Instituto Superior Técnico

Lisboa, 1-3 July 2025

MATERIAIS 2025

Reshaping the Future

- XXII Congresso da Sociedade Portuguesa de Materiais
- XIII International Symposium on Materials
- III Iberian Meeting on Materials Science

Program at a Glance

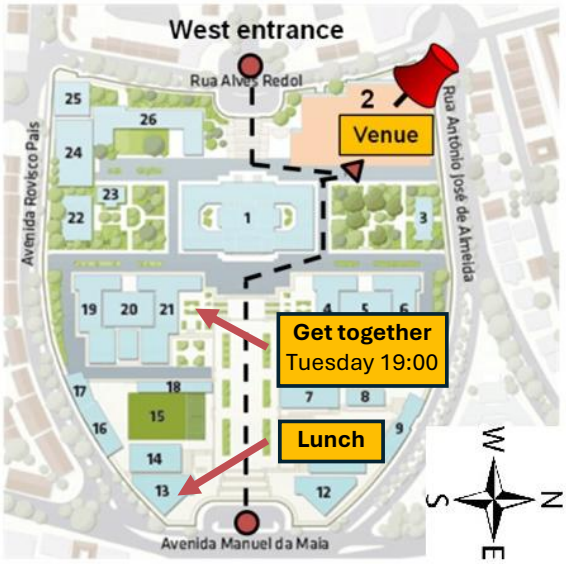
General Information

Internet access:
Account name: Materiais2025
Password: yv4zHb

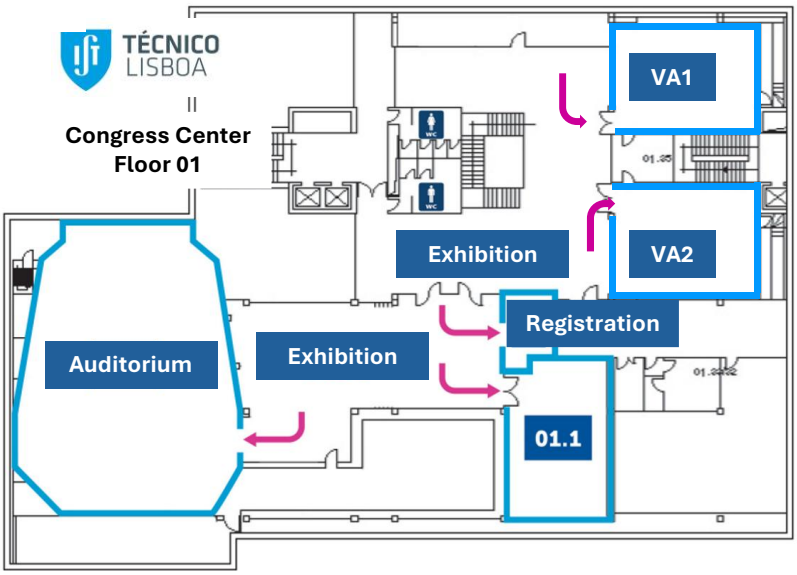
Working room
02.3, Floor 02

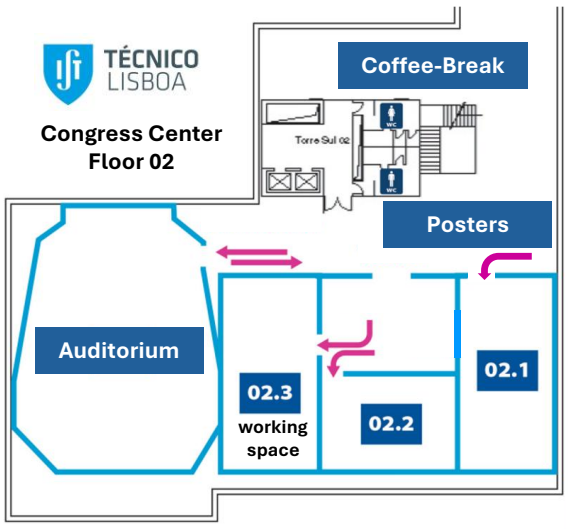
Conference Dinner
July 2, Wednesday, 20:00
CAFÉ IMPÉRIO LISBOA
Av. Almirante Reis 205
1000-048 - Lisboa
http://www.cafeimperio.pt/
(700 m from the conference venue)

Campus Map:



Rooms Map





PROGRAM

July 1, Tuesday

8:30	**Registration**
9:00-11:00	**Opening and Plenary Session**
Auditorium	
9:00	Opening
9:30	PL1 – João Mano, University of Aveiro, Portugal *Human-to-human biomaterials*
10:15	PL2 – Philip Withers, University of Manchester, UK *Time resolved electron and x-ray imaging of materials behaviour*
11:00-11:30	**Poster Session & Coffee**
11:30-13:00	**Parallel Sessions**
Room VA1	
Chair	*João Salvador, Instituto Superior Técnico, Portugal*
11:30	IL1 – Fátima Montemor, Instituto Superior Técnico, Portugal *Sustainable materials for high power electrochemical energy storage*
12:00	OC1.1 – Mariana Fernandes, University of Trás-os-Montes and Alto Douro, Portugal *Recent advancements in sol-gel derived organic-inorganic hybrid ormolytes for electrochromic device applications*
12:15	OC1.2 – Kateryna Oleksandrivna Shvydyuk, University of Beira Interior, Portugal *Degradation of plasma actuators induced by high-temperature exposure*
12:30	OC1.3 – Carla Martins, University of Minho, Portugal *Liner-Boss Adhesion Analysis for Type IV Hydrogen Storage Reservoirs*
12:45	OC1.4 – António J. N. Oliveira, International Iberian Nanotechnology Laboratory, Portugal *Optical modelling to design light trapping schemes for ultrathin and bifacial solar cells*
Room VA2	
Chair	*Ermelinda Maçôas, Instituto Superior Técnico, Portugal*
11:30	OC1.5 – Jennifer P. Teixeira, International Iberian Nanotechnology Laboratory, Portugal *Nanopillars as optical enhancers in ultra-thin CIGS solar cells*
11:45	OC1.6 – Abdollah Hajalilou, NOVA University of Lisboa, Portugal *Room-temperature ammonia sensing using polyaniline-coated screen-printed electrodes*
12:00	OC1.7 – Anna Safonova, University of Verona, Italy *Photoluminescence and stability in Ag-doped 13X zeolite through different synthesis approaches*
12:15	OC1.8 – Maria Morais, NOVA University of Lisboa, Portugal *Microwave-assisted hydrothermal growth of zinc oxide particles for impact pressure sensing applications*

12:30	IL2 – David Levy, Material Science Institute of Madrid, Spain *Sol-Gel Materials for Optical and Electrooptical Applications*
Room 01.1	
Chair	*Patrícia Carvalho, SINTEF, Norway*
11:30	IL3 – Márcia Vilarigues, NOVA University of Lisboa, Portugal *Material Studies of Magic Lantern Slides: Approaches to the Research of 17th–19th Century Visual Culture*
12:00	OC1.9 – Soraia A.R. Coelho, University of Aveiro, Portugal *Boron-based bioactive glass and natural compounds in electrospun PCL nanofibers: a novel hybrid for tissue engineering*
12:15	OC1.10 – Bárbara D. D. Cruz, University of Minho, Portugal *Tailoring poly (L-lactic acid) for sensing and energy applications though thermal annealing and blending with different ionic liquids*
12:30	OC1.11 – Fernando Sá, University of Aveiro, Portugal *Electromechanical Characterization of Bacterial Nanocellulose and ZnO Composites through First and Second Harmonic Generation*
12:45	OC1.12 – Camila Ribeiro, University of Aveiro, Portugal *Fabrication of dense BaTiO3-based thick films by solvent-free fibrillation and cold sintering*
Room 02.1	
Chair	*Jorge Lino, University of Porto, Portugal*
11:30	OC1.13 – Zeinab Ebrahimpour, ELETTRA Sincrotrone Trieste, Italy *Optical force-driven liquid sample delivery in vacuum: enabling ultrafast time-resolved soft X-ray investigations*
11:45	OC1.14 – Salvador Rea, University of Aveiro, Portugal *Systematic study of ZnO densification via Flash Cold Sintering Process*
12:00	IL4 – Ana Reis, University of Porto, Portugal *Toward sustainable industry: applying digital and numerical technologies in advanced manufacturing*
12:30	OC1.15 – Rodolfo L. Batalha, Instituto de Soldadura e Qualidade, Portugal *Heat treatment of the AlSi10Mg alloy produced by laser powder bed fusion*
12:45	OC1.16 – Albano Cavaleiro, University of Coimbra, Portugal *Structural patterning of WSC sputtered coatings by laser treatment*
Room 02.2	
11:30	PARALAB – Sheida Rajabi, Application Scientist at Oxford Instrum *Broadband Benchtop NMR Spectroscopy for Research and Industrial Applications*
13:00-14:00	**Lunch**
14:00-15:00	**Poster Session & Coffee**
15:00-16:30	**Parallel Sessions**
Room VA1	
Chair	*Gilberto Siqueira, EMPA and ETH Zurich, Switzerland*
15:00	IL5 – Rute A. S. Ferreira, University of Aveiro, Portugal *Luminescent materials for energy and digital transition*

15:30	OC1.17 – Alan Lima, Centre for Nanotechnology and Advanced Materials, Portugal *Impact of PVDF molecular weight on the properties of LFP slurries*
15:45	OC1.18 – Nikola Perinka, BCMaterials, Spain *Development of functional materials for conformable printed electronics*
16:00	OC1.19 – Marcelo Oliveira, CeNTI-Centre for Nanotechnology and Advanced Materials, Portugal *Efficient recovery of graphite and cathode active materials from the black mass of lithium-ion batteries*
16:15	OC1.20 – Jorge Corker, Instituto Pedro Nunes, Portugal *Evaluation of expanded perlite as a low-cost core material for energy-efficient vacuum insulation panels (VIPs): Experimental and modelling approach*
Room VA2	
Chair	*Federico Bella, Politecnico di Torino, Italy*
15:00	OC1.21 – Pedro Moreira, NOVA University of Lisboa, Portugal *Green liquid-phase exfoliation of two-dimensional materials using cyrene*
15:15	OC1.22 – Ane Martin Ayerdi, BCMaterials, Spain *Exploration of carbon dioxide derived polycarbonates (CO_2-PCs) as active and substrate materials for printed piezoresistive sensors*
15:30	OC1.23 – Magda A. Pereira-Barros, Centre for Nanotechnology and Advanced Materials, Portugal *Sustainable materials for printed CO_2 sensor for smart facade integration*
15:45	OC1.24 – Carlos Silva, NOVA University of Lisboa, Portugal *Sustainable computing: Physical reservoir platform for real-time edge applications*
16:00	IL6 – Senentxu Lanceros-Méndez, BCMaterials, Spain *Materials and processes for a sustainable digitalization*
Room 01.1	
Chair	*Luísa Durães, University of Coimbra, Portugal*
15:00	IL7 – Helena Godinho, NOVA University of Lisboa, Portugal *Cellulose-based liquid crystalline networks for time-, temperature-, and strain-dependent structural sensors*
15:30	OC1.25 – João Correia, University of Minho, Portugal *Thin embeddable layer integrating piezoelectric sensors for real-time monitoring impact events in composite materials*
15:45	OC1.26 – Petra Uhlmann, Leibniz Institute of Polymer Research Dresden, Germany *Multifunctional coatings by tailoring chemistry and morphology of polymer brushes*
16:00	OC1.27 – Braian Buitrago Uribe, University of Minho, Portugal *Epoxy-Montmorillonite coatings for type IV high-pressure vessel applications*
16:15	OC1.28 – Dorina T. Papanastasiou, NOVA University of Lisboa, Portugal *Paper based multi-stack printed heaters with improved thermal uniformity and durability for sustainable wearable applications*
Room 02.1	
Chair	*Albano Cavaleiro, University of Coimbra, Portugal*
15:00	OC1.29 – Dayana Guzmán Sierra, University of Aveiro, Portugal *Electrical response of chitosan films for bioelectronics*
15:15	OC1.30 – Henrique Gomes, University of Aveiro, Portugal *Design of laser-induced conductive Nb_2O_5 pathways*

15:30	IL8 – Ramón Escobar Galindo, University of Sevilla, Spain *Surface Engineering concepts for Concentrating Solar Power materials: from simulation to real operation*
16:00	OC1.31 – Miguel Alexandre, NOVA University of Lisboa, Portugal high performance photonic-amplified dots-in-host perovskite solar cells
16:15	OC1.32 – Artur Baeta, University of Aveiro, Portugal *Molecular Dynamics for new piezoelectric polymers discovery*
Room 02.2	
15:00	PARALAB - João Carvalheira, Sales Manager at Paralab *From Sample Preparation to Polymer Identification Differential Scanning Calorimetry (DSC)*
16:30-17:00	**Poster Session & Coffee**
17:00-18:30	**Parallel Sessions**
Room VA1	
Chair	*Helena Tomás, University of Madeira, Portugal*
17:00	IL9 – Rui M. A. Domingues, International Iberian Nanotechnology Laboratory, Portugal *The role of ECM cues, cellular crosstalk and submolecular control of their mechanosignaling in tissue specification and function*
17:30	OC1.33 – Maria Carmo Lança, NOVA University of Lisboa, Portugal *Cryogel foams of hydroxyapatite, beta-TCP and cellulose for bone regeneration*
17:45	OC1.34 – Ana Catarina Vale, University of Minho, Portugal *Natural-derived polysaccharide-protein microfibres for wound treatment*
18:00	OC1.35 – Marta Fernandes, University of Aveiro, Portugal *Advanced approach for stabilization of crystalline phase in thin films of PLLA deposited on medical stainless steel substrate*
18:15	OC1.36 – Pedro Nogueira, Instituto Superior Técnico, Portugal *Electrochemical impedance spectroscopy of iron, and iron lattice structures*
Room VA2	
Chair	*João Rodrigues, University of Madeira, Portugal*
17:15	OC1.38 – Miguel Franco, NOVA University of Lisboa, Portugal *Inkjet printed IGZO memristors with volatile and non-volatile switching*
17:30	OC1.39 – Luís Pinto da Silva, University of Porto, Portugal *Development of Waste-Based Carbon Dots for Sunlight-Driven Photocatalytic Water Treatment*
17:45	OC1.40 – Nuno Miguel Figueiredo, University of Coimbra, Portugal *Sustainable decorative structural colours on polymers for the automotive industry*
18:00	IL10 – Ermelinda Maçôas, Instituto Superior Técnico, Portugal *The kaleidoscope of Carbon: From life's foundation to nanoscale innovation*
Room 01.1	
Chair	*David Levy, Material Science Institute of Madrid, Spain*
17:00	IL11 – Gilberto Siqueira, EMPA and ETH Zurich, Switzerland *3D Printing nanocellulose - From controlled anisotropic particles to functional and complex structures*

17:30	OC1.41 – Susete N. Fernandes, NOVA University of Lisboa, Portugal *Chiral Polarized Luminescence via Self-Assembled Cellulose Nanocrystals: A Photonic Approach to Anti-Counterfeiting*
17:45	OC1.42 – Braian Uribe, University of Minho, Portugal *Effect of salinity on the degradation of PMMA matrix composites reinforced with carbon fibers for nautical applications*
18:00	OC1.43 – Mariana Silva, NOVA University of Lisboa, Portugal *Cellulose-based materials for water collection from dew – Water supply and Management*
18:15	OC1.44 – Talita Nascimento, Instituto Superior Técnico, Portugal *Lignin valorization through depolymerization followed by copolymerization with eco-acrylonitrile*
Room 02.1	
Chair	*Senentxu Lanceros-Mendez, BCMaterials, Spain*
17:00	OC1.45 – Bernardo Diniz, Instituto Superior Técnico, Portugal *CoCrFeNiMn – NbC coatings synthesized by laser deposition*
17:15	OC1.46 – Hélder Baptista, University of Aveiro, Portugal *PDMS-layered water-based screen-printed sensors with enhanced hydrophobicity for amine detection in humid fish packaging*
17:30	IL12 – Inês Flores-Colen, Instituto Superior Técnico, Portugal *Nano-based rendering mortars in building facades: Challenges, innovation and opportunities*
18:00	OC1.47 – Hurraira Hashim, International Iberian Nanotechnology Laboratory, Portugal *UV filters for improving the durability of fire-resistant glass*
18:15	OC1.48 – Ana S. Ramos, University of Coimbra, Portugal *Optimization of laser quenching for surface hardening of a mould steel*
19:00	**Get Together – Chemistry Garden**

July 2, Wednesday

8:30	**Registration**
9:00-10:30	**Plenary Session**
Auditorium	
9:00	PL3 – Carolin Körner, University Friedrich-Alexander Erlangen-Nürnberg, Germany *Voxel based material design by electron beam additive manufacturing*
9:45	PL4 – Lucio Isa, ETH Zurich, Switzerland *Sliding or rolling? Characterizing single-particle contacts*
10:30-11:00	**Poster Session & Coffee**

11:00-13:00	**Parallel Sessions**
Room VA1	
Chair	*Jennifer Teixeira and Pedro Salomé, INL, Portugal*
11:00	IL13 – Patrícia Almeida Carvalho, SINTEF, Norway *Mineral tetrahedrites as the next commercial thermoelectric materials*
11:30	OC2.1 – André Pereira, Instituto Superior Técnico, Portugal Study of $(CrFeTiTa)_{70}W_{30}$ and VFeTiTaW refractory High Entropy Alloys for nuclear fusion applications
11:45	OC2.2 – Maria Inês Fernandes Monteiro, University of Minho, Portugal *Addressing battery thermal runaway through polymer composite separator membranes with phase change materials*
12:00	OC2.3 – João L. Miranda, University of Aveiro, Portugal *Ultrafast high-temperature sintering of strontium titanate-based thermoelectric ceramics*
12:15	OC2.4 – Rafael S. Pinto, University of Minho, Portugal *On the Role of Solvent Selection for Improving Performance and Sustainability of Printed Lithium-ion Batteries*
12:30	OC2.5 – Ivan M. Santos, NOVA University of Lisboa, Portugal *Light-driven engineering of c-Si solar cells with photonic nanostructures*
12:45	OC2.6 – Liliana C. Fernandes, University of Minho, Portugal *Molecular and structural insights into PVDF/MOF/ionic Liquid Composites for energy storage and electrochemical applications*
Room VA2	
Chair	*Ramón Escobar Galindo, University of Sevilla, Spain*
11:00	OC2.7 – João Rocha, University of Aveiro, Portugal *Photoresponsive hybrid and metal-nitrosyl ferroelectrics: toward multi-state memory materials*
11:15	OC2.8 – Bruno Peliteiro, Centre for Nanotechnology and Advanced Materials, Portugal *Innovative textile fibres and structures for sustainable utilization and valorisation of natural resin and its derivatives*
11:30	OC2.9 – Ana S. Castro, University of Minho, Portugal *Ionic liquid/Cellulose acetate sustainable composites for iron (III) detection in water*
11:45	OC2.10 – Gabriela Caetano, Instituto Superior Técnico, Portugal *Integrating poly(ionic liquid)s with 3D electrooxidation technology for advanced azo dye treatment*
12:00	OC2.11 – Marta C. Corvo, NOVA University of Lisboa, Portugal *Advancing CO_2 mitigation: Poly(ionic liquid)-based aerogels for capture and utilization*
12:15	OC2.12 – Cláudia Sofia Pessa Buga, University of Minho, Portugal *Development of a multisensing e-skin for gripper sensorization*
12:30	IL14 – Clara Rodrigues Pereira, University of Porto, Portugal *Smart textiles for an energy-driven future: the quest for all-in-one hybrid energy harvesting & storage technologies*
Room 01.1	
Chair	*Frederico Ferreira, Instituto Superior Técnico, Portugal*
11:00	OC2.13 – Beatriz Santos, Polytechnic of Porto, Portugal *Effect of addition of styrene-butadiene and cork particles on the mechanical behavior of glass fiber reinforced polyester composites*

11:15	OC2.14 – Mariana Vallejo, University of Aveiro, Portugal *Engineering functional bio-based paper coatings from potato, onion, and garlic side streams*
11:30	IL15 – Lluis Marsal, University Rovira y Virgili, Spain *Photonic Architectures Based on Nanoporous Anodic Alumina for Enhanced Light–Matter Interaction and Optical Biosensing*
12:00	OC2.15 – Francisco Soares, Polytechnic of Porto, Portugal *Effect of rubber particle addition on the impact behavior of composites produced by Hand Lay-Up*
12:15	OC2.16 – João F. G. Silva, Polytechnic of Porto, Portugal *Mechanical Characterization Challenges of Potentially Structural Dyneema® (UHMWPE)/LDPE Composites*
12:30	OC2.17 – Vitor H. Carneiro, University of Trás-os-Montes and Alto Douro, Portugal *Viscoelastic ratio and range – a "new pair" of mechanical properties*
12:45	OC2.18 – Jorge Dores de Castro, Polytechnic of Porto, Portugal *Analysis of the temperature variation of thermoplastics in tensile tests*
Room 02.1	
Chair	*Hélder Puga, University of Minho, Portugal*
11:00	OC2.19 – João Afonso Mendes, NOVA University of Lisboa, Portugal *Silicon nanoparticles sintering into a porous polycrystalline material*
11:15	OC2.20 – Simão Santos, University of Aveiro, Portugal *Geometrical and dimensional accuracy of 3D printed parts by vat-photopolymerization using a novel water-based hydroxyapatite resin*
11:30	OC2.21 – Ivan Rodrigues, Instituto Superior Técnico, Portugal *The effect of deposition strategy on the intrinsic heat treatment of 18Ni300 maraging steel induced during additive manufacturing*
11:45	OC2.22 – Susana Devesa, University of Coimbra, Portugal *Environmentally friendly electrodeposition of Ni–P Alloys: Boric acid-free approach for steel substrates*
12:00	IL16 – João Pedro Oliveira, NOVA University of Lisboa, Portugal *Microstructure control during wire and arc additive manufacturing*
12:30	OC2.23 – Fatih Toptan, Izmir Institute of Technology, Turkey F*unctionalized titanium surfaces for load-bearing implants: Combining tribocorrosion resistance with smart antimicrobial ion release*
12:45	OC2.24 – Maryna Taryba, Instituto Superior Técnico, Portugal *Manganese oxide in aqueous media: localized interface study "in situ" and "in operando" to unveil the charge storage mechanism*
Room 02.2	
Industrial-NETPORE Workshop	
9:00	Welcome and Opening Remarks
9:10	Lluis F. Marsal, Univeristat Rovira i Virgili, Spain *Introduction to the NETPORE COST Action*
9:30	Frederico Maia, SMALLMATEK - Small Materials and Technologies, Lda, Portugal *Nanostructured materials for immobilization of active compounds*
9:55	Kari Koshi, BENEQ, Finland
10:20	Coffee Break & Networking

11:00	Pietro Agola, NOVAC S.R.L., Italy *Optimization and scale-up of activated carbon-based supercapacitors for automotive applications*
11:30	Lluis Marsal, University Rovira y Virgili, Spain (room 01.1) *Photonic Architectures Based on Nanoporous Anodic Alumina for Enhanced Light–Matter Interaction and Optical Biosensing*
12:05	Moisés Pinto, Instituto Superior Técnico, Portugal
12:30	João Rocha, University of Aveiro, Portugal *From Bench-to-Bedside: Microporous Sodium Zirconium Silicate for Treating Hyperkalemia*
13:00-14:00	**Lunch**
14:00-15:00	**Poster Session & Coffee**
15:00-16:30	**Parallel Sessions**
Room VA1	
Chair	*Jennifer Teixeira and Pedro Salomé, INL, Portugal*
15:00	IL17 – Federico Bella, Polytechnic University of Turin, Italy *Material platforms for electrochemical ammonia production*
15:30	OC2.25 – André F. Violas, International Iberian Nanotechnology Laboratory, Portugal *Advanced light management in ACIGS solar cells via single-step nanopatterning*
15:45	OC2.26 – Madalena Roque, NOVA University of Lisboa, Portugal *Sustainable and scalable hierarchical wood/ZnO composites as piezoelectric nanogenerators towards green energy harvesting*
16:00	OC2.27 – Beatriz A. Santos, Instituto Superior Técnico, Portugal *Thermoelectric magnesium-based materials: exploring synthesis routes and outcomes*
16:15	OC2.28 – Ana Rovisco, NOVA University of Lisboa, Portugal *Sustainable and multifunctional ZTO nanostructures: from energy to environmental applications*
Room VA2	
Chair	*Rui Domingues, University of Minho, Portugal*
15:00	OC2.29 – Lydia dos Orfãos, University of Madeira, Portugal Fluorodendrimers as detectable gene carriers
15:15	OC2.30 – Júlio Rocha, University of Aveiro, Portugal *Enhancing bone regeneration: The impact of polarization on PLLA-coated 316L stainless steel devices*
15:30	OC2.31 – Maria João Álvaro Martins, Instituto Superior Técnico, Portugal *Engineering silica nanoparticles for advanced surgical imaging applications*
15:45	OC2.32 – Luís M. Pereira, University of Aveiro, Portugal *Fabrication and design of hydroxyapatite microneedle patches for dental applications*
16:00	IL18 – Frederico Castelo Ferreira, Instituto Superior Técnico, Portugal *Electrically conductive materials for sustainable tissue engineering*
Room 01.1	
Chair	*Pablo Taboada, University of Santiago de Compostela, Spain*
15:00	IL19 – Jorge F. J. Coelho, University of Coimbra, Portugal *Reversible deactivation radical polymerization: a new life for poly(vinylchloride)*

15:30	OC2.33 – Ricardo Andrade, Mackenzie Presbyterian University, Brazil *Influence of cellulose fiber size and PPy incorporation on the rheological and structural properties of alginate-glycerol hydrogels for 3D bioprinting*
15:45	OC2.34 – Joana Neiva, University of Coimbra, Portugal *Combining tunable plasmonic coloration and antibacterial properties in Ag-ZrO_2 nanocomposite coatings on polypropylene via reactive magnetron sputtering*
16:00	OC2.35 – Noelle C. Zanini, University of Aveiro, Portugal *Triboelectric performance of polymers: A comparative study of PE and PDMS*
16:15	OC2.36 – Ana Barra, University of Aveiro, Portugal *Recycling expanded polystyrene packaging: A modern-day challenge*
Room 02.1	
Chair	*Alberto Ferro, Instituto Superior Técnico, Portugal*
15:00	OC2.37 – Aida B. Moreira, University of Porto, Portugal *Reinforcement of a low-carbon steel using a TiC-based metal matrix composite: A microstructural and wear performance analysis*
15:15	OC2.38 – Inês V. Gomes, University of Minho, Portugal *Evaluating the efficacy of conformal cooling channels in aluminum high-pressure die casting: A critical performance analysis*
15:30	IL20 – Benjamin Butz, University of Siegen, Germany *Scale-bridging cryo and in situ microscopy of highly reactive / sensitive materials and devices*
16:00	OC2.39 – Púria Esfandiari, Polytechnic of Porto, Portugal *Calcination method for carbon fibre reinforced composites*
16:15	OC2.40 – Daniel Gatões, University of Coimbra, Portugal *Effect of defect on 2D structural metamaterials*
Room 02.2	
Industrial-NETPORE Workshop	
14:30	Lluis Marsal, Frederico Maia, Kari Koshi, Pietro Agola, Moisés Pinto, João Rocha *Industry Engagement Roundtable: Bridging Research and Application*
14:50	Mirtha Lourenço, University of Aveiro, Portugal *Enhancing CO_2 Capture via Microstructural Tuning of N-Doped Biochar*
15:10	Arlete Apolinário, University of Porto, Portugal *Advanced nanostructured oxide semiconductors for photoelectrochemical solar water splitting and green hydrogen*
15:30	Anton Ficai, National University POLITEHNICA of Bucharest, Romania *Functional Magnetic Nanoparticles for Biomedical Applications*
15:50	Cláudia Nunes, University of Aveiro, Portugal *Chitosan-Based Scaffolds Targeting Bone Regeneration and Cancer Therapy*
16:30-17:00	**Poster Session & Coffee**
17:00-18:30	**Parallel Sessions**
Room VA1	
Chair	*Jennifer Teixeira and Pedro Salomé, INL, Portugal*
17:00	IL21 – Roberto Campana, Spanish National Hydrogen Centre, Spain *Materials processing and characterization for high temperature fuel cells and electrolyzers*

17:30	OC2.41 – Mariana Rodrigues, University of Aveiro, Portugal *Piezoelectrics for domestic energy harvesting applications*
17:45	OC2.42 – Sandra Carvalho, University of Coimbra, Portugal *Annealing impact on RF-sputtered $LiCoO_2$ thin films for lithium-ion batteries*
18:00	OC2.43 – Catarina Vieira, Instituto Superior Técnico, Portugal *Electrochemical characterization for the identification of alternative health indicators in lithium-ion batteries*
18:15	OC2.44 – João Mascarenhas, National Laboratory of Energy and Geology (LNEG), Portugal *Production and characterization of tetrahedrite materials for Te-free thermoelectrical devices*
Room VA2	
Chair	*Pedro Paulo, Instituto Superior Técnico, Portugal*
17:00	OC2.45 – Joana Soares Regadas, University of Aveiro, Portugal *45S5 Bioglass with Ce and Fe as anti and pro-oxidant agent*
17:15	OC2.46 – Ivo Martins, University of Madeira, Portugal *Solving the paradox of the synthesis of carbon dots*
17:30	OC2.47 – Joana F. Henriques, University of Coimbra, Portugal *Mimicking atherosclerotic conditions through SLA - the impact of storage condition on the mechanical properties*
17:45	IL22 – Pablo Taboada, University of Santiago de Compostela, Spain *Hybrid nanostructures for combined therapeutics and tissue repair*
Room 01.1	
Chair	*Luís Pereira, NOVA University of Lisboa, Portugal*
17:00	IL23 – Hélder Puga, University of Minho, Portugal *Multifrequency ultrasonic treatment of light alloys for microstructural refinement*
17:30	OC2.48 – Gonçalo Abrantes, University of Coimbra, Portugal *Design of experiments for LPBF processing of HEA-inspired low-density alloys for aerospace applications*
17:45	OC2.49 – Isaque Moura, NOVA University of Lisboa, Portugal *Tuning microstructure and mechanical performance of metastable HEAs: The effect of B_4C addition in LPBF processing*
18:00	OC2.50 – Davi A. Marques, NOVA University of Lisboa, Portugal *Electrochemical properties and corrosion behavior of LPBF-printed $Fe_{40}Mn_{20}Co_{20}Cr_{15}Si_5$ high-entropy alloy: Impact of B_4C addition*
Room 02.1	
Chair	*Jorge Coelho, University of Coimbra, Portugal*
17:00	OC2.51 – Inês Vilarinho, University of Aveiro, Portugal *From waste to resource: Sustainable Valorization of rice husk ash in one-part alkali-activated materials*
17:15	OC2.52 – Maider Iturrondobeitia, University of the Basque Country, Spain *Life cycle Assessment methodology for eco-design using bio based and biodegradable polymers (polyhydroxybutyrate)*
17:30	IL24 – Luisa Durães, University of Coimbra, Portugal *Upcycling waste materials for production of aerogels*
18:00	OC2.53 – Lígia Afreixo, University of Porto, Portugal *Food design to feed the future: additive manufacturing of functional foods*

18:15	OC2.54 – Marinélia Capela, University of Aveiro, Portugal *Production and characterization of lightweight one-part inorganic polymers derived from ground granulated blast furnace slag*
Room 02.2	
Industrial-NETPORE Workshop	
17:00	Nefeli Lagopati, National and Kapodistrian University of Athens, Greece
17:20	Hatice Duran, TOBB University of Economics and Technology, Turkey
17:40	Malgorzata Norek, Military University of Technology-Warsaw, Poland *Photonic materials based on porous anodic alumina*
18:00	Martina Corsi, University of Pisa, Italy *Real-Time Monitoring of Diagnostic Markers Using Implantable, Biodegradable Chemical Sensors with High Temporal and Spatial Precision*
20:00	**Conference Dinner – Café Império Lisboa**

July 3, Thursday

8:30	**Registration**
9:00-10:30	**Plenary Session**
Auditorium	
9:00	PL5 – Ingo Burget, ETH Zurich, Switzerland *Wood Materials – Potential and Challenges*
9:45	PL6 – Seema Argarwal, University of Bayreuth, Germany *Advanced Polymer and Polymer-Ceramic Macroobjects: Multidimensional Innovations for Health, Energy and Water Purification*
10:30-11:00	**Poster Session & Coffee**
11:00-12:30	**Parallel Sessions**
Room VA1	
Chair	*Ermelinda Maçôas, Instituto Superior Técnico, Portugal*
11:00	IL25 – Helena Tomás, University of Madeira, Portugal *Materials based on dendritic systems for biomedical applications*
11:30	OC3.1 – José Santos, Instituto Superior Técnico, Portugal *Nanoplasmonic materials for optical sensing based on DNA origami*
11:45	OC3.2 – André Lopes, University of Aveiro, Portugal *3D scaffolds from PCL-chitosan fibrous blends loaded with HAp for tissue engineering applications*
12:00	OC3.3 – Maria Luísa Durão, Fibrenamics, Portugal *A novel biodegradable adhesive approach for the end-of-life separation and recycling of PES-PU laminated textiles*

12:15	OC3.4 – Maria Norberta de Pinho, Instituto Superior Técnico, Portugal *Mixed matrix membranes, cellulose acetate/silica/metal organic framework, for protein-bound uremic toxins removal in the artificial kidney*
Room VA2	
Chair	*Amélia Almeida, Instituto Superior Técnico, Portugal*
11:00	OC3.5 – Helena Alves, INESC-MN, Portugal *From Printed Materials to Wearable Devices: Scalable and Sustainable Electronics for Harsh Environments*
11:15	OC3.6 – Vitor Sencadas, University of Aveiro, Portugal *Upcycling leather residues into functional electrode materials for wearable applications*
11:30	OC3.7 – Tomás Pinheiro, NOVA University of Lisboa, Portugal *Paper-based laser-induced graphene bioelectrodes for wearable sensing and stimulation*
11:45	OC3.8 – Tomás Seixas, Instituto Superior Técnico, Portugal *Effect of pressure and quenching on biogenic calcium phosphate synthesis and cytocompatibility*
12:00	IL26 – Maria Goreti F. Sales, University of Coimbra, Portugal *Autonomous biosensors and plastic antibodies*
Room 01.1	
Chair	*Ana Clara Marques, Instituto Superior Técnico, Portugal*
11:00	OC3.9 – Maurício José Aires Malheiro, University of Minho, Portugal *Body armour systems using shear thickening fluid and thermoplastic matrix composites*
11:15	OC3.10 – Ana Rita Carreiras, Polytechnic of Porto, Portugal Interlaminar fracture of thermoplastic composites and healing
12:00	OC3.11 – António Torres Marques, University of Porto, Portugal *Material design-for-excellence (M-DFX) – A social, environmental and economic analysis for composites materials*
12:15	OC3.12 – Deesy Gomes Pinto, University of Madeira, Portugal *Reinforced Polymeric Composites with Basalt Fibers and Nanoparticles of Alumina Manufactured with Thermoplastic or Thermosetting Matrices for Civil Construction Applications – A Review*
Room 02.1	
Chair	*Paula Vilarinho, University of Aveiro, Portugal*
11:00	OC3.13 – Fatima Vaz, Instituto Superior Técnico, Portugal *Effect of degradation on the compression properties of iron lattices*
11:15	OC3.14 – Abílio P. Silva, University of Beira Interior, Portugal *3D modelling of dense and porous microstructures of multiphasic ceramics*
11:30	OC3.15 – Pello Jimbert, University of the Basque Country, Spain *On the decarbonization of steel industry: Electrification of round steel bars heating process*
11:45	OC3.16 – Vera L. D. Costa, University of Beira Interior, Portugal *Assessing biodegradability, compostability, and ecotoxicity of a PLA-based biocomposite: A pathway to sustainable materials*
12:00	IL28 – João Labrincha, University of Aveiro, Portugal *Sustainable use of resources? ways to mitigate future sourcing of strategic materials*
12:30-14:00	**Lunch**

14:00-16:00	**Plenary Session, Awards and Closing**

Auditorium	
14:00-14:15	Rodrigo Martins, NANOMAT, Portugal *Presentation of Associação para a Investigação e Desenvolvimento em Materiais Avançados e Aplicações*
14:15	PL7 – Adélio Mendes, University of Porto, Portugal *Opportunities for materials within the energy decarbonization endeavor*
15:00-15:30	SPM Career and Recognition Award
15:30-15:45	Awards *Materiais 2025 – Best Poster*
15:45-16:00	Closing and *Materiais 2027* Announcement

Posters

P1 Susana P. B. Sousa, University of Porto, Portugal
Wind Blades Scraps as a Potential Envelope Solution for Buildings

P2 V. C. Ferreira Filho, Instituto Superior Técnico, Portugal
Tailoring multifunctional nanoplataforms based on SPIONs and graphene oxide for advanced healthcare applications

P3 Renato Reis, Center for Innovation in Polymer Engineering, Portugal
Biodegradable Thermoplastic Materials for Sustainable Food Packaging

P4 Ghulam Abbas, NOVA University of Lisboa, Portugal
Optimising Wet Chemical Treatment for Improved Surface Passivation of Damaged Silicon Wafers Towards Ultra-Thin SHJ Solar Cells Fabrication

P5 Daniel Cavaco, Instituto Superior Técnico, Portugal
Comparative Theragnostic Potential of Photosensitizer-Functionalized Silica Nanoparticles and Nanodiamonds

P6 Isabel Moura, CITEVE, Portugal
Natural Based Fibers in 3D Printing: The Convergence of Technology and Sustainability

P7 Lucas P. Marcelino, Instituto Superior Técnico, Portugal
Microplastic-free microcapsules towards a sustainable agriculture

P8 Inês Costa, CITEVE, Portugal
Advancing Automotive Sustainability: High-Performance Biobased Prepregs with Natural Fibers

P9 Maria Carolina Parreira, University of Coimbra, Portugal
Tailorable Ionic Poly(ester amide)s: A Versatile Platform Enabled by Quaternization

P11 Maria C. Almeida, University of Coimbra, Portugal
Amino-yne click reaction of vegetable oils for reversible thermosets

P12 Dora Sousa, Instituto Superior Técnico, Portugal
Sustainable Use of Extractive Industry Waste: Development of Limestone-Based Composites

P13 Leonor Saraiva, University of Coimbra, Portugal
Eutectic-inspired hydrophobic polymers: tailoring structure and degradability

P14 Bernardo Afonso Santos Monteiro Vicente, University of Aveiro, Portugal
Respiratory Signal Processing and Analysis Using Flexible Capacitive Sensor Data

P15 Sung-Tag Oh, Seoul National University of Science and Technology, South Korea
Pore Structure Control of Porous Tungsten by Freeze-Casting using Camphene and Tert-butyl Alcohol as Freezing Vehicles

P16 S. Magalhães, Instituto Superior Técnico, Portugal
The role of software in enhancing Rutherford backscattering spectrometry and ion channeling analysis

P17 Rodrigo Soares, Polytechnic University of Lisboa, Portugal
Femtosecond Laser-Induced Nanotexturing of Silicon Surfaces

P18 Idalina Gonçalves, University of Aveiro, Portugal
Luminescent starch-based films for microbial sensing in wound care

P19 Ilse Valenzuela Matus, University of Porto, Portugal
Extrusion-Based Additive Manufacturing of Substrates and Artificial Reefs of Cementitious Mortar with Crushed Mussel Shell Waste

P20 Mariana T. Donato, National Laboratory of Energy and Geology, Portugal
Fire-resistant materials: characterization and thermal behavior of intumescent gels for fire resistant glass

P21 David Carvalho, NOVA University of Lisboa, Portugal
Hydrothermal Synthesis of Metal Oxide 1D Structures for UV Light Detection

P22 Vanessa Morgado, National Laboratory of Energy and Geology, Portugal
Enhancing modular facade systems with natural materials: Durability and sustainability of wood-based solutions

P23 Sílvio Abrantes, University of Aveiro, Portugal
A Circular Approach to Tanned Leather Waste Valorization through Additive Manufacturing with Leather-Polyurethane Composites

P24 Eva Rodriguez Hortelano, University of the Basque Country, Spain
The relevance of quantifying the biodegradation of bio-based and biodegradable Polyhydroxybutyrate (PHB)

P25 Anitta Mathew, NOVA University of Lisboa, Portugal
Cellulose: A Sustainable Platform for Pressure Sensing and Energy Harvesting Devices.

P26 Bárbara Aguiar Carmo, NOVA University of Lisboa, Portugal
Nature-based Solid-State Electrolytes for Sustainable Energy Storage Devices

P27 L.M. Cacho, University of Coimbra, Portugal
Correlating Microstructural Evolution and Mechanical Performance in L-PBF 17-4 PH via In-Situ Synchrotron XRD

P28 Tiago Monteiro Matos, University of Porto, Portugal
Additive Manufacturing in Orthopedics. Mechanical Prosthetics for the Upper Limb

P29 Alexander Mirandona-Olaeta, BCMaterials, Spain
New hybrid solid-electrolytes: combination of metal-organic frameworks and ionic liquids for lithium and sodium batteries

P30 Beatriz Rodrigues, University of Aveiro, Portugal
Digital Light Processing 3D Printing of Bioinstructive Screw-shaped Si_3N_4 Implants for Enhanced Osseointegration

P31 Pedro Lopes, University of Porto, Portugal
Effect of processing parameters on the microstructure of pure iron parts produced by L-PBF

P32 Ana F. R. Cerqueira, University of Aveiro, Portugal
Antimicrobial starch-based films doped with porphyrins for wound healing

P33 Catarina Santos, Polytechnic Institute of Setúbal, Portugal
Zinc-Magnesium Layered Hydroxide Nanoparticles with Rosehip for the Management of Dental Diseases

P34 Mirela J. Santos, University of Aveiro, Portugal
Evaluation of Copper Corrosion in Simulated Solution for Gas Water Heaters: Electrochemical Study by EIS and Polarization

P35 Julen Ibarretxe, University of the Basque Country, Spain
Multiscalar characterization of themicrostructure of PLA/nanoclay compositesand its use to investigate themicrostructure – elastic modulus relationship

P37 Patrícia Freitas Rodrigues, University of Coimbra, Portugal
Integration of Shape Memory Alloy Wires into Aluminum Structures via Additive Manufacturing for Lightweight Smart Systems

P39 Carlos Matos, University of Aveiro, Portugal
An experimental study on laser deposition of Inconel-loaded polymer films

P40 Tomás Mingates, NOVA University of Lisboa, Portugal
Scalable, Low-Cost Solution Processing of 2D Materials for High-Performance RRAM Applications

P41 Joana F. Fernandes, University of Minho, Portugal
Incorporation of natural fragrances in a cosmetic packaging

P42 Raquel Azevedo Martins, NOVA University of Lisboa, Portugal
Printed ZTO memristors for reservoir computing systems

P43 Ana Mimoso, Instituto Superior Técnico, Portugal
Out of the Can: Insights into the Structure, Decorative Coatings, and Corrosion of Historical Lithographed Tinplate Cans

P44 João Pereira, University of Minho, Portugal
Material with repellent properties to mosquitoes

P45 Cláudia Freitas, University of Minho, Portugal
The Future of Lunchboxes in a Circular and Sustainable Economy

P46 Anuja Sasi Kumar, NOVA University of Lisboa, Portugal
Nanomaterial-Enhanced Textile Electrodes for Sustainable Wearable Technologies

P47 Tiago Linares, NOVA University of Lisboa, Portugal
Cellulose Nanocrystals for Enhanced Mechanical and Thermoresponsive Properties of Polysaccharide-BasedInjectable Hydrogels in Biomedical Applications

P48 João Pedro Correia, University of Aveiro, Portugal
Sustainable Carbon Structures from Apple Pomace for Methane Adsorption

P50 Amjid Rafique, NOVA University of Lisboa, Portugal
Functional Lignin Membranes: A Sustainable Path to All-Solid-State Batteries

P51 Rui A. Rego, Polytechnic of Porto, Portugal
Numerical characterization of thermal conductivity in composite materials

P52 Gabriel Oliveira, University of Aveiro, Portugal
Development of piezoelectrically active Intraoral Device

P53 Humaira Rafique, NOVA University of Lisboa, Portugal
Advanced Colloidal Quantum Dots Fabrication: Paving the Way for Efficient Multicolor LEDs and Functional Coatings

P54 Catarina Quitério, SINTEF, Norway
Enhancing Stability and Thermoelectric Performance of Tetrahedrites via Cu Substitution

P55 Edgar Coimbra, NOVA University of Lisboa, Portugal
PAPEROVSKITE: Breaking the Barriers for Perovskite Solar Cells on Paper

P56 Zohra Benzarti, University of Coimbra, Portugal
A Comparative Study of Sacrificial Anode and Impressed Current Cathodic Protection for steel water heater tank

P57 Susana Piçarra, Polytechnic Institute of Setúbal, Portugal
The Involuntary Circular Economy of (Nano)Plastics

P58 João Silva, NOVA University of Lisboa, Portugal
Solution-based transparent electrodes using silver nanowire networks for flexible perovskite solar cells

P59 Duarte Oliveira, NOVA University of Lisboa, Portugal
Thermochromic Security Inks for Anti-counterfeiting Smart Stamps

P60 Beatriz Vale, Instituto Superior Técnico, Portugal
Silver-gold nanoclusters and undecagold nanoclusters for Fluorescence Image-Guided Surgery (FIGS)

P61 Diana Gaspar, AlmaScience, Portugal
Eco-Friendly Electrode Materials: Lignin Hard Carbon Composites Integrated with MoS_2 for Superior Energy Storage

P62 Pedro Soeiro, Automotive Compounding Industry, Portugal
The effect of Post-Industrial and Post-Consumer Recycled HDPE on the physical, thermal, and mechanical properties of polyethylene compounds for automotive cable industry.

P63 André Torres-Pinto, University of Porto, Portugal
Grape pomace-derived electrocatalysts for venlafaxine removal

P64 Sara Silvestre, NOVA University of Lisboa, Portugal
MXene Supercapacitors for Sustainable Printed IoT

P65 Alexandre F. Carvalho, University of Aveiro, Portugal
Laser-defined graphitic wicks for heat-pipe applications

P66 Tulane Rodrigues da Silva, University of Aveiro, Portugal
Rheological characterization of porcelain stoneware pastes printed by robocasting containing fired ceramic waste

P68 João Pedro Freire Duarte, Instituto Pedro Nunes, Portugal
The application of the Product Environmental Footprint (PEF) methodology to packaging products: Challenges, case study and influence of recycling factors in Portugal

P69 Ana Ferreira, Instituto Pedro Nunes, Portugal
Comparative Life Cycle Assessment of a PLA–Corn Fiber Biocomposite and Conventional PP in rigid parts

P70 Sandra Cruz, Instituto Pedro Nunes, Portugal
APOLLO - A Proactive Approach to the Recovery and Recycling of Photovoltaic Modules

P71 João Pedro Martins Manaia, Instituto Pedro Nunes, Portugal
Repurposing Electric Vehicle Batteries: From Design Methodologies to Performance Testing

P72 Paul Okhiria, University of Aveiro, Portugal
Sliding Wear Performance of a wide range of WC-Co Hardmetals

P74 Ana Marta Cabral, Instituto Superior Técnico, Portugal
Influence of the Atmosphere on the Swelling of Stimuli-Responsive Polymer Nanoparticles

P75 Pedro Rosa, Instituto Superior Técnico, Portugal
Controlled Lysozyme Delivery Using Pore Surface-Functionalized Mesoporous Silica Nanoparticles

P76 Odila Florêncio, Federal University of São Carlos, Brazil
Ti-5Mo-xNb alloys synthesized by laser deposition with potential use as biomaterials

P77 Inês Vilarinho, University of Aveiro, Portugal
Stability of the cubic phase in CsSnCl3 perovskite maintained under different humidity and luminosity conditions

P78 Marinélia Capela, University of Aveiro, Portugal
Influence of hydrogen incorporation in the flue gas on the characteristics of stoneware ceramics

P79 Sandra Cruz, Instituto Pedro Nunes, Portugal
Mechanisms and Mitigation of Pitting Corrosion in Copper Tubes of Sanitary Water Heaters: Analysis, Electrochemical Testing, and Prototype Validation

P80 Midhun Dominic, Sacred Heart College Thevara, India
Nanocellulose for Green Tyre Tread: Extraction, Characterization and Property Evaluation

P81 Nefeli Lagopati, National and Kapodistrian University of Athens (NKUA), Greece
Hybrid Nanostructures for Magnetic Hyperthermia and Cytotoxicity Assessment in Cancer Cells