



Deutscher Akademischer Austauschdienst
German Academic Exchange Service



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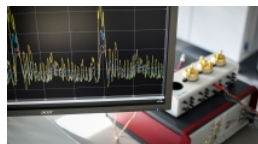
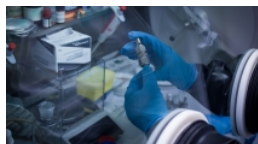
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Master's degree



Battery Materials and Technology

University of Bayreuth • Bayreuth



Overview

Degree	Master of Science
Teaching language	<ul style="list-style-type: none">English
Languages	Courses are held in English. Students can choose to write their Master's theses in English or German.
Full-time / part-time	<ul style="list-style-type: none">full-time
Programme duration	4 semesters
Beginning	Winter and summer semester
Application deadline	Application for EU citizens 1 April to 15 July (winter semester) 1 October to 15 January (summer semester) Application for non-EU citizens 1 April to 15 July (winter semester) 1 October to 15 January (summer semester)
Tuition fees per semester in EUR	None
Combined Master's degree / PhD programme	No
Joint degree / double degree programme	No
Description/content	<p>Do you want to pursue a career in the rapidly evolving fields of battery technology, sustainable energy storage and electromobility? Graduate with a Master's degree in "Battery Materials and Technology" and develop the next generation of battery materials!</p> <p>The interdisciplinary Master's degree programme provides students with the necessary battery know-how of the entire value chain: from the electrode and separator materials to the battery pack</p>

in the e-car. The teaching of scientific specifics and competencies in the field of battery technology also takes into account subject-specific requirements and qualification paths, and it offers excellent career prospects in industry and research for our graduates.

The Master's degree programme "Battery Materials and Technology" is taught in English and is focused on the natural sciences. However, students can participate in modules from the sister programme, "Batterietechnik", which is taught in German and has a strong engineering background. Both programmes are well suited for applicants who want to pursue a PhD in our cutting edge research facilities as a follow up. Benefit from the close link to the "[Bavarian Centre for Battery Technology](#)" (BayBatt) and be part of the next generation of highly qualified battery developers!

Course Details

Course organisation

The Master's degree programme takes four semesters (two years). Students will deepen basic background knowledge from their respective Bachelor's programmes with a battery-specific focus and they will significantly expand their interdisciplinary knowledge in the battery sector.

In their first semester, students will be brought to a common background level on the different disciplines of natural sciences and engineering by using alignment modules. Considering the subject breadth, the first semester also provides students with battery-specific basic knowledge and initial interdisciplinary competences in the areas of battery systems technology, battery materials, and electrochemistry.

During their second semester, all students extend their knowledge of the material and system side of the battery as well as the internal processes within a battery cell in order to gain an overall understanding of the battery. Additionally, the required elective modules facilitate the consolidation of individual knowledge along the diverse technological challenges of the entire battery value chain. They will lead to both specialisation and a holistic understanding of the battery.

The third semester is characterised by an in-depth examination of current research topics from the field of battery materials and technology. In a joint seminar module, current scientific papers are presented and discussed in front of a specialist audience. Two research modules allow students to apply their newly acquired knowledge creatively and critically to a current research topic. One research module can be carried out externally, abroad or in the form of an internship with a company.

The programme concludes with the Master's thesis at our research facilities with superb instruments for analytical and preparative purposes. It will be prepared based on a research plan.

A Diploma supplement will be issued

Yes

International elements

- International guest lecturers
- Courses are led with foreign partners
- Projects with partners in Germany and abroad
- International comparisons and thematic reference to the international context
- Integrated/optional study abroad unit(s)

Integrated/optional study abroad unit(s)

A research module can be carried out externally, abroad or in the form of an internship with a company.

Course-specific, integrated German language courses

No

Course-specific, integrated English language courses No

Costs / Funding

Tuition fees per semester in EUR None

Semester contribution In Germany, students at all higher education institutions pay a semester contribution. This payment (University of Bayreuth: 143 EUR per semester) has nothing to do with tuition fees; rather, it covers your contributions to student services and the student government. At the University of Bayreuth (which combines the campus in Bayreuth and our Faculty VII located in Kulmbach), it includes a "semester ticket" that allows you to use public transportation in the region.

Costs of living The cost of living in Germany, e.g. accommodation, food, clothing and recreational activities, is about average compared to other European countries. Living expenses are significantly lower than in countries like Denmark, Luxembourg or Switzerland, but they are rather high compared to countries like Poland, the Czech Republic or Italy. Compared to other large German cities, such as Munich, Berlin or Hamburg, Bayreuth's low cost of living and affordable housing make the city and the region particularly attractive to young people and families. You can find an example what the monthly costs could be here: <https://www.gamechanger-campus.de/en/cost-of-living>.

Funding opportunities within the university Yes

Description of the above-mentioned funding opportunities within the university **Scholarships for international students:** International students and doctoral researchers have the opportunity to apply for a study grant at the [International Office](#). Limited funding from the State of Bavaria and the DAAD is available for this purpose. The application deadline for the **winter semester is 31 August and for the summer semester 28 February**. All grants can be awarded for up to two semesters.

Unfortunately, first-semester students cannot be funded, i.e. applications cannot be submitted until the second semester of study for [funding](#) starting in the third semester of study. Above all, academic achievements from the previous semester are decisive for the evaluation of the application.

Requirements / Registration

Academic admission requirements A Bachelor's degree in any of the following subject areas: Chemistry, Polymer and Colloid Chemistry, Biochemistry, Physics, Material Science and Materials Engineering, Engineering Science or an equivalent degree from another university

This must include the following academic credits (total 22 credits):

- Chemistry (min. 4)
- Physics (min. 5) and Mathematics (min. 8) for a total of 18 credits

A larger number of credits in these areas (and especially Chemistry) is evaluated positively for admission.

For candidates awaiting results or completion of their Bachelor's degree, the application can already be submitted if 150 out of a total of 180 credit points (i.e. 83.33% of total credit points depending on the system) are already achieved.

Language requirements	<p>ENGLISH: level B2; while B2 is the minimum level required, a C1 level or higher is positively evaluated for admission. See the list of accepted certificates and required minimum scores at the bottom of this page.</p> <p>GERMAN: level A1; it is recommended that candidates submit their German A1 language certificate at the time of admission. In case this isn't possible, they must submit it by the end of the second semester.</p>
Application deadline	<p>Application for EU citizens 1 April to 15 July (winter semester) 1 October to 15 January (summer semester)</p> <p>Application for non-EU citizens 1 April to 15 July (winter semester) 1 October to 15 January (summer semester)</p>
Submit application to	<p>Online application are accepted through the application platform of the university, CAMPUSonline. You can find further details via this link.</p>

Services

Possibility of finding part-time employment	<p>There are many ways for international students to earn money while they study, but there are some restrictions. For more detailed information, please visit the DAAD website.</p> <p>The University of Bayreuth's Career Services team provides a central interface between student and professional life. The team offers guidance and support to students of all subjects with regard to starting their careers.</p>
Accommodation	<p>Accommodation for students Bayreuth and Kulmbach have a number of student dormitories (both private dormitories and dormitories offered by the Association for Student Affairs) and a vast array of private rooms available. Under no circumstances should you assume that you will be assigned a room in the student dormitories! You will need to actively search for a room on your own – either in a private dormitory or on the private market.</p> <p>More information regarding accommodation for students is available here: https://www.gamechanger-campus.de/en/accommodation. Please also read the DAAD's information.</p> <p>Accommodation for international guests All other international guests are requested to register via the Welcome Services Database (WelSe).</p> <p>Accommodation for short visits For short visits, we recommend searching for accommodation on Airbnb. In addition, a limited number of apartments are available in the Alexander von Humboldt Guest House.</p>
Support for international students and doctoral candidates	<ul style="list-style-type: none"> ● Welcome event ● Tutors ● Visa matters



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Michael Danzer
(Director of the
Bavarian Centre for
Battery Technology,
BayBatt)
Prof Dr-Ing



Corporate video of the University of Bayreuth

It all begins with a dream – a search for knowledge and insights, important changes, every great idea. Welcome to the University of Bayreuth!

» more:
<https://www.youtube.com/watch?v=vWle6FHIR5k>

We want to contribute to the success of the energy transition not only through excellent research but also through excellent teaching. That is why we are looking forward to excellent applicants to work with us on the next generation of batteries at our cutting-edge research facility.

University of Bayreuth

International, innovative, and interdisciplinary in research and teaching

Top-notch research, state-of-the-art teaching methods, international influences, diversity, and a springboard to a successful career – these are all things the University of Bayreuth stands for.

[The University of Bayreuth](#) is a dynamic campus university with currently about 13,000 students. Beyond the interdisciplinary research focus and excellence in teaching, the university has a clear vision of social responsibility and entrepreneurship. In the middle of [Kulmbach](#), our new satellite campus unites the perspectives of natural science, economics, law, social sciences, and behavioural science in one place in a way that has not yet been seen in Germany.

We have a close network of strategically selected [international](#) research partners, and we have strategic partnerships with universities around the globe. A wide range of innovative BA, MA and PhD programmes as well as our international summer schools are [conducted in English](#). There are presently around 1,770 international students from more than 100 countries on the Bayreuth and Kulmbach campuses. Focus areas in [research](#) include Nonlinear Dynamics, Polymer and Colloid Science, Molecular Biosciences, Ecology and Environmental Sciences, New Materials, African Studies, High Pressure and High Temperature Research, Cultural Encounters and Transcultural Processes, Innovation and Consumer Protection, Food and Health Sciences, Energy Research and Energy Technology, Governance and Responsibility.

Our university has an outstanding staff-to-student ratio. Our high performance levels, multidisciplinary collaborations and scientific excellence result in [high-ranking positions](#). In the 2021 THE ranking of “475 under 50”, the University of Bayreuth once again achieved a top position among the best universities in Germany. We have proven expertise in campus and curriculum [internationalisation](#), which is confirmed by the results of the extended internationalisation audit conducted by the German Rectors’ Conference, a close and successful project cooperation with the German Academic Exchange Service (DAAD) and a number of Alexander von Humboldt Awards for our international management and [service](#).

Welcome to our one-of-a-kind [campus](#) in Bavaria!

It is both the heart of our university and a source of inspiration. It is where friendships are made, collaboration is initiated, and ideas are conceived, ensuring that our university remains a beacon of innovation. Scientific exchange profits tremendously from the wide variety of

disciplines our communicative campus brings together.

For a closer look at our university, have a look here <https://www.gamechanger-campus.de/en>.



University location

Welcome to Bavaria!

Seventy-six thousand people from **145 nations** chose the city of Bayreuth as their new home, and those numbers are steadily rising. Because of its 13,000 students, Bayreuth is the **third-youngest city in Germany**. Living here means not getting stuck in traffic jams every morning. The short distances in Bayreuth allow you to leave your car at home and to walk or ride your bike to work and to campus.

Career & Networking

The [Welcome Service](#) at the University of Bayreuth is here to assist you with any questions regarding living and [working](#) in the region of Bayreuth. The team of our International Office provides guidance and support for all international students, scholars, and their families before, during and after their stay at the University of Bayreuth. The aim is to ensure a quick, trouble-free and thus successful start as well as an unforgettable stay on our friendly campus in Bayreuth and Kulmbach.

A good climate for your entrepreneurial spirit

The University of Bayreuth takes its role as a regional motor of innovation very seriously. The [Office of Entrepreneurship & Innovation](#) was set up to help students gain [the necessary qualifications](#) in the area of entrepreneurial and innovative thinking and acting. In doing so, we nurture our students' willingness and ability to start their own companies. Our [Adviser for Start-Ups](#) provides start-ups and prospective start-ups with confidential guidance and support. Strong **innovation and research** institutions combined with high-performance medium-sized companies make for a steady rise in workforce and a guarantee for job security.

Your new home away from home

Bayreuth and Kulmbach offer a fast variety of childcare services as well as affordable **living space**. Step outside your front door and enjoy the **recreational activities**. Scenic northern Bavaria is great for sports activities: cycling, hiking, mountain-climbing, canoeing, rafting, and skiing are all excellent ways to enrich your leisure time. However, if you do happen to crave the feel of a bigger city now and then, Nuremberg is only a one-hour train ride away and Munich is only two and a half hours away. You can reach Berlin in four hours by car or bus and Leipzig in half that time.

Why you should study in Bayreuth: <https://www.gamechanger-campus.de/en/study-in-bayreuth>

Have a great start. We look forward to meeting you!

Contact

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🌐 Course website: <https://www.uni-bayreuth.de/en/master/battery-materials-technology>

📘 <https://www.facebook.com/UniBayreuth/>

🐦 <https://twitter.com/unibt>

🌐 <https://de.linkedin.com/school/university-of-bayreuth/>

📷 <https://www.instagram.com/uni.bayreuth/>

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International Programmes in Germany - Database

www.daad.de/international-programmes

www.daad.de/sommerkurse

Editor

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German Academic Exchange Service

Section K23 – Information on Studying in Germany

Kennedyallee 50

D-53175 Bonn

www.daad.de

GATE-Germany

Consortium for International Higher Education Marketing

www.gate-germany.de

Disclaimer

The data used for this database was collected and analysed in good faith and with due diligence. The DAAD and the Content5 AG accept no liability for the correctness of the data contained in the "International Programmes in Germany" and "Language and Short Courses in Germany".

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