Doctoral candidate in Electrochemical Doping of Organic Semiconductors in EU Training Network FADOS

The University of Stuttgart is recruiting a doctoral researcher to join the European Marie Sklodowska-Curie Training Network programme FADOS. The position is based in the team of Prof. Dr. Sabine Ludwigs, Institute of Polymer Chemistry (IPOC – Functional Polymers; https://www.ipoc.uni-stuttgart.de/fp/). As part of an international cohort of 17 doctoral researchers across 16 research groups in Europe and the UK, the doctoral researcher will contribute to advancing the understanding of doped organic semiconductors for next-generation electronic applications.

About FADOS

FADOS (Fundamentals and Applications of Doped Organic Semiconductors) is a consortium composed of 8 universities, 4 research institutes, and 4 companies from EU countries, the UK and Switzerland. The mission of FADOS is to achieve targeted modification of semiconductor properties through electronic doping to control and modify electronic characteristics. The project's goal is to develop fundamental understanding and innovative fabrication processes to solve urgent problems in organic electronic devices, and enable new components with sustainable functionalities. Collaboration with industry partners will enhance the translation of research into real-world applications.

The 17 doctoral researchers recruited for this international project will receive training at the forefront of research and innovation in organic electronics. Moreover, the network will provide doctoral researchers with exposure to academic and commercial working environments through a balanced secondment plan, and access to a complete training programme complementing scientific skills with personal and entrepreneurial skills, including communication to various audiences, career development, intellectual property, and startup-funding.

The doctoral researchers will form a strong cohort through participation in seven network-wide events as well as secondments and collaborations, which entail travel to several different EU countries.

About the IPOC – Functional Polymers team at the University of Stuttgart

The IPOC – Functional Polymers team is an interdisciplinary and international research team of polymer chemists, physical chemists and materials scientists who are developing functional and intelligent polymer materials and devices. One of the main aims is to control and manipulate structure-property relationships of hierarchical architectures from the molecular via the nanoscopic to the macroscopic device level.
Fully equipped polymer chemistry labs are complemented by labs dedicated to advanced in-situ electrochemical characterization (including coupling to spectroscopy and conductivity for opto-electronic applications), as well as high-resolution morphology and mechanical characterization.

Project description

The aim of the FADOS project in the Ludwigs team is to explore electrochemical doping of solution-deposited and electropolymerized p-type and n-type semiconductor films. Particular focus will be put on processing and patterning of semiconductor films to generate doped semiconductor arrays. Methods include patterning with top-down lithographic tools, morphology analysis, and mechanical characterization, alongside advanced electrochemical methods, such as in-situ spectroelectrochemistry and organic electrochemical transistors (OECTs). The project will include 2 secondments in research teams in Sweden and France as well as 1 secondment in a company.
The work will be done in close collaboration and exchange with fellow doctoral researchers and postdocs in the Ludwigs team and in the FADOS network.

QUALIFICATIONS and ELIGIBILITY

Applications are welcomed from candidates with a M.Sc. degree (or equivalent, including candidates who are about to complete their degrees) in chemistry, chemical engineering, materials science, physics, or related fields. Experience in electrochemistry and/or polymer electronics is a desirable requirement.
Candidates should have a genuine interest in collaborative and interdisciplinary teamwork. This includes a high level of self-motivation and keen interest in science and fundamental research. Good communication skills and proficiency in spoken and written English are required. Willingness and the ability to travel both within the Schengen region, the UK and abroad to conduct research (including secondments) and attend conferences and network activities is expected.

Eligibility for FADOS programme:

- At the time of recruitment, be in the first four years of their research career and have not been awarded a doctoral degree.
- **Mobility rule:** The applicant must not have resided or carried out their main activity (work, studies, etc.) in the country of the host institute, Germany, for more than 12 months in the 3 years immediately prior to the recruitment. Compulsory national service, short stays such as holidays, and time spent as part of a procedure for obtaining refugee status under the Geneva Convention are not taken into account.
- Demonstrate their ability to understand English and express themselves fluently in speech and writing.
- The applicant can be of any nationality.

APPOINTMENT

The appointment is for a total of 36 months, with a starting date on 1 February 2026 or by agreement.
A competitive salary in the range in accordance with the MSCA regulations for Doctoral Researchers will be offered, including a living allowance, a mobility allowance, and a family allowance (if applicable).

APPLICATION PROCEDURE

Apply for the position by clicking the “Apply” button below. The preselection for interviews will start on 1st October 2025, and your application must be received at latest by September 30th, 2025. Applications and documents received after the date above will not be considered.

Please include in the application:

- A motivation letter
- A detailed curriculum vitae including references that can be contacted
- Copy of the M.Sc. and bachelor’s degrees and all corresponding transcripts (lists of courses taken during bachelors and M.Sc. studies).

At the University of Stuttgart, we actively promote diversity among our employees. We have set ourselves the goal of recruiting more women scientists and employing more people with an international background, as well as people with disabilities. We are therefore particularly pleased to receive applications from such people. Regardless, we welcome any good application. Women who apply will be given preferential consideration in areas in which they are underrepresented, provided they have the same aptitude, qualifications and professional performance. Severely disabled applicants with equal qualifications will be given priority.

As a certified family-friendly university, we support the compatibility of work and family, and of professional and private life in general, through various flexible modules. We have an employee health management system that has won several awards and offers our employees a wide range of continuing education programs. We are consistently improving our accessibility. Our Welcome Center helps international scientists get started in Stuttgart.

CONTACT

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Applicants are encouraged to contact the project supervisor(s) directly in addition to the online application procedure.

To discover more about the work in the IPOC - Functional Polymers team, please visit our homepage: https://www.ipoc.uni-stuttgart.de/fp/