu smo posvetili poboljšanju performansi postojećeg bolida i uklanjanju manjih poteškoća koje su se javile na natjecanjima.

Last season began with a meeting to define the plans for the 2019 season. For the purpose of easier organization and better quality of work distribution, we divided the team into sub-teams. The focus of the season was on developing its own telemetry system and acquiring tire data. Although the plan was to develop a new RRC6 car, we have dedicated the season to improving the performance of the existing car and eliminating minor difficulties encountered in competitions.

Kao i svake godine, tradiciju smo nastavili rješavajući registracijske kvizove kao pripremu za nadolazeća natjecanja. Snalažljivost u literaturi i dobra znalačka podloga dovela nas je do prolaska kviza za FS Netherlands. Iako smo kviz prošli, odlučili smo preskočiti natjecanje kako bismo kvalitetno pripremili bolid za nadolazeća testiranja. Zbog držanja koraka s razvojem tehnologije i gradnje znanje na novim izazovima, odlučili smo se pozabaviti planom izrade električnog i autonomnog bolida.

Osim u garaži, vrijeme smo proveli i na testiranjima i raznim izlaganjima. Posjetili smo simpozij u Mađarskoj, prisustvovali na Student day festivalu i na događaju “Tesla in Lika”. Posjetili smo jedno od FS natjecanja, točnije FS East u Mađarskoj, kao gledatelji i volonteri. Kraj sezone smo zaokružili odlaskom na najtecanje FS Alpe Adra, FS natjecanje na kojem su postignuti vrlo dobri rezultati.

As every year, we have continued our tradition of resolving registration quizzes in preparation for the upcoming competitions. Resourcefulness in literature and good knowledge enabled us to pass the quiz for FS Netherlands. Although we passed the quiz, we decided to skip the competition in order to properly prepare the car for the upcoming tests. To keep up with technological development and to improve knowledge in new challenges, we decided to build an electric and autonomous car.

In addition to spending time in the garage, we also dedicated ourselves to testing and exhibiting. We attended a symposium in Hungary, the Student day festival and the “Tesla in Lika” event. Furthermore, we visited one of the FS competitions, namely FS East in Hungary as spectators and volunteers. We ended the season by going to FS Alpe Adria, the FS competition where very good results were achieved.

Radni vikend s Alumni članovima

Kako bismo kvalitetnije odradili radne zadatke, održano je dvodnevno druženje s Alumni članovima tima. Proveli smo lijepi radni vikend te dobili novi pogled na trenutnu situaciju. Kroz radionice i produktivne razgovore, palo je par odličnih ideja. Odlučili smo učvrstiti vezu sa starim članovima tima. Ponekad nije dovoljno samo pustiti zapis znanja na papiru i tako ga prenositi na mlađe generacije. Ulaganje u novo znanje traži ispravljanje starih grešaka. Kako bismo izbjegli njihovo konstantno ponavljanje, stari članovi

Working weekend with Alumni members

In order to perform out tasks better, a two-day meeting with Alumni team members was held. We had a nice working weekend and got a new perspective on the current situation. Through workshops and productive conversations, a couple of great ideas came up. The decision was to strengthen bonds with older team members. Sometimes it’s not enough to just put a record on a paper and pass it on to younger generations. In order to invest in further knowledge, it is necessary to correct old mistakes first. In order

nam ukazuju kako pojedine elemente napraviti, testirati ili ispravno izraditi. Učenjem na njihovim greškama i pridržavanjem njihovih uputa, naš put prema uspješnoj realizaciji izrade sljedećog bolida je lakši.

U mađarskom gradu Győru, na Sveučilištu „Széchenyi Istvan“, od 23. do 25. 11. 2018. godine, održao se simpozij. Cilj simpozija je okupiti studente i sudionike natjecanja Formule, povezivanje timova, razmjena ideja i mišljenja, učenje i primjena znanja stručnjaka iz svijeta motorsporta i autoindustrije.

Riteh Racing Team je prisustvovao s 10 članova, od toga je 6 novih. Osim općeg upoznavanja s FS natjecanjem i načinom na koji se natjecanje održava, cilj je bio povezati nove članove, kako međusobno, tako i sa starijim članovima. Druženje na simpoziju je stvorilo bolje radno okruženje i očvrsnulo timski duh što su nam potvrdili novi članovi, a zadovoljstvo stečenim iskustvom i poznanstvom se moglo iščitati s njihovih lica :)

Formula Student simpozij je edukativna konferencija organizirana kako bi olakšala i poboljšala proces dizajna u ranoj sezoni. Ugledni stručnjaci iz motosporta dolaze kako bi razgovarali i savjetovali studente u njihovu radu. Organizacija simpozija može se podijeliti u dva dijela, odnosno na predavanja i radionice koji pripadaju formalnom djelu, te na neformalni dio, uz druženja predato avoid constantly repeating mistakes, the older members instruct us how certain elements should be tested or properly made. Learning from their mistakes and following their instructions are one of the ways to success and realization of the next car.

FS symposium

In the Hungarian city of Győr from 23rd to 25th November 2018 a symposium was held at Széchenyi Istvan University. Gathering students and participants of the Formula Student competition, connecting teams, exchanging ideas and opinions, learning and applying the knowledge of experts from the world of motor sport and the automotive industry were the goals of the symposium.

The Riteh Racing Team attended with 10 members, of whom 6 were new. In addition to an introduction with the FS competition in general and how the competition is organized, the goal was also to connect new members both with one another and with older members.

Hanging out at the symposium has created a better working environment and solidified the team spirit that new members have confirmed to us, and satisfaction with the experience and acquaintance could be read from their faces.

vača i timova. Predavanja su držali stručnjaci iz pojedinih područja. Specijalizirane radionice osmišljene su za pojedine podsustave.

Na putu smo svratili i u Graz . Na poziv bivšeg voditelja tima, posjetili smo Joanneum Racing Graz i postrojenje u kojem proizvode svoj bolid. Pokazao nam je prostorije, opremu, određene postupke proizvodnje dijelova i glavnu halu u kojoj drže bolide i rade na njima.

Rimac FS Alpe Adria 2019

Natjecanje se održavalo od 29. 8. do 1. 9. 2019. g. na kartodromu Bura u Šmriki. Ove godine sudjelovalo je osam timova iz Hrvatske, Slovenije, Srbije, Bosne i Hercegovine i Bugarske. Natjecali smo se u seriji statičkih i dinamičkih disciplina.

Atmosfera je bilo vrlo napeta, a vrijeme nas je svakako poslužilo. Na natjecanju smo mogli vidjeti i ispitati stvarnu izdržljivost našega bolida. U četvrtak se održavao tehnički pregled vozila i prezentacija biznis plana i design report. Drugi dan je započeo autokrosom i vozila su se testirala na brake test. Specijalni gost, ujedno i sudac na natjecanju, Vincenzo Bevilacqua, inženjer koji je trenutno zaposlen u Porshe Engineering Service GmbH, održao je prezentaciju na temu Glavni izazovi termodinamičkog razvoja motora za Formulu Student. Treći dan uslijedio je endurance, najteža disciplina na natjecanju. Možemo reći da smo vrlo zadovoljni našim postignutim rezultatima:

Prezentacija poslovnog plana: 6. mjesto
Konstrukcija: 5. mjesto
Utrka ubrzanja: 2. mjesto
Autocross: 2. mjesto
Utrka izdržljivosti: 1. mjesto
Ukupno: 2. mjesto

The Formula Student symposium is an educational conference organized to facilitate and enhance the early season design process. Respectable motorsport experts come to discuss and advise students in their work. The organization of the symposium can be divided into two parts, that is, lectures and workshops that belong to the formal part and to the informal part with the socializing of lecturers and teams. The lectures were held by experts in particular fields. Specialized workshops were designed for individual subsystems.

On the way we stopped in Graz. At the invitation of the former team leader, we visited Joanneum Racing Graz and their plant where they produce their car. He showed us the premises, the equipment, the specific manufacturing processes for the parts, and the main hall where they keep and work on the cars.

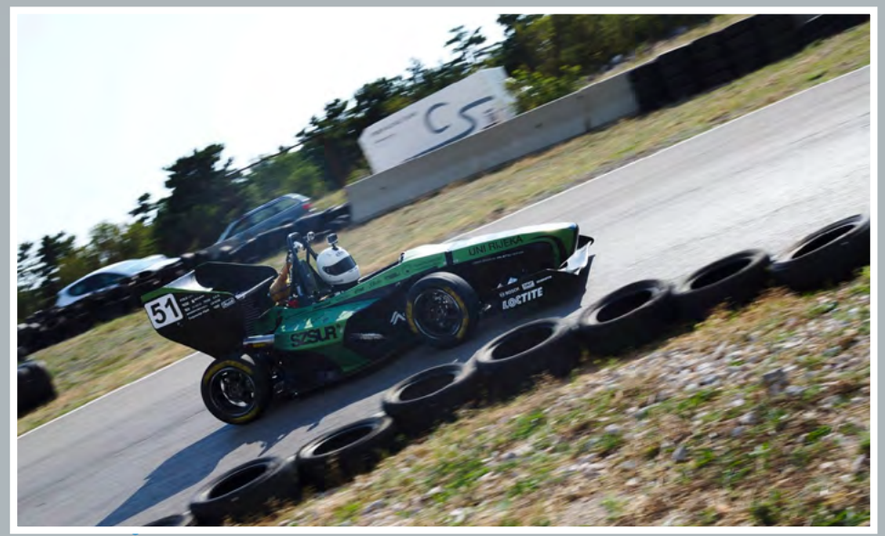
Rimac FS Alpe Adria 2019

The competition was held on 29th August – 1st September 2019 on the go-cart track Bura in Šmrika. Eight teams from Croatia, Slovenia, Serbia, Bosnia and Herzegovina and Bulgaria participated this year. We competed in series of static and dynamic disciplines.

The atmosphere was very tense and the weather certainly served us. At the competition we were able to see and test the true durability of our car. On Thursday, a technical inspection of the vehicles and a presentation of the business plan and design report were held. The second day started with autocross and the vehicles were tested for brake test. A special guest and also a judge at the competition Vincenzo Bevilacqua, an engineer currently employed by Porshe Engineering Service GmbH, gave a presentation on The Main Challenges of Thermodynamic Engine Development for Formula Student. The third day was followed by endurance as the most difficult discipline in the competition. We can say that we are very pleased with our results:

Business plan presentation: 6th place
Engineering design: 5th place
Acceleration: 2nd place
Autocross: 2nd place
Endurance: 1st place
Overall: 2nd place


FSSymposium
FSS


51
LOCTITE

7.6 riteh drone team

Riteh Drone team je studentski projekt koji djeluje pod mentorstvom izv. prof. Kristijana Lenca i asistenta Franka Hržića te već treću 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 istraživačke sekcije RiTeh Drone Teama fokusira se na istraživanje i razvoj tehnologija vezanih za procesiranje i prikupljanje podataka pomoću bespilotnih letjelica, razna snimanja i praćenje trenutnih zakonskih regulativa vezanih uz bespilotne letjelice u Hrvatskoj. Krajem ove godine otvorena je i trkaća sekcija tima s primarnim fokusom na istraživanja i primjene tehnologije trkaćih dronova i sudjelovanju u trkama.

Ove godine ostvarili smo suradnju s Hrvatskom agencijom za civilno zrakoplovstvo u educiranju šire javnosti o upotrebi dronova unutar Republike Hrvatske, kao i u edukaciju učenika srednjih škola u korištenju bespilotnih letjelica.

Sudjelovali smo u aktivnostima Studentskog zbora Sveučilišta u Rijeci i bili podrška u istraživanjima na Tehničkom fakultetu.

Svojoj opremi smo dodali nekoliko malih dronova, Tello Ryze, za ostvarenje studentskih projekata i završnih radova, simulator leta za pripremu članova za upravljanje trkaćim dronovima i trkaćih dronova za trkaću sekciju tima.

Trenutno radimo na nekoliko studentskih projekata i regrutiranju novih članova.

U idućoj godini planiramo raditi na osnaživanju povezanosti s gospodarstvom i pružanju podrške daljnjim istraživanjima fakulteta.

Riteh Drone Team is a student project which works under the mentorship of Assoc. Prof. Kristijan Lenac and Assistant Franko Hržić, and for the third year in a row, 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 research section focuses on research and developement 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. At the end of this year, the racing section was founded with the primary focus on research and application of racing drones technologies, and participating in drone races.

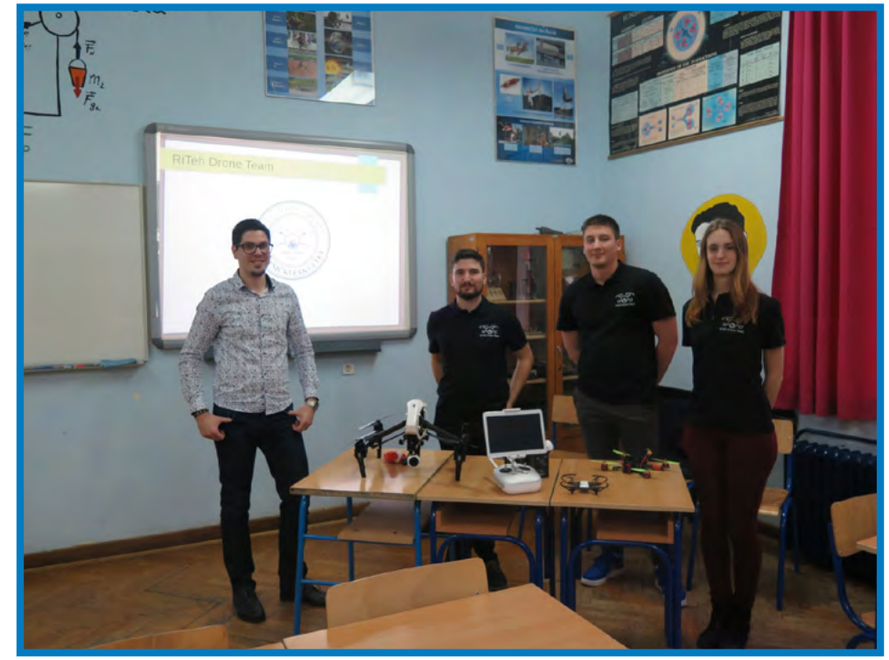
This year we started a cooperation with the Croatian Civil Aviation Agency for educating the public about using unmanned aerial vehicles in Croatia, as well as high school students about unmanned aerial vehicles.

We participated in the activities of the Student Council of the University of Rijeka, and we were a support in the research of the Faculty of Engineering.

To our equipment we added a few small drones, Tello Ryze, for the realisation of student projects and undergraduate final theses, as well as a flight simulator for preparing members to manage racing drones and racing drones for our racing section.

Currently we are working on several student projects and the recruitment of new members.

Our plan for next year is to work on strengthening the connection with the economy and supporting further faculty research.



7.7 riteh waterbike team

RITEH Waterbike Team (RWT) osnovala je grupa studenata brodogradnje Tehničkog fakulteta u Rijeci 1999. g., sve s namjerom sudjelovanja na International Waterbike Regatta (IWR). Prva IWR regata održana je 1980. godine u Hannoveru. Isprva je to bio skup studenata s raznih njemačkih sveučilišta i višiih škola koji su svoje druženje nastojali upotpuniti natjecanjem u granama znanosti i tehnologija koje najbolje poznaju. Time započinju prva natjecanja studentskih 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) je plovilo pokretano isključivo snagom mišića nogu 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 za stvaranje sile poriva. Natjecanje se sastoji od sedam disciplina: sprint 100 m, slalom 100 m, ubrzanje 10 m, naprijed - stop - natrag 50 m, maraton (1 h), vuča na stupu te utrka iznenađenja. Pobjednik natjecanja je plovilo koje skupi najmanje negativnih bodova. Svi dijelovi vodocikla korišteni od početka natjecanja moraju ostati na vodociklu sve do završetka svih disciplina.

RWT je najstariji studentski tim na Tehničkom fakultetu. Kroz tim je prošlo više desetaka studenata, danas uspješnih inženjera i uglednih ljudi iz brodograđevne i strojarske struke. Aktivnosti RWT su usko vezane za tehničku struku – brodogradnju i strojarstvo i ekološki prihvatljive

RITEH Waterbike Team (RWT) was founded by a group of students of naval architecture at the Faculty of Engineering in Rijeka in 1999, with the intention of participating in the International Waterbike Regatta (IWR). The first IWR was held in Hannover in 1980. At first, it was composed of a group 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 the beginning of the first competitions of the student nautical vessels. With the involvement of the Netherlands, the regatta gained an international status, so in 1988 the first regatta was held outside Germany.

The waterbikes are driven exclusively by the leg muscles of two persons. According to the IWR rules, the waterbikes must not be longer than six meters and their breadth should not be larger than their length. The draught should not exceed 1.5 meters and no electronic aids must be used for the thrust force. The competition consists of seven disciplines, as follows: 100 m sprint, 100 m slalom, acceleration (10 m), 50 m forward - stop - backward, marathon (1 h), bollard pull and surprise race. The winner of the competiotionis the vessel which gains the fewest negative points. All waterbike parts, used form the beginning of the competition, have to remain onboard until the end of all disciplines.

RWT is the oldest student team of the Faculty of Engineering. Several dozens of students who are today known as successful engineers

tehnologije te promociju zdravog studentskog života. RWT se bavi projektiranjem i izradom plovila koja su inovativna i ekološki prihvatljiva te pokretana snagom mišića dvaju natjecatelja. Vodocikle moraju projektirati i izraditi studenti, pod vodstvom voditelja tima i stručnog mentora. Proces započinje razvojem ideje, nakon čega slijedi njegova izrada sve do samog natjecanja na kraju, a sve 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 tima. Radom na projektiranju i izradi vodocikla, studenti u praksi primjenjuju teorijska znanja stečena na fakultetu. Kako bi se kvalitetno pristupilo projektu vodocikla, primjenjuju se integralna brodograđevna i strojarska 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 stječu znanja i vještine iz organizacije, financija, marketinga, logistike i timskog rada, važnih pri budućim zapošljavanjima.

and distinguished people in the field of naval architecture and mechanical engineering have been part of it. The RWT activities are closely related to the engineering profession - naval architecture and mechanical engineering, environmentally friendly technologies and the promotion of a healthy student life. RWT is involved in designing and manufacturing of watercrafts which are innovative and environmentally friendly vessels powered only by the muscular strength of two competitors. Waterbikes are to be designed and built by students, but guided by team leaders and expert mentors. The process starts from the development of the concept of a waterbike, followed by its construction and finally taking part in comptetitions, all being supported by a rational use of funds and organization of the entire project. There are no strict requirements for the construction of waterbikes, and therefore, the performances are innovative and depend on knowledge, technical capabilities and team's readiness. By designing and building the waterbikes within the RWT, students put into practice their theoretical knowledge acquired at the faculty. In order to have a qualitative

Do sada je izgrađeno pet vodocikala: “Esmeralda” (1998.), “Zvizda” (2009.), “Kajzer” (2010.), “Šijun” (2013.) i “Tramontana” (2017). “Šijun” je ostvario najznačajnije rezultate kroz kratku povijest tima.

RWT je krenuo s projektiranjem novoga vodocikla “Tramontana” još 2017. godine. Ovaj je vodocikl zamišljen kao jednotrupno plovilo, a napravljen je od epoksidne smole s ojačanjima od ugljikovih vlakana primjenom tehnike vakuumske infuzije. Vodocikl je vrlo lagan i jedan je od najlakših plovila na natjecanju. Pored samog vodocikla, izrađen je i niz od šest brodskih vijaka tehnologijom 3D printanja, uz naknadno presvlačenje ojačanjem od ugljikovih vlakana. Svaki brodski vijak prilagođen je pojedinoj discipline u natjecanju. Namjera je bila da se novoizgrađenim vodociklom nastupi na IWR u Hamburgu 2019. Ove je godine u RWT bilo aktivno uključeno deset studenata brodogradnje i strojarstva Tehničkog fakulteta: Adrijan Lisac, Alen Gačić, Darin Majnarić, Davor Penava, Dora Vojnić, Filip Tremski, Ivor Majnarić, Mario Božičević, Tonko Bošković, Vedrana Rogoznica. Vanjski suradnik bio je Mihovil Tomašić. Mentor tima je bio prof. dr. sc. Roko Dejhalla.

Ovogodišnja regata, 40. po redu, održana je u Ratzenburgu kraj Hamburga, u Njemačkoj, od 22. do 25. svibnja 2019. U Hamburgu se natjecalo preko 200 članova posada s uglednih europskih sveučilišta i 39 različitih vodocikala. RWT je sudjelovao na regati, ali se zbog tehničkih problema na vodociklu nije takmičio.

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

approach to the waterbike project, the integral parts of knowledge of naval architecture and mechanical engineering are employed, such as seaworthiness, stability, hydrodynamics and the construction of the waterbike. Teamwork is solely undertaken on a volunteer basis and funds for the project are raised independently by students seeking sponsorships and donations. In addition, students acquire the skills of organization, finance, marketing, logistics and teamwork, which are important for future employments.

So far, five waterbikes have been built: “Esmeralda” (1998), “Zvizda” (2009), “Kajzer” (2010), “Šijun” (2013) and “Tramontana” (2017). The waterbike "Šijun" has achieved the most significant results in the history of RWT.

In 2017, the team started designing and building a new waterbike named “Tramontana”. This waterbike was conceived as a monohull, and was made of carbon fiber reinforcement and epoxy resin using the vacuum infusion technique. The waterbike is very light and one of the lightest vessels on the regatta. Apart the waterbike, a set of six screw propellers was manufactured using 3D printing technology, followed by the overlaying of the propeller surface by carbon fiber reinforcement. Each screw propeller was adapted to a particular discipline on the regatta. The intention was to have this newly built waterbike in operational condition for the regatta in Hamburg 2019. Ten students of naval architecture and mechanical engineering from the Faculty of Engineering have been actively involved in this year's RITEH Waterbike Team: Adrijan Lisac, Alen Gačić, Darin Majnarić, Davor Penava, Dora Vojnić, Filip Tremski, Ivor Majnarić, Mario Božičević, Tonko Bošković and Vedrana Rogoznica. The external associate was Mihovil Tomašić. The team mentor was Prof. D. Sc. Roko Dejhalla.

The 40th IWR was held in Ratzenburg near Hamburg, Germany, from 23 to 25 May 2019. Over 200 members of eminent European universities competed with their 39 various waterbikes. The RWT participated in the regatta, but due to some technical problems, did not manage to compete with the newly built waterbike.

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

7.8 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 i sami studenti.

Tim je osnovan krajem 2014. godine, a inicijalno je okupljen oko tri projekta: sustava za upravljanje sadržajem weba Tehničkog fakulteta, web aplikacije za automatizirano vrednovanje rješenja zadataka (na predmetima kao što su Programiranje, Algoritmi i strukture podataka te Baze podataka) i sustava za navigaciju u zatvorenim prostorima Navindo.

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 radnom okviru Django 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 kojeg aktivno koriste zaposlenici Tehničkog fakulteta, specifično za potrebe rada Tehničke službe i Računalnog centra.

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, (2) web application for automated evaluation of task solutions (for classes such as Programming, Algorithms and Data Structures, and Database Systems), 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.

As a result of the team's work, many interesting web applications have been made. Apart from

Ticketing sustav omogućuje zaposlenicima fakulteta prijavu određenog problema nakon čega ga preuzimaju službe Tehničkog fakulteta zadužene za rješavanje čiji agenti putem sustava 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 priliku raditi na stvarnim problemima, u najnovijim tehnologijama uz mentoriranje profesora i starijih studenata koji su u timu više godina.

Na taj način studenti stječu vrijedno radno iskustvo koje mogu istaknuti u svojim životopisima.

Kvaliteta studenata, članova tima, dokazana je njihovim uspjesima na raznim programerskim natjecanjima te ostvarenim praksama i zaposlenjima u vodećim IT tvrtkama poput Googlea i Microsofta.

Pojedini članovi tima i ove su akademske godine sudjelovali na Natjecanju timova studenata informatičara hrvatskih sveučilišta te su se, kao pobjednički tim sa Sveučilišta u Rijeci, kvalificirali na Central Europe Regional Contest (CERC) održanom u Pragu.

the aforementioned, we can point out the Ticketing system, which has been actively 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 office agents can communicate through the system 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 in various programming competetions and through the practices and employment within the leading IT companies such as Google and Microsoft.

Osim na natjecanjima u okviru oragnizacije ACM, neki članovi RWT-a nastoje pokazati svoje znanje i na ostalim natjecanjima kao što su Google Code Jam, Google Hash Code i Codeforces online natjecanja.

Kada se ukaže prilika, članovi tima usavršavaju svoja znanja i vještine prisustvovanjem na relevantnim stručnim skupovima.

Tako su u ožujku 2019. godine studenti Arian Skoki, Rino Rodin, Tomislav Milanović i Marin Vidaković Lipovac, svi članovi RWT-a, prisustvovali konferenciji PyCon održanoj u Bratislavi u Slovačkoj.

Some of the team's members participated in the university collegiate programming contest this year and, as the winners from the University of Rijeka, qualified for the Central Europe Regional Contest (CERC) held in Prague.

In addition to competitions within the ACM organization, some RWT members also seek to demonstrate their knowledge in other contests such as Google Code Jam, Google Hash Code and Codeforces online competitions.

When the opportunity arises, team members improve their knowledge and skills by attending relevant professional conferences.

Thus, in March 2019, students Arian Skoki, Rino Rodin, Tomislav Milanovic and Marin Vidakovic Lipovac, all RWT members, attended the PyCon conference held in Bratislava, Slovakia.

7.9 akademski sport - uspjesi sportaša
academic sport - achievements of athletes

U sklopu sportskih aktivnosti u ovoj akademskoj godini, studenti Tehničkog fakulteta su se već tradicionalno natjecali u Unisport ligi u kojoj godinama ostvaruju zavidne rezultate. U uvijek tijesnoj borbi za 1. mjesto s Medicinskim fakultetom, ove smo godine ponovno odnijeli pobjedu u muškoj konkurenciji. Medicinski fakultet odnio je pobjedu u ženskoj konkurenciji, kao i ukupnu pobjedu.

Rezultati po sportovima Unisport lige:

- ***Futsal*** *– 1. mjesto (M), 1. mjesto (Ž)*
- ***Košarka*** *– 2. mjesto (M)*
- ***Rukomet*** *– 2. mjesto (M)*
- ***Odbojka*** *– 1. mjesto (M), 2. mjesto (Ž)*
- ***Cageball*** *– 1. mjesto (M), 2. mjesto (Ž)*
- ***Squash*** *– 3. mjesto (M), 1. mjesto (Ž)*
- ***Cross*** *– 1. mjesto (M), 3. mjesto (Ž)*
- ***Badminton*** *– 1. mjesto (M), 1. mjesto (M parovi), 2. mjesto (Ž parovi)*
- ***Odbojka na pijesku*** *– 2. mjesto (M), 2. mjesto (Ž)*
- ***Šah*** *– 2. mjesto (M)*
- ***Pikado*** *– 2. mjesto (M), 3. mjesto (Ž)*
- ***Stolni tenis*** *– 1. mjesto (M), 2. mjesto (M parovi)*
- ***Tenis*** *– 2. mjesto (M)*
- ***Streetball*** *– 2. mjesto (Ž)*

As part of sports activities in this academic year the students of the Faculty of Engineering have traditionally participated in the Unisport League, achieving remarkable results. In an always close contest with the Faculty of Medicine, we again achieved the 1st place in the male competition. The Faculty of Medicine won in the female competition as well as in the overall ranking.

Results in each sport of the Unisport League:

- ***Futsal*** *– 1st place (M), 1st place (F)*
- ***Basketball*** *– 2nd place (M)*
- ***Handball*** *– 2nd (M)*
- ***Volleyball*** *– 1st place (M), 2nd place (F)*
- ***Cageball*** *– 1st place (M), 2nd place (F)*
- ***Squash*** *– 3rd place(M), 1st place (F)*
- ***Cross*** *– 1st place (M), 3rd place (F)*
- ***Badminton*** *– 1st place (M – individually), 1st place (M - in pairs), 2nd place (F - in pairs)*
- ***Beach volleyball*** *– 2nd place (M), 2nd place (F)*
- ***Chess*** *– 2nd place (M)*
- ***Darts*** *– 2nd place (M), 3rd place (F)*
- ***Table tennis*** *– 1st place (M - individually), 2nd place (M - in pairs)*
- ***Tennis*** *– 2nd place (M - individually)*
- ***Streetball*** *– 2nd place (F)*

Osim natjecanja u Unisport ligi, sudjelovali smo i na ovogodišnjem izdanju STEM Gamesa u Poreču. U iznimno jakoj konkurenciji natjecali smo se u futsalu, košarci, odbojci na pijesku, veslanju, stolnom tenisu i crossu. Šah tim Tehničkog fakulteta u sastavu Daniel Ivaničić, Alen Gačić i Romano Polić osvojio je 2. mjesto u cross utrci. Tim u sastavu Nikola Samardžić, Sandro Šafar, Vid Štimac, Marko Dujić i Karlo Jelinić osvojili su 4. mjesto ekipno, dok je Sandro Šafar zauzeo odlično 2. mjesto u pojedinačnoj konkurenciji. Od ostalih rezultata valja napomenuti kako je futsal tim došao do četvrtfinala u kojem je bolja bila ekipa FOI fakulteta iz Varaždina.

Except for the Unisport League competition, we also participated in the STEM Games in Poreč. In a very strong competition, we took part in futsal, basketball, beach volleyball, rowing, table tennis and cross. The chess team of the Faculty of Engineering comprised of Daniel Ivaničić, Alen Gačić and Romano Polić achieved the 2nd place in cross. The team consisting of Nikola Samaržić, Sandro Šafar, Vid Štimac, Marko Dujić and Karlo Jelinić won the 4th place as a team, while Sandro Šafar achieved the 2nd place individually. Additionally, it should be mentioned that our futsal team reached the quaterfinals, in which the team from the Faculty of Organization and Informatics in Varaždin was better.

7.9 riteh akademski sport - uspjesi sportaša academic sport - achievements of athletes


SVEUČILIŠTE U RIJECI
TEHNIČKI FAKULTET
SVEUČILIŠTE U RIJECI