Speaker: **Angelika Knothe (University of Regensburg)**

Title: **Two-dimensional materials-based nanostructures for quantum technologies**

Date: **Tuesday, July 18th, 11 am**

Place: **Seminar room 915**

Next-generation quantum technologies will require building blocks with fundamentally new (quantum) functionalities. How can we use the ever-growing family of two-dimensional materials, offering us versatile and highly tunable properties, to develop innovative quantum technologies?

2D materials can be tuned, e.g., by stacking, twisting, external fields, strain, and gating. I will demonstrate how the material's properties translate into the confined quantum states of nanostructures, such as electrostatically induced bilayer graphene quantum wires, quantum dots, and all-electronic cavities. Building on this, we will develop ideas for two-dimensional materials-based components for quantum information and quantum computing, e.g., spin valves and qubits.