CAS-Fraunhofer joint training program for UCAS doctoral students in Germany 2026-2027

The Fraunhofer-Gesellschaft

The Fraunhofer-Gesellschaft, headquartered in Germany, is one of the world's leading organizations for applied research. Since its founding as a nonprofit organization in 1949, Fraunhofer has held a unique position in the German research and innovation ecosystem. With nearly 32,000 employees, the research organization operates 75 institutes and independent research units across Germany. The Fraunhofer-Gesellschaft plays a major role in innovation by prioritizing research on cutting-edge technologies and the transfer of results to industry to strengthen Germany's industrial base and for the benefit of society as a whole.

Fraunhofer's primary customer base consists of large and medium-sized companies that utilize its expertise to boost their competitiveness with new technologies. For years, Fraunhofer has been one of the most active patent applicants in both Germany and Europe. Its extensive international patent portfolio is the basis for technology transfer through research projects, spin-offs and licensing. Moreover, Fraunhofer addresses societal goals in key technology sectors through interdisciplinary and international partnerships in specific markets. Examples include developments in microelectronics, artificial intelligence (AI), quantum computing, healthcare, the circular economy, new materials, energy systems, critical infrastructure security and defense. Fraunhofer is an attractive and established partner in publicly funded joint projects with industry partners. The Fraunhofer-Gesellschaft is also instrumental in strengthening Germany's innovation and industrial base and ensuring its viability. Its activities create jobs in Germany, increase public-sector investments, give companies competitive edges and foster public acceptance of advanced technology. International partnerships with leading research partners and companies around the world ensure direct contact with the most influential research communities and economic areas.

Fraunhofer's annual business volume is €3.6 billion, €3.1 billion of which is generated by contract research — Fraunhofer's core business model. Unlike other public research organizations, base funding from the German federal and state governments is merely the foundation for the annual research budget. This serves as the basis for groundbreaking precompetitive research that will become important for the private sector and society in the years ahead. Fraunhofer's distinctive feature is its large share of industry revenue, guaranteeing close collaboration with the private sector and industry and the consistent focus of Fraunhofer's research on the market. In 2024 alone, industry revenue accounted for €867 million of its total budget. Fraunhofer's research portfolio is augmented by competitively acquired public-sector funding, pursuing the right balance between public-sector and industry revenue.

Highly motivated employees are the most important factor behind Fraunhofer's success. The research organization therefore fosters an environment that encourages independent thinking, creativity and goal-driven work. It supports career development in both research and industry by providing targeted programs for professional and personal development.

The Fraunhofer-Gesellschaft is a recognized nonprofit organization named after Joseph von Fraunhofer (1787–1826), a Munich-based scholar who enjoyed equal success as a scientist, inventor and entrepreneur. His legacy continues to inspire the organization's spirit of innovation to this day.

Fraunhofer CAS Joint Doctoral Program

The joint training program for doctoral students has been running since 2008. So far, more than120 UCAS–PhD-students have been invited to conduct research for their PhD-theses at one of the Fraunhofer Institutes. The aim of the joint doctoral program is to promote the scientific exchange between Germany and China.

Initially the duration of the fellowship is limited to 12 months. Yet should the hosting Fraunhofer Institute, the Fraunhofer Executive Board as well as the UCAS and your supervisor agree, the stay may be prolonged for the duration of 12 or 24 months after the first year. In case of a prolongation the stipend will be provided by Fraunhofer. Students can apply for different institutes depending on their research fields and the willingness of the Fraunhofer Institute to participate in the program.

The participating students will get familiar with the scientific work of the world's leading applied research organization, and they will experience the different way of life in Germany and German culture.

The following Fraunhofer Institutes do currently not participate in the program and must not be chosen as guest institutes:

- Fraunhofer Institute for Applied Solid State Physics IAF
- Fraunhofer Institute for Communication, Information Processing and Ergonomics FKIE
- Fraunhofer Institute for High Frequency Physics and Radar Techniques FHR
- Fraunhofer Institute for High-Speed Dynamics, Ernst-Mach-Institut EMI
- Fraunhofer Institute for Technological Trend Analysis INT
- Fraunhofer Institute for Applied Optics and Precision Engineering IOF
- Fraunhofer Institute for Computer Graphics Research IGD
- Fraunhofer Institute for Process Engineering and Packaging IVV
- Fraunhofer Institute for Molecular Biology and Applied Ecology IME

Application process

If you are interested in this program, please have a look at the Chinese homepage of the Fraunhofer-Gesellschaft. Click on the Chinese name of an institute and you will get more information like the research areas, ongoing research projects and contact details. It might be of interest as well to consult the research topics which were handed in by Fraunhofer (please refer to the attachment).

Choose up to **three** institutes, which match exactly your research focus (kindly consider the list of institutes which do not participate in the program). The Fraunhofer Institute which might function as a hosting unit has to be selected with care. A good match of your research focus with the research area of the Fraunhofer Institute increases your chances of success.

In the first phase of your application, you should prepare the documents, which are required by UCAS. Please refer to the UCAS website https://www.ucas.ac.cn to download the application documents. Kindly add the duly signed Fraunhofer Privacy Policy as well as a detailed CV which depicts all the colleges/universities attended, your academic degrees and your employment history. Your application must be submitted to Ms. Maoli Li of UCAS till December 17, 2025.

After UCAS has completed its selection process the Fraunhofer Representative Office in Beijing and the Fraunhofer Headquarters will conduct a pre-selection and will invite all the shortlisted candidates for an (online) interview in March/April 2026. Based on this interview the Fraunhofer Representative Office Beijing/Fraunhofer Headquarters will select the candidates who are eligible to apply at the Fraunhofer Institute of their choice. Please do not contact the Fraunhofer Institutes before the interview.

After the pre-selection of candidates by the Fraunhofer Representative Office Beijing and the Fraunhofer Headquarters the application phase at the Fraunhofer institutes will start in the mid of May 2026 and selected candidates will send their applications to the Fraunhofer Institutes. The decision as to whether to take on a doctoral student is solely at the discretion of the Fraunhofer Institutes.

Q&A

1. **Who will sponsor the students?**

UCAS is responsible for funding the costs of the first year. In case Fraunhofer agrees to prolong the stay for another 12 to 24 months the scholarship will be provided by Fraunhofer.

2. **Where can I find more information on Fraunhofer and the research topics of the Fraunhofer institutes:**

- Online info session on Fraunhofer and the joint program for doctoral students on November 27, 2025, 8.30 am CET. Please send an E-mail to Ms. Maoli Li (李茂力 limaoli@ucas.edu.cn) to register for the workshop.
- Website of Fraunhofer Office Beijing: 德国弗劳恩霍夫应用研究促进协会-北京代表处 (fraunhofer.cn) (in Chinese)
- Website of Fraunhofer Germany: https://www.fraunhofer.de/en.html (in English)
- List of institutes and research establishments in Germany: https://www.fraunhofer.de/en/institutes/institutes-and-research-establishments-in-germany.html (in English)
- Fraunhofer Magazine: https://www.fraunhofer.de/en/media-center/publications/fraunhofer-magazine.html (depicts research topics of Fraunhofer, in English)
- Fraunhofer Annual Report 2024, Annual Report 2024
- Films about current research topics: Videos (in English)

3. **Which documents do I need to hand in?**

Please hand in the following documents:

- Duly filled in and signed application form, take special care to describe the research proposal as well as potential applications in detail
- Detailed CV including academic and employment history
- Duly signed Fraunhofer data protection policy

4. How many institutes can each student choose?

Each student may apply for up to three institutes.

5. How to choose a suitable contact person?

Find a contact person on the Fraunhofer Institutes´ websites (a list of all the institutes is available on the official website: https://www.fraunhofer.de/en/institutes/institutes-and-research-establishments-in-germany.html) according to your own research area or ask the Representative Office in Beijing for support. In general, your contact person must be a head of a department/research group and must be actively involved in research.
It might be of interest as well to consult the research topics which were handed in by Fraunhofer (please refer to the attachment).

6. How to prepare for the interview?

You should prepare some brief information about yourself, your academic background, your PhD-project, a study proposal for your stay at Fraunhofer, the reason why you wish to work at a Fraunhofer Institute, potential applications of your research and your expectations for living and working in Germany. The interview will be conducted in English.

7. I have not yet received a reply by the Fraunhofer Institute. Should I send another enquiry?

Since your potential hosts are quite busy their response might take up to one months. Please be patient and refrain from frequent enquiries regarding the status of your application.

8. How can I get a visa after receiving an offer?

You will receive an invitation letter by e-mail, which will be issued by the Fraunhofer Headquarters. You are responsible for the visa application process. Kindly check the current visa guidelines on the homepage of the German embassy. To prove the adequate financial resources for your research stay in Germany a blocked account might be required.

9. When can I move to Germany?

The time of departure varies according to your personal schedule and the waiting time for the granting of the visa. Currently the waiting time for a visa is quite long and we assume that you will start your research stay in the end of 2026 at earliest.

10. What is the working language in the institutes?

English and German. Proficiency in German as well as a German language test are not required.

11. Which certificates will be accepted as proof of my English language skills?

Fraunhofer accepts the following certificates: GRE, IELTS, TOEFL, CET6.

12. Will I get support to settle in?

The administration as well as the colleagues in the hosting guest institute will support you to get familiar with everyday life in Germany. Moreover, Fraunhofer headquarters offers counselling in English as well as Chinese in case of any problems and will invite you to an online platform on which you receive information on everyday life in Germany.

Contact details:

Fraunhofer Representative Office Beijing

Ms. Lin Zhu
Assistant
1102D, DRC Building 1
19 Dongfang Donglu
Chaoyang District 100600 Beijing
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Fraunhofer Headquarters

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Attachment:

Open position at the Institute for Wind Energy Systems IWES

We, the Fraunhofer Institute for Wind Energy Systems IWES, offer an exciting opportunity in Bremerhaven in the field of ***Floating Offshore Wind Farm Shared Mooring Optimization***.

At the Fraunhofer Institute for Wind Energy Systems IWES, the energy transition becomes a reality every day. Our focus topics are: offshore wind energy, hydrogen, test infrastructure and digitization. More than 400 employees – including around 100 students – from over 50 countries work at nine locations in scientific and non-scientific teams on the development of innovative methods to accelerate the expansion of the wind energy and hydrogen economy, minimize risks, and increase cost efficiency. Do you want to join us in shaping a sustainable future?

Be part of change

Your area of research is within our "Global Turbine Dynamics" group at our site in Bremerhaven. The group conducts research in the field of aero-servo-hydro-elastic simulation of wind turbines. The focus is on improving simulation and verification methods for onshore and offshore as well as for floating wind turbines. For this purpose, the Modelica Library for Wind Turbines (MoWiT) simulation model (www.mowit.info) was programmed for load calculation and real-time simulation. At present, the team consists of five employees and several students. One main task is the investigation of the dynamics of shared mooring lines in a floating wind farm simulation. This involves the setup of the wind farm simulation model as well as engineering the design and layout of joint or shared mooring-line systems. The wind farm simulation will be setup at our institutes in-house software FarmQSim. It is a Python-based wind farm simulator using the IEA 15-MW floating wind turbine modelled in MoWiT. The research question further involves execution of time domain simulation to extract the motion as well as the fatigue and extreme loads of the mooring system, which will be used to optimize its design.

What you contribute
You are currently pursuing a PhD in the area of floating wind energy and have a scientific background in offshore wind including wave theory, hydrodynamics and wind turbine foundations? Are you experienced in load simulation (e. g. using Bladed, OpenFAST, HAWC2 or QBlade) and Python programming? Great! If you already are familiar with the Modelica programing language, you are off to a head start.

If you have any further questions, please contact:

Mr. Philipp Thomas
Group Leader "Global Turbine Dynamics"
E-mail: philipp.thomas@iwes.fraunhofer.de

For more information please refer to the website: Fraunhofer IWES