

Advanced Materials and Devices in CENIMAT/I3N



Microelectronic clean rooms



Staff (DCM): 21 + 1 invited PhD Students: 39
 Researchers with PhD: 41 Grant holders: 17

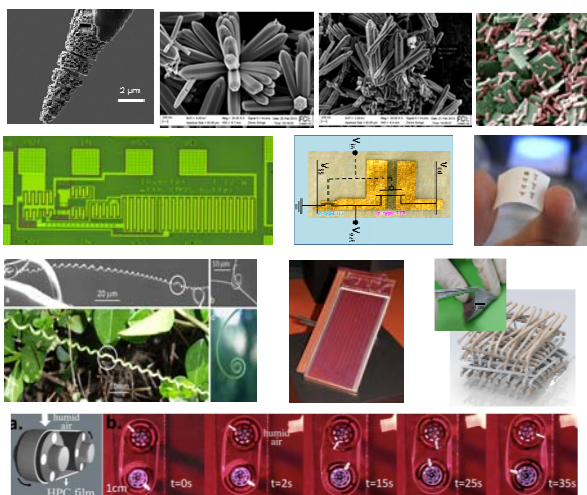
Materials for Devices



Nanofabrication laboratory

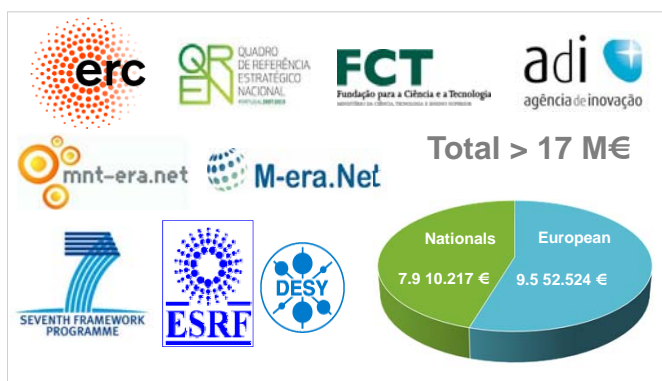
- | | |
|-------------------------|--------------------------------|
| Solar Cells | Integrated Circuits |
| Batteries/Biobatteries | UV-vis Optical Sensors |
| Nanobiosensors | Electrochromic Devices |
| Paper Electronics | Microfluidics |
| Transparent Electronics | Interdigital Electrode Sensors |
| Intelligent Windows | Smart Textiles |
| Thin Film Transistors | |

Technologies / Facilities



- | | |
|----------------------|-----------------------------------|
| Ink-jet Printing | CO ₂ laser |
| Sol-Gel | Severe Plastic Deformation (ECAP) |
| Hydrothermal | Casting |
| Combustion Synthesis | Heat Treating |
| PECVD | Rolling |
| Thermal Evaporation | Oxygen Plasma |
| Magnetron Sputtering | Diffusion Furnaces |
| Langmuir Blodgett | Oxidation Furnaces |
| Electrospinning | LPCVD |
| Dry Etching | Spray Pyrolysis |
| Parylene Deposition | Single Screw Extruder |
| Oxygen Plasma | |

Projects 2007-2014



Recent Books/Chapter Books

Barquinha, P.; Martins, R.; Pereira, L.; Fortunato, E., **Transparent oxide electronics: from materials to devices**. West Sussex: Wiley, 2012.

Barquinha, P.; Martins, R.; Fortunato, E., **"N-type Oxide Semiconductor Thin-Film Transistors,"** in *Advances in GaN and ZnO-based Thin Film, Bulk and Nanostructured Materials and Devices*. vol. 156, Pearton, S. J., Ed. New York: Springer, 435-476, 2011

J.P. Borges, M.H. Godinho, J.L. Figueirinhas, M.N. de Pinho, M.N. Belgacem, **"All-cellulosic based composites"** in *Cellulose Fibers, Bio-, and Nano- Polymer Composites*, ed. By S. Kalia, B.S. Kaith, I. Kaur, Springer-Verlag, Germany (2011).

"Shape Memory Alloys-Processing, Characterization and Applications", Editor: FM Braz Fernandes. ISBN 978-953-51-1084-2, InTech., Apr 2013 (<http://www.intechopen.com/books/shape-memory-alloys-processing-characterization-and-applications>). 278 pgs.