



Quantum science and nano- materials | QMat

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A graduate school

of University of Strasbourg



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About us & mission

The continuing miniaturization and integration of information technologies requires a better understanding and control of the constituents of matter at a very small scale, approaching a millionth of a millimeter (nanometer), which is about twenty times the size of an atom.

At these extremely short scales, the quantum nature of matter becomes dominant. By exploiting typical quantum effects, such as coherence and entanglement, we can create new and innovative devices and materials that will shape the future of technology and positively impact society as a whole. QMat prepares the next generation of quantum scientists and engineers for this task, by putting outstanding MSc and PhD students at the forefront of international research, combined with an engaging training program bridging physics, materials science, chemistry, and engineering.

Education & training program

QMat offers an integrated Master/PhD program to the best and most motivated students from around the world. Our teaching philosophy rests on three principles:

- Enhanced curriculum in fundamental and applied physics
- Learn-by-doing: integrating coursework with individual research projects
- Involve students in their own training through student-led initiatives

The QMat program features:

- A first-year Master (M1) broad training in advanced physics, ranging from condensed-matter and nanophysics to high-energy physics
- A second-year Master (M2) program specializing in one specific area, followed by an extended research project in a QMat research group or partner group
- Opportunities for doctoral studies (PhD) in one of the QMat research groups

The QMat label is a trademark for outstanding post-graduate level research-oriented education in quantum science and nanotechnology.

Partners

M1 & M2

Faculty of Chemistry

European School of Chemistry, Polymers and Materials | ECPM

Department of Physics and Engineering

PhD

Doctoral School of Physics and Physical Chemistry | ED 182

Doctoral School of Chemical Sciences | ED 222

Doctoral School of Mathematics, Information Sciences and Engineering | ED 269

Doctoral School of Life and Health Sciences | ED 414

International partnerships

Ruprecht-Karls-Universität Heidelberg

Eucor - The European Campus

Partner institutes

Institut de physique et de chimie des matériaux de Strasbourg | IPCMS

Institut de science et d'ingénierie supramoléculaires | ISIS

Institut pluridisciplinaire Hubert Curien | IPHC

Institut Charles Sadron | ICS

Admission criteria

To be eligible, the candidate needs to hold a Bachelor of Science in Physics, Chemistry, Materials Science or equivalent (3 years diploma) and have a complete application including a CV, a cover letter and full transcripts.

The selection criteria include (in order of priority): academic results (excellent grades and required qualities for QMat), motivation specific to the objectives of QMat, research experience, and a potential to actively participate to the QMat initiatives.

Key figures

QMat students
(year 2018-2019)

30

QMaster scholarships per year
+ PhD top-up fellowships

60+

Members of the Young
investigators group (YIG)

20+

International and
industrial partners