

MTSM 2023
Conference venue:
**Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture –
Amphitheatar C501**

CONFERENCE SCHEDULE

Thursday, 21st September 2023

- 08.30 – 09.00 **Participant registration, at the registration desk in front of the Amphitheatre C501**
(Karla Grgić, Ivana Dumanić Labetić)
- 09.00 – 09.10 Welcome address**
(Jure Krolo, Marina Crnjac Žižić)

INTRODUCTORY PRESENTATIONS
SESSION I – C501
Chairmen: Igor Ćulum, Ivan Peko

Company presentations:

- 09:10 – 09:30 – EVN – Šimun VRANČIĆ, Tomislav KERA
- 09:30 – 09:45 – Parklio – Mirela JURIĆ
- 09:45 – 10:00 – Cortec Corporation – Ivana RADIĆ BORŠIĆ

Keynote lectures:

- 10:00 – 10:30 – Cognitive manufacturing – one model - Vidosav MAJSTOROVIĆ
- 10:30 – 11:00 – Biomanufacturing strategies towards bone and cartilage tissue regeneration - Carla MOURA

11.00 Coffee break - POSTER SESSION (Hall in front of C501)

1. **Aida Imamović**, Borut Kosec, Aleš Nagode, Mirsada Oruč, Šaban Žuna, Zijad Alibašić, Ensar Mulaosmanović
SEM analysis of hydrated titanium alloy TiAl6Nb7 produced using HDH technology
2. Anna Dziubińska, Krzysztof Majerski, **Ewa Siemionek**, Monika Kulisz, Julia Longwic
Review of materials used to manufacture magnesium wheels for light vehicles
3. **Anna Dziubinska**, Krzysztof Majerski, Ewa Siemionek, Piotr Surdacki and Wojciech Presz
The influence of thermo-plastic processing parameters on the structure of the AZ91 cast magnesium alloy
4. **Gabriela Kotseva**, Mara Kandeve, Nikolay Stoimenov
Tribological processes in the material for 3D printing filament HIPS
5. **Lyudmila Nyrkova**, Svetlana Osadchuk, Yulia Kharchenko, Larysa Goncharenko, Anatoly Klymenko, Valery Kostin, Anatoy Rybakov
Comparative studies of stress-corrosion cracking of long-term exploited and storage pipes of X70 steel of main gas pipeline

6. Matija Živoder, **Suzana Jakovljević**, Danko Ćorić, Viktor Smrkulj
Analysis of abrasion and erosion resistance of hot-work tool steel and martensitic stainless steel with TiCn coating applied by the PACVD process
7. **Matija Zorc**, Borut Kosec, Aleš Nagode, Maja Pogačar, Milan Bizjak
Potentiodynamic measurements of selective laser melting additively manufactured Ti6Al4V alloy
8. **Michael Krampe**, Bernd Kuhlenkötter
Methodical concept development for a leakproof diameter-variable nozzle for the FLM process in additive manufacturing
9. **Miglena Paneva**, Peter Panev, Kristina Pavlova
Experimental Determination of grinding parameters with a ball mill with trapezoidal lifters
10. **Mirko Gojić**, Stjepan Kožuh, Ivana Ivanić, Daniela Dumenčić and Borut Kosec
Steel production in electric arc furnaces in the world and in Croatia
11. **Nikolay Stoimenov**, Miglena Paneva, Peter Panev
Experimental determination of grinding parameters with a ball mill with rectangular lifters
12. **Sandro Doboviček**, Elvis Krulčić, Duško Pavletić, Sandi Tominić
Synergetic approach to planning a scalable manufacturing system
13. **Sanja Perinović Jozić**, Mirna Duktaj, Dražan Jozić and Miće Jakić
Structural and thermal analysis of poly(ethylene oxide)/magnesium alginate blends for use in Mg-ion batteries
14. Ivan Nišević, Hana Vukotić, **Zoran Jurković**, Mladen Perinić, Marko Fabić
3D printer selection using AHP method
15. **Ivan Peko**, Marina Crnjac Žižić, Amanda Aljinović Meštović and Nikola Gjeldum
Application of artificial intelligence fuzzy logic technique in modelling of Industry 4.0 maturity level of production enterprises
16. Sviatoslav Motrunich, Aleksei Milenin, Vitaliy Knysh, Ilya Klochkov, Massimo Rogante and **Anatoliy Zavdoveev**
Fracture resistance under static, dynamic and cyclic loading of welded joints of AA2219 alloy obtained by TIG
17. **Andrej Bašić**, Marko Mladineo, Ivan Jerković
Utilizing 3D scanning, optimization, and 3D printing for cultural heritage conservation
18. **Mirna Tadić**, Goran Bosanac, Mario Božić, Damir Ježek, Mladen Brnčić
Determination and Comparison of Stress Depending on the Diameter of the Extrusion Disc and the Type of Various Food Based Filling
19. **Ladislav Vrsalović**, Senka Gudić, B. Kordić, N. Vukojević, S. Svilović, Aleš Nagode, Borut Kosec, Nikša Čatipović
The influence of the mixing speed and the concentration of the supportive electrolyte NaCl on the removal efficiency of Crystal Violet dye
20. **Borut Kosec**, Mateja Vodlan, Aleš Nagode, Alenka Pavlič, Igor Kopač, Henry Taubmann, Mirko Gojić, Igor Budak, Ladislav Vrsalović, Matija Zorc, Tatjana Puškar, Milan Bizjak, Blaž Karpe
Thermal properties of selected metal dental materials
21. **Anatoliy Zavdoveev**, Andrej Klapatyuk, Olga Karasevska, Thierry Baudin, Massimo Rogante, Valeriy Pozniakov, Alexandr Gaivoronskii
X-Ray analysis of the microstructure of the wire arc additively manufactured high entropy alloy
22. **Darko Landek**, Ivica Garašić, Mislav Štefok
Relationship between hardness distribution and residual stresses on the weld cross-section of a thick-walled plate made of S235JR steel
23. **Darko Landek**, Jurica Jačan, Mislav Štefok, Qi Yang
Comparison of residual stresses and resistance to microabrasive wear of PACVD TiN and PVD TiN coatings on 100Cr6 steel

24. **Igor Ćulum**, Sonja Jozić, Dražen Bajić and Luka Celent
Application of modal analysis on machine tool for stability lobe diagram generation
25. **Amra Talić-Čikmiš**, Nedima Hurem and Nermina Zaimović-Uzunović
Numerical analysis of the fracture zone during bending in layers of different types of wood

SESSION II – C501

Chairmen: **Ivana Dumanić Labetić, Marina Crnjac Žižić**

- 11:40 **Beatriz Oliveira**, João Neves, Cândida Malça, Sofia Campos, Joel Sá, Marta Henriques, Ana Baptista and Carla Moura
Hybrid hydrogel as a delivery vehicle for bioactive ions to enhance bone regeneration
- 11:55 **Jaroslav Jerz**, Ľubomír Orovčík
Industrial perspectives of Atomic Layer Deposition technique used for metal oxides coating of magnesium alloy powders
- 12:10 **Lidija Ćurković**, Ivana Ropuš, Ivana Gabelica
The corrosion behaviour of alumina ceramics in nitric acid
- 12:25 Igor Gabrić, **Zlatko Jankoski**, Stjepan Marković, Josip Martinić
Analysis of Experimental Device for Measuring the Thermal Conductivity of Thermal Insulation Materials using FDM method
- 12:40 **Matej Fonović**, Dario Kvrđić, Dario Iljkić, Lovro Liverić
Gaseous nitriding of pure nickel - observation and interpretation of microstructural features
- 12:55 **Slaven Šitić**, Josip Palinić
Ship bearings testing system - shaft repair welding process technology
- 13:10 Zlatko Jankoski, Igor Gabrić, Stjepan Marković, **Ivan Vrljičak** and Luka Vuković
Fixed Tilt vs. Tracker System – An Experimental Analysis of Photovoltaic System
- 13:30 Lunch – Faculty restaurant (9th floor)**

SESSION III – C501

Chairmen: **Karla Grgić, Amanda Aljinović Meštrović**

- 15:00 Claudio Santelli (**Massimo Rogante** as presenter)
Photobiomodulation: applications in vivo and in structural biomaterials through the activation of cellular chromophores by specific light frequencies
- 15:15 **Massimo Rogante**, György Lakatos, Daniele E. Lucchetta, Ilija Nastovski
Feasibility study for the advanced characterization of musical string wires
- 15:30 Petr Novotný, Jiří Rulc, Radek Divín, Alexej Pashchenko, Ján Varga, **Massimo Rogante**, Leontýna Varvařovská, Romana Siroka, Tatana Jarosikova, Evžen Amler
Contactless collection of impurities on ultrasensitive nanofiber membrane

- 15:45 **Gerardo Tricarico**, Valter Travagli
Relevant aspects in industrial engineering for quality management of medical devices according to current EU legislation
- 16:00 **Josip Florian Strutz**
Digitalization in the CAD/CAM process chain of customised products
- 16:15 Lachezar N. Lazov, **Petko N. Nedyalkov** and Dragomir Ts. Vrazhilski
Influence of the sheet metal quality over the characteristics for the main girder at bridge crane applications
- 16:30 Closing speech**
(Jure Krolo, Marina Crnjac Žižić)
- 20:00 Dinner – Tinel restoran at Campus near Faculty**

Friday, 22nd September 2023

09:00 EXCURSION: Zadar