

**Format:**

✓ JPhD2023 will have...

**Plenaries****Orals and Poster session****Roundtables****Talks of Multidisciplinary topics in single and parallel sessions at:**

Sala d'Actes Carles Miravittles (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.**

**June 7<sup>th</sup>**

8:30-9:00

**Registration**
**Electronics and Nanofabrication**

9:00-09:45	<b>Elisabetta Dimaggio,</b> Assistant Professor at University of Pisa <i>"1D &amp; 2D material - based electronics for energy harvesting and sustainable technology"</i>	
	<b>Theoretical Modeling</b>	<b>Fabrication and Characterization</b>
09:45-09:55	<b>Saptam Ganguly</b> <i>"Enhanced photostrictive actuation in freestanding ferroelectric membranes."</i>	<b>Xueliang Lyu</b> <i>"Epitaxial stabilization of ferroelectric Hf<sub>0.5</sub>Zr<sub>0.5</sub>O<sub>2</sub> thin films."</i>
09:55-10:05	<b>Mohammad Amir Ghasemishabankareh</b> <i>"Investigating the Use of Fresnel Lens and Holy-Structured Metamaterials with different materials in COMSOL for enhancing ultrasound focusing for Imaging purposes."</i>	<b>Thomas Günkel</b> <i>"Voltage induced changes in LSMO-YBCO heterostructures for novel memristive devices."</i>
10:05-10:15	<b>Manel Mas Martín</b> <i>"Electrothermal modeling of Mo/Au Transition-Edge Sensors."</i>	<b>Philipp Langner</b> <i>"An oxygen-ion all-solid-state synaptic transistor with efficient energy consumption for low temperature applications."</i>
10:15-10:25	<b>Umair Saeed</b> <i>"Free Standing Antiferroelectric membrane capacitors: Avenue for high efficiency Silicon integrated electronics."</i>	<b>Carolina Duque Sierra</b> <i>"Electrospun-based SiGe nanotubes for thermoelectric applications."</i>
10:25-10:35	<b>Ismael Babeli Aguilera</b> <i>"3D printing for SOFC/SOE C applications."</i>	<b>Maria Elisabetta Giglio</b> <i>"Charge-Transfer Complexes: Implementation in solution-processed Organic Field-Effect Transistors."</i>

<b>10:40-11:15</b>	<b>Roundtable:</b> <b>Planning your career</b> <ul style="list-style-type: none"> <li>- Alejandro Gómez, Senior Researcher at ICN2</li> <li>- Alba Garzón Manjón, Senior Researcher at ICN2</li> <li>- María Cabello, InBrain Researcher</li> <li>- Gabriel Martínez, MDPI</li> </ul>	
<b>11:15-11:45</b>	<b>Coffee break</b>	
<b>Bioapplications in Medicine</b>		
<b>11:45-12:30</b>	<b>Anna Laromaine,</b> Researcher at ICMAB <i>"Harnessing the Power of C. elegans for Nanoparticle Innovation and Progress"</i>	
	<b>Sensors</b>	<b>Therapy</b>
<b>12:30-12:40</b>	<b>Marc Domingo Cabasés</b> <i>"Effect of surfactants on SARS-CoV-2: Molecular dynamics Simulations"</i>	<b>Jose Daniel Bolaños Cardet</b> <i>"Bioinspired Antibacterial Catechol-Amine Coatings"</i>
<b>12:40-12:50</b>	<b>Razia Batool</b> <i>"Biomimetic Nanoplasmonic sensor for the evaluation of COVID-19 antiviral immunotherapy"</i>	<b>Noelia Hernández Lobato</b> <i>"Graphene oxide-based model platform for vaccine development"</i>
<b>12:50-13:00</b>	<b>María Jesús Ortiz Aguayo</b> <i>"Electrolyte gated organic field – effect transistor for point-of-care Tests"</i>	<b>Despoina Despotopoulou</b> <i>"Engineering versatile graphene oxide-based nanoplatfoms for Immunomodulation"</i>
<b>13:00-13:10</b>	<b>Denise Marrero</b> <i>"Organ-on-a-chip with integrated semitransparent organic electrodes for barrier function monitoring"</i>	<b>Carla Castellar Álvarez</b> <i>"DELOS nanovesicles-based hydrogels as promising subcutaneous drug delivery systems"</i>
<b>13:10-13:20</b>	<b>Laura Lefaix Fernández</b> <i>"Integrated ZnO piezoelectric nanostructures in microdevices for wireless electrical cell stimulation"</i>	<b>Marta Alcaina Hernando</b> <i>"New plant-based nanovesicles based on alkyl polyglucosides surfactants and <math>\beta</math>-sitosterol as topical drug delivery systems"</i>

13:20-13:30	<b>Marc Navarro Pons</b> <i>"Aluminum Nitride resonant MEMS for bioelectronic Microdevices"</i>	<b>Carla Riera-Llobet</b> <i>"Adaptative Computation Techniques in Proton therapy"</i>
13:30-13:40		<b>Nanthilde Malandain</b> <i>"Composite hydrogels based on decellularized extracellular matrix and cellulose"</i>
13:45-14:15	<b>Multidisciplinary Digital Publishing Institute (MDPI)</b> <b>Gabriel Martinez</b> <i>"MDPI Open Access &amp; Peer Review process"</i>	
14:15-15:15	<b>Lunch</b>	
<b>Energy and Environment</b>		
15:15-16:00	<b>Maria Bernechea,</b> Senior Researcher (ARAID) <i>"Colloidal Nanosemiconductors for Energy and Environment"</i>	
	<b>Energy</b>	<b>Environment</b>
16:00-16:10	<b>Chao Yue Zhang</b> <i>"Metal-Sulfur Batteries with High Performance Enabled by Ferromagnetic Catalytic Additives through Magnetically Induced Spin Polarization"</i>	<b>Houyem Trabelsi</b> <i>"Electrochemical behavior of zinc and cadmium complexes in solution with bidentate organochalcogenophosphorus ligands."</i>
16:10-16:20	<b>Ashitha Paingott Parambil</b> <i>"Surface Functionalized MXene-based Halide Perovskite Solar Cells"</i>	<b>Jessica Casandra Ramirez</b> <i>"Development of multifunctional micro/nanoparticles for environmental remediation"</i>
16:20-16:30	<b>Aureliano Macili</b> <i>"Synthesis of New Ni Nanostructures via the Organometallic Approach and Their Applications in Energy-Relevant Processes"</i>	<b>Mario Herrero Cervera</b> <i>"Unraveling the role of a plant immune cell death marker ATPase"</i>
16:30-16:40	<b>Fanny Baumann</b> <i>"Monitoring of physical mechanisms acting during perovskite solar cell degradation via in-situ characterization and insights to stabilization when using molecular additives"</i>	<b>Ranit Ram</b> <i>"Cation exchange driven alloy/heterostructure synthesis using Cu<sub>2-x</sub>Se nanosheet template"</i>

16:40-16:50	<b>Fjorelo Buzi</b> <i>"A novel air-electrode nanocomposite with enhanced durability for Thin Film Solid Oxide Cells"</i>	<b>Muhammad Adil</b> <i>"Control and operation of Wastewater treatment plants with inclusion of environmental consideration"</i>
16:50-17:00	<b>Kenedy Tabah Tanko</b> <i>"Stability Assessment of Perovskite Solar Cells Under Real Outdoor Conditions: Effect of Encapsulation"</i>	<b>Heting Hou</b> <i>"Ru and Pt-Based Nanomaterials as Electrocatalysts or PhotoCatalysts for the Hydrogen Evolution Reaction"</i>
17:00-17:10	<b>David Batet</b> <i>"Carrageenan-based ink formulations for sustainable screen-printed primary batteries"</i>	<b>Xuesong Zhang</b> <i>"Outperforming catalytic activity of AuxPt1-x nanostructures by a chlorine-assisted synthesis in hydrogen evolution reaction"</i>
17:10-17:20	<b>Miquel Casademont Viñas</b> <i>"RAINBOW Organic Solar Cells: Implementing Spectral Splitting in Lateral Multi-Junction Architectures"</i>	<b>Roger de Paz Castany</b> <i>"Electrodeposited Ni-W coatings for hydrogen evolution reaction in acidic media: insights on electrocatalyst durability"</i>
17:30-18:30	<b>1<sup>st</sup> Poster session + Beer tasting + coffee break (at ICMAB terrace)</b>	

## June 8<sup>th</sup>

8:45-9:00

**Registration**

### Synthesis and Characterization

9:00-9:45	<b>Jordi Arbiol,</b> ICREA Research Professor <i>"2D Nanostructures at Atomic Scale: From Energy and Environmental Applications to Quantum Devices"</i>
9:50-10:00	<b>Naureen Khanam</b> <i>"Scalable synthesis of ferromagnetic <math>\epsilon</math>-Fe<sub>2</sub>O<sub>3</sub> nanoparticles for 6G applications"</i>
10:00-10:10	<b>Martí Ramis García</b> <i>"Solution-processed Sr<sub>3-x</sub>Ca<sub>x</sub>Al<sub>2</sub>O<sub>6</sub> sacrificial layer for ex-situ synthesis of freestanding epitaxial oxide membranes"</i>
10:10-10:20	<b>Meritxell Toda i Casaban</b> <i>"Epitaxial growth of perovskite manganite thin films by polymer"</i>

	<i>assisted deposition for spintronic applications "</i>
10:20-10:30	<b>José Catalán Toledo</b> <i>"Synthesis and stabilization of liquid metal Eutectic Gallium Indium (EGaIn) nanoparticles with phosphonic acid derivatives in aqueous media"</i>
10:30-10:40	<b>Carla Torres</b> <i>"Growth of superconducting YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-x</sub> epitaxial layers by TLAG with in-situ synchrotron characterization"</i>
10:40-10:50	<b>Marta Ruiz Ruiz</b> <i>"Real-time microscopic view of the relaxation of an ultrastable Glass"</i>
10:50-11:00	<b>Alejandro Ramo Iurre</b> <i>"Study of prussian blue related materials: synthesis, characterization and test as positive electrode for secondary calcium batteries"</i>
11:10-11:45	<b>Coffee break</b>
11:45-12:45	<b>Roundtable: Career Perspectives</b> <ul style="list-style-type: none"> <li>- Enrique Vilanova, Project Researcher at ICMAB-CSIC</li> <li>- Adriana R. Kyvik, Cofunder y Technology Lead de B'ZEOS</li> <li>- Damià Viana, InBrain Researcher.</li> </ul>
12:45-14:00	<b>Lunch</b>
<b>Nanomaterials and Magnetism</b>	
14:00-14:45	<b>Lucia Aballe,</b> Senior Researcher at ALBA synchrotron <i>"X-ray magnetic micro-spectroscopy of magnetization dynamics driven by surface acoustic waves"</i>
14:45-14:55	<b>Shoulong Chen</b> <i>"Microstructure and Magnetization Dynamics in La<sub>2/3</sub>Sr<sub>1/3</sub> MnO<sub>3</sub> Epitaxial Thin Films"</i>
14:55-15:05	<b>Shunya Yan</b> <i>"Unexpected Microscopic electrostatic effects in organic semiconductor thin films revealed by KPFM"</i>
14:05-15:15	<b>Guilherme Theophilo Telles</b> <i>"Topological optimization of a low impedance HTS-Cu coating for particle accelerators beam screens"</i>

15:15-15:25	<b>Jaume Cunill-Subiranas</b> <i>“Bulk Superconductors for Toroidal Magnetic Confinement: Application for Fusion Magnets”</i>
15:25-15:35	<b>Natanael Bort-Soldevila</b> <i>“Shaping Magnetic Fields and Removing Electromagnetic Forces with Bulk Superconductors”</i>
15:35-15:45	<b>Hugo Gómez Torres</b> <i>“Measurement of heat capacity of MoSe<sub>2</sub> nanoflakes by pulse heating technique”</i>
15:45-15:55	<b>Neil Lamas</b> <i>“A novel method for HTS coating”</i>
16:00-17:00	<b>2<sup>nd</sup> Poster session</b>
17:00-17:15	<b>Closing Remarks and Awards</b>

<b>June 9<sup>th</sup></b>	
9:00-12:00	<b>Visit to ALBA</b>

**Poster session**

	June 7 <sup>th</sup>		June 8 <sup>th</sup>
1	<b>Arianna Quesada</b> <i>"Ellipsometric measurements in organic semiconducting materials for photovoltaics."</i>	14	<b>Milos Manojlovic</b> <i>"Soft X-ray Low Gain Avalanche Detector for Imaging Application."</i>
2	<b>Alba Cazorla</b> <i>"Charge-Transfer Complex Formation in Organic Semiconductor Films and its role in Surface Doping."</i>	15	<b>Èric Bach</b> <i>"Production results and analysis of the ATLAS ITk Strip Sensors Quality Assurance Program"</i>
3	<b>Giulia Pancotti</b> <i>"Synchrotron Circular Dichroism Mapping of Organic Composites."</i>	16	<b>Lorette Fernandez</b> <i>"MOST Characterization and Devices."</i>
4	<b>Meriem Abid</b> <i>"Free Standing Antiferroelectric membrane capacitors: Avenue for high efficiency Silicon integrated electronics."</i>	17	<b>Cheng Liu</b> <i>"Operando Observation of Mechanisms in the MnO<sub>2</sub> Cathode in Rechargeable Aqueous Zn Batteries."</i>
5	<b>Alexander Frebel</b> <i>"Band alignment of BiFe<sub>0.9</sub>Co<sub>0.1</sub>O<sub>3</sub> based photovoltaic devices."</i>	18	<b>Paul Nizet</b> <i>"Characterization of a perovskite oxide-based device via optical impedance."</i>
6	<b>Wenjuan Zhang</b> <i>"Theoretical Study of the Catalytic Performance of Fe and Cu Single-atom Catalysts Supported on Mo<sub>2</sub>C Towards the Reverse Water-gas Shift Reaction (RWGS)"</i>	19	<b>Nerea Ruiz</b> <i>"Arabidopsis metacaspase MC1 localizes in stress granules, clears protein aggregates and delays senescence"</i>
7	<b>Anna Solé</b> <i>"Theranostic Polymeric Nanocarriers Administered to the Brain and Lungs"</i>	20	<b>Allan Lancéux</b> <i>"Functionalization Of Bacterial Cellulose with Ceria Nanoparticles and Chitosan for Biomedical Applications"</i>
8	<b>Jose Daniel Bolaños</b> <i>"Bioinspired Antibacterial Catechol-Amine Coatings"</i>	21	<b>Liqiong Li</b> <i>Bacterial cellulose-low molecular weight chitosan nanocomposites for biomedical applications"</i>
9	<b>Ariana Rueda</b>	22	<b>Kevin García</b>



	<i>"Site-directed conjugation of multivalent protein nanomaterials for cancer targeted therapies"</i>		<i>"Aligning periodic arrays of 1D topological states with superlattices."</i>
10	<b>Aitor Arreondo</b> <i>"Magneto-ionic effects in mesoporous oxidized Ni-Co alloy electrodeposited films"</i>	23	<b>Tommaso Albrigi</b> <i>"Phonon transport across Ge/GaAs heterojunctions by nonequilibrium molecular dynamics"</i>
11	<b>Naureen Khanam</b> <i>"Preparation of <math>\epsilon</math>-Al<sub>x</sub>Fe<sub>2-x</sub>O<sub>3</sub> thin films by chemical solution deposition"</i>	24	<b>Esteve Ribas</b> <i>"Filling the pores of nanoporous graphene with atomic precision"</i>
12	<b>Alejandro Cuesta</b> <i>"Template-assisted synthesis of 1D van der Waals heterostructures"</i>	25	<b>Karen Stefanie Mejía</b> <i>"Cerium-doped Magnetite Nanoparticles: Synthesis, Characterization and Catalytic Activity"</i>
13	<b>Aiswarya Kethamkuzhi</b> <i>"Superconducting properties and microstructural characterization of TLAG YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-<math>\delta</math></sub> thin films oxygenated with ozone"</i>	26	