3585 6190 PhD Student Chemistry - Protein Complex Engineering (m/f/d) The imminent climate change requires fundamentally novel concepts for the generation and use of energy forms that do not harm the environment and climate. The Photobiotechnology group at the Faculty for Biology & Biotechnology at Ruhr University Bochum (www.rub.de/pbt/index.html) focuses on the characterization and application of hydrogen (H2) producing enzymes (hydrogenases). To understand the working principles of these sophisticated and efficient redox catalysts, we apply a multitude of advanced (bio)chemical, biophysical and spectroscopic techniques. We also investigate the natural H2 metabolism of microalgae, which can employ photosynthesis for light-dependent H2 production. Based on the in-depth characterization of the mechanism and diversity of natural hydrogenases, we optimize the natural enzymes and pathways and design artificial biocatalysts. For a novel project in which we aim to boost microalgal H2 production through protein complex engineering we are looking for a motivated doctoral candidate. The three-year PhD project (TV-L E13 65 %) will integrate biochemistry and biotechnology and aims at characterizing and re-designing biological protein complexes for the sustainable production of molecular hydrogen. This research is part of a collaborative project in the framework of the EIG Concert Japan initiative. With partners from France, Belgium and Japan we aim to optimize pathways that generate molecular hydrogen in microalgae. The doctoral student will have the opportunity to conduct experiments at the world's largest third-generation synchrotron radiation facility together with the Japanese partners at the Institute of Protein Research, Osaka University.  
  
 Cloning and manipulating sequences for heterologous expression  
 Purification of recombinant proteins  
 Characterization of recombinant proteins on the catalytic and spectroscopic level  
 Preparing proteins for structural analyses  
 Structural analyses at Osaka University, Japan  
 Evaluating results and developing research plans  
 Literature research and hypothesis building  
 You must have a diploma or Master of Science degree in chemistry, biochemistry or biology. You should be experienced especially in molecular biology, biochemistry and enzyme catalysis. We welcome enthusiastic team players who enjoy international journeys, especially to Japan, and interdisciplinary work.   
 challenging and diversified tasks with a high degree of independent responsibility  
 support and teamwork with competent colleagues  
 a friendly and collegial environment  
 an open working atmosphere biologist None 2023-03-07 15:57:54.253000