

3 PhD student & 1 Postdoc Openings

– EU-funded ERC Grant Project *QUANTiC* –



“Quantum Nanowire Integrated Photonic Circuits”

The **Semiconductor Quantum Nanomaterials Group** at the Walter Schottky Institut (WSI), Technical University of Munich (TUM) offers several positions at the PhD student and Postdoctoral researcher level for excellent candidates to work on a cutting-edge ERC-funded project under Horizon2020.

The project QUANTiC – *Quantum Nanowire Integrated Photonic Circuits* – which started in early 2019 and which runs for a period of 5 years aims to create new links between semiconductor-based nanowires with precisely tailored quantum properties and nanoscale photonic circuits. The vision is to enable thereby highly deterministic and site-selectively integrated nanoscale coherent light sources, such as efficient nanolasers and single photon sources, directly on photonic and quantum photonic circuits. With emission from the near-IR to the THz spectral range, these integrated light sources are expected to provide novel grounds for future technologies in the fields of on-chip light processing, quantum communication, as well as lab-on-chip sensing.

Key responsibilities:

The overall scope of research is at the interface of semiconductor physics, photonics, quantum optics, as well as materials science and electronic device engineering. Central tasks and methodologies employed will be state-of-the-art nanofabrication/lithography methods (e-beam, FIB), epitaxial nanostructure growth (MBE), structure-electronic/optical property correlations, high-resolution microscopy, advanced spatial- & time-resolved optical spectroscopy (confocal cw & pulsed PL spectroscopy, pump-probe, single photon spectroscopy, etc.), electronic band-structure and electromagnetic simulations (Schrödinger-Poisson solver, FDTD,...), finite element modelling, etc.. Each of the several research positions has specific goals within the project, but involves at least a number of the above research methodologies.

Candidate profile:

Candidates are expected to hold a M.Sc. or Ph.D. degree in physics, electrical engineering or similar with outstanding academic record and should possess exceptional motivation and creativity combined with very good communications skills and proficiency in English (oral and written). A strong background in optics and photonics of semiconductor-based nanostructures both experimentally and theoretically is an advantage. Knowledge of advanced optical spectroscopy, state-of-the-art nanofabrication and electro-optical simulation is considered an asset. Hiring will start immediately.

Interested applicants should submit their application including cover letter (motivation), curriculum vitae, list of 3 references and relevant documentation (transcripts, certificates) to the PI of the project by **Email: Gregor.Koblmueller@wsi.tum.de**
PD Dr. Gregor Kobl Müller, Walter Schottky Institut, TUM, www.wsi.tum.de/koblmueller

