



European Materials Research Society

2025 Spring Meeting

May 26 – 30 | Strasbourg Convention Centre

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SYMPOSIUM H

Ferroic materials and heterostructures: from fundamentals to applications

Oral sessions : MADRID 2 – GROUND FLOOR

Poster sessions : ETOILE – FIRST FLOOR

Symposium Organizers:

Ignasi FINA (Main organizer), Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Spain

Jorge ÍNIGUEZ-GONZALEZ, Luxembourg Institute of Science and Technology, Luxembourg

Morgan TRASSIN, ETH Zurich, Switzerland

Salia CHERIFI-HERTEL, Institut de Physique et Chimie des Matériaux de Strasbourg,
CNRS – Université de Strasbourg, France

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Monday May 26		
H01 Oral session		
Chairperson(s): IGNASI FINA, MORGAN TRASSIN, JORGE IÑIGUEZ,SALIA CHERIFI-HERTEL		
View session abstracts		
08:30	2796	Ferroelastic domain walls in antiferroelectrics, and antiferroelectric domain walls in ferroelastics CATALAN Gustau (Invited)
09:00	387	Electrically-driven antiferroelectric-ferroelectric phase transition in epitaxial PbZrO3 thin films studied by in situ X-ray diffraction CORNELIUS Thomas
09:15	2266	Modulating Ferroelectric-Antipolar Phase Interconversion in Multiferroic Thin Films YAN Bixin
09:30	1141	Thickness and strain dependent phase mixing in free-standing suspended antiferroelectric oxide membranes SAEED Umair
09:45	224	Material Strategies for a Significant Increase in Piezocatalysis AMDOUNI Wafa

Monday May 26		
H02 Oral session		
Chairperson(s): GUSTAU CATALAN		
View session abstracts		
10:30	1457	Strain and light in micro-cantilevers based on ferroelectric thin films MATZEN Sylvia (Invited)
10:45	2512	Engineering ferroelectricity in thin films using lattice chemistry EFE Ipek (Invited)
11:00	664	Enhanced polarization and ferroelectricity down to one unit cell in epitaxial layered Carpy-Galy ferroelectrics GRADAUSKAITE Elzbieta (Invited)
11:15	1243	Tuning the optoelectronic properties of a ferroelectric lead halide perovskite by hydrostatic pressure PILLET Sebastien (Invited)
11:30	1197	Study of the dielectric non-linearities in 0.5(Ba0.7Ca0.3TiO3)–0.5(BaZr0.2Ti0.8O3) thin film NADAUD Kevin (Invited)

Monday May 26		
H03 Oral session		
Chairperson(s): SYLVIA MATZEN		
View session abstracts		
13:45	103	Tuning the thermal conductivity of barium titanate with an electric field NATAF Guillaume (Invited)
14:15	2752	Ferroelectric Phase Transitions in strain-free Barium Titanate (BaTiO ₃) Membranes: Investigating the Roots of Displacive and Order-Disorder Mechanisms BAR Tapas
14:30	1289	Spin and orbital Rashba effects at the Ni/HfO ₂ interface ARRAS Rémi
14:45	108	On the piezoelectric and photostrictive behaviour of PZT cantilevers integrated on silicon ZING Alexandre
15:00	636	Energy harvesting properties of highly aligned BaTiO ₃ platelets-polymer composite scaffold structure KUMAR Ajeet
15:15	1489	Giant Photocaloric Effects across a Vast Temperature Range in Ferroelectric Perovskites CAZORLA Claudio (Invited)

Monday May 26		
HP01 Poster session		
View session abstracts		
16:30	01_1074	Effect of Co substitution on the transverse susceptibility in Co doped ZnY multiferroic hexaferrite nanoparticles HERNANDEZ-GOMEZ Pablo
16:30	02_1125	Investigation of the electronic, magnetic and magnetocaloric properties of NdPO ₄ : experiment and DFT calculations BALLI Mohamed
16:30	03_1307	Morphological Types of Transverse (Up-Down) Domains in Ferroelectric Films and Domain Type Transformations During Switching ARTEMEV Andrei
16:30	04_1341	Growth and characterization of magnetoelectric multilayer thin films using pulse laser deposition ARSHAD Mohammad
16:30	05_1343	Thermal Conductivity of Copper Based Composites by a Spark Plasma Sintering YANG Min Hyeok

16:30	06_1350	Potential coexistence of antiferromagnetic and glassy magnetic states in rare-earth Heusler alloy Pd ₂ DySn P Koushik	16:30	21_1836	Large-scale van der Waals growth of ferroelectric α -GeTe(111) thin films for spin-based frugal electronics and neuromorphic devices LAGRAVE Jules
16:30	07_138	Enhancing BaTiO ₃ Seed Performance: Suppression of Bi Volatilization and Low-Temperature Fabrication of Bi ₄ Ti ₃ O ₁₂ KIM Hoyeon	16:30	22_1916	Enhanced Ferroelectric Properties of Ultra-Thin HZO films in MFS structure via Interface Engineering KIM Hyobae
16:30	08_1384	Growth and characterization of magnetoelectric multilayers thin films using pulse laser deposition ARSHAD Mohammad	16:30	23_1925	Low Temperature Crystallized Ferroelectric Thin Films for Flexible Microwave Devices JAMES RAJU K C
16:30	09_1421	Magnetic field-driven mass transfer and triplet-singlet interconversion for enhanced electrochemical nitrite reduction to ammonia by spin thrusted Fe (II; III) oxide-based catalyst. Mitra Koushik	16:30	24_1950	Enhanced microwave absorption in GaFeO ₃ coated CoFe ₂ O ₄ nano-hollowsphere JANA Ishita
16:30	10_1513	Investigating the Optical and Magnetic Interplay in MnPS ₃ : Temperature-Dependent Optical Spectroscopy and Structural Insights IGNATOWICZ Katarzyna	16:30	25_1966	Twinning and Its Impact on Magnetoresistive Behavior in La _{0.67} Ca _{0.33} MnO ₃ Films MOHAN Brij
16:30	11_1530	The effect of Fe and Ni catalysts on the growth of carbon nanotubes using chemical vapor deposition ISMATOV Askar	16:30	26_1978	Evolution of Spin Waves with Coherent Phonon Excitation in Magnetic Oxides JAYAKRISHNAN S S
16:30	12_1553	Optical markers of magnetic phase transition in Cr ₅ Br LINHART Wojciech	16:30	27_2055	Epitaxial growth of (LaVO ₃) _n /(PrVO ₃) _m superlattices for emerging multiferroicity BENEDIT CARDENAS Adrian
16:30	13_1571	Computational Design of Stacking Oxide Freestanding Membranes into Artificial Heterostructures HANSEN William Sandholt	16:30	28_2112	Curvature-Controlled Ferroelectric Polarization in SrRuO ₃ /PbTiO ₃ Bilayer Membrane SEGANTINI Greta
16:30	14_1676	Sputtering of wurtzite III-V materials for ferroelectric component in heterostructures BALESCU Liliana	16:30	29_2184	Tailoring the Polarization of non-Ising Domain Walls in Uniaxial Ferroelectrics HAJDARI-MANIGAULT Loan
16:30	16_1722	Growth mechanisms and defect formation in epitaxial CeO ₂ thin films deposited on r-plane sapphire substrates CHASLIN Edgar	16:30	30_2201	Switching of anomalous Hall effect and its relation with magnetic interactions in two-dimensional van der Waals material Fe ₃ GeTe ₂ YADAV Neesha
16:30	17_1758	Programmed Heterostructures for Enhanced Electrical Conductivity SINGH Neha	16:30	31_2234	Resilient and stable Mn-Cu-Ga based magnetocaloric alloys for sustainable refrigeration TIWARI Nishant
16:30	18_1811	Performance Analysis of nanoscale Fe-JLGAA FETs with Strained Binary Alloy Channels: A DFT and Circuit-Level Study DJEFFAL Faycal	16:30	32_2332	Protonation in free-standing perovskite thin films due to sacrificial layer etching SAEED Umair
16:30	19_1812	Origin of the Interplay Between Normal and Inverse Exchange Bias in Nd _{1-2x} Sr _x CoMnO _{3-δ} (0 ≤ x ≤ 1) (δ ~ 0.15) Double Perovskite Series ISLAM Kazi Parvez	16:30	33_2412	Microscopic Origin of Thickness-Dependent Ferroelectricity in few layer SrTiO ₃ films PAUL Shinjini
16:30	20_1814	Performance Analysis of a Novel FET Structure with Intermediate Ferroelectric Layers: Numerical Simulations and Circuit-Level Investigation DJEFFAL Faycal	16:30	34_2482	Anisotropic manganite tunnel junction with ferromagnetic-insulating barrier MANRAL Pooja
			16:30	35_2564	High Energy Storage Performance in Lead Free Epitaxial Dielectric Superlattice Capacitors KARDOUS Reda
			16:30	36_2569	Thickness-dependent defect dynamics and ferroelectric performance in Hf _{0.5} Zr _{0.5} O ₂ Capacitors Yadav Gunjan

16:30	37_2585	The coupling of polarization and oxygen vacancy migration in ferroelectric $\text{Hf}_{0.5}\text{Zr}_{0.5}\text{O}_2$ thin films enables electrically controlled thermal memories above room temperature. BARNEO Dídac
16:30	38_2621	Optical and transport detections of magnetoelectric coupling in the multiferroelectric heterostructure WU Mingxing
16:30	39_2739	Corona-Boosted Piezocatalysis: Transforming Ferroelectric Materials for Enhanced water splitting KRISHNAMURTHY Abinaya
16:30	40_2767	Memristor Devices based on BaTiO3 Thin Films grown on Silicon substrates by PLD AGUIRRE Myriam Haydee
16:30	41_2963	Symmetry-breaking in Ferroelastic Domain Walls in Inorganic Halide Perovskite CsPbI_3 SKOGVOLL Ida Cathrine
16:30	42_2973	Interplay of Stiffness and Effective mass of the Magnetic Alloy deposited Microcantilever Resonator with Temperature BANSWAR Durgesh
16:30	43_3152	CO2 laser heating for advanced applications in PLD processes STEIN Wolfgang
16:30	44_34	Transformation of chemical ordering and configuration entropy in quaternary $\text{Cr}_x\text{Ti}_{0.75}\text{Mo}_{0.75}\text{V}_{1.5-x}\text{AlC}_2$ MAXs system XUE Yaqing
16:30	45_386	Polarization switching and charge injection at (anti-)ferroelectric / electrode interfaces HU Pengcheng
16:30	46_814	Ferroic thin films by pulsed laser deposition for the control of thermal conductivity ANIL Anusri
16:30	47_854	Design and Development of Ferrite-Decorated Multifunctional Carbonized Cotton Fabrics for Enhanced Electromagnetic Interference Shielding Ganesanpotti Dr. Subodh
16:30	48_871	A low noise LSMO/Nb:STO Schottky barrier heterostructure combining bolometric and photon sensing BLOND Jérémy
16:30	49_924	Phonon's magnetic moment in non-magnetic chiral materials: A theoretical estimation Lamus-Rincon J. D.
16:30	50_942	Role of 3d-4f magnetic-exchange on the electronic and magnetic ground states of monoclinic double perovskites $\text{Sm}_{2-x}\text{Gd}_x\text{CoMnO}_6$ ($x = 0.0, 0.5, 1.0, 1.5$) SHIT Ashes
16:30	53_3224	Ductile melt-spun Cu-Al-Mn shape memory alloy and its elastocaloric potential OUYANG Gaoyuan

16:30	51_1671	Influence of the target on lead free ferroelectric KNN thin films deposited by pulsed laser deposition and substrate scaling up to 200 mm diameter CARREÑO JIMÉNEZ Brenda
16:30	52_368	Thermally assisted spin tunnelling in short-range correlated distorted diamond lattices RTaO_4 ($\text{R} = \text{Ta}$ and Dy) KUMAR Jogendra

Tuesday May 27 H05 Oral session Chairperson(s): MORGAN TRASSIN		
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08:30	2641	Nonreciprocal transport in ferromagnetic Rashba 2-dimensional electron gases BIBES Manuel (Invited)
09:00	1869	Study of electronic reconstruction at ferroelectric-insulator interface RATH Martando
09:30	1146	Anisotropic Nonlinear Charge Transport in $\text{NiFe}_2\text{O}_4/\text{Y-Al}_2\text{O}_3/\text{SrTiO}_3$ heterostructures TRIER Felix
09:45	2142	Spin-dependent transport properties of epitaxial DyVO_3 and GdVO_3 thin films on NdGaO_3 (110) substrate MARTIROSYAN Mariam

Tuesday May 27 H06 Oral session Chairperson(s): MANUEL BIBES		
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10:30	2620	Magnetism of orthorhombic iridates: small tweaks for large effects LEZAIC Marjana (Invited)
11:00	1262	Measuring Current and Magnetic Field Induced Hysteresis in Magnetic Thin Films with Soft X-ray Reflectivity STEADMAN Paul
11:15	196	Preparation and characterization of organic chiral spin materials QIN Wei
11:30	1817	Interplay Between Magnetism and Topology in 3D Chiral Kagome Lattices. GARCIA-CASTRO Andres Camilo
11:45	812	Exploring metamagnetic transitions in polar antiferromagnets PRODAN Lilian
12:00	2090	The Essence of Three: Navigating the Interplay of Multiple Ferroic Orders in Multiferroics WEBER Mads

Tuesday May 27

H07 Oral session

Chairperson(s): MARJANA LEZAIC

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13:45	3135	THz spin transport through antiferromagnetic insulators VIRET Michel (Invited)
14:15	415	Thermally generated spin transport and spin Seebeck effect in magnetic oxide heterostructures SRIKANTH Hari
14:30	1582	Reconfigurable antiferromagnetic topology in free-standing nanomembranes Jani Hariom
14:45	843	Atomic scale structure of Domain Walls in NiO CHARTIER Alain
15:00	1495	Increased interface connection between van der waals topological insulators and magnetic functional oxides Hallsteinsen Ingrid
15:15	1626	Electronic band structure measurements of LSMO thin films grown by pulsed laser deposition FINNSETH Øyvind
15:30	1503	Altermagnetism from Orbital Ordering in the layered Ruddelsden-Popper Chromates MEIER Quintin N. (Invited)

Tuesday May 27

H08 Oral session

Chairperson(s): CHERIFI-HERTEL Salia

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16:45	1575	Investigating domain and superdomain structures in ferroelectric PbTiO ₃ based heterostructures on DyScO ₃ TOVAGLIERI Ludovica
17:00	715	Creating currents of electric bubbles INIGUEZ-GONZALEZ Jorge
17:15	370	Dynamical Manipulation of Polar Topologies from Acoustic Phonon Excitations BASTOGNE Louis
17:30	105	Switchable Skyrmion–Antiskyrmion Tubes in Rhombohedral BaTiO ₃ and Related Materials GÓMEZ-ORTIZ Fernando
17:45	1879	Effect of Zr substitution on piezoelectric property and domain structure in rhombohedral Ba(Zr,Ti)O ₃ ceramics NOZAKI Takumi

18:00	292	Emergence of Polar Domains in Epitaxial WO ₃ Films SAROTT Martin
18:15	2237	Impact of the polar discontinuity at the BaTiO ₃ /SmNiO ₃ interface on the ferroelectric properties of BaTiO ₃ SIMMEN Edith

Wednesday May 28

H09 Oral session

Chairperson(s): INIGUEZ-GONZALEZ Jorge

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08:30	2924	Remote moiré interactions in twisted oxide membranes SANTAMARIA Jacobo (Invited)
09:00	139	Coupling of Two-Dimensional Ferroelectrics with Emerging Physical Properties for Multifunctional Device Applications ZHANG Yuyang
09:30	625	Opto-electric control of van der Waals ferroelectric heterostructures : opportunities for beyond-Moore applications DAYEN Jean-Francois
09:45	668	Tailoring Imprint of Ferroelectric Heterostructures through Interface Engineering HU Chenyue

Wednesday May 28

H10 Oral session

Chairperson(s): JACOBO SANTAMARÍA

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10:30	1824	Domains, superdomains and wrinkles in epitaxially strained and freestanding PbTiO ₃ LICHTENSTEIGER Céline (Invited)
11:00	3151	Stabilization of head-to-head domain walls by light ion implantation and annealing in LiTaO ₃ single crystals MONTOUSSE Joachim
11:15	607	Nanoscale Imaging of Multiferroicity with Soft X-ray Ptychography BUTCHER Tim A.
11:30	1477	Delving into the structure of orthorhombic perovskite thin films COPIE Olivier
11:45	328	Engineering magnetic domain wall energies in multiferroic BiFeO ₃ via epitaxial strain MEYER Sebastian
12:00	458	Morphotropic Phase Boundary Tuning in Ferroelectrics Using Liquid PFM ZHOU Lima

Wednesday May 28

H11 Oral session

Chairperson(s): SAROTT Martin

View session abstracts		
13:45	2519	Phase transitions in tetragonal and hexagonal tungsten bronzes; preliminary insights from theory and simulation BRISTOWE Nicholas (Invited)
14:15	912	Magnetic and polar properties of [010] DyFeO ₃ thin films SCHNEIDER Christof
14:30	852	Dynamical Magnetic Effective Charges: Enhancing microscopic understanding of magnetoelectric phenomena BRAUN Maxime
14:45	2449	Room temperature magnetoelectric coupling in vertically aligned nanocomposite thin film BANSAL Manisha
15:00	3053	Enhanced Magnetoelectric and Mechanical Properties of CoFe ₂ O ₄ /BaTiO ₃ Freestanding Membranes MIRJOLET Mathieu
15:15	731	Single-phase multiferroic Fe ₂ O ₃ thin films via epitaxial atomic layer deposition JUSSILA Topias

Thursday May 29

H12 Oral session

Chairperson(s): IGNASI FINA

View session abstracts		
08:30	1252	Switching in Wurtzite Ferroelectrics TROLIER-MCKINSTRY Susan (Invited)
09:00	2034	Ferroelectric AlScN thin films with enhanced polarization and low leakage enabled by high-power impulse magnetron sputtering SIOL Sebastian
09:15	539	Enhanced morphology and ferroelectric properties of Sc ₃₀ Al ₇₀ N thin films via a compositionally graded layer NGUYEN Tai
09:30	1806	Long-term stability of ferroelectric AlScN and HfO ₂ devices - An approach by operando hard X-ray photoelectron spectroscopy MÜLLER Martina (Invited)

Thursday May 29

H13 Oral session

Chairperson(s): MARTINA MULLER

View session abstracts		
10:30	501	Strain as a Critical Factor for the Ferroelectric Phase Formation in Hf _{0.5} Zr _{0.5} O ₂ -based MIM Capacitors SCHROEDER Uwe (Invited)
11:00	473	Towards structural softness and enhanced electromechanical responses in HfO ₂ ferroelectrics MUKHERJEE Binayak
11:15	3041	Ab-initio study of the ferroelectric, piezoelectric, and pyroelectric properties of HZO thin films SILVA Alexandre
11:30	3144	Processing effects toward flexible Hf _{0.5} Zr _{0.5} O ₂ thin films by solution methods BRETOS Íñigo
11:45	650	Enhancing the Ferroelectric Properties of HfO ₂ -ZrO ₂ Films through Tetravalent Element Doping: Tailoring Dopant Size to Optimize Polarization Strength and Transition Speed PARK Jihye

Thursday May 29

H14 Oral session

Chairperson(s): LAURA BÉGON-LOURS

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13:45	1103	Synergistic effects of doping, interface symmetry and redox conditions in the stabilization of ferroelectricity in epitaxial HfO ₂ films SANCHEZ Florencio (Invited)
14:15	2991	Phase Stability and Ferroelectric Properties of Free-standing Hf _{0.5} Zr _{0.5} O ₂ Membranes KNABE Judith
14:30	1476	Impact of layer configuration on ultrathin HfO ₂ -ZrO ₂ structures for ferroelectric non-volatile memories MALLMANN TONELLI Amanda
14:45	2323	Stabilizing Orthorhombic Hf _{0.5} Zr _{0.5} O ₂ Thin Films on TiN/Si Substrates via Low-Temperature Pulsed Laser Deposition CHIRILA Florentina Cristina
15:00	2109	Engineering Interlayer Composition for Enhanced Performance and Fast Switching in Epitaxial Hf _{0.5} Zr _{0.5} O ₂ based Nanolaminates GHIASABADI FARAHANI Mehrdad

15:15	2987	Time-resolved x-ray photoelectron spectroscopy of the atomic layer deposition of Hf0.5Zr0.5O2 on TiN and RuO2 WIKARE Erik
15:30	2006	High Remanent Polarization Ferroelectric Hf0.5Zr0.5O2 Capacitors with Ultra-Low Leakage and Device-to-Device Variations for Back-End-of-Line Integrated Memory and Neuromorphic Circuits Safdar Muhammad
15:45	1142	Accessing imprint electric fields by PFM characterization in epitaxial HfO2-films towards the control of neuromorphic response ZOU Jingye

Thursday May 29
H15 Oral session
Chairperson(s): FLORENCIO SÁNCHEZ

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17:00	1511	Ferroelectric Synapses for Neuromorphic Circuits: Bismuth Ferrite and Hafnium Zirconium Oxides. BÉGON-LOURS Laura
17:15	794	On the retention stability of thickness scaled HfxZr1-xO2 ferroelectric capacitors for multilevel applications SUNIL Athira
17:30	1430	Dynamics in Ferroelectric Hafnia: From Picoseconds to Biological Timescales BAIGOL Alexandre
17:45	556	The Effect of La, Al, Y, Ga, and Sb Doping on Remnant Polarization and Switching Characteristics in Hf _{0.5} Zr _{0.5} O ₂ JUNG Soojin
18:00	3157	Magnetoelectric and photovoltaic effects in systems based on epitaxial ferroelectric hafnia Fina Ignasi

Friday May 30
H16 Oral session
Chairperson(s): CHERIFI-HERTEL Salia

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08:30	334	Ferrochiral phase transition from soft mode theory BOUSQUET Eric
08:45	718	Tunable Strain Gradients and Flexoelectric Phenomena in Centrosymmetric Oxide Thin Films PIECUCH Timo

09:00	1229	Evaluating machine-learned force fields for ferroelectrics ROBREDO Iñigo
09:15	307	Crystallographic control of the inverse spin Hall effect LAGUNA-MARCO Maria Angeles
09:30	1695	Structural, Dielectric, and Ferroelectric Properties of BiFeO ₃ /BaTiO ₃ Superlattices KARDOUS Reda
09:45	2124	Steady-State Negative Capacitance in Ferroelectric Bilayer Thin Film Structures BONI Andra Georgia

Friday May 30
H17 Oral session
Chairperson(s): IGNASI FINA

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10:30	2177	Investigation of the optimum morphotropic phase boundary composition in lead-free and biocompatible KxN(1-x)NbO ₃ Films PAVESE Giulia
10:45	1006	Stoichiometric control of functional properties in (K,Na)NbO ₃ -based bioceramics GUZZO Caitlin
11:00	1701	Seed layers as an improvement method for obtaining KNN thin films by PLD. CARREÑO JIMÉNEZ Brenda
11:15	1715	Reconfigurable devices based on Ba(1-x)Sr(x)TiO ₃ thin films: From structural and dielectric characterizations to high-frequency applications CHASLIN Edgar
11:30	2388	Controlling the Schottky barrier height by interface engineering in BST varactors Negulescu Beatrice
11:45	2597	The influence of bottom electrode deposition conditions on ferroelectric layer properties SHEPELIN Nick