

8th Czech-Austrian workshop: New trends in photo and electro catalysis

CONFERENCE PLACE: HOTEL HAPPY STAR, HNANICE,
CZECH REPUBLIC

(www.hotelhappystar.cz)

Date: 30th November – 2nd December 2016

Main Czech partner:

University of Chemistry and Technology, Prague - Prof. Dr. Ing. Josef Krýsa

Main Austrian partner:

Vienna University of Technology - Assoc. Prof. Dr. Guenter Fafilek

Participating institutions:

Czech Republic

University of Chemistry and Technology, Prague
J. Heyrovský Institute of Physical Chemistry AS CR
Institute of Chemical Process Fundamentals AS CR
Faculty of Chemical Technology, Technical University Brno
Institute of Physics AS CR

Austria

Vienna University of Technology
University of Salzburg

Germany

Friedrich-Alexander University, Erlangen

Slovakia

Slovak University of Technology in Bratislava

Slovenia

University of Ljubljana



The event is co-funded by AKTION CR – Austria programme.

Programme

Wednesday, 30th November

11.00 – 13.00 arrival

13.00 – 13.30 registration of participants

13.30 welcome talk (Josef Krýsa)

Chair: Vlasta Brezová

13.40 Ladislav Kavan

Conduction Band Engineering in TiO₂: Electrochemistry, Photocatalysis and Applications

14.10 Jan Balajka, Martin Setvín, Zdeněk Jakub, Matthias Müllner, Stijn Mertens, Michael Schmid, Ulrike Diebold

Stability and Structure of TiO₂ Surfaces in Liquid Water

14.25 Georg Brunauer, Guenter Fafilek

A Novel Approach in Solid Oxide Photo-Electrochemistry: Basis for Thermally Activated Solar Energy Conversion

14.40 Hana Krýsová, Andrea Li Bassi, Ladislav Kavan

Electrochemical and Photoelectrochemical Properties of Tantalum Doped Titania Thin Films

15.00 – 15.45 coffee break

Chair: Guenter Fafilek

15.45 Vlasta Brezová, Zuzana Barbieriková, Dana Dvoranová

EPR Spectroscopy for the Analysis of Paramagnetic Species in the Titania-Based Photocatalytic Systems

16.15 Florian Kraushofer, Zdeněk Jakub, Magdalena Bichler, Ulrike Diebold, Peter Blaha, Gareth Parkinson

Atomic Scale Studies of the Hematite (012) Surface

16.30 Martin Zlámal, Šárka Paušová, Štěpán Kment, Zdeněk Hubička, Josef Krýsa
Preparation and Photoelectrochemical Properties of Mixed Hematite-Titanium Dioxide Transparent Nanotubular Layers

16.50 Selda Ozkan, Nhat Truong Nguyen, Anca Mazare, Isotta Cerri, Patrik Schmuki
Key Parameters for Controlled Spacing of Anodic TiO₂ Nanotubes

17.05 JeongEun Yoo, Patrik Schmuki

Photocatalytic H₂ Generation Using Dewetted Noble Metal Decorated TiO₂ Nanotubes: Optimized Dewetting and Oxide Crystallization by a Multiple Annealing Process

17.20 Matthias Niedermaier, Markus Schuhmann, Korbinian Aicher, Thomas Berger, Oliver Diwald

Nature and Stability of Paramagnetic Defects in Reducible Metal Oxide Nanoparticle Systems

17.35 end of the session

19.30 common dinner

Thursday, 1st December

Chair: Ladislav Kavan

9.00 Dana Dvoranová, Milan Mazúr, Zuzana Barbieriková, Vlasta Brezová, Tatiana Giannakopoulou, Christos Trapalis

Photoinduced Reactions of Composite g-C₃N₄/TiO₂ Photocatalysts

9.20 Eva Pližingrová, Mariana Klementová, Petr Bezdička, Jaroslav Boháček, Zuzana Barbieriková, Dana Dvoranová, Milan Mazúr, Vlasta Brezová, Jan Šubrt, Josef Krýsa
Preparation, Characterization and Photocatalytic Activity of Modified 2D-Titanium Dioxide Nanosheets

9.35 Zuzana Barbieriková, Dana Dvoranová, Vlasta Brezová, Eva Pližingrová, Jan Šubrt
EPR Study of Doped Lamellar Anatase Nanoparticles

9.55 Krisztina Kocsis, Vit Kašpárek, Thomas Berger, Oliver Diwald
From Dehydroxylated Particle Surfaces to Designed Interfaces

10.10 Markéta Zukalová, Barbora Pitňa Lásková, Ladislav Kavan
Electrochemical Study of Na Insertion into Li₄Ti₅O₁₂

10.30 – 11.00 coffee break

Chair: Martin Paidar

11.00 Michal Baudys, Josef Krýsa
Review of Methods for the Photocatalytic Activity Assessment of Various Building Materials

11.20 Boštjan Žener, Romana Cerc Korošec
Nitrogen and Sulfur Doped Titania Thin Films

11.35 Jakub Mališ, Martin Paidar, Karel Bouzek
Mobile APU System Based on the PEM Fuel Cell Stack – an Energy Balancing and Air Purification Issues

11.50 Šárka Paušová, Martin Zlámál, José Antonio Sánchez Pérez, José Luis Casas López, Josef Krýsa
Photoelectrocatalytic Degradation of Thiabendazole Using 1-D Nanostructured TiO₂ Photoanodes and Solar Light

12.10 Alexandra Němečková, Martin Zlámál, Josef Krýsa, Michael Neumann-Spallart, Štěpán Kment, Zdeněk Hubička
Bi-layer TiO₂/α-Fe₂O₃ Photoanodes for Water Splitting

12.25 Petr Dzik, Michal Veselý, Pavel Krystyník, Michael Neumann-Spallart
Planar Photoelectrochemical Cells with Vertically Separated Electrodes: Design and Fabrication

12.45 Michael Neumann-Spallart, Petr Dzik, Michal Veselý
Planar Photoelectrochemical Cells with Vertically Separated Electrodes: Electrochemical Aspects

13.05 lunch

14.00 – 18.00 individual discussions

19.30 common dinner

21.00 Informal discussions of teachers, young researchers and PhD students about the aspects and experiences from Czech-Austrian exchange programme

Friday, 2nd December

Chair: Karel Bouzek

9.00 Zdeněk Hubička, Martin Čada, Jiří Olejníček, Petra Kšířová, Štěpán Kment
Reactive HIPIMS Magnetron Sputtering of Sulphide Thin Films

9.20 Andreas Brüger
Stability of WO₃ Thin Films

9.40 Petra Kšířová, Michaela Brunclíková, Roman Perekrestov, Jiří Olejníček, Martin Čada, František Kovanda, Zdeněk Hubička
Preparation of Co₃O₄ Thin Films on Stainless Steel Sieves

10.00 Violeta Martín-Gil, Mohd Zamidi Ahmad, Roberto Castro-Muñoz, David Dlouhý, Jan Ullsperger, Vlastimil Fila
Membranes for Gas Separation Applications

10.15 – 11.00 coffee break, check out from the hotel

Chair: Michael Neumann-Spallart

11.00 Vlastimil Fila, Milan Bernauer, Zdeněk Sobalik
Methane Aromatization on Zeolite Catalysts

11.20 Vít Kašpárek, Krisztina Kocsis, Thomas Berger, Jaroslav Cihlar, Oliver Diwald
Colloidal Nanoparticle Processing and Water Splitting Catalyst Preparation

11.35 Adam Giurg, M. Paidar
Comparison of Carbon Materials for Capacitive Deionisation

11.50 Magda Zlámalová, Pavel Janda, Hana Tarábková
Poly(Methylene Blue) Modified Graphite Electrodes for the Electrocatalytic Oxidation of Hydrogen Sulfide

12.05 Martin Prokop, Roman Kodým, Michal Carda, Tomáš Bystroň, Martin Paidar, Karel Bouzek
Rotating Rod as an Alternative to Rotating Disk Electrode for High Temperature Applications

12.20 Monika Klusáčková, Pavel Janda, Hana Tarábková
Effect of Substrate Hydrophobicity on the Electrocatalytic Behaviour of Water Soluble Phthalocyanine Derivate

12.35 final remarks

13.00 lunch

14.00 departures