Université PSL
Chimie ParisTech

Fostering talents for tomorrow’s chemistry
Chemistry at the heart of Paris

- 1896: Founded by Charles Friedel
- 1899-1907: Directed by Henri Moissan (Nobel Prize winner 1906)
- 1916: First woman embracing engineer career in France
- 1904: Eugène Schueller, founder of L’Oréal

« Young chemists devoted to industrial careers should have a scientific background as solid as that of those embracing purely academic ones »
Our PSL University: a young university with renowned members.
ParisTech

An exceptional union of ten graduate schools enabling a unique transdisciplinarity

- 6 ParisTech Schools are in the top 10 out of 250 Engineering Schools in France
- Each School is ranked #1 at the national level in its specific domain

Shared-values

- Excellence based on the model of French “Grandes Écoles”
- Openness as a driver for growth: international openness, social diversity, openness to new pedagogical methods
- The quest for innovation, key to future successes for our Schools

16,500 students
100 laboratories
71 teaching and research chairs
2,000 professors
100 partner companies
130,000 Alumni
OUR VISION.....

Provide basics & fundamentals courses in all fields of chemistry illustrated by a cutting-edge research
Key figures
Training

Highly selected students (50% of women)

320

Researchers and Professors & Associate Professors

120

1 Prof for 3 students

Practical training

40%

Business, management and human skills

20%

100% abroad

international students

20%

Mandatory internship

12 months
Researchers and Professors & Associate Professors: 120
PhD and post-docs students: 140
Research Teams: 13
Research Laboratories: 3
7 per week
100%
Label
erc
PSL
Research & Development

- 2 Chairs with AREVA & Eco-Systèmes
- 50% of PhD funded by companies
- 2 Labcom (joint lab with SMEs)
- >40 Research contracts per year
Energo

Plasma catalysis technology for methanation of CO₂

European patent [EP15202925.2] 2015

Innovation & Start-Ups

Our incubator: Chimie Paris Innov
Cofunded by the European Union

➢ 6 start-ups since 2018

Zinc-Air
Cheap and Safe Batteries for Electrical Vehicles & Stationary Electricity Storage
Employability of our Engineers

90% of the students get a job or PhD before the graduation ceremony (December)

Class 2017 (126 students)

- 26% in Health, cosmetics, fine chemistry
- 23% in Energy
- 22% in Consulting
- 17% in Materials
- 7% in Other
- 5% in Agriculture, Food

Sectors like Health, cosmetics, fine chemistry, Energy, Consulting, Materials, Other, and Agriculture, Food are depicted in the pie chart.
Training

Engineering Masters & PhD
HIGHER EDUCATION SYSTEM

PREPARATORY CLASSES
- PC1
- PC2

Graduate Engineering Schools

Y1
- Y1
- Y2
- Y3

Master level

PhD
- D1
- D2
- D3

Universities

BACHELOR
- BA
- BA2
- BA3

MAJOR
- M1
- M2

PhD
- D1
- D2
- D3

French baccalauréat

1 2 3 4 5 6 7 8
Training top level professionals in chemistry

Year 1
Towards engineering
- Basic courses
- Team projects
- Management, Economy
- Language and Cultures
- Work internship 1-2 months

Year 2
Options
- Basic courses & options
- Projects (innovation)
- Management, Economy
- Language
- Internship - 5 months

Year 3
Specialization
- Projects (entrepreneurship)
- Engineering or Research master
- Master internship - 6 months

- 12 months of mandatory internship
- Regular meetings with industrials (conferences, workshops, visits)

Organic and Bioorganic Chemistry
Solid State Chemistry
Material Science
Chemical and Process Engineering
Theoretical Chemistry
Analytical Chemistry
Environmental science
Life and health sciences
Nuclear Chemistry
Analytical Chemistry
Environmental science
Life and health sciences
Nuclear Chemistry

Chemical and Process Engineering
Material Science
Masters @ Chimie ParisTech

- Master *Chimie Paris Centre* (with SU):
  - Analytical, Physical & Theoretical Chemistry
  - Molecular Chemistry
  - Inorganic Materials and Polymers
  - Chemical Engineering
  - *Chemical Frontiers of Living Matter*
- Master of Nuclear Energy
- Master *Material Science* (PSL)
- Master *Energy* (PSL)
- Master *Molecular Pharmacology* (with Paris Descartes)
- Master *Material Science and Nanoobjects* (with SU)
PhD

- Chemical engineering and advanced technology
- Physical chemistry and analytical chemistry
- Molecular chemistry
- Material physics and chemistry
Research
A world class research made to tackle global societal challenges

Integrated research: from the concept to the device / process, tuned to downstream applications

Research at the interfaces: physical, engineering and processes, biology, medicine

Unfocused research, convenient to the reactivity and to the emergence of innovative subjects and risk-taking

- Energy
- Environment
- Materials
- Health
Our main research areas

Chemistry for Materials & Energies

- Materials Sciences
- Thin Films and Surfaces
- Chemical Engineering
- Organometallic Chemistry
- Polymerization Catalysis
- Energy
- Microsystems
- Heritage materials
- Nano materials & structures
- Modelisation

Chemistry for Life Sciences & Health

- Analytical physico-chemistry : electrochemistry, separative methods & coupling of detection techniques
- Miniaturization
- Imagery
- Organic synthesis and methods for imaging and screening
- Modeling & theoretical Chemistry
- Inorganic Biological Chemistry, Medicinal Inorganic Chemistry, Medicinal Organometallic Chemistry
- Catalysis, Synthesis of Biomolecules and Sustainable Development
Pierre Gilles de Gennes Institute for microfluidics

• National excellence laboratory
• Created in 2011
• € 28.2m project
• To bring together, in a cross-disciplinary domain, experts from various disciplines (Physics, biology, chemistry, technology)
• To develop both basic and applied research

www.institut-pgg.com
Implementation of exchanges
Engineering cursus @ Chimie ParisTech

**Year 1**
Towards engineering
- Basic courses
- Team projects
- Management, Economy
- Language and Cultures
- Work internship 1-2 months

**Year 2**
Options
- Basic courses & options
- Projects (innovation)
- Management, Economy
- Language
- Internship - 5 months

**Year 3**
Specialization
- Projects (entrepreneurship)
- Engineering or Research master
- Master internship - 6 months

- 12 months of mandatory internship • Regular meetings with industrials (conferences, workshops, visits)
Second year : New applications

2 quarters:
- **1st**: Common bases: Chemical engineering, Metallurgy, Polymers, Analytical chemistry II, Biochemistry, Nuclear energy and radioactivity, Thermostatistics and modelization, Inorganic chemistry
- **2nd**: one option among • Molecular chemistry • Materials • Chemical engineering • Analytical and Biological Chemistry • Biotechnologies

« Techno project » (1/2 day per week, teamwork): Building of a prototype ➔ innovation skills

Internship (4-5 months)
Third year: specialization

industrial innovation and/or research

1 Sept-31 Jan

Engineering

- Biotechnologies
- Sustainable processes & materials
- Industrial processing
- Green organic chemistry
- Cosmetology and Formulation
- Energies

1 Feb-31 Jul

Internship

(6 months)
### Regular international mobility

#### Exchange “engineering track”

<table>
<thead>
<tr>
<th>Year</th>
<th>Start Date</th>
<th>End Date</th>
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</thead>
<tbody>
<tr>
<td>Y1</td>
<td>1 Sept-31 Dec</td>
<td>1 Jan-30 Apr</td>
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<tr>
<td></td>
<td></td>
<td>1 May-30 Jun</td>
</tr>
<tr>
<td>Y2</td>
<td>1 Sept-31 Dec</td>
<td>1 Jan-30 Mar</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 Apr-30 Aug</td>
</tr>
<tr>
<td>Y3</td>
<td>1 Sept-31 Jan</td>
<td>1 Feb-31 Jul</td>
</tr>
</tbody>
</table>

[https://www.chimieparistech.psl.eu/admissions/](https://www.chimieparistech.psl.eu/admissions/)
International mobility
“Master track”

M1
1 Sept-30 June
Including 3-4 months of Internship

M2
1 Sept-31 Jan

1 Feb-31 Jul
Internship

https://www.psl.eu/en/formations?field_niveau%5B30%5D=30&domaine%5B28%5D=28&domaine%5B27%5D=27
Double Degree agreement
3 semesters @ Chimie ParisTech & 2 internships

Y1
1 Sept-31 Dec → 1 Jan-30 Apr → 1 May-30 Jun

Y2
1 Sept-31 Dec → 1 Jan-30 Mar → 1 Apr-30 Aug (Internship)

Y3
1 Sept-31 Jan → 1 Feb-31 Jul (Internship)

courses are taught in French
www.chimieparistech.psl.eu

International Relation Office

Dr. Fethi Bedioui, Director
Mr. Antoine Mercier, Deputy
international@chimieparistech.psl.eu

Thank you!