



TECHNISCHE
UNIVERSITÄT
WIEN

INSTITUT FÜR
ANGEWANDTE PHYSIK
Institute of Applied Physics
vormals/formerly
Institut für Allgemeine Physik



Wiedner Hauptstraße 8-10/E134, 1040 Wien/Vienna, Austria – Tel: +43 1 58801 13401 / Fax: +43 1 58801 13499 – E-mail: office@iap.tuwien.ac.at / <http://www.iap.tuwien.ac.at>

IAP-SEMINAR

ANNOUNCEMENT

- Date: **Tuesday, 18.10.2016**
Time: **16:00 s.t.**
Location: **Technische Universität 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
- Lecturer: **Prof. Dr. Patrik Schmucki**
University of Erlangen-Nuremberg, Department of Materials Science, LKO, Erlangen/Germany
- Subject: **Self-organized TiO₂ nanotube arrays: Formation, features and applications**
- 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.

*All interested colleagues are welcome to this seminar lecture
(45 minutes presentation followed by discussion).*

*U. Diebold e.h.
(Seminar-Chairperson)*

*F. Aumayr e.h.
(LVA-Leiter)*