



PROGRAMME

Tuesday 31/January

12:30 – Scientific outreach talks at secondary schools in Salamanca

20:00 - **GEFES2023 WELCOME PARTY** – Sala de Pinturas – Colegio Fonseca

Wednesday 1/February

8:00 Registration desk opening – Hospedería Fonseca –

9:00 GEFES2023 opening – Auditorio – Hospedería Fonseca

2D Materials I – Chair:

9:15 Keynote: [Rebeca Ribeiro](#) (C2N Paris-Saclay and CNRS)

Non-identical moiré twins in bilayer graphene

10:00 Invited: Pablo Ares (Universidad Autónoma de Madrid)

Piezoelectricity and ferroelectricity in hexagonal boron nitride

10:20 Invited: Fernando de Juan (Donostia International Physics Center)

Magnetic Kondo lattices in two dimensional metallic dichalcogenides

10:40 Carmen Rubio (Freie Universität Berlin)

Universal moiré nematic phase in twisted graphene

11:00 **COFFEE BREAK AND POSTER SESSION A1**

2D Materials II – Chair:

12:00 Invited: Juan A. Delgado-Notario (Universidad de Salamanca)

Graphene field effect transistors for THz technology and applications

12:20 Invited: Marco Gobbi (CIC-NANOGUNE, Donostia)

Non-reciprocal charge transport in chiral Tellurium nanowires

12:40 María Rodríguez-Losada (Universidad de Granada)

Non-perturbative indirect exchange in spin-valley coupled 2D crystals

13:00 Olga Arroyo (ICMM-CSIC, Instituto de Ciencia de Materiales de Madrid)

Universality of moiré physics in collapsed chiral carbon nanotubes

13:20 **CONFERENCE PICTURE – COLEGIO FONSECA**

13:30 **LUNCH**



Soft Matter – Chair:

15:00 Keynote: [Olivier Dauchot](#) (ESPCI CNRS – Paris)

When active matter turns solid: from collective motion to collective

15:45 Invited: Laura Rodríguez Arriaga (Universidad Autónoma de Madrid)

Rotating vesicles to mimic cell motion

16:05 Arturo Moncho-Jordá (Universidad de Granada)

Non-equilibrium active switching of soft colloids: microstructure, phase behaviour and heterogeneous dynamics

16:25 Javier Rojo-González (Universitat de Barcelona)

Nematics in solid tori: Doubly twisted structures and defect populated configurations

16:45 **COFFEE BREAK AND POSTER SESSION A2**

Nanophotonics I – Chair:

17:45 Keynote: [Alejandro Manjavacas](#) (Instituto Daza de Valdés CSIC)

Lattice resonances: a collective response of periodic arrays of nanostructures

18:30 Invited: Paloma Arroyo Huidobro (University of Lisbon)

Temporal and spatio-temporal metamaterials

18:50 Daniel Vaquero (Universidad de Salamanca)

Fast response photogating in monolayer MoS2 phototransistor

19:10 Javier Rodríguez-Álvarez (Universitat de Barcelona)

Imaging of Anti-ferroelectric Dark Modes in an Inverted Plasmonic Lattice



Thursday 2/February

Spintronics and Magnetism – Chair:

- 9:00 Keynote: [Jairo Sinova](#) (Inspire Group, University of Mainz)
The emergence of research landscape of altermagnetism
- 9:45 Invited: Sandra Ruiz Gómez (Max Planck Institute for Chemical Physics of Solids, Dresden)
Direct x-ray detection of the Spin Hall Effect
- 10:05 Invited: José Hugo García (ICN2-Institut Català de Nanociència i Nanotecnologia, Barcelona)
Electronic control of spin currents in low-symmetry transition metal dichalcogenides
- 10:25 Jaume Meseguer (ICMOL, Universitat de València)
Coexistence of structural and magnetic phases in van der Waals magnet CrI₃
- 10:45 David Sánchez-Manzano (CNRS-Thales, Palaiseau)
Extremely long-range, high-temperature Josephson coupling across a half-metallic ferromagnet
- 11:05 **COFFEE BREAK AND POSTER SESSION B1**
- 12:00 Alexandru Delamoreanu (Oxford Instruments)
Cryogenics for Quantum Technology and Condensed Matter Physics
- ### **Nanophotonics II – Chair:**
- 12:20 Invited: Rui E. F. Silva (ICMM-CSIC, Instituto de Ciencia de Materiales de Madrid)
Strong field phenomena in solids
- 12:40 Invited: Elena Pinilla (Universitat Politècnica de València)
Optical bistability based on the integration of a molecular nanomaterial in silicon photonics
- 13:00 Sungguen Ryu (IFISC-CSIC, Universitat de les Illes Balears)
Periodically driven chiral engine beyond the Carnot limit
- 13:20 Javier Martín (Universidad de Oviedo)
Focusing of In-plane Hyperbolic Polaritons in Van der Waals Crystals
- 13:40 **LUNCH**



Novel Devices and Functionalities – Chair:

- 15:00 Invited: Beatriz Martín García ((CIC-NANOGUNE, Donostia)
Layered hybrid metal-halide perovskites under strain: insights from photoluminescence and micro-Raman spectroscopy
- 15:20 Invited: Javier del Valle (University of Geneva)
Fundamentals and applications of the voltage-triggered insulator to metal transition
- 15:40 Invited: Sara Lafuerza Bielsa (INMA - Universidad de Zaragoza)
Investigating new electrocaloric oxides for sustainable and efficient refrigeration applications
- 16:00 Sergio Puebla (ICMM-CSIC, Instituto de Ciencia de Materiales de Madrid)
Combining Freestanding Ferroelectric Perovskite Oxides with Two- Dimensional Semiconductors for High Performance Transistors
- 16:20 **COFFEE BREAK AND POSTER SESSION B2**
- 17:20 **Best Paper and Phd Awards Ceremony**
- 17:30 Best Paper Award
- 17:50 Best Experimental PhD . Francesco Callavalle (CIC Nanogune – Donostia)
Probing and tuning the electronic properties of low dimensional Van der Waals materials
- 18:10 Best Theoretical PhD : Iñigo Robredo Magro (Univesity of the Basque Country)
Topological Materials from a Symmetry Perspective
- 18:30 Best Theoretical PhD: Oscar Pozo Ocaña (Materials Physics Center, Donostia)
On symmetry and topological aspects of novel phases of matter
- 19:30 **GUIDED TOUR around Salamanca old town including Escuelas Mayores.**
Meeting point: Main entrance Colegio Fonseca.
- 21:00 **CONFERENCE COCKTAIL-DINNER at Casino de Salamanca** (Palacio de Figueroa) – C/ Zamora 11



Friday 3/February

Quantum Materials and Technologies – Chair:

- 9:00 Keynote: [Natalia Ares](#) (Oxford University)
Quantum devices for thermodynamics at the nanoscale
- 9:45 Invited: Edwin Herrera (Universidad Autónoma de Madrid)
Visualizing waves and quantum well states at the surface of the heavy fermion URu₂Si₂
- 10:05 Invited: Daniel Gosálbez-Martínez (Universidad de Alicante)
Diversity of radial spin textures in chiral materials
- 10:25 Katerina Vaxevani (CIC-NANOGUNE, Donostia)
Extending the spin excitation lifetime of a magnetic molecule on a proximitized superconductor
- 10:45 Toraya Fernández (Universidad de Cantabria, Santander)
Real-Time Second Principles TD-DFT calculations of Optical Properties: Can large-scale methods be used to simulate Excitons?

11:05 COFFEE BREAK

Nanomaterials – Chair:

- 11:35 Keynote: [Irene Calvo](#) (INMA – CSIC , University of Zaragoza)
Synchrotron X-ray Coherence to Probe the Complexity of realistic interfaces at the Nanoscale
- 12:20 Invited: Lourdes Marcano (Universidad de Oviedo)
Quantifying the magnetic anisotropy of 50 nm-magnetic nanoparticles embedded in biological entities
- 12:40 Invited: Ana Isabel Borrás (ICMSE-CSIC Instituto de Ciencia de Materiales de Sevilla)
Nanogeneratos and self-powered sensors enable by plasma and vacuum processing of multifunctional thin films and 3D nanoarchitectures
- 13:00 Tamara de Ara (Universidad de Alicante)
STM Study and Electronic Transport Signature of Dithiahelicenes at Ambient Conditions

13:20 Noa Varela (Universidade de Santiago de Compostela)

Spatial control of the thermal conductivity in transition metal oxides

13:40 Poster Awards and Closing remarks