M.Sc. Sustainable Materials – Polymer Sciences

The Freiburg Master's program qualifies bachelors for the sustainable development of modern multifunctional materials, systems and technologies.

Who can apply?
Bachelors of Sciences trained in materials science, physics, chemistry, or micro system engineering.

Knowledge of German and English (at least level B2), above average grade, and basic experience in macromolecular science are required. Please attach the following documents to your online application:

- Transcript of records
- Certificate of language proficiency
- Curriculum vitae
- Letter of intent

Collaborations with:
- Institute for Macromolecular Chemistry
- Freiburg Materials Research Center (FMF)
- Department of Microsystems Engineering (IMTEK)
- Freiburg Center for Interactive Materials and Bioinspired Technologies (FIT)
- University Clinics and Center for Biological Signalling Studies (BI-OSS),
- Fraunhofer Institutes in Freiburg
- Université de Strasbourg
- Institute for Macromolecular Chemistry
- Freiburg Materials Research Center (FMF)

Faculty of Chemistry and Pharmacy
Faculty of Engineering

Coordination
Prof. Dr. Rolf Mülhaupt

Application (For more information contact)
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M.Sc. Sustainable Materials – Polymer Sciences

Polymer Science – A key discipline enabling innovations in sustainable development.

Sustainable polymeric materials and system-integrated functional polymers play a key role in modern life and economy. Progress in polymer sciences is an important pace maker for:
- Creating advanced materials for sustainable developments
- Enabling high resource and energy efficiency
- Protecting climate, environment and human health
- Rendering high-tech products available for everybody

In contrast to conventional materials, polymers combine:
- Low carbon footprint with attractive ecobalance
- Tailored property profiles with facile processing

Curriculum content
Focus of the national degree program

The research-oriented and consecutive M.Sc. Sustainable Materials - Polymer Sciences begins every winter semester in Freiburg.

In the first semester, the main focus will be teaching the basics of macromolecular chemistry, polymer physics and polymer technologies. There will also be a practical training with the senior lectures of this master degree program.

In the second semester – together with the international students from Strasbourg - you can choose between the three main focus areas:

Advanced Macromolecular Materials and Nanostructure Engineering:
- Advanced knowledge of designing, structuring and implementing advanced functional polymers.

Macromolecular Engineering and System Integration:
- Advanced knowledge of surface analysis, (micro) fabrication and assembly of flexible, energy-autonomous embedded micro systems and their applications.

Biomaterials and Biosystems:
- Advanced knowledge of biobased polymer materials for sustainable development, exploiting renewable resources and the integration of biopolymer and synthetic functional polymers into (bio/micro) systems.

In the third semester, the advanced and research training introduces students to their master thesis. In their third semester, students are encouraged to gain work experience at another university, research institute and industry. In the fourth semester, the master thesis takes place.

Who can apply?
- Highly qualified and motivated bachelors
- Applicants with a bachelor degree in physics, chemistry, materials science or engineering with excellent grades
- Applicants should have a strong interest to expand their horizon at the scientific and cultural levels
- Applicants should have excellent proficiency in English. Knowledge of german and French language is not required.

Program and courses of IM-PolyS:
- Semester 1 (Strasbourg): Introduction to polymer and soft matter science, complemented by courses in physical chemistry and/or physics
- Semester 2 (Freiburg - consistent with second Semester in Freiburg)
- Semester 3 “à la carte”: Specialization through a broad list of elective courses offered in Strasbourg and Freiburg
- Semester 4: Master’s research internship and Master Thesis

The French-German University will grant a scholarship to every IM-PolyS student.

Built on a long-standing transnational collaboration in training and research, the University of Freiburg and the University of Strasbourg offer an International Master program in “Polymer Sciences” (IM-PolyS). All courses are held in English language.

Who can apply?
- Highly qualified and motivated bachelors
- Applicants with a bachelor degree in physics, chemistry, materials science or engineering with excellent grades
- Applicants should have a strong interest to expand their horizon at the scientific and cultural levels
- Applicants should have excellent proficiency in English. Knowledge of german and French language is not required.

An interview (in person / skype / telephone) might be scheduled in order to verify the candidate’s motivation and level of English.

For further information please visit the website http://www.physique-ingenierie.unistra.fr/im-polyss or E-Mail: im-polys@unistra.fr