

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

## **Master/Bachelor Thesis Project - Development of sustainable $d^{10}$ emitters for light-emitting electrochemical cells**

**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) lead by Professor Dr. Rubén D. Costa 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/ electro-chemical 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?**

**Background:** *Chemistry or similar*

**Project areas:** *Synthetic Chemistry, Organometallic Chemistry, Photophysics.*

Light-emitting electrochemical cells is an ideal thin-film device as it combines the beauty of the simplest device architecture with a high device performance in terms of brightness and stability. However, this technology faces the use of unsustainable emitters and electrodes. The candidate will be involved in the synthesis, spectroscopic (steady and time-resolved emission/absorption, TADF, etc.), electrochemical (SW, CV, EIS), and analytical (NMR, MS, IR, XRD, etc), microscopy (AFM and SEM of films) characterizations, and integration (thin film preparation) and analysis (EIS, LIV, lifetime, etc.) in LECs of a new family of sustainable emitters based on  $d^{10}$  complexes. The project offers an exciting interface between inorganic chemistry, spectroscopy, and thin-film lighting.

A successful project ends with a technical/proceeding paper and one or more author contributions to the articles of the group in artificial evolution.

**For further information, please contact:**

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