



Field : Material's Sciences
Sertor. : Chemistry

Academic Master Physical Chemistry

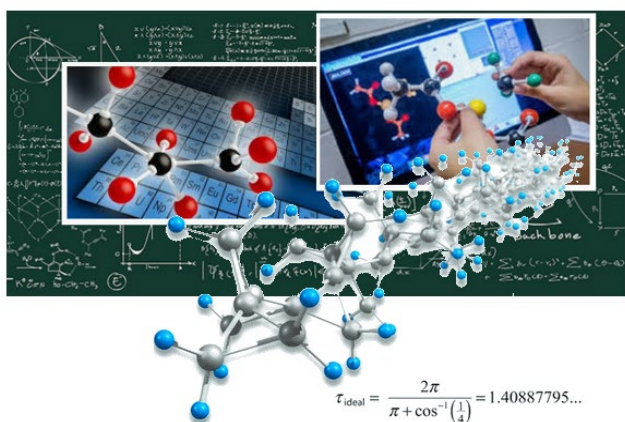
Objective

The Academic Master in Physical Chemistry offers training in the field of materials sciences. It focuses on the design, synthesis, characterization and development of new materials with interesting physical and chemical properties.

The main objective of the training is to provide the student with the theoretical foundations and experimental capacity he needs to understand the materials sciences: from chemical precursors, their exploitation, their physical, chemical and catalytic properties as well as their applications in various processes.

Areas covered by this training include:

- Design and development of organic and inorganic materials,
- Characterization and determination of the physico-chemical properties of materials,
- Homogeneous and heterogeneous catalysis and process implementation,
- Applied electrochemistry,
- Molecular modeling.



Target Profiles and Competencies

The Academic Master in Physical Chemistry trains students on the methods and concepts of the complementary fields of

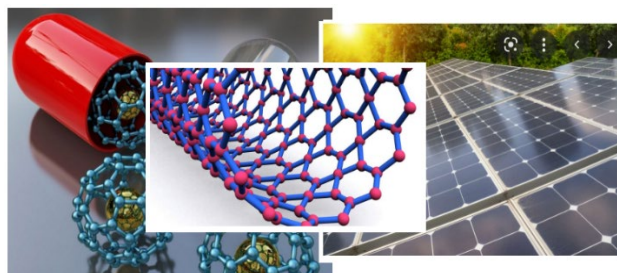
catalysis, physical chemistry and processes, combining the molecular approach and the concepts of solid systems.

Beyond basic approaches, applications are oriented towards catalysis for the environmental and industrial processes. It is intended for future researchers wishing to start research training in order to pursue a career in the academic field, in industrial groups of chemistry, refining or petrochemicals, and in small or medium-sized enterprises.



Regional and national employability potentials

The thesis is the main outlet of the master's degree in physical chemistry. This master's degree naturally opens a large number of doctoral courses in the fields of physical chemistry and materials sciences but also in interdisciplinary fields where the skills acquired can serve the environment (environmental catalysis, depollution processes, energy materials), petrochemicals (refining, catalytic processes), etc. It makes it possible to prepare in the best conditions for a PhD in chemistry and thus to access the professions of researcher and teacher-researcher of the public or private sectors.



The three research laboratories at the UMMTO associated with the three host laboratories outside the UMMTO represent an important strength of thesis proposal that will allow a large number of students from this master's degree to pursue PhD in physical chemistry.

Job opportunities are very wide and cover virtually all industrial sectors in which chemicals and materials are involved.