JPhD2023

7th-9th June 2023

Venue: **ICMAB-CSIC (UAB Campus)**

Format:

✓ **JPhD2023 will have…**

- **Plenaries**
- **Orals** **and** **Poster session**
- **Roundtables**

Talks of Multidisciplinary topics in **single** and **parallel sessions at**:

Sala d'Actes Carles Miravitlles (room 1) + Matgas (room 2)

Main topics:

-Energy and Environment.
-Electronics and Nanofabrication.
-Bioapplications in Medicine.
-Nanomaterials and Magnetism.
-Synthesis and Characterization.

- ✓ The talks will be in **English**.
- ✓ **Orals (PhDs)**: 8 min (presentation) + 2 min (for questions), approximately.
- ✓ **Plenaries** for each topic: 1 h + A **talk by MDPI publisher** company (30 min)

Main speakers:

-Prof. Jordi Arbiol
-Dr. Maria Bernechea Navarro
-Dr. Lucia Aballe
-Elisabetta Dimaggio
-Dr. Anna Laromaine

- ✓ **2 Roundtables** in **parallel sessions for PhDs:**

Topics: **Planning your career** (hosted by Alejandro Gómez)

And now what, Industry or Academia?

- **Thought** for early and last stage PhDs
- A **space** of **interaction, experience sharing** and **fruitful discussion** with the **guest speakers**

- ✓ **Coffee breaks** to rest a little bit, eat and drink.
- ✓ And a **beer tasting** (for those who wish).
- ✓ **Last day: Visit to ALBA synchrotron.**

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7th-9th June 2023

Venue: ICMAB-CSIC (UAB Campus)

June 7th

8:30-9:00	**Registration**

Electronics and Nanofabrication (Room 1 and 2)

9:00-09:45	**Elisabetta Dimaggio,** Assistant Professor at University of Pisa *"1D & 2D material - based electronics for energy harvesting and sustainable technology"*

	Theoretical Modeling (Room 2) *Chairperson: Francesco Salutari*	Fabrication and Characterization (Room 1) *Chairperson: Jessica Ramirez*
09:45-09:55	**Saptam Ganguly** *"Enhanced photostrictive actuation in freestanding ferroelectric membranes."*	**Xueliang Lyu** *"Epitaxial stabilization of ferroelectric Hf0.5Zr0.5O2 thin films."*
09:55-10:05	**Mohammadamir Ghasemishabankareh** *"Investigating the Use of Fresnel Lens and Holy-Structured Metamaterials with different materials in COMSOL for enhancing ultrasound focusing for Imaging purposes."*	**Thomas Günkel** *"Voltage induced changes in LSMO-YBCO heterostructures for novel memristive devices."*
10:05-10:15	**Manel Mas Martín** *"Electrothermal modeling of Mo/Au Transition-Edge Sensors."*	**Philipp Langner** *"An oxygen-ion all-solid-state synaptic transistor with efficient energy consumption for low temperature applications."*
10:15-10:25	**Umair Saeed** *"Free Standing Antiferroelectric membrane capacitors: Avenue for high efficiency Silicon integrated electronics."*	**Carolina Duque Sierra** *"Electrospun-based SiGe nanotubes for thermoelectric applications."*
10:25-10:35	**Ismael Babeli Aguilera** *"3D printing for SOFC/SOEC applications."*	**Maria Elisabetta Giglio** *"Charge-Transfer Complexes: Implementation in solution-processed Organic Field-Effect Transistors."*
10:40-11:15	**Roundtable:** **Planning your career** - Alejandro Gómez, Senior Researcher at ICN2 - Alba Garzón Manjón, Senior Researcher at ICN2	

	- María Cabello, InBrain Researcher - Gabriel Martínez, MDPI
11:15-11:45	**Coffee break**

Bioapplications in Medicine (Room 1 and 2)

11:45-12:30	**Anna Laromaine,** Researcher at ICMAB *"Harnessing the Power of C. elegans for Nanoparticle Innovation and Progress"*

	Sensors (Room 2) *Chairperson: Helena Rabelo*	Therapy (Room 1) *Chairperson: Aritz Lafuente*
12:30-12:40	**Marc Domingo Cabasés** *"Effect of surfactants on SARS-CoV-2: Molecular dynamics Simulations"*	**Jose Daniel Bolaños Cardet** *"Bioinspired Antibacterial Catechol-Amine Coatings"*
12:40-12:50	**Razia Batool** *"Biomimetic Nanoplasmonic sensor for the evaluation of COVID-19 antiviral immunotherapy"*	**Noelia Hernández Lobato** *"Graphene oxide-based model platform for vaccine development"*
12:50-13:00	**María Jesús Ortiz Aguayo** *"Electrolyte gated organic field – effect transistor for point-of-care Tests"*	**Despoina Despotopoulou** *"Engineering versatile graphene oxide-based nanoplatforms for Immunomodulation"*
13:00-13:10	**Denise Marrero** *"Organ-on-a-chip with integrated semitransparent organic electrodes for barrier function monitoring"*	**Carla Castellar Álvarez** *"DELOS nanovesicles-based hydrogels as promising subcutaneous drug delivery systems"*
13:10-13:20	**Laura Lefaix Fernández** *"Integrated ZnO piezoelectric nanostructures in microdevices for wireless electrical cell stimulation"*	**Marta Alcaina Hernando** *"New plant-based nanovesicles based on alkyl polyglucosides surfactants and β-sitosterol as topical drug delivery systems"*
13:20-13:30	**Marc Navarro Pons** *"Aluminum Nitride resonant MEMS for bioelectronic Microdevices"*	**Carla Riera-Llobet** *"Adaptative Computation Techniques in Proton therapy"*
13:30-13:40		**Nanthilde Malandain** *"Composite hydrogels based on decellularized*

		extracellular matrix and cellulose"
13:45-14:15	**MDPI** **Gabriel Martinez** *"MDPI Open Access & Peer Review process"*	
14:15-15:15	**Lunch**	
Energy and Environment (Room 1 and 2)		
15:15-16:00	**Maria Bernechea,** Senior Researcher (ARAID) "Colloidal Nanosemiconductors for Energy and Environment"	
	Energy (Room 1) ***Chairperson: Jing Yu***	**Environment (Room 2)** ***Chairperson: Marc Botifoll***
16:00-16:10	**Chao Yue Zhang** *"Metal-Sulfur Batteries with High Performance Enabled by Ferromagnetic Catalytic Additives through Magnetically Induced Spin Polarization"*	**Houyem Trabelsi** *"Electrochemical behavior of zinc and cadmium complexes in solution with bidentate organochalcogenophosphorus ligands."*
16:10-16:20	**Ashitha Paingott Parambil** *"Surface Functionalized MXene-based Halide Perovskite Solar Cells"*	**Jessica Casandra Ramirez** *"Development of multifunctional micro/nanoparticles for environmental remediation"*
16:20-16:30	**Aureliano Macili** *"Synthesis of New Ni Nanostructures via the Organometallic Approach and Their Applications in Energy-Relevant Processes"*	**Mario Herrero Cervera** *"Unraveling the role of a plant immune cell death marker ATPase"*
16:30-16:40	**Fanny Baumann** *"Monitoring of physical mechanisms acting during perovskite solar cell degradation via in-situ characterization and insights to stabilization when using molecular additives"*	**Ranit Ram** *"Cation exchange driven alloy/ heterostructure synthesis using $Cu_{2-x}Se$ nanosheet template"*
16:40-16:50	**Fjorelo Buzi** *"A novel air-electrode nanocomposite with enhanced durability for Thin Film Solid Oxide Cells"*	**Muhammad Adil** *"Control and operation of Wastewater treatment plants with inclusion of environmental consideration"*

16:50-17:00	**Kenedy Tabah Tanko** *"Stability Assessment of Perovskite Solar Cells Under Real Outdoor Conditions: Effect of Encapsulation"*	**Heting Hou** *"Ru and Pt-Based Nanomaterials as Electrocatalysts or PhotoCatalysts for the Hydrogen Evolution Reaction"*
17:00-17:10	**David Batet** *"Carrageenan-based ink formulations for sustainable screen-printed primary batteries"*	**Xuesong Zhang** *"Outperforming catalytic activity of AuxPt1-x nanostructures by a chlorine-assisted synthesis in hydrogen evolution reaction"*
17:10-17:20	**Miquel Casademont Viñas** *"RAINBOW Organic Solar Cells: Implementing Spectral Splitting in Lateral Multi-Junction Architectures"*	**Roger de Paz Castany** *"Electrodeposited Ni-W coatings for hydrogen evolution reaction in acidic media: insights on electrocatalyst durability"*
17:20-17:30	**Tehreema Naeem** *"Electrochromic study of dimethyl terephthalate in green solid media"*	
17:30-18:30	**1st Poster session** + Beer tasting + coffee break (at ICMAB terrace)	

June 8th

8:45-9:00 **Registration**

Synthesis and Characterization (Room 1)

Chairperson: Darla Mare

9:00-9:45	**Jordi Arbiol,** ICREA Research Professor *"2D Nanostructures at Atomic Scale: From Energy and Environmental Applications to Quantum Devices"*
9:50-10:00	**Naureen Khanam** *"Scalable synthesis of ferromagnetic ε-Fe_2O_3 nanoparticles for 6G applications"*
10:00-10:10	**Martí Ramis García** *"Solution-processed Sr3-xCaxAl2O6 sacrificial layer for ex-situ synthesis of freestanding epitaxial oxide membranes"*
10:10-10:20	**Meritxell Toda i Casaban** *"Epitaxial growth of perovskite manganite thin films by polymer assisted deposition for spintronic applications "*

10:20-10:30	**José Catalán Toledo** *"Synthesis and stabilization of liquid metal Eutectic Gallium Indium (EGaIn) nanoparticles with phosphonic acid derivatives in aqueous media"*
10:30-10:40	**Carla Torres** *"Growth of superconducting $YBa_2Cu_3O_{7-x}$ epitaxial layers by TLAG with in-situ synchroton characterization"*
10:40-10:50	**Marta Ruiz Ruiz** *"Real-time microscopic view of the relaxation of an ultrastable Glass"*
10:50-11:00	**Alejandro Ramo Irurre** *"Study of prussian blue related materials: synthesis, characterization and test as positive electrode for secondary calcium batteries"*
11:10-11:45	**Coffee break**
11:45-12:45	**Roundtable:** **Career Perspectives** - Enrique Vilanova, Project Researcher at ICMAB-CSIC - Adriana R. Kyvik, Cofunder y Technology Lead de B'ZEOS - Damià Viana, InBrain Researcher. - Jordi Arbiol, ICREA Research professor
12:45-14:00	**Lunch**
Nanomaterials and Magnetism (Room 1) ***Chairperson: Muhammad Adil***	
14:00-14:45	**Lucia Aballe,** Senior Researcher at ALBA synchrotron *"X-ray magnetic micro-spectroscopy of magnetization dynamics driven by surface acoustic waves"*
14:45-14:55	**Shoulong Chen** *"Microstructure and Magnetization Dynamics in $La_{2/3}Sr_{1/3}MnO_3$ Epitaxial Thin Films"*
14:55-15:05	**Shunya Yan** *"Unexpected Microscopic electrostatic effects in organic semiconductor thin films revealed by KPFM"*
14:05-15:15	**Guilherme Theophilo Telles** *"Topological optimization of a low impedance HTS-Cu coating for particle accelerators beam screens"*
15:15-15:25	**Jaume Cunill-Subiranas**

	"Bulk Superconductors for Toroidal Magnetic Confinement: Application for Fusion Magnets"
15:25-15:35	**Natanael Bort-Soldevila** *"Shaping Magnetic Fields and Removing Electromagnetic Forces with Bulk Superconductors"*
15:35-15:45	**Hugo Gómez Torres** *"Measurement of heat capacity of $MoSe_2$ nanoflakes by pulse heating technique"*
15:45-15:55	**Neil Lamas** *"A novel method for HTS coating"*
16:00-17:00	**2nd Poster session**
17:00-17:15	**Closing Remarks and Awards**

June 9th

15:00-16:30	**Visit to ALBA**

Poster session

	June 7th		June 8th
1	**Arianna Quesada** *"Ellipsometric measurements in organic semiconducting materials for photovoltaics."*	14	**Milos Manojlovic** *"Soft X-ray Low Gain Avalanche Detector for Imaging Application."*
2	**Alba Cazorla** *"Charge-Transfer Complex Formation in Organic Semiconductor Films and its role in Surface Doping."*	15	**Èric Bach** *"Production results and analysis of the ATLAS ITk Strip Sensors Quality Assurance Program"*
3	**Giulia Pancotti** *"Synchrotron Circular Dichroism Mapping of Organic Composites."*	16	**Lorette Fernandez** *"MOST Characterization and Devices."*
4	**Meriem Abid** *"Free Standing Antiferroelectric membrane capacitors: Avenue for high efficiency Silicon integrated electronics."*	17	**Cheng Liu** *"Operando Observation of Mechanisms in the MnO2 Cathode in Rechargeable Aqueous Zn Batteries."*
5	**Alexander Frebel** *"Band alignment of BiFe0.9Co0.1O3 based photovoltaic devices."*	18	**Paul Nizet** *"Characterization of a perovskite oxide-based device via optical impedance."*
6	**Wenjuan Zhang** *"Theoretical Study of the Catalytic Performance of Fe and Cu Single-atom Catalysts Supported on Mo2C Towards the Reverse Water-gas Shift Reaction (RWGS)"*	19	**Nerea Ruiz** *"Arabidopsis metacaspase MC1 localizes in stress granules, clears protein aggregates and delays senescence"*
7	**Anna Solé** *"Theranostic Polymeric Nanocarriers Administered to the Brain and Lungs"*	20	**Allan Lancéux** *"Functionalization Of Bacterial Cellulose with Ceria Nanoparticles and Chitosan for Biomedical Applications"*
8	**Jose Daniel Bolaños** *"Bioinspired Antibacterial Catechol-Amine Coatings"*	21	**Liqiong Li** *Bacterial cellulose-low molecular weight chitosan nanocomposites for biomedical applications"*
9	**Ariana Rueda** *"Site-directed conjugation of multivalent protein nanomaterials for cancer targeted therapies"*	22	**Kevin García** *"Aligning periodic arrays of 1D topological states with superlattices."*

10	**Aitor Arreondo** *"Magneto-ionic effects in mesoporous oxidized Ni-Co alloy electrodeposited films"*	**23**	**Tommaso Albrigi** "Phonon transport across Ge/GaAs heterojunctions by nonequilibrium molecular dynamics"
11	**Naureen Khanam** *"Preparation of ε-AlxFe2-xO3 thin films by chemical solution deposition"*	**24**	**Esteve Ribas** *"Filling the pores of nanoporous graphene with atomic precision"*
12	**Alejandro Cuesta** *"Template-assisted synthesis of 1D van der Waals heterostructures"*	**25**	**Karen Stefanie Mejía** *"Cerium-doped Magnetite Nanoparticles: Synthesis, Characterization and Catalytic Activity"*
13	**Aiswarya Kethamkuzhi** *"Superconducting properties and microstructural characterization of TLAG YBa2Cu3O7-δ thin films oxygenated with ozone"*	**26**	**Ruben García Fontarosa** *"High-Z nanoparticles for enhanced radiation therapy"*