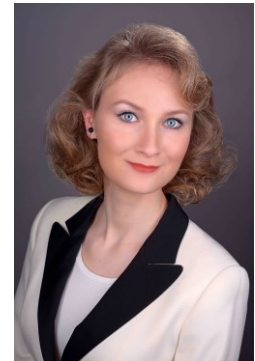




SFB – Colloquium

Speaker: **Dr. Angelika Knothe**
National Graphene Institute,
University of Manchester

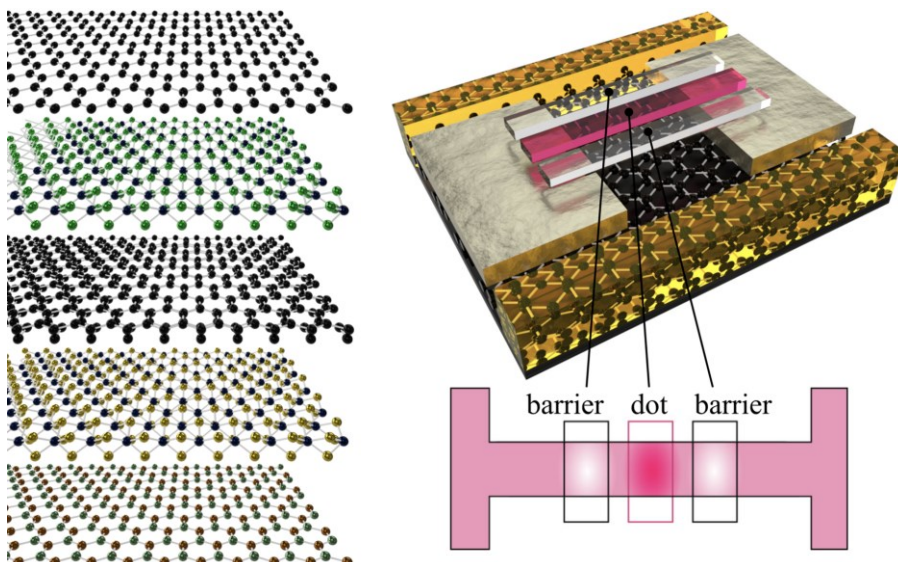


Date: Tuesday, 22 February 2022, 14:15,
H34 and via Zoom

Topic: Two-dimensional materials-based nanostructures
for quantum technologies

Abstract:

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? I will report some examples from my recent work on the tunability of several 2D materials, e.g., by twisting, external fields, strain, and gating. I will demonstrate how the material's properties translate into nanostructures such as electrostatically induced bilayer graphene quantum wires and dots. Building on this, we will develop ideas for two-dimensional materials-based components for quantum technologies.



Host: Prof. Dr. Klaus Richter

Left: The class of two-dimensional atomic lattices comprises many different materials with versatile properties. How can we use two-dimensional materials for quantum technologies?

Right: Device schematic of electrostatically induced quantum dots in bilayer graphene, promising candidates for spin and valley qubits.