INTERDISCIPLINARNI PROJEKT - RRP

UČNI NAČRT PREDMETA/COURSE SYLLABUS

Predmet:	Interdisciplinarni projekt - RRP
Course title:	Interdisciplinary Project - RRP
Članica nosilka/UL Member:	UL FS

Študijski programi in stopnja	Študijska smer	Letnik	Semestri	Izbirnost
Strojništvo - razvojno raziskovalni program, prva stopnja, univerzitetni	Ni členitve (študijski program)	3. letnik	2. semester	izbirni

Univerzitetna koda predmeta/University course code:	0545370
Koda učne enote na članici/UL Member course code:	2040-U

Predavanja /Lectures	Seminar /Seminar	Vaje /Tutorials	Klinične vaje /Clinical tutorials	Druge oblike študija /Other forms of study	Samostojno delo /Individual student work	ECTS
15		15			45	3

Nosilec predmeta/Lecturer:	prof. dr. Iztok Golobič, prof. dr. Edvard Govekar, prof. dr. Niko Herakovič, prof. dr. Mitjan Kalin, prof. dr. Andrej Kitanovski, izr. prof. dr. Robert Kunc, prof. dr. Marko Nagode, prof. dr. Rok Petkovšek, prof. dr. Primož Podržaj, prof. dr. Franci Pušavec, prof. dr. Mihael Sekavčnik, prof. dr. Janko Slavič, doc. dr. Lidija Slemenik Perše, prof. dr. Božidar Šarler, prof. dr. Roman Šturm, izr. prof. dr. Nikola Vukašinović
Izvajalci predavanj:	doc. dr. Vid Agrež, izr. prof. dr. Ciril Arkar, doc. dr. Tomaž Berlec, doc. dr. Drago Bračun, izr. prof. dr. Miha Brojan, prof. dr. Gregor Čepon, doc. dr. Martin Česnik, prof. dr. Matevž Dular, prof. dr. Iztok Golobič, prof. dr. Edvard Govekar, izr. prof. dr. Peter Gregorčič, izr. prof. dr. Miroslav Halilovič, prof. dr. Niko Herakovič, prof. dr. Marko Hočevar, izr. prof. dr. Boris Jerman, prof. dr. Matija Jezeršek, prof. dr. Mitjan Kalin, prof. dr. Tomaž Katrašnik, doc. dr. Tomaž Kek, prof. dr. Andrej Kitanovski, prof. dr. Jernej Klemenc, doc. dr. Katja Klinar, izr. prof. dr. Damjan Klobčar, doc. dr. Dominik Kozjek, izr. prof. dr. Davorin Kramar, doc. dr. Andraž Kravos, izr. prof. dr. Robert Kunc, izr. prof. dr. Jože Kutin, izr. prof. dr. Franc Majdič, doc. dr. Boštjan Mavrič, prof. dr. Sašo Medved, izr. prof. dr. Nikolaj Mole, izr. prof. dr. Mitja Mori, prof. dr. Marko Nagode, izr. prof. dr. Simon Oman, izr. prof. dr. Tomaž Pepelnjak, izr. prof. dr. Aljoša Peperko, prof. dr. Rok Petkovšek, viš. pred. dr. Igor Petrović, prof. dr. Primož Podržaj, doc. dr. Marko Polajnar, doc. dr. Primož Potočnik, izr. prof. dr. Jurij Prezelj, prof. dr. Franci Pušavec, doc. dr. Darja Rupnik Poklukar, prof. dr. Mihael Sekavčnik, prof. dr. Janko Slavič, doc. dr. Lidija Slemenik Perše, izr. prof. dr. Uroš Stritih, prof. dr. Božidar Šarler, izr. prof. dr. Domen Šeruga, izr. prof. dr. Marko Šimic, prof. dr. Roman Šturm, doc. dr. Jovan Trajkovski, Jaka Tušek, izr. prof. dr. Joško Valentinčič, izr. prof. dr. Rok Vrabič, izr. prof. dr. Nikola Vukašinović, izr. prof. dr. Matevž Zupančič, prof. ddr. Janez Žerovnik
Izvajalci seminarjev:	
Izvajalci vaj:	

Izvajalci kliničnih vaj:	
Izvajalci drugih oblik:	
Izvajalci praktičnega usposabljanja:	

Vrsta predmeta/Course type:	Splošni izbirni predmet /Elective general course

Jeziki/Languages:	Predavanja/Lectures:	Slovenščina
	Vaje/Tutorial:	Slovenščina

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	**Prerequisites:**
V sklopu predmeta se student po poveže v interdisciplinarne skupine in spozna s širšim področjem določenega dela strokovne tematike. Zato so pogoj za vključitev v delo opravljene študijske obveznosti prvih štirih semestrov študijskega programa RRP.	In the scope of this course a student participates in inter-disciplinaty teams and acquires knowledge from a wider field of a specified professional area. The necessary condition is finished study obligations from the first four semesters of the RRP programme.

Vsebina:	**Content (Syllabus outline):**
Študentje bodo v manjših interdisciplinarnih skupinah, ali posamično, reševali ter analizirali aplikativne inženirske probleme v obliki projektno-seminarskega dela. Projekti se bodo nanašali na dele ali celotne sklope znanj iz posamičnih ali več področij predhodnih semestrov. Projekti bodo zahtevali integracijsko znanje in inženirske prostope, ob upoštevanju širših teoretičnih in praktičnih vidikov, tudi iter- in intra-disciplinarnih. Izzivi bodo vključevalli aktualne tematike iz industrije, širše družbe, mednarodnih ali domačih študentskih tekmovanj in drugih akademskih izzivov. Pri tem bo uporabljen tematsko-problemski pristop, kjer se bo združevalo znanja z različnih področij. Zato bodo študenti spodbujeni, da se povezujejo tudi s kolegi drugih fakultet in/ali industrije in družbe, in na ta način razširijo praktične izkušnje reševanja interdisciplinarnih nalog. Vsebinsko bodo aktivnosti razdeljene v sledeče časovno sosledne vsebine: 1. Kreacija skupin in oblikovanje ustrezne projektne ideje. Formalizacija projektnih ciljev. 2. Teoretične podlage ter iskanje optimalnih rešitev skozi analizo obstoječega stanja in pristopom inoviranja. 3. Razčlenitev projektne ideje v obvladljive podsklope in iskanje morebitnih kritičnih točk. 4. Razdelitev nalog in določitev časovnice. Spremljanje napredka preko predstavitve vmesnih rezultatov in praktičnega dela. 5. Predstavitev in razširjanje rezultatov.	The students individually of as a member of a small team analyse and solve applied engineering problems in the form of peoject-seminar work. The projects are be related to partial or comprehensive knowledge areas from the former study semesters. Integrated knowledge and engineering approaches are inherently linked to this projects as well as application of wider theoretical and practical inter- and intra-disciplinary aspects. The content consist of concurrent industrial problems, social issues, domestic and international student's competitions and academic challenges. A contextual hand-on approach is followed when using knowledge integration from different areas of expertise. The students are encouraged to link themselves with the collegues from the other faculties and/or industry or wider society in order to widen their professional horizon and practical experience by solving inter-disciplinary tasks. The course content consists of the following: 1. Team building and formation of a suitable project idea. Formalisation of project objectives. 2. Theoretical content for finding optimal solutions through the state-o-the-art analysis and innovation approach. 3. Segmentation of the project idea into manageable sub-tatsks in identification of risks. 4. Task allocation and definition of time-sheet. Progress control through intermediate-results presentation and practical work. 5. Presentation and dissemination of results.

Temeljna literatura in viri/Readings:

Določena je smiselno v dogovoru z izbranim nosilcem (mentorjem) predmeta za vsakega študenta posebej glede na izbrano problematiko. Literatura je dosegljiva v knjižnici laboratorija, fakultetni knjižnici ali širše. Praviloma študent študira iz člankov, ki so obravnavali podoben primer, kakor ga ima sam definiranega. It is determined appropriately in agreement with the selected lecturer (mentor) for each student according to the chosen topic. Literature is available at the lab library, faculty library or beyond. As a rule, a student studies from articles dealing with a similar case as he or she has defined.

Cilji in kompetence:	**Objectives and competences:**
Cilji: 1. Omogočiti študentu seznanitev s temeljno in predmetno specifično literature na delu tematike, ki bo obravnavana v zaključni nalogi. 2. Seznanitev z namensko opremo na področju eksperimentiranja in uporabe računalniških orodij. Študent tako spozna osnovno funkcionalnost opreme, ki jo lahko uporabi. 3. Predmet se izvaja v laboratoriju (enem ali več) odvisno od dogovora z mentorjem in nosilci predmeta. Kompetence: S1-RRP: Sposobnost za opredelitev, razumevanje in ustvarjalno reševanje strokovnih izzivov. S2-RRP: Razvijanje sposobnosti kritičnega, analitičnega in sintetičnega mišljenja ter učenje z evalvacijo in refleksijo lastnega dela (izkustveno učenje, supervizija). S4-RRP: Sposobnost strokovnega sporazumevanja in pisnega izražanja, vključno z uporabo tujega strokovnega jezika.	**Objectives:** 1. To enable the student to get acquainted with the basic and specific literature on the topic that will be discussed in the Bachelor's degree thesis. 2. To familiarize with the specific equipment in the field of experimentation and use of computer tools. Thus the student learns about the basic functionality of the equipment he can use. 3. The course is carried out in the laboratory (one or more), depending on the agreement with the mentor and course lecturers. **Competencies:** S1-RRP: The ability to define, understand and creatively solve professional challenges. S2-RRP: Development of creative, analytical and synthetic thinking. S4-RRP: Professional communication and writing communication skills, including the u se of foreign technical language. S6-RRP: The ability to use the acquired knowledge to solve professional engineering problems independently. S7-RRP: The ability to find sources, make critical judgement of information, upgrade the acquired skills independently and further develop the knowledge on various specific areas of engineering. S8-RRP: Following safety, functional, economic and environmental principles at their work. P1-RRP: Mastery of basic theoretic skills, fundamental to the technical aspect of mechanical engineering. P4-RRP: The ability of basic physical, mathematical and numerical modelling of problems with the ability of critically analysing the results. P6-RRP: A Level 1 graduate is able to perform easier development, engineering and professional organisational tasks as well as to solve individual well-defined engineering tasks.

S6-RRP: Usposobljenost za uporabo pridobljenih znanj pri samostojnem reševanju tehničnih problemov v strojništvu. S7-RRP: Sposobnost iskanja virov, kritične presoje informacij, samostojnega nadgrajevanja pridobljenih znanj in poglabljanja znanja na posameznih specializiranih področjih strojništva. S8-RRP: Usposobljenost za delo v skupini in interdisciplinarno povezovanje. P1-RRP: Obvladovanje temeljnih teoretičnih znanj, ki so bistvena za obvladovanje tehničnega področja strojništva. P4-RRP: Sposobnost osnovnega fizikalnega, matematičnega in numeričnega modeliranja problemov z razvito sposobnostjo kritične analize rezultatov. P6-RRP: Sposobnost samostojnega izvajanja manj zahtevnih razvojnih, inženirskih in strokovno organizacijskih del ter sposobnost kreativnega reševanja posameznih dobro definiranih nalog na področju strojništva.	

Predvideni študijski rezultati:	**Intended learning outcomes:**
Znanja: Z1: Poglobljeno strokovno teoretično in praktično znanje na določenem področju, podprto s širšo teoretično in metodološko osnovo. Spretnosti: S1.1 Izvajanje kompleksnih operativno-strokovnih opravil, ki vključujejo tudi uporabo metodoloških orodij.	Knowledge: Z1: Thorough professional theoretical and practical knowledge in a selected field of expertise that is supported with a broad theoretical and methodological basis. Skills: S1.1 Executing complex operational-professional tasks that incorporate usage of methodological tools.

S1.2 Obvladovanje zahtevnih, kompleksnih delovnih procesov ob samostojni uporabi znanja v novih delovnih situacijah. S1.3 Diagnosticiranje in reševanje problemov v različnih specifičnih delovnih okoljih, povezanih s področjem izobraževanja in usposabljanja. S1.4 Osnova za izvirna dognanja/ stvaritve in kritično refleksijo.	S1.2 Mastering demanding and complex work processes by independent usage of knowledge in new working situations. S1.3 Problem diagnostics and solving in different and specific working environments that are linked to the teaching and training content. S1.4 Basis for unique innovations and critical reflections.

Metode poučevanja in učenja:	**Learning and teaching methods:**
Klasične oblike poučevanja: P1 Avditorna predavanja z reševanjem izbranih - za področje značilnih - teoretičnih in praktično uporabnih primerov. P2 Obravnava snovi po urejeni in vnaprej razloženi sistematiki. P5 Uporaba študijskega gradiva v obliki (knjiga, skripta, e-knjiga, tiskana verzija predstavitve predavanj). **Moderne in prožne oblike poučevanja:** P6 Interaktivna predavanja. P7 Študij literature in razprava (timsko delo, viharjenje možgan, organizacija in/ali udeležba tekmovanj, organizacija in/ali udeležba delavnic). P8 Izdelava in predstavitev aplikativnih seminarskih nalog P14 Virtualni eksperimenti	**Conventional teaching methods:** P1 Auditorial lectures with solving selected field-specific theoretical and applied use cases. P2 Presenting the content according to the explained system. P5 Application of study material (textbook, e-book, printed lecture presentations, etc.). **Contemporary and flexible teaching methods:** P6 Interactive lectures. P7 Literature study and discussion (teamwork, brainstorming, organisation- and/or participation at student's competitions or workshops). P8 Making and presenting applied seminar exercises. P14 Virtual experiments.

Načini ocenjevanja:	**Delež/Weight**	**Assessment:**
Ocena končnega poročila.	50,00 %	Final report.
Ocena končnih predstavitev rezultatov.	50,00 %	Presentation of final results.

Ocenjevalna lestvica:	**Grading system:**
5 - 10, pri čemer velja, da je pozitivna ocena od 6 - 10	5 - 10, a student passes the exam if he is graded from 6 to 10

Reference nosilca/Lecturer's references:

Iztok Golobič:

1. GREGORČIČ, Peter, ZUPANČIČ, Matevž, **GOLOBIČ, Iztok**. Scalable surface microstructuring by a fiber laser for controlled nucleate boiling performance of high- and low-surface-tension fluids. *Scientific reports*. May 2018, vol. 8, f. 1-8, ilustr. ISSN 2045-2322. https://www.nature.com/articles/s41598-018-25843-5.pdf, DOI: 10.1038/s41598-018-25843-5. [COBISS.SI-ID 16034331]
2. RAVNIK, Jure, **GOLOBIČ, Iztok**, SITAR, Anže, AVANZO, M., IRMAN, Špela, KOČEVAR, K., CEGNAR, Mateja, ZADRAVEC, Matej, RAMŠAK, Matjaž, HRIBERŠEK, Matjaž. Lyophilization model of mannitol water solution in a laboratory scale lyophilizer. *Journal of drug delivery science and technology*. [Print ed.]. June 2018, vol. 45, str. 28-38, ilustr. ISSN 1773-2247. DOI: 10.1016/j.jddst.2018.02.015. [COBISS.SI-ID 21209622]
3. ZUPANČIČ, Matevž, NOVAK, Dušan, DIACI, Janez, **GOLOBIČ, Iztok**. An evaluation of industrial ultrafiltration systems for surface water using fouling indices as a performance indicator. *Desalination*. [Print ed.]. Jul. 2014, vol. 344, str. 321-328, ilustr. ISSN 0011-9164. DOI: 10.1016/j.desal.2014.04.002. [COBISS.SI-ID 13420827]

Edvard Govekar:

1. **GOVEKAR, Edvard**, JEROMEN, Andrej, KUZNETSOV, Alexander, LEVY, Gideon N., FUJISHIMA, Makoto. Study of an annular laser beam based axially-fed powder cladding process. CIRP annals. 2018, vol. 67, iss. 1, str. 241-244, ilustr. ISSN 0007-8506.

https://www.sciencedirect.com/science/article/pii/S0007850618301069, DOI: 10.1016/j.cirp.2018.04.082. [COBISS.SI-ID 16026395]
2. POTOČNIK, Primož, **GOVEKAR, Edvard**. Semi-supervised vibration-based classification and condition monitoring of compressors. Mechanical systems and signal processing. Sep. 2017, vol. 93, str. 51-65, ilustr. ISSN 0888-3270. http://www.sciencedirect.com/science/article/pii/S088832701730047X, DOI: 10.1016/j.ymssp.2017.01.048. [COBISS.SI-ID 15296539]
3. KUZNETSOV, Alexander, JEROMEN, Andrej, **GOVEKAR, Edvard**. Droplet detachment regimes in annular laser beam droplet generation from a metal wire. CIRP annals. 2014, vol. 63, iss. 1, str. 225-228, ilustr. ISSN 0007-8506. DOI: 10.1016/j.cirp.2014.03.051. [COBISS.SI-ID 13402651]

Niko Herakovič:
1. **HERAKOVIČ, Niko**, ŠIMIC, Marko, TRDIČ, Francelj, SKVARČ, Jure. A machine-vision system for automated quality control of welded rings. *Machine vision and applications*. [Print ed.]. 2011, vol. 22, no. 6, str. 967-981. ISSN 0932-8092. DOI: 10.1007/s00138-010-0293-9. [COBISS.SI-ID 11512091]
2. DEBEVEC, Mihael, ŠIMIC, Marko, **HERAKOVIČ, Niko**. Virtual factory as an advanced approach for production process optimization. *International journal of simulation modelling*. Mar. 2014, vol. 13, no. 1, str. 66-78, ilustr. ISSN 1726-4529. DOI: 10.2507/IJSIMM13(1)6.260. [COBISS.SI-ID 13367835]
3. PIPAN, Miha, **HERAKOVIČ, Niko**. Closed-loop volume flow control algorithm for fast switching pneumatic valves with PWM signal. *Control engineering practice*. [Print ed.]. Jan. 2018, vol. 70, str. 114-120. ISSN 0967-0661. https://www.sciencedirect.com/science/article/pii/S096706611730240X, DOI: 10.1016/j.conengprac.2017.10.008. [COBISS.SI-ID 15981083]

Mitjan Kalin:
1. **KALIN, Mitjan**, KUPEC, Alja. The dominant effect of temperature on the fatigue behaviour of polymer gears. *Wear*, ISSN 0043-1648. [Print ed.], Apr. 2017, vol. 376/377, part B, str. 1339-1346, ilustr. https://www.sciencedirect.com/science/article/pii/S0043164817302788?via%3Dihub, doi: 10.1016/j.wear.2017.02.003. [COBISS.SI-ID 15897115]
2. BARTOLOMÉ, Luis, OBLAK, Eva, **KALIN, Mitjan**. Mechanical behaviour and constitutive models of ZDDP tribofilms on DLC coatings using nano-indentation data and finite element modelling. *Tribology international*, ISSN 0301-679X, Mar. 2016, vol. 95, str. 19-26, ilustr. https://www.sciencedirect.com/science/article/pii/S0301679X15004958?via%3Dihub, doi: 10.1016/j.triboint.2015.10.036. [COBISS.SI-ID 14342939]
3. **KALIN, Mitjan**, OBLAK, Eva, AKBARI, Somayeh. Evolution of the nano-scale mechanical properties of tribofilms formed from low- and high-SAPS oils and ZDDP on DLC coatings and steel. *Tribology international*, ISSN 0301-679X, Apr. 2016, vol. 96, str. 43-56, ilustr., doi: 10.1016/j.triboint.2015.12.013. [COBISS.SI-ID 14398491]

Andrej Kitanovski:
1. DEL DUCA, Manuel Gesù, TUŠEK, Jaka, MAIORINO, Angelo, FULANOVIĆ, Lovro, BRADEŠKO, Andraž, PLAZNIK, Uroš, MALIČ, Barbara, APREA, Ciro, **KITANOVSKI, Andrej**. Comprehensive evaluation of electrocaloric effect and fatigue behavior in the 0.9Pb(Mg1/3Nb2/3)O3-0.1PbTiO3 bulk relaxor ferroelectric ceramic. *Journal of applied physics*. Sep. 2020, vol. 128, iss. 10, str. 1-9, ilustr. ISSN 0021 8979. https://aip.scitation.org/doi/full/10.1063/5.0003250, Repozitorij Univerze v Ljubljani – RUL, DOI: 10.1063/5.0003250. [COBISS.SI-ID 31087619].
2. AHČIN, Žiga, **KITANOVSKI, Andrej**, TUŠEK, Jaka. Latent thermal energy storage using solid-state phase transformation in caloric materials. *Cell reports physical science*. Sep. 2024, vol. 5, iss. 9, [article no.] 102175, str. 1-18, ilustr. ISSN 2666-3864. https://www.sciencedirect.com/science/article/pii/S2666386424004600, Repozitorij Univerze v Ljubljani – RUL, DOI: 10.1016/j.xcrp.2024.102175. [COBISS.SI-ID 206949635].
3. PETELIN, Nada, PEČAR, Borut, VRTAČNIK, Danilo, PERNE, Jakob, TOMC, Urban, **KITANOVSKI, Andrej**. Oscillating thermal switch using electrostatic forces. V: ŠARLER, Božidar (ur.), VANOLI, Laura (ur.), DOBRAVEC, Tadej (ur.). *Eurotherm 2024 : 9th European Thermal Sciences Conference, 10/06/2024 - 13/06/2024, Lake Bled, Slovenia*. [S. l.]: IOP publishing, 2024. Vol. 2766, [article no.] 012204, str. 1-6, ilustr. Journal of physics. Conference series (Online), vol. 2766. ISSN 1742-6596. https://iopscience.iop.org/article/10.1088/1742-6596/2766/1/012204, Repozitorij Univerze v Ljubljani – RUL, DOI: 10.1088/1742-6596/2766/1/012204. [COBISS.SI-ID 199190787].

Robert Kunc:

1. BASAN, Robert, FRANULOVIĆ, Marina, PREBIL, Ivan, **KUNC, Robert**. Study on Ramberg-Osgood and Chaboche models for 42CrMo4 steel and some approximations. Journal of constructional steel research. [Print ed.]. sep. 2017, vol. 136, str. 65-74, ilustr. ISSN 0143-974X. http://www.sciencedirect.com/science/article/pii/S0143974X17302341, DOI: 10.1016/j.jcsr.2017.05.010. [COBISS.SI-ID 15531035]
2. BIČEK, Matej, **KUNC, Robert**, ZUPAN, Samo. Mechanical impact on in-wheel motor's performance. Journal of mechanics. [Print ed.]. Oct. 2017, vol. 33, iss. 5, str. 607-618, ilustr. ISSN 1727-7191. https://www.cambridge.org/core/journals/journal-of-mechanics/article/div-classtitlemechanical-impact-on-in-wheel-motorandaposs-performancediv/A4D5DB17B7102D3897C02AAAC07A32A7, DOI: 10.1017/jmech.2016.95. [COBISS.SI-ID 15295259]
3. ŽEROVNIK, Andrej, PEPEL, Vili, PREBIL, Ivan, **KUNC, Robert**. The yield-point phenomenon and cyclic plasticity of the uniaxially loaded specimens. Materials & design. Feb. 2016, vol. 92, str. 971-977, ilustr. ISSN 0264-1275. DOI: 10.1016/j.matdes.2015.12.111. [COBISS.SI-ID 14442011]

Marko Nagode:
1. ŠOLINC, Urša, KLEMENC, Jernej, **NAGODE, Marko**, ŠERUGA, Domen. A direct approach to modelling the complex response of magnesium AZ31 alloy sheets to variable strain amplitude loading using Prandtl-Ishlinskii operators. *International journal of fatigue*. Oct. 2019, vol. 127, str. 291-304, ilustr. ISSN 0142-1123. https://www.sciencedirect.com/science/article/pii/S0142112319302397, https://repozitorij.uni-lj.si/IzpisGradiva.php?id=108298&lang=slv, DOI: 10.1016/j.ijfatigue.2019.06.009. [COBISS.SI-ID 16674075]
2. ŠERUGA, Domen, **NAGODE, Marko**. A new approach to finite element modelling of cyclic thermomechanical stress-strain responses. *International journal of mechanical sciences*. Dec. 2019, vol. 164, str. 1-14, ilustr. ISSN 0020-7403. https://www.sciencedirect.com/science/article/pii/S0020740319306964?via%3Dihub, DOI: 10.1016/j.ijmecsci.2019.105139. [COBISS.SI-ID 16795675]
3. **NAGODE, Marko**, ŠERUGA, Domen. Fatigue life prediction using multiaxial energy calculations with the mean stress effect to predict failure of linear and nonlinear elastic solids. *Results in physics*. 2016, vol. 6, f. 352-364, ilustr. ISSN 2211-3797. http://www.sciencedirect.com/science/article/pii/S2211379716300407, DOI: 10.1016/j.rinp.2016.06.007. [COBISS.SI-ID 14715163]

Rok Petkovšek:
1. **PETKOVŠEK, Rok**, NOVAK, Vid, AGREŽ, Vid. High power fiber MOPA based QCW laser delivering pulses with arbitrary duration on demand at high modulation bandwidth. *Optics express*, ISSN 1094-4087, 2015, vol. 23, no. 26, str. 33150-33156, ilustr., doi: 10.1364/OE.23.033150. [COBISS.SI-ID 14385947]
2. ORTHABER, Uroš, **PETKOVŠEK, Rok**, SCHILLE, Jörg, HARTWIG, L., HAWLINA, Gregor, DRNOVŠEK-OLUP, Brigita, VREČKO, Andrej, POBERAJ, Igor. Effect of laser-induced cavitation bubble on a thin elastic membrane. *Optics and laser technology*, ISSN 0030-3992. [Print ed.], Dec. 2014, vol. 64, str. 94-100, ilustr., doi: 10.1016/j.optlastec.2014.05.008. [COBISS.SI-ID 14498843]
3. MUR, Jaka, **PETKOVŠEK, Rok**. Near-THz bursts of pulses : governing surface ablation mechanisms for laser material processing. *Applied Surface Science*, ISSN 0169-4332. [Print ed.], Jun. 2019, vol. 478, str. 355-360, ilustr. https://www.sciencedirect.com/science/article/pii/S0169433219302120?via%3Dihub, doi: 10.1016/j.apsusc.2019.01.182. [COBISS.SI-ID 16467995]

Primož Podržaj:
1. MABKHOT, Mohammed M., FERREIRA, Pedro, MAFFEI, Antonio, **PODRŽAJ, Primož**, MĄDZIEL, Maksymilian, ANTONELLI, Dario, LANZETTA, Michele, BARATA, Jose, BOFFA, Eleonora, FINŽGAR, Miha, PAŚKO, Łukasz, MINETOLA, Paolo, CHELLI, Riccardo, NIKGHADAM-HOJJATI, Sanaz, WANG, Xi Vincent, PRIARONE, Paolo C., LITWIN, Paweł, STADNICKA, Dorota, LOHSE, Niels. Mapping industry 4.0 enabling technologies into united nations sustainability development goals. Sustainability. Mar. 2021, vol. 13, iss. 5, f. 1-35, ilustr. ISSN 2071-1050. https://www.mdpi.com/2071-1050/13/5/2560, DOI: 10.3390/su13052560. [COBISS.SI-ID 53600515]
2. FINŽGAR, Miha, **PODRŽAJ, Primož**. Machine-vision-based human-oriented mobile robots : a review. Strojniški vestnik. May 2017, vol. 63, no. 5, str. 331-348, si 47, ilustr. ISSN 0039-2480. http://www.dlib.si/details/URN:NBN:SI:DOC-RFY9PMZJ, DOI: 10.5545/sv-jme.2017.4324. [COBISS.SI-ID 15492635]

3. **PODRŽAJ, Primož**. Contionuous VS discrete PID controller. V: Proceedings of 2018 IEEE 9th International Conference on Mechanical and Intelligent Manufacturing Technologies (ICMIMT 2018), February 10-13, 2018 Cape Town, South Africa. 9th International Conference on Mechanical and Intelligent Manufacturing Technologies (ICMIMT 2018), February 10-13, 2018 Cape Town, South Africa. Piscataway (NJ): IEEE, 2018. Str. 177-181, ilustr. ISBN 978-1-5386-4297-9, ISBN 978-1-5386-4298-6, ISBN 978-1-5386-4296-2. https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=8340444. [COBISS.SI-ID 16247323]
4. **PODRŽAJ, Primož**, KUSTER, Boris. Face detection and face recognition in Python programming language. V: Proceedings. The Seventh International Conference on Informatics and Applications (ICIA2018) [and] The Fourth International Conference on Electronics and Software Science (ICESS2018), Takamatsu, Japan, November 5-7, 2018. [S. l.]: Society of Digital Information and Wireless Communications (SDIWC), 2018. Datoteka 304 (7 f.), ilustr. ISBN 978-1-941968-52-9, ISBN 978-1-941968-53-6. [COBISS.SI-ID 16379419]
5. FINŽGAR, Miha, **PODRŽAJ, Primož**. Feasibility of remote photoplethysmogrpahy for implementation in mobile robots. V: BODZÁS, Sándor (ur.), MANKOVITS, Tamás (ur.). ISCAME 2017 : proceedings. 5th International Scientific Conference on Advances in Mechanical Engineering, 12-13 October, 2017 Debrecen, Hungary. Debrecen: Faculty of Engineering, 2017. Str. 147-152, ilustr. ISBN 978-963-473-304-1. http://old.eng.unideb.hu/gepesz/wp-content/uploads/2015/10/ISCAME_2017_Conference_Proceeding.pdf. [COBISS.SI-ID 15804699]

Franci Pušavec:

1. **PUŠAVEC, Franci**, GRGURAŠ, Damir, KOCH, Matthias, KRAJNIK, Peter. Cooling capability of liquid nitrogen and carbon dioxide in cryogenic milling. *CIRP annals*, ISSN 0007-8506, 2019, vol. 68, iss. 1, str. 73-76, ilustr. https://www.sciencedirect.com/science/article/pii/S0007850619300174, doi: 10.1016/j.cirp.2019.03.016. [COBISS.SI-ID 16614427]
2. GRGURAŠ, Damir, STERLE, Luka, KRAJNIK, Peter, **PUŠAVEC, Franci**. A novel cryogenic machining concept based on a lubricated liquid carbon dioxide. *International journal of machine tools & manufacture : Design, research and application*, ISSN 0890-6955. [Print ed.], Oct. 2019, vol. 145, str. 1-6, ilustr. https://www.sciencedirect.com/science/article/pii/S0890695519307953?via%3Dihub, doi: 10.1016/j.ijmachtools.2019.103456. [COBISS.SI-ID 16781851]
3. **PUŠAVEC, Franci**, DESHPANDE, Ashish, YANG, Shu, M'SAOUBI, Rachid, KOPAČ, Janez, DILLON, Oscar W., JAWAHIR, I. S. Sustainable machining of high temperature Nickel alloy - Inconel 718. Part 2, Chip breakability and optimization. *Journal of cleaner production*, ISSN 0959-6526. [Print ed.], Jan. 2015, vol. 87, str. 941-952, ilustr., doi: 10.1016/j.jclepro.2014.10.085. [COBISS.SI-ID 13790491]

Mihael Sekavčnik:

1. LOTRIČ, Andrej, **SEKAVČNIK, Mihael**, POHAR, Andrej, LIKOZAR, Blaž, HOČEVAR, Stanko. Conceptual design of an integrated thermally self-sustained methanol steam reformer : high-temperature PEM fuel cell stack manportable power generator. *International journal of hydrogen energy*. [Print ed.]. Jun. 2017, vol. 42, iss. 26, str. 16700-16713, ilustr. ISSN 0360-3199. http://www.sciencedirect.com/science/article/pii/S0360319917319225. [COBISS.SI-ID 15546139]
2. MORI, Mitja, MRŽLJAK, Tilen, DROBNIČ, Boštjan, **SEKAVČNIK, Mihael**. Integral characteristics of hydrogen production in alkaline electrolysers. *Strojniški vestnik*. Oct. 2013, vol. 59, no. 10, str. 585-594, si 116, ilustr. ISSN 0039-2480. DOI: 10.5545/sv-jme.2012.858. [COBISS.SI-ID 13158683]
3. LACKO, Rok, DROBNIČ, Boštjan, **SEKAVČNIK, Mihael**, MORI, Mitja. Hydrogen energy system with renewables for isolated households : The optimal system design, numerical analysis and experimental evaluation. *Energy and buildings*. Sep. 2014, vol. 80, str. 106-113, ilustr. ISSN 0378-7788. DOI: 10.1016/j.enbuild.2014.04.009. [COBISS.SI-ID 13429787]

Janko Slavič:

1. ČESNIK, Martin, **SLAVIČ, Janko**, BOLTEŽAR, Miha. Accelerated vibration-fatigue characterization for 3D-printed structures : application to fused-filament-fabricated PLA samples. International journal of fatigue. 2023, vol. 171, str. 1-12, ilustr. ISSN 0142-1123. https://www.sciencedirect.com/science/article/pii/S0142112323000750, https://repozitorij.uni-lj.si/IzpisGradiva.php?id=145241, DOI: 10.1016/j.ijfatigue.2023.107574. [COBISS.SI-ID 141842691]
2. ZALETELJ, Klemen, GORJUP, Domen, **SLAVIČ, Janko**, BOLTEŽAR, Miha. Multi-level curvature-based parametrization and model updating using a 3D full-field response. Mechanical systems and signal processing. 2023, vol. 187, str. 1-15, ilustr. ISSN 0888-3270.

https://www.sciencedirect.com/science/article/pii/S0888327022009955, https://repozitorij.uni-lj.si/IzpisGradiva.php?id=142702, DOI: 10.1016/j.ymssp.2022.109927. [COBISS.SI-ID 130115331]

3. TOMAC, Ivan, **SLAVIČ, Janko**. Morlet-wave-based modal identification in the time domain. *Mechanical systems and signal processing*. Jun. 2023, vol. 192, str. 1-11, ilustr. ISSN 1096-1216. https://www.sciencedirect.com/science/article/pii/S0888327023001504, DOI: 10.1016/j.ymssp.2023.110243. [COBISS.SI-ID 144036355], [JCR, SNIP, Scopus] ZALETELJ, Klemen, SLAVIČ, Janko, BOLTEŽAR, Miha. Full-field DIC-based model updating for localized parameter identification. *Mechanical systems and signal processing*. 1. Feb. 2022, vol. 164, str. 1-14, ilustr. ISSN 0888-3270. https://www.sciencedirect.com/science/article/pii/S088832702100652X, DOI: 10.1016/j.ymssp.2021.108287. [COBISS.SI-ID 72574211]
4. TOMAC, Ivan, **SLAVIČ, Janko**. Damping identification based on a high-speed camera. *Mechanical systems and signal processing*. Mar. 2022, vol. 166, str. 1-12, ilustr. ISSN 0888-3270. https://www.sciencedirect.com/science/article/pii/S0888327021008281, DOI: 10.1016/j.ymssp.2021.108485. [COBISS.SI-ID 132558595]
5. GORJUP, Domen, **SLAVIČ, Janko**, BABNIK, Aleš, BOLTEŽAR, Miha. Still-camera multiview spectral optical flow imaging for 3D operating-deflection-shape identification. *Mechanical systems and signal processing*. May 2021, vol. 152, str. 1-14, ilustr. ISSN 0888-3270. https://www.sciencedirect.com/science/article/pii/S0888327020308426, DOI: 10.1016/j.ymssp.2020.107456. [COBISS.SI-ID 40694019]

Lidija Slemenik Perše:

1. OSELI, Alen, PRODAN, Ted, SUSIČ, Egon, **SLEMENIK PERŠE, Lidija**. The effect of short fiber orientation on long term shear behavior of 40% glass fiber reinforced polyphenylene sulfide. *Polymer testing*. [Print ed.]. Jan. 2020, vol. 81, str. 1-12, ilustr. ISSN 0142-9418. https://www.sciencedirect.com/science/article/pii/S0142941819316538?via%3Dihub, DOI: 10.1016/j.polymertesting.2019.106262. [COBISS.SI-ID 16981019]
2. **SLEMENIK PERŠE, Lidija**, HUSKIĆ, Miroslav. Rheological characterization of multiarm star copolymers. *European Polymer Journal*. [Print ed.]. Mar. 2016, vol. 76, str. 188-195. ISSN 0014-3057. http://www.sciencedirect.com/science/article/pii/S0014305716300453/pdfft?md5=a6d369cbad988b50a18bb36cc1855544&pid=1-s2.0-S0014305716300453-main.pdf, DOI: .1016/j.eurpolymj.2016.01.045. [COBISS.SI-ID 5862682]
3. **SLEMENIK PERŠE, Lidija**, MIHELČIČ, Mohor, OREL, Boris. Rheological and optical properties of solar absorbing paints with POSS-treated pigments. *Materials chemistry and physics*. [Print ed.]. Jan. 2015, vol. 149/150, str. 368-377. ISSN 0254-0584. http://ac.els-cdn.com/S0254058414006828/1-s2.0-S0254058414006828-main.pdf?_tid=2e86e240-7563-11e4-8658-00000aacb361&acdnat=1417003137_ba8d5da662012336ae2203582f409cb8, DOI: 10.1016/j.matchemphys.2014.10.031. [COBISS.SI-ID 5607706]

Božidar Šarler:

1. **ŠARLER, Božidar**, DOBRAVEC, Tadej, GLAVAN, Gašper, HATIĆ, Vanja, MAVRIČ, Boštjan, VERTNIK, Robert, CVAHTE, Peter, GREGOR, Filip, JELEN, Marina, PETROVIČ, Marko. Multi-physics and multi-scale meshless simulation system for direct-chill casting of aluminium alloys. *Strojniški vestnik*. Nov./Dec. 2019, vol. 65, no. 11/12, str. 658-670, ilustr. ISSN 0039-2480. https://www.sv-jme.eu/sl/article/multi-physics-and-multi-scale-meshless-simulation-system-for-direct-chill-casting-of-aluminium-alloys/, DOI: 10.5545/sv-jme.2019.6350. [COBISS.SI-ID 3385188]
2. DOBRAVEC, Tadej, MAVRIČ, Boštjan, **ŠARLER, Božidar**. Reduction of discretisation-induced anisotropy in the phase-field modelling of dendritic growth by meshless approach. *Computational materials science*. [Print ed.]. 2020, vol. 172, [12] str., graf. prikazi, ilustr. ISSN 0927-0256. https://doi.org/10.1016/j.commatsci.2019.109166, DOI: 10.1016/j.commatsci.2019.109166. [COBISS.SI-ID 1527466]
3. KOVAČIČ, Miha, STOPAR, Klemen, VERTNIK, Robert, **ŠARLER, Božidar**. Comprehensive electric arc furnace electric energy consumption modeling : a pilot study. *Energies*. Jun. 2019, vol. 12, iss. 11, f. 1-13, ilustr. ISSN 1996-1073. https://www.mdpi.com/1996-1073/12/11/2142, DOI: 10.3390/en12112142. [COBISS.SI-ID 16647451]

Roman Šturm:

1. **ŠTURM, Roman**, GRIMBERG, Raimond, SAVIN, Adriana, GRUM, Janez. Destructive and nondestructive evaluations of the effect of moisture absorption on the mechanical properties of polyester-

based composites. *Composites.Part B, Engineering*. [Print ed.]. Mar. 2015, vol. 71, str. 10-16, ilustr. ISSN 1359-8368. DOI: 10.1016/j.compositesb.2014.11.022. [COBISS.SI-ID 13818395]
2. ŽAGAR, Sebastjan, **ŠTURM, Roman**. Influence of grinding on the residual stress measurements of shot peened aluminum alloy AA7075. *Strojniški vestnik*. Jul./Avg. 2019, vol. 65, no. 7/8, str. 401-409, ilustr. ISSN 0039-2480. https://www.sv-jme.eu/article/influence-of-grinding-on-the-residual-stress-measurements-of-shot-peened-aluminum-alloy-aa7075/, DOI: 10.5545/sv-jme.2019.6083. [COBISS.SI-ID 16702235]
3. RAVNIKAR, Dunja, TRDAN, Uroš, NAGODE, Aleš, **ŠTURM, Roman**. Energy density effect of laser alloyed TiB2/TiC/Al composite coatings on LMZ/HAZ, mechanical and corrosion properties. *Metals*. 2020, iss. 3, vol. 10, str. 1-19, ilustr. ISSN 2075-4701. https://www.mdpi.com/2075-4701/10/3/411/htm, DOI: 10.3390/met10030411. [COBISS.SI-ID 17102363]

Nikola Vukašinović:
1. URBAS, Uroš, VLAH, Daria, **VUKAŠINOVIĆ, Nikola**. Machine learning method for predicting the influence of scanning parameters on random measurement error. *Measurement science & technology*. [Print ed.]. 2021, vol. 32, no. 6, str. 1-9, ilustr. ISSN 0957-0233. https://iopscience.iop.org/article/10.1088/1361-6501/abd57a, DOI: 10.1088/1361-6501/abd57a. [COBISS.SI-ID 49131523], [JCR, SNIP, WoS]
2. URBAS, Uroš, ARIANSYAH, Dedy, ERKOYUNCU, John Ahmet, **VUKAŠINOVIĆ, Nikola**. Augmented reality aided inspection of gears. *Tehnički vjesnik: znanstveno-stručni časopis tehničkih fakulteta Sveučilišta u Osijeku*. Jun. 2021, vol. 28, no. 3, str. 1032-1037, ilustr. ISSN 1330-3651. https://hrcak.srce.hr/258238, DOI: 10.17559/TV-20200728151912. [COBISS.SI-ID 66828803], [JCR, SNIP, WoS]
3. URBAS, Uroš, ZORKO, Damijan, **VUKAŠINOVIĆ, Nikola**. Model-based geometric inspection of polymer spur gears. V: HORVÁTH, Imre (ur.), KEENAGHAN, Garret N. (ur.). *Proceedings of TMCE 2020 : tools and methods of competitive engineering*. Thirteenth International Tools and Methods of Competitive Engineering Symposium (TCME 2020), 11-15 May, 2020, Dublin, Ireland. Delft: University of Technology, 2020. Str. 331-342, ilustr. ISBN 978-94-6384-131-3. https://tmce.io.tudelft.nl/?year=2020&page=proceedings%202020. [COBISS.SI-ID 22585091]
4. TAVČAR, Jože, ČOK, Vanja, KALJUN, David, **VUKAŠINOVIĆ, Nikola**, ŽAVBI, Roman, DUHOVNIK, Jože. Industrijsko oblikovanje peletnega gorilnika : zaključno poročilo. Ljubljana: Fakulteta za strojništvo, LECAD, 2013. 23 f., ilustr. [COBISS.SI-ID 13103387]
5. **VUKAŠINOVIĆ, Nikola**, DUHOVNIK, Jože. Polnilni ventil iz plastičnih mas : SI 24236 (A), 2014-05-30. Ljubljana: Urad Republike Slovenije za intelektualno lastnino, 2014. 5 f., 2 f. pril., ilustr. [COBISS.SI-ID 13520923] patentna družina: Številka prijave: P-201400066, 2014-02-21