

THURSDAY OCTOBER 19

08:30
09:30 **Hall 2-1** Registration

09:30 **Hall 2-1** Conference Opening
11:00 PLENARY SESSION

11:00 – 11:30 Coffee break 


11:30 **Hall 2-1**
13:00 ENGINEERING MATERIALS AND APPLICATIONS
I Session

Hall 2-2
ADVANCED TECHNOLOGIES AND MANUFACTURING
II Session

13:00 – 14:00 Lunch 

14:00 **Hall 2-1**
15:30 ENGINEERING MATERIALS AND APPLICATIONS
III Session

Hall 2-2
ADVANCED TECHNOLOGIES AND MANUFACTURING
IV Session

15:30 – 16:00 Coffee break 

16:00 **Hall 2-1**
17:00 POSTER SESION
V Session

19:00 Conference Dinner

FRIDAY OCTOBER 20

09:00

Hall 2-1

10:30

ENGINEERING MATERIALS AND APPLICATIONS

VI Session

10:30 – 11:00 Coffee break 


11:00

Hall 2-1

13:00

ADVANCED TECHNOLOGIES AND MANUFACTURING

VII Session

13:00 – 14:00 Lunch 

14:00

Conference Closing

Place of Venue:

Victoria Hotel Kaunas

Miško St. 11, LT-44321

Kaunas, Lithuania

ORAL PRESENTATIONS

Hall 2-1 THURSDAY, October 19

09:30 Conference Opening

11:00 PLENARY SESSION

Conference Opening

Welcome Speech

Prof. **Regita Bendikienė**

Chair of the conference "Materials Engineering and Modern Manufacturing 2023"

Plenary lecture I

Managing Overall Labour Effectiveness by Cyber-Physical Systems with the Advent of Industry 5

Prof. **Andrea Bonci**

Universita Politecnica Delle Marche, Italy

Plenary lecture II

Technologies and industrial challenges in the context of human-centric manufacturing system design and management

Assoc. prof. **Dorota Stadnicka**

Rzeszow University of Technology, Poland

Plenary lecture III

A Partnership for a Sustainable Industrial Future

Prof. **Žaneta Stasiškienė**

Kaunas University of Technology, Institute of Environmental Engineering, Lithuania

Hall 2-1 THURSDAY, October 19**11:30 ENGINEERING MATERIALS AND APPLICATIONS****13:00 Session I**Chair of the session – Assoc. Prof. **Kazimieras Juzėnas**

Mechanical Nanostructuring Synthesis of Magnesium by High Pressure Torsion Extrusion, An Approach to the Solid-State Hydrogen Storage**Babak O' Shahreza, Fjodor Sergejev, Julia Ivanisenk, Jacques Huot**Tallinn University of Technology, ESTONIA
University of Quebec in Trois-Rivieres, CANADA

Characterization of Waste Micro-Nano WC/Co-Cr 86/10-4 Powder Reinforced Polyamide 66 (PA66) Matrix Composites**Isik Cetintav, Mehmet Ceviz**

Trakya University, TURKEY

Analysis of Pine Resin Properties as a Way to Understand and Prevent Exudation in Wood Material**Errj Sansonetti, Dace Cirule, Edgars Kuka, Kristine Meile**

Latvian State Institute of Wood Chemistry, LATVIA

Torsional Dynamics of Axially Graded Viscoelastic Carbon Nanotubes**Mustafa Arda, Metin Aydogdu**

Trakya University, TURKEY

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Hall 2-2 THURSDAY, October 19

11:30 ADVANCED TECHNOLOGIES AND MANUFACTURING

13:00 Session II

Chair of the session – Assoc. Prof. **Vaida Jonaitienė**

Development of a Performance-Based Specification Model of the Combat Clothing for the Procurement Process in Estonia

Ada Traumann, Merje Beilmann, Teele Peets, Allan Keefe, Piret Saartok

TTK University of Applied Sciences, ESTONIA

Sustainable Strategies for Textile Manufacturing

Daiva Mikučionienė, Raquel Belda, Kyriaki Kiskira

Kaunas University of Technology, LITHUANIA

Engineering Approach in Modern Dentistry

Tsanka Dikova

Medical University - Varna Prof. Dr. Paraskev Stoyanov, BULGARIA

Production Technology and Reliability of Flexible Textile QR Code

Inga Breitmozerė, Jovita Dargienė, Ilze Baltina, Shubam Rajora, Jurgita Domskienė

Kaunas University of Technology, LITHUANIA

Hall 2-1 THURSDAY, October 19**14:00 ENGINEERING MATERIALS AND APPLICATIONS****15:30 Session III**Chair of the session – Prof. **Virginija Jankauskaitė****Challenges of Using Textiles Materials for Building and Living Area****Vaida Jonaitienė, U. Stachewicz, G. Priniotakis**

Kaunas University of Technology, LITHUANIA

Experimental And Numerical Tribometer Study of Friction of WC-Co Sliding Over Extruded Wood-Plastic Composites**Almontas Vilutis, Vytenis Jankauskas**

Vytautas Magnus University Agriculture Academy, LITHUANIA

The Effect of Niobium on In-Situ Synthesis of Titanium Carbide in Composite Hardfacings**Sibel Yöyler, Andrei Surzhenkov, Mart Viljus, Rainer Traksmas, Kristjan Juhani**

Tallinn University of Technology, ESTONIA

Environmentally Safer Solvent-Free Manufacturing of 3D-Printable Biodegradable Piezo-Composite Filaments Using Multi-Stage Extrusion Process**Malik Daniyal Zaheer, Rolanas Daukševičius, Arūnas Kleiva**

Kaunas University of Technology, LITHUANIA

Hall 2-2 THURSDAY, October 19

14:00 ADVANCED TECHNOLOGIES AND MANUFACTURING

15:30 Session IV

Chair of the session – Assoc. Prof. **Eglė Fataraitė-Urbonienė**

**Industrial Scale Functionalization Approaches for
Textile Airflow Management Systems**

Rasa Gofman, Rimvydas Milašius

Kaunas University of Technology, LITHUANIA

Advanced 3D Knitted Structure Models

Brigita Petkuvienė, Daiva Mikučionienė

Kaunas University of Technology, LITHUANIA

**Development of New 3D Weft-Knitted Structures and
Properties Research**

Vaida Buzaitė, Daiva Mikučionienė

Kaunas University of Technology, LITHUANIA

**Cotton Coloration Using Bio-Waste Extracts:
A Greener Approach**

**Md. Reazuddin Repon, Daiva Mikučionienė,
Sigita Jurkonienė, Tarikul Islam**

Kaunas University of Technology, LITHUANIA

Hall 2-1 **Hall 2-2** **THURSDAY, October 19****16:00** **POSTERS SESSION****17:00** Chair of the session – Assoc. Prof. **Ramūnas Česnavičius**

P01 **Mechanical, Thermal Properties of Virgin, Recycled and Mixed HDPE Matrices and Wood Plastic Composites with Plywood Sanding Dust****Janis Kajaks, Karlis Kalnins, Martins Zalitis, Juris Matvejs**Riga Technical University, LATVIA

P02 **RFCVD Carbon Coatings on Steels Subjected to Nanobainization and Surface Hardening****Karol Wunsch, Rafał Chodun, Krzysztof Kulikowski, Jerzy Robert Sobiecki**Warsaw Technical University, POLAND

P03 **Development of Graphene-Based Functional Coating for the Surface Modification of Textiles****Līga Rampāne, Ieva Baķe, Laimdota Vilcēna, Silvija Kukle**Riga Technical University, LATVIA

P04 **Utilization of Levoglucosan Production Side Product****Kalvis Liepins, Aivars Zhurinch, Ance Plavniece, Galina Dobele, Kristīne Meile**Latvian State Institute of Wood Chemistry, LATVIA

P05 **Development of Photocurable Ceramic Slurry with Natural Hydroxyapatite for Stereolithography****Viktorya Rstakyan, Liana Mkhitaryan, Lilit Bagdasaryan, Marina Aghayan, Miguel Angel Rodríguez**A.B. Nalbandyan Institute of Chemical Physics, ARMENIA

P06 **Manufacture of Tubular Elements from Titanium Powder by the Method of Magnetic-Pulsed Pressing****Ervins Blumbergs, V. Mironovs, V. Zemcenkovs, V. Abramovskis**Limited liability scientific-technical company AERKOM, LATVIA

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- P07** **Improving the Printing Quality of Additively Manufactured CCFRPC Structures Using Controlled Cooling Effect During Printing Process**
Nabeel Maqsood, Marius Rimašauskas
Kaunas University of Technology, LITHUANIA
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- P08** **Review and Investigation of a Shock Freezing Concept with Additional Electromagnetic Field Exposure**
Viktors Mironovs, Vadims Sokolovs, Vjaceslavs Zemcenkovs, Jekaterina Kuzmina, Viktorija Stankevica, Vjaceslavs Lapkovskis
Riga Technical University, The Institute of Biomedical Engineering and Nanotechnologies, LATVIA
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- P09** **The Analyzes of Biotechnological Anti-Freezing Coating**
Regina Rekuvienė, L. Mažeika, V. Samaitis, A. Jankauskas, A. Sadaghiani, S. Saeidiharzand, V. Jankauskaitė, L. Gegeckienė
Kaunas University of Technology, LITHUANIA
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- P10** **Thermal Stability of Pet Films for Food Packaging**
Akash Ulhas Naik, Eglė Fataraitė-Urbonienė, Jolanta Donelienė, Juras Ulbikas
Kaunas University of Technology, LITHUANIA
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- P11** **Investigation of Brass Welding Process and Mechanical Properties of Welded Joints**
Saulius Baskutis, Jolanta Baskutiene, Matas Petlinskas
Kaunas University of Technology, LITHUANIA
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- P12** **Investigation of Welded Joints Between Wood Boards and Plastic Wedge Dowels**
Regita Bendikienė, Lina Kavaliauskienė, Markas Borkys
Kaunas University of Technology, LITHUANIA
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- P13** **The Use of Stainless-Steel Welded Joints in The Food Industry**
Ieva Juškevičiūtė, Regita Bendikienė, Ramūnas Česnavičius, Antanas Čiuplys
Kaunas University of Technology, LITHUANIA
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Hall 2-1 FRIDAY, October 20**09:00 ENGINEERING MATERIALS AND APPLICATIONS****10:30 Session VI**Chair of the session – Assoc. Prof. **Antanas Čiuplys**

**Compositionally Complex TiAl-Based Nitride Coatings –
A Novel Approach with Promising Outcomes****Olga Maksakova, Vyacheslav Beresnev, Serhii Lytovchenko**Institute of Materials Science, Slovak University of Technology in Bratislava,
SLOVAKIA

V. N. Karazin Kharkiv National University, UKRAINE

**Comparative Evaluation of AC and DC TIG-Welded 5083 Aluminium
Plates of Different Thickness****Rolandas Šertvytis, Regita Bendikienė, Antanas Čiuplys**

Kaunas University of Technology, LITHUANIA

**Literature Review of Applicable Ballistic Materials for Temporary
Wooden Building Envelopes****Elina Barone, Baiba Gaujena, Martins Vilnitis**

Rīga Technical University, LATVIA

**Analysis of the Effect of Modern Methods of Obtaining
Nanostructured Powders and Their Consolidation Using Highly
Concentrated Energy Flows****Laura Gegeckienė, Ingrida Venytė, Rasa Kandrotaitė Janutienė,****Darius Mažeika, Olha Syzonenko**

Kaunas University of Technology, LITHUANIA

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Hall 2-1 FRIDAY, October 20

11:00 ADVANCED TECHNOLOGIES AND MANUFACTURING

13:00 Session VII

Chair of the session – Assoc. Prof. **Rasa Kandrotaitė-Janutienė**

**Manufacturing of Bioactive Biodegradable Scaffolds
by Stereolithography**

**[Viktorya Rstakyan](#), [Liana Mkhitaryan](#), [Mikayel Torosyan](#),
[Marina Aghayan](#), [Miguel Angel Rodríguez](#)**

A.B. Nalbandyan Institute of Chemical Physics, ARMENIA

**Failure of Porcelain Coating on Titanium Alloy with Different
Surface Treatment**

[Tsanka Dikova](#), [Yavor Gagov](#)

Medical University - Varna Prof. Dr. Paraskev Stoyanov, BULGARIA

**Additive Manufacturing of Silicon Carbide-Silicon Nitride-Based
Composites**

**[Tsovinar Ghaltaghchyan](#), [Mikayel Torosyan](#), [Miguel A. Rodríguez](#),
[Marina Aghayan](#)**

A.B. Nalbandyan Institute of Chemical Physics, ARMENIA

**Developing Four Powder Recycling Strategies for Sustainable
Additive Manufacturing 3D Printing Process**

[Nima Gorji](#), [Mark Mirigian](#)

South East Technological University, IRELAND

**Method for the Evaluation of Weld Strength for Enclosed Geometry
Polymer Assemblies Manufactured Using Quasi-Simultaneous Laser
Transmission Welding**

[Simonas Mindaugas Jankus](#), [Regita Bendikienė](#), [Audrius Jutas](#)

Kaunas University of Technology, LITHUANIA

**Measurements of Vibration Displacement Reduction in Glass Fiber
Composite Structures with Laser and Non-Contact Approaches**

[Ali Raza](#), [Rūta Rimašauskienė](#)

Kaunas University of Technology, LITHUANIA

