

8th ESRW in Nanoscience

Madrid (Spain), June 13–14, 2018

Organized by the Madrid Institute for Advanced Studies in Nanoscience (IMDEA Nanoscience)

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PROGRAM

Wednesday, June 13

- 9:00- 9:45** Registration
- 9:45-10:00** **OPENING**
Prof. Dr. Rodolfo Miranda, Director of IMDEA Nanociencia
- 10:00-11:00** **INVITED LECTURE (Sponsored by Fisher)**
Dr. Javier Ramón Azcón, Institute for Bioengineering of Catalonia (IBEC), Barcelona.
Title: Metabolic Cross-talk Approach by Multi-Organ-on-a-Chip
Chair: Alvaro Somoza
- 11:00-11:30** **Coffee Break & Photo (Sponsored by Bruker)**
- 11:30-11:45** **O1 – Patricia Bondía Raga, IMDEA Nanociencia, Nanoscale imaging of light-induced damage in amyloid fibers**
- 11:45-12:00** **O2 – Aritz García Arribas, Instituto Biofisika (CSIC, UPV/EHU), Ceramide effects on lipid bilayer heterogeneity under the AFM**
- 12:00-12:15** **O3 – Alberto Hidalgo, UCM, Pulmonary surfactant and drug delivery: to alveoli and beyond**
- 12:15-12:30** **O4 – Julene Madariaga-Marcos, CNB-CSIC, Characterization of protein kinetics at the single-molecule level combining microfluidics, Lateral Magnetic Tweezers and TIRF Microscopy**
- 12:30-12:45** **O5 – Natalia Martín González, UAM, Understanding the Role of DNA condensing proteins in viral chromatin with Atomic Force Microscopy**
- 12:45-13:45** **POSTER SESSION 1**
- 13:45-15:15** **Lunch**
- 15:15-15:30** **O6 – Alejandro Martín González, CNB-CSIC, Atomic Force Microscopy shows DNA-bridging by human CtIP**
- 15:30-15:45** **O7 – Juan Luis Paris, UCM, NANOparticles for antiVAscular Multimodal therapy: Photothermal, photodYnamic and dual drug RElease (NANOVAMPYRE)**
- 15:45-16:00** **O8 – Carmen Suay-Corredera, CNIC, Calibration-independent Atomic Force Microscopy**
- 16:00-16:15** **O9 - María Rocío Villegas Díaz, UCM, Hybrid Nanocarriers for the Treatment of Cancer**
- 16:15-16:45** **Coffee Break (Sponsored by Bruker)**
- 16:45-17:00** **O10 – Elena Beltrán de Heredia Rodríguez, UCM, Curvature Induces Cardiolipin Sorting**
- 17:00-17:15** **O11 – Daniel Casaleiz, IMDEA Nanociencia, Synthesis and Advanced 3D-printing of Polymerized Composites Based in Metallic Particles**
- 17:15-17:30** **O12 – Paula Corte Leon, UPV/EHU, Engineering of magnetic properties of Co-rich microwires by Joule heating**
- 17:30-17:45** **O13 – Christin David, IMDEA Nanociencia, Plasmonic properties of electrolytes beyond classical nanophotonics - Nonlocal soft plasmonics**
- 17:45-18:00** **O14 – Leticia de Melo Costa, IMDEA Nanociencia, Exchange coupling effects in hybrid Gr-4f RE systems**

SESSION 1

Chair:
Ana Espinosa

SESSION 2

Chair:
Marco Cordani

SESSION 3

Chair:
Andrew Norris

Thursday, June 14

10:00-11:00 **INVITED LECTURE**
Dr. Nair López Martínez, *Universidad Autónoma de Madrid, (UAM), Madrid.*
Title: 4-colours/2-junctions solar cells: 4 SUNS project
Chair: Borja Ibarra

11:00-11:30 **Coffee Break** (Sponsored by Bruker)

11:30-11:45 **O15 – Fernando Jiménez**, *IMDEA Nanociencia*, Towards Fabrication of MoS₂ P-N Homo-junctions via Pulsed Focused eBeam Induced Etching

11:45-12:00 **O16 – Sergio Ramirez**, *IMDEA Nanociencia*, Reaction Products obtained in the Hydrothermal Synthesis of Carbon Dots

12:00-12:15 **O17 – Beatriz Rodilla**, *IMDEA Nanociencia*, Nanowire interfaces as nanoelectrodes for neural electrical stimulation at the spinal cord

12:15-12:30 **O18 – Victor Rollano García**, *IMDEA Nanociencia*, Topological protected superconducting ratchet effect produced by spin ice magnet

12:30-12:45 **O19 – Chen Sun**, *IMDEA Nanociencia*, The Influence of β -Phase Conformation on Transient Absorption and Light Amplifying Properties of Polydiarylf luorene

SESSION 4

Chair:
Manuela Garnica

12:45-13:45 **POSTER SESSION 2**

13:45-15:15 **Lunch**

15:15-15:30 **O20 – Arturo Gamonal**, *IMDEA Nanociencia*, Divergent Sorption Behaviour of Isostructural Luminescent Lanthanide-based Metal-Organic Frameworks as Key for the Design of Novel, Selective and Sensitive Gas Sensors

15:30-15:45 **O21 – Juan Gurruchaga Pereda**, *Donostia International Physics Center*, Bioorthogonal Photocatalysis for prodrugs activation

15:45-16:00 **O22 – Sonia Infante Tadeo**, *IMDEA Nanociencia*, Osmium(II) tether complexes with a coordinatively bound oxygen atom capable of hijacking and releasing a proton

16:00-16:15 **O23 – Yurena Luengo**, *IMDEA Nanociencia*, Evaluation of antibacterial activity of magnetite/Ag nanocomposites with different silver content synthesized by an aqueous route

SESSION 5

Chair:
Jose Santos

16:15-16:45 **Coffee Break** (Sponsored by Bruker)

16:45-17:00 **O24 – Paloma Martínez Martín**, *UAM*, Pyridine/Diazine derivatives to access a new lanthanide luminescent materials

17:00-17:15 **O25 – Lucía Palomino Ruiz**, *Universidad de Granada*, Synthesis of non-planar nanographenes

17:15-17:30 **O26 – Michele Pisarra**, *IMDEA Nanociencia*, Nanostructured graphene catalyzes the reaction between two organic molecules

17:30-17:45 **O27 - Sonia Romero Perez**, *UAM*, Oligonucleotide-Templated Stacking of Semiconductors

17:45-18:00 **O28 – Julia Villalva**, *IMDEA Nanociencia*, Band gap opening in metallic single-walled carbon nanotubes by encapsulation of an organic salt

SESSION 6

Chair:
Amalía
Rapakousiou

18:00-18:15 **AWARDS & CLOSING REMARKS**

POSTER SESSION 1, 13 June

- P1** – New Hole Transporting Material for Perovskite Solar Cells
Abasi Abudulimu, *IMDEA Nanociencia*
- P2** - Design of bactericidal surfaces by using micro-nano hierarchical topographies
María Teresa Alameda Felgueiras, *IMDEA Nanociencia*
- P3** - Mechanical softening of lipid membranes by the rotating motor protein F1F0 ATP synthase
Víctor G. Almendro Vedia, *UCM*
- P4** - Magnetic microwires for contact-less sensing application
Diego Archilla, *Instituto de Magnetismo Aplicado (IMA) [UCM-ADIF-CSIC]*
- P5** - Carbon nanodots for the oxygen reduction reaction electrocatalysis
Iria Bravo, *UAM*
- P6** - Organometallic iridium(III) cyclopentadienyl complexes bearing a structural strain as potential anticancer
Ana Carrasco, *IMDEA Nanociencia*
- P7** - The many faces of the topological insulator BiTeCl
Pablo Casado Aguilar, *IMDEA Nanociencia*
- P8** - Functionalized gold nanoparticles for the detection of uveal melanoma miRNAs
Catarina Coutinho, *IMDEA Nanociencia*
- P9** - Biomedical application of novel magnetic detection methodology based on AC magnetometry
Lucía Cremades, *IMDEA Nanociencia*
- P10** - Interfacing porphyrins and carbon nanotubes through mechanical links
Leyre De Juan, *IMDEA Nanociencia*
- P11** - Simultaneous AFM nanoindentation and fluorescence microscopy of soft materials and individual bacteria
Adrián Del Valle, *IMDEA Nanociencia*
- P12** - Protein engineering for improved delivery in CRISPR-based gene editing strategies
Carmen Escalona Noguero, *IMDEA Nanociencia*
- P13** - Computational studies of core protonated and β -brominated of meso-tetraphenylporphyrin: High saddle shape structure properties
Mortaza Eskandari, *Institute for Advanced Studies in Basic Sciences (IASBS)*
- P14** - A Robust and Unique Iron (II) Mosaic-like MOF Architecture
Estefanía Fernández Bartolomé, *IMDEA Nanociencia*
- P15** - Alveolar dynamics: implication on drug delivery assisted by pulmonary surfactant
Cristina García Mouton, *UCM*
- P16** - Synthesis of ferrite nanoparticles for biomedical applications
David García Soriano, *IMDEA Nanociencia*
- P17** - Smart self-immolative polymers as pH-responsive gatekeepers for mesoporous carbon nanoparticles
Miguel Gisbert Garzarán, *UCM*
- P18** - Superconductivity in tungsten carbide nanostructures and its importance in STM experiments performed on metal-supported graphene
Cosme Gonzalez Ayani, *IMDEA Nanociencia*
- P19** - Graphene/Ferromagnetic epitaxial stacks grown on oxides with tuned spin orbit coupling
Adrián Gudín Holgado, *IMDEA Nanociencia*

- P20** - Influence of ball milled pyrex free magnetic microwires on strontium ferrite, BHmax
Papa Gorgui Birame Gueye, *Instituto de Magnetismo Aplicado, UCM*
- P21** - Moth-eye antireflective and self-cleaning surfaces with enhanced mechanical properties
Alejandra Jacobo Martín, *IMDEA Nanociencia*
- P22** - Study of phase separation in a negatively charged colloid / polymer system
Mikheil Kharbedia, *UCM*
- P23** - Reaction of platinum(II) complexes with bismuth-halides: Pt-C(sp³) or Pt-C(sp²) bond cleavage
Maedeh Koochi, *Institute for Advanced Studies in Basic Sciences (IASBS)*
- P24** - Functionalization of Magnetic Nanoparticles with Gemcitabine and Doxorubicin via disulfide bonds
Nuria Lafuente Gómez, *IMDEA Nanociencia*
- P25**- Advanced Therapies Based on Nanoparticles: efficient drug delivery and CRISPR/Cas9 gene editing
Ana Belén Latorre Lozano, *IMDEA Nanociencia*
- P26**- Continuously modulate Förster energy transfer from fluorescein to rodamin 6G by electrical doping graphene
Yansheng Liu, *IMDEA Nanociencia*
- P27** - In vitro study of the thermal stress mediated by iron oxide nanoparticles subjected to infrared irradiation and/or alternating magnetic fields
Claudia Lozano, *IMDEA Nanociencia*

POSTER SESSION 2, 14 June

- P28** - Interaction of L-Alanine and L-Dialanine with Aluminium Oxide surfaces
Juan Carlos Martín, *IMDEA Nanociencia*
- P29** - Antimonene 2D single layers as supercapacitors
Emiliano Martínez Periñán, *UAM*
- P30** - Towards graphene-based field effect transistors
Victor Marzoa, *IMDEA Nanociencia*
- P31** - Carbon Dots Modified Electrodes for Catalysis of Hidrazine
Mónica Mediavilla Supe, *UAM*
- P32** - Towards the Synthesis of a Nanoswimmer
Sofía Mena Hernando, *IMDEA Nanociencia*
- P33** - Uveal Melanoma Treatment Based on Gold Nanoparticles: Oligonucleotide Therapy Combined with Chemotherapy
Paula Milan Rois, *IMDEA Nanociencia*
- P34** - Genetherapy for Osteoporosis using Mesoporous Silica Nanoparticles to Deliver sost siRNA and Osteostatin
Patricia Mora Raimundo, *UCM*
- P35** - Nanocarrier for a controlled protein delivery to tumoral cells
Victor Moreno Zafra, *UCM*
- P36** - Magnetic Composites: Strontium Ferrite with Magnetic Microwires and the dependence of its magnetic properties with the proportions
Arturo Moya, *Instituto de Magnetismo Aplicado (UCM)*
- P37** - Advantages of carbon-coated superparamagnetic nanoflowers for lateral flow immunoassays
Amanda Moyano Artime, *Universidad de Oviedo*

- P38** - A neural bypass for sensing and stimulating at the spinal cord
Vicente Muñoz Martínez, IMDEA Nanociencia
- P39** - Efficient expression of OPA1 mitochondrial membrane fusion protein in in vitro and in vivo experiments by using Gemini/DOPE - based Lipoplexes
Mónica Muñoz Úbeda, Instituto de Investigación Biomédica Hospital 12 de Octubre
- P40** - Loading capacity and stability of Gold Nanoparticles conjugated with oligonucleotides
Demian Pardo Filippidis, IMDEA Nanociencia
- P41** - In vitro Catalytic Transfer Hydrogenation Studies of Organoiridium Complexes
Sonia Paz, IMDEA Nanociencia
- P42** - Endosomal escape of plasmonic gold nanoparticles mediated and quantum dots by *Listeria monocytogenes* Listeriolysin O toxin LLO
Ismael Plaza García-Abadillo, UCM
- P43** - Electrically conducting coordination polymer as an acetonitrile chemical sensor
Esther Resines Urien, IMDEA Nanociencia
- P44** - A single-molecule manipulation assay to study the transcriptional dynamics of Influenza A virus
Carlos Rodríguez Pulido, IMDEA Nanociencia
- P45** - In silico magnetic hyperthermia: insights for a treatment planning platform
Irene Rubia, IMDEA Nanociencia
- P46** - Enhancement of magnetic lateral flow immunoassays by means of a magnetic field gradient
María Salvador Fernández, Universidad de Oviedo
- P47** - Fundamentals of detection methodology based on the AC magnetization signal of functionalized magnetic nanoparticles in biological fluids
Elena Sanz de Diego, IMDEA Nanociencia
- P48** - MOF:PDMS Composites as a Promising Luminescent Chemosensors: Photophysics and Sensing Characterization
Ahmad Sousaraei, IMDEA Nanociencia
- P49** - Preliminary study on a thermoresponsive drug delivery system based on the combination of magnetite NPs and liposomes
Andrea Tabero, UAM
- P50** - Optimization of the resolution of pauses in biological motors
Andrés Tejedor Reyes, UCM
- P51** - Single Molecule Spectroscopy of Key Protein-Protein Interactions in the Pyruvate Dehydrogenase (PDH) Multienzyme complex
Cintia Vequi-Suplicy, IMDEA Nanociencia
- P52** - High coercive MnBi magnets for high temperature applications, from quasi-isotropic particles to textured films
Melek Villanueva, IMDEA Nanociencia
- P53** - Entropy reduction by information in feedback flashing ratchets
Daniel Villarrubia Moreno, UCM