

Booklet

6th Meeting of the Young Researchers of LAETA

6TH EJIL 2025
PORTO **27-28 OCTOBER**

Edited by:

Ana Ramos, Margarida Machado, João Magrinho,
Ana Rita Amaral, Leandro Magalhães

INEGI – Instituto De Ciência e Inovação em Engenharia Mecânica e Industrial
Porto, Portugal

Title:

Book of Abstracts

6th Meeting of the Young Researchers of LAETA

Edited by:

Ana Ramos, Margarida Machado, João Magrinho, Ana Rita Amaral,
Leandro Magalhães

First edition, **October 2025**

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Engenharia Mecânica e Engenharia Industrial**

R. Dr. Roberto Frias, 400

4200-465 PORTO

WELCOME MESSAGE

6th Encontro de Jovens Investigadores do LAETA (EJIL 2025)

Porto, Portugal | 27–28 October 2025

Dear Participants,

It is with great pleasure that we welcome you to Porto for the 6th Encontro de Jovens Investigadores do LAETA (EJIL 2025). This event brings together young and experienced researchers from across the Associated Laboratory for Energy, Transports and Aeronautics (LAETA) and its partner institutions, fostering dialogue, collaboration, and innovation across diverse scientific fields.

Since its first edition, the EJIL has grown into a vibrant forum for the exchange of ideas, the presentation of emerging research, and the strengthening of bonds within our scientific community. The 2025 edition continues this tradition, offering an opportunity to share knowledge, inspire creativity, and encourage new collaborations that will drive future research and technological development.

This Book of Abstracts gathers the contributions presented during the conference, each abstract reflecting the dedication, curiosity, and scientific rigor of our participants, showcasing the vitality and diversity of research carried out within the LAETA network.

We would like to express our sincere gratitude to all authors, reviewers, keynote speakers, session chairs, and members of the organizing and scientific committees, whose efforts and commitment made this event possible.

We hope you find this collection both informative and inspiring, and that the discussions and connections made during EJIL 2025 will continue well beyond these two days. May this meeting in Porto strengthen the ties within our community and spark new ideas for the challenges ahead.

Welcome to EJIL 2025 — and enjoy the conference!

October 2025, Porto

With our best regards,

Ana Ramos (*Chair*), INEGI
Margarida Machado, INEGI
João Magrinho, IST
Ana Rita Amaral, ADAI
Leandro Magalhães, AEROG

CONFERENCE ORGANIZATION

Executive Committee

- Ana Ramos (*Chair*), INEGI
- Margarida Machado, INEGI
- João Magrinho, IDMEC
- Ana Rita Amaral, ADAI
- Leandro Magalhães, AEROG

Scientific Committee

- Ana Ramos - INEGI
- João Magrinho - IDMEC
- Leandro Magalhães - AEROG
- Ana Amaral - ADAI
- Carlos Viegas - ADAI
- Vírginia Infante - IDMEC
- Pedro Camanho - INEGI
- Nuno Silvestre - IDMEC
- André Silva - AEROG
- Francisco Pires - INEGI
- Manuel Gameiro - ADAI
- Abílio de Jesus - INEGI
- António Andrade - IDMEC
- Mário Vaz - INEGI
- Adélio Gaspar - ADAI
- Vitor Leal - INEGI
- João Sousa - IDMEC
- Marco Parente - INEGI
- Duarte Valério - IDMEC
- Carlos Fonseca - INEGI
- Luís Reis - IDMEC
- Eliseu Monteiro - INEGI
- Sónia Simões - INEGI

Organizing Institutions

- INEGI, Institute of Science and Innovation in Mechanical and Industrial Engineering
- IDMEC, Institute of Mechanical Engineering
- ADAI, Association for the Development of Industrial Aerodynamics
- AEROG, Aeronautics and Astronautics Research Center
- FCT, Foundation for Science and Technology
- LAETA, Associate Laboratory of Energy, Transports and Aeronautics

CONFERENCE INFORMATION

Conference Venue

The 6th Meeting of the Young Researchers of LAETA (6EJIL) takes place at the Faculty of Engineering of the University of Porto (FEUP), located in R. Dr. Roberto Frias, s/n, 4200-465, Porto.

The Faculty of Engineering is the largest faculty of the University of Porto, with a privileged location in the Porto Innovation District.

With almost 10,000 students and more than 600 professors and researchers spread over six departments: Civil and Georesources Engineering, Electrical and Computer Engineering, Mechanical Engineering, Chemical and Biological Engineering, Industrial Engineering and Management and Informatics Engineering.

FEUP is located in a true innovation district, where the strong presence of engineering, health sciences and entrepreneurship is highly conducive to the innovation process. It is also home to the University of Porto Science and Technology Park (UPTEC), a fundamental structure for supporting the transfer of knowledge between the university and the market.

Life in Campus

- [Virtual Tour](#) Faculdade de Engenharia da Universidade do Porto

How to get to FEUP

- By metro: FEUP is served by three metro stations on line D (yellow) in zone C6. Line D (yellow) connects the University Centre with Gaia City Hall in about 15 minutes, passing through Trindade, where it connects with lines A (blue), B (red) and C (green). When you get off at Pólo Universitário station, turn left into Dr Manuel Pereira da Silva Street and, after passing the Paranhos cemetery, turn left into Rua do Dr Roberto Frias. Continue until you see FEUP on your right. Leaving the IPO, you should walk the whole length of Rua do Dr Plácido da Costa and cross Dr Roberto Frias Street. You are now in front of FEUP. Leaving the Hospital de São João, follow the ring road until the intersection with Rua do Dr Roberto Frias. Follow this street until it crosses Rua do Dr Plácido da Costa. FEUP is now on your left.

For more information, see [Metro do Porto maps](#).

- By bus: there are four bus lines in the Faculty area: 204, 300, 301 and 803. Other STCP lines are also available from the Hospital de S. João, as well as regular routes to other cities. To choose the bus that best suits your needs, visit the following websites:

[STCP Lines](#)

[STCP Plan your trip](#)

- "MOVE-ME" App: To check the arrival time of your bus or metro, you can download the mobile [app MOVE-ME](#).

- By car

The best way to find the Faculty of Engineering is to follow the signs to Hospital de São João. Here are the routes to FEUP from the main points of departure.

From Ermesinde, Gondomar and Valongo on the Circunvalação road (EN12):
Follow the EN12 until you see the Hospital de São João on your left. At the traffic lights with Rua Dr Roberto Frias, go straight ahead and keep to the left. At the next set of traffic lights, turn left into Rua António Bernardino Almeida (with the IPO on your right) and continue straight ahead until you reach the junction with Rua do Dr Plácido da Costa. Keep to the left until you reach the next junction, where you should turn left. Continue along this road until you come to another T-junction, where you should turn left. Continue until you reach the end of the road, which ends in Rua do Dr Roberto Frias, where you should turn left. Keep to the right until you reach the junction with Via Estruturante, where you should turn right.

From Maia and Matosinhos on the Circunvalação road (EN12):
Follow the EN12 until you see the IPO on your right. At the traffic lights, turn right into Rua António Bernardino Almeida (bypassing the IPO) and continue straight ahead until you reach the junction with Rua do Dr Plácido da Costa. Keep to the left until you reach the next junction, where you should turn left. Continue along this road until you reach another junction where you should turn left. Continue until you reach the end of the road that leads to Rua do Dr Roberto Frias, where you should turn left. Keep to the right until you reach the junction with Via Estruturante, where you should turn right.

- By train: If you arrive in the city of Porto by train, you have two options: If you arrive at Campanhã station, take the metro and choose one of the following lines: A (blue), B (red), C (green), or E (purple). You will need to transfer at

If you arrive from the main entrance side, go up the stairs on your right hand-side and follow the long corridor (marked with B in the map), until you reach the so called FEUP lounge area, outside of which the registration desk will be located. There will be signs along the way and the registration desk will be easily identified.

Life in Campus

Safety: Information on safety procedures in the event of an unusual or dangerous situation on the Faculty of Engineering campus.

Dangerous situation

If you detect an unusual or potentially dangerous situation for people, equipment, and/or the environment, immediately alert the Security Officer, either in person or through the internal emergency number - #115 (from any internal extension within FEUP's network) or (+351) 91 22 333 77.

Safety information and procedures to be followed on the campus of the Faculty of Engineering, University of Porto.

Medical Emergency

In the event of sudden illness or an accident with victims, call 112 (National Emergency Number) directly. The Emergency Central Operator will ask for information about the victim, which will enable a quick and effective response and the dispatch of appropriate emergency services. After calling 112, you should immediately contact the Security Officer - #115 (from any internal extension within FEUP's network) or (+351) 91 22 333 77 - so that they can take the necessary steps to send FEUP first responders to the location and facilitate access for the ambulance.

Safety team

The Safety Team is made up of staff from FEUP, the University of Porto, and other entities providing services at FEUP, all of whom are adequately trained and responsible for implementing and enforcing safety measures in line with the Internal Safety Plan. The team members are divided into various groups: Evacuation Teams, Fire Brigade, First Responders, and Technical Teams.

In case of an emergency or during a safety drill, follow the instructions of the Evacuation Coordinators and cooperate with the team - they will be identifiable by

their vests.

Emergency Contacts

Emergency internal number: #115 (FEUP internal network), or (+351) 91 22 333 77

External entities

National Emergency Number: 112

Fire Brigade Battalion: (+351) 225 073 700

Porto Volunteer Firefighters: (+351) 226 151 800

Civil Protection (ANPC): (+351) 226 197 650

Poison Information Centre (CIAV): (+351) 800 250 250

SNS24: (+351) 808 24 24 24

PSP - Bom Pastor: (+351) 222 461 360

GNR - (+351) 223 399 600

Judicial Police (on-call): (+351) 225 088 644

Internal contacts

Management: 1622

Technical Maintenance and Environmental Services: 1500

Infodesk: 1400

FEUP First Aid (internal contacts)

Ana Carvalho (SICC): 4502

Daniel Reis (UPDigital): 3070

Fernando Silva (STMA): 4739

José Luís Moreira (DEQB): 3686

Maria Clara Ferreira (STMA): 4739

Nuno Pereira (STMA): 4739

Patrícia Pereira (DECG): 3784

Ramiro Soares (DEMec): 3122

Ricardo Barbosa (SEAG) 3521

Ricardo Silva (SDI): 3829

Rui Carvalho (DEEC): 3287

Secretariat Opening Hours

- Monday, October 27: 09h00 – 18h00
- Tuesday, October 28: 8h30 – 17h30

Coffee Breaks and Lunches

The coffee breaks and lunches will take place at FEUP Lounge area, just next to the registration desk and will be available for all participants. A vegetarian option will also be provided. Please wear your conference badge.

Instructions for Presenters

Each Oral presentation will take 15 minutes: 12 minutes for presentation + 3 minutes for discussion.

- The files required for the presentation (PowerPoint or PDF) should be uploaded, and tested to ensure compatibility, during the coffee or lunch breaks before the beginning of the session. Please deliver your presentation in a USB key to the technical staff in the room.
- The lecture rooms contain a Windows PC, with Office and Acrobat PDF Reader, connected to a data projector. The use of personal computers is not recommended.

Wireless Internet Access

Participants without access to Eduroam should take the following steps:

Step 1 - Connect your mobile device to the UPorto wifi network.

Step 2 - Open a browser and enter the portal to the following credentials:

Username: LAETA2025

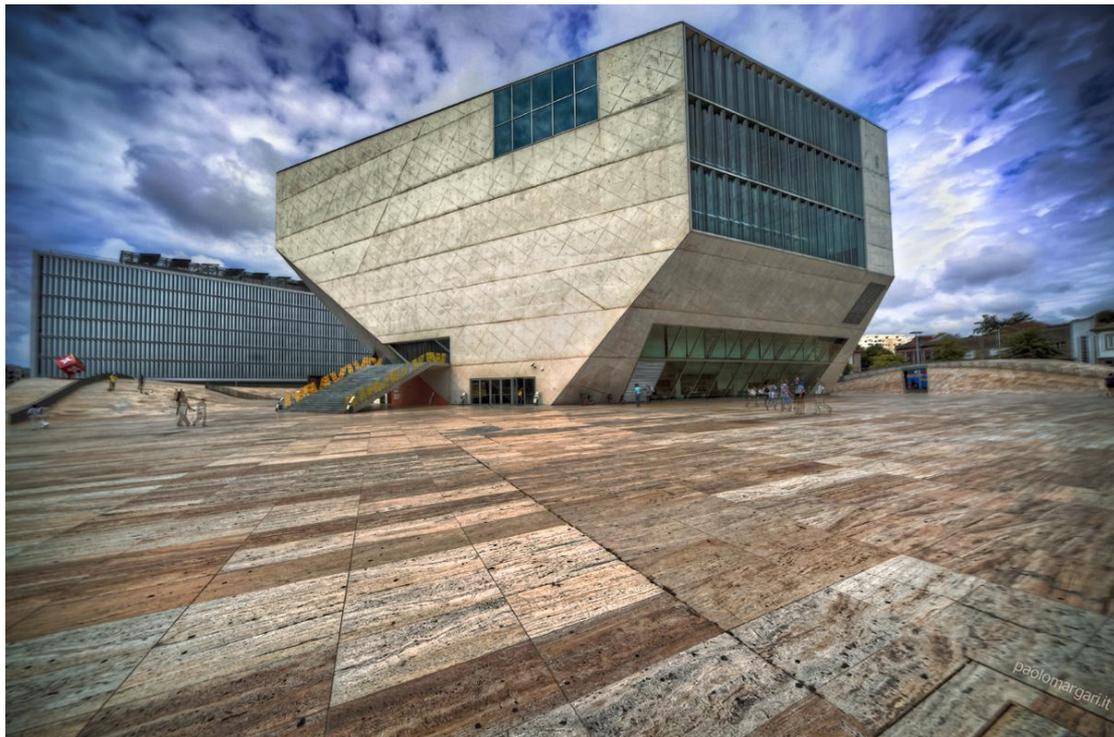
Password: Events2025%

SOCIAL PROGRAM

Conference Dinner

Conference Dinner – Monday, October 27, 20:00h

The conference dinner will take place at the Casa da Música restaurant, located in Av. da Boavista, 604-610, 4149-071, Porto, Portugal



[GPS info:](#)

41.158400, -8631000

+41° 9' 30.24" , -8° 37' 51.60"

The best way to reach Casa da Música is by:

- METRO

Lines A, B, C, E and F

Hours: 06:00 / 01:00 – Every day of the year

<http://www.metroporto.pt>

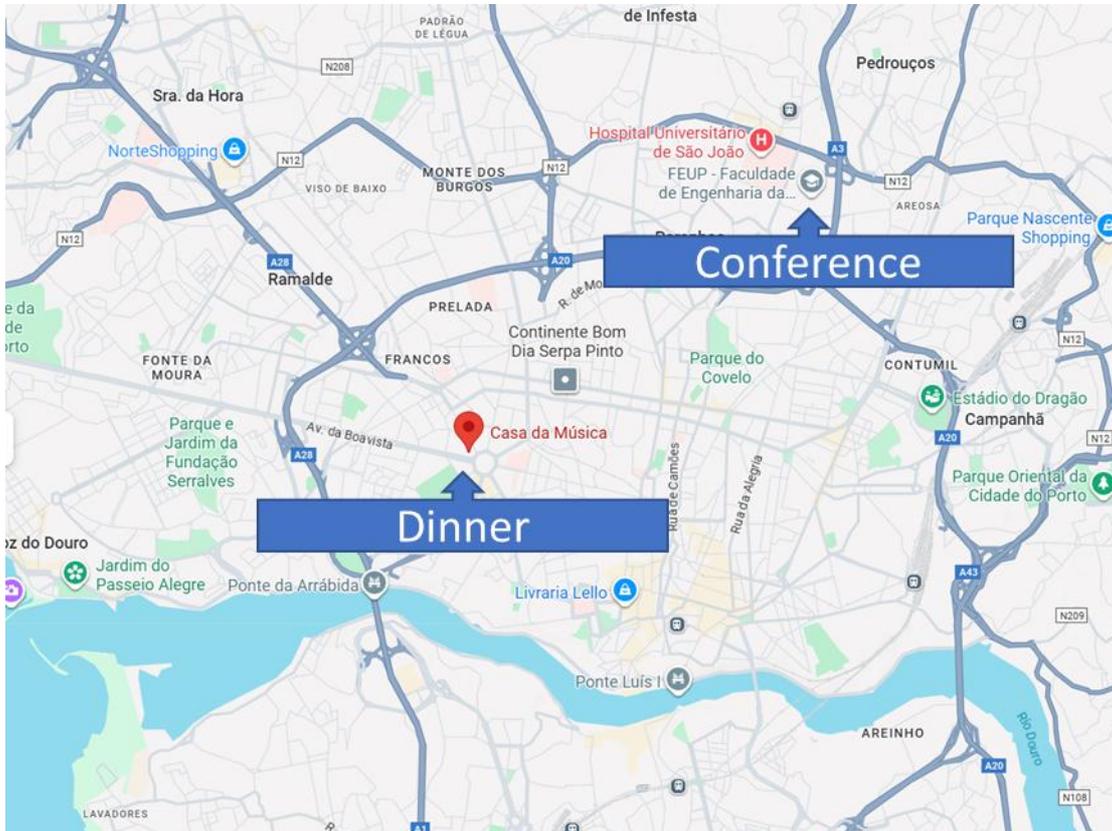
[Metro do Porto / Maps and Timetables](#)

- Bus

STCP – 201, 202, 203, 204, 208, 209, 303, 402, 501, 502, 503, 504, 507, 601, 803, 902, 903

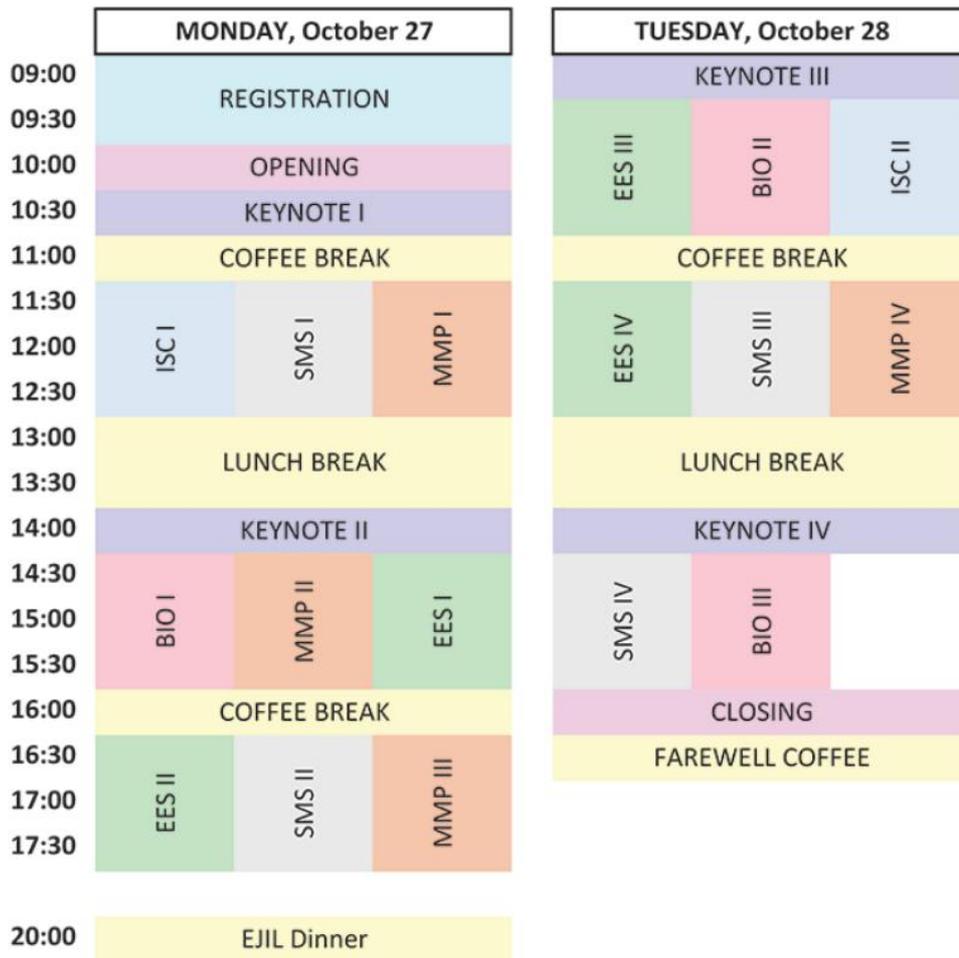
www.stcp.pt

Porto Map



SCIENTIFIC PROGRAM

Program Overview



Detailed Program

6th EJIL 2025

Detailed Programme

Porto, PORTUGAL

MONDAY, October 27		Chair	Co-Chair	Local
09:00	10:00	REGISTRATION		Front Desk
10:00	10:30	OPENNING CEREMONY		B003
10:30	11:00	KEYNOTE I <i>Virgínia Infante (IDMEC) LAETA 2025-2029 Multiannual Programme.</i>		B003
11:00	11:30	COFFEE BREAK		Lounge
PARALLEL SESSIONS 1: ISC I, SMS I & MMP I				
11:30	13:00	ISC I: Intelligent Systems & Control <i>Afonso Carvalho, Ant colony Optimization applied to traditional and non-traditional warehouse layouts.</i> <i>Miguel S. E. Martins, A Digital Twin of the Ocean for the Azores Technological Free Zone.</i> <i>Jhonny Rodrigues, A Framework to Physics-Informed Neural Networks for thermal distribution in composite materials.</i> <i>Fillipe Santos, Hidden Yet Exposed: Embeddings Encode Sensitive Information.</i> <i>André R. Silva, Preliminary Exploration of IK3070 Airfoil Dynamics Using Machine Learning.</i> <i>João P. M. Oliveira, Task-Parameterized Learning of Nonlinear Stable-Dynamical Systems.</i>		B001
11:30	13:00	SMS I: Structures & Mechanical Systems <i>Alexandre M. Palaio, Improvement of a Fast Conceptual Rocket Design and Trajectory Optimization Framework with Hybrid Engine Model.</i> <i>Erdem Dintler, Unveiling Interrelations among Mechanical Properties of Polymer Composites.</i> <i>Francisco Machado, XFOIL Neural Network: A Data-Driven Surrogate for 2D Airfoil Aerodynamic Analysis.</i> <i>Francisco Portela, New design of Bogie Y25 for Iberian Railway Gauge.</i> <i>Vitor Silva, Validation of Finite-Element Model of a MALE UAV Composite Wing with Experimental Static Bending Test.</i> <i>Rui Coelho, Composite Bayesian Optimisation for the Analysis and Design of Materials and Structures.</i>		B002
11:30	13:00	MMP I: Materials & Manufacturing Processes <i>Bernardo L. Ribeiro, Complex Concentrated Alloys as a Pathway to Next-Generation Lead-Free Brasses.</i> <i>Daniel S. Correia, Development of a unified specimen for direct generation of cohesive zone law data of adhesives.</i> <i>Hélder Nunes, Valorisation of Al-Si Secondary Alloys through Controlled Rare Earth Microalloying.</i> <i>Vasco Rodrigues, Debonding methods for electric vehicles battery packs.</i> <i>Luis Piedra Marin, Atomic-Scale Visualization of Moiré Patterns in Graphene Using TEM.</i> <i>Duarte Cachulo, Hydrogen environmental embrittlement in high-strength steels and their welds: from unified continuum-mechanics modeling to in-situ experimental characterization.</i>		B003
13:00	14:00	LUNCH BREAK		Lounge
14:00	14:30	KEYNOTE II <i>André Silva (AEROG) Open Science in the Research Process.</i>		B003
PARALLEL SESSIONS 2: BIO I, MMP II & EES I				
14:30	16:00	BIO I: Biomechanics <i>Carlos Quental, Application of statistical shape models in the 3D reconstruction of the scapula and estimation of the glenohumeral joint center from limited data.</i> <i>Margarida Neves, A Geometry Based Simplified L4-S1 Finite Element Model for Topology Optimization of Spinal Cages.</i> <i>Catarina Rocha, Impact of Anterolateral Ligament Reconstruction on Knee Joint Pressure Following ACL Surgery.</i> <i>Madalena Antunes, A rotational driving constraint based on relative Euler parameters for redundancy-free multibody kinematics and dynamics.</i> <i>Luis Pacheco, Polynomial Surrogates for F-Actin Networks with Compliant Crosslinkers.</i> <i>Sérgio B. Gonçalves, H-Move: A Novel Multibody Tool Based on Fully Cartesian Coordinates and a Generic Rigid Body Formulation for Biomechanical System Analysis.</i>		B001
14:30	16:00	MMP II: Materials & Manufacturing Processes <i>João Magrinho, Improving Local Formability in Sheet Injection Using Tailored Laser Heat Treatment.</i> <i>Jorge Gil, Predicting the fatigue life of 18Ni300 Maraging steel produced via directed energy deposition: an heuristic method.</i> <i>Pedro Rosado, Towards thin-walled construction by arc-based directed energy deposition via adaptive three-axis deposition strategies.</i> <i>Fahad Zafer, Characterization of Green Feedstock for Additive Manufacturing – Case study of a High-strength Aluminium alloy powder.</i> <i>Tiago Oliveira, Chemical-mechanical Devulcanization of SBR at Low Temperatures.</i> <i>Alina Rodrigues, An iterative design of experiments approach for 4D printing of PLA/EVA blends.</i>		B002
14:30	16:00	EES I: Energy, Environment & Sustainability <i>James D'gundiran, A Comparative Study on Indoor Air Quality, Air Stiffness, and Air Change Rate in Classrooms with Different Ventilation Strategies.</i> <i>Fátima Felgueiras, Exploring the impact of indoor plants in modern offices on IEQ and workers' health, well-being and productivity.</i> <i>Muhammad Tavab Waheed, IEQ in healthcare settings: Impact of continuous monitoring system on Infection risk, Thermal comfort and Energy Efficiency.</i> <i>João Pedro Cardoso, Modelling for net zero and positive energy districts: integrating new technological solutions.</i> <i>Sofia Gonçalves, Integrated Experimental-Modelling Framework for Colorific Energy Assessment in a Microwave Dual-Mode Cylindrical Cavity.</i> <i>Bruno Cardoso, The Afroenergy project: Empowering Mozambique for a just energy transition and improved living conditions.</i>		B003
16:00	16:30	COFFEE BREAK		Lounge
PARALLEL SESSIONS 3: EES II, SMS II & MMP III				
16:30	18:00	EES II: Energy, Environment & Sustainability <i>Beatriz Arouca Maia, Design of Nanostructured LFP-Based Cathodes via Ultra-Low CNT Loading.</i> <i>Joana Gouveia, Driving Sustainability in Solid-State Battery Design: A Regulatory Blueprint for Ecodesign Excellence.</i> <i>Tiago Fernandes, Towards Lab-Scale Implementation of a Heat Pump-Organic Rankine Cycle Carnot Battery.</i> <i>Manuela Baptista, Anode-less solid-state batteries with a ferroelectric electrolyte: improved performance.</i> <i>Sara Pinto, European Regulations for the Digital Product Passport Implementation – A Transition to a Sustainable Economy.</i> <i>Carlos Viegas, Challenges and breakthroughs towards the automation and electrification of forestry heavy machines.</i>		B001
16:30	18:00	SMS II: Structures & Mechanical Systems <i>António Carneiro, A Unified Approach to Contact between Rough Surfaces: Contact Homogenisation with the Method of Multiscale Virtual Power.</i> <i>Adriana Oliveira, Wing Fatigue in the VHSF Regime: Numerical and Experimental Simulations.</i> <i>Igor Lopes, FE2 Modelling of Localisation with Second-Order Homogenisation with Emphasis on the Impact of the RVE Length and the Interplay between Mesh-Dependency Across Scales.</i> <i>Paulo Ricardo Rocha, Effect of the temporal discretization of contact forces on dynamic contact simulations using modified mass matrix.</i> <i>Pedro Pinto, Damage Modelling of Bolt-less HYPER Joints for Composite Connections.</i> <i>Francisco Ricardo, Axial Structural Stiffness Effects on Gear Dynamic Behaviour.</i>		B002
16:30	18:00	MMP III: Materials & manufacturing Processes <i>Matilde Martins, Design, Manufacturing and Testing of an Innovative Ultrasonic Fatigue Specimen Composed of Cellular Structures.</i> <i>Beatriz Sousa Monteiro, Influence of Substrate Roughness and Coating Composition on HIPIMS-Coated SiAlON Cutting Tools.</i> <i>Inês Almeida, Formability limits in thin-walled tubes with square cross section and L-section profiles.</i> <i>Ruben Costa, Internal Hole Quality Assessment in the Drilling of Thin CFRP/Al Multi-Material Stacks.</i> <i>João Viegas, A new methodology for controlled thickness in deformation machining.</i> <i>Francisco Bumba Paça, Application of Stress scale factor approach to 316L stainless steel produced by powder bed fusion-laser beam.</i>		B003
20:00	23:00	EJIL 2025 DINNER		Casa da Música

6th EJIL 2025

Detailed Programme

Porto, PORTUGAL

		TUESDAY, October 28		
Time	Topic	Chair	Co-Chair	Local
09:00 - 09:30	KEYNOTE III Nuno Silvestre (IDMEC) <i>Wrinkling Mitigation in Solar Sails Through a Multiscale Approach.</i>	Leandro Magalhães (AEROG)		B003
PARALLEL SESSIONS 4: EES III, BIO II & ISC II				
09:30 - 11:00	EES III: Energy, Environment & Sustainability Guilherme Grácio, <i>Optimization of a Hydrogen and Natural Gas Blending and Injection Station.</i> Miguel Coelho, <i>Techno-economic performance analysis and environmental impact assessment of transporting hydrogen through pipelines.</i> João Martins, <i>Effect of Turbulence Models on Hydrogen Injection Flow Dynamics in Natural Gas Pipelines.</i> Shiyuan Yang, <i>Intelligent identification of hydrogen trap information in temperature-programmed hydrogen desorption.</i> Maryam Karim, <i>Investigating the Degradation Mechanisms of IrO₂ Catalysts for PEM Water Electrolysis Using In-Situ Scanning Transmission Electron Microscopy.</i> Daniela Alves, <i>Moisture content of live and dead fine fuels and their relation to meteorological conditions and wildfire activity in the Central Region of Portugal (2000-2024).</i> Leandro Magalhães, <i>Evaluation of Different CO₂ Capture Technologies - Life Cycle Assessment approach.</i>	Manuel Gameiro (ADAI)	Leandro Magalhães (AEROG)	B003
09:30 - 11:00	BIO II: Biomechanics David Lopes, <i>Development of biomimetic polyvinyl alcohol/ polyethylene oxide/ lysine membranes functionalized with ibuprofen and salicylic acid for application in the regeneration of skin wounds.</i> Evangelia Antoniadj, <i>Development of Melt-Electrowritten Mesh Implants with Integrated Antistatic Properties for Hernia Repair.</i> Jhoselyn Acosta Yanez, <i>Production of 3D printed scaffolds coated with Gelatin and Tree tea oil for future application in bone tissue regeneration.</i> Nuno Miguel Ferreira, <i>Mechanical Suitability of Biodegradable Meshes in Pelvic Organ Prolapse Treatment.</i> Pedro Nogueira, <i>Experimental evaluation of intended decay of mechanical properties in iron lattice materials for biodegradable implants.</i> Sérgio B. Gonçalves, <i>On the Analysis of the Hemocompatibility of 3D-Printed ABS.</i>	Carlos Fonseca (INEGI)	João Magrinho (IDMEC)	B016
09:30 - 11:00	ISC II: Intelligent Systems & Control Armin Hallicki, <i>A Requirements-Driven Control Architecture for Coordinated Robotic Ocean Surveys.</i> João Madeiras, <i>Quadrotor Trajectory Tracking: An Almost Global Full-State Solution.</i> Fábio Silva, <i>Benchmarking CNN Architectures for Robust Surface Defect Detection Across Multiple Domains.</i> Luís Martins, <i>Robust Global Exponential Attitude Tracking on SO(3) via Optimal MRP-Based Hybrid Feedback.</i> João Bogas, <i>Cost-Effective AUV Navigation.</i> Pedro Santos, <i>Trajectory Tracking Control for Sounding Rockets via Adaptive Feedback Linearization.</i>	João Sousa (IDMEC)	Ana Ramos (INEGI)	B015
11:00 - 11:30	COFFEE BREAK			Lounge
PARALLEL SESSIONS 5: EES IV, SMS III & MMP IV				
11:30 - 13:00	EES IV: Energy, Environment & Sustainability Ana Ramos, <i>Environmental and Economic Benchmarking of Municipal Waste Management through Waste-to-Energy Techniques.</i> Rui Silva, <i>Development of a HTHP design tool for industrial waste heat recovery system integrated with a two-phase variable geometry ejector and IHX using natural refrigerants.</i> Bruno Cardoso, <i>Understanding Energy Efficiency Barriers and Drivers in the Portuguese Water Sector: Upstream and Downstream Perspectives.</i> Mariam Sakhrail, <i>Trends, Gaps, and Methodological Challenges in Kinetic Modeling of Biomass Torrefaction: A Systematic TGA Review.</i> Filipe Neves, <i>Biomass combustion using a transient state approach.</i> Matheus Oliveira, <i>Valorization of Plastic-Biomass Mixtures in Co-Gasification: Simulation and Performance Assessment Using Aspen Plus®.</i> Diogo Oliveira, <i>Balancing beef: a physics-based multi objective framework for profit-sustainability trade-offs in beef production.</i>	Eliseu Monteiro (INEGI)	Carlos Viegas (ADAI)	B016
11:30 - 13:00	SMS III: Structures & Mechanical Systems Nuno Matos, <i>Automatic Aircraft Parametric Shape Generation for Design Optimization.</i> Júlia Ribeiro, <i>A Systematic Review of Cabin Noise Control Strategies for VTOL Aircraft.</i> Pedro Cardoso, <i>Low Reynolds UAV Airfoil Adjoint-Based Optimization with SA-BCM Transition Model.</i> Pedro Brito, <i>Aeroelastic simulation of torsional vibrations in a single-axis solar tracker.</i> Renato Morais, <i>Numerical Modeling of Oceanic Asteroid Impacts Using LSDYNA.</i> Pegah Mohammadpour, <i>Estimating Forest Canopy Fuel Parameters Using a Multi-Source LIDAR Approach for Central Portugal.</i>	Francisco Pires (INEGI)	Leandro Magalhães (AEROG)	B015
11:30 - 13:00	MMP IV: Materials & manufacturing Processes Ana Rita Carreiras, <i>Production of thermoplastic composites by pultrusion.</i> Arménio Correia, <i>Feasibility research on metal-polymer composite panels with integrated channels for thermal management systems.</i> Beatriz Pereira, <i>Assessment of embedded-element-based models for micro-scale simulation of fibre-reinforced composites.</i> Cláudia Moura, <i>Sustainable valorization of wool keratin waste into functional nanofibers via electrospinning using deep eutectic solvents.</i> Ruben Pereira, <i>On the investigation of tailoring local permeabilities of ADFP thin-ply preforms on the enhancement of their VI processability.</i> Benjamin Andoh-Appiah, <i>Modular Onshore Power Supply Containers Made From Reused End-Of-Life Wind Turbine Blades.</i> Pedro Lopes, <i>Microstructural and Physical Characterization of Atomized 195 SP Iron Powder for Laser Powder Bed Fusion.</i>	Sónia Simões (INEGI)	João Magrinho (IDMEC)	B003
13:00 - 14:00	LUNCH BREAK			Lounge
14:00 - 14:30	KEYNOTE IV Pedro Camanho, <i>How to write competitive research proposals - a personal view</i>	João Magrinho (IDMEC)		B003
PARALLEL SESSIONS 6: SMS IV & BIO III				
14:30 - 16:00	SMS IV: Structures & Mechanical Systems João Marafona, <i>How Gear Mesh Stiffness Asymmetry Influences Gear Behaviour.</i> Rita Dantas, <i>An analysis of the frequency effect in fatigue data: from uniaxial to multiaxial loading.</i> Pedro Marques, <i>Modified gears for constant mesh stiffness.</i> Abhishhek S. Bhadouria, <i>Identifying the most appropriate lifetime variable for maintenance freight wagon wheelsets.</i> Stéphane Portron, <i>Investigating Gear Mesh Stiffness in High Contact Ratio Plastic Gears.</i> Tiago Sabino, <i>Toward modeling transfer film evolution in tribological contacts: A preliminary computational approach.</i>	António Andrade (IDMEC)	Leandro Magalhães (AEROG)	B003
14:30 - 16:00	BIO III: Biomechanics Micaela Cunha Rodrigues, <i>Association between Maximum Handgrip Strength and Force-Time Curve Indicators from Handgrip Digital Dynamometry with Undernutrition Risk in a Multicentre Cross-Sectional Sample of Heart Failure Outpatients - The NUTRIC Project.</i> Rita Moura, <i>Modeling the Dynamics of Vacuum-Assisted Delivery: A Biomechanical Study.</i> Joana Cerqueira, <i>Diagnosis, Monitoring, and Functional Recovery of Knee Musculoskeletal Injuries.</i> Flávio L. Lázaro, <i>Identifying Human Factors in Aviation Accidents with Natural Language Processing and Machine Learning Models.</i> Vasco Reis, <i>Immersive Tools for The Future of Mining Engineering Students.</i>	Mário Vaz (INEGI)	João Magrinho (IDMEC)	B015
16:00 - 16:30	CLOSING CEREMONY			B003
16:30 - 17:30	FAREWELL COFFEE			Lounge



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