



International Master **Nanotech**

Micro and Nano Technologies for Integrated Systems

PRESENTATION

The science of creating, designing, integrating and manufacturing miniature components, instruments and systems is carried out using expertise in micro/nanometric technology. The objective of this degree course is to train engineers with a wide range of knowledge in this field, where applications abound in practically all sectors of the world economy. The 1st semester is at Politecnico di Torino (Italy). The 2nd semester is at Phelma, where research, education and industry meet. Set in a rich industrial and research-intensive environment, the Minatec campus is the ideal place for highly motivated students with a strong career oriented interest. The 3rd semester is at Ecole Polytechnique Fédérale de Lausanne (Switzerland) a top-ranked institution in the world. All the courses are in English.



INDUSTRIAL SECTORS

Students in this program will be awarded an Engineering degree from Grenoble INP, a Laurea magistrale, as well as a joint Master of Science from Politecnico di Torino. They are pursuing as engineer or Ph.D. in various fields such as : electronics or microelectronics, computer sciences, telecommunications, material engineering, microsystems-microtechnology, biotechnology, food industry, automotive, finance, aerospace, strategy consulting...



RESEARCH

Each student should perform a master thesis either in a company or in a research laboratory (France or abroad). This is an opportunity to consolidate and discover working methods and to learn how to manage real projects. Optimum working conditions and exciting opportunities are offered thanks to a long term relation with laboratories such as CEA-Leti, CSEM, CNRS, Palo Alto Research Center, MIT, UC Berkeley, MCGILL University, NDL-Taiwan, or companies: ST Microelectronics, Tronics, IBM, Dolphin Integration, EM-Marin, SOITEC, LEMOPTIX, IMEC, Sony, BIOCARTIS, NXP.

ASSETS

The program is unique in Europe not only because of the three very high level institutions which are involved but also by the content of the courses a bridge between physics and electronics in the benefit of micro/nano systems. More than 60h of practical training in nanotechnology (design, clean room, characterization, STM, AFM,...) are proposed. Solid theoretical basis are provided in physics (solid state, nanostructures, advanced microscopy and lithography...), electronics (nanoelectronics, optoelectronics, analogue and digital circuit design, hardware systems modeling) and microtechnologies (microsystems, characterization of technological processes, biotechnologies, modeling of microsystems). The international mobility and the multiculturalism (around 10 nationalities by year) are other two strength points for the Nanotech program.



CONTACT

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<http://phelma.grenoble-inp.fr>

Grenoble INP - Phelma is the school for scientific diversity. It offers its students courses in various fields with a promising future: **micro and nano-technologies** (micro / nano-electronics, nano-sciences, materials, health, building, etc.), **energy** (nuclear energy, renewable energies, accumulators, etc.), **innovative materials** (for aeronautics, automobiles, sport & leisures, health, microelectronics, energy, etc.), **information technology** (digital technologies, image and signal processing, telecommunications, computer science & networks, embedded softwares, etc.), **biomedical engineering** (medical imagery and therapy, implantable devices, etc.) and the **environment** (eco-processes, energy management, natural signal analysis, etc.).

Based in Grenoble in the heart of the French Rhône Alpes region, Phelma boasts a rich academic and industrial infrastructure. As the only teaching institute on the Minatec innovation campus, Phelma benefits from an exceptional Training / Research / Industry synergy.

Key figures: more than 1,200 students, plus 300 engineering graduates a year, 150 permanent research lecturers from the school's thirteen partner laboratories, 200 speakers from industry and the world of research, plus 25% of engineering students studying for doctorates.

PRESS RANKINGS



Grenoble INP, leader in 2 lists from QS World University Rankings Engineering & Technology 2014



Grenoble INP ranked 2nd by L'Usine Nouvelle among the 100 best french engineering schools in 2014



Grenoble INP ranked 1st by « Industrie et Technologies » in 2013



Grenoble, ranked 5th World's most inventive city by Forbes in 2013

