

MONABIPHOT: Cursus in EU Universities

Outline of the Master Course.

Number of ECTS in brackets; starred courses are mandatory.

ENS Cachan

Contact person: Isabelle Ledoux, Professor

E-mail: ledoux@lpqm.ens-cachan.fr

- Fundamentals in Physics (3)
- Fundamentals in Mathematics (3)
- Fundamentals in Chemistry(3)
- Fundamentals in Biology (3)
- Light-matter interactions in molecular media (3)*
- Molecular Nanophotonics (5)*
- Molecules and Interactions (5)*
- Biophotonics: theoretical aspects of fluorescence in Biology (5)
- Biosensors (5)
- Polymer-based Photonic devices for optical telecommunications (5)
- Microfluidics: fundamentals and applications (2)
- Photonics and microwaves (5)
- Conducting Polymers and OLED's (3)
- Ion Channel Recording (3)
- Nonlinear Optics (3 credits for theoretical courses, 2 for lab work)
- Signal processing (5)
- Cytoskeleton (in French) (5)
- French / English / Spanish Courses (3/3/3)
- Light-Matter Interactions: Advanced (2)
- Advanced Mathematics (3)

Each student may earn a maximum of 6 credits in the "fundamentals" courses. A maximum of 6 credits can be earned by each student in Language courses (French/English/Spanish/Polish).

University Complutense, Madrid

Contact person: Prof. Mercedes Cano

e-mail: mmcano@quim.ucm.es

- Electric and Magnetic Molecular Materials (3)*
- X-Ray Diffraction and Solution of Crystal Structures (5)
- Molecular Materials towards Liquid Crystal (Lc) or Non-Linear Optical Properties (3)*
- Advanced Polymers: Preparation, Characterization and Applications (3)
- Chemical Sensors and Biosensors (7)*
- Organic Molecular Materials (3)
- Applications of Organic Photochemistry (3)*
- Supramolecular Chemistry (3)
- Electron Microscopy and Associated Techniques (4)
- Nanomaterials (4)*
- Biomaterials (4)*

Wroclaw University of Science and Technology

Contact persons: Prof. Andrzej Miniewicz

E-mail: andrzej.miniewicz@pwr.wroc.pl

Dr. Katarzyna Matczyszyn

E-mail: katarzyna.matczyszyn@pwr.wroc.pl

- Theoretical modelling of the nonlinear optical properties of molecules and clusters (6)
- Introduction to optical telecommunications (6)
- Nanoscale physics (6)*
- Liquid crystals in photonics (6)
- Molecular electronic materials (6)*
- Micro- and nanophotonics (6)
- Devices, technology and applications (6)
- Monte-Carlo-based modelling of photonic processes in liquid crystals and azo-polymers (6)
- Introduction to quantum information processing and quantum cryptography (6)
- Fluorescence microscopy and imaging in life sciences (6)
- Bioorganic chemistry with elements of biochemistry (6)
- Genetic engineering as a tool for bio-based technology (6)*
- Bioorganic chemistry for photonics (6)
- Methods of structural investigations in physics, chemistry and biology (6)

University of Wroclaw

Contact person: Prof. Jerzy Hawranek

e-mail: HJP@wchuwr.pl

- Bioinorganic chemistry (4)*
- Spectroscopic techniques (4)*
- Application of electron spectroscopy in studies on the structure of lanthanide compounds and materials (4)
- Computer design methods of new materials on biological importance and others (4)*
- Molecular interactions (4)*
- Photoinduced electron transfer(4)
- Molecular magnetism (4)
- Protein chemistry (4)
- Fluorescence techniques, image analysis (4)
- Fundamentals of molecular spectroscopy (4)

University Paris descartes (UPAD)

Contact person: Prof. Alain Marty

e-mail: alain.marty@parisdescartes.fr

- Spectroscopies (6)
- Methods in Cell Biology (3)
- Neurosciences (6)
- Physical Chemistry of tissue interface, biocompatibility (6)
- Imaging and cellular electrophysiology (3)
- From neuron to neuronal networks (3)
- Modelization and Neurophysics (3)
- Advanced optical methods for neuroscience (2)