

Department of Materials Science - CENIMAT / I3N

Soft Materials

Polymeric and Mesomorphic Materials Group
DCM/FCT/UNL and Cenimat / I3N



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- Physic Degree, UNCa, Argentina.
- PhD in Soft Matter – Liquid Crystals, FaMAF - IFEG, Argentina.
- Current Research Interests: soft matter and complex fluids.

Objectives

- **Wettability changes;** Induce changes in the wettability of surfaces through thin organic films coating obtained by the Langmuir-Blodgett technique.
- **Thin organic films;** study of structural arrangement of cellulose derivatives molecules employing Langmuir and Langmuir-Blodgett techniques.
- **Thin films characterization;** study of physical – chemical properties in thin films.
- **Nano-structured materials;** Better understanding of nano particles influence in thin organic films.

Methodology

- **Monolayer and multilayer studies;** Langmuir and Langmuir-Blodgett techniques (KSV NIMA equipment).
- **Microscopic analysis;**
 - Scanning Electron Microscope (SEM),
 - Transmission Electron Microscopy (TEM)
 - Atomic Force Microscopy (AFM).
- **Contact angle measurements,** analysis of wettability and adhesion properties (OCA15 equipment).

Expected Results

- **Obtain thin organic coating with specific properties to control the surfaces wettability.**
- **Improve thin organic films properties by adding nano particles.**
- **Multilayer materials oriented to micro-electronic applications.**
- **Fabricate networks for separation of water from oil/mixtures and photonic structures using low cost materials in ambient conditions.**

