



1st Cluster Workshop in Materials and Nanotechnology

Program

Wednesday 4th

13:30-14:00 Workshop Registration

14:00-14:20 Opening

SESSION 1 *Chairman: François Weiss (Grenoble-INP, France)*

14:20-15:00 **IC1:** Alain M. Jonas (Université Catholique de Louvain, Belgium)
“Hybrid Nanostructured Functional Layers: From Confined Polymer Crystallization to Plastic Memory Devices”

15:00-15:40 **IC2:** José Gaspar Martinho (CQFM, IST, ULisboa)
“Photochromic Materials Activated by Two-Photon Excitation”

15:40-16:00 **OC1:** Frederico Ferreira (IBB, IST, ULisboa)
“Electrospun Nanofiber Based Scaffold Platform for Stem Cell Alignment”

16:00-16:30 Coffee Break / Poster Session

SESSION 2 *Chairman: Rui Vilar (IST-MN, IST, ULisboa)*

16:30-17:10 **IC3:** Pedro L. Granja (INEB/ICBAS, UPorto)
“Engineering Cell-Material Interactions at the Molecular Level”

17:10-18:00 **Round Table:** “New opportunities in Materials Science education at post graduated level”
- François Weiss (Grenoble-INP, France)
- Wolfgang Donner (TU Darmstad, Germany)
- João Carlos M. Bordado (IST, ULisboa)
- António Sousa Correia (Ordem dos Engenheiros)
- Rui Vilar (IST-MN, IST, ULisboa)

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Thursday 5th

SESSION 3 *Chairman: Manuel Almeida (CTN, IST, ULisboa)*

- 9:00-9:40 **IC4:** João Carlos M. Bordado (IST, ULisboa)
“Antifouling Surfaces: New Immobilized Biocide Systems”
- 9:40-10:20 **IC5:** Jorge Morgado (IT, IST, ULisboa)
“Molecular Wires Based on Zinc-Porphyrins: Preparation and Electrical Properties Assessed by STM”
- 10:20-10:50 Coffee Break / Poster Session

SESSION 4 *Chairman: Rui Almeida (ICEMS, IST, ULisboa)*

- 10:50-11:30 **IC6:** Albano Cavaleiro (SEG-CEMUC, UCoimbra)
“The Importance of Structural Arrangement on the Friction Performance of Transition Metal Dichalcogenides Sputtered Films”
- 11:30-12:10 **IC7:** Manuel Freitas (Dep. Mechanical Engineering, IST, ULisboa)
“AZ31 Magnesium Alloy Elastoplastic Behavior Under Multiaxial Loading Conditions”
- 12:10-12:30 **OC2:** Nuno Silvestre (Dep. Mechanical Engineering, IST, ULisboa)
“Computational Modelling of the Compressive Behaviour of CNT-Reinforced Aluminium Composites”
- 12:30-14:00 Lunch

SESSION 5 *Chairman: José Gaspar Martinho (CQFM, IST, ULisboa)*

- 14:00-14:40 **IC8:** João Rocha (CICECO, UAveiro)
“Light at the End of the Tunnel”
- 14:40-15:20 **IC9:** Rui Almeida (ICEMS, IST, ULisboa)
“YAG:Ce³⁺ Photoluminescence Tuned by 1-D Photonic Crystal Microcavity for White Light Generation”
- 15:20-16:00 **IC10:** Manuel Almeida (C2TN, IST, ULisboa)
“Metals Based on Neutral Molecular Species: The New Paradigm and its Application to Plastic Electronics”
- 16:00-16:30 Coffee Break / Poster Session

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SESSION 6 *Chairman: Jorge Morgado (IT, IST, ULisboa)*

16:30-16:50 **OC3:** Elena Tatarova (IPFN, IST, ULisboa)
“Free Standing Graphene Synthesis Using Microwave Plasmas”

16:50-17:10 **OC4:** António Gonçalves (CTN, IST, ULisboa)
“New Thermoelectric Materials: The Disorder Paradigm”

17:10-17:50 **IC11:** Paulo Freitas (INESC-MN/INL, IST, ULisboa)
“Magnetoresistive Sensors: from Industrial to Biomedical Applications”

20:00 Workshop Dinner: Museu da Cerveja (Terreiro do Paço)

Friday 6th

SESSION 7 *Chairman: Pedro Granja (INEB, UPorto)*

9:00-9:40 **IC12:** Laura Ilharco (CQFM, IST, ULisboa)
“The Versatility of Sol-gel Processing in Tailoring Silica-Based Materials for Specific Applications”

9:40-10:20 **IC13:** Verónica Bermudez (CQ-VR, UTAD)
“Self-Directed Assembly in Non-Bridged Silsesquioxanes”

10:20-10:50 Coffee Break / Poster Session

SESSION 8 *Chairman: Albano Cavaleiro (SEG-CEMUC, UCoimbra)*

10:50-11:30 **IC14:** Elvira Fortunato (CENIMAT/I3N, FCT, UNL)
“Thin Film Transistors Based on Metal Oxide Semiconductor Thin Films and Nanoparticles”

11:30-11:50 **OC5:** Tânia Ribeiro (CQFM, IST, ULisboa)
“Highly Photostable Fluorescent Silica Particles for Laser Scanning Imaging Applications”

11:50-12:10 **OC6:** Pedro Paulo (CQE, IST, ULisboa)
“Large Fluorescence Enhancements of Phthalocyanine in (Lipid Bilayer)-Polyelectrolyte Coated Gold Nanoparticles”

12:10-12:30 **OC7:** Rui Pinto (INESC-MN/CQFM, IST, ULisboa)
“Exciton Dynamics in Organic Materials: High Quantum Efficiency in Charge-Transfer Interfaces”

12:30-14:00 Lunch

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SESSION 9 *Chairman: Fátima Montemor (ICEMS, IST, ULisboa)*

14:00-14:40 **IC15:** François Weiss (Grenoble-INP, France)
“Chemical Routes for Coatings by Design. From “Paint and Heat” to Today”

14:40-15:00 **OC8:** Tiago Monteiro (INESC-MN, IST, ULisboa)
“Silicon Probes as Biosensors for Intra- and Extracellular Measurement of pH for Early Detection of Dysplasia”

15:00-15:20 **OC9:** Vânia André (CQE, IST, ULisboa)
“Bio-MOFs As Potential Drug Delivery Materials – A New Approach To Traditional MOFs”

15:20-15:40 **OC10:** Sónia Eugénio (ICEMS, IST, ULisboa)
“Electrodeposition of Dendritic Transition Metal Films and Their Application as Electrodes for Supercapacitors”

15:40-16:00 **OC11:** Graça Brotas (IT, IST, ULisboa)
“Synthesis of Cross-linkable P3HT Derivatives and Applications in Photovoltaic Cells”

16:00-16:20 Coffee Break

SESSION 10 *Chairman: Amélia Almeida (ICEMS, IST, ULisboa)*

16:20-16:40 **OC12:** Nikolay Polushkin (ICEMS, IST, ULisboa)
“Current-Induced Magnetization Switching in a Single Ferromagnetic Element”

16:40-17:00 **OC13:** António Maurício (CERENA/CEPGIST, IST, ULisboa)
“X-ray MicroCT: Non-Destructive Tool for Material Characterization in Art and Science”

17:00-17:20 **OC14:** Reinhard Schwarz (ICEMS, IST, ULisboa)
“Raman Spectroscopy, XPS and XRD of Ferroelectric Domains in Pulsed Laser Deposited Na_{0.5}K_{0.5}NbO₃ Films”

17:20-17:40 **OC15:** Maria Norberta Pinho (ICEMS, IST, ULisboa)
“Sub-Micron Tailoring of Bi-Soft Segment Asymmetric Polyurethane Membrane Surfaces with Enhanced Hemocompatibility Properties”

17:40-18:00 Student poster award.
Closing