



WESTFÄLISCHE
WILHELMS-UNIVERSITÄT
MÜNSTER



FACHBEREICH
PHYSIK

› Allgemeines Physikalisches Kolloquium

› Donnerstag, 07.12.2017 um 16 Uhr c.t.

Prof. Dr. Ian D. Sharp

Technische Universität München



„Functional semiconductors and interfaces for generating fuels from sunlight“

The capture of solar energy and its direct conversion to chemical fuel in artificial photosystems provides a promising route to sustainably meet global energy demands and to overcome our current reliance on fossil fuels. However, development of practical photosystems requires semiconductor light absorbers that are simultaneously efficient, durable, and scalable. In addition, these light harvesting elements must be coupled to catalysts for selectively driving chemical transformations in harsh reaction environments. Here, I will present recent research advances and discuss future opportunities for creating assemblies capable of efficient and stable solar energy conversion. In the quest for a next generation of stable thin film semiconductors, basic mechanisms underlying the competition between photocarrier recombination and chemical reaction in emerging transition metal oxide semiconductors are investigated. In parallel, interfaces between catalysts and high efficiency semiconductors are precisely engineered. These studies reveal that future progress in artificial photosynthesis will require coupling of advanced semiconductor characterization and deposition methods to control the landscape of disorder in complex multi-phase, multi-component assemblies.

Kolloquiums-Kaffee
ab 16 Uhr vor dem Hörsaal

Wilhelm-Klemm-Straße 10
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