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TEHNIČKI FAKULTET

University of Rijeka
FACULTY OF ENGINEERING



GODIŠNJAK TEHNIČKOG FAKULTETA Sveučilišta u Rijeci • ANNUAL REPORT - FACULTY OF ENGINEERING University of Rijeka 2012/2013



GODIŠNJAK **ANNUAL REPORT**
TEHNIČKOG **FACULTY OF**
FAKULTETA **ENGINEERING**
Sveučilišta u Rijeci University of Rijeka

2012/2013

GODIŠNJAK ANNUAL REPORT
TEHNIČKOG FACULTY OF
FAKULTETA ENGINEERING

Sveučilišta University
u Rijeci of Rijeka

2012 / 2013

Sveučilište u Rijeci
Tehnički fakultet



University of Rijeka
Faculty of Engineering



GODIŠNJAK TEHNIČKOG FAKULTETA SVEUČILIŠTA U RIJECI 2012./2013.
ANNUAL REPORT OF THE FACULTY OF ENGINEERING UNIVERSITY OF RIJEKA 2012/2013

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SADRŽAJ / CONTENTS

PREDGOVOR DEKANA / DEAN'S PREFACE	5
1 OPĆE INFORMACIJE O FAKULTETU / GENERAL INFORMATION	7
2 FAKULTET U AKADEMSKOJ GODINI 2012.-2013. / FACULTY IN THE ACADEMIC YEAR 2012-2013	14
2.1 OPĆE INFORMACIJE / GENERAL INFORMATION	14
2.2 STUDENTI NAGRAĐENI ZA POSTIGNUTI USPJEH U AKADEMSKOJ GODINI 2012.-2013. / STUDENTS AWARDED FOR THEIR SUCCESS IN THE 2012-2013 ACADEMIC YEAR	19
2.3 ČASOPIS <i>ENGINEERING REVIEW</i> / THE JOURNAL <i>ENGINEERING REVIEW</i>	21
2.4 ALUMNI TFR	24
2.5 DOKTORSKE DISERTACIJE OBRANJENE U AKADEMSKOJ GODINI 2012.-2013. / DOCTORAL DISSERTATIONS DEFENDED IN ACADEMIC YEAR 2012-2013	27
2.6 AKTIVNOSTI, ZBIVANJA I KONFERENCIJE / ACTIVITIES, EVENTS AND CONFERENCES	30
2.6.1 Suradnja Tehničkoga fakulteta Sveučilišta u Rijeci na Ljetnom kampu Ericsson Nikola Tesla / Cooperation between the Faculty of Engineering, University of Rijeka Summer Camp Ericsson Nikola Tesla	30
2.6.2 Noć istraživača uz sudjelovanje znanstvenika s Tehničkoga fakulteta / Researchers' Night with the participation of scientists from the Faculty of Engineering	33
2.6.3 International Conference on Innovative Technologies IN-TECH 2013	34
2.6.4 RiScience 2013	37
2.6.5 Riječki energetska tjedan 2013./ Rijeka Energy Week 2013	40
2.6.6 Matdat.com	42
2.6.7 Tempus IV	46
2.6.8 Studentski projekti i diplomski radovi	48
3 STUDIJSKI PROGRAMI NA FAKULTETU / STUDY PROGRAMS AT THE FACULTY	50
4 UPRAVA / DEAN'S OFFICE	68
5 ZAVODI / DEPARTMENTS	71
5.1 ZAVOD ZA AUTOMATIKU I ELEKTRONIKU / DEPARTMENT OF AUTOMATION AND ELECTRONICS	72
5.2 ZAVOD ZA BRODOGRADNJU I INŽENJERSTVO MORSKE TEHNOLOGIJE / DEPARTMENT OF NAVAL ARCHITECTURE AND OCEAN ENGINEERING	80
5.3 ZAVOD ZA ELEKTROENERGETIKU / DEPARTMENT OF ELECTRIC POWER SYSTEMS	88

5.4	ZAVOD ZA INDUSTRIJSKO INŽENJERSTVO I MANAGEMENT / DEPARTMENT OF INDUSTRIAL ENGINEERING AND MANAGEMENT . . .	96
5.5	ZAVOD ZA KONSTRUIRANJE U STROJARSTVU / DEPARTMENT OF MECHANICAL ENGINEERING DESIGN	104
5.6	ZAVOD ZA MATEMATIKU, FIZIKU, STRANE JEZIKE I KINEZILOGIJU / DEPARTMENT OF MATHEMATICS, PHYSICS, FOREIGN LANGUAGES AND KINESIOLOGY	114
5.7	ZAVOD ZA MATERIJALE / DEPARTMENT OF MATERIALS SCIENCE AND ENGINEERING	120
5.8	ZAVOD ZA MEHANIKU FLUIDA I RAČUNARSKO INŽENJERSTVO / DEPARTMENT OF FLUID MECHANICS AND COMPUTATIONAL ENGINEERING	126
5.9	ZAVOD ZA RAČUNARSTVO / DEPARTMENT OF COMPUTER ENGINEERING	132
5.10	ZAVOD ZA TEHNIČKU MEHANIKU / DEPARTMENT FOR ENGINEERING MECHANICS	140
5.11	ZAVOD ZA TERMODINAMIKU I ENERGETIKU / DEPARTMENT OF THERMODYNAMICS AND ENERGY ENGINEERING	150
6	STRUČNE SLUŽBE / PROFESSIONAL AND ADMINISTRATIVE STAFF	163
6.1	KNJIŽNICA / LIBRARY	164
6.2	RAČUNALNI CENTAR / COMPUTER CENTER	168
6.3	FINANCIJSKA SLUŽBA / ACCOUNTING DIVISION	170
6.4	SLUŽBA NABAVE I KOMERCIJALE / PROCUREMENT AND COMMERCIAL OFFICE	172
6.5	SLUŽBA OPĆIH I KADROVSKIH POSLOVA / GENERAL AND PERSONNEL OFFICE	174
6.6	SLUŽBA STUDENTSKE EVIDENCIJE / STUDENTS'REGISTRAR AND AFFAIRS OFFICE	176
6.7	TEHNIČKA SLUŽBA / TEHNICAL AND MAINTENANCE SERVICES	178
6.8	MARENDARIJ / CAFETERIA "PIPI"	180
7	STUDENSKI ZBOR / STUDENT COUNCIL	181
7.1	STUDENSKI ZBOR TEHNIČKOGA FAKULTETA / STUDENT COUNCIL AT THE FACULTY OF ENGINEERING	182
7.2	IEEE	185
7.3	IAESTE	188
7.4	EESTEC	192
7.5	STUDENSKA INICIJATIVA "bioLeonardo" / STUDENTS' INITIATIVE "bioLeonardo"	193
7.6	RITEH RACING TEAM	195
7.7	RITEH EMOBIL	199
7.8	RITEH WATERBIKE TEAM	205

PREDGOVOR DEKANA / DEAN'S PREFACE



Dragi čitatelji,

Tehnički je fakultet i tijekom prošle akademske godine sustavno, kroz angažman svojih djelatnika i studenata, provodio razvojnu strategiju temeljenu na izvrsnosti u znanstvenoj, nastavnoj i stručnoj djelatnosti, sukladno jasno definiranoj viziji i misiji. U skladu s tim, Fakultet je zadržao poziciju prepoznatljive sastavnice riječkoga sveučilišta te hrvatske znanstvene i visokoobrazovne scene.

Prema staroj izreci da što nije zapisano, nije se ni dogodilo, ali i u skladu s dugogodišnjom tradicijom, i ove smo godine objavili *Godišnjak*, posvećen, između ostaloga, i obilježavanju 53. obljetnice Fakulteta. U njemu su prikazana sva postignuća naših djelatnika i studenata te su opisane sve aktivnosti provedene na našem Fakultetu tijekom prošle, 2012./2013. akademske godine.

Izuzetno mi je zadovoljstvo istaći da su i u toj akademskoj godini našim djelatnicima uručene istaknute nagrade i priznanja: izv. prof. dr. sc. Domagoj Lanc dobitnik je godišnje *Nagrade Zaklade Sveučilišta u Rijeci za područja tehničkih i prirodnih znanosti*; dr. sc. Vedran Kirinčić dobitnik je *Nagrade Zaklade Sveučilišta u Rijeci za znanstvene novake i asistente*, dok je doc. dr. sc. Ne-

Dear Readers,

In the course of last academic year, owing to the commitment of its employees and students, the Faculty of Engineering systematically implemented its development strategy based on excellence in scientific, teaching and professional activity in line with its clearly defined vision and mission. Owing to that, the Faculty has retained the position of a recognizable member of Rijeka University as well as of the Croatian scientific and higher education scene.

According to an old saying "What has not been noted down, has not even happened!" and our long tradition, the Faculty has issued the *Annual Report* also this year to mark, inter alia, its 53rd anniversary. It presents all the achievements of our employees and students as well as the activities carried out at and around the Faculty during the 2012/2013 academic year.

I am very proud to point out that also in that academic year our employees received prestigious awards and acknowledgements: Assoc. Prof. Domagoj Lanc, PhD, was the recipient of the yearly *Award of the Foundation of the University of Rijeka for the Fields of Engineering and Natural Sciences*; Vedran Kirinčić, PhD, was the recipient of the *Award*

venu Buliću tvrtka *Texas Instruments* dodijelila nagradu *Young Professional Educator's Award* u 2012. godini za izvrsnost u području obrade signala u ugradbenim računalnim sustavima.

Na sjednici Fakultetskoga vijeća održanoj u travnju ove godine, a kojoj je prisustvovao i rektor Sveučilišta u Rijeci prof. dr. sc. Pero Lučin, ravnateljica AZVO-a prof. dr. sc. Jasmina Havranek svečano je Fakultetu uručila Certifikat sustava osiguranja kvalitete, kojim se potvrđuje da je sustav osiguravanja kvalitete Fakulteta u *razvijenoj fazi*. Time je Tehnički fakultet postao prva sastavnica Sveučilišta u Rijeci koja je takav certifikat dobila. To, zasigurno, za Fakultet predstavlja veliko priznanje, ali istovremeno i veliku obvezu da dostignutu razinu razvijenosti sustava osiguranja kvalitete ne samo održava već i kontinuirano unapređuje.

Ovim ću putem iskoristiti priliku čestitati svim djelatnicima i studentima Tehničkoga fakulteta 53. obljetnicu, a *Radnoj skupini za izradu Godišnjaka*, predvođenoj glavnim urednikom dr. sc. Svenom Maričićem, zahvaliti na trudu i vremenu uloženom u pripremu cjelokupnoga materijala.

U Rijeci 18. listopada 2013.

Dekan
prof. dr. sc. Goran Turkalj

of the Foundation of the University of Rijeka for Junior Researchers and Assistants, while Assist. Prof. Neven Bulić, PhD, received from Texas Instruments the *Young Professional Educator's Award* for the excellence in the field of signal processing in integrated computer systems.

At the meeting of the Faculty Council held in April this year, which was attended also by the Rector Pero Lučin, D. Sc., the head of the Agency for Science and Higher Education (AZVO), Prof. Jasmina Havranek, D. Sc., ceremonially presented the Faculty with a Certificate awarded in recognition of the advanced level of the Faculty's quality assurance system. In this way, the Faculty of Engineering has become the first constituent of Rijeka University to be awarded such a certificate. For the Faculty, this represents undoubtedly a remarkable recognition, but also great commitment not only to maintain the achieved level of the quality assurance system but also to continuously improve it.

In the end, I take this occasion to congratulate all employees and students of the Faculty of Engineering on the 53rd anniversary, and I'd like to thank the *Working Group for the Preparation of the Annual Report*, lead by the editor-in-chief Sven Maričić, PhD, for the effort and time invested in the preparation of the whole material.

Rijeka, 18 October 2013

Dean
Prof. Goran Turkalj, D. Sc.



1 OPĆE INFORMACIJE O FAKULTETU / GENERAL INFORMATION

Tehnički fakultet Sveučilišta u Rijeci stolžerna je visokoškolska i znanstvenoistraživačka institucija na području tehničkih znanosti ne samo na Sveučilištu u Rijeci nego i u regiji u kojoj djeluje, konkurentna na europskom i svjetskom tržištu znanja. Fakultet 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 it is situated. It is competitive on the European and the world knowledge market. The Faculty encompasses today 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 Science;
- Zavoda za tehničku mehaniku /
Department of Engineering Mechanics;
- Zavoda za termodinamiku i energetiku /
Department of Thermodynamics and Energy Engineering.

U sklopu zavoda djeluje 37 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 180 zaposlenika 70 ih je u znanstveno-nastavnim, 9 u nastavnim i 22 u suradničkim zvanjima, 26 je znanstvena novaka, a 49 je djelatnika u administrativnim i stručnim službama te 4 na stručnom osposobljavanju. Na Fakultetu radi i veći broj vanjskih suradnika. Fakultet izvodi sveučilišne preddiplomske, sveučilišne diplomske te stručne studijske programe na polju strojarstva, brodogradnje, elektrotehnike i računarstva, kao i trogodišnji treći ciklus obrazovanja koji omogućava stjecanje doktorata znanosti na području tehničkih znanosti, i to na polju strojarstva, brodogradnje te temeljnih tehničkih znanosti.

Do sada je na Tehničkom fakultetu u Rijeci diplome steklo 113 doktora znanosti, 95 magistara znanosti, 2899 diplomiranih inženjera (od čega 2335 strojarstva, 311 brodogradnje i 253 elektrotehnike), 404 magistra inženjera (od čega 158 strojarstva, 43 brodogradnje, 200 elektrotehnike i 3 računarstva), 1536 inženjera (od čega 717 strojarstva, 108 brodogradnje i 711 elektrotehnike), 725 sveučilišnih prvostupnika inženjera (od čega 322 strojarstva, 65 brodogradnje, 274 elektrotehnike i 64 računarstva) te 263 stručna prvostupnika inženjera (od čega 96 strojarstva, 23 brodogradnje i 144 elektrotehnike). Danas tu studira više od 1800 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

37 chairs and 50 laboratories operate within the departments, and the Faculty encompasses also a Computer Centre, a Library as well as an Accounting Division, Procurement and Commercial Office, the General and Personnel Office, the Students' Registrar and Affairs Office and the Technical Maintenance Services. Of total number of 180 employees, 70 are professors, 9 lecturers and 22 assistants, 26 junior researchers, 49 work in the administrative and professional staff section and 4 apprentices. External collaborators also work at the Faculty. The Faculty holds undergraduate university, graduate university and vocational study programs in mechanical and electrical engineering, naval architecture and in computer science as well as post-graduate doctoral studies in the fields of mechanical engineering, naval architecture and basic engineering sciences.

So far, at the Faculty of Engineering in Rijeka, the title of Doctor of Science has been earned by 113 and Master of Science by 95 candidates. Total number of 2899 Graduated Engineers have taken their degree (of whom 2335 in Mechanical Engineering, 311 in Naval Architecture and 253 in Electrical Engineering), 404 Masters (of whom 158 in Mechanical Engineering, 43 in Naval Architecture, 200 in Electrical Engineering and 3 in Computer Engineering), and 1536 Engineers (of whom 717 in Mechanical Engineering, 108 in Naval Architecture and 711 in Electrical Engineering); Total number of 725 students have graduated with University Bachelor's Degree (of whom 322 in Mechanical Engineering, 65 in Naval Architecture, 274 in Electrical Engineering and 64 in Computer Science) and also 263 students with Professional Bachelor's Degree (of whom 96 in Mechanical Engineering, 23 in Naval Architecture and 144 in Electrical Engineering). Today, there are more than 1,800 students at this Faculty.

The Faculty of Engineering has a long tradition of publishing scientific and technical papers. Proceedings were first published as far back as 1970, and then in 1988, the

i jačanja veza i suradnje između bivših studenata i Tehničkoga fakulteta, ali i osobne suradnje između bivših studenata. Predsjednik ALUMNI TFR je prof. dr. sc. Zmagoslav Prelec, a na dan 30. 9. 2013. godine ukupan broj registriranih članova kluba ALUMNI TFR iznosi 336.

Dobrovoljno darivanje krvi na Fakultetu provodi se još od 1980. godine. U novije doba ta hvalevrijedna aktivnost provodi se organizirano od 2002. godine. Zbog dobre situacije sa zalihama krvi u KB Rijeka u prošloj smo godini bili zamoljeni da održimo samo dvije akcije darivanja krvi (u veljači i listopadu), na kojima je prikupljeno oko 120 doza krvi. Proteklih godina glavni organizator darivanja krvi je prof. dr. sc. Roberto Žigulić, a pomažu mu i članovi Kluba 25. Krv u podjednaku 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.

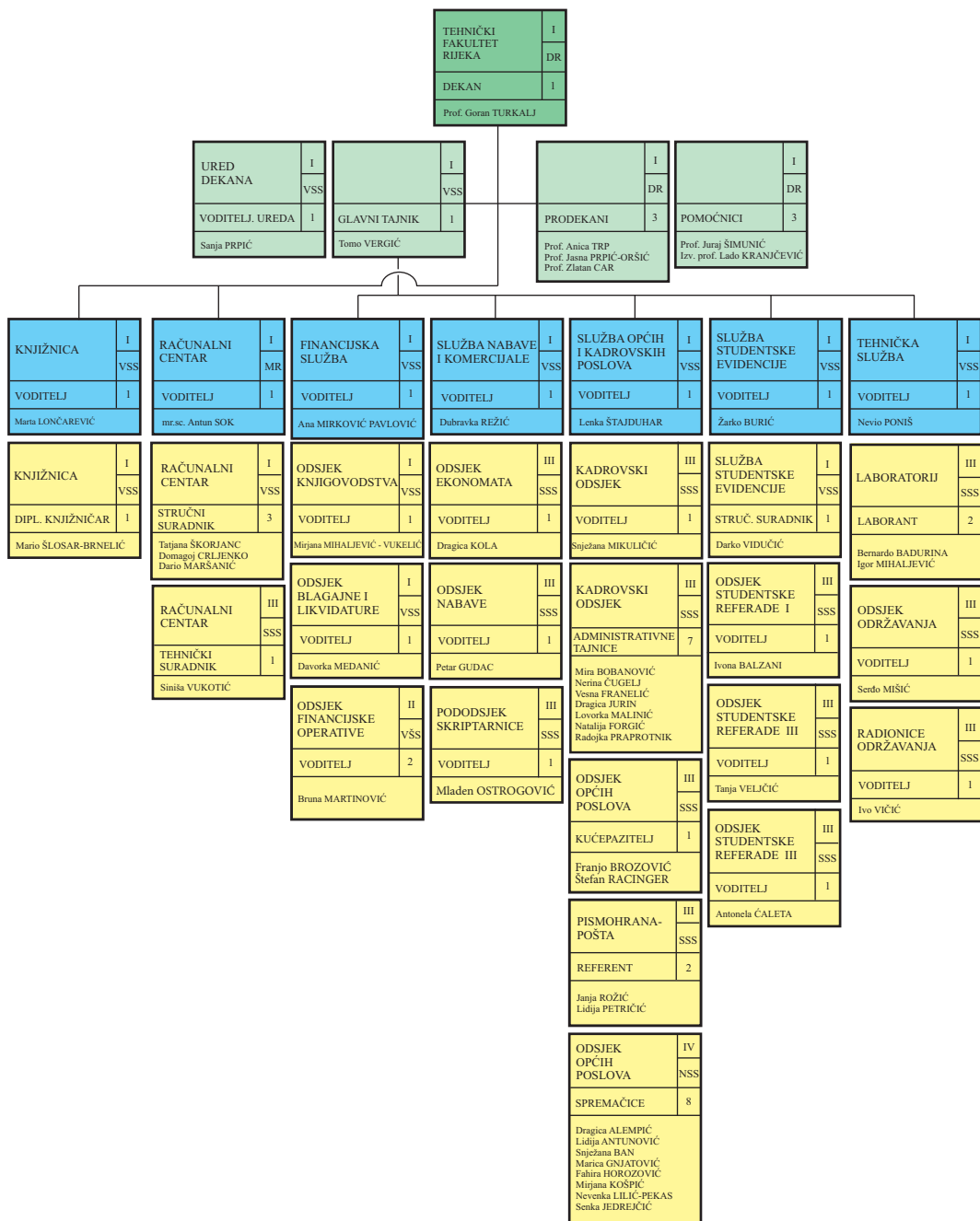


mentioned edition was renamed into the Proceedings of the Faculty of Engineering Rijeka. In 1995, this title was renamed again into *Engineering Review*, and accordingly, this professional journal is still being published under this title. Except for scientific and technical papers, an array of books and textbooks have been published by teaching staff of our Faculty.

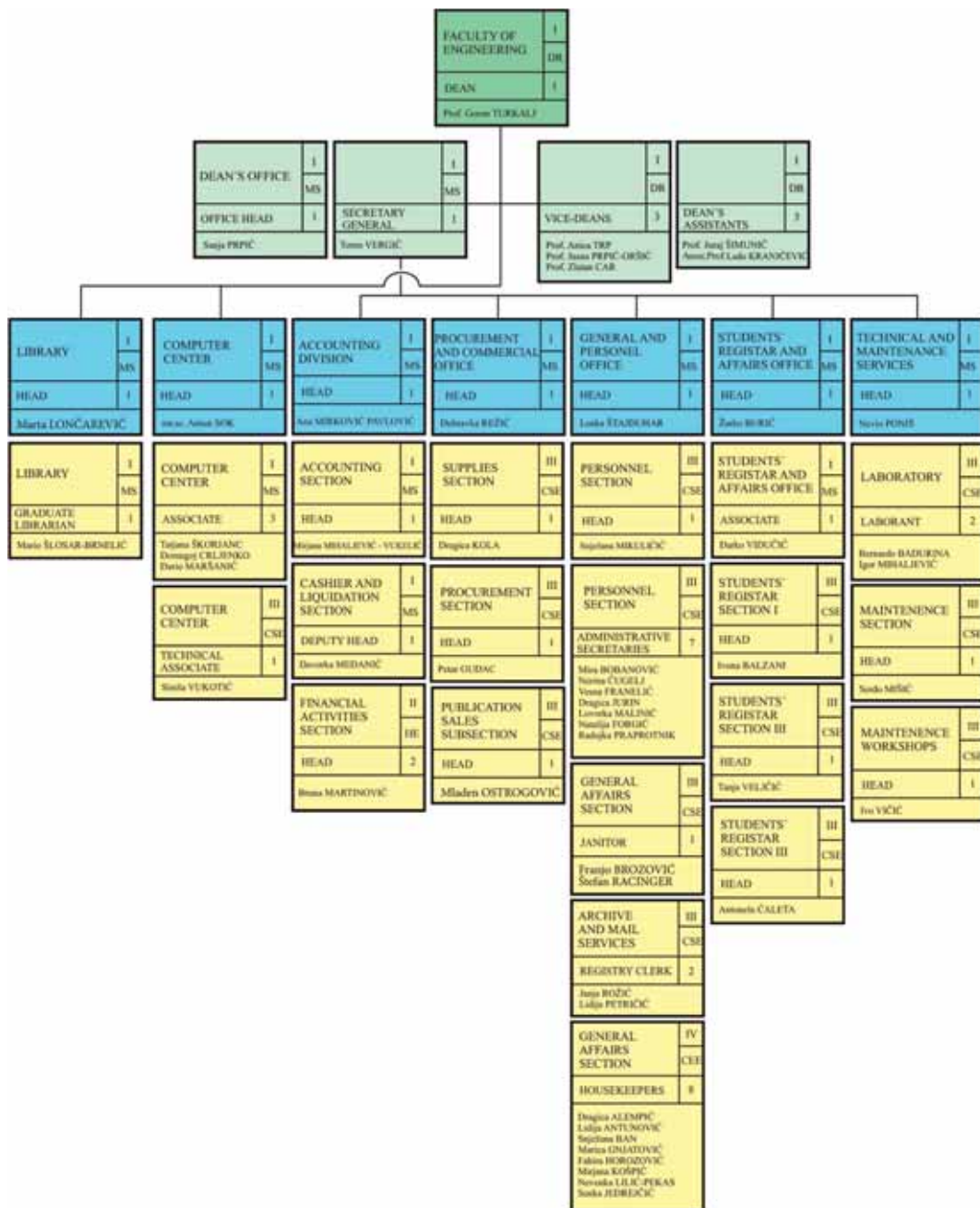
Furthermore, the Alumni Club of the Faculty of Engineering University Rijeka (abbreviated ALUMNI TFR), founded with the primary aim of establishing and strengthening ties and cooperation not only between alumni and the Faculty of Engineering but also among the alumni themselves, has been pursuing various activities at the Faculty since November 24, 2000. On September 30, 2013, with Prof. Zmagoslav Prelec, D. Sc. in the chair, ALUMNI TFR has a total of 336 registered members.

It is also worth pointing out that blood drive has been carried out at the Faculty since early 1980. Lately, in fact since 2002, this praiseworthy voluntary blood donation programme has been carried out in an organized manner. Due to the good situation with blood supplies in KBC Rijeka, in the past year the Blood donors active was asked to carry out only two actions (in February and October), in which about 120 blood doses were collected. For the past years, the main organizer of blood donation has been Prof. Roberto Žigulić, D. Sc., assisted by the members of the Club 25. Blood has been equally donated by the faculty staff and students.

Since 1990, a subsidiary of the Independent Union of Research 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' Council at the Faculty, which was not actually constituted at the Faculty. The Syndical representatives of Subsidiary are Prof. Roberto Žigulić, D. Sc., representing teaching staff and Žarko Burić non-teaching staff.



Organizacijska struktura Fakulteta - Stručne službe



Organisational Structure of the Faculty - Professional and Administrative Staff

2 FAKULTET U AKADEMSKOJ GODINI 2012.-2013. / FACULTY IN THE ACADEMIC YEAR 2012-2013

2.1 OPĆE INFORMACIJE / GENERAL INFORMATION



Preuređen ulazni hodnik / Redesigned entrance hall

Na Tehničkom fakultetu tijekom akademske godine 2012./2013. u različitim fazama svog studija aktivno je studiralo 1766 studenata, a svoj studij u tom razdoblju uspješno je završilo 163 magistara inženjera, 145 sveučilišnih prvostupnika i 60 stručnih prvostupnika. Prošle je akademske godine na našem fakultetu dvoje kandidata obranilo doktorske disertacije.

U akademskoj godini 2012./2013. studij je završila i uspješno diplomirala prva generacija studenata na Diplomskom sveučilišnom studiju računarstva.

Tijekom akademske godine 2012./2013. Fakultet je uložio oko milijun kuna vlastitih

During the academic year 2012/2013, at the Faculty of Engineering there were around 1766 students actively studying at different stages of their studies so that during that period 163 masters of engineering, 145 university bachelors and 60 professional bachelors completed their studies with success. Last academic year, 2 candidates defended their doctoral theses at our Faculty.

Also, the first generation of students successfully completed graduate university study of Computer Science in that academic year.

It is worth noting that during the academic year 2012/2013, the Faculty invested about million HRK of its own funds for purchasing

novčanih sredstava u nabavku opreme s ciljem osuvremenjivanja i unaprjeđenja nastavničkih aktivnosti.

Tijekom protekle se akademske godine na Tehničkom fakultetu odvijao znanstveno-istraživački rad u okviru 24 znanstvena projekta koje financira MZOS i osam istraživačkih projekata financiranih iz ostalih izvora.

U studenom 2012. godine ministar znanosti obrazovanja i sporta doc. dr. sc. Željko Jovanović Fakultetu je izdao 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 (AZVO) donesene u postupku reakreditacije Fakulteta te uz prethodno mišljenje Akreditacijskoga savjeta AZVO.

U travnju 2013. godine na sjednici Fakultetskog vijeća ravnateljica Agencije za znanost i visoko obrazovanje prof. dr. sc. Jasmina Havranek uručila je Fakultetu, kao prvaj sastavnici Sveučilišta u Rijeci, certifikat kojim se potvrđuje da je sustav osiguravanja kvalitete Fakulteta učinkovit i u razvijenoj fazi te je u skladu sa standardima i smjernicama za osiguravanje kvalitete u Europskom prostoru visokoga obrazovanja.

Tehnički fakultet intenzivno radi na promociji međunarodne mobilnosti među studentima i nastavnicima, što je rezultiralo ministarskom nagradom programa CEEPUS za akademsku godinu 2011./2012. na kojemu je mreža HR-0108 koordinatora prof. dr. sc. Zlatana Cara ocijenjena kao treća najkvalitetnija CEEPUS mreža.

Erasmus je dio Programa za cjeloživotno učenje (LLP), koji je usmjeren na visokoškolsko obrazovanje. U Programu mogu sudjelovati studenti u svrhu studijskoga boravka i obavljanja stručne prakse, te nastavno i nenastavno osoblje Sveučilišta u svrhu održavanja nastave, odnosno radi stručnoga usavršavanja. Tehnički fakultet trenutno ima devet bilateralnih ugovora sa sveučilištima iz Austrije, Cipra, Češke, Francuske, Poljske, Italije, Portugala i Švedske. U akademskoj godini 2012./2013. naši su studenti ostvarili

the equipment so as to modernize and improve teaching activities.

During the past academic year, scientific research was carried out at the Faculty of Engineering within the framework of 24 research projects funded by the Ministry of Science and eight research projects funded from other sources.

In November 2012, the Minister of Science, Education and Sport Assist. Prof. Željko Jovanović, D. Sc. issued a certificate attesting that the Faculty meets all the requirements for the performance of higher education and research activities. The certificate was issued on the basis of positive accreditation recommendations by Accreditation Agency for Science and Higher Education adopted in the process of re-accreditation of the Faculty and in accordance with the opinion already given by the Accreditation Council of the Agency.

In April 2013, at the meeting of the Faculty Council, the directress of the Agency for Science and Higher Education Prof. Jasmina Havranek, D. Sc. presented a commendation Certificate to the Faculty, as the first constituent of the University of Rijeka, attesting that the quality assurance system at the Faculty is effective, at a developed stage and in conformity with the standards and Guidelines for Quality Assurance in the European Higher Education Area.

The Faculty of Engineering has been actively promoting international mobility among students and teachers and as a result we were granted ministerial awards for CEEPUS program for the academic year 2011/2012 and for the network HR-0108 rated the third best quality CEEPUS network, which was designed by the coordinator Prof. Zlatan Car, D. Sc.

Erasmus is a part of LLP program that focuses on higher education. We welcome students for studies and practical training as well as teaching and non-teaching staff of the University to get into teaching and training. The Faculty of Engineering has currently nine bilateral agreements with universities from Austria, Cyprus, the Czech Republic,



Nova pristupna mjesta za informiranje / New info access points

četiri studijske mobilnosti i tri mobilnosti za obavljanje stručne prakse, dok smo istovremeno imali jednu dolaznu studijsku mobilnost. Također, jedan je profesor s našega Fakulteta realizirao mobilnost u svrhu održavanja nastave, a istovremeno smo ugostili jednoga gostujućega profesora iz inozemstva.

Tijekom akademske godine 2012./2013. Fakultet je sklopio više ugovora i sporazuma o znanstvenoistraživačkoj, obrazovnoj i stručnoj suradnji s obrazovnim i znanstvenim ustanovama te gospodarskim subjektima, a to su: ULJANIK TESU ELEKTRONIKA – Pula, VULKAN-NOVA d.o.o. – Rijeka, INSTITUT RUĐER BOŠKOVIĆ – Zagreb, ABB d.o.o. – Zagreb, LUKA RIJEKA d.d. – Rijeka, OSNOVNA ŠKOLA GONJA VEŽICA – Rijeka, REGIONALNA ENERGETSKA AGENCIJA KVARNER d.o.o. – Rijeka, AMF INŽENJERING d.o.o. – Opatija, HRVATSKA UDRUGA ZA RASHLADNU, KLIMA TEHNIKU I DIZALICE TOPLINE (HURKT) – Za-

France, Poland, Italy, Portugal and Sweden. In academic year 2012/13, our students realized four study mobility projects and three mobility ones of their internship while at the same time we had one academic mobility program. One of our teachers realized the mobility program for the purpose of teaching, and simultaneously we hosted for the same purpose one foreign professor.

During the academic year 2012/13, the Faculty has signed several treaties and agreements on scientific research, educational and professional cooperation with educational and research institutions and economic entities, namely ULJANIK TESU ELECTRONICS - Pula, VULKAN-NOVA Ltd. – Rijeka, INSTITUT RUĐER BOŠKOVIĆ – Zagreb, ABB Ltd. – Zagreb, LUKA RIJEKA JSC – Rijeka, ELEMENTARY SCHOOL GONJA VEŽICA - Rijeka, REGIONAL ENERGY AGENCY KVARNER Ltd. – Rijeka, AMF ENGINEERING Ltd. – Opatija, CROATIAN ASSOCIATION FOR REFRIGERATION, AIR-

greb. Fakultet je također sklopio Ugovor o suizdavaštvu časopisa Brodogradnja s BRODARSKIM INSTITUTOM d.o.o. iz Zagreba.

U okviru potpisanoga ugovora o suradnji tvrtka ABB Hrvatska donirala je Tehničkom fakultetu opremu za modernizaciju Laboratorija za automatiku i robotiku. Oprema će se koristiti za nastavnu, znanstvenu i stručnu djelatnost u okviru laboratorija, a pokrivat će područja upravljanja elektromotornih pogona, automatizaciju industrijskih postrojenja i sustava digitalnoga upravljanja. Doniranom će se opremom opremit sedam radnih mjesta od kojih će na svako radno mjesto doći jedan asinkroni motor, frekvencijski pretvarač, programirajući logički kontroler i HMI panel. Osim sklopovske opreme donirana je i programska podrška za sustav ABB SCADA te programska podrška za svu doniranu opremu. Procijenjena je vrijednost donirane opreme oko 140.000 kn.

Početak je akademske godine 2012./2013. u suradnji s pulskom firmom ULJANIK TESU ELEKTRONIKA pokrenut projekt „Fotonaponska elektrana RITEH-1“. Fotonaponska elektrana RITEH-1 je neinetgriranoga tipa, s dvoosnim praćenjem Sunca, maksimalne snage 3,444 kW, a na obližnju NN distribucijsku mrežu priključena je jednofazno. Fotonaponski se generator sastoji od 15 FN panela povezanih u seriju, svaki maksimalne snage 235 W. Planirana godišnja proizvodnja FN elektrane iznosi cca 4.700,00 kWh, dok se vlastita potrošnja sustava za pozicioniranje FN panela i prateće automatike procjenjuje na cca 100 kWh.

Fotonaponska elektrana RITEH-1 omogućit će brojnim generacijama studenata Tehničkoga fakulteta da dobiju uvid u cjelokupni proces, od ideje do realizacije, jednoga suvremenoga energetskeg postrojenja za proizvodnju električne energije iz obnovljivoga izvora energije te da pohađajući nastavu i ispunjavajući svoje nastavne obveze steknu relevantne kompetencije.

Osim toga, istraživači s Tehničkoga fakulteta, kao i istraživači s drugih znanstveno-istraživačkih institucija, imat će priliku ispitati svoje ideje i zamisli primjenjive u polju

CONDITIONING TECHNOLOGY AND HEAT PUMPS (HURKT) – Zagreb. The Faculty has also made a contract on Co-editing the journal Brodogradnja with BROADARSKI INSTITUT Ltd. from Zagreb.

As a part of the partnership agreement, the company ABB Croatia donated the equipment for modernization of the lab Automation and Robotics. The equipment will be used for teaching, scientific and professional activities within the lab and will cover the field of electric drives, industrial automation systems and digital control systems. Seven places of work will be furnished by this equipment so that each place will be fitted out with one asynchronous motor, frequency converter, programmable logic controller and HMI panel. Aside from the circuitry, software support for the AMM SCADA system was provided as well. The estimated value of the donated equipment is about 140,000 HRK.

At the beginning of the AY 2012/2013 and in cooperation with the firm ULJANIK TESU ELEKTRONIKA – Pula, a project „Photovoltaic power plant RITEH – 1“ was initiated. Photovoltaic power plant RITEH – 1 is of a non-integrated type, with dual axis sun tracking, maximum power up to 3,444 kW, and a single phase connection to the nearby LV distribution network. Photovoltaic generator is made up of 15 PV panels wired in series, each having maximum power of 235 W. The planned annual production of PV power plant is approx. 4,700.00 kWh, while the private consumption system for the positioning of the PV panels and associated automation is estimated to be about 100 kWh.

The development of photovoltaic power RITEH-1 will enable many generations of students of the Faculty not only to get an insight into the entire process of a contemporary power plant, from idea to realization of a modern renewable energy technology but also to attend classes fulfilling thus their teaching obligations to acquire relevant competencies.

Besides, research scientists from the Faculty of Engineering as well as research scientists from other scientific - research insti-

tehnologija za proizvodnju električne energije iz energije Sunca. Realizaciju su projekta FNE Riteh pomogli: Grad Rijeka (zemljište, javna rasvjeta), ULJANIK TESU ELEKTRONIKA d.o.o. (treker, paneli), IGH d.d. (projekti, nadzor), ELIS inženjering d.o.o. (nadzor), 5 E d.o.o. (projekt zaštite od djelovanja munje), AMF-inženjering d.o.o. (analiza opravdanosti izgradnje FN postrojenja) i Schrack Technik d.o.o. (kabeli, sklopna oprema).

Krajem akademske godine 2012./2013. preuređen je i ulazni hol Fakulteta. Prilikom uređenja vodilo se računa o implementiranju novih tehnologija koje imaju za cilj povećanje razine IT alata sa svrhom podizanja kvalitete pristupa informacijama naših studenata.

tutions will be offered the opportunity to test their ideas and concepts applicable to the field of technologies for the production of electricity from solar energy. The project FNE Riteh has been realized with the assistance of City of Rijeka(land, public lighting), Uljanik TESU Electronics Ltd. (trekkers, panels), IGH JSC (projects, supervision), ELIS engineering Ltd. (control), 5 E Ltd. (the protection against the effects of lightning), AMF engineering Ltd (analysis of the feasibility of building PV plants) and Schrack Technik Ltd. (cables, switchgear).

At the end of the academic year 2012/2013, the renovation of the entrance hall of the Faculty was completed. During the renovation, a special emphasis was set on the implementation of new technologies, the aim of which is to enhance and raise the level of IT tools for the purpose of improving the quality of information accessibility of our students.

2.2 STUDENTI NAGRAĐENI ZA POSTIGNUTI USPJEH U AKADEMSKOJ GODINI 2012.-2013. / STUDENTS AWARDED FOR THEIR SUCCESS IN THE 2012-2013 ACADEMIC YEAR

Preddiplomski sveučilišni studij/ Undergraduate university study

Studij/Study	God./Year	Ime i prezime/ Name and surname	Prosjeak usvojenosti znanja, vještina i kompetencija / Knowledge, skills and competences average		ECTS
			godine/year	studija/study	
Strojarstvo/ Mechanical Engineering	1.	Lorena Jakovac	89%	89%	60
	2.	Stjepan Piličić	91%	91%	120
Brodogradnja/ Naval Architecture	1.	-	-	-	60
	2.	Lucija Bujan	90%	88%	120
Elektrotehnika/ Electrical Engineering	1.	Nikola Lopac	99%	99%	60
	2.	Ivan Jurković	87%	88%	120
Računarstvo/ Computer Science	1.	Franko Hržić	94%	94%	60
	2.	Antonio Mileta	89%	90%	120

Sveučilišni prvostupnici inženjeri/ University Bachelor Engineers

Studij/ Study	Ime i prezime/ Name and surname	Prosjeak usvojenosti znanja, vještina i kompetencija/ Knowledge, skills and competences average
Strojarstvo/ Mechanical Engineering	Sandra Kvaternik	95%
Brodogradnja/ Naval Architecture	Matej Gljušić	86%
Elektrotehnika/ Electrical Engineering	Dražen Cvija	91%
Računarstvo/ Computer Science	Diego Sušanj	92%

Diplomski sveučilišni studij/ Graduate university study

Studij/ Study	God./Year	Ime i prezime/ Name and surname	Prosjeak usvojenosti znanja, vještina i kompetencija/ Knowledge, skills and competences average		ECTS
			godine/year	studija/study	
Strojarstvo/ Mechanical Engineering	1.	Barbara Jurki	96%	96%	60
Brodogradnja/ Naval Architecture	1.	Dario Maretić	94%	94%	60
Elektrotehnika/ Electrical Engineering	1.	Nikola Baćac	97%	97%	60
Računarstvo/ Computer Science	1.	Jean Petrić	93%	93%	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	Valter Uravić	97%
Brodogradnja/ Naval Architecture	-	-
Elektrotehnika/ Electrical Engineering	Alen Pavlinić	96%
Računarstvo/ Computer Science	Alan Martinović	92%

Stručni studij/ Vocational study

Studij/ Study	God./ 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.	-	-	-	60
	2.	Denis Valenčić	88%	81%	120
Brodogradnja/ Naval Architecture	1.	-	-	-	60
	2.	-	-	-	120
Elektrotehnika/ Electrical Engineering	1.	Toni Brenčić	85%	85%	60
	2.	-	-	-	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	Ivan Pavat	88%
Brodogradnja/ Naval Architecture	Saša Ostojčić	75%
Elektrotehnika/ Electrical Engineering	Daniel Šimičić	77%

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 i konačno 1995. uspostavlja se naziv *Engineering Review*, pod kojim se nazivom ovaj časopis i danas tiska.

Sve spomenute edicije bile su na raspolaganju za objavu radova kako nastavnog osoblja samog fakulteta tako i za sve ostale zainteresirane. Fakultet nastoji zainteresirati znanstvenu javnost za publiciranje znanstvenih radova, a sve sa svrhom širenja i razmjene znanstvenih postignuća temeljenih na istraživačkom radu. Polja iz kojih se u časopisu mogu objavljivati radovi prvenstveno obuhvaćaju strojarstvo, brodogradnju, temeljne tehničke znanosti, elektrotehniku, računalne znanosti i građevinarstvo. U ovom smislu časopis predstavlja jednu od rijetkih baza za publiciranje radova iz vrlo širokog dijapazona tehničkog područja. Razmatraju se i radovi koji su kvalitetni, a nisu izravno iz tehničkog područja, već mogu biti primjerice iz prirodnih znanosti, ali imaju određenu poveznicu s područjem tehnike. Do sada je u razvitak i uređivanje časopisa uloženo puno

The Faculty of Engineering of the University of Rijeka has a long tradition of publishing scientific papers. The publication of scientific papers by the employees of the Faculty of Engineering dates back in 1970, when the printing of Proceedings was initiated. In 1988, the mentioned edition was renamed the Proceedings of the Faculty of Engineering Rijeka and finally in 1995, the journal was renamed again *Engineering Review* and it has been published under this title to this very day.

All these editions have readily published papers written not only by teaching staff of the Faculty but also by all other interested sides. 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. Fields in which the journal may publish papers primarily include mechanical engineering, naval architecture, electrical engineering, computer sciences and civil engineering. In this sense, the journal is one of the few centres used for publishing papers covering a wide range of technical areas. Also, qualitative papers not directly from the engineering area are also taken into consideration. They might be, for instance, from natural sci-

truda, posebice u vrijeme pod vodstvom glavnog urednika prof. dr. sc. Branimira Barišića, čija je svestrana aktivnost naglo prekinuta njegovom tragičnom i preranom smrću. Za sve uloženo dugujemo mu iskrenu zahvalnost.

Nakon potpisanog ugovora o suizdavaštvu časopisa *Engineering Review* između Tehničkog fakulteta Sveučilišta u Rijeci (dekan prof. dr. sc. Goran Turkalj) i Građevinskog fakulteta Sveučilišta u Rijeci (dekanica prof. dr. sc. Aleksandra Deluka Tibljaš), nastavljaju se aktivnosti oko izdavanja.

Izdavanje časopisa *Engineering Review* nastavlja se pod vodstvom glavnog urednika prof. dr. sc. Josipa Brnića (Editor-in-Chief) i pomoćnih urednika (Associate Editors): izv. prof. dr. sc. Marine Franulović, izv. prof. dr. sc. Kristiana Lenića, izv. prof. dr. sc. Viktora Sučića, prof. dr. sc. Gordana Jelenića. Pomoć aktivnostima vezanim uz računalna rješenja pružio je izv. prof. dr. sc. Lado Kranjčević. Broj članova Editorial Boarda kao i broj članova Advisory Editorial Boarda je proširen.

Članovi obaju uredništva su eminentni domaći i inozemni profesori i stručnjaci. Veliku pomoć pripremi, uređivanju i tiskanju radova pružaju asistenti i znanstveni novaci Tehničkog fakulteta: dr. sc. Sven Maričić, Željka Milanović, Željko Vrcan, Neven Munjas, Boris Delač, Ivan Volarić, te Maja Gaćeša i Leo Škec (Građevinski fakultet u Rijeci).

Proširena je baza citiranosti časopisa, te se ona svodi na sljedeće indeksiranje: *Aluminum Industry Abstracts*, *Advanced Polymers Abstracts*, *Cambridge Scientific Abstract (CSA)*, *Ceramic Abstracts/World Ceramics Abstracts*, *Compendex*, *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, Mechanical & Transportation Engineering Abstracts*, *ME-TADEx*, *SCImago*, *SCOPUS*, *VINITI*.

ences but surely with some particular links to the area of engineering. So far, a lot of effort has been made in developing and editing the journal. More particularly, an immense effort was made under the leadership of editor-in-chief, Prof. Branimir Barišić, D. Sc., whose versatile activities were put to an abrupt halt because of his tragic and untimely end of his life. Heartfelt thanks to him for all his contribution.

Having entered into the contract on co-editions of the journal *Engineering Review*, signed by the Faculty of Engineering University Rijeka (dean Prof. Goran Turkalj, D. Sc.) and the Faculty of Civil Engineering University Rijeka (female dean Prof. Aleksandra Deluka Tibljaš, D. Sc.), publication activities will continue.

It follows that the journal *Engineering Review* will be published under the guidance of main editor-in-chief Prof. Josip Brnić, D. Sc., and Associate Editors: Assoc. Prof. Marina Franulović, D. Sc., Assoc. Prof. Kristian Lenić, D. Sc., Assoc. Prof. Viktor Sučić, D. Sc., and Prof. Gordan Jelenić, D. Sc. Assistance with computer solutions have been provided by Assoc. Prof. Lado Kranjčević, D. Sc. Furthermore, the member lists of both Editorial Board and Advisory Editorial Board have been enlarged.

Certainly, both lists consist of eminent home and abroad professors and experts. An enormous assistance with arrangements for editing and printing has been given by senior assistants and junior researchers of the Faculty of Engineering: Sven Maričić, PhD, Željka Milanović, Željko Vrcan, Neven Munjas, Boris Delač, Ivan Volarić and Maja Gaćeša, Leo Škec (Faculty of Civil Engineering).

Database Journal Citation has been enlarged and it has hence the following indexing: *Aluminum Industry Abstracts*, *Advanced Polymers Abstracts*, *Cambridge Scientific Abstract (CSA)*, *Ceramic Abstracts/World Ceramics Abstracts*, *Compendex*, *Composites Industry Abstracts*, *Computer and Information Systems Abstracts*, *Copper Techni-*

Časopis je uređen za elektroničku obradu svih podataka i elektroničku komunikaciju od prijave radova do recenzentskih postupaka i priopćavanja rezultata podnositeljima radova. Časopis ima široku bazu domaćih i inozemnih recenzenata i ona se stalno dopunjava. Za svaki su rad u postupak recenzije uključena minimalno dva recenzenta od kojih je najmanje jedan inozemni. Za prihvaćanje rada niti jedna recenzija ne smije biti negativna. Ako broj kvalitetnih radova bude primjeren, za objavu se predviđaju četiri broja godišnje, no u ovoj fazi planirana su tri broja godišnje. Časopis također može objaviti i određeni broj kvalitetnih radova s određenog kongresa, s time da njihova kvaliteta bude zagarantirana jednom recenzijom kongresa i jednom novom recenzijom. Spomenuti radovi idu u prijavu istom procedurom kao i svi drugi radovi. U pogledu svrhe i cilja časopisa, preuzima se niže navedeni tekst.

cal Reference Library, Corrosion Abstracts, Electronics and Communications Abstracts, Engineered Materials Abstracts, High Technology Research Database with Aerospace, Mechanical & Transportation Engineering Abstracts, METADEX, SCImago, SCOPUS, VINITI.

The journal has transferred to electronic processing of all data so that information on paper application, review procedures and results to the applicants are electronically communicated. The journal has a broad base of national and international reviewers and it is constantly being supplemented. The procedure to review the paper includes at least two referees for each work submitted for publication in the journal, at least one being from abroad. For the acceptance of the paper, it is important to mention that all reviews have to be positive. Provided that adequate numbers of qualitative works are submitted, four numbers annually are expected to be published, but present phase includes three numbers annually. With reference to aims and scope of the journal, the below written text must be considered.

AIMS AND SCOPE

Engineering Review is an international journal designed to foster the exchange of ideas and transfer of knowledge between scientists and engineers involved in various engineering disciplines that deal with investigations related to design, materials, technology, maintenance and manufacturing processes. It therefore provides an appropriate resort for publishing the papers covering prior applications – based on the research topics comprising the entire engineering spectrum. Topics of particular interest thus include: mechanical engineering, naval architecture and marine engineering, electrical engineering, computer sciences and civil engineering. Manuscripts addressing other issues may also be considered if they relate to engineering oriented subjects. The contributions, which may be analytical, numerical or experimental, should be of significance to the progress of mentioned topics. Papers that are merely illustrations of established principles or procedures generally will not be accepted. The high standard of excellence for any of published papers will be ensured by peer-review procedure.

Na kraju valja spomenuti da je zainteresiranost za publiciranjem radova u časopisu prilično velika te da ponude za objavljivanjem dolaze iz inozemstva i iz Hrvatske. Ovakvoj zainteresiranosti svakako doprinosi uređeni sustav prijave, recenzija, indeksiranost i komunikacija s autorima.

Finally, lots of authors from Croatia and abroad have shown their interest in publishing their scientific papers in Engineering Review. Article processing is supported with dynamic system of review, communication with authors and indexing that surely contribute to the importance of the journal.

2.4 ALUMNI TFR

Alumni klub Tehničkog fakulteta Sveučilišta u Rijeci (ALUMNI TFR) udruga je osnovana s primarnim ciljem uspostave te jačanja veza i suradnje između bivših studenata i 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 znanstvenoga i stručnoga mišljenja o svim važnim 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.

Prema podacima od 30. rujna 2013. godine ALUMNI TFR broji 336 registriranih članova. U akademskoj godini 2012./2013. predsjednik ALUMNI TFR bio je prof. dr. sc. Zmagoslav Prelec, potpredsjednik prof. dr. sc. Zoran Mrša, te tajnica Tatjana Škorjanc, dipl. ing. Članovi su Predsjedništva bili: prof. dr. sc. Zmagoslav Prelec, prof. dr. sc. Roko Dejhalla, dekan Tehničkoga fakulteta prof. dr. sc. Goran Turkalj, prof. dr. sc. Bernard Franković, dr. sc. Aleksandar Regent, prof. dr. sc. Božidar Križan, Zlatko Komadina, dipl. ing., dr. sc. Serdo Klapčić, Davor Lukeš, dipl. ing., Ante Maras, dipl. ing., dr. sc. Vedran Kirinčić, Mladen Merlak, dipl. ing., prof. dr. sc. Zoran

The Alumni Club of the Faculty of Engineering, Rijeka University, the abbreviation ALUMNI TFR, is an association established with the primary aim of fostering liaisons and cooperation of the former alumni not only with the Faculty of Engineering but also with each other. The association was founded under the name the Academic Club of Ph. D. graduates, masters of science, graduate engineers and engineers of the Faculty of Engineering, the University of Rijeka at the Inaugural Meeting held in the Marble Hall of the Maritime and History Museum of Croatian Littoral and Rijeka, on November 24, in the year of 2000, to mark 40th anniversary of the Faculty.

The purpose of ALUMNI TFR is to preserve the tradition of the Faculty of Engineering of Rijeka University, to promote the reputation of the Faculty in Croatia and abroad, to care for the development and progress of the Faculty, to nurture and foster ethics in the engineering profession and calling, to exhibit an influence on the creation of the public scientific and professional opinion about all important issues in the development of the profession, science, and their application, to exhibit an influence on the development and advancement of knowledge and awareness about the need to preserve nature and our environment; the aim is also to develop and 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 the Republic of Croatia and the world, to promote the reputation of the engineering profession and to establish and develop the cooperation with similar organizations at home and abroad.

On September 30, in the year of 2013, the ALUMNI TFR numbers a total of 336 registered members. In the AY of 2012/2013, the chairman of the ALUMNI TFR is Prof. Zmagoslav Prelec, D. Sc., Vice chairman is Prof. Zoran Mrša, D. Sc. and female secretary is



ALUMNI TFR / ALUMNI TFR

Mrša, prof. dr. sc. Jasna Prpić-Oršić i Danko Venturini, dipl. ing. U Nadzornom su odboru bili: mr. sc. Slavko Štambuk, prof. dr. sc. Duško Pavletić i Davor Mihovilić, dipl. ing.

U organizaciji su ALUMNI TFR tijekom akademske godine 2012./2013. realizirane sljedeće aktivnosti:

- 26. listopada 2012. organiziran je susret 17. generacije TFR.
- 2. studenoga 2012. organiziran je susret 3. generacije studenata TFR.
- 9. studenoga 2012. organizirano je predavanje Miljenka Brnića, dipl. ing., Kristijana Ivančića, te Milana Bičića, dipl. ing. iz Tehnomonta – Pula pod naslovom „Mala i srednja bodogradnja – stanje u svijetu te razvoj i perspektiva u RH”.
- 9. studenoga 2012. organiziran je susret 8. generacije TFR.

Tatjana Škorjanc, M.Eng. The current members of the chairmanship are: Prof. Zmagoslav Prelec, D. Sc.; Prof. Roko Dejhalla, D. Sc.; Prof. Goran Turkalj, D. Sc. - Dean of the Faculty of Engineering; Prof. Bernard Franković, D. Sc.; Aleksandar Regent, PhD; Prof. Božidar Križan, D. Sc.; Zlatko Komadina, M.Eng.; Serđo Klapčić, D. Sc.; Davor Lukeš, M.Eng.; Ante Maras, M.Eng.; Vedran Kirinčić, PhD; Mladen Merlak, M.Eng.; Prof. Zoran Mrša, D. Sc.; Prof. Jasna Prpić-Oršić, D. Sc., and Danko Venturini, M.Eng. The current members of the Supervisory Board are: Slavko Štambuk, M.Eng.; Prof. Duško Pavletić, PhD, and Davor Mihovilić, M.Eng.

During the academic years 2012/2013, the following activities were realized by the ALUMNI TFR:

- On October 26th, 2012, a meeting of the 17th generation of TFR was organized.

- 16. studenoga 2012. organiziran je susret 13. generacije TFR.
- 16. siječnja 2013. potpisani su ugovori o donacijama po 3.000,00 kuna koje daje ALUMNI TFR studentskim projektima na Fakultetu i to: Formula Student, Riteh Emobil i Riteh Waterbike Team.
- 18. siječnja 2013. održana je Izborna skupština ALUMNI TFR.
- 15. veljače 2013. organizirano je predavanje Davora Mihovilića, dipl. ing., pod naslovom „Upravljanje investicijskim projektima“.
- 5. travnja 2013. organizirano je predavanje Josipa Luzera, profesora visoke škole, pod naslovom „Plovidba morem i rijekama u drevnoj Kini“.
- 4. srpnja 2013. organizirano je predavanje Danijela Frke pod naslovom „Podvodno blago Jadrana“.
- On November 2nd, 2012, a meeting of the 3rd student generation of TFR was organized.
- On November 9th, 2012, lectures were held by Miljenko Brnić, M.Eng., Kristijan Ivančić. Milan Bičić, M.Eng. from Tehnomont – Pula held the lecture “Small and Medium Enterprises in the shipbuilding industry – world affairs, development and prospects of the Republic of Croatia”.
- On November 9th, 2012, the meeting of the 8th generation of TFR was organized.
- On November 16th, 2012, the meeting of the 13th generation of TFR was organized.
- On January 16th, 2013, contracts on donation worth 3.000,00 HRK were signed, an amount given by ALUMNI TFR to the student projects at the Faculty - Formula Student, Riteh Emobil and Riteh Waterbike Team.
- On January 18th, 2013, the electoral meeting of ALUMNI TFR was held.
- On February 15th, 2013, the lecture „Management of Investment Projects“ was held by Davor Mihovilića, M.Eng.
- On April 5th, 2013, the lecture „Sailing the Sea and Rivers in Ancient China“ was organized by Josip Luzer, College Professor.
- On July 4th, 2013, the lecture „Underwater Treasures of the Adriatic“ was organized by Danijel Frka.

2.5 DOKTORSKE DISERTACIJE OBRANJENE U AKADEMSKOJ GODINI 2012.-2013. / DOCTORAL DISSERTATIONS DEFENDED IN ACADEMIC YEAR 2012-2013

Ime i prezime / Name and surname: **Igor Pešić**
 Područje / Scientific area: Tehničke znanosti, Strojarstvo, Opće strojarstvo, Temeljne tehničke znanosti, Tehnička mehanika
 Naziv rada / Title: *Konačnoelementni model za analizu izvijanja kompozitnih grednih konstrukcija / Finite element model for buckling analysis of composite beam structures*
 Mentor(i) / Supervisor(s): izv. prof. dr. sc. / Assoc. Prof. D. Sc. Domagoj Lanc
 Datum obrane / Date of defence: 7. 1. 2013.

Sažetak:

U ovom radu je prikazana konačnoelementna analiza stabilnosti tankostjenih kompozitnih grednih konstrukcija. Korišten je gredni konačni element pod pretpostavkom velikih pomaka, ali malih deformacija. Izvedena je linearna i nelinearna analiza stabilnosti. Kod linearne analize korišteno je nelinearno polje pomaka koje uzima u obzir efekte velikih rotacija, a kod nelinearne analize implementirana je korotacijska formulacija koja je linearna na nivou elementa, a geometrijska nelinearnost se uvodi transformacijom u globalni koordinatni sistem. Korištena je klasična laminatna teorija za vlaknom ojačane kompozite. Analitički model također opisuje linearno viskoelastično ponašanje vlaknima ojačanih plastičnih kompozitnih laminiranih greda. Razvijen je računalni program koji je verificiran na testnim primjerima.

Summary:

This work presents a finite element algorithm for buckling analysis of thin-walled laminated composite beam-type structures. One-dimensional finite element is employed under the assumptions of large displacements, but small strains. The non-linear displacement field of cross-section has been used, which includes the large rotation effects. Stability analysis has been performed in an eigenvalue manner and in load deflection manner using co-rotational formulation. Laminates have been modeled on the basis of classical lamination theory. Analytical model also predicts the linear viscoelastic behavior of thin-walled laminated fiber-reinforced plastic composite beams. Computer program has been developed and verified on test examples.

Ime i prezime / Name and surname: **Marko Kršulja**
 Područje / Scientific area: Tehničke znanosti, Strojarstvo, Proizvodno strojarstvo
 Naziv rada / Title: *Unaprijeđenje procesa inkrementalnog preoblikovanja u jednoj točki / Furthering the process of single point incremental forming*
 Mentor(i) / Supervisor(s): prof. dr. sc. / Prof. D. Sc. Zlatan Car
 izv. prof. dr. sc. / Assoc. Prof. D. Sc. Tomaž Pepelnjak
 Datum obrane / Date of defence: 1. 9. 2013.

Sažetak:

U ovome je radu proveden niz istraživanja kako bi se utvrdio stabilni tehnološki proces izrade tankostjenih proizvoda tehnologijom inkrementalnog oblikovanja u jednoj točki (SPIF - single point incremental forming). Pretpostavljeno je da je moguće primijeniti tehnologiju inkrementalnog oblikovanja na tankostjeni lim. Istraživanja su provedena na čeličnome limu TS230 (broj čelika prema EN 10027-2 je W. nr. 1.0371) debljine 0.155 mm i na limu TH415 (broj čelika prema EN 10027-2 je W. nr. 1.0377) debljine 0.24 mm s ciljem utvrđivanja optimalnih parametara u njihovoj obradi SPIF tehnologijom. Provedena su ispitivanja mehaničkih svojstava s ciljem utvrđivanja pouzdanosti ulaznih parametara kako bi se jasno definirala točnost izrade tražene geometrije krnjeg stošca pomoću SPIF procesa. Proveden je vlačni test kako bi se definirao konvencionalni dijagram naprezanje - deformacija, te Marciniak test kako bi se formirao dijagram deformabilnosti SPIF tehnologijom. Postavljeni su analitički modeli koji opisuju stanjivanje lima, kritične sile te pojavu trenja za ispitivane limove u SPIF procesu. Prema rezultatima analitičkog modela za izračun sile u SPIF procesu za tankostjene limove provedeno je ispitivanje trenja za odabrane materijale TS230 i TH415. Uzimajući u obzir rezultate vlačnoga testa i ispitivanja trenja postavljeni su uvjeti za modeliranje, analizu i simulaciju SPIF procesa u softveru ABAQUS. Za izradu modela odabran je oblik krnjeg stošca, simulacije su provedene kako bi se utvrdili uvjeti izrade uspješnog SPIF procesa za materijal TS230 i TH415. Na temelju prikupljenih podataka

Summary:

In this work series of investigations were conducted in order to establish a stable technological process of manufacturing tinplate products with single point incremental forming technology (SPIF). At the beginning of investigation it was assumed that SPIF technology is applicable to thin sheet metal. Investigations were conducted on two materials, steel tinplate TS230 (W. nr. 1.0371 according to EN 10027-2), thickness of 0.155 mm and steel tinplate TH415 (W. nr. 1.0377 according to EN 10027-2), thickness of 0.24 mm with the goal of establishing optimal parameters in their manufacture with SPIF technology. Investigation of mechanical properties will be conducted with the goal to establish reliable input parameters for clearly defining the accuracy of investigated truncated cone dimensions with SPIF process. A tensile test was conducted for defining material stress - strain curve and Marciniak investigation in order to create forming limit diagram (FLD) for SPIF technology. Analytical models were defined for describing effects of sheet metal thinning, defining critical force and friction for investigated sheet metal in SPIF process. Friction investigation was conducted for materials TS230 and TH415 according to results obtained from an analytical model for defining critical forces in SPIF process for thin sheet metals. Considering obtained results of tensile and friction investigation conditions for modelling, analysis and simulation of SPIF process in ABAQUS software are obtained. A truncated cone was selected for model development, a series of simulations were conducted in order to

postavljen je plan eksperimenata za istraživanje u realnim proizvodnim uvjetima te je pristupljeno eksperimentalnoj verifikaciji modela. Odabran je CNC stroj, CNC-glodalica WEMAS VZ 750, te je projektirana specijalna radna naprava te su odabrani alati za inkrementalno oblikovanje. Postavljeni su modeli za izvedbu SPIF procesa na odabranom stroju pomoću softvera Solidcam i VeriCUT. Prema dobivenim spoznajama izveden je eksperimentalni plan izrade krnjeg stošca kako bi se utvrdilo funkcioniranje modela. Nakon uspješno izvedenog SPIF procesa i utvrđivanja optimalnih parametara obrade, postavljen je eksperimentalni plan mjerenja stanjivanja lima, ponovljivosti oblika te sposobnosti izvedenog inkrementalnog oblikovanja. Sposobnost inkrementalnog oblikovanja tankostjenog lima mjerena je metodom 3D fotogrametrije (dig italizacijski sustav ARGUS), a dobiveni su rezultati uspoređeni sa dobivenim rezultatima Marciniak ispitivanja. Sustavom 3D fotogrametrije kontrolirana je ponovljivost oblika i stanjivanje tankostjenog lima. Ustanovljena je maksimalna sposobnost inkrementalnog oblikovanja za ispitivane materijale s oblikom krnjeg stošca. Objasnjeni su parametri koji uvjetuju uspješnu obradu SPIF procesom tankostjenog materijala. Izvršena su dodatna mjerenja tvrdoće, hrapavosti i topline.

establish conditions for successful SPIF process of selected materials TS230 and TH415. On the basis of collected data, a plan of experiments for real production conditions was proposed and verification of proposed was conducted. The CNC machine, CNC milling machine WEMAS VZ 750 was selected, the special work holder and tooling necessary for SPIF process proposed and created. Models for the execution of SPIF process on milling machine were selected with softer Solidcam and VeriCUT. According to acquired know-how, an experimental plan for the creation of truncated cones was executed so as to confirm functionality of developed model. After successful implementation of SPIF process and confirmation of optimal working parameters, an experimental plan was prepared in order to measure with 3D fotogrametry. Thinning of sheet metal, geometry shape repeatability and FLD were measured with 3D fotogrametry system ARGUS. FLD diagrams for material TS230 and TH415 for selected geometry shape of truncated cone was defined. Obtained FLD diagrams of SPIF process were compared with obtained FLD diagrams of Marciniak investigation. An explanation of influential parameters that influence successful SPIF process of thin sheet metal is given. Additional measurements of hardness, roughness and heat were conducted.

2.6 AKTIVNOSTI, ZBIVANJA I KONFERENCIJE / ACTIVITIES, EVENTS AND CONFERENCES

2.6.1 Suradnja Tehničkoga fakulteta Sveučilišta u Rijeci na Ljetnom kampu Ericsson Nikola Tesla / Cooperation between the Faculty of Engineering, University of Rijeka Summer Camp Ericsson Nikola Tesla



Tim s Tehničkoga fakulteta ispred Ericsson Nikola Tesla u Zagrebu / The team from the Faculty of Engineering in front of Ericsson Nikola Tesla company in Zagreb

Već treću godinu za redom, u sklopu suradnje Tehničkog fakulteta Sveučilišta u Rijeci i kompanije Ericsson Nikola Tesla, studenti Tehničkog fakulteta ljetuju na Ljetnom kampu. Ljetni kamp međunarodna je aktivnost koja već dvanaestu godinu zaredom okuplja studente elektrotehnike i računarstva. Cilj je uspostava suradnje između akademije i gospodarstva čime bi se povećala i kvaliteta obrazovanja te osigurao transfer znanja.

O važnosti ovog Ljetnog kampa svjedoči i činjenica da Ericsson Nikola Tesla, uz veliki interes najboljih studenata, slične radionice

For the third year in a row, in the framework of a cooperation between the Faculty of Engineering of Rijeka University and Ericsson Nikola Tesla company, students of the Faculty of Engineering have attended Summer Camp. Summer Camp is an international activity that has joined the students of Electrical Engineering and Computer Science for the twelfth consecutive year. The aim is to establish the close cooperation between academia and industry so as to enhance the quality of education and ensure the transfer of knowledge.

organizira već trinaest godina u suradnji s vodećim fakultetima tehničkih disciplina u regiji. Stoga je pred polaznike s našeg fakulteta postavljen težak zadatak da ne samo pokažu svoju izvrsnost i svrstaju se uz bok studenata s drugih uključenih fakulteta, već svrstaju Tehnički fakultet Sveučilišta u Rijeci među hrvatske centre izvrsnosti i u ovom području. Naši studenti su do sada pokazali svoju izvrsnost i uspijevali redovno izvršavati sve obaveze te uspješno odraditi i završiti izazovne projekte koji su postavljeni pred njih.

U trinaestom po redu *ENT Summer Camp 2013* studenti Aleksandar Vidović, Alan Martinović, Sandi Vuković i Maja Grubišić predstavljali su tim Sveučilišta u Rijeci. Program je trajao ukupno 5 tjedana i to u periodima od 8. srpnja do 21. srpnja i od 19. kolovoza do 7. rujna 2013. godine, za vrijeme kojeg su studenti boravili u laboratorijskim prostorima Ericsson Nikole Tesle u Zagrebu i marljivo odradivali svoje zadatke uz pomoć mentora iz industrije. Tema ovogodišnje ljetne škole je *Izazovi umreženog društva* u sklopu koje su naši studenti sudjelovali u izvedbi sljedećih uspješno završenih projekata: IPTV online shopping, ETSI M2M gateway, GCP verification tool for GIT based CI with GERRIT i Web based data presentation with charts and maps. Završna svečanost održana je 1. listopada 2013. godine u prostorijama Ericsson Nikole Tesle kada su studenti imali priliku predstaviti svoje radove i vanjskim uzvanicima. Na svečanosti je predsjednica kompanije Ericsson Nikole Tesle mr. sc. Gordana Kovačević uručila pomoćniku rektora Sveučilišta u Rijeci prof. dr. sc. Zdravku Lencu Zahvalu za uspješnu suradnju.

I na kraju, još napomenimo da se uslijed niza pozitivnih iskustava u sklopu ljetne škole, ugovara daljnja kontinuirana suradnja u vidu istraživačkih projekata i institucijskog partnerstva s Ericsson Nikolom Teslom i to ne samo u vidu uključivanja Tehničkog fakulteta u buduće ljetne škole već i zajedničko definiranje i mentorstvo završnih i diplomskih radova za studente računarstva Tehničkog fakulteta u Rijeci.

The significance of this summer camp is shown in the fact that, with great interest of the best students, Ericsson Nikola Tesla has been organizing similar workshops in cooperation with leading universities of engineering disciplines in the region for thirteen years. Therefore, students from our Faculty have been faced with a difficult task - to not only demonstrate their excellence and keep abreast with the students from other universities involved but to align the Faculty of Engineering of Rijeka University among Croatian centers of excellence in this area as well. So far, our students have demonstrated their excellence, have managed to perform all their obligations regularly and to complete challenging projects set before them with great success.

In the thirteenth consecutive *ENT Summer Camp 2013*, students Aleksandar Vidović, Alan Martinovac, Sandi Vuković and Maja Grubišić represented the team of the University of Rijeka. The program lasted for five weeks and in the periods from July 8 to July 21, and from August 19 to September 7, 2013, the students stayed in the laboratory spaces of Ericsson Nikola Tesla in Zagreb where they were diligently performing their tasks with the help of mentors from industry. The theme of this year's summer school was *The Challenges of the Networked Society* and our students participated with the successfully completed projects: IPTV online shopping, ETSI M2M gateway, GCP verification tool for GIT based CI with GERRIT and Web based data presentation with charts and maps. The closing ceremony was held on October 1st, 2013, on the premises of Ericsson Nikola Tesla where the students had the opportunity to present their works to their guests. At the ceremony, the chairwoman of Ericsson Nikola Tesla company, Ma Gordana Kovačić handed a card of thanks in acknowledgment of a successful collaboration to the assistant rector of the University of Rijeka, Prof. Zdravko Lenac, D. Sc.



Predstavljanje Ljetnog kampa na našem fakultetu uz velik interes studenata. / Summer Camp presentation at our Faculty followed with great interest of our students.

Kroz inicijativu Ljetnog kampa osiguran je kontinuiran transfer znanja i novih tehnologija između Ericsson Nikole Tesle i Tehničkog fakulteta Sveučilišta u Rijeci.

And finally, it is worth noting that due to a series of positive experiences in the summer school, future continuous collaboration in the form of research projects and institutional partnership with Ericsson Nikola Tesla is defined, not only in terms of involvement of the Faculty of Engineering in future summer schools but also in common defining and mentoring final and graduate theses of the students of Computer Science of the Faculty of Engineering in Rijeka.

Summer Camp initiative has enabled a continuous transfer of knowledge and new technologies between Ericsson Nikola Tesla and the Faculty of Engineering in Rijeka.



Zahvala Tehničkom fakultetu za uspješnu suradnju na Ljetnom kampu 2013. godine. / Acknowledgment to the Faculty of Engineering for successful collaboration on Summer Camp 2013.

2.6.2 Noć istraživača uz sudjelovanje znanstvenika s Tehničkoga fakulteta / Researchers' Night with the participation of scientists from the Faculty of Engineering



Noć istraživača u Rijeci privukla je veliki broj posjetitelja / Researchers' Night in Rijeka has attracted a large number of visitors

U sklopu obilježavanja Noći istraživača koja se ove godine održavala u Zagrebu, Splitu i Rijeci predstavljena je nekoliko projekata i aktivnosti znanstvenika sa Sveučilišta u Rijeci među kojima su bili i znanstvenici s Tehničkoga fakulteta. Znanstvene teme posjetiteljima su bile izuzetno privlačne te je tijekom cijelog trajanja programa na štandovima vladao izniman interes, bilo da su posjetitelji željeli saznati nešto više o strojarstvu, računarstvu, brodogradnji ili elektrotehnici ili s druge strane u biomedicinskom dijelu od čega je građeno ljudsko tijelo, kako se obraniti od virusa i bakterija, koje su sličnosti između ponašanja vinskih mušica i ljudi ili te kako nam računarstvo olakšava svakodnevni život. Tijekom trajanja projekta organizirana su brojna predavanja po riječkim osnovnim i srednjim školama kao i atraktivne radionice posvećene znanstvenim motivima. Znanstvenici riječkog sveučilišta tako su bez

As part of marking the Researchers' Night, which took place in Zagreb, Split and Rijeka this year, several projects and activities were presented by scientists of Rijeka University, among which also by scientists from the Faculty of Engineering. The visitors were visibly attracted and showed great interest through the program, either because they wanted to learn something more about mechanical engineering, IT, naval architecture or electrical engineering, or something else about biomedicine, such as what the human body is made of, how to defend oneself from viruses and bacteria, what the similarities of behaviour between vinegar flies and people are, or how IT can make our everyday life easier. In the course of the project, numerous lectures were organised in primary and secondary schools in Rijeka, and attractive workshops focussed on scientific issues. The scientists from Rijeka University have

sumnje dokazali kako njihov rad građane i te kako zanima i kako ga vrednuju. Riječki su događaj organizirano posjetili i štíćenici Doma za djecu i mlađe punoljetne osobe "Ivana Brlić Mažuranić".

Uz glazbene taktove skupina Octachord, Duo Bayan i Audizy posjetitelji su imali priliku uživati u jedinstvenom događaju koji riječka publika još nije imala priliku doživjeti. U znanstvenom kvizu sudjelovalo je 13 timova, ali je privukao i brojne gledatelje koji su kviz pratili do samoga kraja.

Otvaranju Noći istraživača u Rijeci prisustvovali su i zamjenik ministra znanosti, obrazovanja i sporta prof. dr. sc. Saša Zelenika, pročelnik Odjela za sport, kulturu i tehničku kulturu Primorsko-goranske županije Darko Bodul, zamjenik riječkoga gradonačelnika Miroslav Matešić i rektor Sveučilišta u Rijeci prof. dr. sc. Pero Lučin.

thus undoubtedly proved that citizens of Rijeka are really interested in their work and value. This event in Rijeka was also visited by a group of inmates from the "Ivana Brlić Mažuranić" Home for children and younger adults.

To the accompaniment of the bands Octachord, Duo Bayan and Audizy, the visitors were able to enjoy this unique event for the first time ever in Rijeka. Thirteen teams participated in the scientific quiz, which also caught the interest of numerous spectators who followed it to its very end.

The Researchers' Night in Rijeka was ceremonially opened in the presence of the Deputy Minister of Science, Education and Sports, Prof. Saša Zelenika, D. Sc., head of the Department of Culture, Sports and Technical Culture of the Primorsko-Goranska County Darko Bodul, Deputy Mayor of Rijeka Miroslav Matešić and the Rector of Rijeka University, Prof. Pero Lučin, D. Sc.

2.6.3 International Conference on Innovative Technologies IN-TECH 2013 (International Conference on Innovative Technology in Design, Manufacturing and Production)

<http://www.in-tech.info>

U Budimpešti je od 10. do 13. rujna 2013. održana Međunarodna konferencija inovacijskih tehnologija IN-TECH 2013., koji je organizirao World Association for Innovative Technologies (WAIT). Konferencija promovira razvoj novih tehnologija, te njihovu implementaciju u industriji. Konferencija je međunarodnog karaktera i organizirana je u suradnji Tehničkog fakulteta Rijeka, Tehničkog sveučilišta u Pragu te Fakulteta tehnologije i ekonomije Sveučilišta u Budimpešti. Po redu četvrta IN-TECH konferencija organizirana je u Budimpešti, što nakon konferencije u Pragu, Bratislavi i Rijeci potvrđuje dobru suradnju pripadajućih sveučilišta čiji je cilj promoviranje međunarodne suradnje.

Suradnjom s prestižnim sveučilištima promovira se međunarodna suradnja hrvatskih institucija i Sveučilišta u Rijeci na jednu višu razinu kvalitete znanstvenog i stručnog istraživanja.

In Budapest, an International conference of innovative technologies IN-TECH 2013 organized by the World Association for Innovative Technologies (WAIT), was held from 10th to 13th September 2013 where the latest developments in the field of engineering sciences were presented. The conference promotes the development of new technologies and their implementation in the industry. This conference was organized by the Faculty of Engineering Rijeka, in collaboration with the Faculty Mechanical Engineering University in Prague and Budapest University of Technology and Economics. This fourth in order conference was organized in Budapest along with conferences held in Prague, Bratislava and Rijeka confirms a good cooperation among these Universities that promote international cooperation.

In cooperation with prestige universities, international cooperation of Croatian institu-

Konferencija je održana u Danubious Hotel Gellért koji je smješten u središtu Budimpešte pokraj mosta Liberty (Francis Joseph most) izgrađenog 1896 g. Sudionici su na raspolaganju imali dvije konferencijske sale, a u predvorju konferencijskih sala postavljena je poster-sekcija. Na IN-TECH 2013 konferenciji bilo je prisutno oko 200 sudionika iz 45 zemalja. U ovoj četvrtoj po redu konferenciji preko 120 znanstveno-stručnih referata je prezentirano u zborniku, od čega 90 radova sa oralnom prezentacijom a preko 30 u poster sekciji.

Konferenciju je otvorio predsjednik WAIT organizacije prof. dr. sc. Zlatan Car, predstavnik Sveučilišta u Rijeci. U uvodnom govoru zahvalio se svim sudionicima te je naglasio da je međunarodna suradnja bitna kako bi se povezali znanstvenici iz različitih tehnologija i postigli značajni znanstveni doprinosi. U ime Fakultet tehnologije i ekonomije Sveučilišta u Budimpešti gostima se je obratio u ime dekana prof. Tibor Szalay, koji je ukratko ispričao povijest Sveučilišta, trenutnu misiju fakulteta te studije koji se na njemu odvijaju.

tions and the University of Rijeka is raised to a higher level of scientific and professional research.

The conference was held at the Danubious Hotel Gellért which is placed in the middle of Budapest near the Liberty bridge (Francis Joseph bridge) built in the year 1886. Participants had two conference halls at disposal for their scientific discussions; the lobby between conference rooms was used for a poster section. At IN-TECH 2013 conference, about 200 participants from 45 countries were present. In this fourth conference more than 120 scientific and technical papers were presented in the proceedings, of which 90 papers with oral presentations and 30 papers in the poster section.

The conference was opened by president of the WAIT organization Prof. Zlatan Car, D. Sc. representative from the University of Rijeka. In the opening speech, he thanked all the participants and mentioned that international cooperation is important to connect scientists from different technologies so as to achieve significant scientific contributions.



Otvaranje konferencije: prof. Zlatan Car, prof. Tibor Szalay i Ing. Dr. J. Kudláček / Opening ceremony: prof. Zlatan Car, prof. Tibor Szalay and Ing. Dr. J. Kudláček



Nagrađeni sudionici / Awarded participants

U svrhu ostvarenja budućih ciljeva pozvao je sve da posjete fakultete u Budimpešti i surađuju na znanstvenim projektima. Zatim je riječ preuzeo Ing. Dr. J. Kudláček koji je kao predstavnik Tehničkog sveučilišta u Pragu poželio svim prisutnima uspjeh u znanstvenim istraživanjima i službeno otvorio konferenciju. Predavanja su nastavljena prema predviđenom programu planu i u dobroj atmosferi. Znanstveni savjet konferencije IN-TECH 2013 je održao tematski sastanak u obliku okruglog stola čiji je cilj bio bolje međunarodno povezivanje znanosti s lokalnim industrijama te uložiti akademske zajednice u

On behalf of Budapest University of Technology and Economics, prof. Tibor Szalay briefly informed guests about the history and heritage of Budapest University, the current mission of the Faculty and presented studies that are taking place at the Budapest University. In his speech he invited all guests to visit Budapest faculties and cooperate with them on scientific projects. Then Dr. J. Kudláček, a representative from the Faculty of Mechanical Engineering University in Prague thanked all attendees for their contribution and wished success in discussions and thus officially opened the conference.



Konferencija je održana zahvaljujući suradnji profesora sa Tehničkom fakulteta u Rijeci, Tehničkom fakulteta u Pragu i Fakulteta tehnologije i ekonomije Sveučilišta u Budimpešti / Conference was organized by the Faculty of Engineering Rijeka in collaboration with the Technical University in Prague and Budapest University of Technology and Economics

poslovno inovacijskim projektima. Konferencija je završila dodjelom nagrada najboljim radovima na svečanoj večeri u hotelu Gellért.

Lectures continued according to a set plan in a good atmosphere. Scientific council of IN-TECH 2013 hold a round table on the topic of how to connect local industries and academic community in business and innovation projects. The conference ended with an award ceremony and a gala dinner at the hotel Gellért.

2.6.4 RiScience 2013



Gotovo u potpunosti popunjena dvorana STEP-a tijekom RiScience radionice / Almost a completely full STEP Conference Hall during the RiScience Workshop

U organizaciji Znanstveno-tehnološkog parka Sveučilišta u Rijeci i Tehničkog fakulteta iz Cluj-Napoca (Rumunjska) održana je 12. rujna RiScience radionica pod nazivom 3D interakcije, na kojoj su stručnoj i znanstvenoj, ali i šire zainteresiranoj javnosti predstavljene suvremene teorije i aplikacije raznovrsnih, ali usko povezanih područja i disciplina: 3D modeliranje, 3D printanje, aditivne tehnologije, uvođenje inovativnih pristupa u razvojnim tehnološkim procesima i biotehnološkim znanostima, kao i iznimno aktualna pitanja društvenih, ekonomskih, pravnih i etičko-filozofijskih implikacija 3D i srodnih tehnologija.

Jointly organized by the Science and Technology Park of the University of Rijeka and the Technical University of Cluj-Napoca (Romania), first RiScience workshop was held on September 12th under the joint title of 3D interaction. The main idea behind the title was creating a place in which the professional and scientific, but also the wider interested public will be presented with contemporary theories and applications of different but closely related fields and disciplines: 3D modeling, 3D printing, additive technologies, introduction of innovative approaches in the development of technological processes and life sciences, but also an extremely critical

Pred u potpunosti popunjenom dvoranom STEP-a neke od vodećih svjetskih trendova u praksi primjene aditivnih tehnologija predstavili su gosti iz Rumunjske, znanstvenici s jedne od najsuvremenije opremljenih institucija u Europi na tome području, osvrćući se na raznovrsne mogućnosti primjene rečenih tehnologija: od personalizirane medicine do automobilske industrije. Kvaliteti tog segmenta radionice svakako da je pridonijela i suradnja dr. sc. Svena Maričića s Laboratorijom za plastične deformacije i obradne strojeve pri Tehničkom fakultetu u Rijeci tijekom istraživanja za doktorski rad i Tehničkog fakulteta u Cluj-Napoci, posebice dr. sc. Razvana Pacurara.

Vrijedi zabilježiti da je događanje poslužilo i kao radni sastanak za osmišljavanje strateških modela suradnje dviju obrazovno-znanstvenih institucija, pri čemu se konkretni rezultati mogu očekivati već sljedeće godine.

Specifičnost RiScience projekta, međutim, nije samo u klasičnoj akademskoj i strukovnoj razmjeni već i promicanje multidisciplinarnih i multisektorskih suradnji između

issues of socio-economic, legal, and ethical implications of 3D and related technologies.

In front of the fully filled STEP's conference hall, some of the leading trends in the applications of additive technologies were presented by Romanian guests, scientists from one of the most up to date equipped institutions in Europe in the field, demonstrating a variety of possibilities of application of the aforementioned technologies: from personalized medicine to automotive industry. To high quality of this segment of the workshop certainly contributed a co-operation between Sven Maričić, Ph.D. (today head of the Laboratory for Plastic Forming and Processing Machines at the Faculty of Engineering) during his work on the doctoral thesis and Technical University of Cluj-Napoca, in particular Razvan Pacurar, Ph.D.

It is worth mentioning that this event also served as a working meeting for the creation of a strategic cooperation between the two educational and scientific institutions, whose results are expected to be evident most likely during the next year.



Dr. sc. Razvan Pacurar daje detaljan pregled suvremenih industrijskih mogućnosti 3D printanja / Razvan Pacurar, Ph.D. provides a detailed overview of modern industrial potential of 3D printing

znanstveno-tehnoloških čimbenika i potencijalnih partnera iz sektora gospodarstva (prije svega, malog i srednjeg poduzetništva), kao i civilnog društva, što je u dosadašnjoj praksi u hrvatskoj znanosti bila rijetkost. S obzirom na to da su 3D tehnologije i srodne discipline svakako među tehnološkim vrhovima današnjice (primjerice u Sjedinjenim Državama prošle godine se u odnosu na 2011. bilježi 200%-ni porast broja 3D printera u uporabi – kako u znanstvenom, tako i u poduzetničkom sektoru), povezivanje poduzetništva i znanosti na uvođenju aditivnih tehnologija nužan je spoj za daljnji gospodarski rast i razvitak.

RiScience radionica – kao i RiScience koncept integralnog pristupa suvremenim tehnološkim praksama – ponudio je, osim uže tehničkog i gospodarskog i prilog društvenih i humanističkih znanosti (u suradnji s međunarodno priznatim stručnjacima s riječkog Filozofskog fakulteta i korejskog Jonsei Sveučilišta) od društveno-ekonomskog učinka aditivnih tehnologija do iznimno aktualnih pravnih pitanja poput intelektualnog vlasništva i patentiranja, ali i, danas nezaobilaznih etičkih pitanja koja se vezuju uz svaku novu tehnologiju i njezinu primjenu. Time se, između ostaloga, željelo ukazati na nužnu iako često zanemarenu povezanost različitih znanstvenih područja, kao i na intrinzičnu vezu između tehnološkog razvitka i društvenog konteksta i procesa u kojemu se isti odvija.

Članovi su organizacijskog odbora bili: dr. sc. Sven Maričić, Natalija Bešlić, dr. sc. Ozren Bukovac, Katja Bilić te Igor Maković iz zagrebačkog multimedijalnog instituta.

Uniqueness and innovativeness of RiScience project, however, lies not in the traditional academic and vocational exchange but in a promotion of a multidisciplinary and multi-sectoral cooperation between the scientific and technological actors and potential partners from industry (particularly SMEs), as well as those from civil society and/or informal initiatives, which was and still is very rare in current practice in Croatia. Given that 3D technology and related disciplines are certainly among the technological tops today (for example, in the United States last year, compared to 2011, 200% of an increase in the number of 3D printers in use - both in science and in the enterprise sector - is noted) linking entrepreneurship and science on joint venture when introducing additive technology is a necessary link to further economic growth and development.

RiScience workshop – in the spirit of RiScience's concept of integrated approach to modern technological practices - offered, in addition to the cutting-edge technological and economic contributions, insights into social sciences and humanities (in collaboration with international experts from University of Rijeka and Jonsei University in Korea) ranging from more general questions of socio-economic impacts of additive technology to extremely urgent legal issues such as problems of intellectual property and patenting. Also, inevitable today, ethical issues associated with each and every new technology and its applications were discussed. With such a structure of the event organisers wanted to underline the necessity, although often neglected, for a strong interconnection between different scientific fields, as well as the intrinsic link between technological development and social context and the processes.

The members of the Organization committee: Sven Maričić, Ph.D., Natalija Bešlić, Ozren Bukovac, Ph.D., Katja Bilić and Igor Maković from Multimedia institute in Zagreb.

2.6.5 Riječki energetska tjedan 2013./ Rijeka Energy Week 2013

U sklopu programa EUSEW (Tjedan održive energije Europske unije) koji povezuje energetske dane diljem Europe i šire, i ove godine je održan Riječki energetska tjedan.

Obilježavanje je počelo 2011. godine na inicijativu članova Zavoda za termodinamiku i energetiku Tehničkog fakulteta u Rijeci. Proteklih godina je u suradnji s Hrvatskim društvom za sunčevu energiju, Regionalnom energetska agencijom REA Kvarner i Gradom Rijekom prerastao u višednevnu manifestaciju koja na nekoliko lokacija okuplja stručnjake, udruge i tvrtke aktivne u području obnovljivih izvora energije u predavanjima, prezentacijama i seminarima otvorenim za širu javnost.

Cilj energetska tjedna je promocija i informiranje javnosti o važnosti učinkovitog korištenja i obnovljivih izvora energije.

Ovogodišnji program, održan od 17. do 20. lipnja, započeo je obraćanjem gradonačelnika i župana u Gradskoj vijećnici Grada Rijeke te nastavilo plenarnim predavanjima uvaženih znanstvenika i stručnjaka. Usporedo s predavanjima Hrvatskog savjeta za zelenu gradnju te predavanjima za srednjoškolce i širu publiku, na Korzu su tvrtke izlagale svoj program proizvoda vezan uz obnovljive izvore energije, s posebnim naglaskom na razdjelnike za centralno grijanje.

Sljedećeg dana je na Tehničkom fakultetu u Rijeci održan niz predavanja te predstavljen Solar Tracker projekt fotonaponske elektrane, student eMobil prototip konverzije auta u električni i nova knjižica o korištenju drvne biomase kao goriva. Poslijepodne su vođene posjete sustavu za edukaciju o obnovljivim izvorima energije Tehničke škole za strojarstvo i brodogradnju te fotonaponskoj elektrani Dječjeg vrtića Potok.

U srijedu se u Gradskoj vijećnici održao Dan energetska agencija na kojem su regionalne energetska agencije Hrvatske predstavile svoj program aktivnosti i rezultate, dok se posljednji dan paralelno odvijao u Opatici, na stručnom skupu HKIS o energetska učinkovitosti u zgradama, i u Rijeci na predavanjima udruge Cezar namijenjenim pred-

The Rijeka Energy Week was held this year as part of the EUSEW (EU Sustainable Energy Week) programme that coordinates Energy days throughout Europe and beyond.

The manifestation started in 2011 at the initiative of the members of the Department of thermodynamics and energy engineering of the Faculty of Engineering in Rijeka. Over the past years, in cooperation with the Croatian solar energy society, The Regional energy agency REA Kvarner and the City of Rijeka, it has grown to cover several days of events at various locations, gathering experts, associations and companies active in the field of renewable energy sources, on lectures, presentations and seminars open to the general public.

The focus of the energy week is promoting and informing the public of the importance of efficient use and renewable sources of energy.

This year's programme, held from June 17 to 20, started with addresses by the mayor and the county prefect to the participants and continued with plenary lectures by esteemed scientists and experts. Parallel with the lectures held by the Croatian Green Building Council and lectures held for high-school students and the general public, companies presented their product assortment on renewable energy sources in Korzo, with emphasis on central heating splitters.

The next day, a series of lectures were delivered at the Faculty of Engineering in Rijeka and the presentations of the Solar Tracker photovoltaic power plant project, the student eMobil conversion into an electric car and the new booklet on fuel usage of wood biomass were held. Guided tours were organized to present the renewable energy system for education in the Technical school for Mechanical Engineering and Naval Architecture in Rijeka and the PV power plant of the Potok kindergarten.

The Energy agency day was held on Wednesday with presentations of activities and results from Croatian regional energy agencies, while the last day consisted of

stavnicima jedinica lokalne samouprave.

I ove godine je program energetskeg tjedna bio otvoren velikom broju posjetitelja kako bi se važnosti obnovljivih izvora energije i energetske učinkovitosti približila raznim profilima stručnosti. Svi suorganizatori se nadaju jednako dobroj posjećenosti i sljedeće godine.

parallel events in Opatija, where the Croatian chamber of mechanical engineers held a Symposium on efficient energy use in buildings, and in Rijeka where the Cezar Association held lectures for the representatives of local community public administrations.

The energy week programme this year was open to visitors from all walks of life so as to communicate the importance of renewable energy sources and energy efficiency to people of diverse levels of expertise, the co-organizers hope for a good number of visitors next year as well.



Suorganizatori / Co-organizers

- Grad Rijeka
- Tehnički Fakultet u Rijeci
- REA Kvarner d.o.o.
- Hrvatski savez za sunčevu energiju
- Hrvatska komora inženjera strojarstva
- Energo d.o.o.
- Udruga Cezar
- Društvo arhitekata Rijeka

U suradnji s / In Cooperation with

- Sveučilište u Rijeci
- Uljanik TESU Elektronika, d.o.o.
- VIESSMANN, d.o.o.
- GRUNDFOS Croatia d.o.o.
- HARREITHER d.o.o.
- Gradska knjižnica Rijeka
- Energetski institut Hrvoje Požar
- Hrvatska energetska regulatorna agencija - HERA

2.6.6 MATDAT.COM projekt - Online baza podataka i znanja o materijalima i direktorij laboratorija i tvrtki / MATDAT.COM Project - Web-based Material Properties and Knowledge Database and Directory of Laboratories and Industrial Services



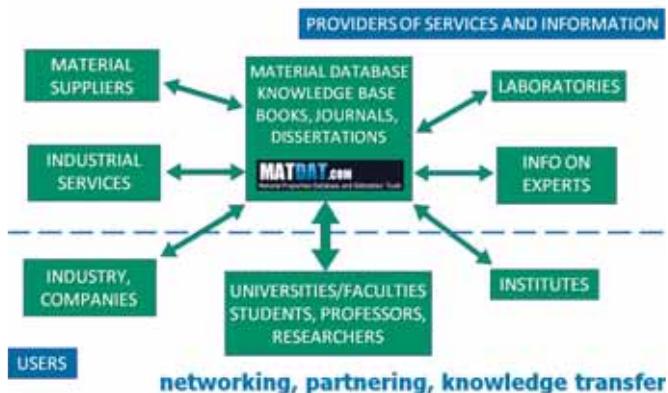
MATDAT logotip / MATDAT logo

Na Tehničkom fakultetu Sveučilišta u Rijeci već se nekoliko godina aktivno razvija MATDAT.COM (<http://www.matdat.com>) projekt čiji je utemeljitelj i voditelj doc. dr. sc. Robert Basan, član Zavoda za konstruiranje u strojarstvu. Osnovna ideja na kojoj se temelji MATDAT.COM projekt je prikupljati postojeće podatke i znanja o konstrukcijski relevantnim materijalima koji su rezultat dosad provedenih znanstvenih i stručnih istraživanja i učiniti ih pretraživima, dostupnima i usporedivima članovima tehničke zajednice. Korisnici usluge su projektanti i inženjeri u metalnoj, kemijskoj i građevinskoj industriji te strojogradnji, znanstvenici i istraživači te profesori i studenti tehničkih fakulteta.

During the last couple of years, MATDAT.COM project (<http://www.matdat.com>) has been actively developed at the Faculty of Engineering, the University of Rijeka by founder and project leader, Assist. Prof. Robert Basan, D. Sc., a member of the Department of Mechanical Engineering Design. The main objective of the MATDAT.COM project is to collect existing experimental data and knowledge of the design-relevant (for now mostly metallic) materials from the published results of scientific research and make them searchable, comparable and available to the members of the technical community through an online database.



Statistika posjeta / Web analytics



Mreža, partneri i prijenos znanja / Networking, partnering and knowledge transfer

MATDAT.COM informacijski sustav i baza podataka temeljeni su na znanju i namijenjeni su globalnoj tehničkoj zajednici. Od svog službenog pokretanja (26. travnja 2011.), internetska stranica projekta bilježi više od 12000 jedinstvenih posjetitelja (iz više od 100 zemalja) od kojih je preko 1200 postalo i registriranim korisnikom. Tijekom faze digitalizacije podataka i sistematizacije sadržaja baze, u rad na razvoju sustava uključeni su bili i studenti Tehničkog fakulteta Sveučilišta u Rijeci. MATDAT baza podataka sadrži sistematizirane rezultate eksperimentalnih ispitivanja materijala objavljenih u relevantnoj literaturi (disertacije, članci iz znanstvenih i stručnih časopisa i konferencija, studije i priručnici). Svi podaci su u potpunosti referencirani i provjerljivi. U ovom trenutku, u bazi podataka nalaze se detaljne (monotone, cikličke i zamorne) značajke preko 1500 nelegiranih, nisko- i visokolegiranih čelika, legura aluminija i titana, lijevanih željeza i čeličnih lijevova te materijala zavara. Osim materijalnih značajki, svaki komplet podataka o pojedinom materijalu sadrži i informacije kao što su reference, opći podaci o materijalu, oznake (norme i proizvođači), kemijski sastav, uvjeti ispitivanja (temperatura, medij...), toplinska obrada i sl. Baza

MATDAT.COM information system and database are knowledge-based and are intended for the global technical community. Since its official launch (April 26, 2011), the web site of the project was accessed by more than 12,000 unique visitors (from more than 100 countries), of whom over 1200 became registered users. Students of the Faculty of Engineering, University of Rijeka were involved in the project during the phase of data digitization and systematization of database content. At present, MATDAT database contains results of experimental tests of the materials published in the relevant literature (dissertations, articles in scientific journals and conferences, studies and manuals). All data are fully referenced and verifiable. Database contains detailed (monotonic, cyclic and fatigue) parameters of over 1500 non-alloyed, low- and high-alloy steels, aluminum and titanium alloys, cast iron and cast steels as well as weld materials. In addition to material characteristics, each material dataset contains information such as reference, general information on the material, designations (standard and manufacturers), chemical composition, test conditions (temperature, media ...), heat treatment, etc. The database and its contents are applicable to

podataka i njen sadržaj primjenjivi su u računalnom modeliranju i simuliranju ponašanja materijala, proračunima i numeričkim (MKE) analizama opteretivosti i trajnosti proizvoda te selekciji materijala u ranim fazama razvoja proizvoda. Neke prednosti i koristi koje njeno korištenje može donijeti su jednostavnija i brža evaluacija materijala-kandidata, bolje iskorištenje materijala, verificiranje vlastitih podataka, podrška razvoju lakših i učinkovitijih proizvoda te kraće vrijeme i niži troškovi razvoja.

Odnedavno, MATDAT bazi podataka pridodana je i nova usluga, Directory of Labs&Services koja je namijenjena prezentiranju kapaciteta, opreme i mogućnosti pružanja usluga laboratorija i tvrtki te poboljšanju međusobne vidljivosti akademskih i industrijskih partnera i povećanju izgleda za njihovo povezivanje i suradnju. U okviru navedene usluge predstavljeni su i pojedini laboratoriji Tehničkog fakulteta Sveučilišta u Rijeci.

Od samog početka rada na MATDAT projektu jedna od glavnih ideja bila je prikupljene podatke i rezultate ispitivanja materijala staviti besplatno na raspolaganje članovima akademske zajednice. To je i ostvareno putem MATDAT EDU i MATDAT ACADEMIC opcija kojima je osigurano besplatno korištenje MATDAT baze podataka za članove akademske zajednice (sveučilišta, fakultete, doktorande i studente). Od sredine 2011. godine održana su brojna predstavljanja projekta i pozvana predavanja na drugim fakultetima te znanstvenim i stručnim konferencijama (Italija, Njemačka, Češka Republika, Austrija, Slovenija, Turska). Trenutno se u okviru MATDAT projekta izrađuje i jedna doktorska disertacija s tematikom primjene neuronskih mreža za procjenu cikličkih i zamornih parametara materijala na osnovi njihovih monotonijskih parametara. Tijekom rada na projektu ostvarena su partnerstva s brojnim inozemnim projektima i institucijama od kojih posebno vrijedi istaknuti Institut za čelične konstrukcije i mehaniku materijala Tehničkog Sveučilišta u Darmstadtu (Njemačka), eFatigue projekt sa Sveučilišta u Illinoisu (SAD), Prag-Tic projekt s Tehničkog sveučilišta u Pragu

computational modeling and simulation of material behavior, calculations and numerical (FEA) analyses of load capacity and product's durability as well as to the process of material selection, especially in the early stages of product development. Some of the potential advantages and benefits resulting from its usage are simpler and faster evaluation of candidate materials, better use of materials, verification of own material testing results, support of the development of lighter and more efficient products and shorter time and lower development costs.

Recently, a new feature has been added to MATDAT.COM system - a new service called Directory of Labs&Services which enables academic and industrial laboratories as well as companies to present their equipment and service capabilities. The service aims at improving mutual visibility of academic and industrial partners and increasing the prospects for their integration and cooperation. Within the Directory of Labs&Services, a number of laboratories of the Faculty of Engineering of the University of Rijeka are also presented and more is expected to be included in the list soon.

Since the beginning of the work on the MATDAT project, one of the main ideas has been to make collected material data and results of material testing freely available to members of the academic community. This goal is being accomplished through MATDAT EDU and MATDAT ACADEMIC options with which free access to MATDAT database is secured for institutions (universities, faculties, colleges) and individual students (doctoral students and undergraduate/graduate students). Since the middle of 2011, numerous presentations and invited lectures have been held at universities and scientific and professional conferences (Italy, Germany, Czech Republic, Austria, Slovenia, Turska). Currently, one doctoral dissertation is being prepared within the MATDAT project and the topic is development and application of neural networks for estimation of cyclic and fatigue material parameters on the basis of their monotonic properties. Dur-

(Češka) te Zavod za opće strojarstvo Montanističkog sveučilišta u Leobenu (Austrija). Institucionalni korisnici MATDAT.COM sustava u ovom trenutku jesu: Tehnički fakultet Sveučilišta u Rijeci, Strojarski fakultet iz Slavanskog Broda, Fakultet elektrotehnike strojarstva i brodogradnje u Splitu, Strojarski fakultet Sveučilišta u Mariboru (Slovenija), Mašinski fakultet u Kragujevcu (Srbija) te University of Applied Sciences Joanneum iz Graza (Austrija).

ing the work on the project, contacts, partnerships and cooperations have been established with numerous international projects and institutions. Among them, especially worth mentioning are "Institut für Stahlbau und Werkstoffmechanik" from Technical University of Darmstadt (Germany), *eFatigue Project* from the University of Illinois (USA), *PragTic Project* from the Technical University in Prague (Czech Republic) and the *Lehrstuhl für Allgemeinen Maschinenbau* from the Montanuniversität Leoben (Austria). Institutional users MATDAT.COM system at the moment are: the Faculty of Engineering at Rijeka University, the Faculty of Mechanical Engineering in Slavonki Brod, the Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture in Split, the Faculty of Mechanical Engineering, University of Maribor (Slovenia), the Faculty of Mechanical Engineering in the Kragujevac (Serbia) and the University of Applied Sciences Joanneum in Graz (Austria).



Mreža korisnika i partnera / Network of users and partners (MATDAT.COM)

2.6.7 Tempus IV: Mreža korisnika virtualne proizvodnje – potpora integraciji trokuta znanja / WBC Virtual Manufacturing Network – Fostering an Integration of the Knowledge Triangle



Tempus IV/ Tempus IV

Ovim je projektom predviđeno uspostavljanje efikasnijih mehanizama i struktura u okviru trokuta znanja (obrazovanje, istraživanje i inovacije) u području virtualnog razvoja proizvoda i procesa, a u cilju poboljšanja suradnje visokih učilišta, malih i srednjih poduzeća, istraživačkih i inovacijskih centara te lokalnih i regionalnih vlasti na Zapadnom Balkanu.

Projektini konzorcij sastoji se od visokih učilišta sa Sveučilištem u Kragujevcu kao nositeljem projekta te sveučilištima u Rijeci, Banja Luci, Crnoj Gori, Ljubljani, Padovi, u suradnji s priznatim istraživačkim institucijama - Institutom za proizvodno inženjerstvo iz Lyngbya (Danska) i C3M iz Ljubljane, značajnom potporom male i srednje industrije - uspješnih poduzeća: Elcon Geratebau iz Hrvatske, SCGM iz Srbije, Metalik iz Crne Gore i Tri Best iz Bosne i Hercegovine, Regionalne agencije za ekonomski razvoj

The project is to establish efficient structures and mechanisms in the frame of the knowledge triangle - education, research and innovation in the area of virtual product and process development, with the goal of improving cooperation among higher education institutions (HEIs), small and medium enterprises (SMEs), research and innovation centres and local and regional government structures in the West Balkans region.

The consortium is a combination of HEIs – universities from Kragujevac, Rijeka, Banja Luka, Montenegro, Ljubljana and Padova, wellknown research institutes - IPU - Institute for Production Engineering Lyngby (Denmark) and C3M from Ljubljana, and a number of SMEs: Elcon Geratebau from Croatia, SCGM from Serbia, Metalik from Montenegro and Tri Best from Bosnia and Herzegovina, Serbian Regional Economic Development Agency of Sumadija and Pomoravlje

Šumadije i Pomoravlja te dva individualna eksperta. Projekt je u prvoj fazi imao za cilj osnivanje i opremanje četiri kooperativna centra za obuku, od kojih je jedan na Tehničkom fakultetu u Rijeci, materijalnim i ljudskim resursima (obučeni predavačima i pružateljima usluga). Tijekom trajanja projekta kontinuirano se radi na uspostavi i širenju mreže virtualne proizvodnje VMnet u regiji uključivanjem stručnjaka iz akademskog, istraživačkog i poslovnog sektora te tijela državne uprave. Odgovarajućim komunikacijskim alatima u vidu internetskog portala bit će dostupna i ažurirana sistematizacija znanja. Nastavni materijali bit će preoblikovani i pripremljeni za postavljanje na platformu Moodle, programsku aplikacija za izradu i održavanje kolegija putem interneta.

Svi partneri na projektu sudjelovali su na razvoju i provedbi novog regionalnog modela suradnje akademskih institucija i poduzeća, kroz program suradnje nastavnika s poduzećima i novi program studentske prakse. Važan cilj koji se postigao projektom je i analiza potreba za obukom i uslugama u području razvoja proizvoda i proizvodnih procesa, te istraživanje potreba tržišta rada za strukovnim obukama čiji je krajnji cilj utvrditi raskorak između dobivenih znanja i vještina te potrebe za novim kompetencijama u malim i srednjim poduzećima. Na temelju ove analize razvijeno je 11 obuka na razini svih centara.

Planirane aktivnosti će na kraju projekta rezultirati kvalitetnijom stručnom praksom studenata temeljenoj na prilagođenom i moderniziranom programu usklađenom s potrebama tržišta rada, kao i pružiti poduzećima prilagođen sustav dodatnog obrazovanja i usavršavanja. Ispunjenje ambiciozno postavljenih planova i ciljeva trebalo bi imati pozitivan učinak na razvoj trokuta znanja, bolju povezanost i aktivniju suradnju akademskih institucija i industrijskog sektora te intenzivnije uključivanje studenata u realan sektor. Specifičnost je ovog projekta aktivno uključivanje srednjih i malih poduzeća što ima za zadatak stvoriti pretpostavke bolje međusobne komunikacije, a time i učinkovitije suradnje na novim zajedničkim projektima.

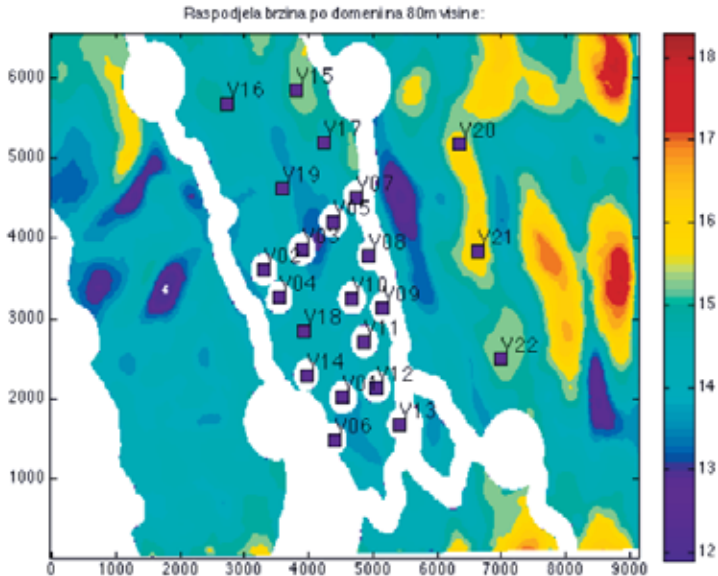
and two individual experts. The first project phase was aimed at establishing and equipping of four cooperative training centres (CTCs), one of them at the Rijeka Faculty of Engineering. Throughout the duration of the project, a virtual production network, VMnet is being established and developed by involvement of experts from the regional academic, research and business sector as well as the government structures. The communication tools connected with the project website provide a review of collected and updated information and knowledge. The teaching materials collected are to be restructured and prepared for on line courses delivered via Moodle platform.

All project partners were taking part in developing and implementing a new regional model of cooperation between HEIs and businesses through the Industrial Fellowship Programme as well as the new Practical Placement Programme providing students with internships in companies. An important project output is the training/service needs analysis in the area of product and production process development as well as the analysis of the labour market needs for professional training activities, the aim of which was to establish the compatibility of the skills and knowledge gained and the needs of SMEs. On the basis of the analysis, 11 training modules have been developed.

The planned activities should result in better quality internships for students based on the modernised program adapted to labour market needs, as well as a training and human resource development system adapted to business needs. Implementation of such an ambitious plan should contribute to the development of the knowledge triangle, improved cooperation among HEIs and industry, and foster students' involvement in the activities in the real sector. A distinctive characteristic of the project is the active involvement of SMEs, which is to provide a basis for efficient future cooperation.

2.6.8 Studentski projekti i diplomski radovi

OPTIMIZACIJA VJETROPARKA / THE WIND FARM OPTIMIZATION



Prikaz pozicija novih vjetroagregata / Positions of new wind turbines

Student Deni Marić pod vodstvom mentora izv. prof. dr. sc. Lade Kranjčevića i sumentora v. asist. dr. sc. Marka Čavraka, razvio je novu metodu kojom se uz pomoć računalne simulacije određuju optimalne pozicije vjetroagregata unutar vjetroparkova s obzirom na dobivena polja srednje brzine.

Novi algoritam u potpunosti reducira potrebu zasebnih intervencija mjerenja brzina vjetra na području planiranom za izgradnju vjetroparka, što je sadašnja praksa. Cilj je takvoga pristupa reduciranje početnih troškova izgradnje vjetroparkova. Koncept i ideja prikazani su na primjeru vjetroelektrane Vrataruša, gdje su dobiveni rezultati uspoređeni s već postojećim snagama 14 vjetroagregata, te su određene i lokacije 8 novih planiranih vjetroagregata radi povećanja nazivne snage vjetroparka. Lokacije su novih vjetroagregata izabrane sukladno dobivenom, simuliranom polju srednjih brzina, uz poštivanje svih zakonskih regulativa Republike Hrvatske.

Tijekom izrade diplomskoga rada razvijen je matematički model kojim se pomoću stan-

Student Deni Marić, under the supervision of Assoc. Prof. Lado Kranjčević, D. Sc. and Senior Assist. Marko Čavrak, PhD, have developed a new fully computerized simulation technique for determination of ideal positions of the wind generators in the wind farm using the obtained average wind speed contours.

The new algorithm reduces the current practice of special interventions, measuring the wind speed over the area planned for the construction of the wind farm. The main objective of this approach is to reduce the initial cost of wind farm installation. This concept and idea are presented in the case of wind farm Vrataruša, near the city of Senj, Croatia. The results are compared with the available information for existing 14 wind-generators and new 8 locations are showed as the planned update of the current wind farm. Locations of the new wind-generators have been selected in accordance with the provided, simulated average wind contours respecting all regulatory requirements of the Republic of Croatia.

dardnih CFD programa može simulirati strujanje vjetra preko kompleksnih realnih terena. Diplomski rad prati vodeće svjetske znanstvene radove iz područja simuliranja onečišćenja u atmosferskom graničnom sloju, što je ovdje primijenjeno za optimizaciju vjetroparkova.

Podaci o terenu preuzeti su iz NASA-inih satelitskih snimaka Zemljina reljefa, dok su podaci o vjetru preuzeti iz baze podataka o meteorološkim prilikama, koju održava dr. sc. Marko Čavrak. Isključivanjem se potrebe za zasebnim mjerenjima vjetra očekuje smanjenje troškova izgradnje vjetroparkova, čime se nedvojbeno ide u smjeru pristupačnijih cijena tzv. zelene energije, toliko potrebne u budućnosti. Opisani algoritam za sada pokazuje odlične rezultate, no zahtijeva dodatno usavršavanje i prilagodbu za komercijalno tržište.

Mathematical model developed for this application is compatible with standard CFD software for wind flow simulation over the complex realistic terrain. This thesis follows the leading scientific papers in the field of atmospheric boundary layer pollution simulation, uniquely applied to the wind farm optimization.

Terrain data are downloaded from NASA's public "data pool" satellite data, while the information of local wind are taken from meteorological database maintained by Marko Čavrak, PhD. By excluding the need for separate local wind measurements, it is expected to reduce the cost of wind farm installations. On the other hand this lead to more exactable green energy prices, much more needed for a better tomorrow. Described algorithm design for the time being shows great results, but requires additional work and adjustments for the commercial usage.



Vjetroelektrana Vrataruša / Wind power station Vrataruša

3 STUDIJSKI PROGRAMI NA FAKULTETU / STUDY PROGRAMS AT THE FACULTY

PREDDIPLOMSKI SVEUČILIŠNI STUDIJ 3-godišnji (180 ECTS)	
Studij	Naziv
Strojarstvo	Sveučilišni prvostupnik inženjer strojarstva
Brodogradnja	Sveučilišni prvostupnik inženjer brodogradnje
Elektrotehnika	Sveučilišni prvostupnik inženjer elektrotehnike
Računarstvo	Sveučilišni prvostupnik inženjer računarstva
DIPLOMSKI SVEUČILIŠNI STUDIJ 2-godišnji (120 ECTS)	
Studij	Naziv
Strojarstvo	Magistar inženjer strojarstva
Brodogradnja	Magistar inženjer brodogradnje
Elektrotehnika	Magistar inženjer elektrotehnike
Računarstvo	Magistar inženjer računarstva
POSLIJEDIPLOMSKI SVEUČILIŠNI (DOKTORSKI) STUDIJ 3-godišnji (180 ECTS)	
Studij	Naziv
Strojarstvo	Doktor tehničkih znanosti
Temeljne tehničke znanosti	Doktor tehničkih znanosti
Brodogradnja	Doktor tehničkih znanosti
Druge interdisciplinarne tehničke znanosti	Doktor tehničkih znanosti
Elektrotehnika	Doktor tehničkih znanosti
STRUČNI STUDIJ 3-godišnji (180 ECTS)	
Studij	Naziv
Strojarstvo	Stručni prvostupnik inženjer strojarstva
Brodogradnja	Stručni prvostupnik inženjer brodogradnje
Elektrotehnika	Stručni prvostupnik inženjer elektrotehnike

UNDERGRADUATE UNIVERSITY STUDY 3 years (180 ECTS)	
Study	Title
Mechanical Engineering	University Bachelor Engineer of Mechanical Engineering
Naval Architecture	University Bachelor Engineer of Naval Architecture
Electrical Engineering	University Bachelor Engineer of Electrical Engineering
Computer Science	University Bachelor Engineer of Computer Science
GRADUATE UNIVERSITY STUDY 2 years (120 ECTS)	
Study	Title
Mechanical Engineering	Master Engineer of Mechanical Engineering
Naval Architecture	Master Engineer of Naval Architecture
Electrical Engineering	Master Engineer of Electrical Engineering
Computer Science	Master Engineer of Computer Science
POSTGRADUATE UNIVERSITY (DOCTORAL) STUDY 3 years (180 ECTS)	
Study	Title
Mechanical Engineering	D.Sc. In Engineering Sciences
Basic Engineering Sciences	D.Sc. In Engineering Sciences
Naval Architecture	D.Sc. In Engineering Sciences
Other Interdisciplinary Sciences	D.Sc. In Engineering Sciences
Electrical Engineering	D.Sc. In Engineering Sciences
VOCATIONAL STUDY 3 years (180 ECTS)	
Study	Title
Mechanical Engineering	Bachelor Engineer of Mechanical Engineering
Naval Architecture	Bachelor Engineer of Naval Architecture
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 pred-diplomski 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 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 sljedećoj tablici. U nastavku su opisane osnovne značajke pojedinog studija.

PREDDIPLOMSKI SVEUČILIŠNI STUDIJ STROJARSTVA

Preddiplomski sveučilišni studij strojarstva priprema studente za diplomski sveučilišni studij strojarstva, ali im pruža 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. Student koji završi ovaj studij sposoban je uključiti se u kontinuirano obrazovanje i profesionalni razvoj te posjeduje šire obrazovanje.

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 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

The undergraduate university study of mechanical engineering prepares the students for graduate university study and provides an opportunity for placement in appropriate professional employment. The aim of the study is to prepare the students for implementing basic and specialistic knowledge in the field of mechanical engineering, recognizing, defining and solving practical problems, implementing other acquired engineering knowledge, math and computing, using modern engineering tools, understanding teamwork and efficient communication, understanding ethics and responsibility and the influence of engineering solutions on society and the environment. At the end of study, students are able to continue with education and professional development and possess a broader education.

Prediplomski sveučilišni studiji																
S	STROJARSTVO				BRODOGRADNJA				ELEKTROTEHNIKA				RAČUNARSTVO			
	Predmet	N	B	Predmet	N	B	Predmet	N	B	Predmet	N	B	Predmet	N	B	
I	Matematika I	6	7	Matematika I	6	7	Matematika I	6	7	Matematika I	6	7	Matematika I	6	7	
	Statika	5	6	Statika	5	6	Fizika I	4	5	Fizika I	4	5	Elektrotehnika R	4	7	
	Materijali I	4	4	Materijali I	4	4	Osnove elektrotehnike I	4	4	Osnove elektrotehnike I	6	7	Programiranje	5	6	
	Uvod u modernu fiziku	3	4	Uvod u modernu fiziku	3	4	Uvod u računarstvo	3	4	Uvod u računarstvo	4	6	Prijemna računalna	4	6	
	Računalne aplikacije u inženjerstvu	3	4	Računalne aplikacije u inženjerstvu	3	4	Inženjerska grafika i dokumentiranje	4	4	Inženjerska grafika i dokumentiranje	4	4	Engleski jezik I	3	3	
II	Matematika II	6	7	Matematika II	6	7	Matematika II	6	7	Matematika II	6	7	Matematika II	6	7	
	Kinematika	5	6	Kinematika	5	6	Fizika II	4	5	Fizika II	4	5	Elektronika	4	6	
	Čvrstoća konstrukcija I	6	7	Čvrstoća konstrukcija	6	7	Osnove elektrotehnike II	6	7	Osnove elektrotehnike II	6	7	Računalne mreže	4	7	
	Materijali II	3	5	Materijali II	3	5	Programiranje	4	6	Programiranje	4	6	Digitalna logika	4	6	
	Oblikovanje pomoću računala	3	4	Oblikovanje pomoću računala	3	4	Tehnologija materijala	3	4	Tehnologija materijala	3	4	Engleski jezik II	3	3	
III	Dinamika	4	5	Dinamika	4	5	Inženjerska matematika ET	5	7	Inženjerska matematika ET	5	7	Algoritmi i strukture podataka	5	7	
	Mehanika fluida	5	5	Mehanika fluida	5	5	Mjerenja u elektrotehnici	5	7	Mjerenja u elektrotehnici	5	7	Operacijski sustavi	4	7	
	Nauka o toplini I	6	7	Zavarivanje I	3	4	Elektronika I	4	6	Elektronika I	4	6	Grada računala	4	6	
	Mjerenja i kontrola kvalitete	3	5	Termodinamika BG	4	5	Električne mreže	4	5	Električne mreže	4	7	Signal i sustavi	4	6	
	Računarske metode	4	5	Uvod u plovidne objekte	3	4	Strani jezik I	2	3	Strani jezik I	2	3	Izborni kolegij I	3	4	
IV	Inženjerska statistika	4	5	Inženjerska statistika	4	5	Digitalna logika	4	5	Digitalna logika	4	6	Programsko inženjerstvo	4	7	
	Konstrukcijski elementi I	5	7	Brodске forme	5	6	Elektronika II	4	6	Elektronika II	4	6	Baze podataka	4	6	
	Hidraulički strojevi	4	5	Osnove gradnje broda	3	5	Osnove regulacijske tehnike	4	6	Osnove regulacijske tehnike	4	6	Računalom podržana mjerenja	3	5	
	Proizvodne tehnologije	4	5	Konstrukcija broda I	4	6	Izborni kolegij	4	4	Izborni kolegij	4	4	Osnove znanstvenog računanja	3	3	
	Strani jezik II	2	3	Engleski jezik II	2	3	Strani jezik II	2	3	Strani jezik II	2	3	Izborni kolegij II	4	4	
V	Stručna praksa I	5	5	Stručna praksa I	5	5	Stručna praksa I	5	5	Stručna praksa I	5	5	Stručna praksa I	5	5	
	Konstrukcijski elementi II	6	7	Plovnost i stabilitet broda	6	7	Električni strojevi	5	6	Električni strojevi	5	6	Ugrađeni računalni sustavi	5	7	
	Toplinski strojevi i uređaji	4	5	Oprema broda	4	6	Energetska elektronika	4	6	Energetska elektronika	5	6	Razvoj web-aplikacija	4	7	
	Proizvodni strojevi, alati i naprave	4	5	Konstrukcija broda II	4	6	Signal i sustavi	4	6	Signal i sustavi	4	6	Računalna grafika	4	6	
	Izborni kolegij skupine	4	4	Tehnologija brodogradnje	4	6	Izborni kolegij skupine	4	7	Izborni kolegij skupine	4	7	Izborni kolegij III	4	5	
VI	Tehnološki procesi	4	4	Izborni projekt	3	5	Izborni projekt	3	5	Izborni projekt	3	5	Izborni projekt	3	5	
	Izborni projekt	3	5	Organizacija i ekonomika posl. sust	3	4	Organizacija i ekonomika posl. sust	3	4	Organizacija i ekonomika posl. sust	3	4	Informacijski sustavi	5	8	
	Energetski sustavi	4	4	Hidrodinamika plovnih objekata I	6	8	Organizacija i ekonomika posl. sust.	3	4	Organizacija i ekonomika posl. sust.	3	4	Organizacija i ekonomika posl. sust.	3	4	
	Automatizacija	3	4	Slobodni kolegij I	3	4	Slobodni kolegij II	3	4	Slobodni kolegij II	3	4	Izborni kolegij IV	4	4	
	Izborni kolegij skupine	3	4	Slobodni kolegij II	3	4	Završni rad	10	10	Završni rad	10	10	Slobodni kolegij	3	4	

(Studijski programi pojedinih studija prikazani su na gornjoj i na tablicama koje slijede: sa S 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				NAVAL ARCHITECTURE				ELECTRICAL ENGINEERING				COMPUTER SCIENCE			
	Course	N	B		Course	N	B		Course	N	B		Course	N	B	
I	Mathematics I	6	7		Mathematics I	6	7		Mathematics I	6	7		Mathematics I	6	7	
	Statics	5	6		Statics	5	6		Physics I	4	5		Electrical Engineering	4	7	
	Materials I	4	4		Materials I	4	4		Fundamentals of Electrical Engineering I	6	7		Programming	5	6	
	Introduction in Modern Physics	3	4		Introduction in Modern Physics	3	4		Introduction to Computer Engineering	4	6		Applied Computing	4	6	
	Applied Computing	3	4		Applied Computing	3	4		Engineering Graphics and Documenting	4	4		English Language I	3	3	
II	Engineering Graphics	4	4		Engineering Graphics	4	4									
	Mathematics II	6	7		Mathematics II	6	7		Mathematics II	6	7		Mathematics II	6	7	
	Kinetics	5	6		Kinetics	5	6		Physics II	4	5		Electronics	4	6	
	Strength of Constructions I	6	7		Strength of Constructions	6	7		Fundamentals of Electrical Engineering II	6	7		Computer Networks	4	7	
	Materials II	3	5		Materials II	3	5		Programming	4	6		Digital Logic	4	6	
III	Modelling by Computer	3	4		Modelling by Computer	3	4		Technology of Materials	3	4		English Language II	3	3	
	Dynamics	4	5		Dynamics	4	5		Mathematics for Engineers ET	5	7		Algorithms and Data Structures	5	7	
	Fluid Mechanics	5	5		Fluid Mechanics	5	5		Electrical Measurements	5	7		Operating Systems	4	7	
	Thermodynamics I	6	7		Welding Engineering I	3	4		Electronics I	3	4		Computer Structure	4	6	
	Measurements and Control of Quality	3	5		Thermodynamics	4	5		Electrical Circuits	4	7		Signals and Systems	4	6	
IV	Computational Methods	4	5		Introduction to Floating Objects	3	4		Foreign Language I	2	3		Elective course I	3	4	
	Foreign Language I	2	3		Fundamentals of Machine Elements Design	4	4									
	Statistics for Engineers	4	5		Statistics for Engineers	4	5		Digital Logic	4	6		Software Engineering	4	7	
	Machine Elements Design I	5	7		Ship Hull Forms	5	6		Electronics II	4	6		Databases	4	6	
	Hydraulic Machines	4	5		Basics of Ship Production	3	5		Basic of Automatic Control	4	6		Computer Aided Measurements	3	5	
V	Manufacturing Technologies	4	5		Ship Construction I	4	6		Elective Course	4	4		Basics of Science Computing	3	3	
	Foreign Language II	2	3		English Language II	2	3		Foreign Language II	2	3		Elective course II	4	4	
	Professional practice	5	5		Professional practice I	5	5		Professional practice I	5	5		Professional practice I	4	4	
	Machine Elements Design II	6	7		Seaworthiness and Stability of the Ship	6	7		Electrical Machines	6	7		Embedded Computer Systems	5	7	
	Heat Engines and Devices	4	5		Ship Equipment	4	6		Power Electronics	5	6		Web Application Development	4	7	
VI	Production Machines, Jigs, Fixtures and Tools	4	5		Ship Construction II	4	6		Signals and Systems	4	6		Computer Graphics	4	6	
	Elective group course	4	4		Shipbuilding Technology	4	6		Elective group course	4	7		Free course	4	5	
	Technological Processes	4	4		Elective project	3	5		Elective project	3	5		Elective project	3	5	
	Elective project	3	5		Organization and Economics of Enterprises	3	4		Electrical Drives	4	5		Information systems	5	8	
	Energy Systems	4	4		Marine Hydrodynamics I	3	4		Organization and Economics of Enterprises	3	4		Organization and Economics of Enterprises	3	4	
Final work	Automation	3	4		Free course I	3	4		Free course	3	4		Elective course IV	4	4	
	Organization and Economics of Enterprises	3	4		Free course II	3	4		Free course	3	4		Free course	3	4	
	Free course	3	4		Final Work	3	4		Final work	10	10		Final work	10	10	
	Final work	10	10													

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

PREDDIPLOMSKI SVEUČILIŠNI STUDIJ BRODOGRADNJE

Preddiplomski sveučilišni studij brodogradnje priprema studente za diplomski sveučilišni studij brodogradnje, ali im pruža i mogućnost zapošljavanja na odgovarajućim stručnim poslovima. Na preddiplomskom studiju brodogradnje polaznicima se u razumnoj količini i na dovoljno visokoj razini daje 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 svojem daljnjem stručnom i znanstvenom usavršavanju, uvijek bili na razini postavljenih zadataka. Svojim opsegom sadržajem ovaj studij polazniku daje 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 sposoban je uključiti se u kontinuirano obrazovanje i profesionalni razvoj te posjeduje i šire obrazovanje.

PREDDIPLOMSKI SVEUČILIŠNI STUDIJ ELEKTROTEHNIKE

Završetkom preddiplomskoga sveučilišnog studija elektrotehnike polaznik posjeduje temeljna znanja iz matematike, fizike, elektrotehnike i primjene računala. Nadalje, zna pripremiti i izvesti eksperiment, odnosno određena mjerenja te ih pravilno obraditi i protumačiti rezultate. Sposoban je identificirati, formulirati i riješiti problem. Pri tome se zna koristiti suvremenim inženjerskim alatima i spreman je za rješavanje šireg spektra inženjerskih zadataka uz mogućnost brze specijalizacije u određenom području. Polaznik je također sposoban raditi u (multidisciplinarnoj) grupi, razumije važnost učinkovite komunikacije u rješavanju određenoga inženjerskog problema, a u svojem radu poštuje profesionalne i etičke norme te zaštitu okoliša. Nakon završetka studija sposoban je uključiti se u kontinuirano obrazovanje i profesionalni razvoj te posjeduje šire obrazovanje.

UNDERGRADUATE UNIVERSITY STUDY OF NAVAL ARCHITECTURE

The undergraduate university study of naval architecture prepares the students for graduate university study and gives them the opportunity for employment in appropriate professional employment positions. The undergraduate study of naval architecture, offers students on the one hand a reasonable quantity and quality of knowledge in basic engineering and, on the other hand, knowledge about the main constructions of shipbuilding so that they can be prepared for professional jobs as well as for further professional education. With its volume and contents, this study gives an adequate width of knowledge so that students can work either in teams or as individuals in any field of the shipbuilding process. At the end of study, students are able to continue with education and professional development and possess broader education.

UNDERGRADUATE UNIVERSITY STUDY OF ELECTRICAL ENGINEERING

Upon completion of the undergraduate university study of electrical engineering, the student obtains a basic knowledge of math, physics, basic electrical engineering and applied computer science. Furthermore, he knows how to prepare and conduct experiments and appropriate measurement and correctly process and recognize the obtained results. He is capable of identifying, formulating and solving problems. In such a way, he is able to use modern engineering tools and is prepared for solving a wide spectrum of engineering tasks related to the ability of fast specialization in certain fields. He is able to work in teams, he understands the importance of efficient communication in solving particular engineering problems and he acts in accordance with professional and ethical codes, as well as environmental protection standards. At the end of the study, students are able to continue with their education and professional development and they possess broader education.

PREDDIPLOMSKI SVEUČILIŠNI STUDIJ RAČUNARSTVA

Ovaj preddiplomski sveučilišni studij ima za cilj pružiti razinu znanja koje će osigurati profil stručnjaka osposobljenih za samostalno obavljanje poslova sastavljanja, održavanja i posluživanja računalnih sustava kao i njihova korištenja kao alata. Ova znanja obuhvaćaju područja računalne programske i sklopovske opreme te znanja iz područja računalnih mreža i sustava. Time se osigurava razina izobrazbe nužna za svladavanje niza stručnih poslova. Pri tome je polaznik sposoban raditi u (multidisciplinarnoj) skupini, razumije važnost učinkovite komunikacije na rješavanju određenoga inženjerskog problema, a u svojem radu poštuje profesionalne i etičke norme te zaštitu okoliša. Završeni polaznik ovog studija sposoban je uključiti se u kontinuirano obrazovanje i profesionalni razvoj te posjeduje šire obrazovanje.

DIPLOMSKI SVEUČILIŠNI STUDIJ STROJARSTVA

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

- Konstruiranje i mehatronika
- Računarsko inženjerstvo
- Tehnološko-informatičko inženjerstvo
- Industrijsko inženjerstvo i management
- Računarska analiza konstrukcija i strojeva
- Termotehnika
- Procesno i energetsko strojarstvo
- Brodstrojarstvo
- Inženjerstvo materijala

Diplomskim sveučilišnim studijem strojarstva studenti stječu potrebna uskospecijalistička znanja iz navedenih područja te su time osposobljeni za obavljanje najsloženijih inženjerskih zadataka temeljenih na znanstvenom pristupu rješavanju problema. Stječu se nova specijalistička znanja iz strojarstva i sposobnost njihove primjene, kao i poznavanje i primjena drugih specijalističkih znanja iz tehnike, matematike i računarstva. Studenti razvijaju sposobnost kontinuiranog obrazovanja i samoobrazovanja, sposobnosti sa-

UNDERGRADUATE UNIVERSITY STUDY OF COMPUTER SCIENCE

This study program aims at providing a level of knowledge that will yield a profile of experts trained to independently perform tasks of assembling, serving and maintaining computer systems and using the same as tools. This category includes knowledge of computer software and hardware as well as knowledge in the field of computer networks and systems, ensuring the level of training required to master a number of related jobs. The student is also able to work in a group and he understands the importance of effective communication when solving specific engineering problems. His work respects professional and ethical standards and environmental protection. Upon completion of the study program, the student will be able to engage in lifelong learning and professional development and will have acquired broad education.

GRADUATE UNIVERSITY STUDY OF MECHANICAL ENGINEERING

In this study, specialization is enabled in one of the following fields:

- Mechanical design and mechatronics
- Computer engineering
- Technological information engineering
- Industrial engineering and management
- Computer analysis of machine elements and machines
- Thermal Energy Engineering
- Process and energy engineering
- Marine engineering
- Engineering of materials

This study enables students to obtain the necessary specialist knowledge in the mentioned fields and to perform the most complex engineering tasks based on a scientific problem solving approach. Students acquire new specialised knowledge of mechanical engineering and the ability to implement it as well as that of other topics in engineering, maths and computing. Students are able to continue their education and self-education, to autonomously perform research and experimental work, as well as

mostalnog 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 uvedene su preporuke iz Bolonjske deklaracije koje se odnose na način osiguranja kvalitete studijskog programa te mobilnost pri studiranju i priznavanju diploma. Za upis na diplomski sveučilišni studij strojarstva, a kako bi se omogućila horizontalna mobilnost studenata, upis je omogućen i studentima koji su završili istovrsne preddiplomske sveučilišne studije (brodogradnja, elektrotehnika, računarstvo). Na diplomskom sveučilišnom studiju strojarstva sve je veći broj i studenata koji su završili stručne studije iz područja tehničkih znanosti te odgovarajući program razlikovne edukacije.

DIPLOMSKI SVEUČILIŠNI STUDIJ BRODOGRADNJE

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

- Projektiranje i konstrukcija plovnih objekata
- Tehnologija i organizacija brodogradnje.

Studijski je program usklađen s preporukama u Bolonjskoj deklaraciji koje se odnose na način osiguranja kvalitete studijskog programa te mobilnost pri studiranju i priznavanju diploma.

to validate the obtained results. The study extends the knowledge and competencies necessary for designing new systems, components or processes and the efficient management of projects as team leaders. The curriculum is similar to other programs at foreign universities with some specificities tuned to the needs of the surroundings that most of the students will work in.

In the study program, recommendations of the Bologna system are implemented, especially concerning quality assurance, mobility during the study, as well as diploma recognition. For admission to graduate university study of mechanical engineering and in order to ensure horizontal mobility of students, enrollment is allowed to students who have completed equivalent undergraduate university studies (naval architecture, electrical engineering, computer science). At graduate study the number of students who have completed professional courses in engineering and an appropriate program of supplementary education is also getting larger.

GRADUATE UNIVERSITY STUDY OF NAVAL ARCHITECTURE

In this study, professional qualifications are acquired for tasks pertaining to the design and construction of various types of vessels, the development and leading of technological processes (mainly in shipbuilding and servicing of vessels and other objects of maritime technology), qualifications pertaining to jobs in classification and supervising institutions, as well as other jobs in the wide field of naval architecture and maritime engineering.

In this study, it is possible to choose the following elective groups:

- Design and construction of vessels
- Technology and organization of ship building.

The study program has been adjusted to recommendations of the Bologna system, especially concerning quality assurance, mobility during the study as well as diploma recognition.

DIPLOMSKI SVEUČILIŠNI STUDIJ ELEKTROTEHNIKE

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

- Automatika
- Elektroenergetika.

Studenti stječu potrebna specijalistička znanja iz navedenih područja te su time osposobljeni za obavljanje stručnih, ali i znanstvenih poslova iz domene elektrotehnike. Student po završetku studija mora znati u potpunosti voditi samostalno istraživanje. Njegovi radni zadaci uključuju ne samo rješavanje problema na postojećim sustavima, nego i projektiranje novih sustava, komponenata ili procesa uz postavljene uvjete. Pri tome mora biti sposoban djelovati i kao vođa i kao član skupine ili istraživačkog tima. Studijski je program usklađen s preporukama u Bolonjskoj deklaraciji koje se odnose na način osiguranja kvalitete studijskog programa te mobilnost pri studiranju i priznavanju diploma.

DIPLOMSKI SVEUČILIŠNI STUDIJ RAČUNARSTVA

Diplomskim sveučilišnim studijem računarstva studenti stječu potrebna usposobljavajuća znanja iz jednog od navedenih područja:

- Programsko inženjerstvo
- Računalni sustavi

Time su osposobljeni za obavljanje naj-složenijih zadataka 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.

GRADUATE UNIVERSITY STUDY OF ELECTRICAL ENGINEERING

In this study, specialization in one of the following fields is made possible:

- Automatics
- Power engineering.

Students acquire the necessary specialist knowledge in the fields mentioned above so that they are enabled to perform the most complex professional engineering tasks as well as those based on a scientific approach to problem solving in the area of electrical engineering. Students should be able to perform autonomous research. The student's tasks include not only problem solving of existing systems, but also the design of new systems, components and processes based on given specifications. Therefore, he is capable of working as a team or research group member or leader. The study program has been adjusted to recommendations of the Bologna system, especially concerning quality assurance, mobility during the study as well as diploma recognition.

GRADUATE UNIVERSITY STUDY OF COMPUTER SCIENCE

By completing the university graduate programme in computer science, students attain the necessary narrowly specialised knowledge in one of the following areas:

- Software engineering
- Computer systems

Students are trained to perform the most complex engineering tasks based on the scientific approach to problem solving. They attain the skills needed for information processing, seeking innovative solutions and performing interdisciplinary approach to systems integration. Students will be able to independently plan, manage, analyse problems and propose solutions related to the development of hardware and software. They will learn how to efficiently select and apply modern tools and procedures from this field on complex engineering activities. They will acquire knowledge and skills for designing systems, components and processes that meet the specific needs of certain domains.

Diplomski sveučilišni studiji																
S	STROJARSTVO				BRODOGRADNJA				ELEKTROTEHNIKA				RAČUNARSTVO			
	Predmet	N	B	Predmet	N	B	Predmet	N	B	Predmet	N	B	Predmet	N	B	
I	Inženjerska matematika	5	7	Inženjerska matematika	5	6	Numerička i stohastička matematika	4	6	Stohastička matematika	4	6		4	6	
	Čvrstoća konstrukcija II	5	7	Čvrstoća broda	4	5	Upravljanje elektromotornim pogonima	4	6	Teorija informacija i kodiranje	4	6		4	6	
	Nauka o toplini II	5	7	Brodaska elektrotehnika	3	4	Kolegij izborne skupine	4	6	Izborni kolegij Z	8	12		8	12	
	Kolegij izborne skupine	4	5	Metodologija gradnje plovnih objekata	4	5	Kolegij izborne skupine	4	6	Kolegij izborne skupine	4	6		4	6	
	Kolegij izborne skupine	4	4	Kolegij izborne skupine	4	4	Kolegij izborne skupine	4	4	Kolegij izborne skupine	4	6		4	6	
II	Projekt I	2	5	Brodski sustavi	4	5	Projekt I	2	5	Upravljanje u programskom inženjerstvu	6	7		6	7	
	Slobodni kolegij I	4	5	Projekt I	2	5	Slobodni kolegij I	4	5	Projekt I	4	5		4	5	
	Stručna praksa II	5	5	Slobodni kolegij I	4	5	Stručna praksa II	4	5	Stručna praksa II	5	5		5	5	
	Izborni kolegij I	4	5	Stručna praksa II	4	5	Kolegij izborne skupine	4	5	Izborni kolegij LJ	4	6		4	6	
	Kolegij izborne skupine	4	5	Kolegij izborne skupine	4	5	Kolegij izborne skupine	4	5	Kolegij izborne skupine	4	7		4	7	
III	Kolegij izborne skupine	4	5	Kolegij izborne skupine	4	5	Projekt II	4	5	Napredni operacijski sustavi	6	8		6	8	
	Kolegij izborne skupine	4	5	Osnivanje plovnih objekata I	4	5	Projekt II	2	5	Projekt II	4	5		4	5	
	Kolegij izborne skupine	4	5	Projekt II	4	5	Slobodni kolegij II	4	5	Slobodni kolegij II	3	5		3	5	
	Kolegij izborne skupine	4	5	Slobodni kolegij II	4	5	Kolegij izborne skupine	4	5	Slobodni kolegij I	8	12		8	12	
	Kolegij izborne skupine	4	5	Izborni kolegij II	4	5	Kolegij izborne skupine	4	5	Izborni kolegij Z	4	5		4	5	
IV	Kolegij izborne skupine	4	5	Kolegij izborne skupine	4	5	Kolegij izborne skupine	4	5	Kolegij izborne skupine	4	5		4	5	
	Kolegij izborne skupine	4	5	Kolegij izborne skupine	4	5	Kolegij izborne skupine	4	5	Kolegij izborne skupine	3	4		3	4	
	Kolegij izborne skupine	4	5	Slobodni kolegij III	4	5	Slobodni kolegij III	4	5	Projektirni management	2	3		2	3	
	Kolegij izborne skupine	4	5	Izborni kolegij III	4	5	Kolegij izborne skupine	4	8	Slobodni kolegij II	3	5		3	5	
	Kolegij izborne skupine	4	5	Kolegij izborne skupine	4	5	Kolegij izborne skupine	4	7	Izborni kolegij LJ	8	12		8	12	
Moduli	Diplomski rad	3	5	Diplomski rad	3	5	Diplomski rad	10	10	Diplomski rad	10	10		10	10	
	Konstruiranje i mehatronika			Projektiranje i konstrukcija plovnih objekata			Automatika			Programsko inženjerstvo						
	Računarsko inženjerstvo			Tehnologija i organizacija brodegradnje			Elektroenergetika			Računalni sustavi						
	Tehnološko informatičko inženjerstvo															
	Industrijsko inženjerstvo i menadžment															
Računarska analiza konstrukcija i strojeva																
Termotehnika																
Procesno i energijsko strojarstvo																
Brodostrojstvo																
Inženjerstvo materijala																

Graduate university studies																
S	MECHANICAL ENGINEERING				NAVAL ARCHITECTURE				ELECTRICAL ENGINEERING				COMPUTER SCIENCE			
	Course	N	B		Course	N	B		Course	N	B		Course	N	B	
I	Mathematics for Engineers	5	7		Mathematics for Engineers	5	6		Numerical and Stochastic Mathematics	4	6		Stochastic Mathematics	4	6	
	Strength of Constructions II	5	7		Ship Strength	4	5		Control of Electrical Drives	4	6		Information Theory and Coding	4	6	
	Thermodynamics II	5	7		Ships Electrical Engineering	3	4		Elective group course	4	6		Elective course Z	8	12	
	Elective group course	4	5		Methodology of Shipbuilding	4	5		Elective group course	4	6		Elective group course	4	6	
II	Elective group course	4	4		Elective group course	4	6		Elective group course	4	6					
	Project I	2	5		Ship Systems	4	5		Project I	2	5		Software Engineering Management	6	7	
	Free course I	4	5		Project I	2	5		Free course I	4	5		Project I	5	5	
	Professional practice II	5	5		Free course I	4	5		Professional practice II	5	5		Professional practice II	5	5	
III	Elective course I	4	5		Professional practice II	4	5		Elective group course	4	5		Elective course LJ	4	6	
	Elective group course	4	5		Elective group course	4	5		Elective group course	4	5		Elective group course	4	7	
	Elective group course	4	5		Elective group course	4	5		Elective group course	4	5					
	Project II	2	5		Ship Design I	4	5		Project II	2	5		Advanced Operating Systems	6	8	
IV	Free course II	4	5		Project II	2	5		Free course II	4	5		Project II	5	5	
	Elective group course	4	5		Free course II	4	5		Elective group course	4	6		Free Course I	3	5	
	Elective group course	4	5		Elective course II	4	5		Elective group course	4	5		Elective course Z	8	12	
	Elective group course	4	5		Elective group course	4	5		Elective group course	4	5					
V	Elective group course	4	5		Elective group course	4	5		Elective group course	4	5					
	Free course III	4	5		Free course III	4	5		Free course III	4	5		Project Management	2	3	
	Elective group course	4	5		Elective course III	4	5		Elective group course	4	8		Free course II	3	5	
	Elective group course	4	5		Elective group course	4	5		Elective group course	4	7		Elective course LJ	8	12	
Modules	Elective group course	3	5		Elective group course	3	5		Graduation thesis	10	10		Graduation thesis	10	10	
	Graduation thesis	10	10		Graduation thesis	10	10									
Modules	Mechanical Design and Mechatronics				Design and Construction of Vessels				Automatics				Software Engineering			
	Computer Engineering				Technology and Organization of Shipbuilding				Power Engineering				Computer Systems			
	Technological Information Engineering															
	Industrial Engineering and Management															
Modules	Computer Analysis of Machine Elements and Machines															
	Thermal Energy Engineering															
	Process and Energy Mechanical Engineering															
	Marine Engineering															
Modules	Engineering of Materials															

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

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

Završetkom ovih studija student stječe stupanj doktora znanosti koji prvenstveno označava da superiorno poznaje određeno znanstveno područje unutar tehničkih znanosti i da je dokazao sposobnost originalnoga 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 da prenese svoje znanje i iskustvo na mlađe generacije studenata, kritičnost, u prvom redu prema vlastitom istraživanju, ali i radu drugih te sposobnost prilagođavanja promjenama koje dolaze.

Nakon završetka doktorskog studija otvaraju se brojne mogućnosti nastavka znanstvenoistraživačkog rada na matičnoj instituciji ili srodnim institucijama u Hrvatskoj ili inozemstvu, kao i postdoktorskog usavršavanja. Također 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.

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

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

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

Upon completion of the doctoral study, numerous possibilities for the continuation of scientific work are present at the Faculty of 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.

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).

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

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

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

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

The 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 subjects 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).

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

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

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

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

**Poslijediplomski sveučilišni (doktorski) studij
Područje tehničke znanosti, polje strojarstvo, brodogradnja, temeljne tehničke znanosti i interdisciplinarne tehničke znanosti**

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

Postgraduate University (Doctoral) Study							
Area of Engineering Sciences, fields of Mechanical Engineering, Naval Architecture, Fundamental Engineering Sciences and Interdisciplinary Sciences							
Common							
Methodology of Science 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
	<p>Planning and Processing of Manufacture</p> <p>Selected Chapters on Conventional Machining Processes</p> <p>Formability and Modern Technology</p> <p>Selected Chapters on Nonconventional Machining Processes</p> <p>Production and Development Management</p> <p>CAM, CAP, CAD/NC-CIM</p> <p>Robots and Manipulators</p> <p>Selected Chapters on Flexible Production Systems</p> <p>Intelligent Manufacturing Systems</p> <p>Simulation Methods in Production</p> <p>Processes Plans Optimization</p> <p>Selected Chapters on Material testing</p> <p>Heat Treatment and Surface Engineering</p> <p>Material chemistry</p> <p>Corrosion and Metals Protection</p> <p>Fracture</p> <p>Mechanics and Fatigue of Materials</p> <p>Processes of Damaging of Materials</p>	<p>Selected Topics on Thermal Sciences</p> <p>Numerical Modeling of Heat Transfer</p> <p>Optimization of Energy Processes</p> <p>Selected Topics of Marine Machinery Systems</p> <p>Thermodynamic Analysis of Processes</p> <p>Experimental Methods in Thermal and Power Engineering</p> <p>Thermodynamics of Mixtures and Thermal Devices</p> <p>Selected Topics in Refrigeration and Low-temperature Refrigeration</p> <p>Selected Topics on Heat Exchangers</p> <p>Selected Topics on Heating and Air-Conditioning</p> <p>Renewable Energy Sources</p> <p>Rational Energy Consumption</p> <p>Numerical Modeling of Combustion Process</p> <p>Selected Topics in Internal Combustion Engines</p> <p>Advanced Design of Internal Combustion Engines</p> <p>Durability and Reliability of Thermal Energy Systems</p> <p>Selected Topics on Thermal Turbomachines</p> <p>Selected Topics Marine Energy Systems</p>	<p>Elastomechanics and Plastomechanics</p> <p>FEM and Structural Optimization</p> <p>Viscoelasticity and Viscoplasticity</p> <p>Structural Stability</p> <p>Nonlinear Structural Analysis</p> <p>Contact Mechanics Advanced</p> <p>Thermomechanics</p> <p>Vibrations and Durability of Machines and Structures</p> <p>Kinematics and Dynamics of Robots</p> <p>Protection Against Noise and Vibrations of Machines and Structures</p> <p>Fluid Dynamics</p> <p>Computational Fluid Mechanics</p> <p>Hydrodynamics of Turbulent Flow</p> <p>Unsteady Pipe Flow Modeling</p>	<p>Methodology of Floating Objects Design</p> <p>Seakeeping and Manoeuvrability</p> <p>Selected Chapter on Floating Objects Design</p> <p>Integrated ship Production Technology</p> <p>Selected Topics on Floating Objects Production</p> <p>Methodology</p> <p>Advanced Chapters of Ship Resistance</p> <p>Advanced Chapters of Ship Propulsion</p> <p>Selected Topics in Marine Dynamics</p> <p>Structural Design of Floating Objects</p>	<p>Selected chapters on Hydrostatic and Pneumatic Transmissions</p> <p>Modelling of Engineering Structures</p> <p>Design Science</p> <p>Selected Chapters of Machine Elements Design</p> <p>Special Mechanical Transmissions</p> <p>Mechanical Engineering Design and Optimization of Gear Transmitting</p> <p>Selected Chapters on Power Transmissions</p> <p>Selected Chapters of Industrial Transport Equipment and Devices</p> <p>Boundary Elements Method</p> <p>Contact Problems in Machine Elements Analyses</p> <p>Principles of High and Ultra-high Precision Devices</p> <p>Compliant Elements and Mechanisms</p>	<p>Quality Management</p> <p>Planning and Processing of Manufacture</p> <p>Statistical Process Control</p> <p>Design of Data Base</p> <p>Business Decision</p> <p>Models of Stochastic Information Processes</p> <p>Reliability of Technical Systems</p> <p>Intelligent Systems</p> <p>Microeconomics and Competitiveness</p> <p>Quality Engineering</p> <p>Safety of Technical Systems</p>	<p>Selected Topics on Environment Protection</p> <p>General Ecology</p> <p>Sea and Coastal Protection</p> <p>Environmental Chemistry</p> <p>Management of Sustainable Development and Environmental Protection</p> <p>Environment Protection in Energetics and Process Industry</p> <p>Instrumentation and Analytical Techniques in Environment Protection</p> <p>Environment and Economy</p> <p>Physics of the atmosphere</p>
Module Subjects							

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

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

STRUČNI STUDIJ STROJARSTVA

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.

STRUČNI STUDIJ BRODOGRADNJE

Stručni studij brodogradnje ima za cilj osposobljavanje stručnjaka brodogradnje za rad na izvršavanju složenih operativnih poslova pri razradi projekata plovnih objekata i objekata morske tehnologije i njihovih elemenata, odnosno složenih operativnih poslova planiranja, pripreme, unapređenja i kontrole procesa gradnje plovnih objekata.

STRUČNI STUDIJ ELEKTROTEHNIKE

Stručni studij elektrotehnike ima za cilj osposobljavanje stručnjaka elektrotehnike za sudjelovanje u projektiranju i konstruiranju elemenata elektroenergetskih postrojenja, odnosno telekomunikacijskih uređaja, sustava i mreža, ovisno o odabranoj izbornoj skupini predmeta.

VOCATIONAL STUDY OF MECHANICAL ENGINEERING

The vocational study of mechanical engineering has the aim to prepare the students for their profession as mechanical engineers, performing jobs that include complex operating tasks in mechanical design, planning, preparing, improvement and controlling of technological and production processes as well as planning, organizing and conducting of production or energy processes and plants.

VOCATIONAL STUDY OF NAVAL ARCHITECTURE

The vocational study of naval architecture has the aim to prepare the students for their profession as naval architect engineers, performing jobs that include complex operating tasks in designing vessels and other maritime objects and their elements as well as planning, improvement and controlling vessel building processes.

VOCATIONAL STUDY OF ELECTRICAL ENGINEERING

The vocational study of electrical engineering has the aim, depending upon the chosen elective subject group, to prepare the students for their profession as electrical engineers in jobs which include designing and constructing elements of power plants, as well as telecommunication equipment, systems and networks.

S		STROJARSTVO				BRODOGRADNJA				ELEKTROTEHNIKA			
		Predmet	N	B		Predmet	N	B		Predmet	N	B	
I	Matematika I	5	7		Matematika I	5	7		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	4		Primjena računala ST	3	4		Primjena računala ST	3	4		
II	Matematika II	5	7		Matematika II	5	7		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	4		Plovni objekti	3	4		Tehničko dokumentiranje	3	4		
III	Organizacija i ekonomika	3	4		Organizacija i ekonomika	3	4		Mjerenja u elektrotehnici ST	5	7		
	Mehanika fluida ST	3	5		Mehanika fluida ST	3	5		Elektroničke komponente i osnovni sklop.	5	7		
	Toplina	4	6		Toplina	4	6		Linearne električne mreže	4	7		
	Tehnologija obrade II	4	6		Brodске forme ST	4	7		Mehatronika	4	6		
	Elementi strojeva I	4	6		Zavarivanje	3	5		Strani jezik I	2	3		
IV	Strani jezik I	2	3		Strani jezik I	2	3						
	Elementi strojeva II	4	6		Hidrostatika broda	4	6		Osnove energetske elektronike	5	7		
	Obradni strojevi	3	5		Strukturalni elementi broda	4	6		Osnove automatske regulacije	4	7		
	Toplinski strojevi i uređaji I	3	5		Tehnologija brodogradnje I	3	5		Kolegiji izborne skupine	5	8		
	Strani jezik II	2	3		Elementi strojeva I BG	3	5		Strani jezik II	2	3		
V	Stručna praksa I	4	5		Strani jezik II	2	3		Stručna praksa I	3	5		
	Kolegiji izborne skupine	4	6		Stručna praksa I	4	6						
	Mjerna tehnika ST	3	5		Mjerna tehnika ST	3	5		Organizacija i ekonomika	3	4		
	Toplinski strojevi i uređaji II	3	5		Tehnologija brodogradnje II	5	6		Kolegiji izborne skupine	5	7		
	Hydraulički strojevi	3	5		Tehnološki procesi gradnje i remonta broda	5	6		Kolegiji izborne skupine	4	7		
VI	Zavarivanje	3	5		Konstrukcija broda	4	6		Kolegiji izborne skupine	4	6		
	Kolegiji izborne skupine	4	5		Oprema broda ST	4	7		Kolegiji izborne skupine	4	6		
	Kolegiji izborne skupine	4	5										
	Slobodni kolegiji	4	5		Gradnja i održavanje malih plovinskih objekata	4	5		Slobodni kolegiji	4	5		
	Stručna praksa II	10	10		Slobodni kolegiji	4	5		Stručna praksa II	10	10		
	Kolegiji izborne skupine	4	5		Stručna praksa II	5	10		Kolegiji izborne skupine	4	5		
	Završni rad	10	10		Završni rad	10	10		Završni rad	10	10		

Vocational studies												
S	MECHANICAL ENGINEERING				NAVAL ARCHITECTURE				ELECTRICAL ENGINEERING			
	Course	N	B		Course	N	B		Course	N	B	
I	Mathematics I	5	7		Mathematics I	5	7		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 I VS	5	8	
	Fundamentals of Electrical Engineering	3	5		Fundamentals of Electrical Engineering	3	5		Materials and Technological Processes	3	4	
	Applied Computing VS	3	4		Applied Computing VS	3	4		Applied Computing VS	3	4	
II	Mathematics II	5	7		Mathematics II	5	7		Mathematics II	5	7	
	Mechanics II	4	6		Mechanics II	4	6		Fundamentals of Electrical Engineering II VS	5	7	
	Strength of Materials	4	6		Strength of Materials	4	6		Digital Logic VS	4	6	
	Technical Drawing	4	6		Technical Drawing	4	6		Mechanics and Structural Elements VS	3	5	
	Manufacturing Technology I	3	4		Floating Objects	3	4		Technical Documenting	3	4	
III	Organization and Economics	3	4		Organization and Economics	3	4		Electrical Measurements VS	5	7	
	Fluid Mechanics VS	3	5		Fluid Mechanics VS	3	5		Electronic Components and Basic Circuits	5	7	
	Thermodynamics	4	6		Thermodynamics	4	6		Linear Electric Circuits	4	7	
	Manufacturing Technology II	4	6		Ship Hull Forms VS	4	7		Mechatronics	4	6	
	Machine Elements I	4	6		Welding Engineering	3	5		Foreign Language I	2	3	
IV	Foreign Language I	2	3		Foreign Language	2	3		Fundamentals of Power Electronics	5	7	
	Machine Elements II	4	6		Ship Hydrostatics	4	6		Fundamentals of Automatic Regulation	4	7	
	Machine Tools	3	5		Ship Structural Elements	4	6		Elective group course	5	8	
	Heat Engines and Devices I	3	5		Shipbuilding Technology I	3	5		Foreign Language I	2	3	
	Foreign Language II	2	3		Machine Elements I NA	3	5		Professional practice I	5	5	
V	Professional Practice I	4	6		Foreign Language II	2	3		Professional practice I	5	5	
	Elective group course	4	6		Professional practice I	5	5		Organization and Economics	3	4	
	Measuring Technique VS	3	5		Measuring Technique VS	3	5		Elective group course	5	7	
	Heat Engines and Devices II	3	5		Shipbuilding Technology II	5	6		Elective group course	4	7	
	Hydraulic Machines	3	5		Technological Processes of Shipbuilding and Repair	5	6		Elective group course	4	6	
VI	Welding Engineering	3	5		Ship Construction	4	6		Elective group course	4	6	
	Elective group course	4	5		Ship Equipment VS	4	7		Elective group course	4	6	
	Elective group course	4	5		Small Craft Building and Maintenance	4	5		Free course	4	5	
	Free course	4	5		Free course	4	5		Professional practice II	4	10	
	Professional practice II	4	5		Professional practice II	4	5		Elective group course	4	5	
								Final thesis				10

4 UPRAVA / DEAN'S OFFICE

Dekan / Dean:

prof. dr. sc. / Prof. D. Sc. Goran Turkalj

Tehnički fakultet Sveučilišta u Rijeci / Faculty of Engineering, University of Rijeka
Vukovarska 58, 51000 Rijeka, Hrvatska / Croatia

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e-pošta / e-mail: dekanat@riteh.hr



1. Sanja Prpić
2. Jasna Prpić-Oršić
3. Lado Kranjčević
4. Goran Turkalj
5. Zlatan Car
6. Tomo Vergić
7. Anica Trp
8. Juraj Šimunić



DEKAN

prof. dr. sc. Goran Turkalj

PRODEKANI

prof. dr. sc. Jasna Prpić-Oršić

znanstvena djelatnost

prof. dr. sc. Zlatan Car

poslovni odnosi

prof. dr. sc. Anica Trp

nastava

POMOĆNICI DEKANA

prof. dr. sc. Juraj Šimunić

izv. prof. dr. sc. Lado Kranjčević

GLAVNI TAJNIK

Tomo Vergić, dipl. iur.

URED DEKANA

Sanja Prpić, dipl. oec.

voditeljica

DEAN

Prof. Goran Turkalj, D. Sc.

VICE-DEANS

Prof. Jasna Prpić-Oršić, D. Sc.

research activities

Prof. Zlatan Car, D. Sc.

business affairs

Prof. Anica Trp, D. Sc.

academics

DEAN'S ASSISTANTS

Prof. Juraj Šimunić, D. Sc.

Assoc. Prof. Lado Kranjčević, D. Sc.

SECRETARY GENERAL

Tomo Vergić, grad. in iur.

DEAN'S OFFICE

Sanja Prpić, grad. economist

head

5 ZAVODI / DEPARTMENTS

5.1 ZAVOD ZA AUTOMATIKU I ELEKTRONIKU / DEPARTMENT OF AUTOMATION AND ELECTRONICS

Predstojnik Zavoda / Department Head:

izv. prof. dr. sc. / Assoc. Prof. D. Sc. Viktor Sučić

<http://www.riteh.uniri.hr/ustroj/zae/>



1. Marko Kršulja
2. Ivan Volarić
3. Leon Šikulec
4. Nicoletta Saulig
5. Zlatan Car
6. Vedran Grudenić
7. Nino Stojković
8. Jonatan Lerga



9. Saša Vlahinić
10. Damir Malnar
11. Željka Milanović
12. Vesna Krajčič
13. Vera Gradišnik
14. Miroslav Vrankić

DJELATNICI

REDOVITI PROFESORI

Zlatan Car

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

Branko Katalinić

automatizacija; robotika

Nino Stojković

analogna obrada signala; analogni filtri

IZVANREDNI PROFESORI

Vera Gradišnik

poluvodičke komponente; fotodetektor; fotodioda; sunčane ćelije; detekcija boja; tranzijentna analiza; numeričko modeliranje; defekti; senzor slike

Viktor Sučić

vremensko-frekvencijska i statistička analiza i obrada signala

Saša Vlahinić

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

Miroslav Vrankić

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

VIŠI ASISTENTI

Jonatan Lerga

obrada signala; vremensko-frekvencijska obrada signala; obrada slike i videa

ASISTENTI

Vedran Grudenić

računalni vid; obrada slike; prepoznavanje uzoraka i objekata

Vesna Krajčić

automatika; robotika

FACULTY AND STAFF

PROFESSORS

Zlatan Car

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

Branko Katalinić

automation; robotics

Nino Stojković

analog signal processing; analog filters

ASSOCIATE PROFESSORS

Vera Gradišnik

semiconductor devices; photodetector; photodiode; solar cells; color detection; transient analysis; numerical modeling; defects; image sensor

Viktor Sučić

time-frequency and statistical signal analysis and processing

Saša Vlahinić

electrical measurements; power quality measurements; electronic and virtual instrumentation

Miroslav Vrankić

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

SENIOR ASSISTANTS

Jonatan Lerga

signal processing; time-frequency signal processing; image and video processing

ASSISTANTS

Vedran Grudenić

computer vision; image processing; pattern and object detection

Vesna Krajčić

automation; robotics

ZNANSTVENI NOVACI

ASISTENTI

Marko Kršulja

mjerna tehnika; tehnologija oblikovanja; tehnologija obrade II; mjerna i regulacijska tehnika; računalna simulacija proizvodnih procesa

Damir Malnar

vremensko-frekvencijska obrada signala; ugradbeni računalni sustavi

Željka Milanović

poluvodičke komponente; usmjerena perkolacija; nanostrukture

Nicoletta Saulig

vremensko-frekvencijska obrada signala

Leon Šikulec

umjetne inteligencije; inteligentni sustavi; robotika; CNC/NC obradni strojevi;

Ivan Volarić

vremensko-frekvencijska obrada signala

ADMINISTRATIVNO OSOBLJE**Dragica Jurin**

administrativna tajnica

VANJSKI SURADNICI**prof. dr. sc. Dario Matika /
Ministarstvo obrane Republike Hrvatske**

automatika

Marino Franušić / Veleučilište u Rijeci

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

Antonio Linić

elektronika

NASTAVA

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

JUNIOR RESEARCHERS

ASSISTANTS

Marko Kršulja

Measurement techniques; technology of forming; technology of processing II; measuring technique and measuring inspection

Damir Malnar

time-frequency signal processing; embedded systems

Željka Milanović

semiconductor devices; directed percolation; nanostructures

Nicoletta Saulig

time-frequency signal processing

Leon Šikulec

Artificial intelligence; intelligent systems; CNC/NC machines

Ivan Volarić

time-frequency signal processing

ADMINISTRATIVE STAFF**Dragica Jurin**

administrative secretary

ASSOCIATES**Prof. Dario Matika, D. Sc. / Ministry of
Defence of the Republic of Croatia**

automation

Marino Franušić / Polytechnics of Rijeka

electrical measurements; power quality measurements; electronic and virtual instrumentation

Antonio Linić

electronics

EDUCATION

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

**KOLEGIJI NA PREDDIPLOMSKIM
SVEUČILIŠNIM STUDIJIMA**

Automatizacija
 Automatsko upravljanje
 Digitalna logika
 Električne mreže
 Elektronika
 Elektronika I
 Elektronika II
 Elementi automatizacije postrojenja
 Mjerenja u elektrotehnici
 Modeliranje i simuliranje sustava
 Osnove regulacijske tehnike
 Računalom podržana mjerenja
 Signali i sustavi
 Stručna praksa I

**KOLEGIJI NA DIPLOMSKIM
SVEUČILIŠNIM STUDIJIMA**

Analogna obrada signala
 Asistivna tehnologija
 Automatizacija postrojenja i procesa
 Automatizirana instrumentacija
 Digitalna obrada signala
 Digitalna obrada slike
 Industrijska robotika
 Optoelektronika
 Osnove robotike
 Primjena umjetne inteligencije
 Stručna praksa II
 Sustavi digitalnog upravljanja
 Sustavi kontrole
 Umjetna inteligencija u robotici

KOLEGIJI NA STRUČNIM STUDIJIMA

Automatizacija ST
 Digitalna logika ST
 Elektroničke komponente i osnovni sklopovi

 Linearne električne mreže
 Mjerenja u elektrotehnici ST
 Osnove automatske regulacije

**UNDERGRADUATE UNIVERSITY
COURSES**

Automation
 Automatic Control
 Digital Logic
 Electrical Circuits
 Electronics
 Electronics I
 Electronics II
 Elements of Plant Automation
 Electrical Measurements
 System Modelling and Simulation
 Basic of Automatic Control
 Computer Aided Measurement
 Signals and Systems
 Industrial Practice I

**GRADUATE UNIVERSITY
COURSES**

Analog Signal Processing
 Assistive Technology
 Automation of Plants and Processes
 Automatic Instrumentation
 Digital Signal Processing
 Digital Image Processing
 Industrial Robotics
 Optoelectronics
 Fundamentals of Robotics
 AI Implementation
 Industrial Practice II
 Digital Control Systems
 Control Systems
 Artificial Intelligence in Robotics

VOCATIONAL COURSES

Automation ST
 Digital Logic ST
 Semiconductors Devices and Basic Electronic Circuits
 Linear Electrical Circuits
 Electrical Measurements ST
 Fundamentals of Automatic Regulation

**KOLEGIJI NA POSLIJEDIPLOMSKIM
SVEUČILIŠNIM (DOKTORSKIM)
STUDIJIMA**

Ambijentalna inteligencija
Analiza i obrada nestacionarnih signala

Fotoničke komponente
Inteligentni proizvodni sustavi
Mjerenje i analiza kvalitete električne ener-
gije
Mješovita obrada signala
Nelinearni sustavi automatskog upravljanja
Pouzdanost tehničkih sustava
Projektiranje digitalnih sustava
Roboti i manipulatori

**POSTGRADUATE UNIVERSITY
(DOCTORAL) COURSES**

Ambient Intelligence
Nonstationary Signal Analysis and Process-
ing
Photonic Devices
Intelligent Manufacturing Systems
Measurement and Analysis of Electric Power
Quality
Mixed Signal Processing
Nonlinear Control Systems
Reliability of Technical Systems
Digital System Design
Robots and Manipulators

**ZNANSTVENOISTRAŽIVAČKI
RAD**

Obrada signala; elektronika; mjerenje kva-
litete električne energije; robotika; umjetna
inteligencija; automatizacija.

**RESEARCH AND
DEVELOPMENT ACTIVITIES**

Signal processing; electronics; power qual-
ity measurements; robotics; artificial intelli-
gence; automation.

PROJEKTI

Optimizacija i dizajn vremensko-frekvencijskih
distribucija, 069-0362214-1575, Ministarstvo
znanosti, obrazovanja i sporta, Viktor Sučić,
2006 – 2012, znanstvenoistraživački.

Vremensko-frekvencijska analiza signala i
njene primjene, Ministarstvo znanosti, obra-
zovanja i sporta, Viktor Sučić, 2011 – 2012,
bilateralni Hrvatska – Crna Gora, znanstve-
noistraživački projekt.

Numeričko modeliranje, simulacija i optimiza-
cija u oblikovanju lima, Ministarstvo znanosti,
obrazovanja i sporta, Branimir Barišić, 2007
- 2011, Zlatan Car 2011-2014, znanstveno-
istraživački.

CEEPUS; CIII-HR-0108-06-1112 - Concur-
rent Product and Technology Development
- Teaching, Research and Implementation

PROJECTS

Optimisation and Design of Time-Frequency
Distributions, 069-0362214-1575, Ministry
of Science, Education and Sports of the Re-
public of Croatia, Viktor Sučić, 2006 – 2012,
research and scientific project.

Time-Frequency Signal Analysis and Its Ap-
plications, Ministry of Science, Education
and Sports of the Republic of Croatia, Vik-
tor Sučić, 2011 – 2012, bilateral Croatia -
Montenegro, research and scientific project.

Numerical modelling, simulation and opti-
mization in sheet metal forming, Ministry of
Science, Education and Sport of the Repub-
lic Croatia, Branimir Barišić, 2007.-2011.,
Zlatan Car 2011-2014, research and scien-
tific project.

CEEPUS; CIII-HR-0108-06-1112 - Concur-
rent Product and Technology Development -
Teaching, Research and Implementation of

of Joint Programs Oriented in Production and Industrial Engineering; (EU projekt mobilnosti/voditelj projekta)

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-CZ-0201-04-1112 - Knowledge Bridge for Students and Teachers in Manufacturing Technologies; (EU projekt mobilnosti/suradnik na projektu)

CEEPUS; CIII-PL-0007-07-1112 - Modern Methods of the Constitution and Measurement of Geometrical Surface Structure; (EU projekt mobilnosti/suradnik na projektu)

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 mobility project; associate member)

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 mobility project; associate member)

PUBLIKACIJE / PUBLICATIONS

RADOVI U ČASOPISIMA / JOURNAL PAPERS

Sučić, V.; Lerga, J.; Vrankić, M.: *Adaptive Filter Support Selection for Signal Denoising Based on the Improved ICI Rule*, Digital Signal Processing, ISSN: 1051-2004, 23, 65-74, 2013.

Lerga, J.; Sučić, V.; Grbac, E.: *An Adaptive Method for Video Denoising Based on the ICI Rule*, Engineering review, ISSN 1330-9587, 32, 33-40, 2012.

Gradišnik, Vera; Linić, Antonio: *Defects characterization in p-i-n a-Si:H photodiode i-layer.*, JOURNAL OF NON-CRYSTALLINE SOLIDS, ISSN: 0022-3093, 363, 193-198, 2013.

Gradišnik, Vera: *Characterization of a-Si:H P-I-N Photodiode Response*, INFORMACIJE MIDEM-JOURNAL OF MICROELECTRONICS ELECTRONIC COMPONENTS AND MATERIALS, ISSN: 0352-9045, 42, 23-28, 2012.

Čep, Robert; Janásek, Adam; Čepová, Lenka; Petrů, Jana; Hlavatý, Ivo; Car, Zlatan; Hatala, Michal: *Experimental Testing of Exchangeable Cutting Inserts Cutting Ability*, Tehnicki Vjesnik-Technical Gazette, ISSN: 1330-3651, 20 (1), 21-26, 2013.

Tomić, Draško; Ogrizović, Dario; Car, Zlatan: *Cloud Solutions for High Performance Computing: Oxymoron or Realm?*, Tehnicki Vjesnik-Technical Gazette, ISSN: 1330-3651, 20 (1), 177-182, 2013.

Drasnar, Petr; Kudlacek, Jan; Pepelnjak, Tomaž; Car, Zlatan; Pazderova, Martina: *Zinc-Polytetra-fluoroethylene (Zn-PTFE) Composite Coating with Exploitable Tribological Properties*, Journal of Engineering Technology, ISSN: 0747-9664, 30 (1), 30 - 36, 2013.

Cecić, M.; Krajči, V.; Bonković, M.: *Optimization of Model-Reference Variable-Structure Controller Parameters for Direct-Current Motor*, Journal of Computations & Modelling, ISSN: 1792-7625, 2, 67-88, 2012.

MEĐUNARODNI KONGRESI / INTERNATIONAL CONGRESSES

Malnar D.; Sučić V.: *On the Reference Signal Parameters in the Cross Wigner-Ville Distribution Based Instantaneous Frequency Estimation Method*, Proceedings of ISPA 2013 8th International Symposium on Image and Signal Processing and Analysis, ISBN:978-953-184-187-0, 1, 414-417, 2013., Trieste, Italija

Malnar D.; Sučić V.; Stanković S.: *Noise Analysis of the Cross Wigner-Ville Distribution Based Instantaneous Frequency Estimation Method*, Proceedings of IN-TECH 2012, ISBN:978-953-6326-77-8, 1, 79-82, 2012., Rijeka, Hrvatska

Volarić, I.; Lerga, J.; Sučić, V.; Orović, I.; Stanković S.: *Modification of the ICI Rule Applied to Signal Denoising*, Proceedings of International Conference on Innovative Technologies IN-TECH 2012, ISBN 978-953-6326-77-8, 1, 97-101, 2012., Rijeka, Hrvatska

Milanović, Ž.; Saulig, N.; Sučić, V.: *Nonstationary Signal Blind Source Separation Using Clustering Algorithms*, Proceedings of IN-TECH 2013, ISBN: 978-953-6326-88-4, 1, 341-344, 2013., Rijeka

Saulig, N.; Milanović, Ž.; Orović, I.; Stanković, S.; Sučić, V.: *Entropy Based Extraction and Classification of Frequency Hopping Signals from their TFDs*, Proceedings of ELMAR 2013, ISSN: 1334-2630, 1, 169-172, 2013., Zagreb

Saulig, N.; Sučić, V.; Boashash, B.; Seršić, D.: *A Comparison of Quadratic TFDS for Entropy Based Detection of Components Time Supports in Multicomponent Nonstationary Signal Mixtures*, Proceedings of the International Workshop on Systems, Signal Processing and their applications., 435 - 441, 2013.

Saulig, N.; Pustelnik, N.; Borgnat, P.; Flandrin, P.; Sučić, V.: *Instantaneous Counting of Components in Nonstationary Signals*, Proceedings of European Signal Processing Conference EUSIPCO 2013, 2013.

Milanović, Ž.; Marasović, I.; Zanchi, V.: *Analysis of PD response on different input voltages and incident light wavelengths*, Proceedings of IN-TECH 2012, ISBN: 978-953-6326-77-8, 1, 381-385, 2012., Rijeka

Janeš, Gordan; Car, Zlatan; Ogrizović, Dario: *A Fast Genetic Algorithm Based on Single Gene Evaluation Fitness Mechanism for Job-Shop Scheduling Problem*, International Conference on Innovative Technologies IN-TECH Budapest, ISBN: 978-953-6326-88-4, 1, 345-348, 2013., Faculty of Engineering University of Rijeka, Croatia

Kršulja, Marko; Štefančić, Mauro; Car, Zlatan; Pepelnjak, Tomaž; Plančak, Miroslav; Vojkovský, Karel: *Finite Analysis of Deep Drawing Tool Geometry for Thin Walled Tin Can*, International Conference on Innovative Technologies IN-TECH Budapest, ISBN: 978-953-6326-88-4, 1, 401 - 404, 2013., Faculty of Engineering University of Rijeka, Croatia

Ogrizović, Dario; Car, Zlatan; Janeš, Gordan; Kovačić, Božidar: *Doing Science in the Cloud*, International Conference on Innovative Technologies IN-TECH Budapest, ISBN: 978-953-6326-88-4, 1, 385 - 388, 2013., Faculty of Engineering University of Rijeka, Croatia

Šikulec, Leon; Perčić, Katja; Plančak, Miroslav; Car, Zlatan; Kačmarčik, Igor; Štrbac, Branko: *Analysing Anomalies of Injection Tooling Mold Design*, International Conference on Innovative Technologies IN-TECH Budapest, ISBN: 978-953-6326-88-4, 1, 425 - 428, 2013., Faculty of Engineering University of Rijeka, Croatia

Zoubek, M.; Kudláček, Jan; Drašnar, Petr; Herrmann, F.; Valeš, M.; Car, Zlatan: *The New Wear-Resistant Coating Systems Containing Carbon Nanotubes*, International Conference on Innovative Technologies IN-TECH Budapest, ISBN: 978-953-6326-88-4, 1, 173 - 176, 2013., Faculty of Engineering University of Rijeka, Croatia

POZVANA PREDAVANJA / INVITED LECTURES

Plančak, Miroslav; Movrin, Dejan; Car, Zlatan; Durakbasa N.; Vilotić, Dragiša: *Orbital Forging of Cross Joint Component*, International Conference on Innovative Technologies IN-TECH Budapest, 2013. Budimpešta, Mađarska

Gradišnik, V.: *The Explanation of Observed Similar Behaviour of a-Si:H P-I-N Photodiode and Retinal Response*, 2012. FBK, Trento, Italija

KNJIGE / BOOKS

Car, Zlatan; Kudláček, Jan; Szalay, Tibor: *Proceedings of International Conference on Innovative Technologies IN-TECH 2013*, Faculty of Engineering University of Rijeka, 978-953-6326-88-4, 2013., Rijeka

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

Technical 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

5.2 ZAVOD ZA BRODOGRADNJU I INŽENJERSTVO MORSKE TEHNOLOGIJE / DEPARTMENT OF NAVAL ARCHITECTURE AND OCEAN ENGINEERING

Predstojnik Zavoda / Department Head:

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

<http://www.riteh.uniri.hr/ustroj/zbimt/>



1. Dunja Matulja
2. Iva Kolacio
3. Jasna Prpić-Oršić
4. Nerina Čugelj
5. Roko Dejhalla
6. Damir Kolić
7. Anton Turk
8. Marko Hadjina



9. Nikša Fafandjel
10. Bruno Čalić
11. Tin Matulja
12. Albert Zamarin

DJELATNICI

REDOVITI PROFESORI

Bruno Čalić

plovnost i stabilitet broda; stabilitet broda u eksploataciji; osnivanje plovniha objekata I i II; objekti morske tehnologije; projektiranje malih plovniha objekata; brodske forme; hidrostatika broda; projektiranje malih plovniha objekata; metodologija projektiranja plovniha objekata; osnivanje plovniha objekata

Roko Dejhalla

otpor i propulzija plovniha objekata; brodski propulzori; gradnja i održavanje malih plovniha objekata

Nikša Fafandjel

gradnja i opremanje plovniha objekata; tehnologija i organizacija brodogradnje; osnivanje brodogradilišta i proizvodnih procesa; oprema broda; upravljanje projektima u brodogradnji; analiza tržišta; tehnološko prognoziranje i ugovaranje plovniha objekata

Jasna Prpić-Oršić

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

IZVANREDNI PROFESORI

Albert Zamarin

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

DOCENTI

Marko Hadjina

gradnja i opremanje plovniha objekata; tehnologija i organizacija brodogradnje; osnivanje brodogradilišta i proizvodnih procesa; simulacijsko modeliranje brodograđevnih procesa; analiza tržišta; ugovaranje i tehnološko prognoziranje

Tin Matulja

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

FACULTY AND STAFF

PROFESSORS

Bruno Čalić

seaworthiness and stability of the ship; ship hull forms; ship hydrostatics; ship stability in exploitation; ship design I & II; ocean mobile and fixed structures; small craft design; methodology of floating objects design; selected chapter on floating objects design

Roko Dejhalla

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

Nikša Fafandjel

ship production and outfitting; shipbuilding technology and organisation; shipyard and production process design; ship equipment; project management in shipbuilding; market analysis; technological forecasting and contracting

Jasna Prpić-Oršić

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

ASSOCIATE PROFESSORS

Albert Zamarin

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

ASSISTANT PROFESSORS

Marko Hadjina

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

Tin Matulja

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

VIŠI ASISTENTI

Damir Kolić

tehnologija i organizacija brodogradnje; vitka proizvodnja; tehnološki procesi brodogradnje; ugovaranje

Anton Turk

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

ZNANSTVENI NOVACI

ASISTENTI

Dunja Matulja

otpor i propulzija plovnih objekata; dinamika broda; brodski propulzori; pomorstvenost plovnih objekata

ADMINISTRATIVNO OSOBLJE

Nerina Čugelj

administrativna tajnica

VANJSKI SURADNICI

Robert Grubiša / Brodograđevna industrija 3. MAJ

osnivanje plovnih objekata

dr. sc. Alan Klanac / As2con - Alveus

strukturna analiza broda

Iva Kolacio

čvrstoća broda

Siniša Lučin / Brodograđevna industrija 3. MAJ

konstrukcija broda

Mirela Marin / M-Inženjering

osnivanje plovnih objekata

Željko Monjac / Brodograđevna industrija 3. MAJ

tehnologija brodogradnje

Romano Pičuljan / Pičuljan Marine

gradnja i održavanje malih plovnih objekata

Rajko Rubeša / Brodograđevna industrija 3. MAJ

opremanje i remont broda; tehnološki procesi gradnje broda

SENIOR ASSISTANTS

Damir Kolić

shipbuilding technology and organisation; lean manufacturing; technological processes of shipbuilding; contracts

Anton Turk

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

JUNIOR RESEARCHERS

ASSISTANTS

Dunja Matulja

ship resistance and propulsion; ship dynamics; ship propulsion devices; seakeeping

ADMINISTRATIVE STAFF

Nerina Čugelj

administrative secretary

ASSOCIATES

Robert Grubiša / Shipbuilding industry 3. MAJ

ship design

Alan Klanac, PhD / As2con - Alveus

ship structural analysis

Iva Kolacio

ship strength

Siniša Lučin / Shipbuilding industry 3. MAJ

ship construction

Mirela Marin / M-Inženjering

ship design

Željko Monjac / Shipbuilding industry 3. MAJ

shipbuilding technology

Romano Pičuljan / Pičuljan Marine

small craft building and maintenance

Rajko Rubeša / Shipbuilding industry 3. MAJ

ship outfitting and repair; technological processes in shipbuilding

Davor Sablić / Brodograđevna industrija 3. MAJ

ugovaranje plovni objekata

Gordana Semijalac / Brodarski institut

hidrodinamika broda

Davor Sablić / Shipbuilding industry 3. MAJ

ship negotiation process

Gordana Semijalac / Brodarski institut

marine hydrodynamics

NASTAVA

Nastava iz područja: projektiranje plovni objekata, tehnologija i organizacija brodogradnje, konstrukcija plovni objekata, hidrodinamika plovni objekata.

KOLEGIJI NA PREDDIPLOMSKIM SVEUČILIŠNIM STUDIJIMA

Brodске forme

Gradnja i održavanje malih plovni objekata SV

Hidrodinamika plovni objekata I

Konstrukcija broda I

Konstrukcija broda II

Oprema broda

Osnove dinamike broda

Osnove gradnje broda

Plovnost i stabilitet broda

Stručna praksa I

Tehnologija brodogradnje

Tehnološki procesi brodogradnje

Uvod u plovnе objekte

KOLEGIJI NA DIPLOMSKIM SVEUČILIŠNIM STUDIJIMA

Brodogradilišta

Brodski propulzori

Čvrstoća broda

Dinamika pomorskih konstrukcija

Hidrodinamika plovni objekata II

Konstrukcija malih plovni objekata

Metodologija gradnje plovni objekata

Objekti morske tehnologije

Oprema malih plovni objekata

Opremanje i remont broda

Organizacija i poslovanje brodogradilišta

EDUCATION

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

UNDERGRADUATE UNIVERSITY COURSES

Ship Hull Forms

Small Craft Building and Maintenance SV

Marine Hydrodynamics I

Ship Construction I

Ship Construction II

Ship Equipment

Basic Ship Dynamics

Basics of Ship Production

Seaworthiness and Stability of the Ship

Industrial Practice I

Shipbuilding Technology

Technological Processes of Shipbuilding

Introduction to Floating Objects

GRADUATE UNIVERSITY COURSES

Shipyards

Ship Propulsion Devices

Ship Strength

Dynamics of Off Shore Structures

Marine Hydrodynamics II

Small Craft Construction

Methodology of Shipbuilding

Ocean Mobile & Fixed Structures

Small Crafts Outfitting

Ship Outfitting and Repair

Shipyards Organisation and Management

Osnivanje plovniha objekata I
 Osnivanje plovniha objekata II
 Pomorstvenost plovniha objekata
 Projektiranje malih plovniha objekata
 Stabilitet broda u eksploataciji
 Strukturna analiza broda
 Stručna praksa II
 Tehnološki proces gradnje broda
 Ugovaranje plovniha objekata
 Upravljanje projektima u brodogradnji
 Vibracije broda

Ship Design I
 Ship Design II
 Seakeeping
 Small Craft Design
 Ship Stability in Exploitation
 Ship Structural Analysis
 Industrial Practice II
 Technological Process of Ship Production
 Ship Negotiation Process
 Project Management in Shipbuilding
 Ship Vibrations

KOLEGIJI NA STRUČNIM STUDIJIMA

Brodске forme ST
 Gradnja i održavanje malih plovniha objekata
 Hidrostatika broda
 Konstrukcija broda
 Oprema broda ST
 Osnivanje plovniha objekata
 Plovni objekti
 Strukturni elementi broda
 Stručna praksa I
 Stručna praksa II
 Tehnologija brodogradnje I
 Tehnologija brodogradnje II
 Tehnološki procesi gradnje i remonta broda

VOCATIONAL COURSES

Ship Hull Forms ST
 Small Craft Building and Maintenance
 Ship Hydrostatics
 Ship Construction
 Ship Equipment ST
 Ship Design
 Floating Objects
 Ship Structural Elements
 Professional Practice I
 Professional Practice II
 Shipbuilding Technology I
 Shipbuilding Technology II
 Technological Processes of Shipbuilding and Repair

KOLEGIJI NA POSLIJEDIPLOMSKIM SVEUČILIŠNIM (DOKTORSKIM) STUDIJIMA

Integralna tehnologija gradnje broda
 Izabrana poglavlja iz dinamike plovniha objekata
 Izabrana poglavlja iz metodologije gradnje plovniha objekata
 Izabrana poglavlja iz osnivanja plovniha objekata
 Izabrana poglavlja iz otpora plovniha objekata
 Izabrana poglavlja iz propulzije plovniha objekata
 Metodologija projektiranja plovniha objekata
 Pomorstvenost i upravljivost plovniha objekata
 Projektiranje strukture plovniha objekata

POSTGRADUATE UNIVERSITY (DOCTORAL) COURSES

Integrated Ship Production Technology
 Selected Topics in Marine Dynamics
 Selected Topics in Floating Objects Production Methodology
 Selected Topics in Ship Design
 Selected Topics in Ship Resistance
 Selected Topics in Ship Propulsion
 Methodology of Floating Objects Design
 Seakeeping and Manoeuvrability
 Floating Objects Structural Design

ZNANSTVENOISTRAŽIVAČKI RAD

Hidrodinamičko opterećenje i odziv pomorskih objekata na morskim valovima; projektiranje strukture broda, nove tehnologije kod projektiranja i preinaka brodskih konstrukcija, tehnološkičnost kod projektiranja i izrade brodskih konstrukcija; otpor i propulzija plovnih objekata, hidrodinamičke optimizacije; primjena naprednih tehnologija i metoda gradnje i opremanja plovnih objekata; organizacija brodograđevnog poslovnog i proizvodnog procesa; osnivanje i unapređenje brodograđilišta i proizvodnih procesa, primjena simulacijskog modeliranja, višekriterijskog odlučivanja i LEAN metodologije za unapređenje brodograđevnog procesa, analiza tržišta; ugovaranje i tehnološko prognoziranje.

PROJEKTI

Numeričko modeliranje hidrodinamičkog opterećenja i odziva pomorskih objekata, 069-0691736-1667, Ministarstvo znanosti, obrazovanja i sporta, Jasna Prpić-Oršić, 2007 - 2013, znanstvenoistraživački.

Fafandjel, N., Hadjina, M., Matulja, T.: Ekspertna ocjena mogućnosti izgradnje Nov. 473 i Nov. 474 u „Brodosplitu“ u zadanim rokovima, Tehnički fakultet u Rijeci, Rijeka, 2013.

PUBLIKACIJE / PUBLICATIONS

RADOVI U ČASOPISIMA / JOURNAL PAPERS

Prpić-Oršić, J.; Turk, A.; Dejhalla, R.: *Genetic-algorithm-based Method for Ship Extreme Behavior Assessment*, Naval Engineers Journal (ASNE), ISSN: 0028-1425, 124 (4), 75-84, 2012., Alexandria

Zamarin, A.; Matulja, T.; Hadjina, M.: *Methodology for Optimal Mast and Standing Rigging Selection of a Racing Yacht Using AHP and FEM*, Brodogradnja, ISSN 0007-215X, 64 (1), 11-21, 2013., Zagreb

RESEARCH AND DEVELOPMENT ACTIVITIES

Hydrodynamic loads and response of marine objects; ship structural design, new technologies in ship structural design and conversions, technologicality in ship structure design and construction; ship resistance and propulsion, hydrodynamic optimizations; 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, multi-criteria decision making and LEAN methodologies to improve the shipbuilding process, market analysis, contracting and technological forecasting.

PROJECTS

Numerical modeling of hydrodynamic loads and response of marine objects, 069-0691736-1667, Ministry of Science, Education and Sports of the Republic of Croatia, Jasna Prpić-Oršić, 2007.– 2013., research and scientific project.

Fafandjel, N., Hadjina, M., Matulja, T.: Expert Estimation of Possibility for Building a Newbuilding 473 and 474 in Shipyard "Brodosplit" to set deadlines, University Rijeka - Technical Faculty, Rijeka, Croatia, 2013.

MEĐUNARODNI KONGRESI / INTERNATIONAL CONGRESSES

Prpić-Oršić, J.; Faltinsen, O.M.; Mrakovčić, T.: *Influence of ship behaviour in a seaway on CO2 emissions*, Proceedings of the 32nd International Conference on Ocean, Offshore and Arctic Engineering (DVD), OMAE 2103, Order No.: I913DV, 1-8, 2013., Nantes, Francuska

Turk, A.; Prpić-Oršić, J.; Ribeiro e Silva, S.; Guedes Soares, C.: *Parametric rolling simulations of container ships*, Proceedings of the 32nd International Conference on Ocean, Offshore and Arctic Engineering (DVD), OMAE 2103, Order No.: I913DV, 1-8, 2013., Nantes, Francuska

Begović, E.; Bertorello, C.; Prpić-Oršić, J.: *Roll damping coefficients assessment and comparison for round bilge and hard chine hullforms*, Proceedings of the 32nd International Conference on Ocean, Offshore and Arctic Engineering (DVD), OMAE 2103, Order No.: I913DV, 1-8, 2013., Nantes, Francuska

Šikić, I.; Turk, A.; Prpić-Oršić, J.: *Operation of ULCS - Real life*, 2 nd TULCS (Tools for Ultra Large Containerships) Workshop, ISBN: 978-953-95746-1-8, 21-25, 2012., Split, Hrvatska

Turk, A.; Prpić-Oršić, J.; Guedes Soares, C.: *Fast parametric rolling simulation of container-ship*, 2 nd TULCS (Tools for Ultra Large Containerships) Workshop, ISBN: 978-953-95746-1-8, 21-25, 2012., Split, 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 Excellence, Trondheim, Norveška / Norway

Technical University of Lisbon, Instituto Superior Tecnico, Lisabon, Portugal / Portugal

University of Technology, Krakow/Krakov, Poljska / Poland

University of Trieste, Department of Naval Architecture and Ocean Engineering, Trieste, Italija / Italy

University of Washington, Department of Industrial and Systems Engineering, Seattle, SAD / USA

University of Naples, Naples, Italija / Italy

5.3 ZAVOD ZA ELEKTROENERGETIKU / DEPARTMENT OF ELECTRIC POWER SYSTEMS

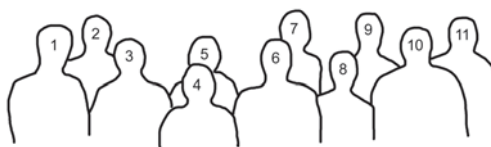
Predstojnik Zavoda / Department Head:

doc. prof. dr. sc. / Assist. Prof. D. Sc. Dubravko Franković

http://www.riteh.uniri.hr/zav_katd_sluz/zee/osn_pod/index.html



1. Alfredo Višković
2. Livio Šušnjić
3. Juraj Šimunić
4. Branka Dobraš
5. Dragica Jurin
6. Dubravko Franković
7. Andrea Andrijašević
8. Marijana Živić-Đurović
9. Vedran Kirinčić
10. Srđan Skok
11. Saša Sladić



DJELATNICI

REDOVITI PROFESORI

Juraj Šimunić

osnove elektrotehnike; elektroenergetska postrojenja; vođenje elektroenergetskog sustava; procesna informatika; istosmjerni razvodi EEP-a

Livio Šušnjić

električni strojevi; primjena MKE u području elektromagnetizma

IZVANREDNI PROFESORI

Srđan Skok

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

Alfredo Višković

elektroenergetski sustavi; tržište električne energije; razvoj energetske projekata

DOCENTI

Neven Bulić

upravljanje elektromotornim pogonima; digitalni sustavi upravljanja

Dubravko Franković

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

Saša Sladić

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

VIŠI PREDAVAČI

Branka Dobraš

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

Marijana Živić-Đurović

kvaliteta električne energije, pouzdanost; mikro-mreže

ASISTENTI

Vedran Kirinčić

vođenje elektroenergetskog sustava; električna postrojenja

FACULTY AND STAFF

PROFESSORS

Juraj Šimunić

fundamentals of electrical engineering; electrical power plant; electric power management systems; process informatics of electrical power system; DC distribution

Livio Šušnjić

electrical machines; FEM application in the electromagnetics

ASSOCIATE PROFESSORS

Srđan Skok

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

Alfredo Višković

electric power systems; electricity markets; power generation project development

ASSISTANT PROFESSORS

Neven Bulić

control of electrical drives; digital control systems

Dubravko Franković

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

Saša Sladić

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

SENIOR LECTURER

Branka Dobraš

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

Marijana Živić-Đurović

quality of electricity supply, reliability; microgrids

ASSISTANTS

Vedran Kirinčić

power system control; electric facilities

Goran Klobučar

elektrane; osnove elektrotehnike

ZNANSTVENI NOVACI

ASISTENTI

Andrea Andrijašević

digitalna obrada signala govora; akustika prostora; elektroakustički pretvarači

Aleksandra Kalinić

elektroenergetski sustavi

ADMINISTRATIVNO OSOBLJE

Dragica Jurin

administrativna tajnica

VANJSKI SURADNICI

izv. prof. dr. sc. Antun Kraš / Pomorski fakultet, Sveučilište u Rijeci

doc. dr. sc. Vitomir Komen / HEP ODS

Marin Antunović

v. pred. Josip Karneluti / 5E

Ranko Lončarić

Andrej Maraš / INA d.d.

Ivan Mužić / Hrvatski registar brodova

Neven Pavlović / T-HT grupa

Vladimir Valentić / HEP OPS

Zoran Zbunjak / HEP OPS

NASTAVA

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

KOLEGIJI NA PREDDIPLOMSKIM SVEUČILIŠNIM STUDIJIMA

Električna postrojenja

Električni strojevi

Elektroenergetske mreže

Elektromotorni pogoni

Goran Klobučar

electric power systems; electrical engineering fundamentals

JUNIOR RESEARCHERS

ASSISTANTS

Andrea Andrijašević

digital processing of speech signals; room acoustics; electroacoustic transducers

Aleksandra Kalinić

electric power systems

ADMINISTRATIVE STAFF

Dragica Jurin

administrative secretary

ASSOCIATES

Assoc. Prof. Antun Kraš, D. Sc. / Faculty of maritime studies, University of Rijeka

Assist. Prof. Vitomir Komen, D. Sc. / HEP DSO

Marin Antunović

Sen. Lect. Josip Karneluti / 5E

Ranko Lončarić

Andrej Maraš / INA d.d.

Ivan Mužić / Croatian ship register

Neven Pavlović / T-HT group

Vladimir Valentić / HEP TSO

Zoran Zbunjak / HEP TSO

EDUCATION

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

UNDERGRADUATE UNIVERSITY COURSES

Electric Power Substations

Electrical Machines

Electric Power Networks

Electrical Drives

Elektrotehnika R
Energetska elektronika
Modeliranje procesnih informacijskih sustava
Osnove elektrotehnike I
Osnove elektrotehnike II

KOLEGIJI NA DIPLOMSKIM SVEUČILIŠNIM STUDIJIMA

Brodaska elektrotehnika
Elektrane
Elektroenergetski sustavi
Modeliranje procesne informatike električnih postrojenja
Numerička analiza u elektromagnetizmu
Prijenos i distribucija električne energije
Projektiranje električnih postrojenja
Teorijska elektrotehnika
Upravljanje elektromotornim pogonima
Vođenje elektroenergetskog sustava
Zaštita i automatika električnih postrojenja

KOLEGIJI NA STRUČNIM STUDIJIMA

Električne energetske mreže
Elektroenergetska postrojenja
Elementi elektroenergetskih postrojenja
Izgradnja i održavanje elektroenergetskih postrojenja
Osnove električnih strojeva
Osnove elektrotehnike
Osnove elektrotehnike ST I
Osnove elektrotehnike ST II

Osnove energetske elektronike
Osnove projektiranja elektroenergetskih postrojenja
Stručna praksa I
Stručna praksa II
Zaštita električnih postrojenja

Electrical Engineering R
Power Electronics
Modeling of Process Information systems
Fundamentals of Electrical Engineering I
Fundamentals of Electrical Engineering II

GRADUATE UNIVERSITY COURSES

Ships Electrical Engineering
Power Plants
Electric Power Systems
Modeling of Process Informatics in Power System
Numerical Analysis in Electromagnetics
Electrical Power Transfer and Distribution
Electric Power Substation Design
Theoretical Electrical Engineering
Control of Electrical Drives
Power System Control
Power System Protection and Automation

VOCATIONAL COURSES

Electrical Power Networks
Electrical Power System
Electric Power Station Equipment
Electric Power Plant Building and Maintenance
Fundamentals of Electrical Machines
Fundamentals of Electrical Engineering
Fundamentals of Electrical Engineering ST I
Fundamentals of Electrical Engineering ST II
Fundamentals of Power Electronics
Fundamentals of Electric Power Substation Design
Professional Practice I
Professional Practice II
Protective System in Electrical Power System

KOLEGIJI NA POSLIJEDIPLOMSKIM SVEUČILIŠNIM (DOKTORSKIM) STUDIJIMA

Automatizacija postrojenja i sustava
Modeli stohastičkih procesa informacija

POSTGRADUATE UNIVERSITY (DOCTORAL) COURSES

Plant and System Automatization
Models of Stochastic Information Processes

ZNANSTVENOISTRAŽIVAČKI RAD

Automatsko vođenje elektroenergetskog sustava; napredne mreže; mikromreže; modeliranje elektroenergetskog sustava u stvarnom vremenu; nadzor, zaštita i upravljanje elektroenergetskog sustava u stvarnom vremenu; sinkronizirana mjerenja; estimacija stanja elektroenergetskog sustava; nadzor, zaštita i upravljanje elektroenergetskog sustava u realnom vremenu; tehnologija sinkroniziranih mjerenja fazora.

RESEARCH AND DEVELOPMENT ACTIVITIES

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; power system state estimation; wide area monitoring, protection and control of the power system in real time; synchronized measurement technology.

PROJEKTI

Inteligentni sustavi u prijenosnoj elektroenergetskoj mreži, 04/23, Hrvatska zaklada za znanost i Hrvatski operator prijenosnog sustava d.o.o., Srđan Skok, 2010-2013, znanstvenoistraživački projekt.

Estimacija stanja elektroenergetskog sustava podržana sinkroniziranim mjerenjima fazora, 03.01/195, Hrvatska zaklada za znanost, Vedran Kirinčić, ožujak 2012 – lipanj 2012, Manchester, Velika Britanija, znanstvenoistraživački projekt.

PROJECTS

Intelligent Systems in Power Transmission Grids, 04/23, Croatian Science Foundation and HEP – Transmission System Operator, Srđan Skok, 2010-2013, research and scientific project.

Power system state estimation assisted by synchronized phasor measurements, 03.01/195, Croatian Science Foundation, Vedran Kirinčić, March 2012 – June 2012, Manchester, United Kingdom, research and scientific project.

PUBLIKACIJE / PUBLICATIONS

RADOVI U ČASOPISIMA / JOURNAL PAPERS

Radulović, D.; Skok, S.; Kirinčić, V.: *Cogeneration – investment dilemma*, Energy, ISSN 0360-5442, 48, 177-187, 2012.

Kirinčić, V.; Skok, S.; Marušić, A.: *A Hybrid Constrained State Estimator with Pseudo Injection Measurements*, Przegląd Elektrotechniczny, ISSN 0033-2097, 89, 137-142, 2013.

Kirinčić, V.; Skok, S.; Terzija, V.: *A Hybrid State Estimator with Pseudo-Flows and Pseudo-Injections*, International Review on Modelling and Simulations, ISSN 1974-9821, 6, 218-226, 2013.

Kirinčić, V.; Skok, S.; Pavić, I.: *Power system state estimation based on PMU measurements vs SCADA measurements*, International Review on Modelling and Simulations, ISSN 1974-9821, 5, 311-318, 2012.

Sumina, Damir; Bulić, Neven; Mišković, Mato: *Application of a DSP-based control system in a course in synchronous machines and excitation systems*, International journal of electrical engineering education (0020-7209) 49 (2012), 10.7227/IJEEE.49.3.12, 3, 334-348, 2012., Manchester University Press

Sumina, Damir; Bulić, Neven; Vražić, Mario: *Load Angle Control of a Synchronous Generator*, Przegląd Elektrotechniczny (0033-2097) 88, 0033-2097, 3a, 225-231, 2012., Warszawa

Višković, Alfredo; Valentić, Vladimir; Franki, Vladimir: *Impact of carbon prices on CCS investment in South East Europe*, Economics and Policy of Energy and Environment, 3, 2013., Milano

MEĐUNARODNI KONGRESI / INTERNATIONAL CONGRESSES

Matica, R., Kirinčić, V., Skok, S., Marušić, A.: *Transmission line impedance estimation based on PMU measurements*, Proceedings of EUROCON 2013, ISBN 978-1-4673-2231-7, 1, 6, 2013., Zagreb, Hrvatska

Skok, S., Kirinčić, V., Brnobić, D., Čerina, Z., Bulat, H.: *System integrity protection and control based on synchronized measurements*, Proceedings of the 4th International conference on Power Engineering, Energy and Electrical Drives - POWERENG, ISBN 978-1-4673-6390-7, 1, 6, 2013., Istanbul, Turska

Šaša, P.; Skok, S.; Kirinčić, V.: *Urban electric vehicle development as part of Smart Grid*, Proceedings on International Conference on Innovative Technologies IN-TECH 2012, ISBN 978-953-6326-77-8, 1, 4, 2012., Rijeka, Hrvatska

Senčić, T.; Kirinčić, V.; Lenić, K.: *Electric vehicle modelling for real application*, Proceedings of the international Congress Energy and the Environment, ISBN: 978-953-6886-18-0, 1, 12, 2012., Opatija, Hrvatska

Andrijašević, A., Domitrović, H., Šimunić J.: *The difference between CCV and CVC logatome form intelligibility levels observed in two acoustically different spaces*, Proceedings of the AIA-DAGA Conference on Acoustics 2013, Merano, 4, 2013., Merano, Italija

Franković D., Šestan, M., Karlović, D.: *Dual axis tracking system with PV panels as a teaching tool*, Proceedings on International Conference on Innovative Technologies IN-TECH 2013, ISBN 978-953-6326-88-4, 1, 4, 2013., Budimpešta, Mađarska

M. Šestan, Franković. D.,D. Karlović: *Numerical simulation and construction of a hybrid PV/T panel*, Proceedings on International Conference on Innovative Technologies IN-TECH 2013, ISBN 978-953-6326-88-4, 1, 4, 2013., Budimpešta, Mađarska

Bulić, Neven; Dirnberger, Peter; Silber, Sigfried: *New approach for rotor displacement measurement in bearing less motors*, XXII Symposium Electromagnetic Phenomena in Nonlinear Circuits Proceedings, 978-9536326-74-7, 2, 2012., Rijeka

Štimac, Goranka; Braut, Sanjin; Bulić, Neven; Žigulić, Roberto: *Modeling and experimental verification of a flexible rotor supported by active magnetic bearings*, XXII Symposium Electromagnetic Phenomena in Nonlinear Circuits Proceedings, 978-9536326-74-7, 2, 2012., Rijeka

Bulić, Neven; Dirnberger, Peter; Silber, Sigfried: *New digital sensor design for rotor displacement measurement based on the coupled oscillators*, EDERC2012: 5th European DSP Education and Research Conference Proceedings Texas Instruments, 978-0-9573832-0-3, 5, 2012., Amsterdam

POZVANA PREDAVANJA / INVITED LECTURES

Bulic, Neven; Sumina, Damir; Car, Zlatan: *DSP-based control system for excitation control of synchronous generator*, International Conference on Innovative Technologies IN-TECH, 2012. Rijeka, Hrvatska

KNJIGE / BOOKS

Branimir Pavković, Vlasta Zanki, Željka Hrs Borković, Kristian Lenić, Dubravko Franković, Marino Grozdek, Vesna Bukarica: *Priručnik za energetska certificiranje zgrada dio 2*, Program ujedinjenih naroda - UNDP, ISBN: 978-953-7429-40-9, 2012., Zagreb

Alfredo Višković: *Energetski izazov*, Edicije d.o.o.; Lidermedija, ISBN: 978-953-7953-00-3, 2013., Zagreb

MEĐUNARODNA SURADNJA / INTERNATIONAL COLLABORATIONS

The University of Manchester, The School of Electrical and Electronic Engineering, Velika Britanija / United Kingdom

Quanta Technology, Sjedinjene Američke Države / United States of America

CEDRAT, Francuska / France

Emerald Group Publishing Limited, Engleska / United Kingdom

ABB Crane Systems, Västerås, Švedska / Sweden

Texas Instruments, Dallas, Texas, Sjedinjene Američke Države / United States of America

Johannes Kepler Universität Linz, Institut für elektrische Antriebe und Leistungselektronik, Linz, Austrija / Austria

Linz Center of Mechatronics GmbH, Linz, Austrija / Austria

Austrian Center of Competence in Mechatronics GmbH, Linz, Austrija / Austria

5.4 ZAVOD ZA INDUSTRIJSKO INŽENJERSTVO I MANAGEMENT / DEPARTMENT OF INDUSTRIAL ENGINEERING AND MANAGEMENT

Predstojnik Zavoda / Department Head:

izv. prof. dr. sc. / Assoc. Prof. D. Sc. Milan Ikonić

<http://www.riteh.uniri.hr/ustroj/ziim/>



1. Mladen Perinić
2. Sandro Doboviček
3. Zoran Jurković
4. Milan Ikonić
5. Samir Žic
6. Tonči Mikac
7. Vesna Fraelić
8. Goran Čukor
9. Sven Maričić
10. Duško Pavletić



DJELATNICI

REDOVITI PROFESORI

Goran Cukor

napredni obradni sustavi i tehnologije; modeliranje i optimiranje obradnih procesa

Tonči Mikac

proizvodno strojarstvo; proizvodni sustavi; CIM, planiranje i upravljanje proizvodnjom, proizvodni management; organizacija poslovnih sustava

Duško Pavletić

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

Mladen Perinić

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

IZVANREDNI PROFESORI

Milan Ikončić

proizvodno strojarstvo; proizvodni sustavi; CIM, planiranje i upravljanje proizvodnjom; proizvodni management; organizacija poslovnih sustava

Zoran Jurković

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

VIŠI ASISTENTI

Sven Maričić

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

ASISTENTI

Sandro Doboviček

proizvodno strojarstvo; proizvodni sustavi; CIM, planiranje i upravljanje proizvodnjom; proizvodni management; organizacija poslovnih sustava

FACULTY AND STAFF

PROFESSORS

Goran Cukor

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

Tonči Mikac

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

Duško Pavletić

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

Mladen Perinić

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

ASSOCIATE PROFESSORS

Milan Ikončić

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

Zoran Jurković

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

SENIOR ASSISTANTS

Sven Maričić

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

ASSISTANTS

Sandro Doboviček

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

Maja Forempoher Škuver

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

Hrvoje Radelja

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

Samir Žic

proizvodno strojarstvo; proizvodni sustavi; CIM, planiranje i upravljanje proizvodnjom, proizvodni management; organizacija poslovnih sustava

ADMINISTRATIVNO OSOBLJE**Vesna Fraelić**

administrativna tajnica

VANJSKI SURADNICI**akademik Elso Kuljanić / HAZU**

obrada odvajanjem čestica

Dorjan Jermaniš / Istarski vodovod d.o.o. Buzet

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

Toni Vidolin / Brodogradilište 3. MAJ, Rijeka

tehnologija zavarivanja

Aleksandar Vuković / NAVIS CONSULT d.o.o., Rijeka

proizvodno strojarstvo; proizvodni sustavi; CIM, planiranje i upravljanje proizvodnjom; proizvodni management; organizacija poslovnih sustava

Mauro Štefančić / Alpron, Jurdani

mjeriteljstvo

NASTAVA

Nastava iz područja: mjerne tehnike i sustava kvalitete, organizacije i operacijskog menadžmenta, proizvodne tehnologije, pro-

Maja Forempoher Škuver

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

Hrvoje Radelja

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

Samir Žic

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

ADMINISTRATIVE STAFF**Vesna Fraelić**

administrative secretary

ASSOCIATES**Academic Elso Kuljanić / HAZU**

machining processes

Dorjan Jermaniš / Istarski vodovod d.o.o. Buzet

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

Toni Vidolin / Shipyard 3. MAJ, Rijeka

welding technology

Aleksandar Vuković / NAVIS CONSULT d.o.o., Rijeka

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

Mauro Štefančić / Alpron, Jurdani

metrology

EDUCATION

Lectures in the field of: measuring technique and quality systems, organization and operational management, manufacturing tech-

izvodne opreme i robotike, projektiranja procesa.

KOLEGIJI NA PREDDIPLOMSKIM SVEUČILIŠNIM STUDIJIMA

Mjerenja i kontrola kvalitete
Organizacija i ekonomika poslovnih sustava

Osiguranje kvalitete
Planiranje i upravljanje proizvodnjom
Proizvodne tehnologije
Proizvodni strojevi, alati i naprave

Tehnološki procesi
Zavarivanje I

KOLEGIJI NA DIPLOMSKIM SVEUČILIŠNIM STUDIJIMA

CAD/CAPP/CAM
CNC/NC obradni strojevi
Ljevarstvo
Management i organizacijski razvoj

Mjerenje u proizvodnji
Napredni proizvodni postupci
Obrada odvajanjem čestica
Organizacija proizvodnje
Proizvodni management
Projektiranje proizvodnih sustava
Projektiranje tehnoloških procesa
Projektni management
Računalna simulacija proizvodnih procesa

Računalom integrirana proizvodnja
Spajanje materijala
Tehnička logistika
Tehnologija oblikovanja
Upravljanje kvalitetom
Zavarivanje II

KOLEGIJI NA STRUČNIM STUDIJIMA

Alati i naprave
Mjerna tehnika ST

nologies, manufacturing equipments and robotics, process planning.

UNDERGRADUATE UNIVERSITY COURSES

Measurements and Quality Control
Organization and Economics of Business Entity

Quality Assurance
Production Planning and Management
Manufacturing Technologies
Production Machines, Tools, Jigs and Fixtures

Technological Processes
Welding Engineering I

GRADUATE UNIVERSITY COURSES

CAD/CAPP/CAM
CNC/NC Machine Tools
Foundry
Management and Organizational Development

Measurement in Industry
Advanced Manufacturing Processes
Machining Processes
Production Organization
Production Management
Designing of Production Systems
Process Planning
Project Management
Computer Simulation of Production Processes

Computer Integrated Manufacturing
Joining of Materials
Technical Logistics
Forming Technology
Quality Management
Welding Engineering II

VOCATIONAL COURSES

Tools, Jigs and Fixtures
Measuring Technique ST

Obradni strojevi
 Organizacija i ekonomika
 Organizacija i upravljanje proizvodnjom
 Osiguranje kvalitete ST
 Proizvodni sustavi
 Tehnologija obrade I
 Tehnologija obrade II
 Tehnološki procesi ST
 Zavarivanje

KOLEGIJI NA POSLIJEDIPLOMSKIM SVEUČILIŠNIM (DOKTORSKIM) STUDIJIMA

CAM, CAP, CAD/NC-CIM
 Deformabilnost i suvremeno oblikovanje de-
 formiranjem
 Izabrana poglavlja iz fleksibilnih proizvodnih
 sustava
 Inženjerstvo kvalitete
 Izabrana poglavlja iz konvencionalne obrade
 odvajanjem čestica
 Izabrana poglavlja iz nekonvencionalnih pos-
 tupaka obrade
 Metode simulacije u proizvodnji
 Optimizacija tehnoloških procesa
 Planiranje i vođenje proizvodnje
 Razvojni i proizvodni management
 Upravljanje kvalitetom

ZNANSTVENOISTRAŽIVAČKI RAD

Napredni obradni sustavi i tehnologije, tehnolo-
 gija oblikovanja deformiranjem, modelira-
 nje i optimiranje obradnih procesa, računalna
 simulacija proizvodnih procesa; modelira-
 nje, simulacija i optimizacija procesa obrade;
 primjena umjetne inteligencije u upravljanju
 procesima obrade; industrijsko inženjerstvo,
 upravljanje i osiguranje kvalitete, mjerenja
 i kontrola kvalitete, mjerenja u proizvodnji,
 spajanje materijala, zavarivanje; proizvodno
 strojarstvo; proizvodni sustavi; CIM, planira-
 nje i upravljanje proizvodnjom, proizvodni

Machine Tools
 Organization and Economics
 Production Organization and Management
 Quality Assurance ST
 Production Systems
 Manufacturing Technology I
 Manufacturing Technology II
 Technological Processes ST
 Welding Engineering

POSTGRADUATE UNIVERSITY (DOCTORAL) COURSES

CAM, CAP, CAD/NC-CIM
 Deformability and Modern Forming Technol-
 ogy
 Selected Chapters from Flexible Production
 System
 Quality Engineering
 Selected Chapters on Conventional Machin-
 ing Processes
 Selected Chapters on Nonconventional Man-
 ufacturing Processes
 Simulation Methods in Production
 Processes Plans Optimization
 Planning and Processing of Manufacture
 Development and Operational Management
 Quality Management

RESEARCH AND DEVELOPMENT ACTIVITIES

Advanced manufacturing systems and tech-
 nology, forming technology, modelling and
 optimisation of machining processes, compu-
 tational simulation of production processes;
 modeling, simulation and optimization of
 manufacturing processes; application of ar-
 tificial intelligence in control of manufactur-
 ing processes; industrial engineering, quality
 management, quality assurance, measure-
 ments and quality control, industrial mea-
 surements, joining of materials, welding; pro-
 duction engineering, manufacturing systems,

management, organizacija poslovnih sustava.

CIM, production planning and control, production management, organization of manufacturing and business systems.

PROJEKTI

Istraživanje visokoproduktivnih obrada na inteligentnim obradnim sustavima, 069-0692976-1738, Ministarstvo znanosti, obrazovanja i sporta, Elso Kuljanić, 2007. - 2013., znanstvenoistraživački.

Projektiranje modela organizacijskih struktura kooperacijskih mreža, 069-0000000-3264, Ministarstvo znanosti, obrazovanja i sporta, Goran Cukor, 2008. - 2013., znanstvenoistraživački.

Modeliranje i optimizacija alata primjenom informacijskih tehnologija virtualne proizvodnje s eksperimentalnom verifikacijom, Ministarstvo znanosti, obrazovanja i sporta, Zoran Jurković, 2011-2013, bilateralni Hrvatska – Srbija znanstvenoistraživački projekt.

Modeliranje naprednih proizvodnih struktura kod inteligentne proizvodnje, 069-0692976-1740, Ministarstvo znanosti, obrazovanja i sporta, Tonči Mikac, 2006 – 2013, znanstvenoistraživački.

Night of the Lab Out, FP7 People – Researchers' Night - Marie Curie Actions, 609815, projekt manager za Tehnički fakultet Sveučilišta u Rijeci - Sven Maričić, 2013.

PROJECTS

Investigation of high productivity machining on intelligent machining systems, 069-069-2976-1738, Ministry of Science, Education and Sports of the Republic of Croatia, Elso Kuljanić, 2007 - 2013, research and scientific project.

Designing models of the organization structures of co-operative networks, 069-0000000-3264, Ministry of Science, Education and Sports of the Republic of Croatia, Goran Cukor, 2008 - 2013, research and scientific project.

Modelling and optimization of tool by application of information technologies of virtual manufacturing with experimental verification, Ministry of Science, Education and Sports of the Republic of Croatia, Zoran Jurković, 2011-2013, bilateral Croatia-Serbia research and scientific project.

Modeling of advanced manufacturing structures of the intelligent manufacturing, 069-0692976-1740, Ministry of Science, Education and Sports of the Republic of Croatia, Tonči Mikac, 2006 – 2013, research and scientific project.

Night of the Lab Out, FP7 People – Researchers' Night - Marie Curie Actions, 609815, project manager for Faculty of Engineering University of Rijeka - Sven Maričić, 2013.

PUBLIKACIJE / PUBLICATIONS**RADOVI U ČASOPISIMA / JOURNAL PAPERS**

Mandić, V., Erić, D., Adamović, D., Janjić, M., Jurković, Z., Babić, Ž., Ćosić, P.: *Concurrent Engineering Based on Virtual Manufacturing*, Tehnički vjesnik/Technical Gazette, 1330-3651, 19, 885-892, 2012., Slavonski Brod

Jurković, M., Jurković, Z., Mandić, V.: *Experimental Analysis and Mathematical Modelling of Rolling Force*, Strojarsstvo, 0562-1887, 54, 145-151, 2012., Zagreb

Jurković, Z., Perinić, M., Maričić, S., Sekulić, M., Mandić, V.: *Application of Modelling and Optimization Methods in Abrasive Water Jet Machining*, Journal of Trends in the Development of Machinery and Associated Technology, 2303-4009, 16, 59-62, 2012., Zenica

Kramar, D., Sekulić, M., Jurković, Z., Kopač, J.: *The Machinability of Nickel-Based Alloys in High-Pressure Jet Assisted (HPJA) Turning*, Metalurgija/Metallurgy, 0543-5846, 52, 512-514, 2013., Zagreb

Ikonić, M.; Kostelac, D.; Mikac, T.: *Selection of key performance indicators as a key for successful implementation of eppm-bsc model in pharmaceutical industry*, Machine Design, ISSN: 1827-269X-1259, 50, 65-74, 2013., Novi Sad

MEĐUNARODNI KONGRESI / INTERNATIONAL CONGRESSES

Kinkela, D., Jurković, Z., Pavletić, D., Perinić, M.: *Primjena sustava za provjeru točnosti pozicioniranja kod obradnih strojeva*, 11th International Scientific-Expert Conference Maintenance and Production Engineering – KODIP 2013, ISBN 978-9940-527-33-4, 191-197, 2013., Podgorica

Jakac, D., Jurković, Z., Cukor, G.: *MAGMA software in casting process of aluminum parts*, 14th International Scientific Conference on Production Engineering - Computer Integrated Manufacturing and High Speed Machining CIM 2013, ISBN 978-953-7689-02-5, 129-134, 2013., Zagreb-Darmstadt

Perinić, M.; Jurković, Z.; Pavletić, D.; Maričić, S.; Vitulić, N.: *CAE Models in the Simulation of the Production Process*, Proceedings of 3rd International Conference Mechanical Technology and Structural Materials 2013, ISSN: 1847-7917, 1, 141-150, 2013., Split, Hrvatska

POZVANA PREDAVANJA / INVITED LECTURES

Ikonić, M.: *Project management in product development and production, Integration of the enterprise project portfolio management with the balanced scorecard*, International symposium organized by Faculty of Technical science, Novi Sad and Association for Design, Elements and Constructions /ADECO//: Modern approach to product development and business improvement, 16 – 19 May, 2013, Balatonfüred, Hungary., 2013. Balatonfüred, Hungary

Maričić, S.: *Additive manufacturing and 3D modeling*, Technical University of Cluj Napoca, Romania, 2013., Cluj Napoca, Romania

Maričić, S.: *A Novel Approach in Biotech Sciences*, Share Conference, Republika Festival, 2013., Rijeka, Hrvatska

KNJIGE / BOOKS

Mikac, T., Ikonić, M.: *Tehnološka priprema proizvodnje, Menadžment životnim ciklusom proizvoda*, Editori: S. Kuzmanović, M. Ikonić, Z. Anišić; CEEPUS mreža CIII-RS-0304, CEEPUS mreža CIII-PL-0033, Univerzitet u Novom Sadu, Fakultet tehničkih nauka, 2013., ISBN 978-86-7892-509-2, 2013., Novi Sad

Tadić, B., Vukelić, Đ., Jurković, Z.: *Alati i pribori*, Fakultet inženjerskih nauka, Univerzitet u Kragujevcu, ISBN 978-86-6335-000-7, 2013., Kragujevac

MEĐUNARODNA SURADNJA / INTERNATIONAL COLLABORATIONS

Università degli Studi di Udine, Facoltà di Ingegneria, Dipartimento di Ingegneria Elettrica, Gestionale e Meccanica (DIEGM), Italia, Italija / Italy

University of Maribor, Faculty of Mechanical Engineering, Production Engineering Institute, Slovenija / Slovenia

University of Kragujevac, Faculty of Engineering, Department for Production Engineering, Srbija / Serbia

University of Novi Sad, Faculty of Technical Sciences, Department of Production Engineering, Srbija / Serbia

University of Montenegro, Faculty of Mechanical Engineering, Podgorica, Crna Gora / Montenegro

University of Banja Luka, Faculty of Mechanical Engineering, Bosna i Hercegovina / Bosnia & Herzegovina

Ss. Cyril and Methodius University in Skopje, Faculty of Mechanical Engineering, Institute of Production Engineering and Management, Republika Makedonija / Republic of Macedonia

Faculty of Mechanical Engineering, University of Zilina, Slovačka / Slovakia

Poznan Politechnic, Technical University of Poznan, Poljska / Poland

5.5 ZAVOD ZA KONSTRUIRANJE U STROJARSTVU / DEPARTMENT OF MECHANICAL ENGINEERING DESIGN

Predstojnik Zavoda / Department Head:

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

<http://www.riteh.uniri.hr/ustroj/zks/>



1. Kristina Marković
2. David Blažević
3. Božidar Križan
4. Marina Franulović
5. Ervin Kamenar
6. Robert Basan
7. Gordana Marunić
8. Sanjin Troha
9. Neven Lovrin



10. Branimir Rončević
11. Vladimir Glažar
12. Dubravka Siminiati
13. Željko Vrcan
14. Goran Gregov
15. Radojka Praprotnik
16. Boris Obsieger

DJELATNICI

REDOVITI PROFESORI

Božidar Križan

konstrukcijski elementi; konstruiranje i oblikovanje proizvoda

Neven Lovrin

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

Gordana Marunić

inženjerska grafika; dokumentiranje; tehničko crtanje; oblikovanje pomoću računala; inženjerska vizualizacija

Boris Obsieger

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

Dubravka Siminiati

konstrukcijski elementi; hidraulički i pneumatski sustavi; kontaktni problemi

IZVANREDNI PROFESORI

Marina Franulović

konstrukcijski elementi; konstruiranje

DOCENTI

Robert Basan

konstrukcijski elementi; mehatronika; CAE; zamor materijala

VIŠI ASISTENTI

Vladimir Glažar

inženjerska grafika; dokumentiranje; tehničko crtanje; oblikovanje pomoću računala; inženjerska vizualizacija

Branimir Rončević

konstrukcijski elementi; konstrukcijski elementi robota; numeričke metode u konstruiranju

FACULTY AND STAFF

PROFESSORS

Božidar Križan

machine elements; systematic product design

Neven Lovrin

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

Gordana Marunić

engineering graphics; documenting; technical drawing; modelling by computer; engineering visualization

Boris Obsieger

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

Dubravka Siminiati

machine elements; hydraulic and pneumatic systems; contact problems

ASSOCIATE PROFESSORS

Marina Franulović

machine elements; design in mechanical engineering

ASSISTANT PROFESSORS

Robert Basan

machine elements; mechatronics; CAE; material fatigue

SENIOR ASSISTANTS

Vladimir Glažar

engineering graphics; documenting; technical drawing; modelling by computer; engineering visualization

Branimir Rončević

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

Sanjin Troha

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

ASISTENTI**Kristina Marković**

konstrukcijski elementi; precizno inženjerstvo

ZNANSTVENI NOVACI**VIŠI ASISTENTI****Goran Gregov**

inženjerska grafika; dokumentiranje; tehničko crtanje; oblikovanje pomoću računala; hidraulika i pneumatika; mehatronika

ASISTENTI**David Blažević**

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

Ervin Kamenar

precizno inženjerstvo; tehnologija mikrosustava; mehatronika; sustavi regulacije i kontrole; sustavi žetve energije; mjerni sustavi

Željko Vrcan

konstrukcijski elementi; mehanički prijenosnici snage; transportna sredstva u industriji

ADMINISTRATIVNO OSOBLJE**Radojka Praprotnik**

administrativna tajnica

VANJSKI SURADNICI**prof. dr. sc. Saša Zelenika**

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

Vladimir Pelić

inženjerska grafika; dokumentiranje; tehničko crtanje

Josipa Rubeša

konstrukcijski elementi; CAE

Sanjin Troha

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

ASSISTANTS**Kristina Marković**

machine elements; precision engineering

JUNIOR RESEARCHERS**SENIOR ASSISTANTS****Goran Gregov**

engineering graphics; documenting; technical drawing; modelling by computer; hydraulics and pneumatics; mechatronics

ASSISTANTS**David Blažević**

precision engineering; microsystems technologies; energy scavenging devices; measurement systems; machine elements

Ervin Kamenar

precision engineering; microsystems technologies; mechatronics; control systems; energy scavenging devices; measurement systems

Željko Vrcan

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

ADMINISTRATIVE STAFF**Radojka Praprotnik**

administrative secretary

ASSOCIATES**Prof. Saša Zelenika, D. Sc.**

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

Vladimir Pelić

engineering graphics and documenting; technical drawing

Josipa Rubeša

machine elements; CAE

NASTAVA

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.

KOLEGIJI NA PREDDIPLOMSKIM SVEUČILIŠNIM STUDIJIMA

Inženjerska grafika

Inženjerska grafika i dokumentiranje

Izborni projekt - Konstrukcijski elementi I

Izborni projekt - Konstrukcijski elementi II

Konstruiranje i oblikovanje

Konstrukcijski elementi I

Konstrukcijski elementi II

Oblikovanje pomoću računala

Osnove konstruiranja

Osnove konstrukcijskih elemenata

Primjena računala

KOLEGIJI NA DIPLOMSKIM SVEUČILIŠNIM STUDIJIMA

Brodski palubni strojevi

CAE u razvoju proizvoda

Elektroničke komponente mehatroničkih sustava

Elementi transportne tehnike

Hidraulika i pneumatika I

Hidraulika i pneumatika II

Inženjerska vizualizacija

Komponente mehatroničkih sustava

Konstruiranje i oblikovanje

Konstrukcijski elementi III

EDUCATION

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.

UNDERGRADUATE UNIVERSITY COURSES

Engineering Graphics

Engineering Graphics and Documenting

Elective project - Machine Elements Design I

Elective project - Machine Elements Design II

Designing and Product Shaping

Machine Elements Design I

Machine Elements Design II

Modelling by Computer

Fundamentals of Engineering Design

Fundamentals of Machine Elements Design

Computer Applications

GRADUATE UNIVERSITY COURSES

Ship's Deck Machinery

CAE in Product Development

Electronic Components of Mechatronic Systems

Elements of the Transport Technic

Hydraulics and Pneumatics I

Hydraulics and Pneumatics II

Engineering Visualization

Components of Mechatronic systems

Designing and Product Shaping

Machine Elements Design III

Konstruktivski elementi robota	Robot Elements Design
Laboratorijske vježbe A	Laboratory Exercises A
Laboratorijske vježbe B	Laboratory Exercises B
Mehanički prijenosnici snage	Mechanical Power Transmissions
Mehatronički sustavi	Mechatronics Systems
Metodičko konstruiranje	Systematic Engineering Design
Mikro i nano elektromehanički sustavi	Micro and Nano Electromechanical Systems
Modeliranje mehatroničkih sustava	Modelling of Mechatronic Systems
Numeričke metode u konstruiranju	Numerical Methods in Mechanical Engineering Design
Precizne konstrukcije i tehnologija mikro sustava	Precision Engineering and Microsystems Technologies
Projekt I - Hidraulika i pneumatika I	Project I - Hydraulics and Pneumatics I
Projekt I - Inženjerska vizualizacija	Project I - Engineering Visualization
Projekt I - Konstruktivski elementi III	Project I - Machine Elements Design III
Projekt I - Konstruktivski elementi robota	Project I - Robot Elements Design
Projekt I - Mehanički prijenosnici snage	Project I - Mechanical Power Transmissions
Projekt I - Numeričke metode u konstruiranju	Project I - Numerical Methods in Mechanical Engineering Design
Projekt II - Elektroničke komponente mehatroničkih sustava	Project II - Electronic Components of Mechatronic Systems
Projekt II - Hidraulika i pneumatika II	Project II - Hydraulics and Pneumatics II
Projekt II - Precizne konstrukcije i tehnologija mikro sustava	Project II - Precision Engineering and Microsystems Technologies
Projekt II – Elementi transportne tehnike	Project II – Elements of the Transport Technique
Tehnička logistika	Technical Logistics
Trajnost strojeva i konstrukcija	Durability of Machines and Structures
Transportni sustavi	Transport Systems
Upravljanje mehatroničkim sustavima	Control of mechatronics systems

KOLEGIJI NA STRUČNIM STUDIJIMA

Elementi strojeva I
 Elementi strojeva I BG
 Elementi strojeva II
 Hidraulika i pneumatika
 Konstruiranje
 Mehatronika
 Oblikovanje pomoću računala CO
 Osnove mehatronike
 Tehničko crtanje
 Tehničko dokumentiranje

VOCATIONAL COURSES

Machine Elements I
 Machine Elements I NA
 Machine Elements II
 Hydraulics and Pneumatics
 Mechanical Engineering Design
 Mechatronics
 Modelling by Computer CO
 Fundamentals of Mechatronics
 Technical Drawing
 Technical Documenting

KOLEGIJI NA POSLIJEDIPLOMSKIM SVEUČILIŠNIM (DOKTORSKIM) STUDIJIMA

Izabrana poglavlja iz hidrostatskih i pneumatskih prijenosa

Izabrana poglavlja iz konstrukcijskih elemenata

Izabrana poglavlja iz prijenosnika snage

Izabrana poglavlja iz transportnih sredstava u industriji

Kontaktne probleme u analizi konstrukcijskih elemenata

Modeliranje inženjerskih konstrukcija

Nauka o konstruiranju

Podatljivi elementi i mehanizmi

Principi konstrukcija visokih i ultravisokih preciznosti

Specijalni mehanički prijenosnici

POSTGRADUATE UNIVERSITY (DOCTORAL) COURSES

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

Compliant Elements and Mechanisms

Principles of High and Ultra-High Precision Devices

Special Mechanical Transmissions

ZNANSTVENOISTRAŽIVAČKI RAD

Hidraulički hibridni pogoni; vodeni hidraulički pogoni; karakterizacija i numeričko modeliranje ponašanja materijala; konstrukcijsko strojarstvo; kontaktne probleme u konstrukcijskim elementima; modeliranje; precizno inženjerstvo: podatljivi mehanizmi, strukturna analiza, integracija u mehatroničke sustave, mjerne tehnike, oprema za sinkrotronsko zračenje; Prijenos energije i informacija u hidrauličkim i pneumatskim sustavima; procjena parametara materijala primjenom klasičnih metoda i neuronskih mreža; tehnologija mikrosustava: MEMS, manipulacija, montaža i pakiranje, skalirajući učinci, proizvodnja mikrostruktura, prikupljanje otpadne energije iz okoline; zamor materijala; zupčasti prijenosnici, planetarni prijenosi, evolventno ozubljenje s velikim stupnjem prekrivanja profila.

RESEARCH AND DEVELOPMENT ACTIVITIES

Hydraulic hybrid drives; water hydraulic systems; characterisation and numerical modelling of material behaviour; mechanical engineering design; contact problems in machine elements; modelling; precision engineering: compliant mechanisms, structural analysis, integration into mechatronics devices, measurement techniques, equipment for synchrotron radiation; the energy and information transmission in hydraulic and pneumatic systems; estimation of material properties by means of classical methods and neural networks; micro-systems technologies: MEMS, handling, assembly and packaging, scaling effects, micro-fabrication, energy scavenging; fatigue of materials; gear transmissions, planetary gears, high transverse contact ratio gears.

PROJEKTI

Automatizirani sustav za identifikaciju parametara tkiva, Marina Franulović, Ministarstvo znanosti, obrazovanja i sporta, 2012– 2013, bilateralni hrvatsko-slovenski znanstvenoistraživački projekt.

Istraživanje dušikovih efekata u složenim poluvodičkim spojevima, 009-0982886-0542, Ministarstvo znanosti, obrazovanja i sporta, suradnik Saša Zelenika, 2007 - 2013, znanstvenoistraživački projekt.

Materijali, trajnost i nosivost suvremenih zupčastih prijenosnika, 069-0692195-1796, Ministarstvo znanosti, obrazovanja i sporta, Božidar Križan, 2007 - 2013, znanstvenoistraživački projekt

Podatljivi uređaji ultravisoke preciznosti za uporabu u mikrotehnologiji i nanotehnologiji, 069-0692195-1792, Ministarstvo znanosti, obrazovanja i sporta, Saša Zelenika, 2007 - 2013, znanstvenoistraživački projekt

Provjera patentibilnosti za Samoregulirajući Autonomni Ventil - SAV, From IP to Business Developing Environment for Start-up Companies (FIDES) Poslovno inovacijski centar RH (BICRO), Saša Zelenika, David Blažević, Ervin Kamenar

Visokoprotočne analitičke platforme za kontrolu kvalitete i provjeru izvornosti hrane iz jadranskog područja, Hrvatska zaklada za znanost, suradnik Saša Zelenika, 2011-2015, znanstvenoistraživački projekt

Sociokulturalna tranzicija iz industrijskog u društvo znanja - Hrvatsko nazivlje hidraulike i pneumatike, Hrvatska zaklada za znanost, 2012-2013; stručni projekt

PROJECTS

Automated system for tissue parameter identification, Marina Franulović, Ministry of Science, Education and Sports, 2012 – 2013, bilateral Croatian – Slovenian research and scientific project.

Analysis of nitrogen-related defects in compound semiconductors, 009-0982886-0542, Ministry of Science, Education and Sports of the Republic of Croatia, partner Saša Zelenika, 2007-2013, research and scientific project.

Materials, Durability and Load Capacity of Modern Gear Transmissions, 069-0692195-1796, Ministry of Science, Education and Sports of the Republic of Croatia, Božidar Križan, 2007- 2013, research and scientific project.

Ultra-high precision compliant devices for micro and nanotechnology applications, 069-0692195-1792, Ministry of Science, Education and Sports of the Republic of Croatia, Saša Zelenika, 2007-2013, research and scientific project.

Self-regulate Autonomus Valve (SAV) patentibility check, From IP to Business Developing Environment for Start-up Companies (FIDES) Business Innovation Agency of the Republic of Croatia (BICRO), Saša Zelenika, David Blažević, Ervin Kamenar.

High throughput analytical platforms for Adriatic-brand food quality and authenticity, National science foundation, partner Saša Zelenika, 2011-2015, research and scientific project.

Sociocultural transition from an industrial to a knowledge society - Croatian terminology of hydraulics and pneumatics, Croatian Science Foundation, 2012-2013; professional project.

PUBLIKACIJE / PUBLICATIONS

RADOVI U ČASOPISIMA / JOURNAL PAPERS

Blažević, D. ; Kamenar, E. ; Zelenika, S.: *Load optimised piezoelectric generator for powering battery-less TPMS*, Proceedings of SPIE, the International Society for Optical Engineering, 0277-786X, 8766, 876653-1 - 876653-10, 2013., USA

Jovanović, Ž. ; Zelenika, S.: *Science and higher education in Croatia at the verge of entering the EU*, Periodicum biologorum, 0031-5362, 115, 27 - 31, 2013., Zagreb

Marunić, G.: *Web Deformation related to Parameters of Gear Structure*, Machine Design, ISSN 1821-1259, Vol. 4 (3), 161-166, 2012., Novi Sad

Marunić, G.: *Contribution of Gear Body to Tooth Deformation*, International virtual journal for science, technics and innovations for the industry MTM-Machines, Technologies, Materials, ISSN 1313-0226, Vol. 4, 7-10, 2013., Sofia, Bulgaria

Marunić, G.; Glažar, V.: *Spatial ability through engineering graphics education*, International Journal of Technology and Design Education, ISSN 0957-7572, Vol. 23 (3), 703-715, 2013., Springer Netherlands

Rončević, B.; Siminiati, D.: *Experimental analysis of an elastic layer pressed into a substrate using digital image correlation*, International journal Advanced Engineering, ISSN: 1846-5900, 6 (2), 221-228, 2012., Revelin, Ičići

Siminiati D.: *Comparison of the Physical Properties of Tap Water and Mineral Oil*, International journal Advanced Engineering, ISBN:1846-5900, 6 (2012), 93 - 102, 2012., Revelin, Ičići

Troha, S. ; Lovrin, N. ; Milovančević, M.: *Selection of the two-carrier shifting planetary gear train controlled by clutches and brakes*, Transactions of FAMENA, 1333-1124, 36-3, 1. - 12., 2012., Zagreb

MEĐUNARODNI KONGRESI / INTERNATIONAL CONGRESSES

Basan, R.; Marohnić, T.; Prebil, I.; Franulović, M.: *Preliminary investigation of the existence of correlation between cyclic Ramberg-Osgood parameters and monotonic properties of low-alloy steels*, 3rd International Conference Mechanical Technology and Structural Materials 2013, 1847-7917, 109-115, 2013., Split, Hrvatska

Kamenar, E.; Zelenika, S.: *Micropositioning mechatronics system based on FPGA architecture*, 36th International Convention on Information and Communication Technology, Electronics and Microelectronics – Mipro 2013 ; Microelectronics, electronics and Electronic Technology (MEET), 978-953-233-074-8, 138 - 143, 2013., Opatija

Lovrin, N.; Vrcan, Ž.: *Some Ethical Aspects of Cheap Products Made In China*, 5th International Scientific Conference Management of Technology – Step to Sustainable Production Proceedings, ISSN: 1848-5022, 1, 2013., Zagreb

Marunić, G.: *Contribution of Gear Body to Tooth Deformation*, Proceeding of trans&MOTOAUTO '13 XXI International Conference, ISSN 1310-3946, Vol. 2, 36-40, 2013., Sofia, Bulgaria

Marunić, G.; Glažar, V.: *Spatial ability of engineering students - gender differences*, Proceedings CADAM 2013 11th International Conference on Advanced Engineering, Computer Aided Design and Manufacturing, ISBN 978-953-7919-06-1, 39-42, 2013., lčići

Obsieger, B.: *Some tribological propertise of involute toothing*, Proceedings of the 11th International Scientific Conference CADAM2013, ISBN 978-953-57074-3-1, 1, 51-54, 2013., lčići

Rončević, B.: *Design considerations of a compliant mechanism with lumped compliance*, Proceedings of the 11th International Scientific Conference CADAM2013, ISBN 978-953-57074-3-1, 1, 59-62, 2013., lčići

Siminiati, D.: *Problem of microbial growth in water hydraulic systems*, Proceedings of the 11th International Scientific Conference CADAM2013, ISBN 978-953-57074-3-1, 1, 67-70, 2013., lčići

POZVANA PREDAVANJA / INVITED LECTURES

Sanjin Troha: *Characteristic and application possibilities of some two-speed planetary gear trains*, Poziv Fakulteta industrijske tehnologije (Faculty of Industrial Technology) Tehničkog sveučilišta u Sofiji, 2013. Sofija, Bugarska

Sanjin Troha: *Selection of the two-carrier shifting planetary gear train controlled by clutches and brakes*, Poziv Strojarskog fakulteta (Faculty of Mechanical Engineering) Tehničkog sveučilišta u Sofiji, 2013. Sofija, Bugarska

KNJIGE / BOOKS

D. Siminiati: *Uljna hidraulika*, Tehnički fakultet Rijeka, 978-953-6326-75-4, 2012., Rijeka

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

Fakultet strojarstva i brodogradnje, Sveučilište u Zagrebu, Hrvatska / Croatia

Fakulteta za strojništvo, Univerza v Ljubljani, Slovenija / Slovenia

Fakulteta za strojništvo, Univerza v Mariboru, Slovenija / Slovenia

University of Applied Sciences, Graz, Austrija / Austria

University of Chemical Technology and Metallurgy, Bugarska / Bulgaria

University of Udine, Italija / Italy

5.6 ZAVOD ZA MATEMATIKU, FIZIKU, STRANE JEZIKE I KINEZILOGIJU / DEPARTMENT OF MATHEMATICS, PHYSICS, FOREIGN LANGUAGES AND KINESIOLOGY

Predstojnik Zavoda / Department Head:

prof. dr. sc. / Prof. D. Sc. Julijan Dobrinić

<http://www.riteh.uniri.hr/ustroj/zmfjsjk/>



1. Bojan Crnković
2. Nelida Črnjarić-Žic
3. Katica Jurasic
4. Ivan Dražić
5. Mirko Bađim
6. Melita Štefan-Trubić
7. Senka Maćešić
8. Loredana Simčić
9. Julian Dobrinić
10. Elisa Velčić Janjetić
11. Mira Bobanović
12. Ksenija Mance



DJELATNICI

REDOVITI PROFESORI

Julijan Dobrinčić

fizika; zaštita okoliša

Senka Maćešić

numerička matematika; znanstveno računanje; matematičko modeliranje; optimalno upravljanje

IZVANREDNI PROFESORI

Nelida Črnjarić-Žic

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

DOCENTI

Marta Žuvić-Butorac

fizika

VIŠI PREDAVAČI

Mirko Bađim

kineziologija

Katica Jursić

euklidska i neeuklidska geometrija; metodika nastave matematike

Ksenija Mance

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

Elisa Velčić Janjetić

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

PREDAVAČI

Ivan Dražić

parcijalne diferencijalne jednačbe; mikropolarne fluidi; numerička analiza; statistička obrada podataka; metodika nastave matematike

Melita Štefan-Trubić

numerička matematika

FACULTY AND STAFF

PROFESSORS

Julijan Dobrinčić

physics; environmental protection

Senka Maćešić

numerical mathematics; scientific computing; mathematical modelling; optimal control

ASSOCIATE PROFESSORS

Nelida Črnjarić-Žic

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

ASSISTANT PROFESSORS

Marta Žuvić-Butorac

physics

SENIOR LECTURER

Mirko Bađim

kinesiology

Katica Jursić

euclidean and noneuclidean geometry; mathematics education

Ksenija Mance

English language and literature; German language and literature; professional language

Elisa Velčić Janjetić

German language and literature; English language and literature; professional language

LECTURER

Ivan Dražić

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

Melita Štefan-Trubić

numerical mathematics

VIŠI ASISTENTI

Bojan Crnković

numerička matematika; matematičko modeliranje;
računalne simulacije u tehnici

ASISTENTI

Loredana Simčić

kombinatorna i diskretna matematika

ADMINISTRATIVNO OSOBLJE

Mira Bobanović

administrativna tajnica

VANJSKI SURADNICI

izv. prof. dr. sc. Nada Orlić /**Odjel za fiziku Sveučilišta u Rijeci**

atomska i nuklearna fizika

v. asist. dr. sc. Luka Mandić

fizika; zaštita okoliša

**asist. dr. sc. Ivana Jelovica-Badovinac /
Odjel za fiziku Sveučilišta u Rijeci**

fizika

asist. Vanja Čotić

numerička matematika

asist. Dina Kovačević

numerička matematika

asist. Nenad Kralj

fizika

asist. Magda Mandić

fizika

asist. Ivana Poljančić Beljan

fizika

**asist. Vlasta Ružička-Matejčić /
Pomorski Fakultet Sveučilišta u Rijeci**

matematika

asist. Marijana Varašanec

fizika

Neven Varljen

fizika

SENIOR ASSISTANTS

Bojan Crnković

numerical mathematics; mathematical modelling;
computer simulations in engineering

ASSISTANTS

Loredana Simčić

combinatorial and discrete mathematics

ADMINISTRATIVE STAFF

Mira Bobanović

administrative secretary

ASSOCIATES

**Assoc. Prof. Nada Orlić, D. Sc. / Depart-
ment of physics, University of Rijeka**

atomic and nuclear physics

Sen. Assist. D. Sc. Luka Mandić

physics; environmental protection

**Assist. Ivana Jelovica-Badovinac, D. Sc.
/ Department of physics, University of
Rijeka**

physics

Assist. Vanja Čotić

numerical mathematics

Assist. Dina Kovačević

numerical mathematics

Assist. Nenad Kralj

physics

Assist. Magda Mandić

physics

Assist. Ivana Poljančić Beljan

physics

**Assist. Vlasta Ružička-Matejčić / Faculty
of Maritime Studies, University of Rijeka**
matematika**Assist. Marijana Varašanec**

physics

Neven Varljen

physics

NASTAVA

Nastava matematičkih kolegija izvodi se za inženjere s odabranim poglavljima iz područja linearne algebre, matematičke analize, diferencijalnih jednadžbi, vjerojatnosti i statistike te numeričke i stohastičke matematike. Nastava fizikalnih kolegija izvodi se za inženjere s odbranim poglavljima iz moderne fizike i zaštite okoliša. Nastava engleskog i njemačkog jezika obuhvaća obrađivanje odabranih poglavlja iz područja strojarstva, brodogradnje, elektrotehnike i računarstva te usavršavanje stručnog vokabulara i gramatičkih struktura jezika tehnike. Nastava iz tjelesne i zdravstvene kulture odvija se kroz obvezne programe (atletika, nogomet, košarka, odbojka, rukomet, vaterpolo sa plivanjem i fitness) kao i slobodne programe (skijanje, jedrenje, veslanje, planinarenje i rafting).

KOLEGIJI NA PREDDIPLOMSKIM SVEUČILIŠNIM STUDIJIMA

Engleski jezik I
 Engleski jezik II
 Fizika 1
 Fizika 2
 Inženjerska matematika ET
 Inženjerska statistika
 Matematika 1
 Matematika 2
 Njemački jezik I
 Njemački jezik II
 Tjelesna i zdravstvena kultura I
 Tjelesna i zdravstvena kultura II
 Uvod u modernu fiziku
 Zaštita okoliša

KOLEGIJI NA DIPLOMSKIM SVEUČILIŠNIM STUDIJIMA

Inženjerska matematika
 Numerička i stohastička matematika
 Stohastička matematika

EDUCATION

Mathematical lectures for engineers with selected chapters in the fields of: linear algebra, mathematical analysis, differential equations, probability and statistics, numerical and stochastic mathematics. Physics lectures for engineers with selected chapters in modern physics and environment 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. Lectures in physical and health education is realized through both compulsory programs (athletics, football, basketball, volleyball, handball, waterpolo with swimming and fitness program) and optional programs (skiing, sailing, rowing, mountaineering and rafting).

UNDERGRADUATE UNIVERSITY COURSES

English Language I
 English Language II
 Physics 1
 Physics 2
 Engineering Mathematics ET
 Statistics for Engineers
 Mathematics 1
 Mathematics 2
 German Language I
 German Language II
 Physical and Health Education I
 Physical and Health Education II
 Introduction to Modern Physics
 Environment Protection

GRADUATE UNIVERSITY COURSES

Engineering Mathematics
 Numerical and Stochastic Mathematics
 Stochastic Mathematics

KOLEGIJI NA STRUČNIM STUDIJIMA

Engleski jezik I
 Engleski jezik II
 Fizika
 Matematika 1
 Matematika 2
 Njemački jezik I
 Njemački jezik II
 Tjelesna i zdravstvena kultura I
 Tjelesna i zdravstvena kultura II

KOLEGIJI NA POSLIJEDIPLOMSKIM SVEUČILIŠNIM (DOKTORSKIM) STUDIJIMA

Izabrana poglavlja iz zaštite okoliša
 Matematičko modeliranje i numeričke metode
 Metode optimizacije
 Metodologija znanstvenoistraživačkog rada
 Statističke metode i stohastički procesi

ZNANSTVENOISTRAŽIVAČKI RAD

Parcijalne diferencijalne jednačbe, numerička matematika, matematičko modeliranje, optimizacija, operacijska istraživanja, statističke metode, diferencijalna geometrija, kombinatorna i diskretna matematika; zaštita okoliša, atomska i nuklearna fizika; interdisciplinarno znanstvenoistraživački pristup području antropologije i temama kulture (znanstvena grana anglistika, područje lingvistike); istraživanje pojma tehnike uopće kao i njegove prisutnosti u izabranim romanima njemačke književnosti weimarskog doba (1918.-1933.) (znanstvena grana germanistika, područje književnosti).

VOCATIONAL COURSES

English Language I
 English Language II
 Physics
 Mathematics 1
 Mathematics 2
 German Language I
 German Language II
 Physical and Health Education I
 Physical and Health Education II

POSTGRADUATE UNIVERSITY (DOCTORAL) COURSES

Selected Topics on Environment Protection
 Mathematical Modeling and Numerical Methods
 Optimization Methods
 Methodology of Scientific Work and Research
 Statistical Methods and Stochastic Processes

RESEARCH AND DEVELOPMENT ACTIVITIES

Partial differential equations, numerical mathematics, mathematical modeling, optimization, operational research, statistical methods, differential geometry, combinatorial and discrete mathematics; environment protection, atomic and nuclear physics; interdisciplinary scientific-research approach to the field of anthropology and cultural themes (the scientific branch of English studies, field Linguistics; research of the term technics and its presence in selected novels of the German literature of the Weimar period (1918-1933) (the scientific branch German studies, field Literature).

PROJEKTI

Istraživanje metoda sprječavanja onečišćenja mora od objekata morske tehnologije. 069-0691668-3007, Ministarstvo znanosti, obrazovanja i sporta, Julijan Dobrinić

PROJECTS

Research of Methods for Prevention of Sea Pollution by Marine Technology Objects, 069-0691668-3007, Ministry of Science, Education and Sports of the Republic of Croatia, Julijan Dobrinić

PUBLIKACIJE / PUBLICATIONS**RADOVI U ČASOPISIMA / JOURNAL PAPERS**

Dražić, I.: *Stjepan Gradić*, Matematika i škola, 1332-0327, 14, 136-138, 2013., Zagreb

Crnković, D.; Rodrigues, B.G.; Rukavina, S.; Simčić, L.: *Self-orthogonal codes from orbit matrices of 2-designs*, Advances in Mathematics of Communications, ISSN: 1930-5346, 7, 161-174, 2013.

MEĐUNARODNI KONGRESI / INTERNATIONAL CONGRESSES

Bosner, T.; Crnković, B.; Škifić, J.: *Tension spline with application on image resampling*, book of abstracts, 2013., 8th Conference on Applied Mathematics and Scientific Computing, Šibenik 2013.

Velčić Janjetić, E.: *Das Bild der Technik in ausgewählten Romanen der neuen Sachlichkeit. (Slika tehnike u odabranim romanima Nove objektivnosti.)*, Die Sprache im Bild - Das Bild in der Sprache (Jezik u slici - slika u jeziku), 2013., Tirana, Albanija

KNJIGE / BOOKS

Štefan Trubić, M.; Sopta, L.; Črnjarić-Žic, N.; Maćešić, S.: *Matematika - zbirka zadataka: integrali, obične diferencijalne jednačbe, funkcije dviju varijabli*, Sveučilište u Rijeci, Tehnički fakultet, 978-953-6326-86-0, 2012., Rijeka

MEĐUNARODNA SURADNJA / INTERNATIONAL COLLABORATIONS

University of Santa Barbara, California, SAD / USA

5.7 ZAVOD ZA MATERIJALE / DEPARTMENT OF MATERIALS SCIENCE AND ENGINEERING

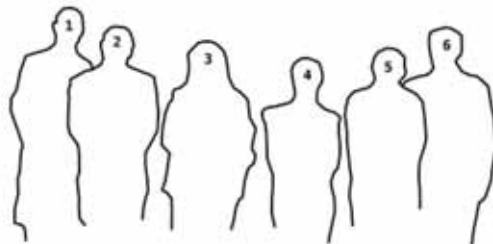
Predstojnik Zavoda / Department Head:

prof. dr. sc. / Prof. D. Sc. Božo Smoljan

http://www.riteh.uniri.hr/zav_katd_sluz/zm/osn_pod/index.html



1. Dario Iljkić
2. Božo Smoljan
3. Loreta Pomenić
4. Natalija Forgić
5. Ivan Katavić
6. Domagoj Rubeša



DJELATNICI

REDOVITI PROFESORI

Ivan Katavić

(professor emeritus)

materijali; tehnologija materijala; materijali i tehnološki postupci; metalni materijali; ljevarstvo; karakterizacija materijala; ispitivanje materijala

Loreta Pomenić

materijali; tehnologija materijala; materijali i tehnološki postupci; nemetalni materijali; zaštita materijala; karakterizacija materijala; selekcija materijala; kemija materijala; korozija i zaštita metala

Domagoj Rubeša

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

Božo Smoljan

materijali; tehnologija materijala; materijali i tehnološki postupci; metalni materijali; ljevarstvo; karakterizacija materijala; toplinska obrada i inženjerstvo površina; ispitivanje materijala

ZNANSTVENI NOVACI

VIŠI ASISTENTI

Dario Iljkić

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

ADMINISTRATIVNO OSOBLJE

Natalija Forgić

administrativna tajnica

VANJSKI SURADNICI

prof. dr. sc. Robert Danzer / Institut für Struktur- und Funktionskeramik

keramički i kompozitni materijali

prof. dr. sc. Leszek Adam Dobrzański / 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 prije-

FACULTY AND STAFF

PROFESSORS

Ivan Katavić

(Professor Emeritus)

materials; technology of material; materials and technological processes; metallic materials; casting; materials characterisation; materials testing

Loreta Pomenić

materials; technology of material; materials and technological processes; nonmetal materials; materials protection; materials characterisation; materials selection; materials chemistry; corrosion and metals protection

Domagoj Rubeša

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

Božo Smoljan

materials; technology of material; materials and technological processes; metallic materials; casting; materials characterisation; heat treatment and surface engineering; materials testing

JUNIOR RESEARCHERS

SENIOR ASSISTANTS

Dario Iljkić

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

ADMINISTRATIVE STAFF

Natalija Forgić

administrative secretary

ASSOCIATES

Prof. Robert Danzer, D. Sc. / Institut für Struktur- und Funktionskeramik

ceramics and composite materials

Prof. Leszek Adam Dobrzański, D. Sc. / Silesian University of Technology, Gliwice

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

loma i umorljivost; ispitivanje materijala; selekcija materijala; procesi oštećivanja materijala; kemija materijala; korozija i zaštita metala

**izv. prof. dr. sc. Vojteh Leskovšek /
IMT Ljubljana**

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

**dr. sc. Sunčana Smokvina Hanza /
Adriainspekt d.o.o.**

materijali; tehnologija materijala; materijali i tehnološki postupci; metalni materijali; ispitivanje materijala

Neven Tomašić / Hara d.o.o.

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

NASTAVA

Nastava se izvodi iz područja materijala, tehnologije materijala, materijala i tehnoloških postupaka, karakterizacije materijala, metalnih materijala, nemetalnih materijala, zaštite materijala, ljevarstva, mehanike materijala, toplinske obrade i inženjerstva površine, mehanike prijeloma i umorljivosti, ispitivanja materijala, selekcije materijala, procesa oštećivanja materijala, kemije materijala, korozije i zaštite metala.

KOLEGIJI NA PREDDIPLOMSKIM SVEUČILIŠNIM STUDIJIMA

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

mechanics and fatigue of materials; materials testing; materials selection; processes of damaging of materials; materials chemistry; corrosion and metals protection

**Assoc. Prof. Vojteh Leskovšek, D. Sc. /
IMT Ljubljana**

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

**Sunčana Smokvina Hanza, D. Sc. /
Adriainspekt d.o.o.**

materials; technology of material; materials and technological processes; metallic materials; materials testing

Neven Tomašić / Hara d.o.o.

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

EDUCATION

Lectures in the field of materials, technology of material, materials and technological processes, materials characterisation, metallic materials, nonmetal materials, materials protection, casting, 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.

UNDERGRADUATE UNIVERSITY COURSES

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

**KOLEGIJI NA DIPLOMSKIM
SVEUČILIŠNIM STUDIJIMA**

Ispitivanje materijala
 Ljevarstvo
 Mehanika materijala
 Mehanika prijeloma
 Metalni materijali
 Nemetalni materijali
 Projekt I - Ljevarstvo
 Projekt I - Zaštita materijala
 Projekt II - Mehanika materijala
 Projekt II - Toplinska obrada metala i inženjerstvo površina
 Selekcija materijala
 Toplinska obrada metala i inženjerstvo površina
 Zaštita materijala

KOLEGIJI NA STRUČNIM STUDIJIMA

Materijali
 Materijali i tehnološki postupci
 Tehnologija obrade I

**KOLEGIJI NA POSLIJEDIPLOMSKIM
SVEUČILIŠNIM (DOKTORSKIM)
STUDIJIMA**

Izabrana poglavlja iz ispitivanja materijala
 Kemija materijala
 Korozija i zaštita materijala
 Mehanika prijeloma i umorljivost
 Proces i oštećivanja materijala
 Toplinska obrada i inženjerstvo površina

**ZNANSTVENOISTRAŽIVAČKI
RAD**

Znanstvenoistraživački rad iz znanstvenog područja tehničke znanosti, znanstvenih polja strojarstvo i temeljne tehničke znanosti, znanstvenih grana proizvodno strojarstvo i materijali.

**GRADUATE UNIVERSITY
COURSES**

Materials Testing
 Casting
 Materials Mechanics
 Fracture Mechanics
 Metallic Materials
 Nonmetallic Materials
 Project I - Casting
 Project I - Materials Protection
 Project II - Materials Mechanics
 Project II - Metals Heat Treatment and Surface Engineering
 Materials Selection
 Metals Heat Treatment and Surface Engineering
 Materials Protection

VOCATIONAL COURSES

Materials
 Materials and Technological Processes
 Manufacturing Technology I

**POSTGRADUATE UNIVERSITY
(DOCTORAL) COURSES**

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

**RESEARCH AND
DEVELOPMENT ACTIVITIES**

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

Optimiranje parametara i predviđanje rezultata toplinske obrade metala, 069-1201780-2986, Ministarstvo znanosti, obrazovanja i sporta, Božo Smoljan, 2007 - 2014, znanstvenoistraživački projekt

PROJECTS

Optimisation of parameters and prediction of metals heat treatment results, 069-1201780-2986, Ministry of Science, Education and Sports of the Republic of Croatia, Božo Smoljan, 2007.- 2014., research and scientific project.

PUBLIKACIJE / PUBLICATIONS**RADOVI U ČASOPISIMA / JOURNAL PAPERS**

Smoljan, B.; Iljkić, D.; Traven, F.; Mrša, J.: *Mathematical modeling and computer simulation of fatigue properties of quenched and tempered steel*, ASTM Special Technical Publication, 0066-0558, 1532, 221-233, 2012., USA

Smoljan, B.; Iljkić, D.: *Computer simulation of quenching and tempering of cast steel*, Quenching Control and Distortion - Proceedings of the 6th International Quenching and Control of Distortion Conference, Including the 4th International Distortion Engineering Conference, 978-161503980-7, 117-123, 2012., USA

Smoljan, B.; Iljkić, D.; Pomenić, L.: *Mathematical modelling and computer simulation of mechanical properties of quenched and tempered steel*, Int. J. Microstructure and Materials Properties, 1741-8410, 8, 97-112, 2013., Slovenija

Smoljan, B.; Iljkić, D.; Traven, F.: *Mathematical modelling of mechanical properties of quenched and tempered steel*, International Heat Treatment and Surface Engineering, 1749-5148, 7, 16-22, 2013., UK/USA

Smoljan, B.; Iljkić, D.; Pomenić, L.: *Input physical properties in mathematical model of steel quenching*, Journal of Achievements in Materials and Manufacturing Engineering, 1734-8412, 58, 81-86, 2013., Poland

MEĐUNARODNI KONGRESI / INTERNATIONAL CONGRESSES

Smoljan, B.; Iljkić, D.: *Simulation of quenched and tempered steel behavior*, Proceedings of the 20th IFHTSE Congress, 820-825, 2012., Beijing, China.

Smoljan, B.; Iljkić, D.; Pomenić, L.: *Prediction of quenched and tempered cast steel properties*, Proceedings of the 13th International Foundrymen Conference, 978-953-7082-15-4, 347-353, 2013., Sisak, Croatia

Smoljan, B.; Iljkić, D.; Novak, H.: *Estimation of coefficient of heat conductivity and heat transfer coefficient in the numerical model of the steel quenching*, Proceedings of the 2nd Mediterranean Conference on Heat Treatment and Surface Engineering, 978-953-7690-02-1, 399-406, 2013., Zagreb, Croatia

Smoljan, B.; Iljkić, D.; Pomenić, L.: *Input physical properties in mathematical model of steel quenching*, Proceedings of the 21st International scientific conference AMME'2013, 2013., Gliwice, Poland

Iljkić, D.; Smoljan, B.; Novak, H.: *An analysis of thermal properties of steel during the quenching*, Proceedings of the 3th International Conference on Mechanical Technologies and Structural Materials, MTSM 2013, 1847-7917, 99-107, 2013., Split, Croatia

POZVANA PREDAVANJA / INVITED LECTURES

Smoljan, B.; Iljkić, D.; Pomenić, L.: *Prediction of quenched and tempered cast steel properties*, 13th International Foundrymen Conference, 2013. Opatija, Croatia

Smoljan, B.; Iljkić, D.; Pomenić, L.: *Input physical properties in mathematical model of steel quenching*, 21st International scientific conference AMME'2013, 2013. Krakow, Poland

KNJIGE / BOOKS

Smoljan, B.; Matijević, B.: *Proceedings 2nd Mediterranean Conference & New Challenges On Heat Treatment And Surface Engineering*, Croatian Society for Heat Treatment and Surface Engineering (CSHTSE), 978-953-7690-02-1, 2013., Zagreb, Croatia

MEĐUNARODNA SURADNJA / INTERNATIONAL COLLABORATIONS

Faculty of Mechanical Engineering, State University of Campinas, Campinas, Brazil / Brasil

Faculty of Mechanical Engineering, University of Ljubljana, Ljubljana, Slovenija / Slovenia

Institute of Metals and Technology, Ljubljana, Slovenija / Slovenia

John von Neumann Faculty of Informatics, Obuda University, Mađarska / Hungary

Materials Engineering, Silesian University of Technology in Gliwice, Gliwice, Poljska / Poland

Metallurgy and Materials Science Research Institute, Chulalongkorn University, Bangkok, Tajland / Thailand

The Institute of Materials, Minerals and Mining, Velika Britanija / UK

5.8 ZAVOD ZA MEHANIKU FLUIDA I RAČUNARSKO INŽENJERSTVO / DEPARTMENT OF FLUID MECHANICS AND COMPUTATIONAL ENGINEERING

Predstojnik Zavoda / Department Head:

prof. dr. sc. / Prof. D. Sc. Luka Sopta

<http://sim.riteh.hr>



1. Luka Sopta
2. Stefan Ivić
3. Zoran Čarija
4. Lado Kranjčević
5. Jerko Škifić
6. Siniša Družeta
7. Zoran Mrša



DJELATNICI

REDOVITI PROFESORI

Zoran Mrša

strujanje u priobalnom području; analiza i optimizacija hidrauličkih sustava; analiza i optimizacija strujanja u hidroturbinama

Luka Sopta

strujanje u priobalnom području; analiza i optimizacija hidrauličkih sustava; strujanje u otvorenim vodotocima; hidraulički tranzijenti

IZVANREDNI PROFESORI

Lado Kranjčević

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

Zoran Čarija

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

DOCENTI

Siniša Družeta

strujanje u priobalnom području; analiza i optimizacija hidrauličkih sustava; strujanje u otvorenim vodotocima

Jerko Škifić

hidraulički tranzijenti; analiza i optimizacija hidrauličkih sustava; programiranje tehničkih aplikacija

ZNANSTVENI NOVACI

VIŠI ASISTENTI

Marko Čavrak

simulacije strujanja fluida u industrijskim pogonima; modeliranje onečišćenja zraka; parametarska optimizacija industrijskih dimnjaka; programiranje tehničkih aplikacija

ASISTENTI

Stefan Ivić

programiranje tehničkih aplikacija; polaganje cjevovoda; optimizacija

ADMINISTRATIVNO OSOBLJE

Lovorka Malinić

administrativna tajnica

FACULTY AND STAFF

PROFESSORS

Zoran Mrša

coastal flow; hydraulic systems analysis and optimization; hydroturbine flow analysis and optimization

Luka Sopta

coastal flow; hydraulic systems analysis and optimization; open channel flow; hydraulic transients

ASSOCIATE PROFESSORS

Lado Kranjčević

pipe network flow; open channel flow; parallel programming

Zoran Čarija

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

ASSISTANT PROFESSORS

Siniša Družeta

coastal flow; hydraulic systems analysis and optimization; open channel flow

Jerko Škifić

hydraulic transients; hydraulic systems analysis and optimization; technical software development

JUNIOR RESEARCHERS

SENIOR ASSISTANTS

Marko Čavrak

industrial flow simulations; air quality modelling; optimization of industrial chimney stack parameters; programming technical applications

ASSISTANTS

Stefan Ivić

technical software development; pipe laying; optimization

ADMINISTRATIVE STAFF

Lovorka Malinić

administrative secretary

NASTAVA

Nastava iz područja: mehanika fluida, hidraulički strojevi, računalne metode, numeričko modeliranje, optimizacija.

KOLEGIJI NA PREDDIPLOMSKIM SVEUČILIŠNIM STUDIJIMA

Hidraulički strojevi
Mehanika fluida
Programiranje
Računalna grafika
Računalne aplikacije u inženjerstvu
Računalne simulacije u tehnici
Računarske metode
Računarsko inženjerstvo
Uvod u računarstvo

KOLEGIJI NA DIPLOMSKIM SVEUČILIŠNIM STUDIJIMA

Dinamika fluida
Dinamički sustavi
Modeliranje u tehnici
Numeričko modeliranje hidrauličkih strojeva
Optimizacije u tehnici
Primjena paralelnog računanja
Primjena računalne grafike
Programiranje tehničkih aplikacija I
Programiranje tehničkih aplikacija II
Računalna mehanika fluida
Računalom podržano mjerenje
Računarske metode u brodogradnji

Upoznavanje industrijskih postrojenja

KOLEGIJI NA STRUČNIM STUDIJIMA

Hidraulički strojevi ST
Mehanika fluida ST

EDUCATION

Lectures in the field of: fluid mechanics, hydraulic machines, computational methods, numerical modeling, optimization.

UNDERGRADUATE UNIVERSITY COURSES

Hydraulic Machines
Fluid Mechanics
Programming
Computer Graphics
Computer Applications in Engineering
Computer Simulations in Engineering
Computational Methods
Computational Engineering
Introduction to Computer Science

GRADUATE UNIVERSITY COURSES

Fluid Dynamics
Dynamic Systems
Models in Engineering
Numerical Modeling of Hydraulic Machines
Optimization in Technics
Applied Parallel Computing
Applied Computer Graphics
Programming of Technical Applications I
Programming of Technical Applications II
Computational Fluid Dynamics
Computer Aided Measuring
Computational Methods in Naval Engineering

Insight to Industrial Facilities

VOCATIONAL COURSES

Hydraulic Machines ST
Fluid Mechanics ST

KOLEGIJI NA POSLIJEDIPLOMSKIM SVEUČILIŠNIM (DOKTORSKIM) STUDIJIMA

Dinamika fluida
Hidrodinamika turbostrojeva
Modeliranje nestacionarnog strujanja u cjevovodu
Modeliranje onečišćenja zraka
Modeliranje strujanja sa slobodnom površinom
Računalna mehanika fluida
Turbulentno strujanje

POSTGRADUATE UNIVERSITY (DOCTORAL) COURSES

Fluid Dynamics
Hydrodynamics of Turbomachines
Unsteady Pipe Flow Modeling

Air Quality Modeling
Free Surface Flow Modeling

Computational Fluid Mechanics
Turbulent Flow

ZNANSTVENOISTRAŽIVAČKI RAD

Strujanje u priobalnom području; strujanje u otvorenim vodotocima; analiza i optimizacija hidrauličkih sustava; hidraulički tranzijenti; strujanje u cjevovodima.

RESEARCH AND DEVELOPMENT ACTIVITIES

Coastal flow; open channel flow; hydraulic systems analysis and optimization; hydraulic transients; pipe flow.

PROJEKTI

Analiza prostiranja tople vode iz ispusta u more tvornice Calucem-Pula upotrebom numeričkih simulacija, L. Sopta, A. Radošević, S. Družeta, naručitelj: Ekonerg d.o.o., Tehnički fakultet Rijeka, Rijeka, 2013.

Proračun kapaciteta ponora u Lipovom polju, Z. Mrša, M. Čavrak

Numerička analiza i izračun gubitaka strujanja tlačnog cjevovoda i račve u HE Zeleni vir, Z. Mrša, Z. Čarija

Topografska karta sliva sjevernog kraka Gacke, Z. Mrša, M. Čavrak

Novelacija programa za predviđanje dotoka i proizvodnje HE Senj, Z. Mrša, M. Čavrak

PROJECTS

Analysis of warm water propagation from the sea outlet of the Calucem-Pula factory by use of numerical simulations, L. Sopta, A. Radošević, S. Družeta, client: Ekonerg d.o.o., Faculty of Engineering, University of Rijeka, Rijeka, 2013.

Calculation of Lipovo polje sink capacity, Z. Mrša, M. Čavrak

Numerical analysis and flow loss calculation through penstock and wye of HE Zeleni vir, Z. Mrša, Z. Čarija

Topographic map of the watershed of north reach of Gacka river, Z. Mrša, M. Čavrak

Program upgrade for flow and production capacity forecast for HE Senj, Z. Mrša, M. Čavrak

PUBLIKACIJE / PUBLICATIONS

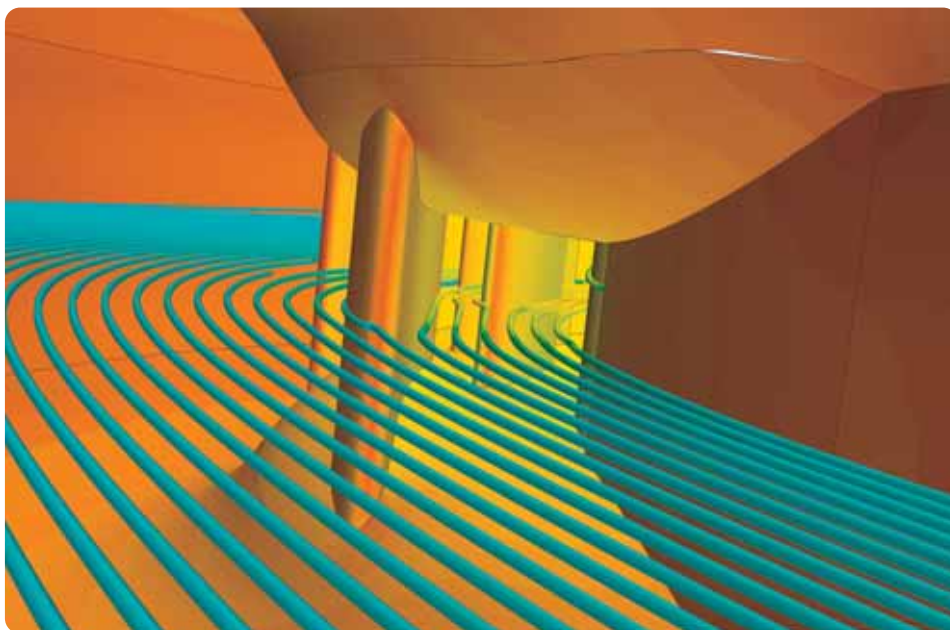
RADOVI U ČASOPISIMA / JOURNAL PAPERS

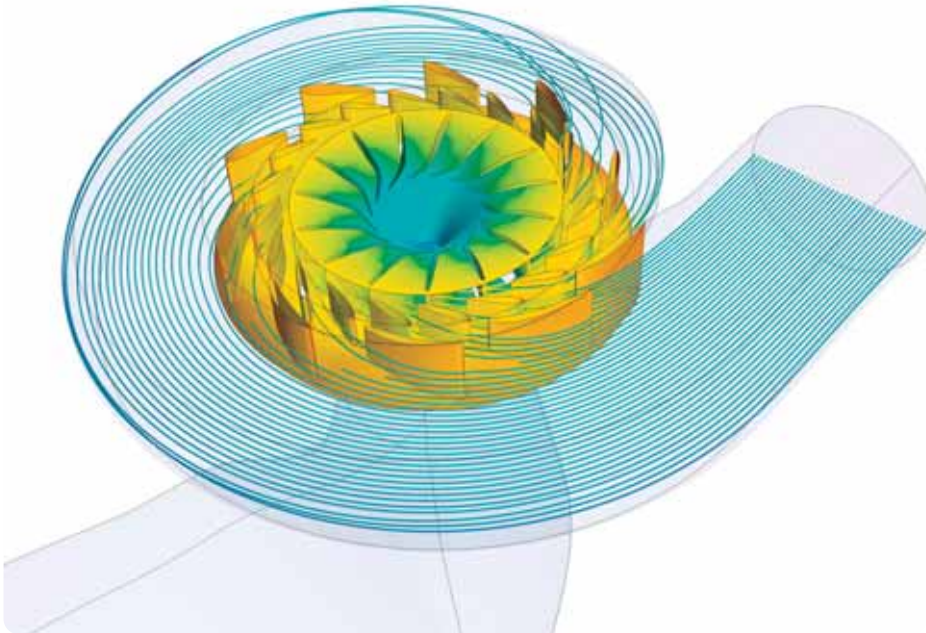
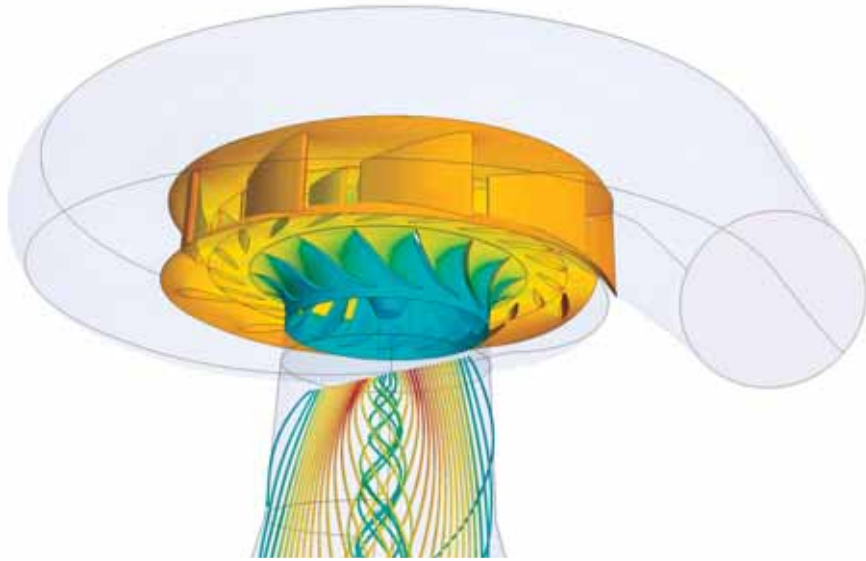
Ivić, S.; Sušanj, A.; Družeta, S.: *Optimizacija trase cjevovoda s obzirom na isplativost instalacije i eksploatacije*, Zbornik radova Petog susreta Hrvatskog društva za mehaniku, 978-953-7539-16-0, 67-72, 2013., Zagreb

Šnjarić, D.; Čarija, Z. et al.: *Irrigation of human prepared root canal – ex vivo based computational fluid dynamics analysis*, Croatian Medical Journal (IF=1.796), 53, 470-479, 2012., Zagreb

Čarija, Z.; Kranjčević, L.; Banić, V.; Čavrak, M.: *Numerical Analyses of Wells Turbine for Wave Power Conversion*, Engineering Review, 32, 141-146, 2012., Rijeka

Škifić, J.; Racić, G.: *Numeričke simulacije hidrauličkih tranzijenata u HE Vinodol*, Zbornik radova Petog susreta Hrvatskog društva za mehaniku, 978-953-7539-16-0, 189-195, 2013., Zagreb



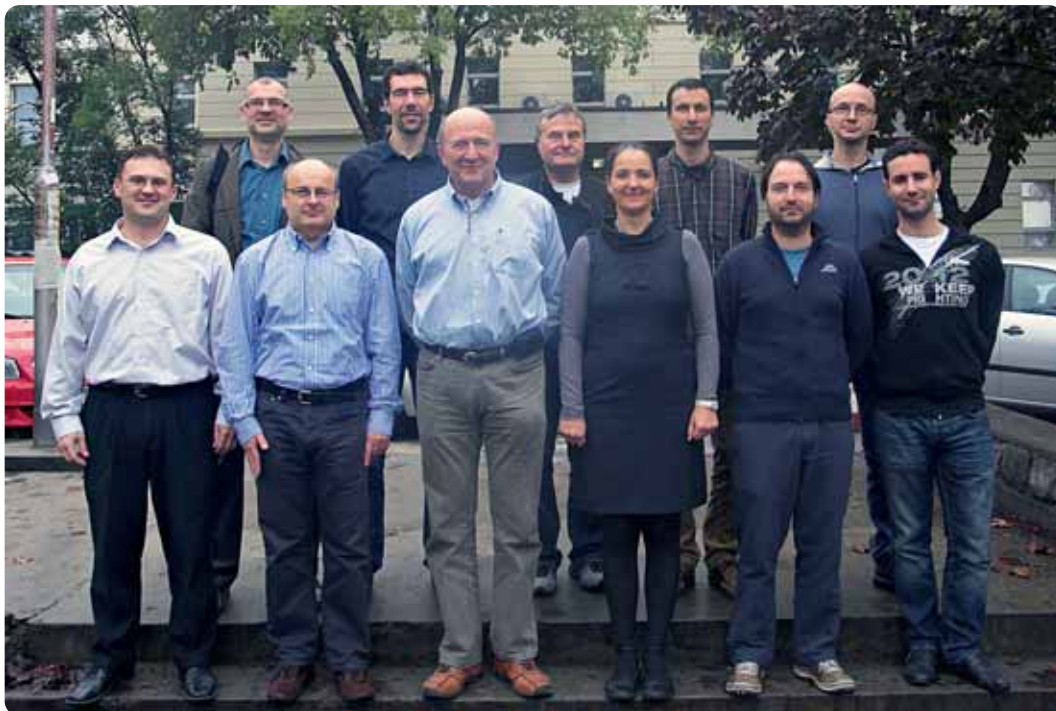


5.9 ZAVOD ZA RAČUNARSTVO / DEPARTMENT OF COMPUTER ENGINEERING

Predstojnik Zavoda / Department Head:

doc. dr. sc. / Assist. Prof. D. Sc. Kristijan Lenac

<http://zr.riteh.hr/>



1. Miroslav Joler
2. Damir Nemčanin
3. Ivo Ipšić
4. Damir Arbula
5. Željko Jeričević
6. Antun Sok
7. Tihana Galinac Grbac
8. Mladen Tomić
9. Sandi Ljubić
10. Ivan Štajduhar
11. Goran Mauša



DJELATNICI

REDOVITI PROFESORI

Ivo Ipšić

umjetna inteligencija; raspoznavanje uzoraka; govorne tehnologije

Željko Jeričević

znanstveno računanje; bioračunalstvo; razvoj algoritama; digitalna obrada slika

IZVANREDNI PROFESORI

Miroslav Joler

bežične komunikacije; računalni elektromagnetizam; biomedicinske aplikacije elektromagnetizma; mobilne aplikacije

DOCENTI

Tihana Galinac Grbac

programsko inženjerstvo; meko računarstvo; inženjerski menadžment; informacijsko-komunikacijske tehnologije

Kristijan Lenac

mobilna robotika; operacijski sustavi; razvoj algoritama; ugradbeni sustavi

Mladen Tomić

digitalna obrada signala i slike; teorija valića; fitarski slogovi

Ivan Štajduhar

umjetna inteligencija; strojno učenje

PROFESORI VISOKE ŠKOLE

Antun Sok

računalstvo; informatika; informacijska tehnologija; ICT edukacija

ASISTENTI

Damir Arbula

bežične mreže osjetila; raspodjeljeni algoritmi; lokalizacija

Sandi Ljubić

interakcija čovjeka i računala; mobilne aplikacije; inženjerstvo upotrebljivosti

FACULTY AND STAFF

PROFESSORS

Ivo Ipšić

artificial intelligence; pattern recognition; speech technologies

Željko Jeričević

scientific computing; biocomputing; algorithm development; digital image processing

ASSOCIATE PROFESSORS

Miroslav Joler

wireless communications; computational electromagnetics; biomedical applications of electromagnetics; applications for mobile

ASSISTANT PROFESSORS

Tihana Galinac Grbac

software engineering; soft computing; engineering management; information-communication technologies

Kristijan Lenac

mobile robotics; operating systems; algorithm development; embedded systems

Mladen Tomić

digital signal and image processing; wavelets; filter banks

Ivan Štajduhar

artificial intelligence; machine learning

COLLEGE PROFESSORS

Antun Sok

computer science; informatics; information technology; ICT education

ASSISTANTS

Damir Arbula

wireless sensor networks; distributed algorithms; localization

Sandi Ljubić

human-computer interaction (HCI); mobile applications; usability engineering

ZNANSTVENI NOVACI

ASISTENTI

Goran Mauša

umjetna inteligencija; neuronske mreže; meko računarstvo

ADMINISTRATIVNO OSOBLJE

Lovorka Malinić

administrativna tajnica

VANJSKI SURADNICI

izv. prof. dr. sc. Renato Filjar / Ericsson N.T. d. d.

Usluge zasnovane na lokaciji

doc. dr. sc. Irena Jurdana / Pomorski fakultet Sveučilišta u Rijeci

Svjetlovodne mreže

asist. Damir Nemčanin

asist. Dean Noč

asist. Iva Vlah

NASTAVA

KOLEGIJI NA PREDDIPLOMSKIM SVEUČILIŠNIM STUDIJIMA

Algoritmi i strukture podataka

Baze podataka

Dijagnostičke metode u medicini I

Dijagnostičke metode u medicini II

Građa računala

Informacijski sustavi

Operacijski sustavi

Osnove znanstvenog računanja

Primjena računala R

Programiranje

Programsko inženjerstvo

Razvoj web-aplikacija

Računalne mreže

Ugradbeni računalni sustavi

Uvod u računarstvo

JUNIOR RESEARCHERS

ASSISTANTS

Goran Mauša

artificial intelligence; neural networks; soft computing

ADMINISTRATIVE STAFF

Lovorka Malinić

administrative secretary

ASSOCIATES

Assoc. Prof. Renato Filjar, D. Sc. / Ericsson N.T. d. d.

Location based services

Assist. Prof. Irena Jurdana, D. Sc. / Faculty of Maritime Studies, University of Rijeka

Optical networks

Assist. Damir Nemčanin

Assist. Dean Noč

Assist. Iva Vlah

EDUCATION

UNDERGRADUATE UNIVERSITY COURSES

Algorithms and Data Structures

Databases

Diagnostic Methods in Medicine I

Diagnostic Methods in Medicine II

Computer Architecture

Information Systems

Operating System

Foundations of Scientific Computation

Applied Computing R

Programming

Software Engineering

Web Applications Development

Computer Networks

Embedded Systems

Introduction to Computer Engineering

**KOLEGIJI NA DIPLOMSKIM
SVEUČILIŠNIM STUDIJIMA**

Bioinformatika
 Građa računala
 Komunikacija čovjek-stroj
 Mobilne komunikacije
 Napredni algoritmi i strukture podataka
 Objektno orijentirano programiranje
 Programiranje ugradbenih sustava
 Radiokomunikacije
 Razvoj mobilnih aplikacija
 Računalna obrada govora i jezika

Teorija informacija i kodiranja
 Upravljanje u programskom inženjerstvu
 Usluge zasnovane na lokaciji

KOLEGIJI NA STRUČNIM STUDIJIMA

Digitalna računala
 Informacije i komunikacije
 Primjena računala ST
 Radikomunikacije ST
 Računalne mreže ST
 Svjetlovodne mreže
 Telekomunikacijski uređaji i mreže

**ZNANSTVENOISTRAŽIVAČKI
RAD**

Bežične mreže osjetila, raspodijeljeni algoritmi; programsko inženjerstvo, informacijsko-komunikacijske tehnologije; računalna obrada govora i jezika, raspoznavanje uzoraka; razvoj i optimizacija algoritama; rekonfigurabilne antene, samoadaptivni sustavi, numeričko modeliranje širenja vala; mobilna robotika, autonomni sustavi, interakcija čovjeka i računala.

**GRADUATE UNIVERSITY
COURSES**

Bioinformatics
 Computer Architecture
 Human-Machine Interaction
 Mobile Communications
 Advanced Algorithms and Data Structures
 Object Oriented Programming
 Embedded Systems Programming
 Radiocommunications
 Mobile Applications Development
 Computer Speech and Language Processing
 Information Theory and Coding
 Software Engineering Management
 Location-Based Services

VOCATIONAL COURSES

Digital Computers
 Information and Communication
 Applied Computing ST
 Radiocommunications ST
 Computer Networks ST
 Optical Networks
 Telecommunication Devices and Networks

**RESEARCH AND
DEVELOPMENT ACTIVITIES**

Wireless sensor networks, distributed algorithms; software engineering, information-communication technologies; speech processing and pattern recognition; development and optimization of algorithms; reconfigurable antennas, self-adaptive systems, numerical modeling of wave propagation; mobile robotics, autonomous systems, human computer interaction.

PROJEKTI

Govorne tehnologije, 318-0361935-0852, 2006 – 2012, Ministarstvo znanosti, obrazovanja i sporta, Ivo Ipšić, znanstvenoistraživački.

Teorija iz ponašanja tipova za pouzdane velike programske sustave, COST Action IC1201, voditelj za HR: Tihana Galinac Grbac, 2012-2016, znanstvenoistraživački.

Pouzdana mreža Internetskih usluga temeljenja na samoupravljanju, COST Action IC 1304, voditelj za HR: Tihana Galinac Grbac, 2013-2017, znanstvenoistraživački.

Laboratorijska i nastavna podrška u ICT tehnologijama, Ericsson Nikola Tesla, voditelj: Tihana Galinac Grbac, 2011-, istraživački.

Programsko inženjerstvo: Obrazovanje u računarstvu i znanstvena suradnja, Njemačka akademska služba za razmjenu, pridruženi član; Tihana Galinac Grbac, 2001-2013, stručni.

Noć istraživača 2013, FP7 projekt, sudionici: Tihana Galinac Grbac i Goran Mauša

Višefunkcijske antene u komunikacijskim i radarskim sustavima, 036-0361566-1573, Miroslav Joler

PROJECTS

Speech technologies, Ministry of Science, Education and Sports of the Republic of Croatia 318-0361935-0852, Ivo Ipšić, 2006 – 2012, research and scientific project.

Behavioral Types for Reliable Large-Scale Software Systems, COST Action, project no. IC1201, MC Cro: Tihana Galinac Grbac, 2012-2016.

Autonomous Control for a Reliable Internet of Services, COST Action, project no. IC1304, MC Cro: Tihana Galinac Grbac, 2013-2017.

Laboratory and educational support in ICT technologies, Ericsson Nikola Tesla, project leader: Tihana Galinac Grbac, 2011.

Software Engineering: Computer Science Education and Research Cooperation, Deutscher Akademischer Austausch Dienst, extended member: Tihana Galinac Grbac, 2001-2013.

Researchers night 2013, FP7 project, participants: Tihana Galinac Grbac and Goran Mauša

Multifunctional antennas in communication- and radar- systems, 036-0361566-1573, Miroslav Joler

PUBLIKACIJE / PUBLICATIONS

RADOVI U ČASOPISIMA / JOURNAL PAPERS

Arbula, D.; Lenac K.: *Pymote: high level Python library for event based simulation and evaluation of distributed algorithms*, International journal of distributed sensor networks, ISSN: 1550-1329, 2013.

Galinac Grbac, T.; Runeson, P.; Huljenić, D.: *A Second Replicated Quantitative Analysis of Fault Distributions in Complex Software Systems*, IEEE Transactions on Software Engineering, ISSN: 0098-5589, 39, 462-476, 2013., Washington, USA

Toplek I., Grbac, N, Galinac Grbac T. *O shvaćanju pojma beskonačnosti i graničnih procesa, Poučak, časopis hrvatskog matematičkog društva*, 52 (13) 2012.

Pobar, Miran; Martinčić-Ipšić, Sanda; Ipšić, Ivo.: *Optimization of Cost Function Weights for Unit Selection Speech Synthesis Using Speech Recognition.*, Neural network world, 1210-0552, 22, 429-441, 2012., Češka Republika, Prag

Kucec, M.; Ljubić, S.; Glavinić, V.: *Improving Students' Technical Skills Using Mobile Virtual Laboratory: Pilot Study of Assembly Language Input Methods for Touchscreen Devices*, Lecture Notes in Computer Science, ISBN: 978-3-642-39061-6, 7946, 514-533, 2013., Berlin - Heidelberg

Ljubić, S.; Kucec, M.; Glavinić, V.: *Tilt-Based Support for Multimodal Text Entry on Touchscreen Smartphones: Using Pitch and Roll*, Lecture Notes in Computer Science, ISBN: 978-3-642-39193-4, 8011, 651-660, 2013., Berlin - Heidelberg

Joler, M.: *Self-recoverable antenna arrays*, IET Microwaves, Antennas & Propagation, Print ISSN 1751-8725, Online ISSN 1751-8733, 6(4), 1608-1615, 2012., UK

Joler, M.: *How FPGAs Can Help Create Self-Recoverable Antenna Arrays*, International Journal of Antennas and Propagation, ISSN: 1687-5877 (Online), vol. 2012, Article ID 196925, 2012., US

MEĐUNARODNI KONGRESI / INTERNATIONAL CONGRESSES

Martinović, A.; Arbula, D.; Jeričević, Ž.: *Web service for separating components in the exponential decay process*, Information & Communication Technology Electronics & Microelectronics (MIPRO), 2013 36th International Convention on, ISBN: 978-953-233-076-2, 188-192, 2013.

Filjar R., Huljenić D., Lenac K.: *Enhancing Performance of GNSS Position Estimation by Cloud-based GNSS SDR Receiver Architecture Utilisation*. Proc of 55th International Symposium ELMAR 2013. Zadar, Croatia (2013).

Lenac K., Mumolo E., Nolich M.: *Sufficient Condition for Real-Time Non-preemptive Scheduling of Interactive Multimedia Tasks*. Proc of 8th International Symposium on Image and Signal Processing and Analysis (ISPA 2013). Trieste, Italy (2013).

Galinac Grbac, T.; Mauša, G; Dalbelo-Bašić, B.: *Stability of Software Defect Prediction in Relation to Levels of Data Imbalance*, Second Workshop on Software Quality, Analysis, Monitoring, Improvement and Applications-SQMIA 2013, ISBN: 978-86-7031-269, 2013., Novi Sad, Srbija

Justin, Tadej; Pobar, Miran; Ipšić, Ivo; Mihelič, France; Žibert, Janez: *A Bilingual HMM-Based Speech Synthesis System for Closely Related Languages*, Text, Speech and Dialogue, Lecture Notes in Computer Science, 978-3-642-40584-6, 8082, 543-550, 2012., Springer-Verlag Berlin Heidelberg,

Jeričević, Ž.; Kožar, I.: *Faster Solution of Large, Over-Determined, Dense Linear Systems*, Information & Communication Technology Electronics & Microelectronics (MIPRO), 2013 36th International Convention on, ISBN: 978-953-233-076-2, DC VIS, 228-231, 2013.

Mauša, G.; Galinac Grbac, T.; Dalbelo Bašić, B.; Pavčević, M. O.: *Hill Climbing and Simulated Annealing in Large Scale Next Release Problem*, Proceedings of International conference on computer as a tool, EuroCon 2013, ISBN: 978-1-4673-2232-4, 2013., Zagreb, Hrvatska

Filjar, R, Brcic, D, and Kos, S.: *Building resilience against space weather effects.*, Proc of Challenges in meteorology 3 Extreme weather and impact on society,2013., Zagreb, Hrvatska

Filjar, R, Ševrović, M, and Dadić, I.: *Development of space weather-resilient GNSS-based applications*, Proc of 2nd International Conference on Applied Internet and Information Technologies AIIT, Zrenjanin, Serbia

Filjar, R, Ševrović, M, and Dadić, I.: *Positioning and localisation for Location-Based Services*, Proc of 21st telecommunications Forum TELFOR, Belgrade, Serbia

POZVANA PREDAVANJA / INVITED LECTURES

Galinac Grbac T.: *Theory on the distributions and predictive capability of verification faults*, Second Workshop on Software Quality, Analysis, Monitoring, Improvement and Applications -SQMIA 2013, 2013. Novi Sad, Srbija

Galinac Grbac T.: *Uslužno orijentirano računarstvo*, Dante, 2013. Rijeka, Hrvatska

MEĐUNARODNA SURADNJA / INTERNATIONAL COLLABORATIONS

Institute of Informatics, Faculty of Electrical Engineering and Computer Science, University of Maribor, Slovenija / Slovenia

Department of Mathematics and Informatics, Faculty of Sciences, University of Novi Sad, Srbija / Serbia

Mälardalen University, School of Innovation, Design and Engineering, Sweden/Švedska

5.10 ZAVOD ZA TEHNIČKU MEHANIKU / DEPARTMENT FOR ENGINEERING MECHANICS

Predstojnik Zavoda / Department Head:

prof. dr. sc. / Prof. D. Sc. Josip Brnić

http://www.riteh.uniri.hr/zav_katd_sluz/zav_teh_meh/osn_pod/index.html



1. Igor Pešić
2. Roberto Žigulić
3. Sanjin Krščanski
4. Marko Čanadija
5. Edin Merdanović
6. Josip Brnić
7. Neven Munjas
8. Natalija Forgić
9. Goranka Štimac



10. Goran Turkalj
11. Ante Skoblar
12. Domagoj Lanc
13. Sanjin Braut
14. Marino Brčić

DJELATNICI

REDOVITI PROFESORI

Josip Brnić

statika; čvrstoća konstrukcija; teorija elastičnosti i plastičnosti; metoda konačnih elemenata; eksperimentalna mehanika; optimizacija konstrukcija

Goran Turkalj

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

Marko Čanadija

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

Roberto Žigulić

kinematika; dinamika; dinamika strojeva i robota; mehatronika; eksperimentalna ispitivanja u mehanici konstrukcija i strojeva

IZVANREDNI PROFESORI

Sanjin Braut

kinematika; dinamika; vibracije; regulacija i upravljanje dinamičkim sustavima; trajnost strojeva i konstrukcija; mehatronika

Domagoj Lanc

čvrstoća; elasto-plastomehanika; stabilnost konstrukcija; kompozitne konstrukcije

DOCENTI

Marino Brčić

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

VIŠI ASISTENTI

Ante Skoblar

kinematika; dinamika; vibracije; akustika

FACULTY AND STAFF

PROFESSORS

Josip Brnić

statics; structural mechanics; theory of elasticity and plasticity; finite element analysis; experimental mechanics; optimization of structures

Goran Turkalj

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

Marko Čanadija

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

Roberto Žigulić

kinematics; dynamics; dynamics of robots and machines; mechatronics; experimental testing of structures and machines

ASSOCIATE PROFESSORS

Sanjin Braut

kinematics; dynamics; vibration; dynamic system control; durability of machines and structures; mechatronics

Domagoj Lanc

strength of materials; elasto-plastomechanics; structural stability; composite structures

ASSISTANT PROFESSORS

Marino Brčić

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

SENIOR ASSISTANTS

Ante Skoblar

kinematics; dynamics; vibration; acoustics

ZNANSTVENI NOVACI

VIŠI ASISTENTI

Igor Pešić

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

Goranka Štimac

kinematika; dinamika; regulacija; aktivni magnet-ski ležajevi

ASISTENTI

Sanjin Krščanski

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

Edin Merdanović

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

Neven Munjas

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

ADMINISTRATIVNO OSOBLJE**Natalija Forgić**

administrativna tajnica

VANJSKI SURADNICI**prof. dr. sc. Franc Kosel / Fakulteta za Strojništvo, Univerza v Ljubljani, Ljubljana, Slovenija**

tehnička mehanika; čvrstoća; elastoplastomehanika

prof. dr. sc. Stojan Kravanja / Fakulteta za gradbeništvo, Univerza v Mariboru, Maribor, Slovenija

tehnička mehanika; optimizacija konstrukcija

NASTAVA

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, tankostijene konstrukcije, računalna analiza kons-

JUNIOR RESEARCHERS

SENIOR ASSISTANTS

Igor Pešić

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

Goranka Štimac

kinematics; dynamics; control; active magnetic bearings

ASSISTANTS

Sanjin Krščanski

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

Edin Merdanović

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

Neven Munjas

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

ADMINISTRATIVE STAFF**Natalija Forgić**

administrative secretary

ASSOCIATES**Prof. Franc Kosel, D. Sc. / Faculty of Mechanical Engineering, University of Ljubljana, Ljubljana, Slovenia**

engineering mechanics; strength of materials; elasto-plastomechanics

Prof. Stojan Kravanja, D. Sc. / Faculty of Civil Engineering, University of Maribor, Maribor, Slovenia

engineering mechanics; structural optimization

EDUCATION

Courses are running in the field of applied mechanics, which includes analytical, computational and experimental mechanics. According to the content of consideration, here belong: statics, strength of materials, structural stability, structural mechanics, optimization of structures, finite element analysis, thin-walled structures, computational analysis of

trukcija, 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.

KOLEGIJI NA PREDDIPLOMSKIM SVEUČILIŠNIM STUDIJIMA

Dinamika
Kinematika
Mehanika i elementi konstrukcija
Osnove primjene metode konačnih elemenata
Računarska analiza konstrukcija
Statika
Čvrstoća konstrukcija
Čvrstoća konstrukcija I

KOLEGIJI NA DIPLOMSKIM SVEUČILIŠNIM STUDIJIMA

Dinamika strojeva i robota
Eksperimentalna ispitivanja u mehanici konstrukcija i strojeva
Eksperimentalna ispitivanja u mehanici konstrukcija i strojeva
Elasto i plastomehanika
Metoda konačnih elemenata čvrstih tijela
Optimalni dizajn konstrukcija
Regulacija i upravljanje dinamičkim sustavima
Simulacija dinamičkih sustava
Stabilnost konstrukcija
Tankostjene konstrukcije
Termomehanika
Trajnost strojeva i konstrukcija
Vibracije
Čvrstoća konstrukcija II

structures, composite structures, experimental testing of structures and machines, thermomechanics, contact mechanics, kinematics, dynamics, vibrations, vibroacustics, dynamic system control, durability of machines and structures; mechatronics.

UNDERGRADUATE UNIVERSITY COURSES

Dynamics
Kinematics
Mechanics and Structural Elements
Introduction to Finite Element Method (FEM)

Computational Structural Analysis
Statics
Strength of Materials
Mechanics of Materials I

GRADUATE UNIVERSITY COURSES

Dynamics of Machines and Robots
Experimental Testing in Mechanics of Structures and Machines
Experimental Testing in Mechanics of Structures and Machines
Elasto and Plastomechanics
Finite Element Method of Solids
Optimization of Structures
Dynamic Systems Control

Simulation of Dynamic System
Structural Stability
Thin-walled structures
Thermomechanics
Durability of Machines and Structures
Vibration
Mechanics of materials II

KOLEGIJI NA STRUČNIM STUDIJIMA

Mehanika I
 Mehanika II
 Mehanika i elementni konstrukcija ST
 Stručna praksa I
 Stručna praksa II
 Čvrstoća

KOLEGIJI NA POSLIJEDIPLOMSKIM SVEUČILIŠNIM (DOKTORSKIM) STUDIJIMA

Elastomehanika i plastomehanika
 IP iz termomehanike
 Kinematika i dinamika robota
 Kontaktna mehanika
 MKE i optimizacija konstrukcija
 Nelinearna analiza konstrukcija
 Stabilnost konstrukcija
 Vibracije i trajnost strojeva i konstrukcija

Viskoelastičnost i viskoplastičnost
 Zaštita od buke i vibracija strojeva i konstrukcija

ZNANSTVENOISTRAŽIVAČKI RAD

Primijenjena mehanika: računalna mehanika, eksperimentalna mehanika, optimalni dizajn konstrukcija, stabilnost konstrukcija, vibracije, vibroakustika, dinamika strojeva i konstrukcija, mehatronika, termomehanika, nanomehanika, integritet konstrukcija.

PROJEKTI

Numerička analiza odziva konstrukcija za određena područja eksploatacije, 069-0691736-1737, Ministarstvo znanosti, obrazovanja i sporta, Josip Brnić, 2007. -2013., znanstvenoistraživački.

VOCATIONAL COURSES

Mechanics I
 Mechanics II
 Mechanics and Structural Elements ST
 Professional Practice I
 Professional Practice II
 Strength of Materials

POSTGRADUATE UNIVERSITY (DOCTORAL) COURSES

Elastomechanics and Plastomechanics
 Advanced Thermomechanics
 Kinematics and Dynamics of Robots
 Contact mechanics
 FEM and Optimization of Structures
 Nonlinear Structural Analysis
 Structural Stability
 Vibrations and Durability of Machines and Structures
 Viscoelasticity and Viscoplasticity
 Protection Against Noise and Vibration of Machines and Structures

RESEARCH AND DEVELOPMENT ACTIVITIES

Applied mechanics: computational mechanics, experimental mechanics, optimal structural design, structural stability, vibrations, vibroacoustics, dynamics of structures and machines, mechatronics, thermomechanics, nanomechanics, structural integrity.

PROJECTS

Numerical analysis of structural response for particular service conditions, 069-0691736-1737, Ministry of Science, Education and Sports of the Republic of Croatia, Josip Brnić, 2007- 2013, research and scientific project.

Konačnoelementni modeli za analizu stabilnosti grednih konstrukcija, 069-0362214-1575, Ministarstvo znanosti, obrazovanja i sporta, Goran Turkalj, 2007 – 2013, znanstvenoistraživački

Redukcija vibracija i buke mehatroničkim pristupom, 069-0691736-1733, Ministarstvo znanosti, obrazovanja i sporta, Roberto Žigulić, 2007. – 2013., znanstvenoistraživački

Premošćivanje tehničkih razlika i društvenih prepreka u cilju pretvaranja jadranskog područja u središte održivog tehnološkog razvoja; Adria HUB, IPA, 2°ord./0127/0

Proračun kritičnih brzina i stabilnosti turbinskog rotora oslonjenog na klizne ležajeve. Tvornica turbina d.o.o. Karlovac

„Analiza uvjeta za kontrolu procesa oblikovanja metala”, bilateralni projekt Hrvatska - Slovenija, Josip Brnić

Finite element models for stability analysis of beam-type structures, 069-0362214-1575, Ministry of Science, Education and Sports of the Republic of Croatia, Goran Turkalj, 2007 – 2013, research and scientific project.

Mechatronic Approach to the Reduction of Machinery Vibration and Noise, 069-0691736-1733, Ministry of Science, Education and Sports of the Republic of Croatia, Roberto Žigulić, 2007- 2013, research and scientific project.

Bridge technical differences and social suspicions contributing to transform the Adriatic area in a stable hub for a sustainable technological development. Adria HUB, IPA, 2°ord./0127/0

Estimation of the critical speed and stability of the turbine rotor supported by journal bearings Turbine works ltd. Karlovac

„Analysis of conditions for control of metal forming processes”, bilateral project Croatia-Slovenija, Josip Brnić



PUBLIKACIJE / PUBLICATIONS

RADOVI U ČASOPISIMA / JOURNAL PAPERS

Brnić, J., Turkalj, G., Krščanski, S.: *Experimental Research and Analysis of Non-alloy Structural Steel Response Exposed to High Temperature Conditions.*, High temperature materials and processes, 0334-6455, 2 (32), 163-169, 2013.

Brnić, J., Turkalj, G., Niu, J. Čanadija, M., Lanc, D.: *Analysis of Experimental Data on the Behavior of Steel S275JR - Reliability of Modern Design*, Materials & design, 0261-3069, 47, 497-504, 2013.

Brnić, J., Vukelić, G., Turkalj, G.: *Crack driving force prediction based on finite element analysis using standard models*, Structural engineering and mechanics, 1225-4568, 44, 601-609, 2012.

Niu, J. Luo, X., Tian, H., Brnić, J.: *Vacuum brazing of aluminium metal matrix composite (55 vol.% SiCp/A356) using aluminium-based filler alloy*, Materials Science and Engineering B-Advanced Functional Solid-State Materials, 0921-5107, 19 (177), 1707-1711, 2012.

Brnić, J., Niu, J., Turkalj, G., Čanadija, M., Lanc, D., Brčić, M., Krščanski, S., Vukelić, G.: *Comparison of Material Properties and Creep Behavior of 20MnCr5 and S275JR Steels*, Materials Science Forum, 1662-9752, 762, 47-54, 2013.

Brnić, J., Turkalj, G., Lanc, D., Čanadija, M., Brčić, M., Vukelić, G., Munjas, N.: *Testing and Analysis of X39CrMo17-1 Steel Properties*, Construction and building materials, 0950-0618, 44, 293-301, 2013.

Brčić, M., Čanadija, M., Brnić, J.: *Estimation of material properties of nanocomposite structures*, Meccanica, 0025-6455, 4, 1-12, 2013.

Čanadija, M., Brcic, M., Brnić, J.: *A finite element model for thermal dilatation of carbon nanotubes*, Reviews on Advanced Materials Science, 1606-5131, 33 (1), 1-6, 2013.

Čanadija, M., Brčić, M., Brnić, J.: *Bending behaviour of single-layered graphene nanosheets with vacancy defects*, Engineering Review, 1330-9587, 33 (1), 9-14, 2013.

Krščanski, S., Turkalj, G.: *FEM stress concentration factors for fillet welded CHS-plate T-joint*, Engineering Review, ISSN: 1330-9587, 32, 147-155, 2012.

Kravanja, S., Turkalj, G., Šilih, S., Žula T.: *Optimal design of single-story steel building structures based on parametric MINLP optimization*, Journal of Constructional Steel Research, ISSN: 0143-974X, 81, 86-103, 2013.

Štimac, G.; Braut, S.; Bulić, N.; Žigulić, R.: *Modeling and Experimental Verification of a Flexible Rotor/AMB System*, COMPEL: The International Journal for Computation and Mathematics in Electrical and Electronic Engineering, ISSN: 0332-1649, 32, 1244-1254, 2013.

MEĐUNARODNI KONGRESI / INTERNATIONAL CONGRESSES

Brnić, J., Turkalj, G., Vukelić, G.: *Importance of Experimental Research in the Design of Structures*, Proceedings of the 23rd International Symposium, 147-150., 2012., Zadar

Turkalj, G., Kravanja, S., Merdanović, E.: *Numerical simulation of large-displacement behaviour of thin-walled frames incorporating joint action*, Design, Fabrication and Economy of Metal Structures, International Conference Proceedings 2013, ISBN: 978-3-642-36690-1, 127-132, 2012., Miskolc, Hungary

Čanadija, M., Mosler, J.: *Low Cycle Fatigue in Metals – A Thermodynamically and Variationally Consistent Constitutive Model Based on Energy Minimization*, COMPLAS XII – Computational Plasticity XII- Fundamentals and Applications, 978-84-941531-5-0, 2013., Barcelona, Španjolska

Brčić, M., Čanadija, M., Brnić, J.: *Multiscale modeling of nanocomposite structures with defects*, Advances in Fracture and Damage Mechanics XII, 978-3-03785-830-1, 141-144, 2013., Sardinija, Italija

Štimac, G.; Braut, S.; Žigulić, R.; Skoblar, A.: *A setup procedure for a flexible rotor/amb system with non-collocation*, Proceedings of the 30th Danubia-Adria Symposium on Advances in Experimental Mechanics, ISBN:978-953-7539-17-7, 238-239, 2013., Zagreb

Skoblar, A; Žigulić, R.; Braut, S.; Štimac, G.: *Determination of simulation parameters for space-harmonic analysis of periodically stiffened panel*, Proceedings of the 30th Danubia-Adria Symposium on Advances in Experimental Mechanics, ISBN:978-953-7539-17-8, 141-142, 2013., Zagreb



Muminović, A.J.; Braut, S.; Repčić, R.: *Elastic Rotor Control using Active Magnetic Bearing System*, Proceedings of the 17th International Research/Expert Conference: "Trends in the Development of Machinery and Associated Technology" TMT 2013., ISSN 1840-4944, 465-468, 2013., Istanbul, Turska

Pešić, I., Lanc, D., Turkalj, G.: *Nonlinear buckling analysis model for laminated beam type structures*, Book of Abstracts of 17th International Conference on Composite Structures, 11, 2013., Porto, Portugal

POZVANA PREDAVANJA / INVITED LECTURES

Brić, J., et al.: *Comparison of Material Properties and Creep Behavior of 20MnCr5 and S275JR Steels*, 7th ICPNS, 2013. Oulu, Finska

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

5.11 ZAVOD ZA TERMODINAMIKU I ENERGETIKU / DEPARTMENT OF THERMODYNAMICS AND ENERGY ENGINEERING

Predstojnik Zavoda / Department Head:

prof. dr. sc. / Prof. D. Sc. Bernard Franković

<http://www.riteh.uniri.hr/ustroj/zte/>



1. Boris Delač
2. Vladimir Medica
3. Tomislav Senčić
4. Branimir Pavković
5. Igor Bonefačić
6. Radojka Praprotnik
7. Igor Wolf
8. Sanjin Fućak
9. Kristijan Lenić
10. Anica Trp
11. Ozren Bukovac
12. Tomislav Mrakovčić



13. Zmagoslav Prelec
14. Paolo Blecich
15. Vedran Mrzljak
16. Bernard Franković

DJELATNICI

REDOVITI PROFESORI

Bernard Franković

termodinamika; prijenos topline i prijenos tvari; izmjenjivači topline; plinska tehnika; obnovljivi izvori energije

Vladimir Medica

motori s unutarnjim izgaranjem, toplinski strojevi, brodski pogonski strojevi, numeričko modeliranje, numeričke simulacije izgaranja

Špiro Milošević

(professor emeritus)

Tomislav Mrakovčić

brodski energetski sustavi, brodski pogonski sustavi, brodski pomoćni strojevi, numeričko modeliranje prijenosa topline i tvari

Branimir Pavković

tehnika hlađenja, mjerenja u termotehnici, kompresori, procesna oprema, dizalice topline, energetska učinkovitost, obnovljivi izvori energije

Zmagoslav Prelec

Energetika; Generatori pare; Energetski sustavi; Zaštita okoliša

Anica Trp

termodinamika; izmjenjivači topline; numeričko modeliranje prijenosa topline i tvari; obnovljivi izvori energije

Ivan Viličić

termotehnička oprema i sustavi; toplinska ugodnost; kvaliteta zraka u prostoru; obnovljivi izvori energije; centralni sustavi nadzora i upravljanja; optimizacija sustava

IZVANREDNI PROFESORI

Kristian Lenić

termodinamika; izmjenjivači topline; numeričko modeliranje prijenosa topline i tvari; obnovljivi izvori energije

FACULTY AND STAFF

PROFESSORS

Bernard Franković

thermodynamics; heat and mass transfer; heat exchangers; gas technology; renewable energy sources

Vladimir Medica

internal combustion engines, heat engines, ship propulsion machinery, numerical modelling, numerical simulations of combustion

Špiro Milošević

(Professor Emeritus)

Tomislav Mrakovčić

marine energy systems, marine propulsion systems, marine auxiliary machinery, numerical modeling of heat and mass transfer

Branimir Pavković

refrigeration, thermal measurements, compressors, process equipment, heat pumps, energy efficiency, renewable energy sources

Zmagoslav Prelec

Energetics; Steam generators, Energy systems, Environmental protection

Anica Trp

thermodynamics; heat exchangers; numerical modeling of heat and mass transfer; renewable energy sources

Ivan Viličić

thermo-technical equipment and systems; thermal comfort; indoor air quality; renewable energy sources; central management and control systems; system optimization

ASSOCIATE PROFESSORS

Kristian Lenić

thermodynamics; heat exchangers; numerical modeling of heat and mass transfer; renewable energy sources

DOCENTI

Tomislav Senčić

termoenergetika; toplinski strojevi; goriva, maziva i voda

Igor Wolf

termotehnička oprema i sustavi; toplinska ugodnost; kvaliteta zraka u prostoru; obnovljivi izvori energije; centralni sustavi nadzora i upravljanja; optimizacija sustava

VIŠI ASISTENTI

Igor Bonefačić

termodinamika, numeričko modeliranje procesa izgaranja, prijenosa topline i tvari, obnovljivi izvori energije

Viktor Dragičević

energetski sustavi, energetski i procesni uređaji, inženjerstvo zaštite okoliša

ZNANSTVENI NOVACI

VIŠI ASISTENTI

Ozren Bukovac

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

ASISTENTI

Paolo Blecich

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

Boris Delač

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

Sanjin Fućak

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

Vedran Mrzljak

motori s unutranjim izgaranjem, termodinamika, toplinski strojevi, numeričko modeliranje

ADMINISTRATIVNO OSOBLJE

Radojka Praprotnik

administrativna tajnica

Marko Perčić

pripravnik

ASSISTANT PROFESSORS

Tomislav Senčić

thermal energy engineering; thermal machines; fuels, lubricants and water

Igor Wolf

thermo-technical equipment and systems; thermal comfort; indoor air quality; renewable energy sources; central management and control systems; system optimization

SENIOR ASSISTANTS

Igor Bonefačić

thermodynamics, numerical modelling of combustion, heat and mass transfer, renewable energy sources

Viktor Dragičević

energy systems, energy and process facilities, environmental engineering

JUNIOR RESEARCHERS

SENIOR ASSISTANTS

Ozren Bukovac

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

ASSISTANTS

Paolo Blecich

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

Boris Delač

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

Sanjin Fućak

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

Vedran Mrzljak

internal combustion engines, thermodynamics, heat engines, numerical modeling

ADMINISTRATIVE STAFF

Radojka Praprotnik

administrative secretary

Marko Perčić

apprentice

VANJSKI SURADNICI

prof. dr. sc. Branko Bošnjaković

okoliš i gospodarstvo

prof. dr. sc. Damir Pečornik

racionalno korištenje energije

prof. dr. sc. Miljenko Šunić

plin i obnovljivi izvori energije

prof. dr. sc. Enco Tireli

toplinske turbine; termoelektrane

izv. prof. dr. sc. Tomaž Katrašnik

motori s unutarnjim izgaranjem

doc. dr. sc. Nedjeljko Škifić

motori s unutarnjim izgaranjem

dr. sc. Ivan Jakovljević

toplinske turbine; termoelektrane

**dr. sc. Serdo Klapčić /
HEP - Termoelektrana**

termoelektrane

mr. sc. Nikola Blažević / Almes

procesno inženjerstvo

Bojan Jurdana / KD Čistoća d.o.o.

plinska tehnika

Serdo Klapčić / HEP - TE Plomin d.o.o.

izvori energije

Katarina Knafelj

brodsko strojarstvo

Edi Kučan

brodsko strojarstvo

Damir Žaja

HVAC

ASSOCIATES

Prof. Branko Bošnjaković, D. Sc.

environment and economy

Prof. Damir Pečornik, D. Sc.

rational energy use

Prof. Miljenko Šunić, D. Sc.

gas and renewable energy

Prof. Enco Tireli, D. Sc.

thermal turbines; thermal power plants

Assoc. Prof. Tomaž Katrašnik, D. Sc.

internal combustion engines

Assist. Prof. Nedjeljko Škifić, D. Sc.

internal combustion engines

Ivan Jakovljević, D. Sc.

thermal turbines; thermal power plants

**Serdo Klapčić, D. Sc. / HEP - Plomin
Thermal Power Plant**

thermal power plants

Nikola Blažević, M. sc. / Almes

process engineering

Bojan Jurdana / KD Čistoća d.o.o.

gas technology

Serdo Klapčić / HEP - TE Plomin d.o.o.

heat sources

Katarina Knafelj

marine engineering

Edi Kučan

marine engineering

Damir Žaja

HVAC

NASTAVA

Nastava iz područja znanstvenih polja strojarstva, temeljnih i interdisciplinarnih tehničkih znanosti, znanstvenih grana procesnog energetskeg strojarstva, brodskog strojarstva, termodinamike, energetike i inženjerstva okoliša, energetske sustavi; energetska postrojenja; energetska oprema, uređaji i strojevi; zaštita okoliša; procesno inženjerstvo.

KOLEGIJI NA PREDDIPLOMSKIM SVEUČILIŠNIM STUDIJIMA

Brodski pomoćni strojevi
Energetski sustavi
Izvori energije
Nauka o toplini I
Tehnika grijanja
Termodinamika BG
Termodinamika i energetika
Toplinski strojevi i uređaji

KOLEGIJI NA DIPLOMSKIM SVEUČILIŠNIM STUDIJIMA

Brodski energetske uređaji
Brodski pogonski strojevi
Brodski sustavi
Brodski termotehnički sustavi
Energetska postrojenja
Energetski i procesni uređaji
Goriva, maziva i voda
Inženjerstvo zaštite okoliša
Kompresori
Laboratorijske vježbe u termotehnici
Motori
Nauka o toplini II
Numeričko modeliranje u termodinamici
Obnovljivi izvori energije
Oprema procesnih postrojenja
Plinska tehnika
Pogonski i radni strojevi
Procesno inženjerstvo
Tehnički izmjenjivači topline
Tehnika hlađenja

EDUCATION

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.

UNDERGRADUATE UNIVERSITY COURSES

Marine Auxiliary Machinery
Energy Systems
Energy Sources
Thermodynamics I
Heating Systems
Thermodynamics NA
Thermodynamics and Energy Engineering
Thermal Engines and Devices

GRADUATE UNIVERSITY COURSES

Ship Energy Equipment
Ship Propulsion Engines
Ship Auxiliary Systems
Marine HVAC&R Systems
Power Plants
Energy and Process Equipment
Fuels, Lubricants and Water
Environmental Engineering
Compressors
Laboratory Practice in Thermal Engineering
Internal Combustion Engines
Thermodynamics II
Numerical Modelling in Thermodynamics
Renewable Energy Sources
Process Plant Equipment
Gas Engineering
Energy Conversion Engines
Process Engineering
Heat Exchangers
Refrigeration Systems

Tehnika klimatizacije i automatska regulacija
 Termodinamika smjesa
 Termoenergetska postrojenja
 Toplinska mjerenja
 Toplinske turbine

KOLEGIJI NA STRUČNIM STUDIJIMA

Brodski sustavi, pomoćni strojevi i uređaji

Energetika u procesnoj industriji
 Grijanje i klimatizacija
 Procesna oprema i uređaji
 Stručna praksa I
 Stručna praksa II
 Tehnološki procesi u procesnoj industriji
 Toplina
 Toplinski strojevi i uređaji I
 Toplinski strojevi i uređaji II
 Zaštita okoliša i radne sredine

KOLEGIJI NA POSLIJEDIPLOMSKIM SVEUČILIŠNIM (DOKTORSKIM) STUDIJIMA

Eksperimentalne metode u toplinskoj tehnici i termoenergetici
 Izabrana poglavlja iz brodskih energetske postrojenja
 Izabrana poglavlja iz brodskih strojnih kompleksa
 Izabrana poglavlja iz grijanja i klimatizacije
 Izabrana poglavlja iz izmjenjivača topline
 Izabrana poglavlja iz motora s unutarnjim izgaranjem
 Izabrana poglavlja iz tehnike hlađenja i tehnike niskih temperatura
 Izabrana poglavlja iz toplinskih turbostrojeva
 Izabrana poglavlja iz toplinskih znanosti
 Numeričko modeliranje prijelaza topline
 Numeričko modeliranje procesa izgaranja
 Obnovljivi izvori energije
 Okoliš i gospodarstvo
 Optimizacija energetske procesa
 Racionalna potrošnja energije

HVAC Systems and Automatic Control
 Thermodynamics of Mixtures
 Thermal Energy Plants
 Thermal Measurements
 Thermal Turbines

VOCATIONAL COURSES

Ship Systems, Auxiliary Engines and Equipment
 Energy in Process Industry
 HVAC Systems
 Process Equipment and Devices
 Professional Practice I
 Professional Practice II
 Technological Processes in Process Industry
 Thermodynamics
 Thermal Engines and Devices I
 Thermal Engines and Devices II
 Environment and Workspace Protection

POSTGRADUATE UNIVERSITY (DOCTORAL) COURSES

Experimental Methods in Thermal and Power Engineering
 Selected Topics in Marine Energy Systems
 Selected Topics in Marine Machinery Systems
 Selected Topics in HVAC
 Selected Topics on Heat Exchangers
 Selected Topics in Internal Combustion Engines
 Selected Topics in Refrigeration and Low-Temperature Refrigeration
 Selected Topics in Thermal Turbomachines
 Selected Topics in Thermal Sciences
 Numerical Modeling of Heat Transfer
 Numerical Modeling of Combustion Process
 Renewable Energy Sources
 Environment and Economy
 Optimization of Energy Processes
 Rational Energy Consumption

Suvremene konstrukcije motora

Termodinamička analiza procesa

Termodinamika smjesa i toplinski uređaji

Trajnost i pouzdanost termoenergetskih sustava

Zaštita okoliša u tehnici hlađenja

Zaštita okoliša u energetici i procesnoj industriji

Advanced Design of Internal Combustion Engine

Thermodynamic Analysis of Processes

Thermodynamics of Mixtures and Thermal Devices

Durability and Reliability of Thermal Energy Systems

Environmental Protection in Refrigeration Systems

Environment Protection in Energy and Process Industry

ZNANSTVENOISTRAŽIVAČKI RAD

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 broskog 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 AND DEVELOPMENT ACTIVITIES

Research on heat devices, heat exchangers and heat storages which encompass theoretical and laboratory research of heat and mass transfer, as well as heat transfer during phase change processes; research and optimization of heating and cooling systems, as well as of renewable energy systems; research into the field of refrigeration which embraces compression and absorption cooling devices and heat pumps; research into energy efficiency and optimization of HVAC&R systems; research into influence of wet steam parameters on the erosion process of rotor turbine blades; research into erosion - corrosion in the flowing part of steam turbines; research into reducing pollution species emission of internal combustion engines while retaining low specific fuel consumption and aiming at increasing specific power and reliability by sudden overload of a super charged engine; research to field of marine engineering aiming at the optimizing ships power plant control; investigation into optimization of energy processes; investigation into the field of emission reduction from energy and process facilities.

PROJEKTI

Istraživanje i razvoj komponenata i sustava obnovljivih izvora energije, 069-0692972-3112, Ministarstvo znanosti, obrazovanja i sporta, Bernard Franković, 2007 - 2012, znanstveno-istraživački

Analiza i tehničko rješenje sustava za recirkulaciju dimnih plinova generatora pare u TE-Rijeka; Rijeka, 2012.

Primijenjena istraživanja rashladnih sustava s novim radnim tvarima, 069-0692972-2203, Ministarstvo znanosti, obrazovanja i sporta, Branimir Pavković, 2007.- 2013., znanstveno-istraživački

Hlađenje restorana specijalne bolnice Thalassoterapia Crikvenica sunčevom energijom, IPA ADRIACOLD project ev.br. 08/13, Pavković, B. et al., Tehnički fakultet Rijeka, 2013., podizvođač u IPA EU projektu

Projekt hlađenja dijela prostorija Tehničkog fakulteta multisplit sustavima, Pavković, B. et al., Tehnički fakultet Rijeka, 2013., stručni projekt

Preliminarna energetska studija i izvješće o energetskom pregledu za stambenu zgradu Vere Bratonje 21 u Rijeci, Pavković, B. et al., Tehnički fakultet u Rijeci, 2013., energetska studija

Preliminarna energetska studija i izvješće o energetskom pregledu za stambenu zgradu Milana Frlana 32 u Matuljima, Pavković, B. et al., Tehnički fakultet u Rijeci, 2013., energetska studija

Preliminarna energetska studija i izvješće o energetskom pregledu za stambenu zgradu Franje Belulovića 18 u Rijeci, Pavković, B. et al., Tehnički fakultet u Rijeci, 2013., energetska studija

Preliminarna energetska studija i izvješće o energetskom pregledu za stambenu zgradu Frane Mladenića 1-3 u Rijeci, Pavković, B. et al., Tehnički fakultet u Rijeci, 2013., energetska studija

PROJECTS

Research and development of renewable energy components and systems, 069-0692972-3112, Ministry of Science, Education and Sports of the Republic of Croatia, Bernard Franković, 2007.- 2012, research and scientific project

Analysis and technical solution for flue gas recirculation on steam boiler in Power plant - Rijeka; Rijeka, 2012.

Applied research of refrigeration systems with new refrigerants, 069-0692972-2203, Ministry of Science, Education and Sports of the Republic of Croatia, Branimir Pavković, 2007.- 2013., research and scientific project

Solar cooling system for restaurant in special hospital Thalassoterapia Crikvenica, IPA ADRIACOLD project ev.br. 08/13, Pavković, B. et al., Faculty of Engineering in Rijeka, 2013., subcontractor in IPA EU project

Multisplit cooling system for Faculty of engineering in Rijeka, Pavković, B. et al., Faculty of Engineering in Rijeka, 2013., professional project

Preliminary energy study and energy audit report for apartment building Vere Bratonje 21 in Rijeka, Pavković, B. et al., Faculty of Engineering in Rijeka, 2013., energy study

Preliminary energy study and energy audit report for apartment building Milana Frlana 32 in Matulji, Pavković, B. et al., Faculty of Engineering in Rijeka, 2013., energy study

Preliminary energy study and energy audit report for apartment building Franje Belulovića 18 in Rijeka, Pavković, B. et al., Faculty of Engineering in Rijeka, 2013., energy study

Preliminary energy study and energy audit report for apartment building Frane Mladenića 1-3 in Rijeka, Pavković, B. et al., Faculty of Engineering in Rijeka, 2013., energy study

Preliminarna energetska studija i izvješće o energetskom pregledu za stambenu zgradu Drage Šćitara 5 u Rijeci, Pavković, B. et al., Tehnički fakultet u Rijeci, 2012., energetska studija

Preliminarna energetska studija i izvješće o energetskom pregledu za stambenu zgradu Braće Horvatića 5 u Rijeci, Pavković, B. et al., Tehnički fakultet u Rijeci, 2013., energetska studija

Preliminarna energetska studija i izvješće o energetskom pregledu za stambenu zgradu Antuna Barca 12 u Rijeci, Pavković, B. et al., Tehnički fakultet u Rijeci, 2013., energetska studija

Preliminarna energetska studija i izvješće o energetskom pregledu za zgradu na adresi Svilno 82B u Rijeci, Pavković, B. et al., Tehnički fakultet u Rijeci, 2013., energetska studija

Preliminarna energetska studija i izvješće o energetskom pregledu za zgradu na adresi Strossmayerova 23 u Rijeci, Pavković, B. et al., Tehnički fakultet u Rijeci, 2013., energetska studija

Preliminarna energetska studija i izvješće o energetskom pregledu za zgradu na adresi A.K. Miošića 8B u Rijeci, Pavković, B. et al., Tehnički fakultet u Rijeci, 2013., energetska studija

Preliminarna energetska studija i izvješće o energetskom pregledu za zgradu na adresi A.K. Miošića 8A u Rijeci, Pavković, B. et al., Tehnički fakultet u Rijeci, 2013., energetska studija

Preliminarna energetska studija i izvješće o energetskom pregledu za zgradu Filodrammatica u Rijeci, Pavković, B. et al., Tehnički fakultet u Rijeci, 2013., energetska studija

Preliminarna energetska studija i izvješće o energetskom pregledu za osnovnu školu u Rabu, Pavković, B. et al., Tehnički fakultet u Rijeci, 2013., energetska studija

Preliminary energy study and energy audit report for apartment building Drage Šćitara 5 in Rijeka, Pavković, B. et al., Faculty of Engineering in Rijeka, 2012., energy study

Preliminary energy study and energy audit report for apartment building Braće Horvatića 5 in Rijeka, Pavković, B. et al., Faculty of Engineering in Rijeka, 2013., energy study

Preliminary energy study and energy audit report for apartment building Antuna Barca 12 in Rijeka, Pavković, B. et al., Faculty of Engineering in Rijeka, 2013., energy study

Preliminary energy study and energy audit report for building at the address Svilno 82B in Rijeka, Pavković, B. et al., Faculty of Engineering in Rijeka, 2013., energy study

Preliminary energy study and energy audit report for building at the address Strossmayerova 23 in Rijeka, Pavković, B. et al., Faculty of Engineering in Rijeka, 2013., energy study

Preliminary energy study and energy audit report for building at the address A.K. Miošića 8B in Rijeka, Pavković, B. et al., Faculty of Engineering in Rijeka, 2013., energy study

Preliminary energy study and energy audit report for building at the address A.K. Miošića 8A in Rijeka, Pavković, B. et al., Faculty of Engineering in Rijeka, 2013., energy study

Preliminary energy study and energy audit report for the building Filodrammatica in Rijeka, Pavković, B. et al., Faculty of Engineering in Rijeka, 2013., energy study

Preliminary energy study and energy audit report for primary school in Rab, Pavković, B. et al., Faculty of Engineering in Rijeka, 2013., energy study

- Preliminarna energetska studija i izvješće o energetsom pregledu za osnovnu školu u Matuljima, Pavković, B. et al., Tehnički fakultet u Rijeci, 2013., energetska studija
- Preliminarna energetska studija i izvješće o energetsom pregledu za osnovnu školu Dražice - Jelenje, Pavković, B. et al., Tehnički fakultet u Rijeci, 2013., energetska studija
- Preliminarna energetska studija i izvješće o energetsom pregledu za specijalnu bolnicu Nemeč u Matuljima, Pavković, B. et al., Tehnički fakultet u Rijeci, 2013., energetska studija
- Preliminarna energetska studija i izvješće o energetsom pregledu za dom za starije i nemoćne osobe „Peščenica“ u Zagrebu, Pavković, B. et al., Tehnički fakultet u Rijeci, 2013., energetska studija
- Preliminarna energetska studija i izvješće o energetsom pregledu za Državni arhiv u Pazinu, Pavković, B. et al., Tehnički fakultet u Rijeci, 2013., energetska studija
- Preliminarna energetska studija i izvješće o energetsom pregledu za kino i kulturno-umjetničko društvo u Raši, Pavković, B. et al., Tehnički fakultet u Rijeci, 2013., energetska studija
- Preliminarna energetska studija i izvješće o energetsom pregledu za market u Raši, Pavković, B. et al., Tehnički fakultet u Rijeci, 2013., energetska studija
- Preliminarna energetska studija i izvješće o energetsom pregledu za zgradu općine u Raši, Pavković, B. et al., Tehnički fakultet u Rijeci, 2013., energetska studija
- Preliminarna energetska studija i izvješće o energetsom pregledu za neboder na adresi Drage Gervaisa 43 u Rijeci, Pavković, B. et al., Tehnički fakultet u Rijeci, 2013., energetska studija
- Preliminarna energetska studija i izvješće o energetsom pregledu za neboder na adresi Dubrovačka 2 u Rijeci, Pavković, B. et al., Tehnički fakultet u Rijeci, 2013., energetska studija
- Preliminary energy study and energy audit report for primary school in Matulji, Pavković, B. et al., Faculty of Engineering in Rijeka, 2013., energy study
- Preliminary energy study and energy audit report for primary school Dražice - Jelenje, Pavković, B. et al., Faculty of Engineering in Rijeka, 2013., energy study
- Preliminary energy study and energy audit report for special hospital Nemeč in Matulji, Pavković, B. et al., Faculty of Engineering in Rijeka, 2013., energy study
- Preliminary energy study and energy audit report for nursing home „Peščenica“ in Zagreb, Pavković, B. et al., Faculty of Engineering in Rijeka, 2013., energy study
- Preliminary energy study and energy audit report for state archives in Pazin, Pavković, B. et al., Faculty of Engineering in Rijeka, 2013., energy study
- Preliminary energy study and energy audit report for cinema and culture society in Raša, Pavković, B. et al., Faculty of Engineering in Rijeka, 2013., energy study
- Preliminary energy study and energy audit report for store in Raša, Pavković, B. et al., Faculty of Engineering in Rijeka, 2013., energy study
- Preliminary energy study and energy audit report for municipality building in Raša, Pavković, B. et al., Faculty of Engineering in Rijeka, 2013., energy study
- Preliminary energy study and energy audit report for apartment building at the address Drage Gervaisa 43 in Rijeka, Pavković, B. et al., Faculty of Engineering in Rijeka, 2013., energy study
- Preliminary energy study and energy audit report for apartment building at the address Dubrovačka 2 in Rijeka, Pavković, B. et al., Faculty of Engineering in Rijeka, 2013., energy study

PUBLIKACIJE / PUBLICATIONS**RADOVI U ČASOPISIMA / JOURNAL PAPERS**

Senčić T., Račić, N., Franković, B.: *Influence of Low-Speed Marine Diesel Engine Settings on Waste Heat Availability*, Brodogradnja-Shipbuilding, ISSN 0007-215X, 63, 329-335, 2012., Zagreb

Perčić, M.; Lenić, K.; Trp, A.: *A three-dimensional numerical analysis of complete crossflow heat exchangers with conjugate heat transfer*, Engineering Review, ISSN: 1330-9587, 33, 23-40, 2013., Rijeka

Z. Prelec, T. Mrakovčić, V. Dragičević: *Performance study of fuel oil additives in real power plant operating conditions*, Fuel Processing Technology, 110, 176-183, 2013., Elsevier

I. Glavan, Z. Prelec: *The analysis of trigeneration energy systems and selection of the best option based on criteria of GHG emission, cost and efficiency*, Engineering Review, ISSN 1330-9587, 32, 131-139, 2012., Rijeka

Grbčić, L., Mrakovčić, T., Hodak, G.: *Numerical simulation of cargo tanks inerting*, Pomorstvo, ISSN 1332-0718, 27, 39-54, 2013., Rijeka

Micev, G., Mrakovčić, T.: *Analysis of ship piping installation effect on mounting and operation of pumps*, Pomorstvo, ISSN 1332-0718, 27, 21-37, 2013., Rijeka

Pavković, B. : *Refrigerants -Part 1: Properties and air-conditioning applications*, The REHVA European HVAC Journal, ISSN:1307-3792, 50, 7-11, 2013.,

Čikić, A., Pavković, B., Vrhovski, Z.: *Dynamic Appearances and Effects of Heat Source at Sawn Timber Dryin*, Journal Strojarsstvo, ISSN: 0562-1887, 54, 71-78, 2012.

MEĐUNARODNI KONGRESI / INTERNATIONAL CONGRESSES

Senčić, T., Kirinčić. V., Lenić, K.: *Electric vehicle modelling for real application*, Energija i okoliš 2012, ISBN 978-953-6886-18-0, 147-159, 2012., Rijeka

Senčić, T., Mrzljak, V., Bukovac, O.: *Internal combustion engine soot and NOx formation simulation*, Inovative Automotive Tecnology 2012, ISBN 978-961-6536-60-8, 497-508, 2012., Novo Mesto

Pripić-Oršić, J., Faltinsen, O.M., Mrakovčić, T.: *Influence of Ship Behaviour in a Seaway on CO2 Emissions*, OMAE 2013, 2013., Nantes, France

POZVANA PREDAVANJA / INVITED LECTURES

Pavković, B.: *Izgleđi i ograničenja za primjenu dizalica topline u sustavima daljinskih grijanja i hlađenja, kao i kod obnove sustava GVIK / Prospect and limits for application of heat pumps in district heating / cooling and for HVAC systems retrofitting*, 3. Međunarodni Kongres Dani inženjera strojarstva u organizaciji Hrvatske komore inženjera strojarstva / 3rd International Congress Mechanical Engineers' Days organized by Croatian Chamber of Mechanical Engineers, 2013. Šibenik, Hrvatska

KNJIGE / BOOKS

Pavković, B., Zanki, V., Hrs Borković, Ž., Lenić, K., Franković, D., Grozdek, M., Bukarica, V.: *Priručnik za energetska certificiranje zgrada - 2. dio / Handbook for energy certification of buildings – Part 2*, United Nations Development Program - UNDP, 2012., Zagreb

Čarapović, L., Pavković, B. Urednici / Editors: *Zbornik radova 3. međunarodnog kongresa Dani inženjera strojarstva / Proceedings of 3rd International Congress Mechanical Engineers' Days*, Hrvatska komora inženjera strojarstva / Croatian chamber of mechanical engineers, ISSN 1847-1714, 2013., Zagreb

Pavković, B., Zanki, V. Urednici / Editors: *Priručnik za energetska certificiranje zgrada - 2. dio / Handbook for energy certification of buildings – Part 2*, United Nations Development Program - UNDP, ISBN 978-953-7429-40-9, 2012., Zagreb

MEĐUNARODNA SURADNJA / INTERNATIONAL COLLABORATIONS

ASHRAE – American Society of Heating, Refrigerating and Air-Conditioning Engineers. California Institute of Technology, SAD / USA

Dipartimento di fisica tecnica, Università degli studi di Padova, Italija / Italy

Dipartimento di energetica, Università degli studi di Trieste, Italija / Italy

Dipartimento di energetica, Politecnico di Milano, Italija / Italy



EAEC – European Automobile Engineers Cooperations. 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 Societies, Ujedinjeno Kraljevstvo / United Kingdom

GRETh, Bâtiment Lynx, Savoie Technolac, Le Bourget du Lac – Cedex, Francuska / France

Institute of Energy Technology, ETH Zürich, Švicarska / Switzerland

Institut für angewandte Thermo- und Fluidodynamik, 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'Applications 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

Voditeljica / Head:

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

URL: <http://www.riteh.uniri.hr/ustroj/knjiznica>



1. Ana Širola
2. Mario Šlosar-Brnelić
3. Marta Lončarević



Knjižnica Tehničkog fakulteta Sveučilišta u Rijeci, sa svojim knjižnično-informacijskim uslugama, dio je znanstvene, istraživačke i obrazovne djelatnosti Fakulteta. Obavlja poslove oblikovanja i izgradnje knjižničkog fonda (nabava, stručna obrada), pružanja knjižničnih usluga korisnicima (posudba i korištenje građe, informacijsko - edukacijska djelatnost) te ostale poslove koji proizlaze iz tih procesa.

DJELATNICI

Marta Lončarević, prof. i dipl. knjižničarka

mr. sc. Mario Šlosar-Brnelić, dipl. knjižničar

Ana Širola, dipl. oec., mag. filozofije i mag. edu.
pripravnica

Sanja Heberling Dragičević, prof., dipl. knjižničar (do 1. 12. 2012.)

Vesna Peršić-Rukonić, dipl. oec., knjižničar (do 1. 6. 2013.)

Opći podaci

Vrsta knjižnice: Fakultetska knjižnica

Smještaj: prizemlje desno (vrata br.0 - 23)

Površina i smještaj: 403 m² na dvije etaže

Čitaonica: 33 mjesta (bežični pristup internetu)

Računalna čitaonica: 24 mjesta s 12 računala s pristupom internetu i 1 umreženim pišačem

Otvorenost za korisnike

- knjižnica: 38 sati tjedno
- računalna čitaonica: 84 sata tjedno

The library of the Faculty of Engineering of the University of Rijeka, with its library-information services, is part of the scientific, research and educational Faculty activity. The library performs activities of form and construction library funds (acquisition, professional processing,...) to provide library services to users (borrowing and the use of material, information-educational activities,...) and other tasks arising from these processes.

STAFF

Marta Lončarević, prof., grad. librarian

Mario Šlosar-Brnelić, M. Sc., grad. librarian

Ana Širola, mag. oec, mag. educ. philol. angl. and mag. phil.
apprentice

Sanja Heberling Dragičević, prof., grad. librarian (until 1 December 2012)

Vesna Peršić-Rukonić, grad. economist, librarian (until 1 June 2013)

General information

Type of library: Faculty library

Position: ground right (door no. 0 - 23)

Area: 403 m² on two floors

Reading room: 33-seat sections (wireless Internet access)

Computers reading room: 24-seat capacity equipped with 12 computers with Internet access and 1 networked printer

Openness to users

- library: 38 hour per week
- computer reading room: 84 hours per week

Usluge knjižnice:

- Korištenje i posudba knjižnične građe
- Korištenje prostora čitaonice i računalne čitaonice
- Pristup informacijama o knjižničnom fondu i ostalim knjižničnim resursima
- Informacijske i edukacijske usluge
- Posebne usluge za zaposlenike Fakulteta (međuknjižnična posudba, klasifikacija stručnih i znanstvenih radova i sl.)

Internetske stranice: Pristup katalozima, bazama podataka, online časopisima, zbirkama akademskih radova i ostalim knjižničnim informacijama http://www.riteh.uniri.hr/zav_katd_sluz/knjiznica/index.html Online katalog: OPAC (Online Public Access Catalog) „Crolist-Tehnički fakultet Rijeka“ <http://crolist.riteh.uniri.hr/>

Online katalog: OPAC (Online Public Access Catalog) „Crolist-Tehnički fakultet Rijeka“ <http://crolist.riteh.uniri.hr/>

Baze podataka: Baze podataka za akademsku i znanstvenu zajednicu (Centar za online baze podataka) www.riteh.uniri.hr/zav_katd_sluz/knjiznica/tf_baze.html

Knjižnični program: Crolist - Aladin

Katalogizacija i klasifikacija građe: U skladu sa međunarodnim propisima i standardima (UDK – Univerzalna decimalna klasifikacija) - UNIMARC format

Uključenost knjižnice u udruge, zajednice i sl.

- Sustav umreženih knjižnica Riječkog sveučilišta
- Udruga knjižnica Konzorcij Crolist
- Zajednica knjižnica Sveučilišta Hrvatske

Sustav upravljanja kvalitetom:
ISO 9001

Library services:

- Using and borrowing of library materials
- Using the reading room and computers reading room
- Access to information about the library fund and other library resources
- Information and education services
- Special services for employees of the Faculty (interlibrary loan, classification of professional and scientific papers, etc.)

Library web site: Access to catalogues, databases, online e-journals, collection of academic papers and other library information http://www.riteh.uniri.hr/zav_katd_sluz/knjiznica/index.html

Online Catalogue: OPAC (Online Public Access Catalog) „Crolist-Faculty of Engineering Rijeka“ <http://crolist.riteh.uniri.hr/>

Databases: Databases for academic and scientific community (Center for online databases) www.riteh.uniri.hr/zav_katd_sluz/knjiznica/tf_baze.html

Library software: „Crolist - Aladin“

Cataloging and classification: According to the International regulations and standards (UDC – Universal Decimal Classification) - UNIMARC Bibliographic Format

Library involvement in associations, communities etc.:

- Library network system of the University of Rijeka
- Coalition of Library Consortium Crolist
- University Library Association of Croatia

Quality management system:
ISO 9001

Podaci o fondu i korisnicima

Aktivni članovi knjižnice: 852 člana
Knjige, doktorske disertacije: 21727 kom.
Ostala knjižnična građa: 9235 komada
Arhiva časopisa: 724 naslova
Online katalog: 18195 zapisa
Webpac statistika: 19758 upita

Nove knjige i časopisi

Kupljene knjige: 321 svezak
Donacije: 183 svezaka
Novi naslovi: 188 naslova
Kupljeni hrvatski časopisi: 8 naslova
Donacije: 21 naslova
Kupljeni strani časopisi: 2 naslova
Donacije: 3 naslova

Korištenje korisničkog prostora

Korištenje prostora: 9142 korisnika
Čitaonica i računalna čitaonica za učenje, pretraživanje internetskih stranica (kataloga, baza podataka...): 35 korisnika dnevno

Posudba građe i druge usluge za korisnike (informacijske, edukacijske)

Posudba knjiga i časopisa: 8039 svezaka u godini
Međuknjižnična posudba: 3 knjige i 10 članaka
Informacije o knjižnici, knjižničnim resursima, literaturi, pretraživanju informacija: Svakodnevno – individualno
Klasifikacija stručnih članaka: 7 članka
Iskorišteni ISBN brojevi za publikacije izdane na Tehničkom fakultetu: 3 broja

Information about the fund and users

Active members of library: 852 members
Books, dissertations: 21727 units
Other library materials: 9235 units
Journal archive: 724 titles
Online Catalogue: 18195 record
Webpac statistics: 19758 search

New books and journals

Bought books: 321 units
Donations: 183 units
New titles: 188 titles
Bought croatian journals: 8 titles
Donations: 21 titles
Bought foreign journals: 2 titles
Donations: 3 titles

Usage of the user area

Usage of the user area: 9142 users
Reading room and computers reading room for study, web search (catalogues, databases...): 35 users daily

Circulation and other customer service (informational, educational...)

Circulation (books and journals): 8039 units per year
Interlibrary loan service: 3 books and 10 papers
Information about library, library resource, information retrieval: Every day – individual
Classification of professional papers: 7 papers
ISBN numbers in use for publications edited at the Faculty of Engineering: 3 numbers

6.2 RAČUNALNI CENTAR / COMPUTER CENTER

Voditelji / Head:

prof. v. šk. mr. sc. / College Professor Antun Sok, M. Sc.

URL: <http://www.riteh.uniri.hr/ustroj/rc/>



1. Antun Sok
2. Siniša Vukotić
3. Tatjana Škorjanc
4. Dario Maršanić
5. Domagoj Crljenko



DJELATNICI**VODITELJ****mr. sc. Antun Sok, prof. v. š.****STRUČNI SURADNICI****Tatjana Škorjanc, dipl. ing.****Domagoj Crljenko, dipl. ing.****Dario Maršanić, prof.****OPERATER****Siniša Vukotić****RAČUNALNI KABINETI**

Računalni kabinet 1: 20 + 1 računalo

Računalni kabinet 2: 20 + 1 računalo

Računalni kabinet 3: 20 + 1 računalo

Računalni kabinet 4: 20 + 1 računalo

Računalni kabinet 5: 10 računala

Računalni kabinet 6: 10 računala

Računalni kabinet 7: 20 + 1 računalo

Računalni kabinet 8: 20 + 1 računalo

PROJEKTI

Akademija Cisco – obrazovni program za projektiranje računalnih mreža. U ak. god. 2012/13. program CCNA pohađalo je 13 polaznika.

Testni centar ECDL – obrazovni program i provjera informatičke pismenosti u svrhu dobivanja Europske računalne diplome. U ak. god. 2012/13. u centru je obavljeno 300 testiranja u okviru osnovnih i naprednih programa.

STAFF**HEAD****College Professor Antun Sok, M. Sc.****ASSOCIATES****Tatjana Škorjanc, graduate engineer****Domagoj Crljenko, graduate engineer****Dario Maršanić, prof.****COMPUTER OPERATER****Siniša Vukotić****COMPUTER CLASSROOMS**

Computer Classroom 1: 20 + 1 computers

Computer Classroom 2: 20 + 1 computers

Computer Classroom 3: 20 + 1 computers

Computer Classroom 4: 20 + 1 computers

Computer Classroom 5: 10 computers

Computer Classroom 6: 10 computers

Computer Classroom 7: 20 + 1 computers

Computer Classroom 8: 20 + 1 computers

PROJECTS

Cisco Networking Academy – training program for designing computer networks. In the AY 2012/13 13 candidates attended the CCNA program.

ECDL Test Centar – training program and testing of informatic literacy for reaching European Computer Driving License. In AY 2012/13 300 tests within basic and advanced programs were made.

6.3 FINANCIJSKA SLUŽBA / ACCOUNTING DIVISION

Voditeljica službe / Office Head:

Ana Mirković Pavlović, mag. oec.

Zamjenik voditelja / Deputy Head:

Robert Mohorić, dipl. oec.

URL: <http://www.riteh.uniri.hr/ustroj/strucne/index.html>



1. Mirjana Mihaljević-Vukelić
2. Robert Mohorić
3. Davorka Medanić
4. Ana Šutalo
5. Ana Mirković Pavlović
6. Bruna Martinović



Financijska služba obavlja financijske i računovodstvene poslove.

Accounting division performs financial and accounting activities.

DJELATNICI

STAFF

VODITELJICA FINANCIJSKE SLUŽBE:

HEAD OF THE ACCOUNTING DIVISION:

Ana Mirković Pavlović, mag. oec.

Ana Mirković Pavlović, grad. economist

ZAMJENIK VODITELJA FINANCIJSKE SLUŽBE:

DEPUTY HEAD OF ACCOUNTING DIVISION:

Robert Mohorić, dipl. oec.

Robert Mohorić, grad. economist

Mirjana Mihaljević Vukelić, ing.

računovodstveni poslovi

Mirjana Mihaljević Vukelić, Eng.

accounting activities

Bruna Martinović, oec.

financijski poslovi

Bruna Martinović, economist

financial activities

Davorka Medanić

financijski poslovi

Davorka Medanić

financial activities

Ana Šutalo, struč. spec. oec.

financijski poslovi

Ana Šutalo

financial activities

6.4 SLUŽBA NABAVE I KOMERCIJALE / PROCUREMENT AND COMMERCIAL OFFICE

Voditeljica službe / Office Head:

Dubravka Režić, dipl. oec. / grad. economist

URL: <http://www.riteh.uniri.hr/ustroj/strucne/index.html>



1. Dubravka Režić
2. Dragica Kola
3. Petar Gudac
4. Dorotea Burčul
5. Mladen Ostrogović



Služba obavlja poslove komercijale, nabave i ekonomata. Vodi poslove u vezi s nabavom roba, usluga i radova, izradom plana nabave robe, usluga i radova za tekuću godinu, priprema i provodi postupke odabira godišnjih dobavljača, vodi evidencije nabava male i velike vrijednosti, administrativno provodi po stupke 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.

DJELATNICI

VODITELJICA SLUŽBE:

Dubravka Režić, dipl. oec.

komercijalni poslovi i poslovi nabave

Petar Gudac

ekonom za inventar

Dragica Kola

ekonom za potrošni materijal

Mladen Ostrogović

ekonom za prodaju publikacija

Dorotea Burčul

pripravnica

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.

STAFF

OFFICE HEAD:

Dubravka Režić, grad. economist

commercial activities and supply/purchasing services

Petar Gudac

economist for inventory

Dragica Kola

economist for supplies

Mladen Ostrogović

economist for sale of publications

Dorotea Burčul

apprentice

6.5 SLUŽBA OPĆIH I KADROVSKIH POSLOVA / GENERAL AND PERSONNEL OFFICE

Voditeljica službe / Office Head:

Lenka Štajduhar, oec. / economist

URL: <http://www.riteh.uniri.hr/ustroj/strucne/index.html>



1. Vesna Franelić
2. Neveneka Lilić-Pekas
3. Snježana Mikuličić
4. Dragica Jurin
5. Lidija Petričić
6. Lenka Štajduhar
7. Štefan Racinger
8. Natalija Forgić
9. Fahira Horozović



10. Marica Gnjatović
11. Snježana Ban
12. Lovorka Malinić
13. Ana Jeričević
14. Franjo Brozović

DJELATNICI

VODITELJICA OPĆE I KADROVSKE
SLUŽBE:

Lenka Štajduhar, oec.

VODITELJICA KADROVSKIH POSLOVA:

Snježana Mikuličić

Janja Rožić

referent

Lidija Petričić

referent

**Mira Bobanović, Natalija Forgić, Nerina
Čugelj, Vesna Franelić, Dragica Jurin,
Lovorka Malinić, Radojka Praprotnik**

tajnice zavoda

Franjo Brozović

domar-kućepazitelj

Štefan Racinger

domar-kućepazitelj

**Dragica Alempić, Lidija Antunović,
Snježana Ban, Marica Gnjatović, Fahira
Horozović, Senka Jedrejčić, Nevenka
Lilić-Pekas, Mirjana Košpić**

spremačice

Ana Jeričević

pripravnica

STAFF

GENERAL AND PERSONNEL OFFICE
HEAD:

Lenka Štajduhar, economist

PERSONNEL OPERATION MANAGER:

Snježana Mikuličić

Janja Rožić

registry clerk

Lidija Petričić

registry clerk

**Mira Bobanović, Natalija Forgić, Nerina
Čugelj, Vesna Franelić, Dragica Jurin,
Lovorka Malinić, Radojka Praprotnik**

department secretary

Franjo Brozović

major-domo

Štefan Racinger

major-domo

**Dragica Alempić, Lidija Antunović,
Snježana Ban, Marica Gnjatović, Fahira
Horozović, Senka Jedrejčić, Nevenka
Lilić-Pekas, Mirjana Košpić**

cleaning staff

Ana Jeričević

apprentice

6.6 SLUŽBA STUDENTSKE EVIDENCIJE / STUDENTS'REGISTRAR AND AFFAIRS OFFICE

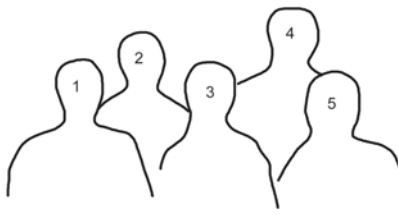
Voditelj službe / Office Head:

Žarko Burić, mag. ing.

URL: <http://www.riteh.uniri.hr/ustroj/strucne/index.html>



1. Tanja Veljić
2. Darko Vidučić
3. Antonela Čaleta
4. Žarko Burić
5. Ivona Balzani



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 i stručne analize za potrebe Fakulteta te vodi potrebnu korespondenciju i daje izvješća za interesiranim strankama.

DJELATNICI

VODITELJ SLUŽBE:

Žarko Burić, mag. ing.

Ivona Balzani

Antonela Čaleta

Đurđica Linardić

Tanja Veljčić

Darko Vidučić

The students' Registrar 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.

STAFF

OFFICE HEAD

Žarko Burić, mag. ing.

Ivona Balzani

Antonela Čaleta

Đurđica Linardić

Tanja Veljčić

Darko Vidučić

6.7 TEHNIČKA SLUŽBA / TEHNICAL AND MAINTENANCE SERVICES

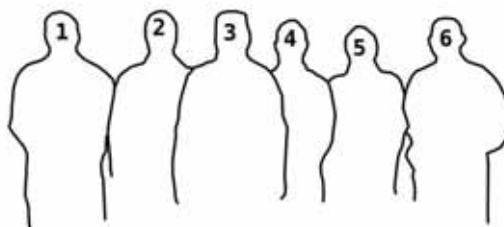
Voditelj službe / Office Head:

Nevio Poniš, dipl. ing. / graduate engineer

URL: <http://www.riteh.uniri.hr/ustroj/strucne/index.html>



1. Bernardo Badurina
2. Josip Jurasić
3. Nevio Poniš
4. Igor Mihaljević
5. Ivo Vičić
6. Serdo Mišić



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.

DJELATNICI

VODITELJ SLUŽBE:

Nevio Poniš, dipl. ing

Bernardo Badurina, bacc. ing. mech.

Josip Jurasčić

Igor Mihaljević, bacc. ing. el.

Serđo Mišić

Ivo Vičić

The Technical and Maintenance Services perform activities pertaining to maintenance, work safety and fire protection. Involved in the Technical Services are also laboratory technicians that, under supervision of teaching staff, participate in the preparation of performing parts of lectures.

STAFF

OFFICE HEAD

Nevio Poniš, graduate engineer

Bernardo Badurina, bacc. eng. mech.

Josip Jurasčić

Igor Mihaljević, bacc. eng. el.

Serđo Mišić

Ivo Vičić

6.8 MARENDARIJ / CAFETERIA "PIPI"

Vlasnica / Owner:

Ivanka Jurasíć



1. Helena Mavrinac
2. Ivanka Jurasíć



7 STUDENTSKI ZBOR / STUDENT COUNCIL



7.1 STUDENTSKI ZBOR TEHNIČKOGA FAKULTETA / STUDENT COUNCIL AT THE FACULTY OF ENGINEERING

Studentski zbor je najviše predstavničko tijelo studenata unutar Fakulteta čiji je rad definiran Statutom. Broji 15 članova predstavnika i isto toliko zamjenika koji se biraju u 6 izbornih jedinica, a naknadno se izabire 4. predstavnik poslijediplomskih studija. Prema Statutu Fakulteta i drugim općim aktima Studentski zbor izabire 12 predstavnika koji aktivno sudjeluju pri radu Fakultetskoga vijeća Tehničkoga fakulteta. Članovi Studentskog zbora kroz odbore i povjerenstva sudjeluju i surađuju u kreiranju politike Fakulteta, studijskih programa te nastave na Fakultetu.

Studentski je zbor dužan braniti interese studenata, upozoravati na nepravilnosti i nepravde te sufinacirati i podržavati rad studentskih udruga i organizacija na Fakultetu. U okviru svojih mogućnosti i sufinanciranja od Fakulteta i Sveučilišta u Rijeci raspolaže određenim sredstvima koja su predviđena za trošak studentskih projekata, rad njihovih udruga i organizacija. Preko svojega ovlaštenog predstavnika aktivno sudjeluje i u tijelima odlučivanja unutar Sveučilišnoga zbora Sveučilišta u Rijeci.

U svibnju 2012. godine održani su izbori za nove članove zbora koji će biti na dužnosti do novih studentskih izbora koji će se održati 2014. godine. Pred Zborom je velik izazov jačanja položaja kako na Fakultetu, tako i na Sveučilištu kroz još jednu ak. godinu.

Pored Studentskog zbora kao krovne studentske organizacije studenti se organiziraju i svoj rad provode i u okviru studentskih udruga koje su ustrojene kao strukovne udruge koje djeluju na području jednog ili više srodnih Fakulteta. Udruge koje djeluju na Tehničkom fakultetu jesu: IEEE, IAESTE, EESTEC, inicijativa bioLeonardo te dva velika projekta, RITEH RACING TEAM i WATERBIKE o kojima će biti više riječi u nastavku.

The Student Council (SC) is the highest student representative body at the Faculty whose work is defined with the Statute. It has 15 representatives and the same number of deputies that are elected in 6 electoral wards; the 4th representative of postgraduate studies is elected subsequently. According to the Statute of the Faculty and other regulations, the SC elects 12 representatives who will actively participate in the work of the Faculty Council. SC members, through the boards and commissions, participate and collaborate in creating of the Faculty policy, academic programs and teaching at the Faculty.

The duty of the SC is to defend the interests of students, draw attention to flaws and injustices, cofinance and support the work of student associations and organizations at the Faculty. Within its capacity and owing to contributions of the Faculty and University of Rijeka, the SC disposes of certain resources that are provided for the cost of student projects, work of their associations and organizations. Through its authorized representative, the SC actively participates in decision-making committees within the University Student Council.

In May 2012, elections for the new members of the SC were held. The students elected will be representatives until 2014. The SC is facing a big challenge to strengthen its position at the Faculty and University through another academic year.

In addition to the SC, as the main student organization, students organize and carry out work in student associations that are active in one or several related Faculties. Associations that are operating at the Faculty are: IEEE, IAESTE, EESTEC, initiative bioLeonardo as well as two major projects: Riteh Racing Team and Waterbike.

AKTIVNOSTI ZBORA

Tijekom godine Zbor će raditi na poboljšavanju standarda studenata našega Fakulteta, organizaciji brucosijade, studijskih putovanja, raznih aktivnosti i predavanja.

Upoznajte nas i priključite nam se! Javite nam se u studentskoj prostoriji, e-poštom na sz@riteh.hr, telefonom na 051/651-556, putem kolegija na Mudriju ili putem Facebook stranice Tehnički Fakultet u Rijeci.

Čekamo vas! Vaš Studentski zbor

ČLANOVI STUDENTSKOG ZBORA TEHNIČKOG FAKULTETA PO IZBORNIM JEDINICAMA

1. Preddiplomski sveučilišni studij strojarstva i brodogradnje

- Toni Koraca
(tonykoraca@gmail.com)
- Wendy Herceg, zamjenica
(wendy.1x6@gmail.com)
- Lovro Liverić
(lliveric@gmail.com)
- Denis Falaš, zamjenik
(dfalas@riteh.hr)
- Ljubica Pavlović
(ljubica69@gmail.com)
- Marino Pešut, zamjenik
(mpesut@riteh.hr)

2. Preddiplomski sveučilišni studij elektrotehnike i računarstva

- Diego Sušanj
(diego.susanj@gmail.com)
- Emil Rubinić, zamjenik
(emil.rubinic@gmail.com)
- Alfred Korić (akoric@riteh.hr)
- Sanjin Ljutić, zamjenik
(sljusic@riteh.hr)
- Ivan Pavković
(pavkovic.ri@gmail.com)
- Filip Stojanac, (fstojanac@riteh.hr)
zamjenik

SC ACTIVITES

This year, the SC will work on: improving the standard of our students, freshman welcome party, study excursions, a variety of activities and lectures.

Come and join us!

Find us in student premises (opposite the P2 lecture hall), mail us on sz@riteh.hr, call us on 051/651-556, follow us on Facebook page or course on MUDRI.

We are waiting for you.

SC MEMBERS, LISTED BY ELECTORAL WARDS

1. Undergraduate university study of Mechanical Engineering and Naval Architecture

- Toni Koraca
(tonykoraca@gmail.com)
- Wendy Herceg, zamjenica
(wendy.1x6@gmail.com)
- Lovro Liverić
(lliveric@gmail.com)
- Denis Falaš, deputy
(dfalas@riteh.hr)
- Ljubica Pavlović
(ljubica69@gmail.com)
- Marino Pešut, deputy
(mpesut@riteh.hr)

2. Undergraduate university study of Electrical Engineering and Computer Science

- Diego Sušanj
(diego.susanj@gmail.com)
- Emil Rubinić, deputy
(emil.rubinic@gmail.com)
- Alfred Korić (akoric@riteh.hr)
- Sanjin Ljutić, deputy
(sljusic@riteh.hr)
- Ivan Pavković
(pavkovic.ri@gmail.com)
- Filip Stojanac, (fstojanac@riteh.hr)
deputy

3. Stručni studij strojarstva, brodogradnje i elektrotehnike

- Sanja Zrinščak
(sanja.zrinscak@gmail.com)
- Stjepan Petrović, zamjenik
(spetrov@riteh.hr)

4. Diplomski sveučilišni studij strojarstva i brodogradnje

- Dinko Didović (ddidovic@riteh.hr)
- Marko Vidas (mvidas@riteh.hr)
- Dario Bićanić, zamjenik
(dbicanic@riteh.hr)

5. Diplomski sveučilišni studij elektrotehnike i računarstva

- Paolo Zenzerović
(paolo.zenzerovic@gmail.com)
- Anamaria Kolonić
(anakolonic@gmail.com)

6. Poslijediplomski sveučilišni (doktorski) studij

- Marko Kršulja
(krsulja.marko@gmail.com)
- Mauro Štefančić, zamjenik
(mauro.stefancic@alpron.hr)
- David Blažević (dablazev@riteh.hr)
- Ervin Kamenar, zamjenik
(ervin.kamenar@gmail.com)
- Sanjin Krščanski
(skrscanski@gmail.com)
- Neven Munjas, zamjenik
(neven.munjas@gmail.com)

4. predstavnik poslijediplomskih studija

- Paolo Blecich (pblecich@gmail.com)
- Vedran Mrzljak, zamjenik
(vedranmrzljak@gmail.com)

3. Vocational study of Mechanical Engineering, Electrical Engineering and Naval Architecture

- Sanja Zrinščak
(sanja.zrinscak@gmail.com)
- Stjepan Petrović, deputy
(spetrov@riteh.hr)

4. Graduate university study of Mechanical Engineering and Naval Architecture

- Dinko Didović (ddidovic@riteh.hr)
- Marko Vidas (mvidas@riteh.hr)
- Dario Bićanić, deputy
(dbicanic@riteh.hr)

5. Graduate university study of Electrical Engineering and Computer Science

- Paolo Zenzerović
(paolo.zenzerovic@gmail.com)
- Anamaria Kolonić
(anakolonic@gmail.com)

6. Postgraduate university (doctoral) study

- Marko Kršulja
(krsulja.marko@gmail.com)
- Mauro Štefančić, deputy
(mauro.stefancic@alpron.hr)
- David Blažević (dablazev@riteh.hr)
- Ervin Kamenar, deputy
(ervin.kamenar@gmail.com)
- Sanjin Krščanski
(skrscanski@gmail.com)
- Neven Munjas, deputy
(neven.munjas@gmail.com)

4th representative

- Paolo Blecich (pblecich@gmail.com)
- Vedran Mrzljak, deputy
(vedranmrzljak@gmail.com)

7.2 IEEE



The Institute of Electrical and Electronics Engineers (IEEE) je stručna neprofitna organizacija koja djeluje širom svijeta. Udruga je nastala 1884. godine na inicijativu nekoliko znanstvenika, a sve s ciljem praćenja razvoja elektrotehnike. S vremenom je prešla u najveću svjetsku stručnu udruhu s više od 425 tisuća članova.

Posredstvom je svojih članova IEEE danas vodeći autoritet na široku tehničko području: od računalnih znanosti, biomedicinske tehnologije i telekomunikacija, preko električne energije, potrošačke elektronike te mnogih drugih grana. Svojom djelatnošću IEEE nastoji poticati, organizirati i pomagati tehničke aktivnosti širom svijeta. Riječki stu-

The Institute of Electrical and Electronics Engineers (IEEE) is a non-profit professional organization which is active throughout the world. It was founded in 1884 on the initiative of a few scientists who wanted to follow the development of electrical engineering, and has grown into the world's largest professional association with more than 425,000 members.

Owing to its members, the IEEE is the leading authority in the overall technical field ranging from computer science, biomedical technology and telecommunications to electrical engineering, consumer electronics and many other fields. The IEEE aims to encourage, organize and support technical ac-

dentski ogranak IEEE trenutno okuplja tridesetak studentskih članova koji sudjeluju na raznim državnim i međunarodnim događajima te daju svoj doprinos u organizaciji raznih događanja na riječkom području.

Computer and Power and Energy Society Chapters

U lipnju i rujnu 2013. godine IEEE studentski ogranak Rijeka osnovao je dva nova studentska odjela: IEEE Computer Society Student Branch Chapter at the University of Rijeka i IEEE Power & Energy Society Student Branch Chapter at the University of Rijeka.

Krajem je prošle godine započeto s osnivanje studentskih podogranka. Sredinom su 2013. godine oba podogranka dobila odobrenje i započela su sa svojim aktivnostima te se vrlo brzo očekuju radionice vezane za područja njihova interesa.

Oba podogranka pružaju studentima mjesto za razmjenjivanje ideja i stavova te mogućnost pristupa vrijednim resursima vezanim za tematiku koja im je usko vezana za struku.

CEuSBC (12. – 15. svibnja 2013., Opole, Poljska)

Central Europe Student Branch Congress (CEuSBC) kongres je koji se održava svake dvije godine s ciljem okupljanja studenata IEEE, volontere središnje Europe, a i šire. Ovaj se kongres prvi put održao 2011. godine u Linzu i tada je okupio tridesetak studenata, dok se već ove godine broj sudionika udvostručio.

Kongres se održao 12. – 15. svibnja 2013. u gradiću Opole u Poljskoj, koji krasi neočekivano veliko i razvijeno sveučilište. Iz Hrvatske je na kongresu sudjelovalo osmero studenata sa sveučilišta u Rijeci, Splitu, Zagrebu i Osijeku. Tijekom tri su dana naši studenti, kroz zanimljive aktivnosti tehničke, ali i socio-kulturne prirode, imali prilike upoznati kolege iz cijele Europe. Zemlja partner Sveučilišta, između ostalih, bila je i Kina, tako da su brojne radionice bile posvećene kineskoj kulturi. Naši su se studenti iz Opola vratili s neprocjenjivim iskustvom, ali i idejama koje

activities all over the world. The IEEE Rijeka Student Branch currently has about thirty student members who participate in diverse domestic and international events and help organize various events in the Rijeka region.

Computer and Power and Energy Society Chapters

In June and September 2013, the IEEE Rijeka Student Branch founded two new student chapters: Rijeka University IEEE Computer Society Student Branch Chapter and Power & Energy Society Student Branch Chapter.

The founding of students chapters began at the end of last year. By mid-2013, both chapters had gained the approval and initiated their activities, so workshops related to the topics that chapters deal with can be expected to start any moment now.

Both chapters offer students the place to exchange their ideas and standpoints as well as the opportunity to access valuable resources linked to the topic of their profession.

12 - 15 May 2013 - CEuSBC Opole

The CEuSBC, Central Europe Student Branch Congress, is a congress held biannually in order to rally IEEE student volunteers of Central Europe and wider. This Congress was first organized in Linz in 2011, gathering about thirty students. This year, the number doubled. The Congress was held from 12-15 May 2013 in the small town Opole in Poland. Opole is only seemingly a small town, but it has a surprisingly big and developed university. There were eight of us from the Universities of Rijeka, Split, Zagreb and Osijek to attend it. Over the three days we associated with students from all over Europe through interesting activities concerning technical topics as well as socio-cultural ones. A country partner of the university is also, among others, China. Consequently, through different workshops we tackled even the Chinese culture. I don't want to elaborate on the workshops we participated in but rather disseminate the ideas and stimulate similar activities at our, Rijeka University.



bi svakako, u dogledno vrijeme, valjalo provesti na Tehničkom fakultetu, no i na riječkom sveučilištu općenito.

Rad udruge IEEE prate brojni zanimljivi događaji i vrijedna iskustva, no nesumnjivo je najvrjednije druženje sa studentima istih interesa iz cijeloga svijeta. Ovim putem pozivamo sve zainteresirane da nam se pridruže.

The sphere of activity of the IEEE Organization includes numerous interesting events, but the most valuable is undoubtedly the getting together of students sharing the same interests from all over the world. We would like to take this opportunity to invite all interested to join us.

7.3 IAESTE



S IAESTE-om na stručnu praksu u inozemstvo!

Maštate o odlasku u inozemstvo na nekoliko mjeseci gdje biste se družili s drugim stranim studentima, radili posao u struci i za to bili plaćeni? IAESTE je odgovor za vas!

Tko smo mi? Hrvatska udruga za međunarodnu razmjenu studenata prirodnih i tehničkih znanosti koja djeluje u četiri lokalna odbora: Zagreb, Osijek, Rijeka i Split.

Glavni je cilj udruge osigurati studentima stručno praktično iskustvo u inozemstvu s ciljem da kroz rad na aplikativnim projektima

With IAESTE to professional work abroad!

Do you dream of going abroad for a few months where you can socialize with other foreign students, do a job in the profession and be paid for it? The IAESTE is the answer for you!

Who are we? We are a Croatian Association for International Exchange of Students of natural and engineering sciences operating in four local committees: Zagreb, Osijek, Rijeka and Split.

The main objective of the Association is to ensure our students professional hand-

i u suvremenim tehnološkim postrojenjima renomiranih stranih kompanija steknu praktično iskustvo koje je važno za produblјivanje i usavršavanje njihova znanja.

IAESTE Hrvatska je neprofitna, nevladina organizacija koja je isključivo volonterске prirode te se svatko može uključiti u njezin rad. Jedan od glavnih poslova Udruge jest prikupljanje stručnih praksi od hrvatskih poslodavaca koje se jednom godišnje, na Generalnoj konferenciji, razmjenjuju s predstavnicima iz 85 država članica IAESTE, po načelu reciprociteta – koliko hrvatskih studenata ode na praksu u inozemstvo, toliko stranih studenata dođe na praksu u Hrvatsku.

Tako je ove godine Hrvatsku posjetilo stotinjak stranih studenata i odradilo stručne prakse u hrvatskim tvrtkama, fakultetima i institucijama. U Rijeci je tako boravilo 12 stranih studenata koji su tijekom boravka, osim stručnoga usavršavanja, proputovali cijelu Hrvatsku, upoznali kulturu naše zemlje, družili se s ostalim praktikantima iz drugih gradova IAESTE te stekli doživotno iskustvo.

Zašto uopće ići na praksu? Ako želite svoje teorijsko znanje primijeniti u praksi, upoznati drugačije metode rada i tehnologije, usavršiti engleski jezik, razviti komunikacijske i profesionalne vještine te stvoriti poslovne kontakte koji će vam dobro doći u budućem zvanju, praksa preko IAESTE je upravo ono što vam treba! Također, studenti na praksi sklapaju brojna prijateljstva, upoznaju kulturu i običaje države u koju su otišli i imaju priliku predstaviti našu državu u svijetu.

Odlazak na stručnu praksu je neprocjenjivo iskustvo, što potvrđuju generacije zadovoljnih studenata iz cijeloga svijeta.

A zašto biti član IAESTE-a? Svaki član za svoj rad dobiva dodatne bodove na Natječaju za stručnu praksu te time bolje konkurira pred ostalim prijavljenim studentima, čime ostvaruje veću priliku za odlazak na praksu. Također, stječu se brojne vještine, kao što su govorničke, pregovaračke, prezentacijske, organizacijske, menadžerske, marketinške... Usavršavanje engleskoga je

on experience abroad so that by working on applicable projects and in modern engineering facilities of the renowned foreign companies, they gain practical experience that is important for deepening and improving their knowledge.

IAESTE is a Croatian non-profit, non-governmental organization that is of purely voluntary nature and everyone can be involved in its work. One of the main tasks of the Association is to organize professional practical training with Croatian employers, thus once a year, at the General Conference, professional practical training can be offered to representatives of 85 countries, also IAESTE members, under the principle of reciprocity – just as many Croatian students go to practice abroad, as many international students come to practice in Croatia.

This year, hundreds of foreign students have visited Croatia and pursued their practical student training in Croatian companies, universities and institutions. Rijeka was in fact visited by 12 foreign students who, during their stay, besides training, traveled throughout Croatia, learned about the culture of our country, socialized with other practitioners from other IAESTE cities and gained their lifetime experience.

Why should I get practical training anyway? If you want to apply your theoretical knowledge in practice, introduce different methods and technologies, improve your English language, develop communication and professional skills and create business contacts that will be useful in your future profession, IAESTE practice is exactly what you need! In addition, students attending practical training make numerous friendships, learn about the culture and customs of the country they visit and have thus the opportunity to present our country in the world.

Attending professional training is an invaluable and priceless experience, as evidenced by generations of contented students from all over the world.

And why would I be a member of the IAESTE? Because, each member gains extra credits for their work, which they can use



zika, učenje o različitim nacijama i kulturama svijeta te stjecanje doživotnih prijateljstava i korisnih poslovnih kontakata zasigurno ulazi u poželjan okvir suvremenoga mladoga čovjeka. Na koncu, ovakvo iskustvo i stečene vještine sigurno neće ostati nezamijećene u životopisu!

Kada izlazi Natječaj za stručnu praksu?
U 2013. godini Natječaj je bio otvoren od 21. listopada do 15. studenoga. Na internetsku stranicu <http://www.iaeste.hr/natjecaj/> mogli su se prijaviti svi studenti sveučilišnih studija prirodnih i tehničkih znanosti sveučilišta u Osijeku, Rijeci, Splitu i Zagrebu koji do prijave na natječaj nisu napunili 30 godina starosti te su bili upisani u 3. godinu preddiplomskog studija ili višu godinu studija i ostvarili su 105 ECTS bodova na preddiplomskom studiju.

when competing for professional training and thus have an advantage over other registered students. Besides, you will acquire many skills such as oratorical, negotiating, presentation, organisational, managerial and marketing ones. You will improve your English, learn a lot about different nations and cultures of the world, and also make lifelong friendships and business contacts. After all, the whole experience will adorn your CV and stand out among others!

When will they finally invite these applications? This year the applications are invited from October 21 to November 15. Applications may be submitted by all the students of university studies of natural and engineering sciences of the universities in Osijek, Rijeka, Split and Zagreb who are younger than 30 years of age and who have enrolled the 3rd or higher year of the undergraduate study and have earned 105 ECTS credits at the undergraduate level.

I na kraju...

Pridružite nam se u radu Lokalnoga odbora Rijeka svakoga utorka od 19,00 sati u prostorijama Tehničkoga fakulteta u Rijeci, prikupite dodatne bodove za nove natječajne i otidite na stručnu praksu u inozemstvo!

U 2013. godini IAESTE lokalni odbor Rijeka organizirao je motivacijski vikend na kojem su sudjelovali članovi iz Splita i Zagreba te strani studenti. Studenti Sveučilišta u Rijeci otišli su na prakse u SAD, Poljsku, Veliku Britaniju, Tunis i Argentinu, a svoje su prakse u Rijeci odradili studenti iz Francuske, Turske i Brazila.

Za sve daljnje informacije možete posjetiti našu internetsku stranicu www.iaeste.hr ili nam se javiti na e-adresu lo.rijeka@iaeste.org te putem stranice na društvenoj mreži Facebook [laeste Rijeka](https://www.facebook.com/iaeste.rijeka).

And finally...

Join us in Rijeka Local Committee, on the premises of the Faculty of Engineering in Rijeka every Tuesday from 7 p.m., collect extra credits for the Application and pursue practical training abroad!

In 2013, the IAESTE Rijeka Local Committee organized motivational weekends that were attended by members from Split and Zagreb as well as by foreign students. Students of the University of Rijeka pursued their practical training in the USA, Poland, Great Britain, Tunisia, and Argentina whereas students from France, Turkey and Brazil pursued their practical training in Rijeka.

For further information you may visit our website www.iaeste.hr or contact us on our email address lo.rijeka@iaeste.org and through the Facebook page.



7.4 EESTEC



Electrical Engineering Students European Association (EESTEC) međunarodna je studentska organizacija koja okuplja studente elektrotehnike i računarstva. Trenutno broji 53 lokalnih odbora u ukupno 26 europskih država i ima više od 1700 članova. Local Committee (LC) Rijeka djeluje pri Tehničkom fakultetu u Rijeci od 1999. godine te broji 100 članova.

Ciljevi su udruge poticanje, pomaganje i razvoj elektrotehnike, informatike i srodnih grana znanosti, ostvarivanje međunarodne suradnje, kontakata i poveznica s europskim zemljama s ciljem promicanja i vrednovanja cjelovite europske baštine.

Udruga se bavi organizacijom skupova studenata elektrotehnike u Europi radi druženja i stručnoga usavršavanja, nadalje održava komunikaciju sa studentima elektrotehnike i računarstva širom Europe, organizira znanstvene manifestacije na području Primorsko-goranske županije, omogućuje izdavanje publikacija, suradnju s drugim organizacijama, organizira međunarodne skupe u svrhu upoznavanja različitih društvenih, kulturnih i jezičnih obilježja te razmjene ideja, ciljeva i stavova, sudjeluje na međunarodnim susretima i tribinama te razvija razne druge kulturne i društvene aktivnosti.

The EESTEC (Electrical Engineering Students European Association) is an international student organization that brings together students of Electrical Engineering and Computer Science. It has currently 53 local committees, in a total of 26 European countries with more than 1700 members. The Rijeka LC (Local Committee) has been working within the Faculty of Engineering since 1999, and counts 100 members.

The objectives of the Association are to encourage and assist the development of electrical engineering, information technology and related branches of the science, achieving international cooperation, contacts and connections with other European countries, with the aim of promoting and appraising European heritage.

The activities of the organizations include: organization of gatherings and training of European electrical engineering students, communication with electrical engineering students across Europe, organization of scientific events in Primorsko - Goranska County, issuing publications, cooperation with other organizations, organization of international conferences aimed at exchange of different social, cultural and linguistic characteristics, ideas, goals and attitudes, participation in international meetings and forums, and developing various other cultural and social activities.

7.5 STUDENSKA INICIJATIVA “bioLeonardo” / STUDENTS’ INITIATIVE “bioLeonardo”



bioLeonardo
Studentska inicijativa

Studentsku inicijativu „bioLeonardo“ pokrenuo je 2010. godine dr. sc. Sven Maričić. U rad inicijative uključeni su studenti Tehničkog i Medicinskog fakulteta te Akademije primijenjenih umjetnosti, a svoj doprinos dali su i aktivni sudionici kulturne scene grada Rijeke. Osnovni ciljevi usmjereni su savladavanju novih znanja, te proširivanju stečenih znanja studenata Sveučilišta u Rijeci organizacijom stručnih seminara, pisanjem stručnih radova i sudjelovanjem na kongresima.

Projektna aktivnost studentske inicijative „bioLeonardo“ doprinosi temeljnim ciljevima Sveučilišta u Rijeci: djeluje na oplemenjivanju ideje društva znanja i promovira vezu umjetnost i znanosti. Protekle akademske godine inicijativa je nastavila sa aktivnim radom i poticala razmjenu i umrežavanje znanja, podržala aktivnosti unutar Znanstvenotehnološkog parka Sveučilišta u Rijeci i zalagala se za razvoj ekspertnih skupina za javne potrebe i potrebe u gospodarstvu, kako bi sinteza tog djelovanja doprinijela dobiti šire zajednice.

Nakon odličnog uspjeha na prethodnoj radionici, Josipa Komljenović, diplomantica Akademije primijenjenih umjetnosti, zajedno sa studentima uključenima u rad inicijative, organizirala je radionicu „2D i 3D modeliranja“. U prostorijama Znanstveno – tehnolo-

The bioLeonardo Students’ Initiative (hereinafter the Initiative) was founded in 2010 by Sven Maričić, PhD. Students from the Faculty of Engineering, the Faculty of Medicine and the Academy of Applied Arts as well as active members of Rijeka’s cultural scene are involved in the Initiative’s activities. Its main goals are acquiring additional knowledge and spreading the acquired skills by spreading workshops, writing papers and participating in conferences.

The envisaged activity of the Initiative is to contribute to the realization of Rijeka University’s principal goals: it promotes the idea of „knowledge society“and supports the connection between art and science. During the previous academic year, the Initiative continued its work and encouraged sharing and networking of knowledge, supported the activities conducted at the Rijeka University Science and Technology Park, and encouraged development of expert groups for public needs and the needs of economy in order to ensure that those endeavors contribute to the benefit of a wider community.

After excellent success in previous workshop, Josipa Komljenović, a graduate The Academy of Applied Arts, organized the „2D and 3D Modeling“ workshop with other students who were involved in the Initiative’s ac-



gijskog parka u kampusu Sveučilišta u Rijeci razmjenjivala su se i povezivala znanja iz područja crtanja (uvod u tehnike i crtanje porteta), dizajna (uspješna rješenja) i tehnologije (3D printera). Gostujući predavači (Daniela Urem, Kate Foley i Filip Dumančić) podijelili su svoja iskustva sa polaznicima, predstavili koje ih sve mogućnosti okružuju, te dali podršku i pozvali na suradnju i aktivno sudjelovanje u predlaganju i izvedbi projekata. Sudionici radionice su bili zadovoljni širinom i različitosti novih znanja stečenih radionici, te su se aktivno uključili u daljnji rad inicijative i vlastitih projekata.

tivities. The premises of Science and Technology Park (at the university campus) were site of exchange of knowledge from the areas of drawing (introduction to portrait drawing techniques), design (successful solutions) and technology (3D printers). Guest lecturers (Daniela Urem, Kate Foley and Filip Dumančić) shared their experience with attendees, presented all the possibilities that surround them, gave their support and encouraged the participants' cooperation and active involvement in suggesting and conducting the projects. The participants of the workshop were satisfied with the scope and variety of the presented materials and they are now actively involved in the Initiative's work and their own projects.

7.6 RITEH RACING TEAM



Riteh Racing Team (RRT) čini skupina studenata Tehničkoga fakulteta u Rijeci koja sudjeluje na međunarodnom natjecanju Formula Student (FS). Riječ je o najprestižnijem svjetskom natjecanju studenata u tehničkim znanostima, koje se sastoji od konstruiranja maloga trkaćeg bolida, njegove izrade, testiranja i natjecanja na međunarodnim natjecanjima te upravljanja ljudskim potencijalima i financijama. RRT postoji od 2008. godine te je do sada ostvario zapažene rezultate: izgradio dva bolida (RRCX i RRC2-evo) i redovito nastupao na najmanje jednom međunarodnom natjecanju godišnje (Engleska, Njemačka, Mađarska...).

Riteh Racing Team (RRT) is a group of students from the Faculty of Engineering in Rijeka which participates in the international Formula Student (FS) contest, the world's most prestigious competition of students of engineering sciences. It entails the design of a small racing car, its manufacture, testing as well as competing with it on international competitions and managing human resources and finances. RRT was established in 2008 and so far has achieved notable results, by constructing two racing cars (RRCX and RRC2-evo) and has regularly competed at least at one international competition (England, Germany, Hungary).

Početak je nove akademske godine detaljnom analizom projekta iz 2012. donesen okvirni plan aktivnosti, nakon čega je prezentiran svim udrugama Sveučilišta u Rijeci te brojnim studentima na Sveučilišnom kampusu i u predvorju Tehničkoga fakulteta.

Na ovogodišnjem je natječaju za nove članove RRT zaprimljeno 40 prijava, a svaki je kandidat trebao riješiti teorijski i računski zadatak, tematski skrojen po njegovim osobnim interesima. Odabrano je 14 novih, što je ukupni broj povećalo na 25 članova, ali velik dio novih kandidata nije ustrajao na članstvu zbog nemogućnosti usklađivanja s drugim fakultetskim obavezama. U studenom je 2012. na Tehničkom fakultetu organizirana dodjela zahvalnica sponzorima za njihov prinos uspješnosti RRT, pri čemu su gosti mogli razgledati garažu i bolide te vidjeti kratku demonstracijsku vožnju ispred Fakulteta. Prezentirana su dostignuća RRT iz prethodne sezone te planovi za nadolazeću godinu. Osim predstavnika sponzora dodjeli su prisustvovali i predstavnici Sveučilišta, Grada, Županije i medija te profesori matičnoga Fakulteta.

Kako se prijave na natjecanja Formula Student održavaju početkom godine, prijave su poslone za natjecanja u Austriji i Mađarskoj.

Dodjelom zadataka vezanih za izradu nacrtu započela je izrada novoga bolida RRC3. Kako bi se što više poboljšalo novi bolid, testirana je krutost šasije te se na temelju rezul-



The start of the new academic year brought the detailed 2012 project evaluation which resulted in the general plan of activities that was presented to all associations of the University of Rijeka and to numerous students at the University campus and the Faculty of Engineering.

This year's applications process yielded 40 new member applications, each of them had to complete a themed theoretical and analytical assignment, which had been thematically tailored to the candidates' individual interest. Fourteen new members were selected, which increased the team number to 25, but many of new members shortly realized their university obligations would prevent them from fully committing to the project and they resigned from further participation.

In November 2012, the sponsors received public acknowledgement at the Faculty of Engineering in Rijeka. The event included a tour of the garage, a presentation of the racing car and a short driving demonstration in front of the Faculty. RRT achievements of the previous season were presented, along with the plans for the following one. Aside from representatives of the sponsors, the event was attended by representatives from the University, City, County and media as well as by professors from the Faculty of Engineering.

As applications for the Formula Student contests are held at the beginning of the year, two were sent for the contests in Austria and Hungary.

The assignment of tasks related to the design of the new RRC3 car set off its manufacture. In order to improve the construction of the new racing car, the chassis' stiffness was tested and the design of a new one was based on the results of this analysis. One of the main goals in the previous season was the transfer of knowledge to the younger generations in order to make the RRT a sustainable project. CAD modelling courses were started, where members with more experience help junior members get to grips with the basics of using the SolidWorks application interface. Many working hours were spent

tata krenulo u izradu nove šasije. Jedan je od glavnih ciljeva prethodne sezone bio i prijenos znanja na mlađe generacije radi održivosti projekta RRT. Uvedeni su tečajevi CAD modeliranja, gdje stariji i iskusniji članovi pomažu mladima u svladavanju osnova rada u programskom sučelju SolidWorks. Mnogo je radnih sati utrošeno u dovršavanje konačnih nacrti šasije i elemenata ovjesa te su nakon nabavke cijevi za izradu uslijedili dani cjelodnevnoga boravka u garaži. Pored izrade bolida, uređenjem prostora dodijeljenih RRT osposobljena je prostorija za testiranje motora i prostorija za rad s kompozitima.

Podešavanje je svih parametara motora za novi bolid trajalo puna dva mjeseca. Tijekom toga vremena drugi je dio tima razvijao i izrađivao kompozitne dijelove, a treći se posvetio elektronici.

Šira je javnost s projektom FS upoznata na 2. Produkteci (platformi za proizvodni dizajn koja povezuje dizajnere, inovatore, proizvođače i distributere), na 2. JDM meeting (međunarodnom susretu ljubitelja japanskih vozila), festivalu Student Day i na Noći istraživača.

Nakon nekoliko je mjeseci rada na novom bolidu, uslijed nedostatka financijskih sredstava i nedostižnih vremenskih rokova, odlučeno doraditi prošlogodišnji bolid i njega predstaviti na natjecanju.

Riteh Racing Team je od 7. do 11. kolovoza ove godine sudjelovao na natjecanju Formula Student Baltic Open u Finskoj. Na tehničkom je pregledu naš bolid već prvoga dana zadovoljio svih pet elemenata potrebnih za daljnje natjecanje. Drugoga je dana svečano otvorenje samoga natjecanja obilježeno vožnjom kroz centar Helsinkija.

Treći je dan na rasporedu bio dinamički test ovjesa tzv. slalom, gdje je postignuto zadovoljavajuće 14. mjesto, nakon čega je ustanovljen problem s pojedinim elementima pogona. Zbog toga se kvalifikacije za utrku izdržljivosti tzv. autocross moralo voziti opreznije kako se bolid ne bi dodatno oštetio, što je rezultiralo 19. mjestom.

completing the final designs for the chassis and suspension elements and the tubes had been purchased, the long round-the-clock working days in the garage followed in order to make the chassis itself. Parallel to the racing car manufacture, the new arrangement of quarters assigned to the RRT provided an engine testing chamber and a room for work with composites.

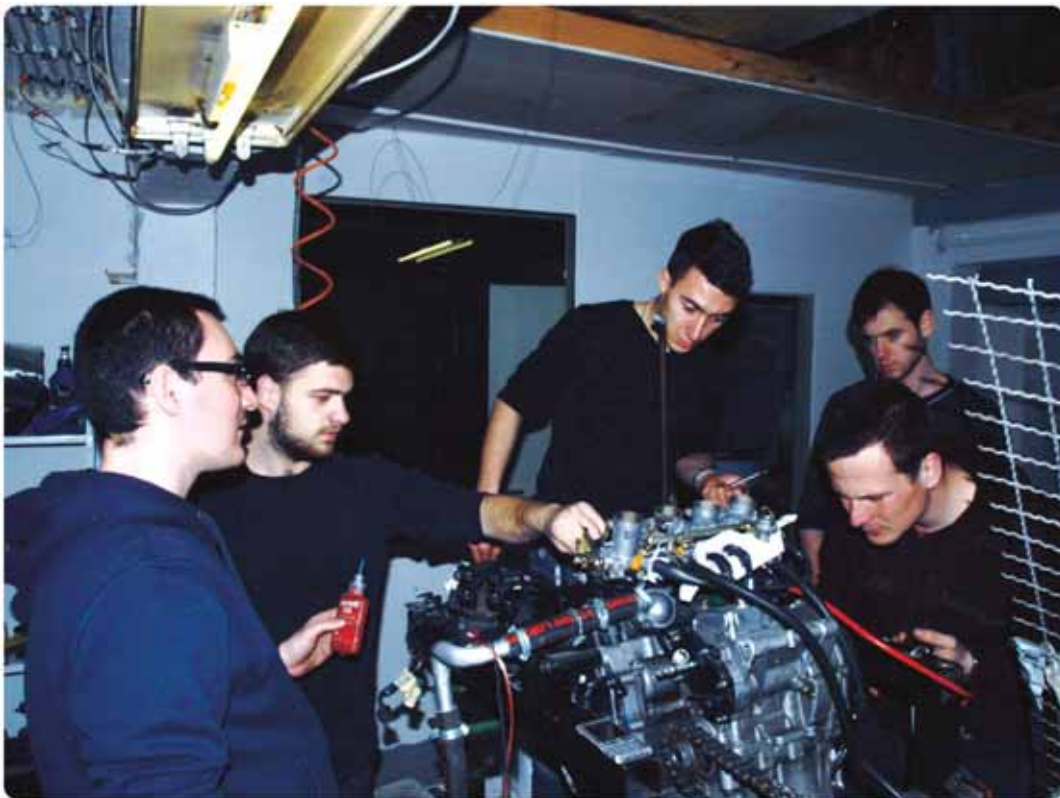
Two months of work were devoted to tuning all the engine parameters for the new racing car. At the same time, another part of the team was developing and building composite parts, while yet the third group was focused on electronics.

In order to better familiarize the public with the FS project, the RRT participated in the 2nd Produkteka, a platform for product design connecting designers, innovators, manufacturers and distributors; in the 2nd JDM meeting (international get-together of Japanese-brand motorcar enthusiasts); the Student Day Festival and the Researcher's Night.

After several months of work on the new racing car, due to lack of financial support and impossibility to meet the deadline, it was decided to work on and further improve the previous year's racing car and use it in the competition.

The Riteh Racing Team has participated in the Baltic Open Formula Student competition, held from August 7th to 11th of this year in Finland. On the first day, the technical inspection of the car was carried out, where we didn't have any problems with satisfying all 5 elements that are necessary for further competition. The grand opening, which was held on the following day, was highlighted by a drive through the centre of Helsinki.

The dynamic suspension test, aka Slalom, was scheduled for the third day of the event, where a satisfactory 14th place was achieved. Afterwards, problems with certain drive elements were determined. The Autocross qualifications for the endurance test were therefore driven more carefully, in order to avoid further damage of the car. This time, we took 19th place.



Posljednji je dan na rasporedu bila utrka izdržljivosti tzv. endurance. Utrka se vozi 22 km s izmjenom vozača na polovici utrke. Budući da su cjelonoćnim radom članova RRT otklonjeni problemi nastali u ranijim fazama natjecanja, i ova je disciplina uspješno završena osvojenim 16. mjestom.

Nakon kratke ljetne stanke i s novostečenim iskustvima Riteh Racing Team pun optimizma kreće s dovršetkom bolida RRC3 i dodatnim usavršavanjem konstrukcije za izradu sasvim novih elemenata.

The endurance test was scheduled on Sunday, the last day of competition. It is 22 km long with a driver swap half-way. After a long night of work spent on eliminating the problems the car had sustained during earlier competition, this discipline was likewise successfully completed by achieving 16th place.

After a short summer break, with newly acquired experience and full of optimism, the Riteh Racing Team has started the final work on the RRC3 racing car with additional design improvements of brand new elements.

7.7 RITEH EMOBIL



Studentski projekt RITEH EMOBIL pokrenut je u akademskoj godini 2011./2012. te za cilj ima izradu potpuno autonomnoga električnog vozila spremnoga za homologaciju i upotrebu u svakodnevnom prometu. Osim toga, kao nastavak projekta planira se izgradnja punionice za električna vozila u krugu zgrade Tehničkoga fakulteta. U projekt su aktivno uključeni studenti Tehničkoga fakulteta pod mentorstvom izv. prof. dr. sc. Srđana Skoka i višega asistenta dr. sc. Vedrana Kirinčića sa Zavoda za elektroenergetiku Tehničkoga fakulteta Sveučilišta u Rijeci, a voditelj je projekta student Marko Pičuljan. Tematika je projekta, s ciljem istraživanja i primjene tehnologije vozila na električni pogon s pripadajućom punionicom, u skladu s potrebom smanjenja potrošnje primarnih izvora energije, povećanja energetske učinkovitosti i redukcije emisije stakleničkih plinova.

Opis problematike projekta

Projekt obuhvaća izradu tehničkih rješenja, projektiranje i samostalnu izradu vozila na električni pogon konverzijom postojećega vozila pogonjenoga motorom s unutrašnjim sagorijevanjem, a koristeći se novim tehnologijama te stečenim znanjima i vještinama.

The student project RITEH EMOBIL was launched in the 2011/2012 academic year, with the aim to create a fully autonomous electric vehicle that is ready for homologation and use in everyday traffic. Moreover, the project is planned to include the construction of a filling station for electric vehicles within the premises of the Faculty of Engineering. The project is carried out by students from the Faculty of Engineering under the supervision of Assoc. Prof. Srđan Skok, D. Sc., and Senior Assistant Vedran Kirinčić, PhD, from the Department of Electrical Power Engineering of the Faculty of Engineering University of Rijeka. The leader of the project is the student Marko Pičuljan. The project focuses on research and application of technology of electric vehicles with the associated filling station, which is in compliance with the need to reduce the consumption of primary energy sources, increase the energy efficiency and reduce the greenhouse gas emissions.

Description of the Topic of the Project

The project includes the development of technical solutions, the design and the manufacturing of electric vehicles through conversion of the existing vehicles powered by in-



U sklopu projekta pažnja će se posvetiti i razvoju punionice vozila kao osnove za buduće projekte iz ovoga područja. Ideja razvoja vozila na električni pogon s pripadajućom punicom dio je cjelokupnoga trenda razvoja elektroenergetskoga sustava (EES) 21. stoljeća koji teži konceptu poznatom kao napredna elektroenergetska mreža (engl. Smart Grid).

Krajnji je cilj, primjenom novih te boljim korištenjem postojećih tehnologija, unaprijediti postojeći EES kako bi pružio potporu rastućim energetske potrebama, a u skladu s konceptom samoodrživosti te brigom za okoliš. Transport ima bitnu ulogu u svakodnevnom životu, a naročito u gradskim sredinama, gdje je osim potrebe za smanjenjem štetnih emisija i buke izražen manjak parkirnog prostora, pa se kao rješenje nudi malo vozilo s autonomijom dostatnom za gradske potrebe. Bavljenje problematikom električnih vozila omogućuje studentima uključenim u projekt rad na danas i u svjetskim razmjerima

ternal combustion engines, while using new technologies as well as the acquired knowledge and skills. As part of the project, development of the electric filling station will be envisaged to serve as a basis for future projects in this field. The idea of the development of electric vehicles with the corresponding electric filling station is part of the overall trend of developing electrical power system (EPS) in the 21st century, which aims towards the concept generally known as Smart Grid.

The ultimate goal is to apply new technologies as well as to improve the use of the existing ones, in order to enhance the EPS to enable it, to support the growing energy needs, all in accordance with the concept of self-sustainability and care for the environment. Transport plays an important role in everyday life, especially in urban areas, which in addition to the need to reduce harmful emissions and noise, suffers from the lack of parking space, which is why a small vehi-

relevantnom području elektroenergetike, s obzirom na to da se sve više poznatih proizvođača automobila odlučuje na slična rješenja. S druge strane, otvara se prostor za razvoj rješenja punionice takvih vozila kao distribuiranih izvora električne energije pa predloženi projekt predstavlja pilot projekt s tematikom vozila na električni pogon, kao dio koncepta Smart Grid.

Cilj projekta

Cilj je projekta aktivan rad studenata na realnom problemu izrade vozila na električni pogon s pripadajućom punionicom. U projektu sudjeluju studenti Tehničkoga fakulteta koji na taj način imaju priliku primijeniti znanja stečena dosadašnjom fakultetskom izobrazbom. Problemi na koje će studenti nailaziti tijekom različitih faza projekta omogućit će im stjecanje novih znanja i vještina te ih motivirati za timski, ali i samostalan rad. Naglasak će pritom biti na tehničkim znanjima te inovativnosti i kreativnosti u pronalaženju rješenja. Svatko od sudionika na projektu imat će priliku pronaći područje rada koje mu najviše odgovara razvijajući time i tzv. osobne vještine (engl. soft skills), poput organizacije rada, vođenja većega ili manjega tima osoba, komunikacijskih i prezentacijskih vještina prilikom predstavljanja projekta. Navedenim će studenti dobiti novu dimenziju obrazovanja, kakvu nemaju priliku steći u postojećem sustavu visokoškolskoga obrazovanja.

Dobro opremljeni laboratoriji i radionica pružaju kvalitetne uvjete za postizanje inovativne radne atmosfere gdje studenti u suradnji s mentorima na Tehničkom fakultetu mogu napraviti prve korake u znanstvenois-traživačkom svijetu. Studenti zainteresirani za daljnji rad u ovome području mogu svoje istraživanje nastaviti na Poslijediplomskom doktorskom studiju elektrotehnike na Tehničkom fakultetu Sveučilišta u Rijeci. Rezultati se istraživanja i razvoja te cjelokupnoga rada na projektu zatim vrlo efikasno mogu diseminirati u širu javnost objavljivanjem radova u međunarodnim i domaćim časopisima te brojnim znanstvenim i stručnim skupovima.

cle with sufficient autonomy for urban needs is given as a viable solution. The possibility to deal with the issue of electric vehicles allows students involved in the project to work in the field of electrical power engineering, a field that is currently highly relevant worldwide and with an increasing number of well-known car manufacturers opting for similar solutions. On the other hand, this opens the possibility to develop optimal filling stations as distributed sources of electrical energy, so the proposed project represents a pilot project of the electric vehicles as part of the Smart Grid concept.

The Aim of the Project

The aim of the project is active students' work on a real issue of constructing electric vehicles with the associated filling station. The project involves students of the Faculty of Engineering who thus have the opportunity to apply the knowledge acquired during their studies at the Faculty. The problems that students will encounter during the various phases of the project will enable them to acquire new knowledge and skills and motivate them for both team and independent work. Emphasis will be laid on technical knowledge as well as innovation and creativity in coming up with solutions. Each of the participants in the project will have an opportunity to find a field of work that suits him best and thus develop also the so-called soft skills, such as organization of work, leading large or small teams and communication and presentation skills. This will provide students with a new dimension of education, something they cannot acquire in the existing system of higher education.

Well-equipped laboratories and workshops provide quality opportunities to achieve innovative working atmosphere where students, in collaboration with mentors of the Faculty, can take their first steps in the scientific and research area. Students interested in further work in this field can continue their research on the postgraduate doctoral study of Electrical Engineering at Rijeka University, Fac-



Tematika električnih vozila otvara mogućnost za izradu brojnih završnih i diplomskih radova.

Projektiranje, razvoj i implementacija komponenata vozila na električni pogon, koje će zatim biti homologirano i registrirano, predstavlja pilot-projekt. Nastavak rada podrazumijeva daljnju suradnju većega broja studenata i istraživača, s naglaskom na interdisciplinarnost, čime bi se mogli povezati studenti različitih područja, s ciljem istraživanja tehničkoga, ekonomskoga, ekološkoga i društvenoga aspekta integracije većega broja vozila na električni pogon, kao i razvoja mreže punionica koje bi opskrbljivale takva vozila.

Riteh Emobil Team u akademskoj godini 2012./2013. sastojao se od 12 članova studenata Tehničkoga fakulteta, s tendencijom primanja novih članova. Valja napomenuti da je ovo prvi studentski projekt ovakve vrste na akademskoj razini u Republici Hrvatskoj.

Rezultat je prve faze ovoga projekta elek-

ulty of Engineering. The results of research and development, and of overall work on the project, can then be efficiently disseminated to the general public by publishing papers in international and national journals at numerous scientific and professional conferences. The topic of the electric vehicles opens up the possibility for compiling numerous diploma theses.

Design, development and implementation of the components of electric vehicles, which will then be homologated and registered, represents a pilot project. The continuation of the work entails further cooperation of a large number of students and researchers, with an emphasis on interdisciplinarity, which could connect students from different fields in order to explore the technical, economic, ecological and social aspects of integration of a large number of electric vehicles, as well as the development of a network of filling stations to supply such ve-

trični automobil spreman za homologaciju i uporabu u svakodnevnom prometu. Vozilo upotrijebljeno za konverziju je Smart ForTwo, čiji je motor s unutrašnjim sagorijevanjem zamijenjen električnim motorom. Sinkroni motor s permanentnim magnetima uparen je s automatskim mjenjačem. Motor se napaja preko baterijskoga paketa sastavljenoga od 32 ćelije ukupne snage 10,32 kWh. Radni napon baterijskog paketa je 96 V. Rad motora kontrolira se preko kontrolera, dok baterijski paket nadzire sustav BMS (engl. Battery Management System) koji u svakom trenutku prati sve parametre važne za siguran rad svake ćelije (napon, struja, temperatura i kapacitet baterije). Pogonski sklop razvija snagu od 25 kW nominalne snage dok kratkotrajno može razviti i do 75 kW. Navedeno automobilu osigurava performanse od 120 km/h maksimalne brzine uz autonomiju od 80 km gradske vožnje. Punjenje se automobila odvija preko jednofazne 230 V mreže u prosječnom trajanju do 6 sati, uz mogućnost ugradnje punjača veće snage čime se vrijeme punjenja baterijskoga paketa može smanjiti na 10 minuta (istosmjerno DC punjenje), što je i cilj u nastavku projekta.

Nakon nabavke svih potrebnih komponenti i slaganja financijske strukture krenulo se u aktivno slaganje automobila te je isti dovršen koncem svibnja 2013. godine. Presentacija je automobila održana u sklopu Riječkoga energetskog tjedna 18. lipnja 2013. god. na Tehničkom fakultetu Sveučilišta u Rijeci. Osim prezentacije automobila, svim je posjetiteljima omogućena i probna vožnja. Predstavljanju su nazočili i brojni novinari te o događaju izvijestili u mnogim tiskanim i elektroničkim medijima. Kako bi se zainteresiranoj javnosti omogućilo informiranje o novostima vezanim za projekt, otvorena je mrežna stranica projekta (www.ritehemobil.com), kao i stranica na društvenoj mreži Facebook (www.facebook.com/RiTehEMobil).

Riteh Emobil Team sudjelovao je na više manifestacija i događanja od kojih valjda istaknuti Studentski dan 2013. godine. Tom je prilikom automobil bio izložen na riječkom Korzu 24. – 25. svibnja pri čemu su mnogi

hicles.

The Riteh Emobil Team in the 2012/2013 academic year consisted of 12 student members of the Faculty of Engineering but open to recruit new members. It should be stressed that this is the first student project of this kind at the academic level in Croatia.

The result of the first phase of this project is an electric car ready to be homologated and used in everyday traffic. The vehicle that was used for the conversion was the Smart ForTwo, whose internal combustion engine was replaced with an electrical motor. Synchronous permanent magnet motor is linked with an automatic transmission. The motor is powered through a battery pack composed of 32 cells with total output 10.32 kWh. The operating voltage of the battery pack is 96 V. The motor is controlled through the controller, while the battery pack is monitored by Battery Management System (BMS), which at any time follows all the parameters necessary for the safe operation of each cell (battery voltage, current, temperature, and capacity). The drive circuit develops 25 kW nominal power, which can reach up to 75 kW in the short term. This provides the car with the performance of 120 km / h maximum speed and autonomy of 80 km in city driving. The car is filled through the single-phase 230 V network lasting on average up to 6 hours, with the possibility of installing a charger of higher power, which can reduce the time of charging the battery pack to 10 minutes (DC charging), which is actually the aim of the next phase of the project.

Once we have obtained all the necessary components and completed the financial structure, we started actively assembling the car and completed it in late May 2013. The car was presented within the Rijeka Energy Week on 18 June 2013 at Rijeka University, Faculty of Engineering. In addition to the presentation, all the visitors were given the opportunity to have a trial drive. The presentation was attended also by many journalists who reported on the event in many print and electronic media. The project webpage was created (www.ritehemobil.com) as well

građani i posjetitelji pokazali velik interes za sam projekt.

U sklopu održavanja projekta EU „Noć istraživača 2013.“ Riteh Emobil je 26. rujna 2013. predstavljen i na europskoj razini te je tom prilikom automobil izložen u riječkom Tower Centru, čemu su nazočili i brojni mediji.

Rad na projektu Riteh Emobil rezultirao je nizom završnih i diplomskih radova studenata elektrotehnike Tehničkoga fakulteta. Pored toga, studenti sudionici projekta su u suautorstvu s mentorima objavili nekoliko radova na međunarodnim konferencijama IN-TECH i MIPRO.

Kao nastavak se projekta u akademskoj godini 2013./2014. planira homologacija i registracija automobila te projektiranje javne punionice za električna vozila te početak gradnje iste. Također, bude li dovoljno sredstava, nije isključena mogućnost konverzije novoga automobila ili motocikla na električni pogon.

Budući da se radi o studentskom projektu financiranom isključivo od sponzorstva raznih tvrtki i institucija, posebno moramo zahvaliti svim pokroviteljima i partnerima projekta bez čije potpore projekt ovakve vrste ne bi bilo moguće izvesti: Studentski zbor Sveučilišta u Rijeci, Tehnički fakultet, ELCON Gerätebau, Zaklada Sveučilišta u Rijeci, Alumni klub Tehničkoga fakulteta u Rijeci, Pol auto oprema, Auto-centar ADRIA P.A., Tema d.o.o., Zanatlija d.d., Auto Birtić, Scripta, Smart Servis Horvat, Malkoč tehnika, Toni auspuh, Web-Com te Plinara Baderna.

as the Facebook site ([www.facebook.com / RiTehEMobil](http://www.facebook.com/RiTehEMobil)).

The Riteh Emobil Team participated in several events and happenings, among which the Student Day 2013. On this occasion, on 24-25 May, the car was exhibited at Rijeka's Korzo, where many citizens and visitors showed great interest in the project.

As part of the EU project "Researchers' Night 2013", on 26 September 2013, the Riteh Emobil was also presented at the European level when the car was on display at the Rijeka's Tower Center. The event was covered by numerous media.

Work on the Riteh Emobil project has resulted in several diploma theses by students of Electrical Engineering of the Faculty of Engineering. In addition, the students involved in the project published in cooperation with mentors several papers at the IN-TECH and MIPRO international conferences.

Next phase of the project in the 2013/2014 academic year is planned to focus on homologation and registration of the car as well as design and construction of public filling stations for electric vehicles. Moreover, provided the finances are secured, a conversion of a new car or motorcycle is envisaged.

Since this is a student project financed exclusively by sponsorship of various companies and institutions, we wish to thank all the sponsors and partners in the project, without whose support the project of this kind would not be possible. They are: Student Council of the University of Rijeka, Faculty of Engineering, ELCON Gerätebau, Foundation of the University of Rijeka, the Alumni Club of the Faculty of Engineering University of Rijeka, Pol Auto oprema, Auto-Centar ADRIA PA, Tema d.o.o., Zanatlija d.d., Auto Birtić, Scripta, Smart Service Horvat, Malkoč Tehnika, Toni Auspuh, WebCom and Plinara Baderna.

7.8 RITEH WATERBIKE TEAM



Riteh waterbike team čini skupina studenata Tehničkoga fakulteta u Rijeci, pod mentorstvom prof. dr. sc. Roka Dejhalle, a voditelj projekta je Marko Vidas. Cilj tima je sudjelovanje na Međunarodnim regatama vodocikala (International waterbike regatta - IWR) koje se održavaju jednom godišnje.

Međunarodna regata vodocikala je natjecanje na kojem se studenti brodogradnje iz cijele Europe natječu u projektiranju i izradi plovila, uvjetovanih prema međunarodnim pravilima studentske regate vodocikala. Natjecanje je višednevno, a osmišljeno je kao cjelina od šest disciplina koje se vrednuju pojedinačno i ukupno. U svakoj od disciplina dan je naglasak na određenu performansu plovila.

Riteh waterbike team is a group of students from the Faculty of Engineering in Rijeka, under the supervision of Prof. Roko Dejhalla, D. Sc., and the project leader Marko Vidas. The team is formed in order to compete an the International Waterbike Regatta which is held once per year.

International Waterbike Regatta is a competition where students of Naval Architecture from European faculties compete in designing and building waterbikes, according to International Waterbike Regatta rules. The competition takes several days, and it consists of six disciplines which are evaluated individually and in total. In each discipline an accent is laid on the specific performanse of the waterbike.

Međunarodna regata vodocikala svoje početke bilježi prije tridesetak godina u Njemačkoj. Isprva je to bio skup studenata s raznih njemačkih sveučilišta, te viših škola koji su svoje druženje nastojali upotpuniti natjecanjem u granama znanosti i tehnologije koje najbolje poznaju. Time započinju prva natjecanja plovila na nožni pogon. Uključivanjem sveučilišta iz Nizozemske regata poprva internacionalni karakter, te je 1988. godine održana prva regata izvan granica Njemačke.

Te godine na regati u Delftu postavljen je temelj današnjeg koncepta organizacije, a to je da susret prelazi iz jednodnevnog u višednevni događaj, svake se godine mijenja mjesto održavanja, te u regati mogu sudjelovati timovi iz cijele Europe. Danas se na regati pojavljuju studenti svih važnijih europskih sveučilišta na kojima postoji studij brodogradnje, čime regata u brodograđevnoj industriji izaziva značajno zanimanje budući da okuplja samu europsku elitu studenata brodogradnje koji će i sami jednog dana biti vodeći stručnjaci u svojoj struci.

Ove godine 34. Međunarodna regata vodocikala održala se je od 15. do 19. svibnja 2013. u gradu Rijeci. Regatu je organizirao Tehnički fakultet uz asistenciju Pomorskoga fakulteta. Na regati su se pojavili timovi iz Njemačke, Poljske, Turske, Nizozemske, te dva tima iz Hrvatske. Riteh waterbike team ove je godine na regati u Rijeci nastupao s dva plovila, od kojih je jedno plovilo potpuno novo, te je po prvi put predstavljeno na ovogodišnjoj regati – radi se vodociklu „Šijun“.

Kao dva glavna cilja za ovu godinu Riteh waterbike team si je postavio sljedeće: prvi cilj bio je uključivanje novih članova u projekt, zbog prijenosa znanja i iskustva, i kako bi se stvorio kontinuitet projekta; drugi cilj bio je izgradnja potpuno novoga plovila. Od početka sudjelovanja na međunarodnim regatama tim je razvio i izgradio do ove godine dva plovila. Prvo plovilo je niskobudžetna „Zvizda“ te „Kajzer“. Koncept novoga plovila („Šijun“) bazirao se je na „Kajzeru“, stoga su rješenja koja su namijenjena novom plovilu prethodno bila testirana na Kajzeru. Poče-

IWR was started in the '80s as a competition between German Universities. By involvement of universities from Holland, the Regatta takes on international character, and in 1988 the first race took place outside Germany.

That year the Regatta in Delft created a basis for today's concept of organization, which is to change from one day to multi-day event, each year changing the venue. The Regatta is open to teams from all over Europe. Today, students from all major European universities with Naval Architecture program participate in the Regatta, causing considerable interest in the shipbuilding industry since it brings together the very elite of European Naval Architecture students who themselves will one day be the leading experts in their field.

This year the 34. International Waterbike Regatta was held from 15 - 19 May in the city of Rijeka, in Croatia. The Regatta was organised by the Faculty of Engineering in Rijeka with the Faculty of Maritime Studies in Rijeka. There were teams from Germany, Poland, the Netherlands, Turkey and two teams from Croatia. The Riteh waterbike team competed with two boats, one of which is a totally new waterbike called „Šijun“.

Two main objectives for this season were first to include new members into the project who could continue with their knowledge and experience; and second to build a new waterbike. From the first participation in regattas Riteh waterbike team has built two waterbikes, the low budget „Zvizda“, and „Kajzer“. The concept for the new boat (Šijun) was based on the Kajzer, so the solutions for the new boat had previously been tested on the Kajzer. Hulls were built first. After that, the chassis was made, followed by a propulsion and steering system. It should be noted that because of lack of time the Šijun was not completed according to the plan, but it participated in the contest. Unfortunately, results were not as expected. Before the start of the 2014 project, a detailed analysis of the 2013 project was made, which was used as a basis for the project plan 2014. Objectives

tak izgradnje „Šijuna“ označila je gradnja trupova. Nakon što su izgrađeni trupovi napravljena je šasija po uzoru na „Kajzer“, kao i sustav propulzije i sustav kormilarenja. Treba reći da se zbog nedostatka vremena nije uspjelo završiti „Šijun“ na način na koji je to bilo isplanirano, međutim ipak se je s njime nastupilo na regati, no rezultati nisu bili zadovoljavajući zbog nedovršenosti. Prije početka projekta za 2014. godinu napravljena je detaljna analiza projekta kroz ovu, te je temeljem toga napravljen plan projekta za 2014. godinu. Ciljevi za 2014. su sljedeći: dovršetak „Šijun“, nastup na IWR 2014. u Istanbulu, te puno bolja promocija projekta nego što je to bio slučaj do sada.

Kako je ovo studentski projekt financiran isključivo putem sponzorstava raznih tvrtki i institucija, moramo zahvaliti pokroviteljima i partnerima bez kojih projekt ne bi bio moguć: Studentski zbor Sveučilišta u Rijeci, Tehnički fakultet, Det Norske Veritas, Lloyd's Register, Bureau Veritas, Navis Consult d.o.o., Vard, Alumni klub Tehničkoga fakulteta u Rijeci, Adria-mar brodogradnja d.o.o., Adria kompoziti, Autoservis RM.



for 2014 are: completion of the Šijun, participation in the IWR 2014 in Istanbul, and better promotion of the project. This project wouldn't be alive without sponsorship of various companies and institutions. We'd like to thank our sponsors and partners: Student Council of the University of Rijeka, Faculty of Engineering in Rijeka, Det Norske Veritas, Lloyd's Register, Bureau Veritas, Navis Consult d.o.o., Vard, the Alumni Club of the Faculty of Engineering in Rijeka, Aitac, Adria-mar brodogradnja d.o.o., Adria kompoziti, Auto service RM.

