

Advanced Materials Characterization @ CENIMAT/I3N

Research groups



Structural Materials
F. Braz Fernandes



Soft and Biofunctional Materials
M. Helena Godinho



Advanced Functional Materials for Micro and Nanotechnologies
R. Martins

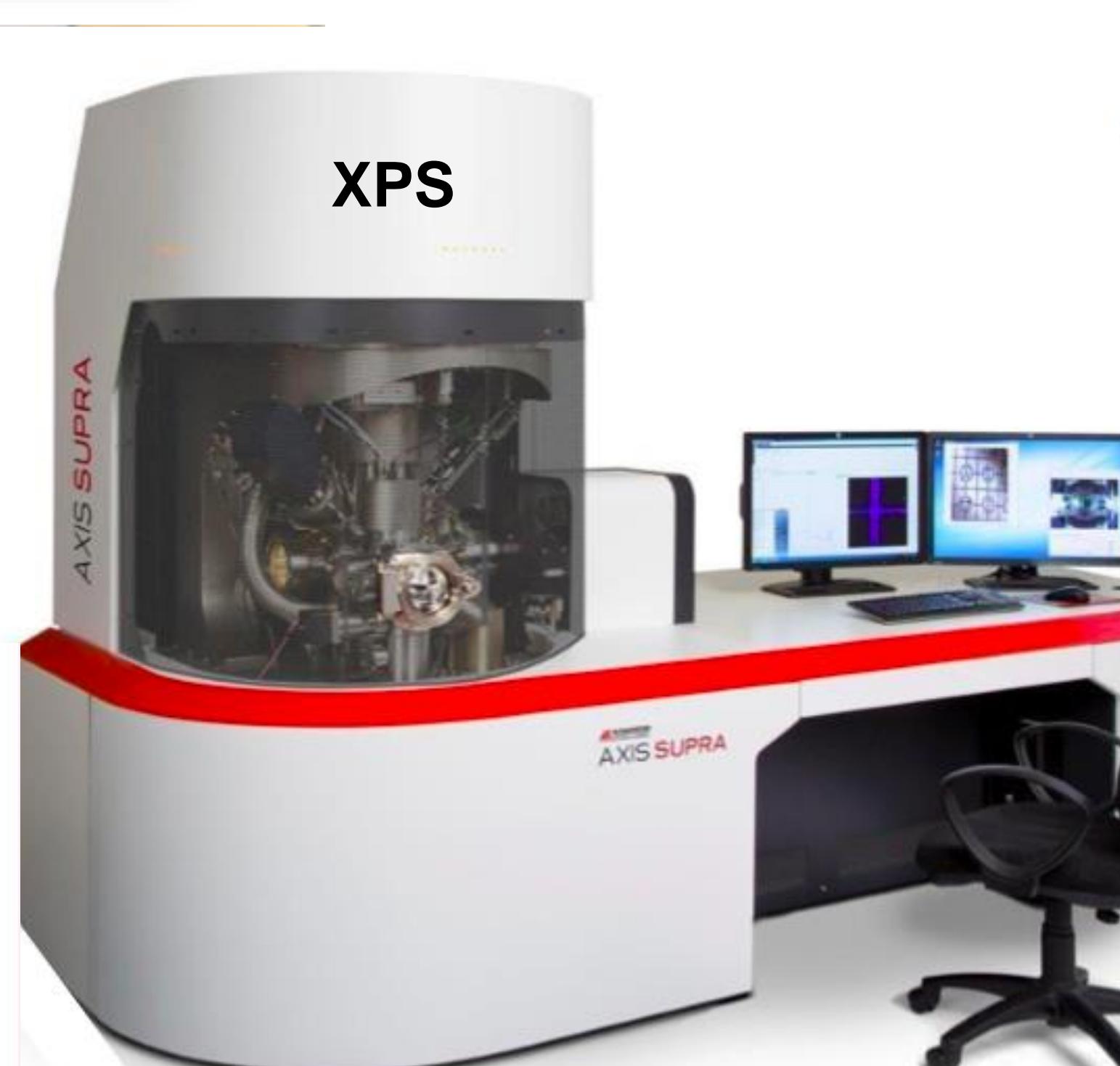
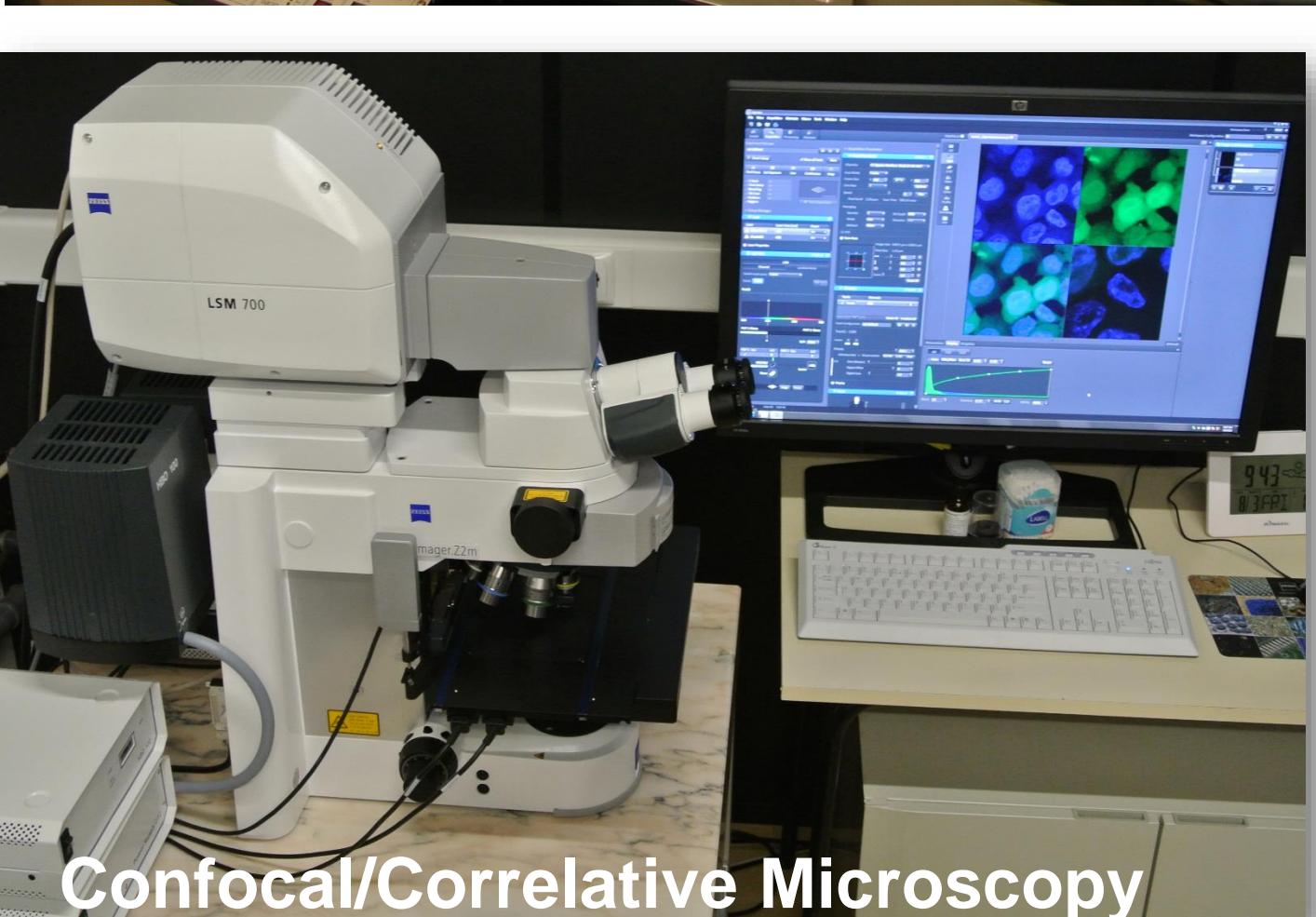
Scientific areas

Bio/Nano/Paper Electronics
Funcional Nanoparticles
Nano/Chromogenics
Microfluidics/Lab-on-Paper
Plasmonics/Nanoplasmonics
Solar Cells
Sensors
Bio/Paper Batteries

Thermoelectrics
Conductive Materials
Liquid Crystals
Nano/Cellulosic Systems
Polymeric Based Materials
Elastomers
Biological Systems
Rheology (Rheo)

Nuclear Magnetic Resonance
Computational Fluid Dynamics
Metal Alloys
Functional Graded Materials
Cultural Materials
Crystal Chemistry
Ceramics and Glass Materials
Recycling of Materials

Characterization tools



X-Ray Diffraction
(temperature, micro diffraction, grazing, texture, stress analysis)

Thermal Analysis - DTA/DSC/TG
(-170 – 2000 °C)

Optical Microscopy with Fluorescence

Confocal Microscopy
(Laser lines: 405/488 nm)

Electron Microscopy
(SEM-FIB and EDS)

Correlative Microscopy

NMR
(High resolution, Solids, Diffusion and Micro-Imaging)

Rheology
(Electro, Optical and High Pressure options)

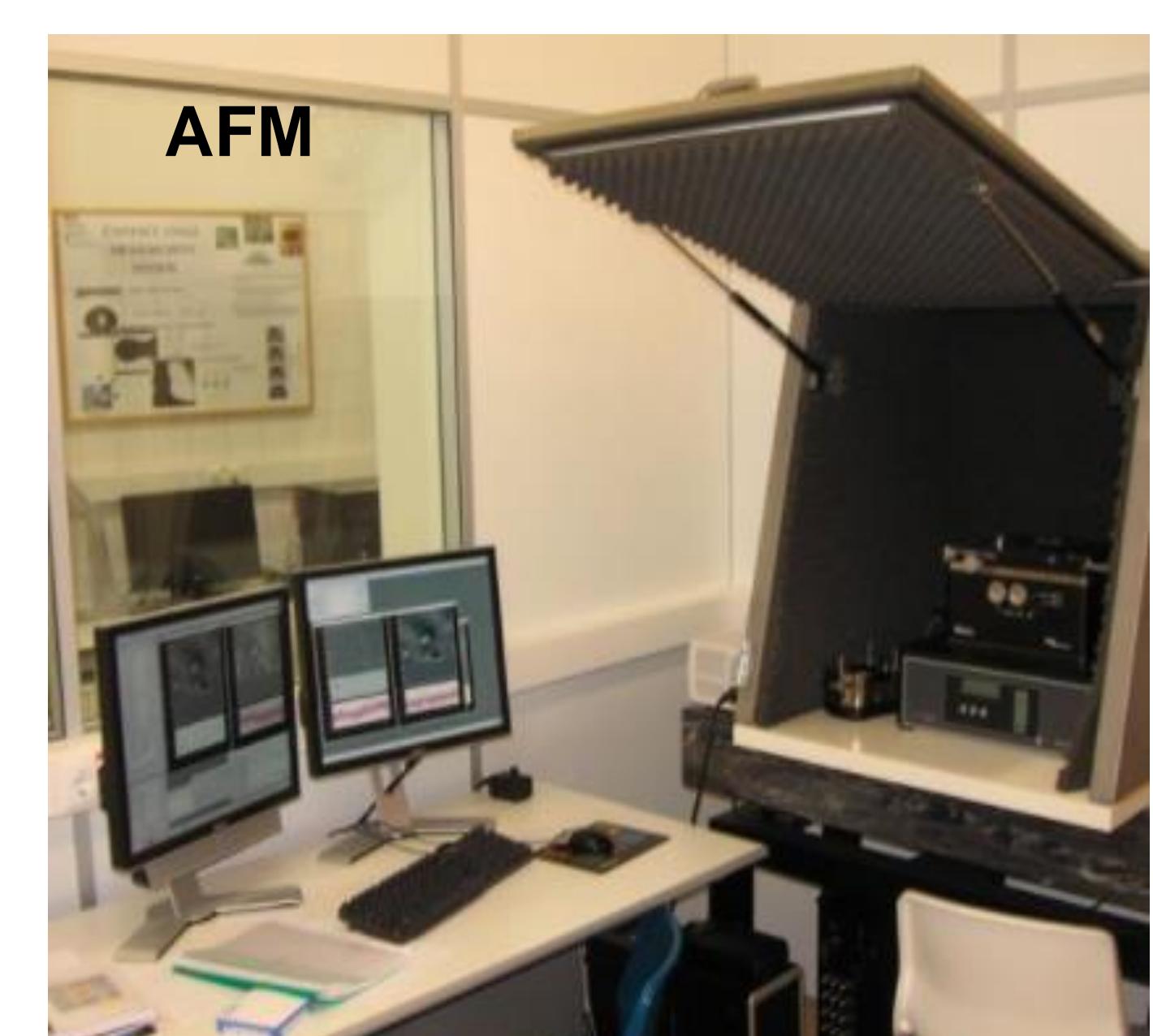
Mechanical Testing
(Static and dynamic tensile, micro/macro-hardness, impact)

X-ray Fluorescence

Melt Spinning

Micro-Raman

XPS



Hall Effect and Kelvin Probe

FTIR with ATR

UV-vis-NIR Spectrophotometry

Contact Angle
(Static and dynamic, tilted)

Spectroscopic Ellipsometer

Potentiostat

Profilometry

AFM

Dielectric Spectroscopy (frequency and time domain)

Ferroelectric Hysteresis

Thermally Stimulated Discharge Currents

Dynamic Light Scattering

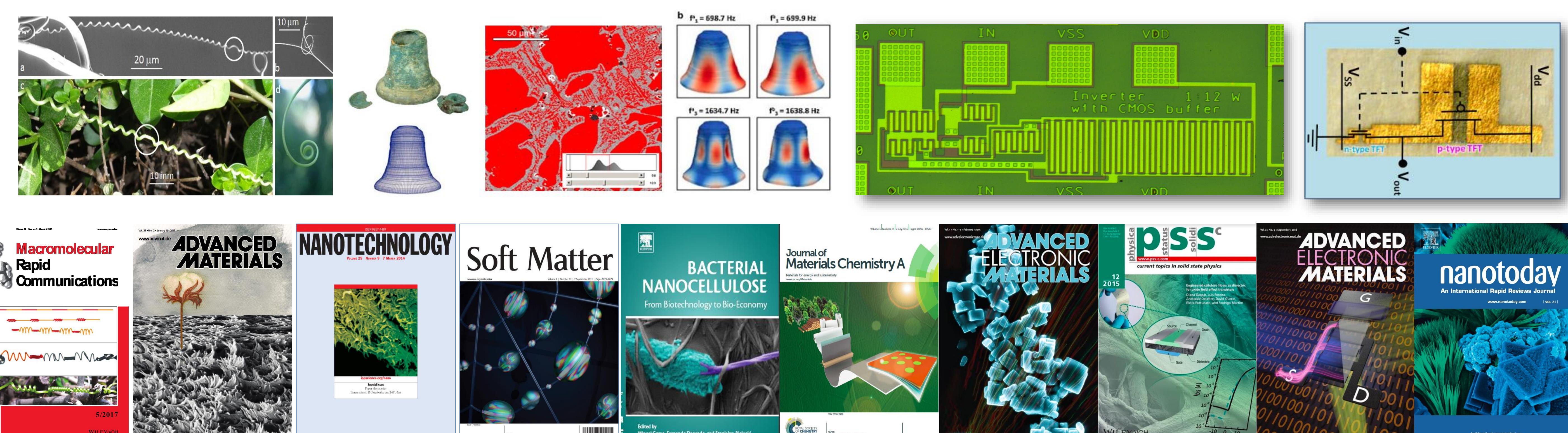
Melt Flow Index

Automatic MicroViscometer

Materialography



Highlights



E. Fortunato
Blaise Pascal medal
2016



E. Fortunato
Czochralski medal
2017

