

CHEMISTRY OF ADVANCED MATERIALS

MASTER PROGRAM

An interdisciplinary programme taught entirely in English!

DESCRIPTION

The master of Science "Chemistry of Advanced Materials" is designed for both international and Romanian students who have earned a Bachelor in physics, chemistry, biology or other programmes related to synthesis of materials, materials characterization and their application.

The structure of this master deals with modern, innovative materials focusing on the control of their properties at atomic/molecular scale.

It is highly orientated for application and strongly connected to technology.

STUDY APPROACH

Courses and practical activities especially focus on basic knowledge in the synthesis and characterization of materials.

On this basis the programme is sub-structured in chapters referring to Molecular Materials, Nanomaterials, Catalytic Materials and Biosensors.

To reach the scope, the Faculty of Chemistry of the University of Bucharest has acquainted specialists in all these directions.

Also, the laboratories are well equipped with high performance apparatus which can ensure a very good students training.

STUDENTS BENEFITS

- Students will acquire hands-on experience in physics and materials science labs.
- Students will acquire scientific working methods and current research in the catalytic, inorganic, nano- and biosensors field.
- Students will acquire scientific competency as well as professional skills in the application range of modern materials science.
- Faculty of Chemistry offers academic standards and facilities, a thrilling student life and modern research opportunities.
- Diplomas are recognized all over Europe and beyond.

DETAILS: www.chimie.unibuc.ro

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Admission 2019

Admitted students in July / September 2019 sessions at **Chemistry of Advanced Materials (CAM)** master will have the opportunity to be involved in a **Cooperative and Partnership** project called **GreenCAM**, in the frame of Romania-Norway institutional collaboration

University of Bucharest (UB)

and

Norwegian Technique and Science University (NTSC)

Inclusion in the project will be based on the degree admissions to the master and of an interview.

Short-term mobility of master students, update curricula at nowadays European standards, Norwegian professors involved in the educational program, and participation at scientific Romanian/Norwegian events in the area of **Green Chemistry in Advanced Materials Synthesis and Applications** are only few benefits offered by **GreenCAM** project.

**Areas research for dissertation theses
Serie 2019/2021**

Department	Supervisor	Title/Area
Organic Chemistry, Biochemistry and Catalysis	Conf. dr. habil. Ioan Cezar MARCU	1. Transition metal oxide based catalytic materials for oxy-dehydrogenation of lower alkanes (ethane, propane) 2. Mixed oxides obtained from double lamellar hydroxide precursors for catalytic combustion of methane
	Lector dr. Mădălina SĂNDULESCU	1. Designing biocatalysts based on the model of enzymes co-immobilization with application for cascade biocatalysis
	Lector dr. Mihaela MATACHE	1. Multistage organic synthesis of compounds with applications in materials chemistry or biological chemistry
	Lector dr. Adriana URDĂ	1. Catalytic hydro-deoxygenation in the presence of mixed oxides catalysts obtained from hydrotalcite precursors 2. Catalytic reforming of alcohols on mixed oxides catalysts obtained from hydrotalcite precursors.
	Conf. dr. Rodica ZĂVOIANU	1. Developing new organic-inorganic hybrid materials from layered double hydroxide structures
	Prof. dr. habil. Simona M. COMAN	1. Core-shell magnetic nanoparticles based catalysts with multiple functionalities for biomass valorization
		2. Humins – from wastes to catalytic materials 3. Bifunctional catalytic materials for the humins valorization to liquid hydrocarbons
	Lector dr. Octavian PAVEL	1. Impact of basic catalysts via layered materials on fine chemical reactions 2. Michael and anti-Michael addition reactions on catalysts dispersed in Ionic Liquid Phase

Analytical Chemistry Department	Prof. dr. Camelia BALA	1. Biosensors Based on Nanostructured Materials
Inorganic Chemistry Department	Conf. dr. Marilena CIMPOEȘU	<ol style="list-style-type: none"> 1. Ligand Field Effects in Simple Lanthanide Complex Units. 2. Magnetic Anisotropy in Simple and Extended Lanthanide Complex Units. 3. Spin conversion effects in manganese (III) complexes. 4. 1D complexes of Mn (III) and network effects. Synthesis, structure, magnetic properties. 5. Stereochemistry of Mn(III) complex units. Effects of elongation and axial compression. 6. Co(II) Mixed Ligand Complexes For Dye-Sensitized Solar Cells 7. Chemical Bond in Organometallic and Coordination Clusters.
	Lector dr. Ruxandra GHEORGHE	1. Homogeneous and heteropolinuclear supramolecular systems based on Schiff / Mannich base ligands. Magnetic studies.
	Conf. dr. habil. Viorel CÎRCU	1. Complexes of luminescent palladium (II) with liquid crystal properties
	Lector dr. Delia POPESCU	<ol style="list-style-type: none"> 1. Crystalline Porous Coordination Polymers with Catalytic / Gas Adsorption Applications 2. Fluorescent Compounds Derived from Schiff Base Ligands 3. Coordination Compounds with Magnetic Properties
Physical-Chemistry Department	Lector dr. Marin MICUȚ	1. Biocompatible polymer composites (hydrogels, sponges, films/membranes) with tunable biodegradability