

27th International Conference

MATRIB 2026

MATERIALS, TRIBOLOGY, RECYCLING

ORGANIZED BY:

- Croatian Society for Materials and Tribology – Croatia
- Faculty of Mechanical Engineering and Naval Architecture, University of Zagreb
- University North - Croatia
- Institute of Materials and Machine Mechanics Slovak Academy of Science - Slovakia
- University of Zagreb, Faculty of Graphic Arts – Croatia
- Metal Center Čakovec – Croatia
- Institute of Metals and Technology – Slovenia

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CONFERENCE TOPICS

- materials characterization
- material testing
- materials and processes
- friction and wear
- materials in graphic industry
- materials in naval architecture
- materials in mining
- materials in civil engineering
- metallurgy
- surface engineering
- chemical engineering
- nanomaterials and nanotechnology
- materials protection
- tribology
- recycling
- industrial ecology
- education in materials engineering
- additive manufacturing

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- Miroslav Mikota
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- Luka Balatinec
- Boris Jalušić

PROGRAMME:

June 24th 2026, Wednesday

21:00 – 23:00 h Welcome reception – *OPG Surjan, Ulica 68 1, 20270 Vela Luka*

June 25th 2026, Thursday

9:30 – 10:00 h Registration – *Vela Luka High School - Ulica 5 9, 20270 Vela Luka*
MATRIB CONFERENCE will be held in Vela Luka High School

10:00 – 10:15 h Opening ceremony

10:15 – 11:45 h Lectures

- ***INVITED LECTURE*** – Natalija Dolic: FROM SOLIDIFICATION TO PROPERTIES: STATISTICAL ASSESSMENT OF HOMOGENEITY IN INDUSTRIALLY CAST EN AW-5083 SLABS
- Tomislav Rodinger, Danko Ćorić **FOAMING KINETICS OF ALUMINUM PRECURSORS WITH CERAMIC PARTICLES PRODUCED BY THE POWDER METALLURGY METHOD**
- Željko Alar, Branimir Buntak, Danijel Pustički **METROLOGICAL EVALUATION OF CHARPY IMPACT REFERENCE TEST PIECES PRODUCED BY SELECTIVE LASER MELTING**
- Karlo Jurković, Darko Landek, Tomislav Staroveški, Primož Mrvar, Branko Bauer **ANALYSIS OF TEMPERATURE MEASUREMENT USING PYROMETERS IN VACUUM CENTRIFUGAL CASTING**
- Karlo Murković, Sanja Šolić, Boris Jalušić, Vlado Tropša **EXPERIMENTAL AND NUMERICAL ANALYSIS OF THE TENSILE BEHAVIOR OF TWO-LAYER LAMINATED WOOD**

11:45 – 12:15 h *Coffee Break*

12:15 – 13:45 h Lectures

- IDEF – Commercial presentation
- Ena Miletić, Paula Šimun, Krešimir Košutić **SELECTION OF COMMERCIAL TFC-PARO MEMBRANES AND THEIR PERFORMANCE OBTAINED FROM SHORT-TERM EXPERIMENTS WITH MODEL SOLUTIONS OF HALOACETIC ACIDS**
- Luka Bugarin, Daniel Pugar, Petra Besedić, Andrej Razumić, Biserka Runje **TENSILE BEHAVIOUR OF ADDITIVELY MANUFACTURED ONYX AND CARBON-FIBER-REINFORCED ONYX SPECIMENS PREPARED IN ACCORDANCE WITH ISO 527-2**
- Boris Jalušić, Sanja Šolić, Matija Bušić, Vlado Tropša **NUMERICAL INVESTIGATION ON THE INFLUENCE OF LASER SCANNING SPEED ON TEMPERATURE PROFILES IN DIRECT ENERGY DEPOSITION**
- Martin Oreški, Sanja Šolić, Matija Bušić, Vlado Tropša **COMPARATIVE ENERGY ANALYSIS OF STEEL AND ALUMINIUM ROBOTIC BASE STRUCTURES UNDER EQUAL DEFLECTION CONSTRAINTS**

	<ul style="list-style-type: none"> Noa Petek, Boris Jalušić, Matija Bušić, Vlado Tropša NUMERICAL INVESTIGATION OF TENSILE BEHAVIOR OF METALLIC SPECIMENS SUBJECTED TO PLASTIC DEFORMATION
15:00 – 16:30 h	Poster session
20:00 h	<p>Opening of the International photography exhibition „Inspired by Material“</p> <p><i>Atrium Centra za kulturu Vela Luka, Ulica 26 2, Vela Luka</i></p>

June 26th 2026, Friday

10:00 – 12:30 h	Lectures
	<ul style="list-style-type: none"> INVITED LECTURE – Igor Zjakić: GRAPHIC FORENSICS: TECHNOLOGICAL ELEMENTS OF BANKNOTE SECURITY AND THEIR ROLE IN COUNTERFEIT DETECTION Robert Basan, Mato Štefanac, Tea Marohnić, Petar Gljušić FROM AS-MANUFACTURED TO DEGRADED STATES: BASELINE EXPERIMENTAL CHARACTERIZATION OF 3D PRINTED ABS SPECIMENS Andrija Bernik, Vladimir Stanisavljević, Matija Grašić IPHONE AS A MOBILE 3D SCANNING TOOL FOR ENGINEERING EDUCATION Darija Ćutić, Dominik Mustač, Miroslav Mikota, Nives Rakamarić APPLICATION OF MASKS AND PATTERN CREATION IN ADOBE PHOTOSHOP BASED ON A SELF-PORTRAIT THEME Spomenko Kešina, Irma Horvat, Dean Valdec, Jelena Poljak Gaži INFLUENCE OF SUBSTRATE PROPERTIES ON COLOUR REPRODUCTION, DOT MORPHOLOGY AND ACCURACY RELATIVE TO FOGRA_{51/52} STANDARDS Igor Zjakić, Tihana Čižmar, Ivana Ljevak, Ivan Budimir RAMAN BASED CHARACTERISATION OF BANKNOTE SECURITY FEATURES Marko Maričević EVALUATION OF 3D MODEL PRINTABILITY GENERATED BY HUNYUAN3D-2.1 SYSTEM Trpimir Jeronim Ježić, Tajana Koren Ivančević, Ivana Pavlović, Miroslav Mikota SVG FILTERS AS A RENDERING LAYER FOR INTERACTIVE WEB UI ANIMATION

June 26th 2026, Friday

19:30 – 24:00 h	Conference Dinner – <i>Hotel Dalmacija, Ul. 62 2, 20270 Vela Luka</i>
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June 27th 2026, Saturday

9:30 – 17:00 h	<p>Conference excursion to the Island Proizd</p> <p><i>(Boat leaves at 9'30 from the Riva in front of the INA gas station)</i></p>
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POSTER SESSION

•	Vesna Alar, Ivan Stojanović, Marin Kurtela, Ivan Fatović CHEMICAL TESTING OF THE CORROSION RESISTANCE OF ENAMEL COATINGS ON STEEL TUBULAR PRODUCTS FOR CHIMNEY SYSTEMS
•	Luka Balatinec, Dalibor Viderščak, Danijel Pustički, Tessa Uroić TOWARDS A NUMERICAL WEAR MODEL FOR POWDER METALLURGY SPECIMENS IN SLIDING CONTACT
•	Gordana Bilić, Tihomir Borko, Tea Horvat, Vesna Alar EFFECT OF CeCl₃ ON THE INHIBITION OF CO₂ CORROSION OF CARBON STEEL IN CHLORIDE-CARBONATE SOLUTION AT 60 °C
•	Gordana Bilić, Anja Sviben, Vesna Alar, Marija Trkmić PROPERTIES AND POTENTIAL APPLICATION OF BIOCHAR PRODUCED FROM AQUATIC BIOMASS
•	Vladislav Brkić, Zoran Najdanović, Nikola Mrvac MATERIALS, TRIBOLOGY AND SUSTAINABILITY: INTEGRATING ENGINEERING PRECISION AND BUSINESS MODELS THROUGH NEXT-GENERATION BUSINESS DESIGN
•	Yuliia Chabak, Bohdan Efremenko, Mario Šercer, Vasily Efremenko IN SITU SYNTHESIS OF CERAMIC REINFORCEMENT IN AN INCONEL 718-BASED COMPOSITE BY LASER SURFACE REMELTING OF SPS SUBSTRATE
•	Matija Cvetnić, Jura Prugovečki, Lidija Furač, Dora Lastovčić, Luka Večenaj, Dora Bramberger, Šime Ukić, Marinko Markić, Tomislav Bolanča, Dajana Kučić Grgić DEVELOPMENT AND VALIDATION OF A ROBUST ANALYTICAL METHOD FOR VOLATILE ORGANIC ACID PROFILING DURING PHA PRODUCTION FROM ACTIVATED SLUDGE
•	Ivan Čular, Robert Mašović, Ivica Galić, Krešimir Vučković, Srečko Glodež COMPARATIVE EVALUATION OF GEAR EFFICIENCY DUE TO FRICTION LOSSES USING FINITE ELEMENT ANALYSIS AND MATLAB SIMSCAPE
•	Marie Natalie Drobac, Maja Somogyi Škoc, Iva Rezić Meštrović PREPARATION AND CHARACTERISATION OF BIOPOLYMER COATINGS WITH OLIVE OIL
•	Vasily Efremenko, Yuliia Chabak, Khrystyna Moskalova, Alexey Efremenko PHASE TRANSFORMATION CRITICAL POINTS OF MEDIUM-CARBON NANOBAINITIC STEELS: EFFECTS OF MANGANESE AND SILICON CONTENT
•	Marko Frajzman, Zoran Kožuh, Jadranka Eršišnik, Natalija Dolić ANALYSIS OF THE INFLUENCE OF FILLER MATERIAL ON THE MICROSTRUCTURE, HARDNESS, AND TENSILE PROPERTIES OF FIBER LASER WELDED TITANIUM JOINTS

<ul style="list-style-type: none"> Sven Gojsović, Vladimir Prpić, Petar Kosec, Stanko Škec, Amir Čatić 	<p>GENERATIVE DESIGN IN DENTISTRY: PERSPECTIVES AND APPLICATIONS IN DENTAL IMPLANT ABUTMENT FABRICATION: A LITERATURE REVIEW</p>
<ul style="list-style-type: none"> Aljaž Ignatijev, Srečko Glodež, Gorazd Fajdiga, Matjaž Šraml, Matej Borovinšek, Aleš Belšak 	<p>AN EXPERIMENTAL STUDY ON THE NOISE BEHAVIOUR OF POLYMER GEARS CONSIDERING WEAR OF GEAR FLANKS</p>
<ul style="list-style-type: none"> Ivana Ivanić, Daniela Dumenčić, Stjepan Kožuh, Aleš Nagode, Ivana Grčić 	<p>MICROSTRUCTURE AND HARDNESS OF CuAlMn SHAPE MEMORY ALLOY AFTER FORGING AND HEAT TREATMENT</p>
<ul style="list-style-type: none"> Lucija Ivanuša, Marko Maričević, Krunoslav Hajdek, Martina Hajdek 	<p>APPLICATION OF ARTIFICIAL INTELLIGENCE IN THE RESTORATION AND RECREATION OF 3D MODELS WITH EMPHASIS ON 3D PRINTING</p>
<ul style="list-style-type: none"> Kristijan Jurgec, Zoran Kožuh, Jadranka Eršišnik, Natalija Dolić 	<p>ASSESSMENT OF WELD INTEGRITY IN MAG-WELDED S355J2+N AND X5CRNI18-10 STEELS</p>
<ul style="list-style-type: none"> Andrii Kolesnykov, Svitlana Semenova, Khrystyna Moskalova 	<p>STATISTICAL MODEL OF STRUCTURE FORMATION IN BUILDING COMPOSITE MATERIALS</p>
<ul style="list-style-type: none"> Marijo Oštrkapa, Krunoslav Hajdek, Martina Hajdek 	<p>RFID TECHNOLOGY: DIGITAL TRANSFORMATION AND SUSTAINABLE DEVELOPMENT</p>
<ul style="list-style-type: none"> Željko Penava, Diana Šimić Penava 	<p>ANALYSIS OF ORTHOTROPIC SYMMETRY AND DEVIATIONS IN THE MECHANICAL PROPERTIES OF WOVEN FABRICS</p>
<ul style="list-style-type: none"> Ivana Plazonić, Irena Bates, Maja Rudolf, Dino Priselac, Jelena Poljak Gaži 	<p>ANALYSIS OF PRINTED PAPERBOARD PACKAGING STABILITY ON WATER</p>
<ul style="list-style-type: none"> Maja Rudolf, Dino Priselac, Irena Bates, Ivana Plazonić, Jelena Poljak Gaži 	<p>MECHANICAL RESISTANCE OF MULTILAYER PRINTS ON CARDBOARD PACKAGING AFTER DIFFERENT RUBBING CONDITIONS</p>
<ul style="list-style-type: none"> Ana-Marija Srzić, Darinka Cvetković, Maja Somogyi Škoc, Iva Rezić Meštrović 	<p>PREPARATION AND CHARACTERIZATION OF COATINGS WITH SODIUM CARBOXYMETHYLCELLULOSE AND PROPOLIS ON TEXTILE</p>
<ul style="list-style-type: none"> Assel Y. Taubayeva, Daniyar A. Akhmetov, Aleksej Aniskin, Bozo Soldo 	<p>PHYSICAL AND MECHANICAL PROPERTIES OF FIBER-REINFORCED EXPANDED CLAY CONCRETE FOR MINE LAGGING ELEMENTS</p>
<ul style="list-style-type: none"> Dalibor Viderščak, Zdravko Schauerl, Ivan Vovk 	<p>COMPARISON OF CONVENTIONAL AND AI APPROACHES TO HARDNESS DETERMINATION</p>

•	Stjepan Vranjković, Marko Jambrošić, Bruno Krajačić, Luka Brenko, Zdravko Schauerl MECHANICAL PROPERTIES OF UV-CURED PHOTOPOLYMER/TALC COMPOSITES FABRICATED BY VAT PHOTOPOLYMERISATION
•	Tamara Živković Ivanović MATERIAL, USER-CENTERED AND COMMUNICATION ASPECTS OF REHABILITATION AFTER TOTAL LARYNGECTOMY: A CONCEPTUAL FRAMEWORK FOR MULTIMEDIA EDUCATION
•	Irena Bates, Maja Rudolf, Dino Priselac, Ivana Plazonić, Jelena Poljak Gaži OPTICAL STABILITY OF PRINTED CARDBOARD PACKAGING TO THE INFLUENCE OF ELECTROMAGNETIC RADIATION
•	Aleksandra Bernašek Petrinec, Tomislav Bogović, Jana Žiljak Gršić, Silvio Plehati ANALYSIS OF DYE TWINS IN THE VISIBLE AND NEAR-INFRARED SPECTRAL REGIONS USING SPECTROSCOPY AND BARRIER IMAGING ON THE FOSTER + FREEMAN FORENSIC DEVICE
•	Anđela Bunoza, Ivana Pavlović, Miroslav Mikota, Trpimir Jeronim Ježić THE INFLUENCE OF AI-BASED IMAGE PROCESSING ON THE PERCEPTION OF ANALOG AND DIGITAL PHOTOGRAPHY
•	Ivan Landeka, Danijela Majkić, Miroslav Mikota, Suzana Pasanec Preprotić THE INFLUENCE OF COMPLEMENTARY COLORS IN THE COGNITIVE MODEL OF MULTIMEDIA CONTENT DESIGN
•	Sanja Mahović Poljaček, Tamara Tomašegović, Ivan Bakarić CHALLENGES IN THE REPRODUCTION OF FINE RASTER ELEMENTS ON POLYMERIC PACKAGING MATERIALS
•	Mile Matijević, Alen Divjak, Krunoslav Hajdek, Marko Čačić OVERVIEW OF FILAMENTS WITH THE ADDITION OF GLASS FIBERS IN FDM ADDITIVE PRODUCTION
•	Jelena Poljak Gaži, Irena Bates, Sonja Jamnicki Hanzer DURABILITY OF PRINTS ON CARDBOARD PACKAGING AFTER FREEZING
•	Maja Strižić Jakovljević, Sanja Mahović Poljaček, Mihaela Dujmović PROPERTIES AND SUITABILITY OF RECYCLED PAPERS FOR GRAPHIC TECHNOLOGY AND PACKAGING
•	Gabrijela Milić, Krunoslav Aladić, Karlo Grgurević, Sabina Fućak, Anja Rakas, Matija Cvetnić, Stela Jokić, Dajana Kučić Grgić OPTIMIZATION OF POLYHYDROXYALKANOATE BIOSYNTHESIS FROM GLUCOSE BY BACTERIAL CULTURES UNDER SUBMERGED FERMENTATION CONDITIONS