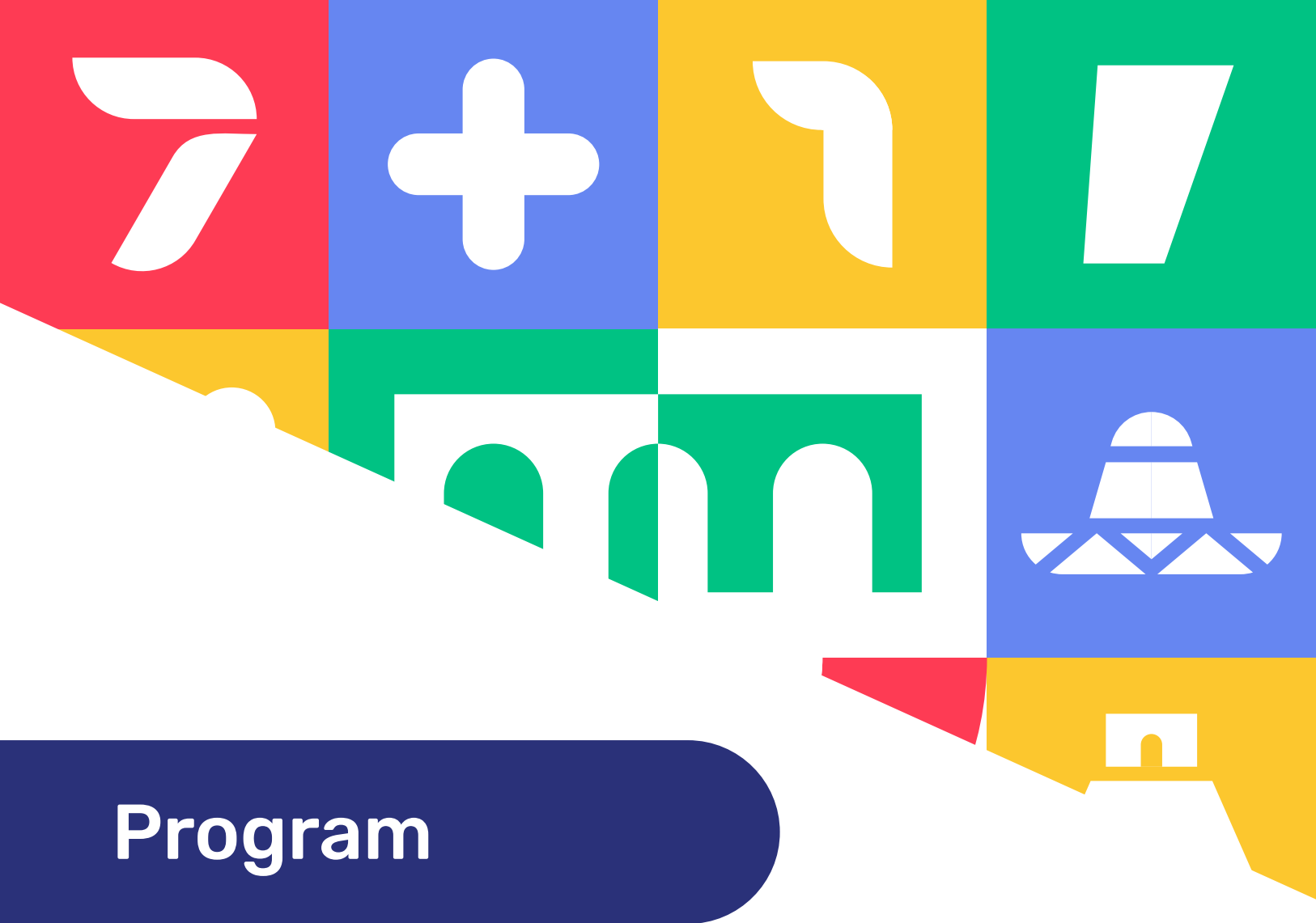




International Meeting for Researchers in Materials and Plasma Technology



IMRMPT
Querétaro
México, 2025



Foristom
Foundation



International Meeting for
Researchers in Materials
and Plasma Technology
Querétaro, Mexico, 2025



Juan Muñoz Saldaña

Chairman 7th IMRMPT

Ely Dannier V. Niño

Editor, Layout Coordinator

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Invited Speakers

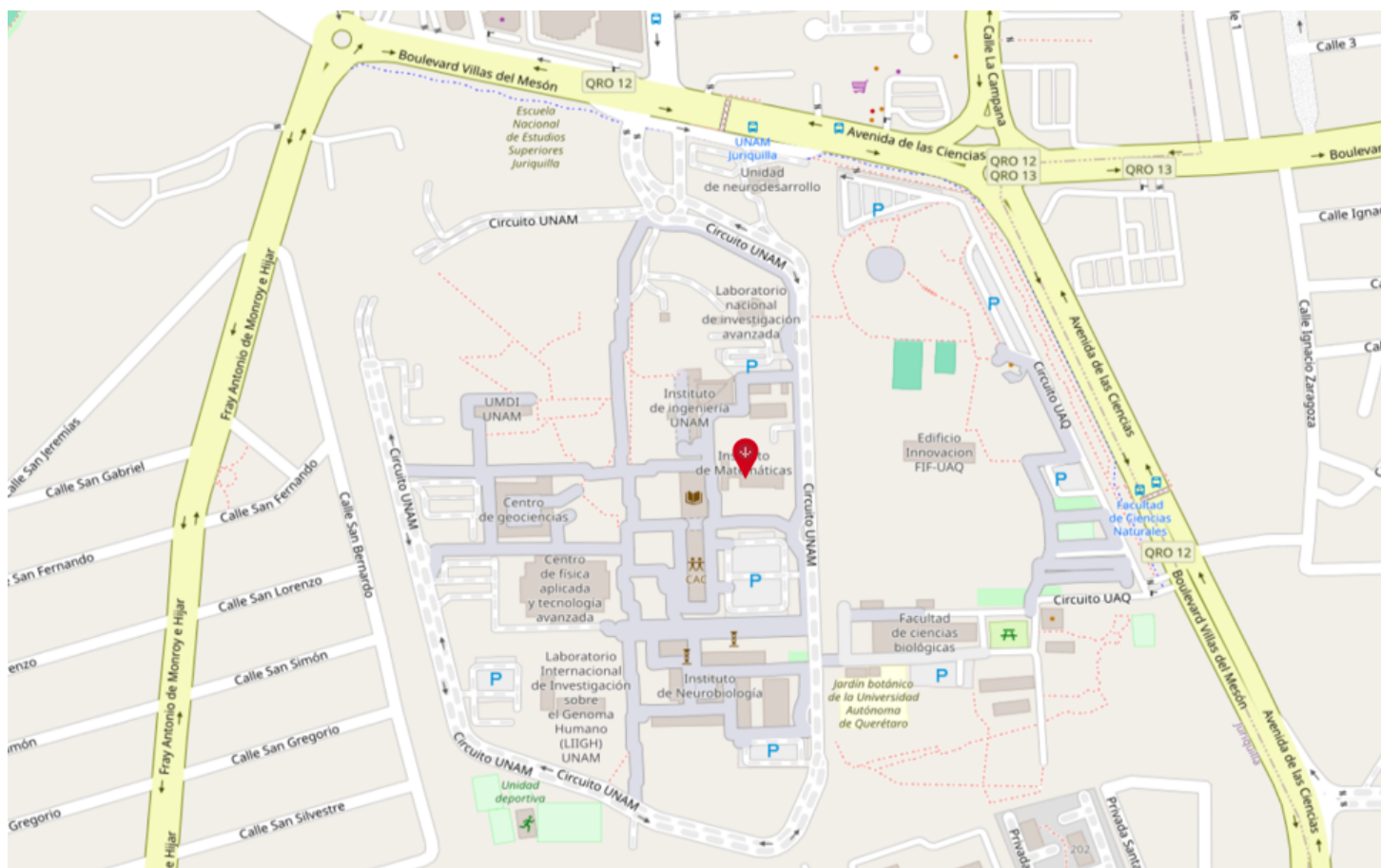
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- ✓ Mildred Quintana
Universidad Autónoma de San Luis Potosí, México
- ✓ Sebastián Díaz de la Torre
Instituto Politécnico Nacional, México



CONFERENCE VENUE

Universidad Nacional Autónoma de México, campus Juriquilla

The Juriquilla Campus of the National Autonomous University of Mexico (UNAM) is located in Juriquilla town, Querétaro, Mexico; the academic and scientific centers and institutes house some undergraduate and graduate study programs oriented to natural sciences and engineering. The campus contains common spaces (administrative building, library, auditorium, sports areas) and buildings of various UNAM centers and institutes; the Academic Cultural Center (auditorium “Flavio Mena Jara,” home of the 7+1st IMRMP), is routinely visited by external audiences due to the extensive and continuous cultural programming.





CONFERENCE ROOM

Wednesday, April 09, 2025

Auditorium Doctor Flavio Mena Jara

Los Arcos

Corregidora

Bernal

Sierra Gorda

Tequisquiapan

Thursday, April 10, 2025

Auditorium Doctor Flavio Mena Jara

Los Arcos

Corregidora

Bernal

Sierra Gorda

Tequisquiapan

Friday, April 11, 2025

Auditorium Doctor Flavio Mena Jara

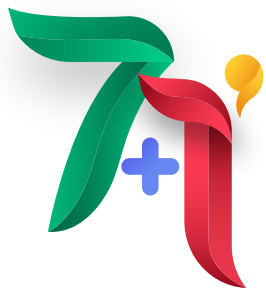
Los Arcos

Corregidora

Bernal

Sierra Gorda

Tequisquiapan



International Meeting for Researchers in Materials and Plasma Technology

Querétaro, Mexico, 2025

Topics

- New Materials
- Renewable Energy
- Photonic Materials
- Structural Integrity
- Biomedical Coatings
- Additive Manufacturing
- Non-Destructive Evaluation
- Environmental Remediation
- Characterization of Materials
- Thin Films and Nanomaterials
- Wear and Corrosion/Oxidation
- Plasma Applications and Technologies
- Modeling, Simulation, and Diagnostics
- Education in Materials, Science, Engineering, and Technology
- Science, Engineering, Technology, and Innovation for Social Inclusion
- Surface Modification (Ion Implantation, Ion Nitriding, Magnetron Sputtering, Cathodic Arc, Sol-Gel, Thermal Spray)





PROGRAM

7+1' IMRMPT



THIRD DAY

April 11, 2025

DAY HOUR	FRIDAY MORNING
9:00 – 9:20	Oral Presentation ID 101: Design of a biodevice (MAV) based on the biomimetics of dung beetle flight Speaker: Juan Jose Niño Viviescas Conference Room: Los Arcos
	Oral Presentation ID 175: microscopic characterization techniques. Diversification of teaching experiences as a strategy to enhance learning among engineering students Speaker: Jesus Rafael Gonzalez Parra Conference Room: Corregidora
	Oral Presentation ID 28: Biomechanical analysis of the hip joint in femoroacetabular impingement using 3D segmentation and finite element modeling Speaker: Octavio Andrés González-Estrada Conference Room: Bernal
	Oral Presentation ID 221: Microstructure and mechanical properties of oxynitrided Ti-6Al-4V water collected in-flight particles from twin wire arc spraying Speaker: Mauricio Nango Conference Room: Sierra Gorda
	Oral Presentation ID 188: Review of advances in catalytic materials for alkaline electrolysis: trends and perspectives in green hydrogen production Speaker: Abimelec Salazar Resendiz Conference Room: Tequisquiapan
9:20 – 9:40	Oral Presentation ID 114: Fabrication and biofunctionalization of titanium carbide foams for bone regeneration applications Speaker: Ena Athenea Aguilar Reyes Conference Room: Los Arcos
	Oral Presentation ID 40: Implementation of a Computer Numerical Control (CNC) System Called FARMBOT to Build a Database on the Growth of Coffee in a Coffea arabica var. Castilla Cultivation in the Municipality of Páramo Speaker: Daniel José Bernal Rodríguez Conference Room: Corregidora
	Oral Presentation ID 122: Evaluation of microstructure and tribological properties of NiCrSiFeB coatings fabricated by plasma transferred arc welding Keynote Speaker: Luis Alberto Cáceres Díaz Conference Room: Bernal
	Oral Presentation ID 0: Speaker: Conference Room: Sierra Gorda
	Oral Presentation ID 71: Pyrolysis of plastic waste for liquid fuel production Speaker: Edinson Lizarazo Sanchez Conference Room: Tequisquiapan



9:40 – 10:00	Oral Presentation ID 0: Speaker: Conference Room: Los Arcos
	Oral Presentation ID 45: Preparation, characterization, and in vitro bioactivity of nurse ass bioceramics for biomedical applications Speaker: Juana Yesenia Ramos Martínez Conference Room: Corregidora
	Oral Presentation ID 0: Speaker: Conference Room: Bernal
	Oral Presentation ID 0: Speaker: Conference Room: Sierra Gorda
	Oral Presentation ID 211: Experimental, analytical and RVE/FEM/PF computational modelling for uniaxial tension and 3-point bending tests to determine the mechanical properties of epoxy nanocomposite materials with UCNPs and graphene Speaker: Jevet Lopez Campos Conference Room: Tequisquiapan
10:00 – 10:20	Coffee Break
10:20 – 11:20	Plenary Lecture V: Physicochemical tuning of 2D materials properties for environmental applications Keynote Speaker: Mildred Quintana Conference Room: Auditorium Doctor Flavio Mena Jara
11:20 – 12:00	Keynote III: The “spark plasma sintering” technique – scope, limitations and evolution – Keynote Speaker: Sebastián Díaz De La Torre Conference Room: Auditorium Doctor Flavio Mena Jara
12:00 – 13:00	Plenary Lecture VI: Protective materials for aerospace extreme environments Keynote Speaker: Samir Aouadi Conference Room: Auditorium Doctor Flavio Mena Jara
13:00 – 15:00	Lunch Break



DAY / HOUR	FRIDAY AFTERNOON
15:00 – 16:00	Poster Section
16:00 – 17:00	Closing Ceremony: 7+1' International Meeting for Researchers in Materials and Plasma Technology (7+1' IMRMPT) Conference Room: Auditorium Doctor Flavio Mena Jara
17:00 – 18:00	Meeting: Network of Researchers in Materials Science, Engineering, and Nanotechnology Speaker: Erica Mejía Restrepo, and Ely Dannier V. Niño Conference Room: Pinal de Amoles

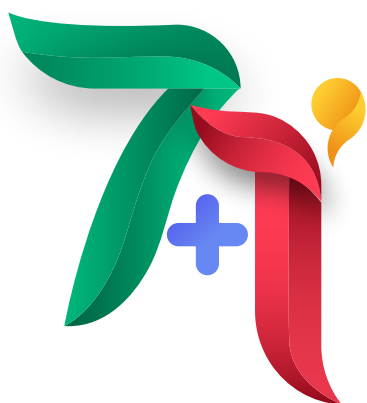


POSTER PRESENTATION

ID	FRIDAY AFTERNOON
15	Presentation: Phase transformations of calcium phosphate-silica powder processed by spark plasma sintering Speaker: Miguel Ángel Ramos López
35	Presentation: Antibacterial behavior of HAp:Mn,Ag as a function of different Ag concentrations for potential use as a biomaterial Speaker: Melanie Villaseñor Cerón
42	Presentation: Biodegradable cellular scaffolds: key to bone tissue engineering Speaker: Víctor Javier Garrido Hernández
44	Presentation: Fusion of cellular scaffolds and 3D additive manufacturing to optimize cell viability in bone tissue engineering Speaker: Víctor Javier Garrido Hernández
51	Presentation: Development of PCL/PLGA/HAp:Fe and PCL/PLGA/HAp:Mn cellular scaffolds for potential application in bone tissue regeneration Speaker: Cecilia García Bravo
54	Presentation: Synthesis and characterization of nanohydroxyapatite: bases for its future functionalization against cancer Speaker: Guillermo Ismael Hernández Domínguez
76	Presentation: Revolutionizing biomaterials: multifunctional composites for the medicine of the future Speaker: Wendy Carolina Vázquez Delgado
78	Presentation: Development of sustainable concrete with waste materials Speaker: Alejandra Chávez Valdez
90	Presentation: Study of the physicochemical properties of hydroxyapatite in male Wistar rats as a function of age for the development of an animal model Speaker: Brandon Alexis Correa Piña
91	Presentation: Modification of the surface chemistry of macroporous silicon for drug adsorption Speaker: Karina Chávez
105	Presentation: Sonosynthesis and characterization of ZrO ₂ nanostructures and its antibacterial activity Speaker: Juan Zárate Medina
131	Presentation: Development of PVA/AS/HAP composites for dermal tissue regeneration Speaker: Sinuhe Ruiz Salgado
142	Presentation: Development of starch-based hydrogels for dermal tissue regeneration Speaker: Sebastián Rosales Gayosso
147	Presentation: Analysis of the effect of strontium doping on the structural and morphological properties of hydroxyapatite Speaker: Mariam Magdalena Plata Fosados
148	Presentation: Analysis of the effect of zinc doping on the properties of hydroxyapatite and the formation of the monoclinic phase Speaker: Mariam Magdalena Plata Fosados
156	Presentation: SiN, an alternative to increase corrosion resistance of orthopedic alloys Speaker: Jesús Rafael González Parra
163	Presentation: Synthesis and characterization of composites based on Ca ₇ Si ₂ P ₂ O ₁₆ for tissue engineering Speaker: Juana Yesenia Ramos Martínez



164	Presentation: Development of a ground vehicle based on dung beetle biomimetics Speaker: Juan José Niño Viviscas
174	Presentation: Application of aggregation-induced emission as a tool for protein detection and quantification Speaker: María Fernanda García Avellaneda
179	Presentation: Comparative study on the bioactivity of bovine hydroxyapatite-based biomimetic scaffolds subjected to low and high-temperature calcination Speaker: Dorian Fernanda Canon Dávila
191	Presentation: Formation of porous HAp-based coatings obtained by HVOF Speaker: John Dairo Henao Penenrey
193	Presentation: Development of coatings with antibacterial metal particles for the elimination of total coliforms in rainwater Speaker: Jorge Morales
198	Presentation: Hydrogel of carboxylated bacterial nanocellulose for enhancing cell maturation Speaker: Elizabeth Mavil-Guerrero
207	Presentation: Sustainable graphene oxide synthesis from agro-industrial waste: a green chemistry approach Speaker: Juan Marcos Castro Tapia
208	Presentation: Generation of pigments through aluminum recycling Speaker: Erick Emmanuel Sanchez Muñiz
215	Presentation: Synthesis and characterization of nanocatalysts supported on modified mesoporous silicas for environmental applications Speaker: Pedro José Bailón Soto
217	Presentation: Laser-induced graphene for Joule Heating applications Speaker: César Fernando Porras Crespo
219	Presentation: Biopolymers in deep eutectic solvents for the design of strain sensors Speaker: Saúl Carrasco-Saavedra
220	Presentation: Development of highly compressible eutectogels made from biopolymers and flavonoids Speaker: Luis Alfonso Jiménez Ortega



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