

Conference Schedule

Time Slot	February 25 (Wednesday)	February 26 (Thursday)	February 27 (Friday)
8.00h-8.30h	Opening Ceremony	Virtual Hall Opening	Virtual Hall Opening
8.30h-9.30h	Charla Magistral Dr. José I. Huertas (Chair Dra. Mariela Cerrada)	Charla Magistral Dr. John R. Agudelo (Chair Dra. Mónica Huerta)	Charla Magistral Dr. Josué Enriquez-Zárate (Chair Dr. René-Vinicio Sánchez)
9.30h-10.30h	<p>Industry 4.0 and Digital Transformation</p> <p>ID 23: Artificial Intelligence in Precision Agriculture: A Bibliometric Mapping Review.</p> <p>ID 34: Design and Implementation of a Low-Cost Hybrid HMI for Geometric Inspection Based on Embedded Platforms.</p> <p>ID 35: MQTT-Synchronised Digital Twin Architecture for a Linear-Actuated Delta Robot.</p> <p>ID 51: Architecture for LegalTech Governance: A Holistic Multidimensional Framework Integrating AI, Blockchain, Cybersecurity, Workflows and Enterprise Standards.</p>	<p>Mechatronic Systems and Control</p> <p>ID 7: Simulation-Based Comparison of Model-Based and Model-Free Controllers for Robotino Trajectory Tracking.</p> <p>ID 15: A Model-Free Dynamic Sliding Mode Control for Nonlinear Processes.</p> <p>ID 16: An Adaptive Fractional Order PID Controller for Nonlinear Processes.</p> <p>ID 17: Cascade Sliding Mode Control for Robust Trajectory Tracking of Aerial Manipulators.</p>	<p>Mechatronic Systems and Control</p> <p>ID 18: Model Reference Adaptive Vs Model-Free Control: A Study on Quadruple-Tank.</p> <p>ID 19: Unified Control of Trajectory Tracking and Obstacle Avoidance in a Mobile Robot Using Virtual Forces: Experimental Validation.</p> <p>Thermodynamics and Fluid Mechanics</p> <p>ID 22: Optimizing Biochar Yield in Slow Co-Pyrolysis: Kinetic and Synergistic Effects of Agave Bagasse-HDPE Mixtures.</p> <p>ID 71: Experimental Study of the Penetration Depth of Vertical Immersion Jets.</p>
10.30h-11.00h	BREAK	BREAK	BREAK

11.00 -12.00h	<p>Energy and Sustainability</p> <p>ID 9: Implementation of QR Codes in Energy Meter Reading: Reducing Time and Improving Productivity.</p> <p>ID 27: Methodology for the Experimental Determination of the Flammability Limits of Ternary $\text{CH}_4/\text{C}_3\text{H}_8/\text{H}_2$ Mixtures with High Concentrations Of H_2.</p> <p>ID 28: Techno-Economic Sizing of Wind-Photovoltaic Systems for Andean Cities: A Case Study in Cuenca, Ecuador.</p> <p>ID 37: Comparative Analysis of Heating Load Calculations in High-Altitude Rural Dwellings in the Peruvian Andes: Ashrae Steady-State Method vs ISO 13790 Simple Hourly Mode.</p>	<p>Energy and Sustainability</p> <p>ID 38: Computational Study of Power Deposition in a Solid Fuel Micro Reactor Using OpenMC.</p> <p>ID 46: Estimation of Vehicular Emission Factors in the City of Nueva Loja.</p> <p>ID 48: A review of unmanned ground vehicle propulsion using nonconventional energy technologies for military logistics response.</p> <p>ID 59: Evaluation and Characterization of Products from the Pyrolysis of Used Tires Under Variable Thermal Conditions.</p>	<p>Biomechanics and Medical Engineering</p> <p>ID 64: Numerical simulation of needle insertion in lumbar zone.</p> <p>ID 72: A Novel Data-Driven Decision Framework for Gait Assistive Technologies: A Methodological Proposal Triangulating Qualitative User Insights and Markerless Analysis.</p> <p>ID 73: Technical Simulation and Competencies Procedural: Evaluation of a Training Intervention Based on a Diesel Injection Simulator.</p> <p>ID 78: Development of a Biomechanical Motion Capture and Analysis System for the Sport of Pelota Nacional.</p>
12.00h-13.00h	<p>Charla Magistral Dra. Mary Vergara (Chair Dra. Mariela Cerrada)</p>	<p>Charla Industrial EDC Tecnología & Dassault Systèmes (Chair Dr. Roger Clotet)</p>	<p>Charla Magistral Dr. Jairo Serrano (Chair Dr. Jairo Saco)</p>
13.00h-14.00h	BREAK (Lunch)	BREAK (Lunch)	BREAK (Lunch)

<p>14.00h-15.00h</p>	<p>Mobility and Transportations Systems</p> <p>ID 29: Triboinformatic Modelling for Concentration Estimation of Nanoadditives in Lubricants by Machine Learning Algorithms.</p> <p>ID 67: Dual-Feed Flux Modulated Machines: A Review Toward Electrically Redundant Actuation in EV Powertrains.</p> <p>Asset Management and Maintenance (2)</p> <p>ID 42: Safety Compliance and Maintenance Gaps in Liquefied Petroleum Gas Systems: An Empirical Assessment of Commercial Installations.</p> <p>ID 79: Vibration-Based Diagnostic Techniques for Fault Identification in Industrial Machinery.</p>	<p>Industry 4.0 and Digital Transformation</p> <p>ID 63: A Low-Cost IoT-Based Residential Surveillance System with Real-Time Notifications.</p> <p>ID 70: Intelligent Navigation for Thermal Surveillance: Algorithmic Design for Autonomous Robots in Smart Cities.</p> <p>ID 74: Simulation and Propagation Analysis of an RFID-Based Asset Protection System for University Campuses.</p> <p>ID 76: Remote Monitoring System for Growth and Counting of Freedom Roses Using Computer Vision and Agricultural IoT with Edge Processing.</p>	<p>Innovation in Engineering Education</p> <p>ID 10: Experimental Validation of Peak Impact Force Models of Rolling Rubber Balls: Extending the Brachistochrone Problem.</p> <p>ID 55: Energy Transition and Mining Reindustrialization in Colombia: A Three-Phase Model Towards the Circular Economy.</p> <p>ID 61: Teaching Nonlinear Model Predictive Control: A Two-Tank Process Case Study.</p>
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<p>15.00h-16.30h</p>	<p>Manufacturing and Advanced Materials</p> <p>ID 8: Comparative Analysis Between Oxyacetylene and Hot Press Welding for Joints of Aluminum and Composite Materials.</p> <p>ID 32: Multivariate Impact Response Analysis of Carbon Fibre Tubes Using X-Statist: A Triadic Approach to Identify Common and Differential Mechanical Patterns Across Tube Types.</p> <p>ID 36: Towards Sustainable Structural Concrete: Performance and Environmental Implications of Recycled Concrete Aggregates.</p> <p>ID 66: Aluminum Metallic Foams with Diamond and Truncated-Octahedron Lattice Geometries: Mechanical Properties Comparison.</p>	<p>Fundamentals, Design and Development of Mechanical Systems</p> <p>ID 13: Mechanical Performance of Polymethyl Methacrylate Cranial Implants With and Without Hole.</p> <p>ID 30: Kinematic Analysis and Parametric Refinement of a Four-Bar Linkage for the Development of a Bioinspired Uniaxial Actuators</p> <p>ID 39: Ultrasonic Non-Destructive Technique for Health Assessment of In-Service HDPE Gas Pipelines.</p> <p>ID 40: Experimental Characterization of The Vibrational Behavior of a Rotating Test Bench Using the Operational Deflection Shape (ODS) Technique.</p> <p>ID 54: Design and CFD Analysis of a Turbojet Combustion Chamber Based on a Turbocharger.</p> <p>ID 60: Re-Engineering and Automation of a Vertical Flammability Test Chamber: Design Validation and its Impact on the Measurement Uncertainty of Textile Combustion Index.</p>	<p>Closing Ceremony and Awards</p>
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