Lehrstuhl für Biogene Funktionswerkstoffe
TUM Campus Straubing für Biotechnologie und Nachhaltigkeit
Technische Universität München

Opportunities for Talents

The new Chair of Biogenic Functional Materials at TUM Campus Straubing for Biotechnology and Sustainability is looking for a

PhD student (f/m/d) for the development of sustainable photoactive compounds for ionic-based photovoltaics

Are you passionate about innovation?; Do you love to develop applied science with environmental impact?; Do you use multidisciplinary thinking to solve professional questions?; Are you able to appreciate the beauty of nature's answers to its many challenges?; Would you like to innovate in an international and highly collaborative environment? Then the Chair of Biogenic Functional Materials (BFM) at the Technical University of Munich (TUM) is the perfect place for your future. BFM offers state-of-the-art infrastructure comprising three inter-disciplinary and inter-connected laboratories focused on the synthesis and engineering of biogenic and sustainable photo-electro-active materials, mechanical/spectroscopic/electrochemical characterizations, and the engineering of lighting and photovoltaic devices with researchers from around the world. We are located at the young TUM Campus Straubing, aiming to become the European leader in developing sustainable technologies and their economic implementation. Learn from Biology, think like a Chemist, and handle like an Engineer…are you ready?

Mission

Ionic-based thin-film devices combine the beauty of the simplest device architecture with a high device performance that can be controlled by user building an efficient p-i-n junction in nanostructured interfaces. However, this technology faces the use of unsustainable compound and electrodes as well as clear rationale between material design and device performance. The candidate will be involved in the fabrication of thin-film photovoltaics (OPV and DSSC) using neutral and ionic doped nanographenes, the spectroscopic (steady and time-resolved emission/absorption techniques), electrochemical (SW, CV, EIS), and microscopy (AFM and SEM of films) characterizations, and integration (thin film preparation) and analysis (EIS, LIV, lifetime, etc.). Hence, this position is an exciting interface between thin film fabrication and characterization towards device application.

Qualification

The successful applicant must have the following:

- High motivation and commitment to scientific excellence
- Master Degree/(10 semester diploma) in chemistry/physics/materials science or related disciplines
- Experience in handling and spectroscopic/mechanical/thermal studies of nanographene derivatives and its corresponding thin films and/or electrodes is required
- Experience in spectroscopic characterization, photophysics, and electrochemistry is positively judged
- Experience in thin-film optoelectronics is welcome

- Interest in photo-physical chemistry, spectroscopy, optoelectronics, and material science will be welcome
- Team player skills and enthusiasm to work in a multi-disciplinary, collaborative environment
- Excellent command of the English language (fully fluent in writing and speech). No knowledge of German is totally fine (free lessons will be provided)

Offer

We offer a deep immersion in bio-based energy technologies; the candidate will learn and live the translational perspective of designing biomaterials for sustainable energy-related applications every day.

TUM offers a wide variety of inspiring and challenging Ph.D. programs, which will supplement the research training with outstanding opportunities for career development, continued education, and life-long learning.

Situated on the Bavarian forest gate, Straubing, the old ducal town on the Danube, is the intellectual hub for renewable raw materials and technologies for sustainability in Germany. Straubing, although small in the number of inhabitants, offers everything you need for a successful Ph.D., including a diverse selection of taverns, cafés, and beer gardens. TUM Campus Straubing for Biotechnology and Sustainability offers scientific and academic excellence in a student-friendly and fresh environment.

The successful applicant will hold a 3-year contract with the possibility to expand it up to 1 year. We offer a competitive salary and benefits depending on work experience and seniority in accordance with the public service wage agreement of the Free State of Bavaria - TV-L E13 (50-65%). As an equal opportunity and affirmative action employer, TUM explicitly encourages applications from women and all others who would bring additional diversity dimensions to the university's research and teaching strategies. Preference will be given to disabled candidates with essentially the same qualifications.

Application

We are looking forward to receiving your comprehensive application including your letter of motivation (1 page), CV (including complete contact information for two references) and academic transcripts of records in English in a **single PDF file,** via email to biofunmat@cs.tum.de . **Please indicate only "PhD PE 08" in the subject line.**

The position will be open until the candidate is selected. Publication date: 21.12.2020

For further information, please contact:

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