

EINLADUNG

zum Vortrag von
Univ.Prof. Dr. Dominik Eder
Technische Universität Wien, Institut für Materialchemie

Interfacial dynamics and synergistic effects in nanocarbon-inorganic hybrid photocatalysts

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Dienstag, 8. März 2016, um 17:30 Uhr

Ort: Lise-Meitner-Hörsaal, Fakultät für Physik, Universität Wien,
1090 Wien, Strudlhofgasse 4 / Boltzmannngasse 5, 1. Stock

Barrierefreier Zugang: Boltzmannngasse 5, Lift, 1. Stock rechts über den Gang zum Hintereingang des Hörsaals

Abstract:

Hybridising nanocarbon materials, i.e. CNTs and graphene, with active inorganic nanomaterials constitutes a powerful strategy towards designing new-generation functional materials for many applications where efficient charge separation and extraction is required, including photovoltaics, photocatalysis, batteries, supercapacitors and biosensors. In contrast to nanocomposites, which merely combine the intrinsic properties of both compounds, nanocarbon hybrids additionally provide access to both a large surface area required for gas/liquid-solid interactions and an extended interface, through which charge and energy transfer processes create synergistic effects that result in unique properties and superior performances.

In this talk, I will briefly introduce the concept of nanocarbon-inorganic hybrids, discuss hybridisation strategies and demonstrate how the photocatalytic performance for water purification and H₂ evolution can be improved by purposefully engineering interfaces and morphology. I will further investigate the nature and extent of interfacial charge and energy transfer with dedicated model systems and elaborate on their impact on the hybrids' properties using transient spectroscopy and electrochemical techniques.

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