

International Conference

MATRIB 2024

MATERIALS, TRIBOLOGY, RECYCLING

25th Conference 1999 - 2024

ORGANIZED BY:

- Croatian Society for Materials and Tribology – Croatia
- University North – Croatia
- University of Zagreb, Faculty of Mechanical Engineering and Naval Architecture – Croatia
- Institute of Materials and Machine Mechanics Slovak Academy of Sciences - Slovakia
- Technological University Dublin – Ireland
- Institute of Metals and Technology – Slovenia
- University of Zagreb, Faculty of Graphic Arts – Croatia
- Metal Centre Čakovec - Development and Educational Centre for the Metal Industry - Croatia

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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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- Irena Bates
- Anamarija Rogina
- Tonča Čaleta Prolić
- Boris Perić
- Filip Žanetić

PROGRAMME:

June 26th 2024, Wednesday

21'00 h	Welcome reception – <i>OPG Surjan</i> , Ulica 68 1, 20270, Vela Luka
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June 27th 2024, Thursday

9'00 – 9'30 h	Registration – <u>Vela Luka High School</u> - Ulica 5 9, 20270, Vela Luka MATRIB CONFERENCE will be held in Vela Luka High School
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9'30 – 10'15 h	Opening ceremony – 25 years of the MATRIB conference - retrospective
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10'15 – 11'30 h	Lectures
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	<ul style="list-style-type: none"> • <u>Andrea Lončarević Vrabec</u>, Lucija Vlahović, Edina Abdii, Iva Bazina, Anamarija Rogina THE INFLUENCE OF CALCIUM PHOSPHATE BIOCERAMICS ON DOXORUBICIN RELEASE FROM CHITOSAN-BASED DRUG DELIVERY SYSTEMS • Antonio Arih, <u>Matija Bušić</u>, Sanja Šolić, Vlado Tropša, Tanja Tomić THE INFLUENCE OF CUTTING SPEED AND FOCAL LENGTH ON THE LASER CUTTING QUALITY OF ALUMINIUM ALLOY EN AW 5754 • <u>Igor Čulum</u>, Ivana Dumanić Labetić, Sonja Jozić, Dražen Bajić, Branimir Lela APPLICATION OF COLD COMPRESSED AIR COOLING WITH THE AIM OF INCREASING SUSTAINABILITY • <u>Marko Orošnjak</u>, Biserka Runje, Amalija Horvatić-Novak, Andrej Razumić FAULT DETECTION AND DIAGNOSIS OF RUBBER MIXING MACHINE USING MACHINE AND DEEP LEARNING: AN ENERGY-BASED MAINTENANCE APPROACH
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11'30 – 12'00 h	<i>Coffee Break</i>
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12'00 – 13'30 h	Lectures
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	<ul style="list-style-type: none"> • <u>Commercial presentation</u> • <u>Anita Peran</u>, Darko Landek, Marin Kurtela TESTING OF THE MECHANICAL, TRIBOLOGICAL AND CORROSION PROPERTIES OF CALUMFLAGE COATING
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	<ul style="list-style-type: none"> • Filip Žanetić, Božidar Matijević, Darko Landek GDOES ANALYSIS OF BORONISED SURFACE LAYER ON DIFFERENT TYPES OF STEEL • Krunoslav Haramina, Branimir Škugor, Nenad Kranjčević, Joško Deur, Matija Hoić CHARACTERIZATION AND MODELING OF DRY FRICTION CLUTCH LININGS WEAR USING LASSO METHOD • Josip Cerovečki, Darko Landek, Lucija Rukavina, Marko Antonio Gašo THE EFFECT OF SURFACE HEAT TREATMENT ON REDUCING VIBRATION AND WEAR OF NEEDLE BEARINGS • Helena Lukšić, Vera Rede, Tomislav Rodinger, Danko Ćorić, Slavica Kladarić COMPARISON OF PROPERTIES OF WEAR RESISTANT STRUCTURAL STEELS
15'00 – 18'30 h	<p>study visit – RADEŽ SHIPYARD BLATO and P.Z. BLATO 1902.</p> <p>(bus is organized from the INA gas station at 15'00 h)</p>
June 28th 2024, Friday	
10'00 – 11'15 h	Lectures
	<p><u>Invited lecture</u> – Miroslav Mikota CROATIA'S CONTRIBUTION TO THE TECHNICAL DEVELOPMENT OF PHOTOGRAPHY</p> <p><u>Invited lecture</u> – Ivana Plazonić THE IMPORTANCE OF FSC CERTIFICATION IN PACKAGING INDUSTRY</p> <ul style="list-style-type: none"> • <u>Commercial presentation</u> – SCAN d.o.o. • Danijela Majkić, Ivana Pavlović, Nikola Mrvac, Miroslav Mikota THE INFLUENCE OF ACHROMATIC COLORS IN THE COGNITIVE MODEL OF MULTIMEDIA CONTENT DESIGN • Anđelko Crnoja, Željko Kos, Volodymyr Kersh, Oleg Popov PANELS FROM RECYCLED CAR TIRES AS HEAT INSULATORS
11'15 – 11'45 h	Coffee Break
11'45 – 13'30 h	Lectures
	<ul style="list-style-type: none"> • Lucija Mađerić, Filip Žanetić, Darko Landek RESISTANCE TO MICRO ABRASION WEAR OF AUSTENITE STAINLESS STEEL • Karlo Murković, Adam Lehpamer, Sanja Šolić, Mario Šercer, Vlado Tropša THE EFFECT OF ANNEALING ON THE MICROSTRUCTURAL

CHARACTERISTICS AND TENSILE STRENGTH OF THE AlSi10Mg ALLOY PRODUCED BY THE ADDITIVE LPBF PROCEDURE

- **Adriana Obrovac, Josip Cerovečki, Darko Landek** MATHEMATICAL MODEL OF HEATING OF STEEL PARTS IN AN ELECTRIC CHAMBER FURNACE
- **Dino Lukman, Martin Oreški, Boris Jalušić, Sanja Šolić** NUMERICAL INVESTIGATION ON THE DEGREE OF INFLUENCE OF CONCRETES STRUCTURAL POROSITY ON THE MATERIAL DEFORMATION
- **Domagoj Brdovčak, Ana Pilipović** THE INFLUENCE OF POST-CURING ON THE FLEXURAL PROPERTIES OF PHOTOPOLYMER RESIN ON TWO DIFFERENT DLP 3D PRINTERS
- **Sanja Gregorinčić, Luka Balažinec, Matija Bušić** CHALLENGES IN TIG WELDING OF STAINLESS STEELS

15'00 – 16'30 h | Poster session

June 28th 2024, Friday

19'30 – 23'30 h | Conference cocktail dinner – *Jovanov Winery, D118, 20271, Blato*
 (bus is organized from the INA gas station at 19'15 h)

June 29th 2024, Saturday

9'30 – 18'00 h | Conference excursion to the Island Proizd **
 (boat leaves at 9'30 from the riva in front of the INA gas station)

POSTER SESSION

- Aleksej Aniskin, Shyngys Zharassov, Khrystyna Moskalova, Yelbek Utepov **SENSOR BASED APPROACH TO STUDY THE INTERCORRELATION OF FACTORS AFFECTING CONCRETE STRENGTH GAIN**
- Zvonimir Bandov, Mislav Tujmer, Ana Pilipović **COMPARISON OF THE DURABILITY OF POLYMER MOULD INSERTS MADE WITH TWO DIFFERENT ADDITIVE TECHNOLOGIES IN INJECTION MOULDING**
- Irena Bates, Ivana Plazonić, Maja Rudolf, Lana Engerini **COMPARATIVE ANALYSIS OF DOT REPRODUCTION ON TiO₂ COATED PRINTING SUBSTRATES AND PS₇ COMMERCIAL PAPER**
- Ivana Bolanča Mirković, Stanislav Bolanča **STYLISH DEVELOPMENT OF INITIALS IN THE AREA OF EUROPE**
- Natalija Dolić, Jožef Medved, Zdravko Schauerl **LOSS OF MAGNESIUM IN Al-Mg ALLOY**
- Luka Dornjak, Iva Bazina, Katarina Caput Mihalić, Inga Urlić, Anamarija Rogina **OSTEOINDUCTIVE DRUG-LOADED CHITOSAN/HYDROXYAPATITE SCAFFOLDS FOR TUMOR TREATMENT AND BONE REGENERATION**
- Krešimir Dragčević, Miroslav Mikota, Ivana Pavlović, Marko Maričević **THE EMOTIONAL EXPERIENCE OF BLACK AND WHITE PHOTO ILLUSTRATION ON THE COMPUTER SCREEN**
- Miće Jakić, Marko Kosir, Jelena Jakić, Sanja Perinović Jozić **FT-IR AND DSC ANALYSIS OF THE ROSEMARY EXTRACT EFFECT ON POLY(ETHYLENE OXIDE) STRUCTURE AND THERMAL PROPERTIES**
- Trpimir Jeronim Ježić, Miroslav Mikota, Ivana Pavlović, Marko Maričević **TECHNICAL ATTRIBUTES OF MEDIA WITH REGARD TO THEIR CAPACITY TO TRANSMIT INFORMATIONAL MATERIALS**
- Maja Jurica, Zoran Kožuh, Jadranka Eržišnik, Matija Hnatek **INFLUENCE OF SHIELDING GAS AND AC WAVE PULSE WELDING PARAMETERS ON WELD GEOMETRY**
- Alojz Kolak, Lidija Mandić, Marko Maričević, Jesenka Pibernik **THE INFLUENCE OF DESIGN ON THE VISUAL QUALITY OF 3D PRINTING**
- Željko Kos, Yevhenii Klymenko, Iryna Grynyova, Viktor Borzović, Mario Herak **NON-METALLIC REINFORCEMENT AND THEIR ENVIRONMENTAL BENEFITS**
- Helena Lukšić, Vera Rede **LASER WELDING OF ALUMINUM AND STEEL IN BATTERY SYSTEMS OF ELECTRIC VEHICLES**
- Sanja Mahović Poljaček, Mia Pejić, Tamara Tomašegović **INFLUENCE OF FLUORESCENT PIGMENT CONCENTRATION AND SUBSTRATE PROPERTIES ON FLUORESCENCE PHENOMENA**

- Nikola Mrvac, Ivan Šabić, Matija Kikelj, Vladislav Brkić **VISUALIZATION OF ANCIENT KNOWLEDGE: CREATING VISUAL REPRESENTATIONS OF BIBLICAL EVENTS AND FIGURES USING AI**
- Katarina Mužina, Helena Bach-Rojecky, Maja Dragić, Filip Brleković, Stanislav Kurajica **PHOTOCATALYTIC ACTIVITY OF ZIRCONIUM DOPED CERIUM(IV) OXIDE**
- Branko Nečemer, Srečko Glodež, Jure Fakin, Gorazd Fajdiga, Matjaž Šraml **THE INVESTIGATION OF BENDING QUASI-STATIC AND FATIGUE BEHAVIOUR OF NORWAY SPRUCE WOOD**
- Željko Penava, Miloš Lozo, Zlatko Vrljičak **FORCE-ELONGATION DIAGRAM ANALYSIS OF KNITTED FABRICS IN FINE WOMEN'S AND PREVENTIVE COMPRESSION STOCKINGS**
- Andrej Razumić, Srđan Medić, Dragutin Lisjak, Amalija Horvatić Novak, Vesna Alar, Frankica Kapor, Biserka Runje **ATOMIC FORCE MICROSCOPE: MEASUREMENT UNCERTAINTY EVALUATION OF 3D TOPOGRAPHY PARAMETERS**
- Maja Rudolf, Ivana Plazonić, Irena Bates **STABILITY OF FULL-TONE DIGITAL PRINTS ON PAPERS WITH CEREAL STRAW FIBERS AFTER NATURAL AGEING**
- Maja Somogyi Škoc, Danijela Kerhoni, Antoneta Tomljenović **TESTING AND EVALUATION OF THE PLASTER**
- Ivan Stojanović, Vesna Alar, Marin Kurtela, Ivan Fatović **INNOVATIVE DRYING TECHNIQUE FOR INDUSTRIAL COATINGS: A COMPARATIVE STUDY OF COATING SYSTEM PROTECTIVE PROPERTIES**
- Tamara Tomašegović, Tina Ilić, Sanja Mahović Poljaček, Maja Strižić Jakovljević **PROPERTIES OF SCREEN-PRINTED FLUORESCENT LAYER ON PREPRINTED RECYCLED PAPER SUBSTRATES**
- Dalibor Videršćak, Zdravko Schauerl, Zoran Domitran, Marija Musa, Mario Šercer **FIRE RESISTANCE OF POLYMER COMPOSITE REINFORCED WITH BASALT AND GLASS FIBERS**
- Anja Zorko, Sanja Zlatić, Lovorka Gotal Dmitrović, Damir Modrić **IMPACT OF DYES AND PIGMENTS ON THE ENVIRONMENT**
- Juro Živičnjak, Antoneta Tomljenović **ASSESSMENT OF SURFACE CHANGES ON KNITWEAR DUE TO WEAR AFTER TREATMENT IN THE PILLING BOX**
- Božo Smoljan, Krunoslav Hajdek, Marko Maričević, Bojan Šarkanj **AN ANALYSIS OF 3D PRINTING OF PLA POLYMERS**