

## Wednesday, 20th May 2015

### Nanodevices, Theory and Simulation, Nanomaterials for Energy and Environment

9:00 - 09:15 **Registration**

9:15 - 09:30 **Welcome**

by organizers and members

### **Session 1 - Short presentations (5 speakers 15min including questions)**

*chairmans : Sweta Bhansali and Irati Golvano*

09:30 - 09:45 "A Monolithically Integrated 3-Terminal CMOS-NEM Relay" - Martin Riverola (UAB)

09:45 - 10:00 "Electrochemical switchable devices based on ferrocene-SAMs for memory devices" - Elena Marchante (ICMAB)

10:00 - 10:15 "Electromechanical transduction in Silicon nanowire mechanical resonators fabricated by focused ion beam (FIB) implantation" - Jordi Llobet (CNM)

10:15 - 10:30 "Top-down silicon microcantilever with coupled bottom-up silicon nanowire for enhanced mass resolution" - Gabriel Vidal (UAB)

10:30 - 10:45 " Uniaxial Alignment of Conjugated Polymers During Deposition From Solution" - Bernhard Döring (ICMAB)

10:45 - 11:45 **Coffe Break + Poster session**

### **Session 2 - Short presentations (6 speakers 15min including questions)**

*chairmans : Daniel Bahamod and Gabriel Vidal*

11:45 - 12:00 "Selecting steady or transient photoresponses in BaTiO<sub>3</sub> nano-multilayer films" - Fanmao Liu (ICMAB)

12:00 - 12:15 "Simulation of CAFM topography and current of structures based on high-k dielectrics" - Carlos Couso (UAB)

12:15 - 12:30 "Understanding the behaviour of multifunctional Gold Nanoparticles (AuNPs)" - Asli Raman (UAB)

12:30 - 12:45 "Pushing the frontiers of first principles calculations into the nanoworld with SIESTA-PEXSI" - Georg Huhs (BSC)

12:45 - 13:00 "Electric transport measurements in YBCO nanocomposites: a route to understand magnetic vortex pinning and creep" - Ferran Vallès (ICMAB)

13:00 - 13:15 "Imaging the intramolecular structure and work function of molecules at room temperature" - Sonia Matencio (ICMAB)

1:15 - 15:00 **Lunch (not included)**

### **Session 3 - Short presentations (4 speakers 15min including questions)**

*chairmans : Jordi Llobet and Elena Marchante*

15:00 - 15:15 "Potential uses of inorganic nanoparticles for the removal of heavy metals in water" - Ada Rebeca Contreras (UAB)

15:15 - 15:30 "GIXRD studies of solvent annealing effect in donor-acceptor structures and effects of ITO functionalization by SAM in high efficient polymer SCs" - Ana Pérez (ICMAB)

15:30 - 15:45 "Nanomaterials for energy and environment" - Carlos Franco (ICMAB)

15:45 - 16:00 "Storing Deformation Energy of ZnO fine wires in a Mechanical Battery" - Oscar Gilberto Súčhil (UAB)

16:00 - 17:00 **Case of Success #1: Xavi Martí (IGSresearch)**

## Thursday, 21st May 2015

### Synthesis and Characterization, Nanomedicine and nanobiomaterials

#### **Session 4 - Short presentations (7 speakers 15min including questions)**

*chairmans : Sweta Bhansali and Irati Golvano*

- 09:00 - 09:15** "Structural and electronic properties of Fe layers intercalated under graphene nanoislands" - Sofia Parreiras (ICN2)  
**09:15 - 09:30** "Growth and characterization of superconducting YBCO films prepared from Fluorine-Free chemical solutions" - Laia Soler (ICMAB)  
**09:30 - 09:45** "Spin-flip electron scattering in the BiAg<sub>2</sub> Rashba surface alloy" - Stefano Schirone (ICN2)  
**09:45 - 10:00** "Plasmonic hollow cylindrical nanostructures fabricated by Nanoimprint Lithography and non-directional metallization" - Ana Conde (CNM-UB)  
**10:00 - 10:15** " Directed self-assembly of block copolymers by chemical surface modification" - Laura Evangelio (CNM)  
**10:15 - 10:30** "Synthesis, Culture Medium Stability, and in vitro and in vivo Zebrafish Embryo Toxicity of Metal-Organic Framework Nanoparticles" - Jordi Espín (ICN2)  
**10:30 - 10:45** "New functional oxynitride materials " - Ashley P. Black (ICMAB)

#### **10:45 - 11:45 Coffe Break + Poster session**

#### **Session 5 - Short presentations (6 speakers 15min including questions)**

*chairmans : Daniel Bahamod and Gabriel Vidal*

- 11:45 - 12:00** "Solution-derived YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-δ</sub> nanocomposites with *ex-situ* preparation of nanoparticles for enhanced superconducting performance" - Pablo Cayado (ICMAB)  
**12:00 - 12:15** "An Amide-Functionalized Microporous Zn-Metal-Organic Framework for CO<sub>2</sub> Capture" - Vahid Safarifard (ICN2)  
**12:15 - 12:30** "Switchable mechanical properties in ferroelectrics" - Kumara Cordero (ICN2)  
**12:30 - 12:45** "Printed Electronics Circuits challenges and trends" - Manuel Llamas (CNM-UAB)  
**12:45 - 13:00** "Albumin: An important protein. From its adsorption mechanism on superparamagnetic iron oxide nanoparticles to its biological effects" - Siming Yu (ICMAB)  
**13:00 - 13:15** "Mechanical and magnetic properties of biodegradable Fe-10Mn6Si1Pd and Fe-30Mn6Si1Pd alloys" - Yuping Feng (UAB)

#### **13:15 - 15:00 Lunch (not included)**

#### **Session 6 - Short presentations (3 speakers 15min including questions)**

*chairmans : Jordi Llobet and Elena Marchante*

- 15:00 - 15:15** "Generating colloidally stable antibody-coated silica nanoparticles using polyamidoamine dendrimers and dextran as crosslinkers" - Colin Moore (U. of Kent)  
**15:15 - 15:30** "Optimization of the cow dry period through protein-based nanoparticles" - Olivia Cano (UAB)  
**15:30 - 15:45** "Quatsomes: New Highly Stable Nanovesicular Structures" - Lidia Ferrer (ICMAB)

#### **16:00 - 17:00 Case of Success #2: Santi Sala (Nanomol Technologies)**

## jphd2015 poster programme

Poster Number	Presenter	Affiliation	Topic Area	Title
1	Antonio Campos García	ICMAB	Nanodevices	pi-extended tetrathiafulvalene derivatives as organic field-effect transistors
2	Inés Temiño Gutierrez	ICMAB	Nanodevices	Stability improvement of DB-TTF transistors in solution processed blends
3	Maria Serena Maglione	ICMAB	Nanodevices	A surface confined molecular switch with multiple accessible redox states
4	Raul Díaz Torres	ICMAB-UB	Nanodevices	Curcuminoid compounds: Design of functional system for molecular electronics
5	Zahilia Caban	ICN2	Energy & Environment	Carbon-LiFePO <sub>4</sub> Electrodes with Fractal Granularity
6	Laura Córcoles Guija	ICMAB	Energy & Environment	Light Beam Induced Current setup for organic solar cells characterization
7	Roberto Willyan Verjullo	CNM	Energy & Environment	Fabrication and Evaluation of a Passive Alkaline Anion Exchange Membrane $\mu$ Direct Alcohol Fuel Cell (AEM- $\mu$ DAFC)
8	Laura González Moragas	ICMAB	Nanomedicine & nanobiomaterials	Evaluation of the interaction between superparamagnetic iron oxide nanoparticles and the model organism <i>Caenorhabditis elegans</i>
9	Wenjie Qian	ICMAB	Nanomedicine & nanobiomaterials	Sequential and Spatial Organization of Zn(II)-Porphyrin
10	Irene González	UAB	Nanomedicine & nanobiomaterials	Intracellular characterization of Gag-GFP VLP production by transient transfection in HEK 293 cells.
11	Antonio Aranda Ramos	UAB	Nanomedicine & nanobiomaterials	In vitro characterisation of silica nanoparticles for drug delivery in human carcinoma cells
12	Rafael Miñana Prieto	Endor Nanotech.	Nanomedicine & nanobiomaterials	Golden Hyaluronan: an active ingredient for cosmetic applications
13	Alberto Rodriguez Fernandez	UAB	Others	Influence of Temperature and Polarity on the Switching Behavior of Ni/HfO <sub>2</sub> -based RRAM Devices
14	Franciele Wolfart	UFPR and ICN2	Others	The kinetic study of pyrrole polymerization in presence of imidazole

## jphd2015 poster programme

Poster Number	Presenter	Affiliation	Topic Area	Title
15	Michele Gastaldo	ICN2	Synthesis & Characterization	Decoupling of shape-selected graphene nanoislands grown on Ni(111) by Au intercalation
16	Changyong Lu	UAB and ICMAB	Synthesis & Characterization	Fe <sub>3</sub> O <sub>4</sub> @SiO <sub>2</sub> core shell nanoparticles and Fe <sub>3</sub> O <sub>4</sub> /CNTs nanocomposites preparation and morphology control
17	Junpeng Fan	UAB	Synthesis & Characterization	Ni- and Cu-doped ordered mesoporous SnO <sub>2</sub> materials prepared by nanocasting: structure and magnetic properties
18	Laura Rodríguez Domínguez	ICN2	Synthesis & Characterization	Study of surface screening by water on polarized ferroelectric thin films by Near Ambient Pressure XPS
19	Federico Gramazio	ICN2	Synthesis & Characterization	Characterization of LiTaO <sub>3</sub> thin films in order to study Water adsorption
20	Francesc Bejarano	ICMAB	Synthesis & Characterization	Modification of sp <sup>2</sup> -carbon and gold substrates with organic radicals
21	Mengdi Qian	ICMAB	Synthesis & Characterization	Tunnel junctions with adjustable ferroelectric barriers for large electroresistive response
22	Bernat Mundet	ICMAB	Synthesis & Characterization	Functional oxide interfaces
23	Natalia Chamorro García	UAB/ICMAB	Synthesis & Characterization	
24	Davide Blasi	ICMAB	Synthesis & Characterization	First example of fluorescent organic nanoparticles (FONPs) based on Inert Carbon Free-Radical
25	Andrea Schiaffino	ICMAB	Theory and simulation	Calculation of Flexoelectricity from Density Functional Perturbation Theory
26	Juli Blasco	UAB	Theory and simulation	Model for the Current-Voltage Characteristic of Voltage-Driven Bipolar RRAM Devices
27	Ahmad Abo Markeb	UAB	Synthesis & Characterization	