

MASTER IN CHEMISTRY

CHEMISTRY & INNOVATION TRACK

U N I V E R S I T É P S L

Social demand for sustainable economy, health, safety,... sets new challenges in terms of scientific and technological innovation where chemistry has a key role to play. Supported by renowned schools and research institutes – Chimie ParisTech, ESPCI Paris, Ecole Normale Supérieure, MINES ParisTech, Institut Curie, Collège de France – the Chemistry & Innovation track of the Graduate Program in Chemistry of Université PSL brings students in contact both with high level research at PSL and frontiers in chemistry preparing them to be innovative actors in the academic or private sectors.

OBJECTIVES

The Chemistry & Innovation track of the Master degree of Chemistry (co-accredited by PSL and Sorbonne University) aims at providing students with a broad background in chemistry and with abilities to transform scientific knowledge into innovative research or economic outputs.

The track offers high level courses in all fields of chemistry (molecular chemistry and chemical biology, physical and analytical chemistry, theory and modelling, materials chemistry) oriented towards the most innovative and up-to-date research topics. A choice of elective courses allows students to customize their own curriculum. Students are encouraged to develop their innovative skills through human and transverse skills, transdisciplinary activities, projects in interaction with research labs in PSL and internships.

Molecular design & synthesis (MDS)

Theoretical chemistry (TC)

Analytical & physical chemistry (APC)

Smart materials (SM)

MAIN ASSETS

The program, entirely taught in english, is articulated along three learning goals:

- **A broad training in fundamental chemistry** will be offered through general-interest courses articulated along 4 topics : Molecular chemistry; Analytical and physical chemistry; Theoretical chemistry; Smart materials
- **Training by research** through strong interactions with research laboratories and various formats ranging from research challenges to laboratory internships
- **Multiple skills and innovation**: a unique course offer to open minds from deep training in innovation to various soft skills

CAREER OPPORTUNITIES

The Chemistry & Innovation track leads to a broad range of career opportunities, including academic research, private sector research, development, production, innovation and entrepreneurship, scientific patenting, consulting.

CURRICULUM (M1)

Semester 1 (30 ECTS)

Training in Chemistry

- 4 basic courses in MDS, APC, TC & SM
- 3 advanced courses chosen among 4 in MC, APC, TC & SM

Training by Research

- Research challenge

Openings and innovation

- Mathematics & physics for chemistry
- Innovation 1: design thinking

Semester 2 (30 ECTS)

Training in chemistry

- 2 super-advanced courses chosen among a broad offer in MDS, APC, TC & SM

Training by research

- Pre-internship project
- 3 month research internship

Openings and innovation

- Innovation 2: prototyping
- Soft skills including French for foreigners or other languages

| Curriculum (M2): any of the M2 tracks proposed in the Chemistry master's degree |

COURSES

Broad training in chemistry: 4 topics articulated with the research and innovation done at PSL

Molecular design and synthesis (MDS)

Organic and organometallic chemistry, bio- and bioinorganic chemistry, advanced spectroscopies, chemical tools for biology and health sciences, medicinal chemistry, molecular biotechnology

Analytical and physical chemistry (APC)

Environmental chemistry, separation sciences, physico-chemistry and interfaces, spectroscopies and imaging, analytical chemistry for biotechnology and diagnostics, interfaces of biomaterials

Theoretical chemistry (TC)

Electronic structure theory and statistical mechanics, from electronic structure to chemical properties and reactivity, molecular simulation in chemistry

Smart materials (SM)

Concepts from inorganic materials to soft matter: design, synthesis and properties, materials for energy or optical applications, advanced materials: research and applications

More information

psl.eu/en/education/masters-degree-chemistry

Contact

admissions-master-chimie@psl.eu

LOCATION

Classes will be held in Paris on the campuses of PSL in the Center of Paris.

ADMISSIONS

- 1/ Online application on PSL portal
Submission deadlines for academic year 2020–21: from **March 30 to May 22, 2020**
- 2/ Interview (for pre-selected candidates): from June 1st to mid-June, 2020

Prerequisites

- Bachelor degree or equivalent in Chemistry or any science at its interface
- A C1 level in English is recommended (Courses taught in English)

PSL WELCOME DESK

PSL welcome desk is a service dedicated to helping international students' settle in Paris and PSL: administrative formalities, help with accommodation, health, cultural events, french courses etc.
Contact: welcomedesk@psl.eu

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