

## Contacts

### Location

UNIVERSITÉ DE PAU  
ET DES PAYS DE L'ADOUR

College of Sciences and Technology  
for Energy and Environment  
Pau Campus - France

### Coordinator

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remi.dedryvere@univ-pau.fr

### More information

[http://formation.univ-pau.fr/  
m-mse-cpcm](http://formation.univ-pau.fr/m-mse-cpcm)

### Admission Office

[master.programs@univ-pau.fr](mailto:master.programs@univ-pau.fr)

### How to apply

The application documents must be  
uploaded on the website:  
<https://ri.univ-pau.fr/m-programs>



## Admission requirements



### Academic requirements

- Applicants must hold at least a Bachelor degree for the Master 1 level.
- Applicants must hold at least a 4-year university level for the Master 2 level.

### English Language Requirements

Minimum required score: CECRL B2 level in English.

### French Language Requirements

None but French language courses are included in the formation.

## Detailed Program Facts

**Academic Year:** Our full academic year runs from September to July

**Application:** Applications are open from October to March 31<sup>st</sup>

**Program intensity:** Full-time

**Duration:** 2 years

**Credits:** 120 ECTS

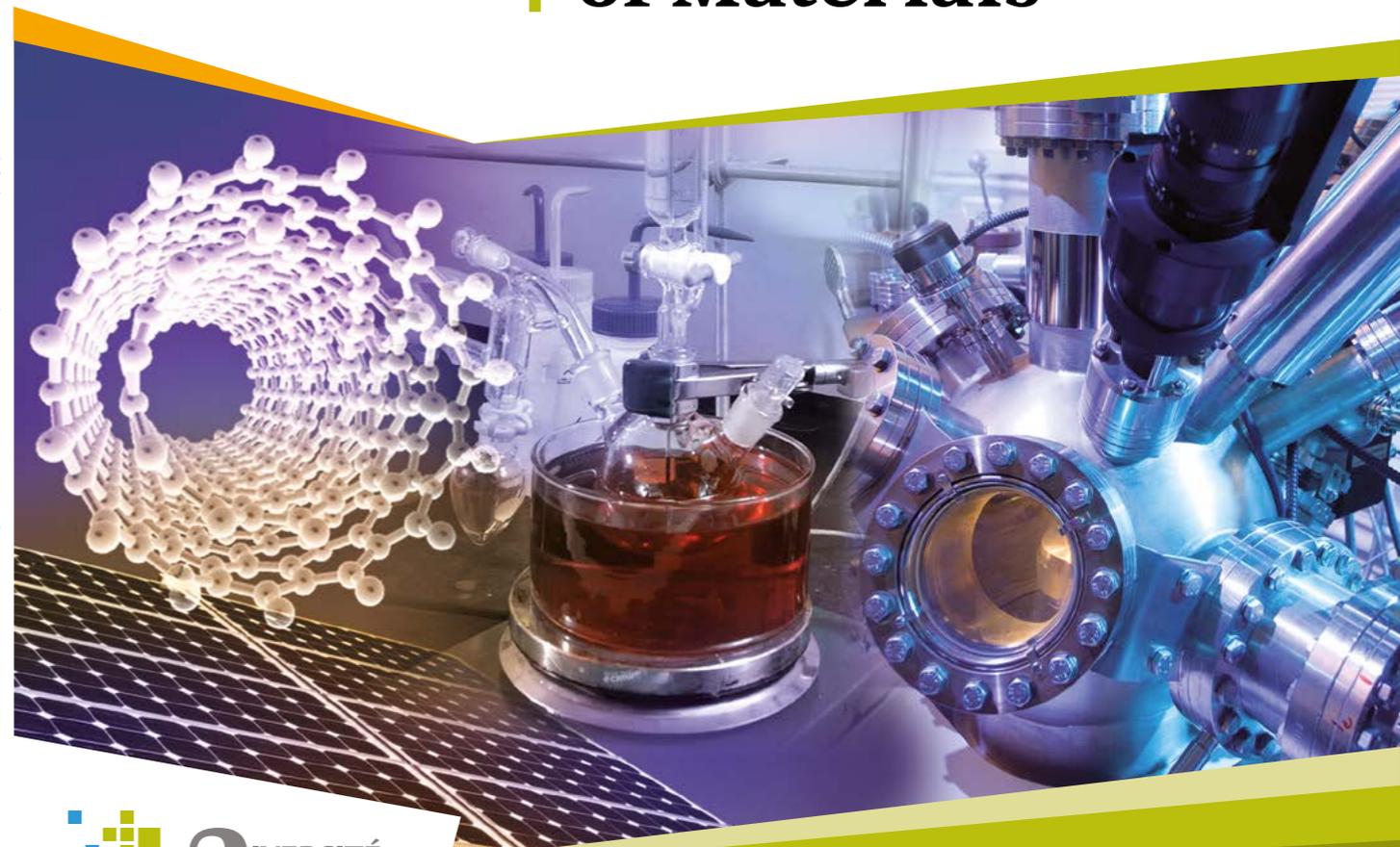
**Language:** Fully taught in English

**Level:** Master's degree

## Master's degree CPCM

IN MATERIALS SCIENCE  
AND ENGINEERING

# Chemistry and Physico-Chemistry of Materials



Conception : Direction de la communication - Impression : Centre de reprographie - LUPPA - Février 2023

## Overview

Master CPCM provides a complete education program in the field of materials, by addressing all aspects related to their synthesis/elaboration, their fine characterization and their implementation for specific applications.

The term "Chemistry" refers to synthesis and elaboration aspects, while the term "Physico-Chemistry" refers to characterization science and understanding of mechanisms and phenomena taking place at different scales of the material (micro/nano or surface/bulk).

The training delivered by Master CPCM allows you to find rapidly a job in the industry as senior executive, in all sectors of activity using or designing materials, as soon as you have obtained the Master degree. Alternatively, you can continue your training with a PhD thesis (three years), which is an advantage in several fields of research and development.

Master CPCM relies on recognized senior researchers, professors and assistant professors in the field of chemistry and physico-chemistry, carrying out their research activity in IPREM institute (Institute of Analytical Sciences and Physico-Chemistry for Environment and Materials). <https://iprem.univ-pau.fr/en/institute.html>

## Student Learning Outcomes

At the end of this program, the students of the "Chemistry and Physico-Chemistry of Materials" master's degree will be able to:

- Elaborate materials (organic and inorganic),
- Use various analytical techniques to characterize materials,
- Validate, interpret and model experimental results,
- Produce quality research,
- Carry out a research project.
- Summarize their work (experimental plan, results and their interpretation) in a report and communicate appropriately with experts.

## Opportunities

### Sectors

- Chemistry
- Energy (photovoltaic, batteries, fuel cells, artificial photosynthesis...)
- Environment (non-polluting materials, pollution control materials and storage...)
- Transport (composite materials, surface treatments...)
- Building (thermal and sound insulating coatings...)
- Cosmetics & life science

### Fields

- Research and Development
- Quality control

### Positions

- Research and Innovation Engineer
- PhD students

**56%** are pursuing their studies with a PhD

*30 months after graduation  
(class of 2019)*

## Program objectives

- Train the students to an advanced specialized level for present and future challenges in materials chemistry, energy, polymers, and modeling.
- Develop their engineering and research skills.
- Prepare students for leading positions in industry and public institutions.

### First year

#### 1<sup>st</sup> semester

- Elaboration of materials (organic, inorganic)
- Physico-chemical properties
- Environmentally friendly materials
- Modeling
- Characterization techniques

#### 2<sup>nd</sup> semester

- Elaboration of materials (organic, inorganic)
- Physico-chemical properties
- Characterization techniques
- **Industrial internship** (2-3 months in a company)

### Second year

#### 1<sup>st</sup> semester

- Materials for different applications
- Large selection of options (experimental & theoretical approaches of materials)

#### 2<sup>nd</sup> semester

- **Internship** (4-6 months) in a company or in an academic lab in various fields of materials science (polymers, ceramics, energy storage and conversion, theoretical chemistry...)

