

EINLADUNG

zum Vortrag
von

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**Self-organized TiO₂ nanotube arrays:
Formation, features and applications**

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Dienstag, 18. Oktober 2016, um 16:00

TU Wien, Institut für Angewandte Physik, E134
yellow tower „B“, 5th floor, Sem.R. DB gelb 05 B (room number DB05L03),
1040 Wien, Wiedner Hauptstraße 8-10

Abstract:

TiO₂ nanomaterials have over the last 30 years attracted tremendous scientific and technological interest. Main research direction using TiO₂ in functional applications are the use in photocatalysis e.g. for the direct splitting of water into H₂ and O₂ to generate the potential fuel of the future, hydrogen; the use in Grätzel type solar cells and in biomedical applications. Over the past decades various 1D and highly defined TiO₂ morphologies were explored for the replacement of nanoparticle networks and were found in many cases far superior to nanoparticles or their assemblies. Nanotubes or wires can be grown by hydrothermal or template methods, or even more elegantly, by self-organizing anodic oxidation. The latter is not limited to TiO₂ but to a full range of other functional oxide structures on various metals and alloys. These advanced and doped morphologies can be grown on conductive substrates as ordered layers and therefore can be directly used as functional electrodes (e.g. photo-anodes). The presentation will focus on these highly ordered nanotube arrays of TiO₂ and discuss most recent progress in synthesis, modification and applications.

FWF SFB F45 „Functional Oxide Surfaces and Interfaces (FOXSI)“

Prof. Günther Rupprechter (Speaker), Melanie Schärer (SFB FOXSI Secretary)

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