

Allgemeines Physikalisches Kolloquium

Donnerstag, 10.11.2022 um 16 Uhr c.t.

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Layered materials beyond graphene

Beyond graphene, which is intensively studied over more than one decade, the other related materials remain almost unexplored. The research activities in the field of other layered materials like phosphorene, arsenene, silicene and germanene are rapidly growing in the last few years. Compare to graphene, all these materials are non-zero band-gap semiconductors. This property opens new application possibilities in electronic and optoelectronic devices. The properties of 2D materials can be further controlled by their functionalization. The chemistry of materials beyond graphene is none explored and shows high application potential in many fields. In addition also the methods of crystal growth and applications of 2D materials from group of chalcogens, halogens, thiophosphates and halogen-chalcogen will be presented.

Zdenek Sofer is a professor at the University of Chemistry and Technology Prague since 2019. He received his PhD also at University of Chemistry and Technology Prague, Czech Republic, in 2008. During his PhD he spent one year in Forschungszentrum Julich (Peter Grünberg Institute, Germany) and also one postdoctoral stay at University Duisburg-Essen, Germany. Research interests of prof. Sofer concerning on 2D based materials covering graphene, pnictogens, silicene, layered chalcogenides and other 2D nanomaterials, its chemical modifications and various applications covering electrocatalysis, gas separation and energy storage. Currently prof. Z. Sofer act as an associated editor of FlatChem Journal. He published over 560 articles, which received over 22 000 citations (h-index of 73).