

# THE 12<sup>TH</sup> INTERNATIONAL CONFERENCE ON STRUCTURAL ANALYSIS OF ADVANCED MATERIALS ICSAAM 2025 – BRAȘOV – ROMANIA 15 – 18 SEPTEMBER 2025

EVENT ORGANIZED BY THE STRENGTH OF MATERIALS DEPARTMENT  
FACULTY OF INDUSTRIAL ENGINEERING AND ROBOTICS  
NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY „POLITEHNICA” BUCHAREST

in collaboration with

- ☐ UNIVERSITY OF PATRAS, GREECE
- ☐ AMADEMA COMPANY, CYPRUS
- ☐ UNIVERSITY OF CAMPANIA „LUIGI VANVITELLI”, ITALY
- ☐ ECOLE NATIONALE D'INGENIEURS DE TARBES, FRANCE
- ☐ UNIVERSITY OF PORTO, PORTUGAL
- ☐ INSTITUTE OF SCIENCE AND INNOVATION IN MECHANICAL AND INDUSTRIAL ENGINEERING, PORTO
- ☐ NORWEGIAN UNIVERSITY OF SCIENCE AND TECHNOLOGY, NORWAY

## CONFERENCE PROGRAMME

Sunday, 14 September 2025	
19:00 – 21:30	Welcome party
Monday, 15 September 2025 MORNING	
09:00 – 09:20	Opening ceremony EUROPA 1 Conference Hall G. JIGA, G. PAPANICOLAOU, V. DRAGONAKIS, A. D'AMORE, D. PORTAN
	SESSION 1A - Materials - Chairman Gabriel JIGA
09:20 – 10:05	PL1 PAPANICOLAOU George <i>The influence of water absorption on the degradation of 3d-printed ply-wood particle composites for packaging applications</i> – University of Patras, GREECE
10:05 – 10:50	PL2 TORRES MARQUES Antonio <i>Regenerative manufacturing applied to bio-based composite materials: the PECCS concept</i> – Faculty of Engineering, University of Porto, PORTUGAL
10:50 – 11:20	Coffee break
	SESSION 1B - Materials - Chairman Miruna CIOLCĂ EUROPA 1 Conference Hall
11:20 – 11:50	KL1 ATHANASOPOULOS Nikos <i>Extreme variable electrical conductivity and ultra-sensitive pressure and bending sensors through interfacial effects of anti-symmetric fibrous layers</i> 4D MATER MON IKE Patras, GREECE
11:50 – 12:10	L1 CRAINIC Nicolae <i>Particularities regarding the nano magnetic composite materials with polymer matrix obtained with the help of magnetic nano fluids</i> – University POLITEHNICA of Timișoara, ROMANIA
12:10 – 12:30	L2 COSTEA Mihai <i>Experimental comparison of impact behaviour in thin carbon fiber reinforced and 3D printed polymeric plates</i> – National University of Science and Technology POLITEHNICA Bucharest, ROMANIA

12:30 – 12:50	<b>L3 IOANNOU Ioannis</b> <i>Influence of Interlayer nanomaterial on the macroscopic mechanical properties of UD and QI laminas</i> - Advanced Materials Design & Manufacturing – AMADEMA, CYPRUS
12:50 – 13:10	<b>L4 ASSIOTIS Savvas</b> <i>Development and evaluation of a nanofibrous enhanced carbon fibre polymer sandwich composite plate as a satellite optical payload interface plate</i> - Advanced Materials Design & Manufacturing – AMADEMA, CYPRUS
13:10 – 13:30	<b>L5 ZGREABAN Francesca</b> <i>Prince Rupert's drops - the influence of glass type on the mechanical properties</i> – National University of Science and Technology POLITEHNICA Bucharest, ROMANIA
13:30 – 14:30	Lunch
<b>Monday, 15 September 2025 AFTERNOON</b>	
	<b>SESSION 2A - Biomaterials - Chairman George PAPANICOLAOU</b> <b>EUROPA 1 Conference Hall</b>
14:30 – 15:15	<b>PL3 ANTONIAC Iulian Vasile</b> <i>Current trends in biomaterials science</i> - National University of Science and Technology POLITEHNICA Bucharest, ROMANIA
15:15 – 16:00	<b>PL4 ATHANASOPOULOS Nikos</b> <i>Innovative biodegradable and plantable composite sandwich panels with advanced thermal insulation properties</i> - 4D MATER MON IKE Patras, GREECE
16:00 – 16:30	Coffee break
	<b>SESSION 2B - Biomaterials - Chairman Diana PORTAN</b> <b>EUROPA 1 Conference Hall</b>
16:30 – 16:50	<b>L5 POPESCU Larisa Maria</b> <i>Current challenges and research directions in additive manufacturing of biomaterials for personalized hand joint implants</i> - National University of Science and Technology POLITEHNICA Bucharest, ROMANIA
16:50 – 17:10	<b>L6 MANEA Marilena</b> <i>Progress and Constraints of Natural Fiber Reinforced Composites an extensive review</i> - National University of Science and Technology POLITEHNICA Bucharest, ROMANIA
17:10 – 17:30	<b>L7 DECA Anca Loredana</b> <i>Prediction of Flax Fiber Behavior Using Mechanical Testing and Finite Element Analysis</i> - National University of Science and Technology POLITEHNICA Bucharest, ROMANIA
17:30 – 18:00	<b>KL2 ICONARU Simona</b> <i>Ultrasound measurements, physico-chemical characterization and biological evaluation of magnesium hydroxyapatite for biomedical applications</i> - National University of Science and Technology POLITEHNICA Bucharest, ROMANIA

<b>Tuesday, 16 September 2025 MORNING</b>	
	<b>SESSION 3A - Materials - Chairman Rui MIRANDA GUEDES</b> <b>EUROPA 1 Conference Hall</b>
09:25 – 09:55	<b>PL6 TĂNĂSESCU Adrian</b> <i>SPECTROMAS Company – News, Products, Applications, Services</i> – Sponsor of ICSAAM2025, Bucharest ROMANIA
09:55 – 10:25	<b>PL7 CROITORU Bogdan</b> <i>RO-MEGA Control SRL – Company presentation</i> – Sponsor of ICSAAM2025, Bucharest ROMANIA

10:30 – 11:00	Coffee break
	<b>SESSION 3B - Materials - Chairman Vassilis DRAKONAKIS</b> <b>EUROPA 1 Conference Hall</b>
11:00 – 11:30	<b>KL3 ARON Gabor</b> <i>Engineering a composite sandwich panel for enhanced energy efficiency and fire safe building envelopes</i> - Laboratoire des Matériaux Composites pour la Construction, Lyon FRANCE
11:30 – 11:50	<b>L8 KRAUKLIS Andrejs</b> <i>Policies and guidelines for recycling of fiber reinforced composites: current state, industrial practices, and future perspectives</i> - Norwegian University of Science and Technology, GJOVIK, NORWAY
11:50 – 12:10	<b>L9 CUCU Andrei</b> <i>Influence of wall thickness on the impact behaviour of 3D printed gyroid lattices for paragliding protectors</i> - National University of Science and Technology POLITEHNICA Bucharest ROMANIA
12:10 – 12:30	<b>L10 MOULLOTOU Constantina</b> <i>Beyond the Battlefield: The material science behind ancient Greek shields</i> - Advanced Materials Design & Manufacturing - AMADEMA CYPRUS
12:30 – 12:50	<b>L11 MAN Giulia Maria</b> <i>Influence Of Cell Size On The Mechanical Performance Of Al-Pla Sandwich Specimens Subjected To Three-Point Bending</i> - National University of Science and Technology POLITEHNICA Bucharest ROMANIA
12:50 – 13:10	<b>L12 STOICA Radu Ionuț</b> <i>Explicit dynamics analysis of the impact response of lithium-ion cells</i> - National University of Science and Technology POLITEHNICA Bucharest ROMANIA
13:00 – 13:20	<b>L13 NIȚOI Dan</b> <i>Design elements of an ultrasonic system used in activating the wire drawing process</i> - National University of Science and Technology POLITEHNICA Bucharest ROMANIA
13:20 – 14:20	Lunch
<b>Tuesday, 16 September 2025 AFTERNOON</b>	
	<b>SESSION 4A - Experimental Techniques - Chairman Florin MICULESCU</b> <b>EUROPA 1 Conference Hall</b>
14:20 – 15:05	<b>PL8 CERBU Camelia</b> <i>Considerations on the use of Digital Image Correlation in mechanical testing for material characterization</i> – University TRANSILVANIA of Braşov ROMANIA
15:05 – 15:50	<b>PL9 GUEDES Rui Miranda</b> <i>Dynamic fragility of polybutylene adipate-terephthalate and its organoclay nanocomposites</i> - Institute of Science and Innovation in Mechanical and Industrial Engineering (INEGI), PORTO, PORTUGAL
15:50 – 16:20	Coffee break
	<b>SESSION 4B - Experimental Techniques - Chairman Antonio TORRES MARQUES</b> <b>EUROPA 1 Conference Hall</b>
16:20 – 16:50	<b>KL4 PSARRAS Georgios</b> <i>Electrical properties in polymers and polymer matrix micro/nano-composites</i> – University of Patras, GREECE
16:50 – 17:10	<b>L14 ZAOUTSOS Stephanos</b> <i>An integrated design, analysis and manufacturing of an exoskeleton device for enhanced functionality</i> - University of Thessaly, Larissa, GREECE
17:10 – 17:20	<b>L15 BARBU Laura Mariana</b> <i>Determination of dynamic characteristics for an aerospace structure using experimental and numerical methods</i> - National University of Science and Technology POLITEHNICA Bucharest ROMANIA

17:20 – 17:40	<b>L16 COSTEA Mihai</b> <i>Determination of mechanical behavior of 3D printed as-built samples of INCONEL 718</i> National University of Science and Technology POLITEHNICA Bucharest, ROMANIA
17:40 – 18:00	<b>L17 GRIGUȚĂ Andreea Denisa</b> <i>Methodologies for Dataset Analysis in Regard to Obtaining Material Characteristics Using Lamb Waves</i> - National University of Science and Technology POLITEHNICA Bucharest ROMANIA
18:00 – 18:20	<b>L18 ZENCENCO Emanuel Eduard</b> <i>Advantages and disadvantages of 3D Rapid prototyping vs traditional manufacturing technologies</i> - National University of Science and Technology POLITEHNICA Bucharest ROMANIA
<b>Wednesday, 17 September 2025 MORNING</b>	
	<b>SESSION 5A – Modelling and simulation – Chairman CERBU Camelia</b> <b>EUROPA 1 Conference Hall</b>
09:00 – 09:45	<b>PL10 DRAKONAKIS Vassilis</b> <i>Stochastic Modeling and Prediction of Particle Size and Shape Evolution in Mechanical Alloying via Ball Milling</i> - Advanced Materials Design & Manufacturing - AMADEMA CYPRUS
09:45 – 10:30	<b>PL11 ROȘCA Ioan Călin</b> <i>Design analysis and experimental validation of ultrasonic horns used in machining technologies</i> – University TRANSILVANIA of Brașov ROMANIA
10:30 – 11:00	Coffee break
	<b>SESSION 5B – Modelling and Simulation – Chairman ATHANASOUPoulos Nikos</b> <b>EUROPA 1 Conference Hall</b>
11:00 – 11:30	<b>KL5 KONTAXIS Lykourgos</b> <i>Finite Element Analysis for Improved Hand Exoprosthesis Design: Assessing Two Structural Approaches</i> - University of Thessaly, Larissa, GREECE
11:30 – 11:50	<b>L20 HURMUZACHE Andrei</b> <i>Numerical study on the performance of a Ceramic/ Kevlar 29 fiber ballistic package against small-caliber kinetic threats</i> - FERDINAND I Military Technical Academy Bucharest ROMANIA
11:50 – 12:10	<b>L21 SMARANDA Gabriel Dumitru</b> <i>A comparative numerical simulation of fracture behavior: standard part vs. Optimized topology</i> National University of Science and Technology POLITEHNICA Bucharest ROMANIA
12:10 – 12:30	<b>L22 SCUTARU Maria Laura</b> <i>Lean Manufacturing Thinking In Assembly Lines For Production Of Luminaries</i> National University of Science and Technology POLITEHNICA Bucharest ROMANIA
12:30 – 12:50	<b>L23 PEREDERIC Cristian</b> <i>Analysis of the elastic behaviour of selected types of plastic materials used in 3D printing</i> National University of Science and Technology POLITEHNICA Bucharest ROMANIA
12:50 – 13:10	<b>L24 COSTEA Mihai</b> <i>Finite Element Analysis of the Performance and Structural Behavior of Polymer Material Components Included in the Structure of an Exo-prosthesis</i> - National University of Science and Technology POLITEHNICA Bucharest ROMANIA
13:10 – 13:30	<b>L25 VERCEUX Floriane</b> <i>The influence of manufacturing process on the durability of High Impact Polystyrene parts manufactured via additive manufacturing and injection moulding</i> - Norwegian University of Science and Technology, Gjøvik, NORWAY
13:30 – 14:30	Lunch

	SESSION 5C – Poster session – Chairman Gabor ARON EUROPA 3 Conference Hall
11:00 – 11:10	<b>P1 PEREDERIC Cristian</b> <i>Mechanical behaviour of post-cured SLA printed resins</i> - National University of Science and Technology POLITEHNICA Bucharest, ROMANIA
11:10 – 11:20	<b>P2 PODAȘCĂ Viorica Elena</b> <i>Synthesis of borneol-polymers as fluorescent sensors for pollutants detection</i> – „Petru Poni” Macromolecular Institute of Chemistry, Iași ROMANIA
11:20 – 11:30	<b>P3 DAS Subrata Chandra</b> <i>A feasibility study to recycle a multilayer hydrogen (H<sub>2</sub>) storage tank</i> - Norwegian University of Science and Technology, Gjøvik, NORWAY
11:30 – 11:40	<b>P4 HALUS Andrei</b> <i>Construction of scale models of a RO-RO pontoon</i> - National University of Science and Technology POLITEHNICA Bucharest, ROMANIA
11:40 – 11:50	<b>P5 PEREDERIC Cristian</b> <i>Influence of infill percentage on the roughness of the contact surface between 3D printed plastic parts and the platform</i> - National University of Science and Technology POLITEHNICA Bucharest, ROMANIA
11:50 – 12:00	<b>P6 CHIRIȚĂ Matei-Alexandru</b> <i>Integration of artificial photosynthesis in industrial processes</i> - National University of Science and Technology POLITEHNICA Bucharest, ROMANIA
12:00 – 12:10	<b>P7 KAPOLOS John</b> <i>Synthesis and Characterization of Copper and Magnesium Oxide Nanoparticles via Environmentally Friendly Methods</i> – University of Peloponnese, Tripoli, GREECE
12:10 – 12:20	<b>P8 FLOROIU Gheorghe</b> <i>Free undamped vibrations for a system with one degree of freedom</i> - National University of Science and Technology POLITEHNICA Bucharest, ROMANIA
12:20 – 12:30	<b>P9 PSARRAS Georgios</b> <i>Development, characterization and functional behaviour of epoxy resin/cellulose nanocomposites</i> , University of Patras, GREECE
12:30 – 12:40	<b>P10 COSTEA Mihai</b> <i>The influence of infill density on the impact behaviour of 3D-printed PLA parts</i> - National University of Science and Technology POLITEHNICA Bucharest, ROMANIA
12:40 – 12:50	<b>P11 CIOBANU Carmen</b> <i>Ultrasound evaluation and biological assessment of zinc-doped hydroxyapatite for antimicrobial applications</i> - National University of Science and Technology POLITEHNICA Bucharest, ROMANIA
12:50 – 13:00	<b>P12 GEAMBASU Gabriel</b> <i>Research study concerning structural design of a drone using 3D print technology</i> - National University of Science and Technology POLITEHNICA Bucharest, ROMANIA
13:00 – 13:10	<b>P13 PAPPAS Konstantinos</b> <i>Thermal shock cycling effect on the degradation of 3D-printed PLA-wood particle composites for packaging applications</i> - National University of Science and Technology POLITEHNICA Bucharest, ROMANIA
13:10 – 13:20	<b>P14 KAPOLOS John</b> <i>Plant-Origin Hydrocolloids: Extraction, Purification, and Structural Insights via Chromatographic Techniques</i> – University of Peloponnese, Tripoli, GREECE
13:20 – 13:30	<b>P15 COSTEA Mihai</b> <i>Influence of 3D printing parameters on mechanical and elastic characteristics</i> - National University of Science and Technology POLITEHNICA Bucharest ROMANIA
13:30 – 14:30	Lunch

<b>Wednesday, 17 September 2025 AFTERNOON</b>	
14:30 – 19:30	Visit at Râșnov fortress, Bran Castle, Poiana Brașov
19:30 – 23:00	Gala Dinner in Poiana Brașov
<b>Thursday, 18 September 2025 MORNING</b>	
	<b>SUMMER SCHOOL EUROPA 3 Conference Hall</b>
09:00 – 10:50	<b>SS1 PORTAN Diana</b> <i>Biomimetics: Principles, models and applications</i> , University of Patras, GREECE
10:50 – 11:10	<b>SS2 UDREA Elena Catalina</b> <i>Benefits of the Open Access publishing model</i>
11:10 – 11:30	Coffee break
11:30 – 13:20	<b>SS3 ATHANASOPOULOS Nikos</b> <i>Biomimetics for responsive structures and thermal management</i> , 4D MATER MON IKE Patras, GREECE
13:20 – 13:40	<b>Closing ceremony.</b> <b>Proposals for the 13<sup>th</sup> ICSAAM2026 Conference organization</b> <b>presented by Prof. KAPOLOS John - University of Peloponnese, Tripoli,</b> <b>GREECE</b>