

## PhD position in optoelectronic semiconductors

Semiconductor materials are the cornerstone of modern electronic and photonic technology, and central to sustainable economic growth. So far, the functions of semiconductors are mainly defined by chemical and physical properties of their components, and organic and inorganic semiconductors are treated as separate research areas. We want to overcome the divide in material systems and tailor unprecedented optoelectronic properties by the

### International German-Australian Research Training Group:

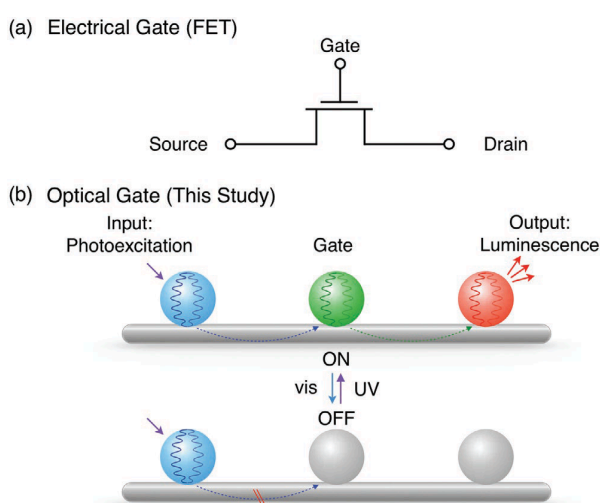
#### Optical excitations in organic and inorganic semiconductors (OPTEXC) -

#### Understanding and control through external stimuli

The University of Bayreuth (Germany), the University of Melbourne (Australia) and Monash University (Australia) together have constituted an interdisciplinary International Research Training Group in the areas of experimental and theoretical physics, synthetic, physical and computational chemistry, electrical engineering, material sciences and related areas.

The subproject "Light controls light; development of optical logic gates" aims at 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.

We are looking for a highly talented, passionate graduate student (m/f/d) with a background in spectroscopy esp. single quantum dot spectroscopy, quantum dot synthesis, or materials science for the fabrication of nanocrystal arrays, as part of a program on exciton logic. The student will work at the Nanoscience Laboratories at University of Melbourne on the creation of arrays using electrophoretic deposition. This process is described in Adv. Optical Mater. 2022, 2200179. The student will be able to spend one year in Germany during their PhD, studying the optical properties of the arrays with collaborator Prof Jürgen Köhler.



Further information on the International Research Training Group, the underlying scientific projects and the application process are available on our website [www.optexc.uni-bayreuth.de](http://www.optexc.uni-bayreuth.de).