

Training through research at IFPEN gives students, PhD students and post-doctoral researchers the opportunity to complete some or all of their program in a stimulating research environment, with cutting-edge laboratory equipment and powerful computing tools.



New IFPEN PhD students in 2023

Each year, IFPEN supervises more than a hundred thesis, that is, several dozen new thesis per year, and hires around a dozen post-doctoral researchers.

Training in and through research at IFPEN takes the form of:

- **internships for Master's students**,
- **PhDs**,
- **post-doctoral research programs**.

It is aimed at training the future engineers and academic and industrial researchers capable of overcoming the scientific and technological challenges associated with the energy transition. For IFPEN, training in and through research is a means of:

- developing new concepts, knowledge and methodologies,
- enhancing skills and renewing ideas,
- establishing or consolidating partnerships with university laboratories.

Would you like to join us? Read about our opportunities below.

OPPORTUNITIES

By joining IFPEN's R&I teams, you will be entering a multidisciplinary and internationally recognized scientific community, whose research extends across 9 distinct disciplinary fields.

> Around **50%** of students are foreign nationals.
> Male/female ratio **50/50**.

Internships

Our internship positions

Numerous internships are available to French and foreign students at IFPEN. Generally speaking, internships last between three and six months. Internship opportunities are primarily aimed at Master's program students in a scientific field in line with IFPEN's research activities.

Internships are the subject of an internship agreement, signed by IFPEN, the higher education establishment and the student. A supervisor is appointed to monitor the student's research. Interns enjoy an attractive financial package.

Doctoral programs (PhDs)

Our thesis offers

In partnership with French and foreign doctoral schools, each year, IFPEN hosts between 40 and 45 young researchers preparing a PhD thesis, over a period of three years.

During their PhD research, these young scientists benefit from:

- high-quality supervision and cutting-edge technical resources,
- integration within IFPEN/IFP School's doctoral college. PhD students take part in events organized for them (welcome days, Doc'Days), scientific and technical training initiatives (seminars, internships) as well as specific training to prepare and facilitate their future career development,
- language classes (for foreign PhD students),
- attractive pay.

The employment contract may be with IFPEN (in the majority of cases) or with one of its external partners. Most PhD students conduct their research activities at IFPEN's Rueil-Malmaison or Lyon sites. Some students are hosted at partner sites for some or all of their thesis.

To give you a few ideas about the research activities conducted by PhD students at IFPEN, you will find 3-minute thesis presentations below.

Yves Chauvin Prize

This prize, awarded by the Scientific Board, is aimed at encouraging PhD excellence at IFPEN. As such, it recognizes the best thesis defended during the year just elapsed. Some previous winners are listed below:

• **2025: Nicolas Fintzi** for his thesis entitled « Statistical modeling of disperse two-phase flows : application to buoyancy-driven droplets suspensions ». To know more, see this article in Science@ifpen n° 59 and this interview;

• **2024: Mohammed Bin Jassar** for his thesis entitled "Molecular Modeling of the Solid Electrolyte Interphase in Lithium Batterie". To know more, see this article in Science@ifpen n° 56 and this interview;

• **2023: Alexandre Delarouzée** for his thesis entitled "Metabolic engineering of Clostridium acetobutylicum for the use of sugars from lignocellulosic biomass". To know more, see this article in Science@ifpen n° 53 and this interview;

• **2022: Martina Torelli** for her thesis entitled « Modelling Microbial Methane Processes in Marine Environments: from Source to Seep. Insights from Basin Analysis ». To know more, see this article in Science@ifpen n° 50 and this interview;

• **2021: Lina Jolivet** for her thesis entitled «Apport de la spectroscopie de plasma induit par laser pour la modélisation des procédés de raffinage ». To know more, see this article;

• **2020**: **Rémi Hocq** and **Jérôme Rey** are the joint winners of the prize. Rémi Hocq for his thesis entitled "Clostridium beijerinckii DSM 6423, une souche plateforme émergente pour la bioproduction de solvant"

(Clostridium beijerinckii DSM 6423, an emerging platform strain for solvent bioproduction) and Jérôme Rey for his thesis entitled “Mécanismes et cinétique de l’isomérisation et du craquage d’alcènes dans la zéolithe chabazite quantifiés par dynamique moléculaire ab initio contrainte” (Isomerization and alkene cracking mechanisms and kinetics in the chabazite zeolite quantified via constrained ab initio molecular dynamics).
• **2019: Céline Pagis** for her thesis entitled "Synthesis and catalytic evaluation of hollow zeolite Y crystals". Read her article in Science@ifpen issue 39;
• **2018: Aurélie Pirayre** for her thesis entitled "Reconstruction and Clustering with Graph optimization and Priors on Gene networks and Images". Read her article in Science@ifpen issue 35;
• **2017: Zlatko Solomenko** for his thesis entitled "Two-phase flows over complex surfaces: towards bridging the gap between computations and experiments with application to structured packings";
• **2016: Kim Larmier** for his thesis entitled "Isopropanol conversions on alumina solids: a mixed experimental/multiscale modeling approach";
• **2015: Anthony Robert** for his thesis on "Large-Eddy Simulation of abnormal combustion in downsized spark ignition engines";
• **2014: Thibault Alphazan** for his thesis entitled "Towards the molecular design of hydrotreatment catalysts prepared from metal-organic precursors".

Post-doctoral positions

Would you like to join us?

Apply

Each year, IFPEN offers around 15 post-doctoral positions to people who have held a PhD for less than three years. These positions, based in our laboratories at Rueil-Malmaison and Lyon, represent full-time 1-year contracts, which can be extended to 18 months.

Post-doctoral researchers join our research teams and benefit from IFPEN’s cutting-edge scientific and technological environment to carry out their research project. They are entitled to an attractive pay package and a welcome bonus for international personnel to help them settle in France.

The **doctoral thesis topics** proposed by IFPEN's Research Divisions are published **in January on https://theses.ifpen.fr**.
The **post-doctoral topics** are published on **https://emploi.ifpen.fr** or on specialized websites.
You can also respond to an offer by sending your CV (e.g. according to the Europass model), together with a cover letter, to **training@ifpen.fr**.

CONTACT

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TO FIND OUT MORE

IFPEN’s fundamental research
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