



PhD position in optoelectronic semiconductors

Topic: "Light controls light; development of optical logic gates"

Typically, electronic devices based on integrated circuits run on electrons as signal carriers and correspond to an interconnected network of logic gates that generate a binary output "1" or "0" according to a combination of input stimuli. In this project, our aim is the development of devices for signal transduction that run on photons rather than on electrons for exploiting the parallelism that is inherently possible with optical signals. In order to do so we want to combine the expertise from various fields including photochromic molecules, semiconductor quantum dots and nanofabrication techniques.

The project is embedded in an interdisciplinary International German-Australian Research Training Group that is run by the University of Bayreuth (Germany), the University of Melbourne (Australia) and Monash University (Australia) combining experimental and theoretical physics, synthetic, physical and computational chemistry, electrical engineering, and material sciences.



We are looking for a highly talented, passionate graduate student (m/f/d) with a <u>background in</u> <u>laser spectroscopy to perform optical experiments</u> on nanostructured arrays as part of the program optical logic gates. The student will work at the Spectroscopy of Soft Matter group of Prof. Jürgen Köhler at the University of Bayreuth, and will spend one year in Australia during his/her PhD, studying nanofabrication of the arrays with collaborator Prof. Paul Mulvaney.

or

Further information is available:

www.optexc.uni-bayreuth.de www.ssm.uni-bayreuth.de www.nanoparticle.com on the International Research Training Group on the Spectroscopy of Soft Matter group, Bayreuth on the Nanoscience Laboratory, Melbourne

Application deadline is May 31, 2023.

Please sent your application to Sekretariat.SsM@uni-bayreuth.de

optexc@uni-bayreuth.de