

NanoSpain Conf 2019

May 28 -31, 2019 • Barcelona (Spain)

TENTATIVE PROGRAM (as of 22/05/2019)

Tuesday (May 28, 2019)

08:00-08:50 **Registration**

08:50-09:00 **Opening Ceremony**

Chair: **Jordi Llop (CIC BiomaGUNE, Spain)**

09:00-09:30 **Giuseppe Battaglia** (University College London, UK) K
Molecular engineering of polymersomes: design principles and applications

09:30-10:00 **Tal Dvir** (Tel Aviv University, Israel) K
Engineering personalized tissue implants: From 3D printing to bionic organs

10:00-10:45 **Coffee Break / Poster Session**

Chair: **Cesare De Pace (University College London (UCL), UK)**

10:45-11:15 **Víctor Puentes** (ICREA / ICN2, Spain) K
The use of metal oxide nanoparticles as third generation immunotherapy: Phenotypic changes follow changes in the chemical potential

11:15-11:30 **Ebru Kilicay** (Bulent Ecevit University, Turkey) O
The Preparation of Nanoparticles Based on Unsaturated Fatty Acid Impregnated Chitosan Membrane for Using in Cancer Related Infections

11:30-11:45 **Laura Mondragón Martínez** (ICN2, Spain) O
AuAg hollow nanoshells as therapeutic tools for cancer treatment

11:45-12:15 **Jordi Llop** (CIC BiomaGUNE, Spain) K
Development of nanomedicines for boron neutron capture therapy

12:15-12:30 **Ana Isabel Becerro** (Instituto de Ciencia de Materiales de Sevilla (CSIC-US), Spain) O
HoF3 and DyF3 nanoparticles as dual contrast agents for MRI and CT

12:30-13:25 **POSTER Flash Session (x11)**

13:25-14:30 **Cocktail Lunch**

14:30-15:00 **Poster Session**

Chair: Víctor Puentes (ICREA / ICN2, Spain)

15:00-15:30 **Danny Porath** (The Hebrew University of Jerusalem, Israel) K
Novel DNA-Based Molecules and Their Charge Transport Properties

15:30-15:50 **Josep Ferré Borrull** (URV, Spain) I
Structural Design and Biotechnological Applications of Nanoporous Anodic Alumina

15:50-16:10 **Anna Laromaine** (ICMAB-CSIC, Spain) I
C. elegans a powerful screening biotool for nanotechnology

16:10-16:25 **Michele Vitali** (Institut de Recerca Vall d'Hebron (VHIR), Spain) O
Spectroscopic kinetic determination of hard protein corona composition

16:25-16:55 **Yossi Paltiel** (The Hebrew University of Jerusalem, Israel) K
The Chiral Induced Spin Selectivity Effect (CISS)

15:00-16:30 Workshop: New solutions for the safe use of NMs: SUDOE NanoDESK and LIFE NanoMONITOR

15:00-15:30: New exposure assessment devices for workplace exposure and air quality studies: LIFE NanoMONITOR. **Carlos Fito**, ITENE

15:30-15:50: Outcomes from the SUDOE NanoDESK project I: new tools for the promotion of the nanotechnology uptake in the plastic sector. **Arantxa Ballesteros**, ITENE

15:50-16:10: Outcomes from the SUDOE NanoDESK project II: NanoDESK Platform, a new tool for the hazard profiling and risk assessment of NMs. **Carlos Fito**, ITENE

16:10-16:30: Roundtable

16:55-17:25 Coffee Break / Poster Session

Chair: Anna Laromaine (ICMAB-CSIC, Spain)

17:25-17:55 **Enrique Navarro** (Instituto Pirenaico de Ecología - CSIC, Spain) K
The use of algal photosynthesis as a sensor of bioavailable silver from nanomaterials at complex biological interfaces

17:55-18:10 **Arantxa Ballesteros Ríaza** (ITENE, Spain) O
Toxicological profile of bioaerosols in industrial and urban scenarios – case studies in the framework of worker risk assessment

18:10-18:30 **Carlos Barata** (IDAEA-CSIC, Spain) I
Adding ECO on aquatic toxicity studies conducted with nanoparticles. A case study of nanoparticles of TiO₂ on Daphnia magna life-history performance across food ratios

18:30-18:50 **Miren Cajarville** (Universidad del País Vasco, Spain) I
Environmental impact of metal-bearing nanoparticles and graphene family nanomaterials

18:50-19:05 **Paloma Gómez Fernández** (GAIKER, Spain) O
NanoReg2 Grouping Approach

Wednesday (May 29, 2019)

Chair: **Daniel Sanchez Portal (CFM-CSIC, UPV/EHU & DIPC, Spain)**

09:00-09:30 **Jose Angel Martin Gago** (ICMM-CSIC, Spain) K
Highly-controlled graphene functionalization as a platform for robust nano-bio-hybrid interfaces

09:30-09:50 **Pedro Alpuim** (INL, Portugal) I
Towards a biosensing platform based on graphene field-effect transistors

09:50-10:20 **Oliver Gröning** (Empa, Switzerland) K
Engineered Quantum States in Graphene Nanoribbons

10:20-10:50 **Paolo Bondavalli** (Thales Research & Technology, France) K
Dynamic Spray-Gun Deposition: a new way of conceiving the lego view for 2D and 1D nanomaterials

10:50-11:05 **Laura Armiento** (Grafoid, Canada) O
Title to be defined

11:05-11:35 **Coffee Break / Poster Session**

Chair: **Jose Angel Martin Gago (ICMM-CSIC, Spain)**

11:35-12:05 **Daniel Sanchez Portal** (CFM-CSIC, UPV/EHU & DIPC, Spain) K
Transport in Low-Dimensional Systems from Theory and Experiment: Two-Probe Scanning Spectroscopy on Ge(001)-c(4x2) and Graphene Nanoribbons

12:05-12:25 **Cesar Moreno** (ICN2, Spain) I
Atomically-precise graphene nanoarchitectures

12:25-12:45 **Blanca Biel** (Universidad de Granada, Spain) I
Point-like defects in transition metal dichalcogenides characterized by SPM simulations

12:45-13:00 **Christophe Adessi** (Institut Lumière Matière, Université Claude Bernard Lyon 1, France) O
DFT study of the electrical and thermal transport properties of 2D MoS₂: Application to thermoelectricity

13:00-13:15 **Aleandro Antidormi** (Catalan Institute of Nanoscience and Nanotechnology (ICN2), Spain) O
An-all atom investigation on morphological stability and transport properties of Reduced Graphene Oxide

13:15-13:30 **Pablo Piskunow** (Catalan Institute of Nanoscience and Nanotechnology (ICN2), Spain) O
The Kernel Polynomial Method in Kwant, Open-Source Software for Nanoscale Simulations

13:30-15:00 **Lunch**

Chair: **Klaas-Jan Tielrooij (ICN2, Spain)**

15:00-15:30 **Paolo Samori** (Université de Strasbourg, France) K
Internet of functions in hybrid supramolecular nanomaterials

15:30-16:00 **Eugenio Coronado** (ICMol / University of Valencia, Spain) K
Interfacing functional molecules with 2D materials

16:00-16:30 **Ian Kinloch** (University of Manchester, UK) K
Electrochemical Exfoliation of 2D Materials for Composite and Energy Applications

16:30-17:00 **Dmitri Efetov** (ICFO, Spain) K
 Cascade of superconducting domes and magnetic order in charge neutral and $\frac{1}{4}$ filled magic angle bilayer graphene

17:00-17:30 **Coffee Break / Poster Session**

Chair: **Dmitri Efetov (ICFO, Spain)**

17:30-17:50 **Klaas-Jan Tielrooij** (ICN2, Spain) I
 Graphene for detection and creation of terahertz light

17:50-18:20 **Niek van Hulst** (ICREA / ICFO, Spain) K
 Nanophotonics – where do the photons go?

18:20-18:50 **Ernesto Joselevich** (Weizmann Institute of Science, Israel) K
 Guided Nanowire Optoelectronics

18:50-19:05 **Maria A. Diaz Garcia** (Universidad de Alicante, Spain) O
 Solution-processed organic lasers with top-layer nanostructured resonators

19:05-19:35 **Yoram Selzer** (Tel Aviv University, Israel) K
 Photocurrent properties of junctions with single PbSe quantum dots

21:00 Conference Dinner

Thursday (May 30, 2019)

Chair: **Francesc Perez-Murano (IMB-CNM-CSIC, Spain)**

09:00-09:15 **Neus G. Bastús** (Catalan Institute of Nanoscience and Nanotechnology (ICN2), Spain) O
 Synthesis of Solid and Hollow Metal/CeO₂ Hybrid Nanostructures

09:15-09:30 **Leire Ruiz Rubio** (University of The Basque Country, Spain) O
 Nanofunctionalised materials based on polyoxometalate-polymer interaction

09:30-09:45 **Gonzalo Santoro** (ICMM-CSIC, Spain) O
 Carbon nanoparticles as cosmic dust analogues

09:45-10:00 **Carlos Sanchez Sanchez** (ICMM-CSIC, Spain) O
 On-Surface Hydrogen-Induced Covalent Coupling of Polycyclic Aromatic Hydrocarbons via a Superhydrogenated Intermediate

10:00-10:15 **Iolanda Di Bernardo** (The Australian National University, Australia) O
 Role of cerium in activating solar fuels production in transition metal-oxides

10:15-11:00 **Coffee Break**

Chair: **Ernesto Joselevich (Weizmann Institute of Science, Israel)**

11:00-11:20 **Francesc Perez-Murano** (IMB-CNM-CSIC, Spain) I
Self-assembly methods for nanoelectronics

11:20-11:40 **Frank Nouvertne** (Raith GmbH, Germany) I
From FIB to advanced FIB Nanofabrication: Taking advantage of multiple Ion Species and large Area Nanopatterning

11:40-11:55 **Ozge Saglam** (Izmir University of Economics, Turkey) O
Nanoscale Direct Writing by Near-Field Electrospinning Method

11:55-12:10 **Angel Perez del Pino** (Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Spain) O
Laser fabrication of nanocarbon-based hybrid electrodes for supercapacitors

12:10-12:40 **Shlomo Magdassi** (The Hebrew University of Jerusalem, Israel) K
Nanomaterials for 2, 3, 4D printing

12:40-13:10 **Jordi Arbiol** (ICREA-ICN2, Spain) K
Free-standing nanostructures at atomic scale: from growth mechanisms to local properties

13:10-14:45 **Lunch**

Parallel Session Phd Student I - Graphene & 2D materials / nanotubes / NanoBiotechnology/Nanomedicine

Chair: **Jordi Arbiol (ICREA-ICN2, Spain)**

14:45-15:00 **Zewdu Messele Gebeyehu** (Catalan Institute of Nanoscience and Nanotechnology (ICN2), Spain) O
High-yield spin devices with a long spin lifetime in chemical vapor deposited graphene

15:00-15:15 **Armando Pezo** (Catalan Institute of Nanoscience and Nanotechnology (ICN2), Spain) O
Enhancement of local Spin-Orbit Coupling effects in TMDC's/graphene heterostructures mediated by disorder

15:15-15:30 **Marc Vila Tusell** (Catalan Institute of Nanoscience and Nanotechnology (ICN2), Spain) O
Tunable Circular Dichroism and Valley Polarization in the Modified Haldane model

15:30-15:45 **Islam Alshaikh** (Universitat de Barcelona, Spain) O
Vertically Aligned Carbon Nanotubes grown on Graphite Paper Electrodes for Highly Flexible Supercapacitors

15:45-16:00 **Jakub Domagalski** (Universitat Rovira I Virgili, Spain) O
Controlled fabrication of nanotubes from nanoporous anodic alumina

16:00-16:15 **Rayhane Ben Khalifa** (Laboratory of Cellular and Molecular Biology, Tunisia) O
Preparation of rosemary essential oil-loaded multiple lipid nanoparticles (RO-MLNs) and evaluation of their antibacterial activity

16:15-16:30 **David Botequim** (Instituto Superior Técnico - University of Lisbon, Portugal) O
Tip-selective functionalization of gold nanorods with dye-labeled DNA's for effective fluorescence enhancements

16:30-16:45 **Dmitry Galyamin** (Instituto de Microelectrónica de Barcelona, IMB-CNM (CSIC), Spain) O
Comparison of oxidase activity of CeO₂ nanoparticles against laccase enzymes

16:45-17:00 **Rui Oliveira Silva** (Instituto Superior Técnico, Universidade de Lisboa, Portugal) O
Temperature-responsive magnetic logic gates in cellular hyperthermia process

Parallel Session Phd Student II - NanoMaterials / Nanophotonics/NanoOptics/Plasmonics / NanoChemistry / Nanomagnetism

Chair: Shlomo Magdassi (The Hebrew University of Jerusalem, Israel)

14:45-15:00 **Yousef Farraj** (The Hebrew University of Jerusalem, Israel) O
Self-Reducible Copper Complexes for Printing on 2D and 3D Heat Sensitive Objects

15:00-15:15 **Maxence Fernandez** (Université de Rennes 1, France) O
Hybrid self-assembly of quantum dots and gold nanoparticles driven by protein pairing

15:15-15:30 **Victor Fuentes** (Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Spain) O
Resistive Switching of SrIrO₃ thin films in the vicinity of a Metal Insulator Transition

15:30-15:45 **M^a Del Pilar Montero Rama** (Universitat Rovira i Virgili, Spain) O
Electrochemical Method for Removing Thick Barrier Layer in Nanoporous Anodic Alumina to get an Electronic Contact

15:45-16:00 **Eulàlia Pujades-Otero** (Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Spain) O
Interactions between conducting additives and redox couples dispersed in flow cell electrolytes

16:00-16:15 **Laura Karen Acosta Capilla** (Universitat Rovira i Virgili, Spain) O
Stacked and Overlapped Photonic Structures in Nanoporous Anodic Alumina

16:15-16:30 **Carolina de Dios Fernández** (IMN-CSIC, Spain) O
Chiral plasmonic systems: Assembling of achiral building blocks into 3D nanostructures

16:30-16:45 **Albenc Nexha** (Universitat Rovira i Virgili, Spain) O
Synthesis, thermal sensing and photothermal conversion efficiency of Ho,Tm:Y₂O₃ colloidal nanocrystals with different morphologies

16:45-17:00 **Sergi Martín Rio** (Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Spain) O
Ferromagnetic Resonance and Inverse Spin Hall Effect in Permalloy/Pt bilayers

17:00-17:45 Coffee Break / Poster Session

Parallel Session Senior I

Chair: Yossi Paltiel (The Hebrew University of Jerusalem, Israel)

17:45-18:00 **José Manuel Delgado-López** (Universidad de Granada, Spain) O
Nature-Inspired nanocomposites enabling smart technologies

18:00-18:15 **Gloria Belén Ramírez Rodríguez** (University of Granada, Spain) O
Biomimetic calcium phosphate nanoparticles as promising nanocarriers for sustainable agriculture

18:15-18:30 **Aitor Gual** (Centre Tecnològic de la Química (CTQC) - EURECAT, Spain) O
 Facile synthesis of NHC-stabilized Ni nanoparticles and their catalytic application in selective hydrogenations

18:30-18:45 **Pablo Guardia** (Institut de Recerca en Energies de Catalunya (IREC), Spain) O
 Multifunctional nanostructured composite aerogels from a molecular-free gelation process

Parallel Session Senior II

Chair: **Danny Porath** (The Hebrew University of Jerusalem, Israel)

17:45-18:00 **Maya Narayanan Nair** (Institute for Nuclear and Radiation Physics (IKS), Belgium) O
 Superperiodicity Induced Band Gap In Graphene

18:00-18:15 **Josep Roqué Rosell** (Universitat de Barcelona, Spain) O
 Nanoscale approach in mineralogy and its implications in ore deposits

18:15-18:30 **Félix Quintero Martínez** (Universidade de Vigo, Spain) O
 Ultra-long, continuous and super-flexible glass nanofibers produced by a novel technique: Continuous Fiberizing by Laser melting and Supersonic dragging

18:30-18:45 **Daniel E. Martínez-Tong** (University of The Basque Country, Spain) O
 Mapping the ionic conductivity of a solid polymer electrolyte by non-contact AFM

Friday (May 31, 2019)

Chair: **Blanca Biel** (Universidad de Granada, Spain)

09:00-09:15 **Krishna P Dhakal** (Sungkyunkwan University, Korea) O
 Continuous phase transition of the MoS₂ from 2H to 1T' state by using 2D electride: Ca₂N

09:15-09:30 **Ravi Kumar Biroju** (University of Birmingham, UK) O
 Exploring Atomic Layers for Photocatalysis

09:30-10:00 **Xinliang Feng** (Technische Universitaet Dresden, Germany) K
 Polymer Synthesis Enabled by Interfaces: Towards a world of organic 2D materials

10:00-10:30 **Roman Gorbachev** (The University of Manchester, UK) K
 Novel materials for van der Waals heterostructures and advances in their nanofabrication

10:30-10:50 **David Soriano** (Radboud University, The Netherlands) I
 Chromium Halides: Recent Progress and Open Questions

10:50-11:10 **Paola Ayala** (University of Vienna, Austria) I
 On the quantification of heteroatoms in carbon nanotubes at bulk and local scale

11:10-11:50 **Coffee Break / Poster Session**

Chair: **Josep Ferré Borrull (URV, Spain)**

- 11:50-12:10 **María José Esplandiu** (ICN2, Spain) I
Chemically propelled motors: an introspection into their operational mechanisms
- 12:10-12:30 **Tania Patiño** (University of Rome Tor Vergata, Italy) I
Bio-hybrid nanorobotic devices: towards healthcare applications
- 12:30-12:45 **Lei Wang** (Institute for Bioengineering of Catalonia (IBEC), Spain) O
Lipase-powered mesoporous silica nanoparticles for triglyceride degradation
- 12:45-13:00 **Mariana Köber** (Institute of Materials Science of Barcelona, ICMAB-CSIC, Spain) O
Quatsomes: a novel, thermodynamically stable nanovesicle system
- 13:00-13:15 **José Vidal-Gancedo** (Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Spain) O
Radical Dendrimers. Synthesis, Characterization and Biomedical Applications
- 13:15-13:30 **Olga Dement'eva** (Frumkin Inst. of Physical Chem and Electrochemistry of RAS, Russia) O
Mesoporous Silica Nanocontainers: State of Art and Outlooks
- 13:30-14:00 **Samuel Sánchez** (IBEC, Spain) K
Nanomotors: Active nanoparticles that move, respond to stimuli, sense, clean, and transport drugs efficiently
- 14:00 **Closing remarks & nanospain2020 announcement**