

## Admissions

Admissions to MatNanoBio are decided by the directors of the master, after examination of the student application and after an interview: face to face or by visio-conference

Candidates must have validated their M1 (physics or chemistry) or equivalent

**Applications form** A curriculum vitae, a letter of motivation, transcript of marks for the 2 previous years, a recent photography. (in a single pdf < 5Mo to [souhir.boujday@sorbonne-universite.fr](mailto:souhir.boujday@sorbonne-universite.fr) or [olivier.pluchery@sorbonne-universite.fr](mailto:olivier.pluchery@sorbonne-universite.fr))

The students at Sorbonne Universite (SU) should also follow the usual process at SU and register at <http://sciences.sorbonne-universite.fr/fr/formations/inscriptions.html> (registration open April 9th to June 29th 2018)

## Internship

### When ?

5 months duration (2nd semester)

### Where ?

- At SU laboratory in Paris or NTU laboratory in Singapore (one of the two partner universities) or any other universities worldwide

- Within a private company (whatever its size)

An internship convention (Convention de Stage) will be established between UPMC and the host laboratory.

## Financial Support

The MatNanoBio Master received special support from various institutions and will be able to offer several grants for supporting internship in foreign countries.

Supported by :

- Form@Innov, Sorbonne Universities
- Sorbonne Université (Paris) & Nanyang Technological University (Singapore)
- Erasmus/Eurasicat grants for students
- LabEx Matisse and LabEx Michem

## Contact

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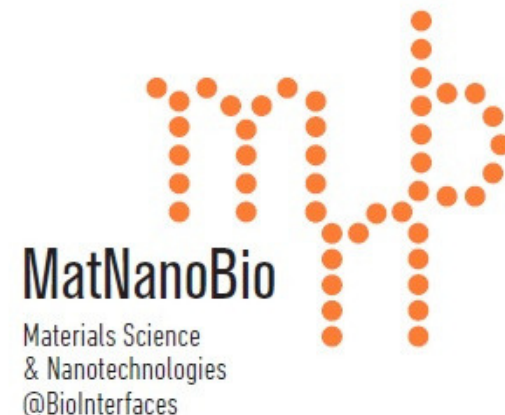
## Institutional Partners



[www.lrs.upmc.fr/fr/matnanobio.html](http://www.lrs.upmc.fr/fr/matnanobio.html)

Graphic design : Isabelle Vuillaume

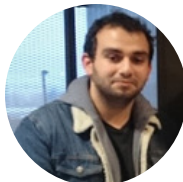
## AN INTERDISCIPLINARY & INTERNATIONAL MASTER 2





## What Alumni say about MatNanoBio ?

YACINE M.



The practical works and the day we spent with Horiba were great. The trip in Brussels was a great opportunity to talk with people with different background and consolidate our group cohesion

KELLY T.



I learned a lot about surface functionalization, understanding mussels adhesion was fascinating! I also enjoyed a lot the team project, an enriching lab work!



## MatNanoBio

is an Interdisciplinary & International Master2 (M2) with courses taught in English. It is jointly organized by Sorbonne Université (SU) in Paris and Nanyang Technical University (NTU) in Singapore.

It provides the highest formation in physical chemistry, biointerfaces and optical instrumentation so that students will either apply in companies related to biochemistry, medical instrumentation, pharmacology, or pursue a university career with a PhD thesis.

## ONE YEAR OF STUDY EITHER IN PARIS OR IN SINGAPORE

MatNanoBio delivers a M2 diploma, that is acknowledged as engineer certification to work in private companies or can open the way to a PhD thesis.

MatNanoBio accepts students with a background either in Chemistry or in Physics who have successfully obtained a M1 (1st year of graduate studies).

## Organization of the Courses

The academic year is split into a first semester with courses and lab works, and a second semester with an internship in a research lab (or in a company).

The courses of the 1st semester take place in the Campus of Sorbonne Université, in Paris Downtown. Students have to take a common base of 3 courses and complement with 2 elective courses that can be chosen among 5 options.

## Common base courses

- **Material Surfaces at the BioInterfaces (5C013)**  
Surfaces and their specificity in biochemistry. Surface Functionalization. Surface characterization techniques (FTIR, Raman, XPS). Biomolecules on surfaces. Examples of nanomaterials applied to BioInterfaces (gold nanoparticles)
- **Biomimetics and Biotechnology (5C014)**  
Biological materials: introduction, characterization techniques. Most abundant load-bearing protein: collagen. Physical processing of silks. Bioelastomers. Sclerotized proteins and structures. Natural adhesives. Biomimetic synthesis.
- **Nano-optics and advanced optical techniques for chemistry & biointerfaces (5P52G)**  
Optics and electromagnetism of surfaces and interfaces. Plasmonics and application to biodetection. Spectroscopy for chemistry and bio-systems. Microscopy and applications to biology. Some advanced optical instruments.

## Elective Courses

It is recommended for chemists to choose chemistry courses and for physicists physics courses.

