

INTERNATIONAL PROGRAMMES

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Master's degree





MSc Sustainable Materials – Polymer Sciences Binational

University of Freiburg • Freiburg im Breisgau

Overview

| Degree | Master of Science in Sustainable Materials – Polymer Sciences |
|---|---|
| In cooperation with | Université de Strasbourg (UFR Physique et Ingénierie) |
| Teaching language | • English |
| Languages | English |
| Full-time / part-time | • full-time |
| Programme duration | 4 semesters |
| Beginning | Winter semester |
| Additional information on beginning, duration and mode of study | First semester classes start mid-September at Université de Strasbourg for all students. The second semester starts for all students in February at University of Freiburg and ends at the end of July or in mid-August. The duration of the third and fourth semesters is according to the respective university calendar, either Strasbourg's or Freiburg's calendar. |
| Application deadline | Apply until 30 June for the following winter semester. It is recommended that non-EU applicants apply as early as possible (to allow time for the visa application). |
| Tuition fees per semester in EUR | Varied |
| Additional information on tuition fees | There are no tuition fees for international students enrolled in this specific binational Master's. |
| Combined Master's degree / PhD programme | No |
| Joint degree / double degree programme | Yes |

Description/content

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 important for the following:

- Creating advanced materials for sustainable developments
- Enabling high resource and energy efficiency
- Protecting climate, environment and human health
- Rendering high-tech products available to everybody

In contrast to conventional materials, polymers combine:

- Low carbon footprint with attractive eco-balance
- Tailored property profiles with facile processing
- High cost efficiency with high versatility
- Low weight with high durability and recycling
- Multifunctionality with facile system integration

The focus is placed upon the development of advanced polymeric materials and systems. Selected examples include:

- Bio-based materials for lightweight engineering and biomedicine
- Adaptive ("smart") materials and systems responding to their environment
- Energy-autonomous micro-/bio-systems for energy management and health care
- Bio-inspired, 3D-printed multifunctional polymers/systems

Course Details

Course organisation

Built on a long-standing transnational collaboration in training and research, the University of Freiburg and the University of Strasbourg offer a double degree Master's programme in Polymer Sciences (IM-PolyS). All courses are held in English.

Programme 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)

Curriculum content

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

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

II. Macromolecular Engineering and System Integration:

Advanced knowledge of surface analysis, (micro) fabrication and assembly of flexible, energy-autonomous embedded micro systems and their applications

III. Biomaterials and Biosystems:

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

- Semester 3 "à la carte"
 Specialisation through a broad list of elective courses offered in Strasbourg and Freiburg (lectures and/or internship)
- Semester 4
 Master's research internship and Master's thesis

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| A Diploma supplement will be issued | Yes |
|---|---|
| International elements | Language training provided Training in intercultural skills Courses are led with foreign partners |
| Course-specific, integrated German language courses | Yes |
| Course-specific, integrated English language courses | No |

Costs / Funding

| Tuition fees per semester in EUR | Varied | | | |
|--|---|--|--|--|
| Additional information on tuition fees | There are no tuition fees for international students enrolled in this specific binational Master's. | | | |
| Semester contribution | 180 EUR per semester: Administrative fee: 70 EUR Contribution to the constituted student body: 7 EUR Contribution to the student union: 103 EUR | | | |
| Costs of living | Participants must ensure that sufficient funding is available to finance their participation in a course of study. The average cost of living in Freiburg for one month is currently approx. 850 EUR to 1,000 EUR. Some details: Rooms in private accommodation including extra costs: 350 EUR – 700 EUR Rooms in student residences: 250 EUR and 550 EUR including extra costs Private expenses amount to around 350 EUR per month. Health insurance (recommended) is available for approx. 120 EUR per month. Transport: A special student ticket for regional transport costs approx. 89 EUR per semester. www.studium.uni-freiburg.de/en/counseling/welcome-guide-for-international-students/finance | | | |
| Funding opportunities within the university | Yes | | | |
| Description of the above- mentioned funding opportunities within the university | Excellence scholarships: The Master's IM-PolyS is presently applying for a "Degree of Excellence". In the event that IM-PolyS is recognised with this distinction, one or two excellence scholarships may be granted to selected highly qualified students. | | | |

Requirements / Registration

| Academic admission requirements | The applicant must hold a Bachelor's degree in chemistry, physics or engineering, or must be about to be conferred this degree. |
|---------------------------------|---|
| Language requirements | Proof of knowledge of English (at least level B2 of the Common European Framework of Reference for Languages [CEFR]). No knowledge of German or French is required. |
| Application deadline | Apply until 30 June for the following winter semester. It is recommended that non-EU applicants apply as early as possible (to allow time for the visa application). |
| Submit application to | All applications are to be sent in one single PDF file toim-polys@unistra.fr. |

Services

Accommodation

As Freiburg is an attractive city, finding a suitable and affordable place to live can take a little while. The University of Freiburg offers all newly enrolled international students the possibility to apply for student housing via the International Office. In addition to these dormitories, which are run by the Studierendenwerk Freiburg (www.swfr.de/en), several independent residence halls are listed on the university website (http://www.housing.uni-freiburg.de). The Studierendenwerk Freiburg and the International Office also offer a list of available private rooms.

Support for international students and doctoral candidates

- Welcome event
- Accompanying programme
- Cultural and linguistic preparation

University of Freiburg



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The University of Freiburg was founded in 1457 as a classical comprehensive university, making it one of the oldest institutions of higher education in Germany. Awarded for its excellence in both research and teaching, the university also boasts a long history, with numerous Nobel laureates. Brilliant scholars and creative thinking distinguish it today as a modern, top-notch university, well equipped for the challenges of the 21st century. As an organisation with around 24,500 students, 288 degree programmes, and 6,536 employees (2021), the University of Freiburg is committed to family friendliness, equal opportunities, and environmental consciousness in its day-to-day operations. The structure of the university is multifaceted, ranging from 11 academic faculties – from the humanities and the social and natural sciences all the way to engineering – to 19 research centres. This goes to show that we are a dynamic, large-scale institution with a diverse educational offering. As studies, research, and continuing education are all an integral part of this offering, we maintain a close relationship with the city and the region as well as with the international academic community. Bilateral partnerships, research projects, joint study courses and memberships in international networks such as the League of European Research Universities (LERU) and of EUCOR – The European Campus are examples of the university's strong transnational relations. All our students, including those from abroad, can take courses at the Universities of Basel (Switzerland) and Strasbourg (France) without having to enrol. Via EUCOR, The European Campus mobility grant, they also receive allowances for travel expenses to their partner institutions.

universität freiburg

University location

Freiburg im Breisgau is a city in south-western Germany on the edge of the Black Forest. Freiburg was founded by Konrad and Duke Bertold III of Zähringen in 1120 as a free market town – hence its name, which translates to "free town". Freiburg holds a central position in Europe at the trijunction of Switzerland, France, and Germany, and is the city with the most hours of sunshine per year in Germany. It is nestled in one of the oldest cultural landscapes north of the Alps, a location which has had an unmistakable influence on the town. The university plays an essential part in the quality of life in Freiburg; both in the academic sphere and in the perception of the general public, the activities of the university are of central importance. Since its founding, teaching, learning and research have formed an indivisible whole.

With approx. 230,000 inhabitants, Freiburg has a friendly size, offering the safe surroundings of a smaller city whilst at the same time excelling in terms of culture, shopping and infrastructure. Both the inhabitants and the city government of Freiburg attach great importance to ecological values and sustainable development. This "green city" atmosphere influences many aspects of city life – from the numerous cyclists on the streets to cutting-edge solar energy research. Surrounded by the beautiful landscapes of the Black Forest and the wine-growing regions of the Rhine Valley, Freiburg is a popular destination for tourism and leisure activities.

Contact

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