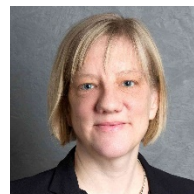


CRC Seminar Series

DATE: 24 June 2021
TIME: 3:00 PM – 5:00 PM
LOC: Online Zoom Meeting



GUEST SPEAKER:

Prof. Janina Maultzsch

Department of Physics Condensed Matter, Friedrich-Alexander University, Erlangen

TITLE:

„Optical and vibrational properties of novel 2D materials“

ABSTRACT:

Atomically thin layered crystals have received great attention due to their fascinating physical properties. By deterministic stacking and twisting of these two-dimensional (2D) materials, an almost unlimited variety of material's combinations and resulting physical properties can be achieved. The properties can be further modified by chemical functionalization of the surface. In this talk I will present recent experimental and theoretical results on the optical and vibrational properties of such 2D materials and heterostructures. In few-layer structures of transition-metal dichalcogenides (TMDCs), we discuss simulations of interlayer excitons. Furthermore, we propose novel 2D antimony oxide structures which show tunable electronic properties depending on the oxygen content. Finally, based on recent experiments on chemically functionalized MoS₂ layers, we present transitions from the 2H to the 1T' phase along with the characteristic phonon modes of the 1T' phase of MoS₂.

PROFILE OF PROF JANINA MAULTZSCH:

Janina Maultzsch received her PhD in Physics from Technische Universität Berlin in 2004. In 2006, she received a Feodor-Lynen grant from the Alexander von Humboldt foundation and worked as postdoctoral researcher at Columbia University, New York, in the group of Prof. Tony F. Heinz. After her return to Berlin in 2007, she was appointed Junior Professor (2008) and Associate Professor (2015) at the Institute of Solid-State Physics at TU Berlin. In 2010 she received an ERC Starting Grant. Since 2017 she is Full Professor of Experimental Physics at the Department of Physics of the Friedrich-Alexander University Erlangen-Nürnberg (FAU). Her research focuses on light-matter interactions in low-dimensional materials.