

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

Master Thesis Project - Development of a fluorescence imaging system to image fluorescent bacteria under external stress conditions

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?

Background: Physics, Bioengineering, or similar

Project Areas: Optics, Spectroscopy, Electrical Engineering, Computer Science

Fluorescent protein-based bio-phosphors applied as color converters are considered front-runners in sustainable lighting and photovoltaics. But proteins have not been evolved so far for this purpose.

This project aims to develop a complete fluorescence imaging and screening platform to image reliably and quantitatively bacterial colonies in plates. This includes the integration of light sources, optics, and cameras to an acquisition and data processing pipeline. The ultimate goal is to evolve fluorescent bacteria comparing them on different plates under various external stress conditions, such as high temperature or irradiation.

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 questions please contact:

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