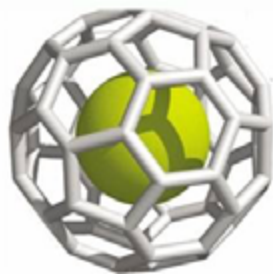




MASTER OF SCIENCE in

Micro- and Nanotechnology



IPB : BORDEAUX INSTITUTE OF TECHNOLOGY

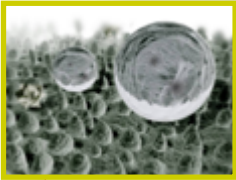
IPB is an Institution composed of five national graduate schools of engineering which are located in Bordeaux :

- ENSC, Cognitics
- ENSCBP, Chemistry-Physics and Food Science
- ENSEGID, Environment and Geological Resources
- ENSEIRB-MATMECA, Electronics, Computer Science, Telecommunication, Mathematics and Mechanics
- ENSTBB, Biotechnology

IPB is a member of the French national network of Institutes of Technology and a founding member of the University of Bordeaux.

The Master of Science in Micro- and Nanotechnology, delivered by IPB, is in English and has been established by ENSCBP as an answer to the rapid evolution of today's needs in industry and academics, allowing the students to adapt efficiently to the most recent technological innovations. It is based on the well-established know-how of ENSCBP and its partner laboratories concerning topics at the interface between chemistry, physics and biology.

www.enscbp.fr



MASTER OF SCIENCE in Micro- and Nanotechnology

September to November

Foreign student starts in September with a **three month internship** in one of the academic partner laboratories

December

One month opening module in December, to choose among :

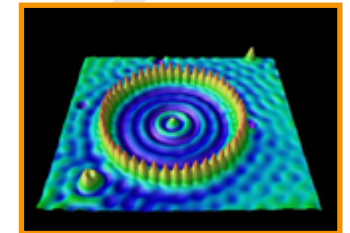
- Innovation
- Geoeconomy
- Marketing and Purchasing
- Wine and Marketing...

January to March

From January to March, **three month courses** in micro- and nanotechnology (fully in english) including different laboratory courses (AFM, STM, Microfluidics...), a one week hands-on training in clean room conditions and a personal project in cooperation with an industrial partner

April to September

From April to September, **six month internship** in a company working in the field of micro- and nanotechnology



COURSES with the participation of industrial partners : Arkema, Thalès, BASF, Rhodia, Merck...

MODULE 1 76h

FABRICATION TECHNIQUES AND CHARACTERISATION

- Near-field scanning techniques
- Characterisation techniques
- High resolution spectroscopy
- Nano- and microfabrication techniques
- Materials and thin films
- Engineering of surfaces and interfaces
- Nanobiotechnologies

MODULE 2 62h

NANO-OBJECTS & AUTO-ORGANISATION

- Inorganic, polymer and metal nanoparticles
- Nanotubes and nanofibres
- Nanostructured materials and applications
- Toxicology of nanomaterials and nanotechnologies

MODULE 3 78h

APPLICATIONS

- Micro- and nanofluidics
- Analytical nanosystems
- Sensors and microsystems
- Nanophotonics
- Organic electronics
- Lab course on microfabrication and clean room technology

Graduate School of Chemistry Biology and Physics



Programmes

- **3 Engineering training programmes (Master) :**
 - Chemistry-Physics
 - Food Science & Techniques
 - Materials Engineering (apprenticeship)
- **1 Master's level degree in Environment and Industrial Security**

Scientifics Research

- **9 laboratories**
- **64 academics and researchers**
- **100 PhD, post-docs**
- **2 Institut Carnot :**
 - MIB (Materials Institute Bordeaux)
 - LISA (Lipids for Industry and Health)

& Technology Transfer

- 2 dedicated buildings :**
- ChemInnov, Agir**

2 industrial Chairs (*ENSCBP - Arkema - Région Aquitaine*)

Dr. Georges Hadziioannou « Advanced functional materials for information and communication technology and for energy »

Dr Patrice Gaillard « Material Nanostructures based on carbon nanotubes or block co-polymers »

International

- **70% graduate students with overseas experience**
- **10% foreign students**

For more information
www.enscbp.fr

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