

**OPERA COST Action - Workshop**  
**" Application-oriented material development"**  
**Bucharest, September 12-14, 2023**

**September 12**

12:30	Registration (snack, coffee)
14:00	Workshop opening
14:15	Short presentation of the host institution
	<b>S1-Chair: C. Dias</b>
14:30	S1.01 (Invited) Marin Alexe <b>"Ferroelectric Topological Structures in Epitaxial Layers"</b>
15:00	S1.02 (Invited) Beatrice Negulescu <b>"Combinatorial pulsed laser deposition for interface engineering in ferroelectric capacitors"</b>
15:30	S1.03 Andra Georgia Boni <b>"Exploring the Influence of Non-Ferroelectric Elements on Polarization Switching in Ferroelectric Devices: Towards Understanding and Controlling Dynamic Behavior"</b>
15:50	S1.04 C.Chirila <b>"Epitaxial ferroelectric thin films and their potential for energy storage"</b>
16:10	Coffee break
	<b>S2-Chair: B. Negulescu</b>
16:30	S2.01 (Invited) C. Dias <b>"Novel 2D materials for neuromorphic computing"</b>
17:00	S2.02 M. Kirti <b>"Optimization of Semiconductor-Superconductor hybrid systems for the development of Andreev qubits"</b>
17:20	S2.03 Kipkurui Ronoh <b>"Synthesis and Characterization of HOPG-Thin metallic films"</b>
17:40	End of first day

**September 13**

8:00	Registration
	<b>S3-Chair: C. Chirila</b>
9:00	S3.02 (Invited) K. Biermann <b>"Development of customized GaAs-based terahertz quantum-cascade lasers"</b>
9:30	S3.01 (Invited) Q.C. Bui/N. Cogneau <b>"Surface charge effects in GaN NWs: An advantage for enhancing the piezoelectric conversion efficiency"</b>

9:50	S3:03 A.Chevillard “ <b>How Can InGaN/GaN Heterostructures Be Advantageous for the Piezoelectric Conversion of GaN Nanowires and their Applications?</b> ”
10:10	S3:04 Ion Lungu “ <b>DC current-voltage and impedance spectroscopy characterization of CdS/ZnTe heterostructures</b> ”
10:30	S3:05 (on-line) N.M. Ferreira “ <b>Optimizing the properties of CaMnO<sub>3</sub> for thermoelectric applications through Laser Floating Zone processing</b> ”
10:50	Coffee break
	<b>S4-Chair: K. Biermann</b>
11:10	S4:01 (Invited) Matthew Zervos “ <b>Controversial issues and challenges pertaining to the growth and properties of Cu<sub>2</sub>O</b> ”
11:40	S4:02 A.C. Galca “ <b>Giant room temperature magnetoresistance of unrelaxed La.<sub>67</sub>Ba.<sub>33</sub>Ti.<sub>02</sub>Mn.<sub>98</sub>O<sub>3</sub> epilayers grown on 001-oriented SrTiO<sub>3</sub></b> ”
12:00	S4:03 Moritz L. Weber “ <b>Metal exsolution dynamics and thermal stability limitations of exsolved nanoparticles at complex oxide surfaces</b> ”
12:20	S4.04 V. Videva “ <b>Photoluminescence analysis of 2D nanolayers synthesized by CVD method</b> ”
12:40	Lunch break
	<b>S5-Chair: M. Zervos</b>
14:10	S5:01 (Invited) R. Vilarinho “ <b>Electric-field engineered lattice distortions for optoelectronic devices</b> ”
14:40	S5:02 Aleksandra Nadolska “ <b>Electrical characterisation and nanomanipulation of MoO<sub>3-x</sub> monolayer grown on graphite</b> ”
15:00	S5:03 L. Méchin “ <b>Epitaxial La<sub>2/3</sub>Sr<sub>1/3</sub>MnO<sub>3</sub> thin films on vicinal SrTiO<sub>3</sub> substrates for sensitive anisotropic magnetoresistive</b> ”
15:20	S5.04 Danica Piper “ <b>Fabrication of LaMnO<sub>3</sub> based epitaxial thin films and DFT calculation</b> ”
15:40	S5:05 Cosmin Romanitan “ <b>Tuning of the Oxidation State of Vanadium Oxide by Pulsed Laser Deposition</b> ”
16:00	Coffee break and Poster Session P01: Abdelkader Nebatti Ech-Chergui “ <b>Unveiling the potential of spray-coated Pr:SnS<sub>2</sub> thin films for photocatalytic and antibacterial applications</b> ” P01: J.A. Guliyev “ <b>APPLICATION OF NANOPOROUS ANODIC ALUMINIUM OXIDE MEMBRANES IN VARIOUS INDUSTRIES OR FIELDS</b> ” P03: Oguzhan Der “ <b>Unlocking Innovation Through Application-Oriented Material Development</b> ” P04: Lala Gahramanli “ <b>Investigating the effect of thermal annealing and changing the concentration of GO in GO/PVA nanocomposites on their structural, electrical, and optical properties</b> ”

	<p>P05: Zehra Ozden ERDOGAN “<b>Preparation of DAOx immobilized AuNPs@CQD for optical sensor applications</b>”</p> <p>P06: Çisem KIRBIYIK KURUKAVAK “<b>Synthesis and Characterizations of Perovskite Quantum Dots and Carbon Quantum Dots as Core Shell Structure</b>”</p> <p>P07: Mutahire TOK “<b>Synthesis of Perovskite Quantum Dots and Their Using in Perovskite Solar Cells as Additive</b>”</p> <p>P08: Marwène Oumezzine “<b>Magnetocaloric and Giant Magnetoresistance Effects in La-Ba-Mn-Ti-O Epitaxial Thin Films</b>”</p> <p>P09: Darija Petković „<b>PLD growth of strontium titanate thin films on silicon substrate for photoelectrochemical water-splitting</b>”</p> <p>P10: Aivara Spokas “<b>Development of GaAsBi MQWs technology for NIR emitters</b>”</p> <p>P11: Gustas Petrusevicius “<b>Investigation of the AlN Buffer Layer Role in Optimizing the AlGaIn/GaN Nonlinear Optical Waveguide Structure</b>”</p>
18:00	End of the second day

### September 14

8:00	Registration
	<b>S6-Chair: R. Butkute</b>
9:00	S6:01 (Invited) Athansios Dimoulas “ <b>Artificial Synapses made of ferroelectric epitaxial <math>\text{Hf}_{0.5}\text{Zr}_{0.5}\text{O}_2 / \text{SrTiO}_{3-\delta}</math> on silicon</b> ”
9:30	S6:02 (Invited) Florencio Sánchez “ <b>Epitaxial stabilization of ferroelectric HfO<sub>2</sub> via doping and interface effects</b> ”
10:00	S6:03 Alina Marinela Ionescu “ <b>Improving the Properties of Superconductor/Ferromagnet Heterostructures <math>\text{YBa}_2\text{Cu}_3\text{O}_{7-x}/\text{CaRuO}_3</math></b> ”
10:20	Coffee Break
	<b>S7-Chair: F. Sanchez</b>
10:40	S7:01 (Invited- <u>on-line</u> ) Susana Cardoso Freitas “ <b>Controlling the quality of thin film multilayers in large area wafers for industry-relevant sensor applications</b> ”
11:10	S7:02 Renata Butkute “ <b>Optimization of Epitaxy Conditions of InGaAs and GaAsBi Multiple Quantum Well Structures for Applications in NIR VECSELS</b> ”
11:30	S7:03 Magdalena Nistor “ <b>Is another epitaxial relationship of ZnO thin films on c-cut sapphire possible</b> ”
11:50	Closing remarks
12:10	Lunch break
13:15	Short lab tour (10 minutes’ walk to lab building)
15:00	End of the third day

### September 15

9:00-15:00 MC meeting (a coffee break and lunch break included)