# CONFERENCE AGENDA

# XVII-INTERNATIONAL CONFERENCE IN MATERIALS SURFACES AND VACUUM

Ensenada BC., México
September 23rd-27th, 2024


INTERCOVAMEX

PFEIFFER VACUUM

IOP Publishing

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POSGRADOS BUAP

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**Dear Colleagues,**

From the very beginning, the Annual Conference of the Sociedad Mexicana de Ciencia y Tecnología de Superficies y Materiales (SMCTSM, Mexican Society of Science and Technology of Surfaces and Materials) has been an important forum used by the Mexican scientific community for the discussion of scientific and technological topics related to research in the fields of surface and materials science.

On this occasion, we are pleased to welcome you to participate in the XVII International Conference on Surface, Materials and Vacuum (ICSMV), which will be held in Ensenada B.C., 23rd to the 27th of September 2024.

The scientific program of the Conference includes plenary conferences, short courses, and the different symposia with oral and poster contributions. Additionally, to the scientific program, there will be a Science Outreach symposium, a traditional forum that brings together students and the general public to engage with the work conducted and developed within our Society.

We hope that the efforts of the organizing committee, sponsors and colleagues will result in an interesting friendly meeting, providing the opportunity for closer and new interactions between researchers coming from diverse institutions.

The XVII ICSMV
Organizing Committee SMCTSM
September 2024, Ensenada B.C., México

## ORGANIZING COMMITTEE

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Maury Solórzano Valencia
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Carlos Antonio Corona García
Aldo Rodríguez Guerrero
Mariana Chan Ley

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Frank Romo García (UNISON)
Matthew Snelgrove (University Of Limerick-Ireland)
**Biomaterials and polymers**
César Márquez Beltrán (BUAP)
Amir Maldonado Arce (USON)
**Characterization and metrology**
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Alfredo Morales Sánchez (INAOE)
Liliana Licea Jiménez (CIMAV-MTY)
Francisco Javier Flores Ruiz (BUAP)
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Gilberto Alarcón Flores: (CICATA-IPN)
Salvador Carmona Téllez: (CONAHCyT-BUAP)
Abraham Mesa Rocha (CONAHCyT-BUAP)
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Isai Salvador Hernández Luna (Centro De nanociencias y micro y nanotecnologías, IPN)
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José Trinidad Elizalde Galindo (UACJ)
**Nanostructures**
Reyna Méndez Camacho (CINVESTAV)
Victor Cabrera Arenas (UPIITA-IPN)
**Plasma and vacuum**
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Miguel Ángel Santana Aranda, (CUCEI, UdeG)
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**Tribology, surfaces and interfaces**
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**Theory and simulation of materials**
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Francisco Sánchez Ochoa (IF-UNAM)
**Thin Films**
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Adriana Alvidrez Lechuga (Universidad Tecnológica De Chihuahua)
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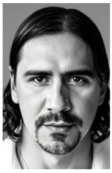
Wilfrido Calleja Arriaga (INAOE)
**Simposio sobre la industria de semiconductores en México**
María de Lourdes Arreguín Hernández (CNyN-UNAM)
Daniel Barrón Pastor (CNyN-UNAM)

**Banerjee Kaustav, PHD**
University of California, USA
2D Materials - Powering the Next Era of Energy-Efficient Electronics



**Calderón Rico Rodrigo, PhD**
Intel Corp, USA
System Architecture Models: Accelerating Product Development from Ideation to Product Release

**de Coss Gómez Romeo, PhD**
Cinvestav-Mérida, México
Understanding the sp-impurity induced magnetism in graphene-based systems

**Falcony Guajardo Ciro, PhD**
Cinvestav-IPN, México
Environmental impact of lighting and solar energy harvesting

**Saucedo Silva Edgardo Ademar, PhD**
Polytechnic University of Catalunya, Spain
The reborn of kesterite: molecular inks synthesis route shows the pathway for solar cells with efficiency over 15%

**Tiznado Vazquez Hugo Jesus, PhD**
CNyN-UNAM, México
Atomic layer alchemy:
engineering nanomaterials, one layer at a time

**Wilson Stephen, PhD**
University of California, USA
Kagome metals and their unusual properties

**Zide Joshua, PhD**
University of Delaware, USA
Epitaxial Growth of Semiconductors and Semiconductor Nanocomposites for (Opto)electronics

# XVII International Conference on Surfaces, Materials and Vacuum

## SUNDAY 22nd SEPTEMBER

| | | |
|---|---|---|
| 18:00 | REGISTRATION: HOTEL BAJA INN | |

## MONDAY 23rd SEPTEMBER

| | | | | |
|---|---|---|---|---|
| 9:00 | 10:00 | OPENING | | |
| 10:00 | 11:00 | OPENING TALK: Prof. Ciro Falcony Guajardo | | |
| 11:00 | 11:30 | COFFEE BREAK | | |
| 11:30 | 11:45 | THF:104 | LPM:275 | TECH. TALK I |
| 11:45 | 12:00 | | | |
| 12:00 | 12:15 | THF:50 | LPM:118 | |
| 12:15 | 12:30 | THF:67 | LPM:124 | |
| 12:30 | 12:45 | THF:112 | LPM:298 | |
| 12:45 | 13:00 | THF:171 | LPM:191 | |
| 13:00 | 15:00 | LUNCH | | |
| 15:00 | 15:15 | THF:81 | LPM:19 | WS-I |
| 15:15 | 15:30 | | LPM:329 | |
| 15:30 | 15:45 | THF:362 | LPM:365 | |
| 15:45 | 16:00 | THF:201 | LPM:294 | |
| 16:00 | 16:15 | THF:237 | LPM:312 | |
| 16:15 | 16:30 | THF:218 | LPM:208 | |
| 16:30 | 16:45 | COFFEE BREAK | | |
| 16:45 | 17:00 | MEM:321 | BIO:72 | WS-I |
| 17:00 | 17:15 | MEM:91 | BIO:89 | |
| 17:15 | 17:30 | MEM:308 | BIO:149 | |
| 17:30 | 17:45 | MEM:230 | BIO:269 | |
| 17:45 | 18:00 | MEM:342 | BIO:156 | |
| 18:00 | 18:15 | MEM:202 | BIO:85 | |
| 18:15 | 18:30 | COFFEE BREAK | | |
| 18:30 | 19:30 | PLENARY 1: Prof. Kaustav Banerjee | | |

## TUESDAY 24th SEPTEMBER

| | | | | | |
|---|---|---|---|---|---|
| 9:00 | 9:15 | SISM:1 | ALD:363 | TSM:160 | |
| 9:15 | 9:30 | | | TSM:344 | |
| 9:30 | 9:45 | SISM:2 | ALD:47 | TSM:206 | |
| 9:45 | 10:00 | | ALD:108 | TSM:213 | |
| 10:00 | 10:15 | SISM:3 | ALD:74 | TSM:307 | |
| 10:15 | 10:30 | | ALD:304 | TSM:164 | |
| 10:30 | 10:45 | COFFEE BREAK | | | |
| 10:45 | 11:00 | SISM:4 | ALD:214 | TSM:99 | |
| 11:00 | 11:15 | | | TSM:125 | |
| 11:15 | 11:30 | SISM:5 | ALD:63 | TSM:115 | |
| 11:30 | 11:45 | | ALD:198 | TSM:183 | |
| 11:45 | 12:00 | SISM:6 Round Table | ALD:301 | TSM:292 | |
| 12:00 | 12:15 | | ALD:207 | TSM:82 | |
| 12:15 | 12:30 | COFFEE BREAK | | | |
| 12:30 | 12:45 | COFFEE BREAK | | | |
| 12:45 | 13:45 | PLENARY 2: Prof. Rodrigo Calderón Rico | | | |
| 13:45 | 15:30 | LUNCH | | | |
| 15:30 | 15:45 | NSN:364 | RWE:345 | WS-II | |
| 15:45 | 16:00 | | RWE:247 | | |
| 16:00 | 16:15 | NSN:242 | RWE:31 | | |
| 16:15 | 16:30 | NSN:13 | RWE:102 | | |
| 16:30 | 16:45 | NSN:276 | RWE:39 | | |
| 16:45 | 17:00 | NSN:299 | RWE:32 | | |
| 17:00 | 17:15 | COFFEE BREAK | | | |
| 17:15 | 18:15 | PLERARY 3: Prof. Stephen Wilson | | | |
| 18:15 | 18:30 | COFFEE BREAK | | | |
| 18:30 | 21:00 | POSTER SESSION | | | |

## WEDNESDAY 25th SEPTEMBER

| | | | | | |
|---|---|---|---|---|---|
| 7:00 | 8:30 | SECOND ATHLETIC RACE | | | |
| 9:30 | 9:45 | NSN:384 | RWE:306 | TECH. TALK II | |
| 9:45 | 10:00 | | RWE:52 | | |
| 10:00 | 10:15 | NSN:316 | RWE:60 | | |
| 10:15 | 10:30 | NSN:35 | RWE:270 | | |
| 10:30 | 10:45 | NSN:285 | RWE-33 | | |
| 10:45 | 11:00 | | RWE-315 | | |
| 11:00 | 11:15 | COFFEE BREAK | | | |
| 11:15 | 11:30 | NSN:241 | RWE:377 | TECH. TALK III | |
| 11:30 | 12:00 | NSN:189 | RWE:46 | | |
| 12:00 | 12:15 | NSN:263 | RWE:45 | | |
| 12:15 | 12:30 | NSN:234 | RWE:380 | | |
| 12:30 | 12:45 | | RWE:383 | | |
| 12:45 | 13:00 | COFFEE BREAK | | | |
| 13:00 | 14:00 | PLENARY 4: Prof. Joshua Zide | | | |
| 14:00 | 15:30 | LUNCH | | | |
| 15:30 | 15:45 | NSN:352 | RWE:376 | WS-II | |
| 15:45 | 16:00 | | | | |
| 16:00 | 16:15 | NSN:303 | RWE:305 | | |
| 16:15 | 16:30 | NSN:314 | RWE:144 | | |
| 16:30 | 16:45 | NSN:244 | RWE:139 | | |
| 16:45 | 17:00 | | RWE:382 | | |
| 17:00 | 17:15 | COFFEE BREAK | | | |
| 17:15 | 18:15 | PLERARY 5: Prof. Edgardo Ademar Saucedo Silva | | | |
| 18:15 | 18:30 | COFFEE BREAK | | | |
| 18:30 | 21:00 | POSTER SESSION | | | |

## THURSDAY 26th SEPTEMBER

| | | | | | |
|---|---|---|---|---|---|
| 9:00 | 9:15 | SEM:396 | PLV:27 | WS-III | |
| 9:15 | 9:30 | | | | |
| 9:30 | 9:45 | SEM:212 | PLV:22 | | |
| 9:45 | 10:00 | SEM:231 | PLV:49 | | |
| 10:00 | 10:15 | SEM:222 | PLV:24 | | |
| 10:15 | 10:30 | SEM:195 | | | |
| 10:30 | 10:45 | COFFEE BREAK | | | |
| 10:45 | 11:00 | SEM:280 | PLV:268 | WS-III | |
| 11:00 | 11:15 | SEM:59 | PLV:260 | | |
| 11:15 | 11:30 | SEM:192 | PLV:267 | | |
| 11:30 | 11:45 | SEM:243 | PLV:394 | | |
| 11:45 | 12:00 | SEM:200 | PLV:220 | | |
| 12:00 | 12:15 | | | | |
| 12:15 | 12:30 | COFFEE BREAK | | | |
| 12:30 | 13:30 | PLENARY 6: Prof. Romeo de Coss Gómez | | | |
| 13:30 | 14:30 | PLENARY 7: Prof. Hugo Jesús Tiznado Vázquez | | | |
| 14:30 | 16:30 | LUNCH | | | |
| 16:30 | 20:00 | NO ACTIVITIES | | | |
| 20:00 | | GALA DINNER | | | |

## FRIDAY 27th SEPTEMBER

| | | | | |
|---|---|---|---|---|
| 9:00 | 9:15 | CHM:331 | TSI:393 | TECH. TALK IV |
| 9:15 | 9:30 | | | |
| 9:30 | 9:45 | CHM:311 | TSI:168 | |
| 9:45 | 10:00 | CHM:64 | TSI:148 | |
| 10:00 | 10:15 | CHM:215 | TSI:94 | |
| 10:15 | 10:30 | CHM:318 | TSI:151 | |
| 10:30 | 10:45 | COFFEE BREAK | | |
| 10:45 | 11:00 | CHM:61 | TSI:199 | |
| 11:00 | 11:15 | CHM:155 | TSI:57 | |
| 11:15 | 11:30 | CHM:84 | | |
| 11:30 | 11:45 | CHM:177 | MMM:97 | |
| 11:45 | 12:00 | CHM:154 | MMM:369 | |
| 12:00 | 12:15 | CHM:73 | | |
| 12:15 | 12:30 | COFFEE BREAK | | |
| 12:30 | 14:30 | GENERAL ASSEMBLY | | |
| 14:30 | | NO ACTIVITIES | | |

**SALON COLOR CODE**

| Museo Caracol: | | |
|---|---|---|
| Auditorio | | Centro Estatal de las Artes |
| Sala Manglares | | Teatro Cultural Riviera |
| Sala C | | Cerro del Vigía |

- **ALD:** ATOMIC LAYER DEPOSITION
- **BIO:** BIOMATERIALS AND POLYMERS
- **CHM:** CHARACTERIZATION AND METROLOGY
- **LP:** LUMINISCENCIA PHENOMENA
- **MEM:** MICROELECTRONICS AND MEMS
- **MMM:** MULTIFUNCTIONAL AND MAGNETICS MATERIALS
- **NS:** NANOSTRUCTURES
- **PV:** PLASMA AND VACUUM
- **REN:** RENEWABLE ENERGY
- **SCO:** SCIENCE OUTREACH
- **SEM:** SEMICONDUCTORS
- **SISM:** SIMPOSIO SOBRE LA INDUSTRIA DE SEMICONDUCTORES EN MÉXICO
- **THF:** THIN FILMS
- **TSI:** TRIBOLOGY, SURFACES AND INTERFACES
- **TSM:** THEORY AND SIMULATION OF MATERIALS

# XVII International Conference on Surfaces, Materials and Vacuum

Conferences

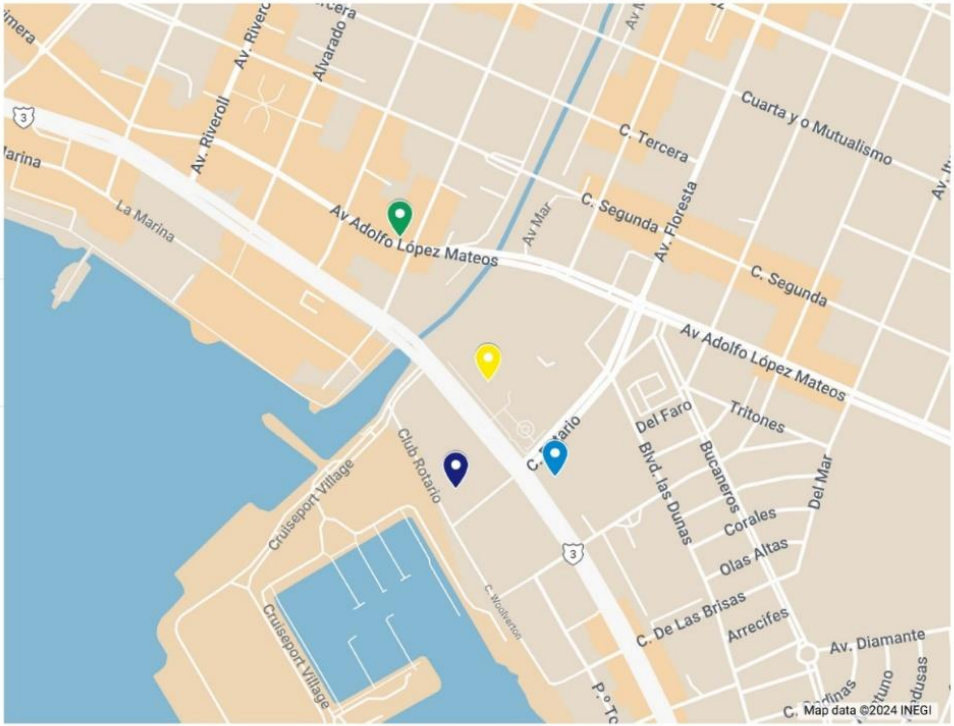
Museo Caracol

Centro Estatal de las Artes

Teatro Cultural Riviera De Ensenada

Hotel

Baja Inn Ensenada



# ORAL PRESENTATIONS
# MONDAY SEPTEMBER 23RD

## LUMINISCENCIA PHENOMENA

**[LPM-275]** LUMINESCENT PROPERTIES OF Dy3+ doped Al2(WO4)3 FOR MODULAR WHITE LIGHT APPLICATIONS. *Rosendo Lozada Morales*
**[LPM-208]** LUMINESCENCE PROPERTIES OF CaMoO4 DOPED Dy3+. *Andrés Alfonso Saavedra Romero*
**[LPM-118]** YTTRIUM OXIDE AEROGELS CO-DOPED WITH EU3+;TB3+ AND FUNCTIONALIZED WITH TTA. *Alan Daniel Alcantar Mendoza*
**[LPM-124]** EVALUATION OF LUMINESCENT PROPERTIES OF CERAMIC POWDERS OF THE CEO2:EU2O3 SYSTEM. *María del Rosario González García*
**[LPM-298]** PHOTOLUMINESCENCE AND JUDD-OFELT ANALYSIS Of Er3+ DOPED CdO-V2O5-ZnO-B2O3 INVERTED GLASSES. *Omar Soriano Romero*
**[LPM-191]** SYNTHESIS AND CHARACTERIZATION OF CA3(VO4)2 ACTIVATED WITH Sm3+ FOR LUMINESCENT APPLICATIONS. *Andrea Sanchez Sanchez*
**[LPM-19]** Spectroscopic characterization of the inverted glass 10Al2O3-70Na2O-20B2O3 activated with Nd3+. *Daniel Morales Tepayotl*
**[LPM-329]** SYNTHESIS AND CHARACTERIZATION OF CALCIUM PHOSPHATES AND THEIR EFFECT ON DAPHNIA MAGNA CONSUMPTION. *Guadalupe Genoveva Méndez Ramos*
**[LPM-365]** LUMINESCENT PROPERTIES OF MONONUCLEAR COMPLEXES FROM EU(III) AND VARIATIONS OF BIPHENYL CARBOXYLIC ACID. *Luis Sergio Cuevas Cadena*
**[LPM-294]** PHOSPHORS FOR WHITE LED LAMPS. *Kora Lu Rojas Baldivia*
**[LPM-312]** Synthesis and characterization of BiCa2VO6 doped Sm3+. *Angela Yazmin Morales Alonso*

## THIN FILMS

**[THF-104]** NiCo2O4 thin films chemically deposited. *Miguel Martinez Gil*
**[THF-50]** EXPLORING THE IMPACT OF COUPLING SYNERGISTIC SEMICONDUCTORS α-Fe2O3 AND ZnO TO CONSTRUCT FEASIBLE BILAYER THIN FILM PHOTOCATALYSTS. *Ana Luisa Martínez García*
**[THF-67]** CORROSION RESISTANCE AND HARDNESS EVALUATION ON

AZ31B ALLOY BY ATMOSPHERIC PRESSURE PLASMA JET TiO2 COATING. *José Antonio Barrera Fernández*

**[THF-112]** Photocatalytic H2 production on Zr-doped TiO2 thin films. *Luis Felipe Garay Rodríguez*

**[THF-171]** SYNTHESIS AND CHARACTERIZATION OF Cu(In,Ga)Se2 THIN FILMS BY ELECTRODEPOSITION AND SUBSEQUENT SELENIZATION. *Miguel Angel Contreras Ruiz*

**[THF-81]** GROWTH OF HIGHLY TEXTURED NON-COLLINEAR ANTIFERROMAGNETIC D019-Mn3Ge/GaN (0001) THIN FILMS BY MAGNETRON SPUTTERING. *Jenifer Priscila Sauzameda Ramírez*

**[THF-362]** Memristive Behavior of YSZ ALD Devices. *Hugo Tiznado*

**[THF-201]** EFFECT OF LASER IRRADIATION ON STRUCTURAL, MORPHOLOGICAL, OPTICAL, AND ELECTRICAL PROPERTIES OF RF-SPUTTERED PURE AND AL-DOPED ZNO THIN FILMS. *Linda Viviana García Quiñonez; Adolfo Hernández Collado*

**[THF-237]** AN ALTERNATIVE METHOD FOR SELECTIVE ETCHING OF SiO2 THIN FILMS. *Alejandro Esparza García; Enrique Francisco Pinzón Escobar*

**[THF-218]** MAGNETO-STRUCTURAL STUDY OF Ge(001)/Mn5Ge3Cx THIN FILMS GROWN BY MAGNETRON-SPUTTERING TECHNIQUE. *Adriana Alvídrez-Lechuga*

## MICROELECTRONICS AND MEMS

**[MEM-321]** DESIGN, SIMULATION, AND FABRICATION OF OPERATIONAL AMPLIFIERS BASED ON AMORPHOUS INDIUM-GALLIUM-ZINC-OXIDE THIN FILM TRANSISTORS. *Arturo Torres-Sanchez*

**[MEM-91]** HfO2/PVP-PMMA/In2O3 SOLUTION-PROCESSED FLEXIBLE THIN FILM TRANSISTORS. *Rafael Ramírez-Bon*

**[MEM-308]** CHARACTERIZATION OF MOS2 DEPOSITED BY RF SPUTTERING IN A MIS STRUCTURE AS 2D MATERIAL FOR TFTS. *Abril A. Garcia-Soriano*

**[MEM-230]** FABRICATION AND CHARACTERIZATION OF NiOx/ZnOx DIODES VIA REACTIVE PULSED LASER DEPOSITION FOR THEIR IMPLEMENTATION IN GAS SENSORS. *Ivonne Julieta Silva Contreras*

**[MEM-342]** CONDUCTIVE TiO2 THIN FILMS GROWTH USING REACTIVE PULSED LASER DEPOSITION MONITORED BY INSITU XPS. *Wencel De La Cruz; Angel Regalado Contreras*

**[MEM-202]** DESIGN AND FABRICATION OF MICROFLUIDICS PLATFORMS USING 3D PRINTING FOR EASY MIXING OF SUBSTANCES. *Tamara Jennifer*

*Crisóstomo Rodríguez*

## BIOMATERIALS AND POLYMERS

**[BIO-72]** PHYSICOCHEMICAL CHARACTERIZATION, MECHANICAL PROPERTIES, AND ANTIFUNGAL ACTIVITY OF NANOSTRUCTURED CHITOSAN-POLYVINYL ALCOHOL BIODEGRADABLE FILMS. *Zormy Nacary Correa Pacheco*

**[BIO-85]** RHEOLOGICAL, MORPHOLOGICAL, THERMAL AND PERMEABILITY STUDIES OF BILAYER CHITOSAN-POLYETHYLENE OXIDE-CERIUM FIBERS FABRICATED VIA THE ELECTROSPINNING TECHNIQUE. *Josue Perzabal-Dominguez*

**[BIO-89]** ANTIMICROBIAL COTTON GAUZE DRESSINGS DERIVED FROM POLY(N-VINYL CAPROLACTAM-CO-MALEIC ANHYDRIDE) GRAFTING. *Juan Carlos Carrillo Rodriguez*

**[BIO-149]** ADSORPTION STUDY OF DEXAMETHASONE ON MAGNETIC NANOPARTICLES STABILIZED WITH GLYCINE. *Azury Nava Guzmán*

**[BIO-269]** CHITOSAN-POLOXAMER SMART HYDROGELS AS A VEHICLE FOR CURCUMIN LOADING. *Alejandra Estefania Herrera Alonso.*

**[BIO-156]** MOLECULAR INTERACTION BETWEEN THE PROTEIN E SEROTYPE II OF DEN-V AND REUSE DRUG USING SURFACE PLASMON RESONANCE. *Natalia Hinostroza-Moya*

## WS-I
## INTRODUCTION TO NEW TRENDS ON THIN FILM PHOTOVOLTAIC TECHNOLOGIES

Edgardo Ademar Saucedo Silva
UPC-Spain

## TECHNICAL TALK-I
**INTERCOVAMEX**

# ORAL PRESENTATIONS
# TUESDAY SEPTEMBER 24TH

## ATOMIC LAYER DEPOSITION

**[ALD-363]** ATOMIC LAYER DEPOSITION: TAILORING NANOMATERIAL PROPERTIES FOR ADVANCED APPLICATIONS. *Hugo Tiznado*

**[ALD-47]** SATURATION DEGREE IN DOPANT MONOLAYERS AS MODULATOR OF AL-DOPING OF ZNO BY ALD SUPERCYCLE APPROACH. *Axel Agustín Ortiz Atondo*

**[ALD-108]** ANTIREFLECTIVE COATINGS BASED ON ZNO/AL2O3 NANOLAMINATES GROWN BY ALD. *Frank Romo Garcia*

**[ALD-74]** EFFECT OF THE CO-REACTANT ON THE ELECTRONIC STRUCTURE BANDS OF NICKEL OXIDE FILMS SYNTHESIZED BY ALD. *Mario Hidrogo*

**[ALD-304]** YSZ THIN-FILM SOLID-STATE ELECTROLYTE WITH BATTERY AND MEMRISTOR CAPABILITY. *Hugo Tiznado*

**[ALD-214]** TiOx analysis on the ALD obtention process by titanium (IV) n-butoxide: comparison with conventional TDMA. *Pierre Giovanni Mani González*

**[ALD-63]** OPTICAL PROPERTIES OF TIO2 GROWN BY ATOMIC LAYER DEPOSITION USING VARIOUS OXIDIZING AGENTS: THE ELLIPSOMETRY ANALYSIS OF ABSORPTION PROPERTIES. *Jorge Luis Vazquez Arce*

**[ALD-198]** HfO2/TiO2 NANOLAMINATES SYNTHETIZED BY ALD FOR MIM CAPACITORS APPLICATIONS. *Jaime Estrada Sánchez*

**[ALD-301]** SELF-ASSEMBLED MONOLAYER FOR AREA-SELECTIVE ALD. *Luis Enrique*

**[ALD-207]** PLASMA ENHANCED ATOMIC LAYER DEPOSITION OF TIO2 THIN FILMS FOR PHOTOCATALYTIC APPLICATIONS AT VIRUS INHIBITION. *Jesús Alfredo Hernández Márquez; Pierre Giovanni Mani González*

## NANOSTRUCTURES

**[NSN-364]** VIRUS- LIKE NANOPARTICLES FOR SMART MEDICINE. *Rafael Vazquez-Duhalt*

**[NSN-242]** SYNTHESIS OF IRON (III) OXIDE AND AU NANOPARTICLES VIA LASER ABLATION OF SOLIDS IN LIQUIDS. *Elder Alejandro Meza Ramírez*

**[NSN-13]** SYNTHESIS AND CHARACTERIZATION OF MAGNETIC LUMINESCENT CORE-SHELL NANOPARTICLES. *Arturo Rodriguez Paredes*

**[NSN-276]** NANOSTRUCTURED TiO2 LAYERS PREPARED BY ANODIZATION: INFLUENCE ON THE EFFICIENCY OF PEROVSKITE SOLAR CELLS AND OSTEOBLAST CELLS GROWTH. *Ma. de la Paz Cruz Jáuregui*
**[NSN-299]** SERS DETECTION OF ADDITIVES IN FOOD PRODUCTS. *Jessica Surisadai Rodríguez Aguilar*

## RENEWABLE ENERGY

**[RWE-345]** EVALUATION OF THE PHOTOCATALYTIC DECOMPOSITION OF METHYL ORANGE, USING 3 TO 1 MOLAR MIXTURES OF BISMUTH OXYBROMIDE AND OXYCHLORIDE. *Miguel Angel Santana-Aranda*
**[RWE-247]** Ciprofloxacin degradation using BiVO4 chemically modified with low amounts (0.1-1wt) of Rubidium. *Gloria Isabel Siller-Monroy*
**[RWE-31]** NaBiO3 Photocatalysis for Environmental Remediation, dye and drugs remotion. *Diego Valencia-Cruz*
**[RWE-102]** ZnO photocatalytic spheres obtained by Thermal oxidation of metallic Zn. *V.H. Castrejón-Sánchez*
**[RWE-39]** EXPLORING PHOTOCATALYTIC ACTIVITY OF BISMUTH OXYHALIDES BIOX (X= CL, BR, I) ON DEGRADATION OF EMERGING POLLUTANTS. *Ángel Eduardo Correa Lozano*
**[RWE-32]** Bismuth Oxyhalloys: enhanced photocatalytic performance of novel BiOXY (X, Y= Cl, Br, I) alloys. *DANIEL FLORES RAMÍREZ*

## THEORY AND SIMULATION OF MATERIALS

**[TSM-82]** PBOH AND PB(OH)2 ADSORPTION ON SRTIO3(111) A DFT STUDY. Reyes García Díaz
**[TSM-99]** COMPUTATIONAL SIMULATIONS OF ANTICANCER DRUGS ENCAPSULATION IN MAGNETIC-DOPED BORON PHOSPHIDE NANOTUBES (BPNTS). A. C. Martínez Olguín
**[TSM-115]** THERMODYNAMIC STABILITY OF THE TaN/MgO INTERFACE. Victor Quintanar-Zamora; Rodrigo Ponce-Pérez; Jesús Antonio Díaz
**[TSM-125]** Engineering TiO2 surfaces to enhance the LP gas detection. Jonathan Efrain Rodriguez Hueso
**[TSM-160]** Surface stability and magnetic arrangements of SrRuO3 surfaces. Carlos Antonio Corona García
**[TSM-164]** ANIONIC GOLD IN RARE EARTH OXIDES? IN SEARCH OF NEW ENVIRONMENTAL REMEDIATION AGENTS. Luis Enrique López González
**[TSM-183]** First principles studies of the adsorption of short-chain aldehydes on 2D-As-P compounds. Jose Mario Galicia Hernandez

**[TSM-206]** First-principles calculations for structural, electronic, and phonon properties of H3S, D3S, MgB2 y Nb-bcc conventional superconductors under pressure. José Alfredo Camargo Martínez
**[TSM-213]** UNDERSTANDING MOLYBDENUM DISULFIDE MONOLAYER REACTIVITY WITH ZINC OXIDE NANOBUBBLES: A THEORETICAL STUDY. Christian Alejandro Celaya López
**[TSM-292]** AB-INITIO STUDIES OF THE INITIAL STAGES OF THE EPITAXIAL GROWTH OF GaN/GaP SUPERLATTICES IN GaP(hhl) SURFACES. Javier Alanis Perez
**[TSM-307]** Charge-density asymmetry in MoSO and MoSeO nanotriangles increases their reactivity towards the hydrodesulfurization reaction. Jair Dominguez
**[TSM-344]** Strain effect on Cr2C MXene passivated surfaces: insight from first principles calculations. Sandra Julieta Gutierrez Ojeda

## SIMPOSIO SOBRE LA INDUSTRIA DE SEMICONDUCTORES EN MÉXICO

**[SISM-1]** *Dr. Fernando Rojas,* Director de CNyN-UNAM

**[SISM-2]** *Dr. Abraham Orozco Lazcano,* Director del Consejo Estatal de Ciencia e Innovación Tecnológica de BC

**[SISM-3]** *MBA. Dulce Bereniss Rodriguez López,* Directora de Innovación y Tecnología de la Secretaría de Economía de BC

**[SISM-4]** *MsEE. Sergio Mier*, Director de Qualcomm Tijuana

**[SISM-5]** *Dr. Israel Mejía*, Director de QSM Semiconductores y Director de la Asociación Mexicana de semiconductores.

**[SISM-6] Round Table Speaker Panel**

## WS-II
## ATOMIC LAYER DEPOSITION: A PRECISION TOOL FOR NANOMATERIAL ENGINEERING

Hugo Jesús Tiznado Vázquez
CNyN-UNAM

# POSTER SESSION I

| THIN FILMS | | NANOSTRUCTRES | | PHOTOVOLTAICS |
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| **RENEWABLE ENERGY** | | **ATOMIC LAYER DEPOSITION** | | **BIOMATERIALS AND POLYMERS** |
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| **CHARACTERIZATION AND METROLOGY** | | **MICROELECTRONICS AND MEMS** | | **MULTIFUNCTIONAL AND MAGNETIC MATERIALS** |
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| **LUMINISCENCIA PHENOMENA** | | **SEMICONDUCTORS** | | **THEORY AND SIMULATION OF MATERIALS** |
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| **TRIBOLOGY, SURFACES AND INTERFACES** | | | | |
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# ORAL PRESENTATIONS
# WEDNESDAY SEPTEMBER 25TH

## NANOSTRUCTURES

**[NSN-384]** INVESTIGATING QUANTUM COHERENCE IN 3D SEMICONDUCTOR NANOWIRE ARRAYS FOR ADVANCED QUANTUM TECHNOLOGIES. *Esteban Cruz Hernández*

**[NSN-316]** SYNTHESIS OF POROUS SiO2 SPHERES AND ITS CHARACTERIZATION AFTER A LOW TEMPERATURE HEAT POST-TREATMENT. *Paulina De León Portilla*

**[NSN-35]** Structural and Spectroscopic Characterization of N, B Bi-Doped and Difunctionalized Carbon Quantum Dots. *Hector Daniel Ibarra Prieto*

**[NSN-285]** STRUCTURAL PROPERTIES OF INAS NANOWIRES GROWN BY MBE ON GRAPHENE-COATED SUBSTRATES. *Miguel González Morales*

**[NSN-241]** Computational Simulations Applied to Kagome GdV6Sn6. *Jonathan Guerrero Sanchez*

**[NSN-189]** On the mechanisms of InAs quantum dots AlGaAs capping: strain, shape and intermixing. *Daniel Lopez Vilchis*

**[NSN-263]** IN-SITU SYNTHESIZED SIO2 NANOPARTICLES AS SILICON POLYMERIC COMPOSITE MODIFIERS FOR IMPROVED MECHANICAL RESPONSE. *Aldo Córdoba Guerrero*

**[NSN-234]** Electron beam lithography. Analysis and control of process variables through testing and verification by SEM images. *José Antonio Cuevas Lara*

**[NSN-352]** SYNTHESIS OF NANOSTRUCTURED MATERIALS FOR THE PRODUCTION OF CLEAN FUELS. *Amelia Olivas*

**[NSN-303]** IMPACT OF THE GRAPHENE BUFFER LAYER ON THE GROWTH OF ANTIMONIDES FOR NEAR AND MID-INFRARED OPTOELECTRONIC DEVICE INTEGRATION. *Nayeli Colin Becerril*

**[NSN-314]** NUMERICAL CALCULATIONS OF OPTICAL EFFICIENCIES, LOCAL ELECTRIC FIELD AND RADIATION PRESSURE OF POROUS DIELECTRIC SPHERES. *Paulina De León Portilla*

**[NSN-244]** From Graphene oxide to N-doped Graphene: Understanding the doping process. *José Israel Paez Ornelas; José Manuel Ruiz Marizcal*

## RENEWABLE ENERGY

**[RWE-306]** HYDROGEN GENERATION FROM Co Ni-BASED CATHODES DEVELOPED FROM WASTED NiMH BATTERIES. *Karina Pulido de la Cruz*

**[RWE-52]** Optimization of ZnO nanorods thin film photocatalyst for hydrogen production. *Maria Alfaro*

**[RWE-60]** Ink-jet perovskite films for photocatalytic CO2 reduction and H2O decomposition. *Edith Luévano Hipólito*

**[RWE-270]** The Influence of Argon Deposition Pressure on LiMn2O4 Thin Film Electrochemistry for Li-Ion Batteries. *Raquel Garza Hernandez*

**[RWE-33]** EXPLORING THE POTENTIAL OF H-Zn2GeO4 AS AN LI-ION HOST. *Gabriel Cosio*

**[RWE-315]** Bi-metallic MXenes Mo2V2C3T2 (T = O, F, OH) for energy storage devices. Atomisitics insigts on ion-adsorption process. *Raul Eduardo Santoy Flores*

**[RWE-377]** MODIFIED SURFACES FOR ENVIRONMENTAL ELECTROCHEMISTRY, AS AN ALTERNATIVE TO THE SUSTAINABLE DEVELOPMENT AND CIRCULAR ECONOMY IN THE REMOVAL OF POLLUTANTS IN AIR, WATER AND SOIL MATRIX. *Erika Bustos Bustos*

**[RWE-46]** USE OF AGROINDUSTRIAL WASTE TO OBTAIN GRAPHENE OXIDE FOR VARIOUS APPLICATIONS. *Juan Marcos Castro Tapia*

**[RWE-45]** Microplastic removal from Water Using Biodegradable Green Solvents. *Anel Robles*

**[RWE-380]** PROMOTING MAGNETOSTRICTION IN GRAIN BOUNDARIES OF NANOSTRUCTURATED TiO2 FILMS SUPPORTED ON STAINLESS STEEL ELECTRODES FOR CONTROLLING THE PHOTOGENERATION OF HOLES AND HYDROXYL RADICALS. *Juan Manríquez*

**[RWE-383]** ELECTROCHEMICAL TREATMENT OF HEMODIALYSIS WASTEWATER FROM A CLINIC USING MODIFIED SURFACES WITH TRANSITION METAL OXIDES. *Erika Bustos Bustos*

**[RWE-376]** CONSTRUCTION OF CHEMICALLY MODIFIED ELECTRODES TO DESIGN ELECTROCATALYTIC, PHOTOVOLTAIC DEVICES AND ELECTROCHEMICAL DETECTORS. *Juan Manríquez*

**[RWE-305]** PHOTODEGRADATION DEPTH PROFILES OF NON-FULLERENE ACCEPTOR ORGANIC SOLAR CELLS. *Ian Carlos Flores Contreras*

**[RWE-144]** PROCESSING OF INDIUM SULFIDE AND CADMIUM SULFIDE THIN FILMS BY SPUTTERING-RF AT OXYGEN ATMOSPHERE FOR APPLICATIONS IN OPTOELECTRONICS DEVICES. *Antony Francisco López Sánchez; Rogelio Mendoza*

**[RWE-139]** INTERACTION OF LASER PULSES IN LASER SCRIBING PROCESSES FOR APPLICATIONS IN PHOTOVOLTAIC AND ELECTRONIC DEVICES BASED ON CDTE AND CIS. *Jesús Adán Fierro López*

**[RWE-382]** EFFECT OF THE MAGNETOSTRICTION INDUCED ON THE CRYSTALLINE STRUCTURE OF NANOPARTICULATE TiO2 PHOTOANODES AND THEIR RELATIONSHIP WITH THE PHOTOVOLTAIC RESPONSE OF BLACK-DYE SENSITIZED SOLAR CELLS. *Juan Manríquez*

## TECHNICAL TALK-II
**IOP Publishing**

## TECHNICAL TALK-III
## VACUUM FUNDAMENTALS
Oscar Hernández Cárcamo
**BUSCH GROUP – PFEIFFER VACUUM**

## WS-II
## ATOMIC LAYER DEPOSITION: A PRECISION TOOL FOR NANOMATERIAL ENGINEERING
Hugo Jesús Tiznado Vázquez
CNyN-UNAM

# POSTER SESSION II

| THIN FILMS | NANOSTRUCTRES | PHOTOVOLTAICS |
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# ORAL PRESENTATIONS
# THURSDAY SEPTEMBER 26TH

## SEMICONDUCTORS

**[SEM-396]** HIGH RESPONSIVITY AND NEW CAPABILITIES IN OPTOELECTRONICS WITH HYBRID GRAPHENE AND QUANTUM DOT PHOTODETECTORS. *Oscar Vazquez-Mena*

**[SEM-212]** G-ZnO FILMS FOR POSSIBLE APPLICATION IN BLOOD GLUCOSE MEASUREMENT AS TEST TRIP. *Raquel Ramírez Amador*

**[SEM-231]** STRUCTURAL PROPERTIES AND CO2 SENSING MECHANISM IN TUNGSTEN OXIDE FILMS. *Marino Conde Guevara*

**[SEM-222]** SYNTHESIS AND CHARACTERIZATION OF Li-DOPED POTASSIUM HEXATITANATE POTHOCATALYST. *MARÍA AZUCENA GONZÁLEZ LOZANO*

**[SEM-195]** SYNTHESIS AND ANALYSIS OF CsPbBr3 PEROVSKITE NANOCRYSTALS OBTAINED UNDER DIFFERENT AMBIENT CONDITIONS. *HECTOR JUAREZ*

**[SEM-280]** COMPOSITION-GRADED INGAAS STRAIN REDUCING LAYER AS MODULATION STRATEGY IN InAs/InGaAs/GaAs SEMICONDUCTOR HETEROSTRUCTURE. *D. Corte Ponce*

**[SEM-59]** OPTICAL AND STRUCTURAL CHARACTERIZATION OF AlN/SI (111) THIN FILMS DEPOSITED BY PLASMA ASSISTED MOLECULAR BEAM EPITAXY. *Edgar Agustin Contreras*

**[SEM-192]** QUANTUM DOTS FACETING CHANGES INDUCED BY MISFIT STRAIN Modulation. *Maria Fernanda Mora Herrera*

**[SEM-243]** THE ACCUMULATIVE DEATH PROBABILITY OF FREE CARRIERS IN HEAVILY DOPED SEMICONDUCTORS. *Maria Fernanda Mora Herrera*

**[SEM-200]** SYNTHESIS OF MIXTURES OF CuFeS2 AND ZnS (WURTZITE) USING MICROWAVES RADIATION. *Isaí Raya Farías*

## PLASMA AND VACUUM

**[PLV-27]** FITTING STRATEGIES FOR METALLIC AND PARTIALLY OXIDIZED AL 2P SPECTRA CONTAINING SUBOXIDES. *Orlando Cortazar Martinez*

**[PLV-22]** XPS ANALYSIS OF THE INTERFACE LAYER IN NITRIDED HFO2/SI NANOFILMS. *Marisol Mayorga Garay*

**[PLV-49]** EVALUATION OF CARBON ULTRATHIN FILMS AS PROTECTIVE LAYERS TO PREVENT OXIDATION OF TITANIUM. *Cassandra Mora Ruiz*

**[PLV-24]** BASIC ASPECTS OF THE ASYMMETRY OF LINESHAPES IN PHOTOEMISSION SPECTRA CAUSED BY A CASCADE OF EXCITATIONS OF FERMI-LEVEL ELECTRONS. *Alberto Herrera Gómez*

**[PLV-268]** NEODYMIUM OXIDE THIN FILMS DEPOSITED BY PLD: OPTICAL AND STRUCTURAL EVOLUTION ANALYSIS. *Laura Patricia Rivera Reséndiz*

**[PLV-260]** PLASMON RESONANCE ABSORPTION OF AG NANOPARTICLES DEPOSITED AT DIFFERENT FLUENCE BY PLD. *Abril Vazquez Francisco*

**[PLV-267]** PULSED LASER DEPOSITION OF THIN FILMS FROM THE ABLATION OF BATIS$ _{3}$ PEROVSKITES AT DIFFERENT FLUENCES. *José Guadalupe Quiñones Galván*

**[PLV-394]** EXPLORING THE SYNTHESIS OF A C-CU-MO-TI-TA MULTI-ELEMENTAL ALLOY/HIGH-ENTROPY ALLOY, THROUGH DC MAGNETRON SPUTTERING. *Julio Cesar Cruz Cardenas*

**[PLV-220]** DURING DC MAGNETRON SPUTTERING WHAT IS THE SURFACE TEMPERATURE OF THE WATER-COOLED TARGET? *Stephen Muhl*

## WS-III
## INTRODUCTION TO PYTHON FOR IA

Dr. Luis García
CNyN-UNAM

# ORAL PRESENTATIONS
# FRIDAY SEPTEMBER 27TH

## CHARACTERIZATION AND METROLOGY

**[CHM-331]** ANALYSIS OF THE ELECTRO-PHOTONIC PROPERTIES OF SILICON-BASED LIGHT EMITTING CAPACITORS. *Alfredo Morales Sánchez*

**[CHM-311]** ELLIPSOMETRY STUDY OF AG2SE POLYCRYSTALLINE THIN FILMS GROWTH BY ELECTRODEPOSITION. *Carolina Janani Diliegros Godines*

**[CHM-64]** CHEMICAL ANALYSIS OF THE INTERFACE BETWEEN CSPBBR3 AND AL2O3 DEPOSITED BY ALD AS PROTECTOR LAYER. *Fernando Quintero-Borbón*

**[CHM-215]** STUDY OF X-RAY PHOTOELECTRON SPECTRA OF AG3D FROM SALTS AND NANOPARTICLES NANOCOMPOSITES. *Milton Vázquez Lepe*

**[CHM-318]** EFFECT OF UNIAXIAL STRUCTURAL ANISOTROPY OF AL/NB METAMATERIAL ON THE SUPERCONDUCTING TRANSITION TEMPERATURE AND MAGNETIC RESPONSE. *F.J. Flores-Ruiz*

**[CHM-61]** MACHINE LEARNING IMAGE CLASSIFICATION ALGORITHM FOR THE DETECTION OF PERCOLATION THRESHOLD IN NANOCOMPOSITES. *Giovanni Alejandro Cruz Ortiz*

**[CHM-155]** FLEXIBLE ELECTROSPUN GRAPHENE-POLYMER ELECTRODES FOR SUPERCAPACITORS. *Liliana Licea*

**[CHM-84]** DETECTION OF DIABETES BIOMARKERS USING A GAS SENSOR ARRAY DEPOSITED WITH A POLYMERIC AND POLYMERIC ORGANOMETALLIC SENSING FILMS. *Marcos Rodríguez Torres*

**[CHM-177]** GRAPHENE-BASED HYDROGEL ELECTROLYTE FOR SUPERCAPACITORS. *Abraham Méndez Reséndiz*

**[CHM-154]** CORRELATION BETWEEN OXIDATION DEGREE AND MECHANICAL PROPERTIES IN GRAPHENE OXIDE: A COMPREHENSIVE ANALYSIS. *Sergio Alfonso Pérez García*

**[CHM-73]** SUBSURFACE MICROSCOPY USING THERMOREFLECTANCE ON MICROELECTRONIC TEST STRUCTURE CROSS-BRIDGE AND GREEK CROSS FOR SHEET RESISTANCE MEASUREMENTS: HIGH-TEMPERATURE IMAGING. *Ernesto Hernandez Rosales*

## TRIBOLOGY, SURFACES AND INTERFACES

**[TSI-393]** AUTOMATION OF A WATER-CONDENSATION COLLECTION WATER SYSTEM USING VARIOUS COOPER SURFACES.
*Veronica Cristel Vázquez De la Cruz*
**[TSI-168]** CHARACTERISATION OF BORIDING ON 9254 STEEL WITH GREEN CHEMISTRY INTEGRATION. *Lizbeth Sanchez*
**[TSI-148]** MICROWAVE PLASMA ASISTED PLD DEPOSITION OF GaN THIN FILMS. *Enrique Camps*
**[TSI-94]** CHARACTERIZATION OF AGAR FILMS FUNCTIONALIZED WITH Ag AND TiO2 NPs AS AN ALTERNATIVE FOR SMART FOOD PACKAGING. *SEBASTIAN YAEL REYES GUTIERREZ*
**[TSI-151]** Hardness of MoxNy thin films deposited by microwave ECR assisted reactive pulsed laser deposition. *Enrique Campos Gonzalez*
**[TSI-199]** STUDY OF THE OSCILLATIONS IN PIN-ON-DISK TRIBOLOGICAL TESTS. *Saúl Domínguez García*
**[TSI-57]** Tribological study of NbN coating on AISI 410 SS surfaces in different work environment. *Ernesto David García Bustos*

## MULTIFUNCTIONAL AND MAGNETICS MATERIALS

**[MMM-369]** A COMPREHENSIVE APPROACH IN MATERIALS SCIENCE FOR GRADUATE STUDENTS. Jesús Leonardo Heiras Aguirre
**[MMM-97]** ROLE OF THE IN-PLANE APPLIED CURRENT DIRECTION IN MAGNETOTRANSPORT PROPERTIES OF MN3GA THIN FILMS.
Isis Maria Cota Martinez

## TECHNICAL TALK-IV
**Nanociencias de México**

## SCIENCE OUTREACH

**[SCO-38]** Explorando el Futuro del Agua: Tecnologías Emergentes en Tratamiento y Purificación. Anel Robles

**[SCO-48]** LA NANOTECNOLOGÍA EN TU VIDA DIARIA. Daniela Lucio Rosales

**[SCO-129]** La tecnología de los supercapacitores. Beatriz Reyes Veloz

**[SCO-180]** FOTOGRAFÍA HIPERESPECTRAL Y LA AGRICULTURA SUSTENTABLE. Juan Hernández-Rosas

**[SCO-185]** La inteligencia artificial, desde resolver tus tareas hasta el desarrollo científico. Giovanni Alejandro Cruz Ortiz

**[SCO-232]** Plásticos centelladores: una forma de detectar rayos cósmicos. Oliver Isac Ruiz Hernandez

**[SCO-284]** EL PAPEL DE LOS MATERIALES SEMICONDUCTORES EN LA REUTILIZACIÓN DEL AGUA. Ana Luisa Martínez García

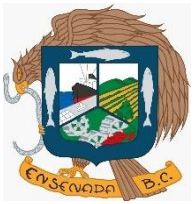
**[SCO-293]** AMBIENTE EN CRISIS: SOLUCIONES CON SEMICONDUCTORES PARA UN FUTURO SOSTENIBLE. Jose Pablo Estrella Leyva

**[SCO-325]** Entre la realidad y la ficción de lo más pequeño: NANOROBOTS, NANOMITES, NANOHORMIGAS, NANOSURFERS. Leticia Ithsmel Espinoza Vega

**[SCO-347]** CATALIZADORES PARA LA PRODUCCIÓN DE BIOENERGÉTICOS Y EL TRATAMIENTO DE AGUA. Issis Claudette Romero Ibarra

**[SCO-368]** Electricidad: un fenómeno maravilloso y útil en nuestra vida. Amir Darío Maldonado Arce

**[SCO-370]** El Futuro Brilla con LEDs: Tecnología Eficiente que Cuida el Medio Ambiente. Yenny Lucero Casallas Moreno

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