

MONDAY, 3.9.2018

14.00 – 17.00 Registration

17.00 -17.20 Welcome and Opening

A. Kaszonyi

Chair: M. Králik

17.20 – 18.20 Plenary lecture 1

Grand Bellevue I

Hydrogen borrowing reactions with heterogeneous catalysts

Dmitry Yu. MURZIN

Laboratory of Industrial Chemistry and Reaction Engineering

Åbo Akademi University, Biskopsgatan 8, 20500, Turku/Åbo, Finland

TUESDAY, 4.9.2018

Chair: A. Kaszonyi

9.00 – 10.00 Plenary lecture 2

Grand Bellevue I

Catalytic automotive pollution control: Current status and some perspectives

Gérard DELAHAY

Institut Charles Gerhardt, Univ Montpellier, CNRS, ENSCM-MACS

240 avenue du Professeur Emile Jeanbrau, 34296 Montpellier, France.

Heterogeneous Catalysis

Grand Bellevue I

Chair: I. Pálinkó

10.00-10.20

O-2.1 ZnO supported Pd and Cu nanoparticle catalysts for CO₂ hydrogenation

K. Dobrezberger, M. Huber, K. Föttinger, G. Rupprechter, Institute of Materials Chemistry, TU Wien, Getreidemarkt 9 / A-1060 Wien, Austria

10.20-10.40

O-2.2 Bond control in citral flow hydrogenation over resin supported catalysts

D. Giziński, W. Błachucki, A. Kubas, A. Śrębowata, K. Matus, D. Lisovytskiy, M. Pisarek, J. Sá, Institute of Physical Chemistry, Kasprzaka 44/52 01-224 Warsaw, Polish Academy of Sciences, Poland

10.40-11.00

O-2.3 Challenges in hydrogen-rich gas production from lignocellulosic feedstock

J. Grams, R. Ryczkowski, A.M. Ruppert, *Lodz University of Technology, Institute of General and Ecological Chemistry, Zeromskiego 116, 90-924 Lodz, Poland*

11.00-11.20 Coffee break

Chair: S. M. Coman

11.20 - 11.40

O-2.4 Catalyst deactivation in the liquid phase hydrogenation of nitrocompounds

M. Králik, D. Gašparovičová, Š. Wenchich, Z. Végh, E. Muntágová, M. Kučera, *Institute of Organic Chemistry, Catalysis and Petrochemistry, Slovak University of Technology, Radlinského 9, 812 37 Bratislava, Slovakia, VUCHT a.s., Nobelova 34, 836 03 Bratislava, Slovakia*

11.40 - 12.00

O-2.5 Application of a heterogeneous silver catalyst in dehydrogenation and multicomponent coupling reactions in a continuous-flow system

Rebeka Mészáros, Sándor B. Ötvös, István Pálinkó, Ferenc Fülöp, *Institute of Pharmaceutical Chemistry, University of Szeged, Eötvös u. 6, Szeged, H-6720 Hungary*

12.00 - 12.20

O-2.6 Organization of the active sites for stabilization of divalent cation in SSZ-13

K. Mlekodaj, E. Tabor, A. Vondrova, M. Bernauer, V. Pashkova, S. Sklenak, *J. Dedecek J. Heyrovsky Institute of Physical Chemistry, Academy of Sciences of the Czech Republic, Prague, Czech Republic*

12.20 - 12.40

O-2.7 Catalytic hydrogenation of CO₂ from flue gas to valuable compounds

G. Pacholik, A. Nagl, K. Föttinger
Institute of Materials Chemistry, TU Wien, Getreidemarkt 9 1060 Wien, Austria

Environmental catalysis and photocatalysis

Grand Bellevue II

Chair: A. Sápi

10.00-10.20

O-4.1 EPR study of metal ion modified/doped titanium dioxide nanomaterials

Z. Barbieriková, O. Pliekhova, U. Lavrencic Stangar, M. Mazúr, V. Brezová, *Department of Physical Chemistry, Faculty of Chemical and Food Technology, Slovak University of Technology in Bratislava, Radlinského 9, SK-812 37 Bratislava, Slovak Republic*

10.20-10.40

O-4.2 EPR approach in the study of nanocrystalline photocatalysts

V. Brezová, Z. Barbieriková, D. Dvoranová, M. Mazúr
Institute of Physical Chemistry and Chemical Physics, Faculty of Chemical and Food Technology, Slovak University of Technology in Bratislava, Radlinského 9, SK-812 37 Bratislava, Slovak Republic

10.40-11.00

O-4.3 Characterization study of Nd species in Nd/TiO₂ photocatalysts for photocatalytic decomposition of methanol

H. Drobná, M. Edelmannová, I. Troppová, M. Reli, L. Matějová, L. Dubnová, A. Rokicińska, P. Kuśtrowski, L. Čapek, K. Kočí, *University of Pardubice, Faculty of Chemical Technology, Pardubice, Czech Republic*

11.00-11.20 Coffee break

Chair: A. Śrębowata

11.20 - 11.40

O-4.4 EPR study of graphitic carbon nitride photocatalysts

D. Dvoranová, Z. Barbieriková, V. Brezová, M. Mazúr, *Institute of Physical Chemistry and Chemical Physics, Faculty of Chemical and Food Technology, Slovak University of Technology in Bratislava, Radlinského 9, SK-812 37 Bratislava, Slovak Republic*

11.40 - 12.00

O-5.5 Feedstock recycling of polypropylene in a two-stage reaction system using clinoptilolite

E. Hájeková, P. Benžová, B. Jambor, P. Hudec, M. Hornáček, *Slovak University of Technology in Bratislava, Faculty of Chemical and Food Technology, Radlinského 9, 812 37 Bratislava, Slovakia*

12.00 - 12.20

O-4.6 Examples of biomass content determination by radiocarbon (¹⁴C) analyses in a liquid scintillation counter (LSC)

T. I. Korányi, T. Szarvas, *Surface Chemistry and Catalysis Department, Institute for Energy Security and Environmental Safety, MTA Centre for Energy Research, H-1121 Budapest, Konkoly Thege 29-33, Hungary*

12.20 - 12.40

O-4.7 Catalytic purification of water from TCE in batch and flow mode

E. Kowalewski, M. Zienkiewicz-Machnik, D. Lisovytskiy, K. Nikiforov, K. Matus, J. Sá, A. Śrębowata, *Department of Catalysis of Metals, Kasprzaka 44/52, PL-01224 Warsaw, Institute of Physical Chemistry PAS, Poland*

13.00 - 15.00 Lunch

Heterogeneous Catalysis

Grand Bellevue I

Chair: P. Hudec

15.00 -15.40

KN-2.1 Biomass-derived fuels and chemicals by aldol condensation

David Kubička
Technopark Kralupy, VŠCHT Praha, Žižkova 7, 278 01 Kralupy n. Vltavou, Czech Republic

15.40 -16.00

O-2.8 Selective oxidation of diphenyl sulfides to sulfoxides and sulfones using H₂O₂ in the presence of V-doped TiO₂ catalysts

Marcelina Radko, Lucjan Chmielarz, Andrzej Kowalczyk, Ewa Bidzińska, Dominik Wierzbicki, Sylwia Górecka, Katarzyna Pamin, *Jagiellonian University, Faculty of Chemistry, Gronostajowa 2, Kraków 30-387, Poland*

16.00 -16.20

O-2.9 IR photoacoustic spectroscopy – can the sample talk to us?

Janusz Ryczkowski, Sylwia Pasieczna-Patkowska, *Maria Curie-Skłodowska University, Faculty of Chemistry, Pl. M. Curie-Skłodowskiej 3, 20-031 Lublin, Poland*

16.20 -16.40

O-2.10 Polyacetylene networks decorated with terminal ethynyl groups as heterogeneous catalysts

L. Sekerova, E. Vyskocilova, L. Cerveny, J. Sedlacek, T. Faulkner, *Department of Organic Technology, Technická 5, Prague 6, 16628, University of Chemistry and Technology Prague, Czech Republic*

16.40-17.00 Coffee break

Chair: L. Čapek

17.00-17.40

KN-4.3 Correlating Structure and Reactivity on Model Catalysts by Operando Studies – Catalysts for Environmental and Energy Applications

C. Rameshan, V. Pramhaas, T. Haunold, R. Rameshan, L. Lindenthal, A. Nenning, A.K. Opitz, G. Rupprechter, *Institute of Materials Chemistry, TU Wien, Getreidemarkt 9, 1060 Vienna, Austria*

17.40-18.00

O-2.11 Dehydration of methanol and ethanol over porous clay heterostructures intercalated with SiO₂, SiO₂-Al₂O₃, SiO₂-TiO₂ and SiO₂-ZrO₂ pillars.

L. Chmielarz, A. Kowalczyk, M. Skoczek, M. Rutkowska, B. Gil, P. Natkański, M. Radko, M. Motak, R. Dębek, J. Ryczkowski, *Faculty of Chemistry, Gronostajowa 2, 30-387 Kraków, Jagiellonian University, Poland*

18.00-18.20

O-2.12 Synthesis and physico-chemical properties of CuO/ZrO₂ catalysts for ethanol steam reforming.

M. Śliwa, K. Samson, M. Ruggiero, B. Napruszewska, D. Duraczyńska, Jerzy Haber Institute of Catalysis and Surface Chemistry, Polish Academy of Sciences, Poland, ul. Niezapominajek 8, 30-239 Krakow

18.20-18.40

O-2.13 Hindered methane decomposition on a novel Ni-In/SiO₂ dry reforming catalyst

Ferenc Somodi, Miklós Németh, György Sáfrán, Anita Horváth, *Surface Chemistry and Catalysis Department, Institute for Energy Security and Environmental Safety, MTA Centre for Energy Research, H-1121 Budapest, Konkoly-Thege M. street 29-33, Hungary*

Environmental catalysis and photocatalysis

Grand Bellevue II

Chair: T. Berger

15.40 -16.00

O-4.8 Visible Light Responsive Wide Band-Gap Oxides: Potential Application in Photocatalysis

Ivana Vukoje, Dušan N. Sredojević, Vesna Đorđević, Vesna Lazić, Jovan M. Nedeljković, *Laboratory for radiation chemistry and physics, P.O. Box 522, Vinča Institute of Nuclear Sciences, University of Belgrade, Serbia*

16.00 -16.20

O-4.9 Cork based floating adsorbent/photocatalyst

V. Slovák, A. Kryeziu, S. Taules, *Department of Chemistry, 30. Dubna 22, 701 03 Ostrava, University of Ostrava, Czech Republic*

16.20 -16.40

O-4.10 Chemical reduction of TiO₂ and WO₃ powders and films by atomic hydrogen

J.M. Jiménez, T. Berger, *Department of Chemistry and Physics of Materials, Jakob-Haringer-Straße 2a, University of Salzburg, Austria*

16.40-17.00 Coffee break

Chair: A. Tompos

17.40-18.00

O-4.11 Reaction enhanced CH₄/NO-SCR activity of Co-SSZ-13 zeolite catalysts.

H.E. Solt, R. Charrad, M. Mhamdi, F. Lónyi, J. Valyon, *Institute of Materials and Environmental Chemistry, Magyar tudósok körútja 2, Budapest, H-1117, Research Centre for Natural Sciences, Hungarian Academy of Sciences, Hungary*

18.00-18.20

O-4.12 PtO_x-TiO₂ catalysts system for methanol photocatalytic reforming: catalytic activity - catalyst structure correlations.

K. Majrik, Z. Pászti, L. Korecz, A. Domján, A. Tompos, E. Tálás, *Institute of Materials and Environmental Chemistry, Research Centre for Natural Sciences, Hungarian Academy of Sciences, H-1117 Budapest, Magyar tudósok körútja 2, Hungary*

18.20-18.40

O-4.13 Iron active site in ferrierites for N₂O decomposition and CH₄ oxidation – FTIR and Mössbauer in-situ studies

E. Tabor, M. Lemishka, M. Bernauer, A. Vondrová, J. Dědeček, Z. Sobalík, *Heyrovský Institute of Physical Chemistry of the Czech Academy of Sciences, Dolejškova 2155/3, CZ 182 23 Prague, Czech Republic*

19.00 Dinner

After dinner posters

WEDNESDAY, 5.9.2018

Heterogeneous Catalysis

Grand Bellevue I

Chair: K.Koči

9.00 -9.40

**KN-4.2 Catalysis Tailoring; Nanostructures and Molecular Level Understanding
Towards High Activity and Selectivity**

András Sápi, *Department of Applied and Environmental Chemistry, Rerrich square 1, 6720, Szeged, University of Szeged, Hungary*

9.40-10.00

O-2.14 Conversion of ethanol to butadiene over MgO-SBA-15 catalysts

B. Szabó, R. Barthos, J. Valyon, *Surface Chemistry and Catalysis Department, Institute for Energy Security and Environmental Safety, MTA Centre for Energy Research, H-1121 Budapest, Konkoly-Thege M. street 29-33, Hungary*

10.00-10.20

O-2.15 A co-promotion effect of cerium and barium compounds on an active phase in cobalt catalyst for ammonia synthesis

A. Tarka, W. Patkowski, M. Zybert, W. Raróg-Pilecka, P. Adamski, D. Moszyński, *Faculty of Chemistry, Noakowskiego 3, 00-664 Warsaw, Warsaw University of Technology, Poland*

10.20-10.40

O-2.16 Copper-bismuth and cerium-bismuth lamellar oxides – Efficient, recyclable catalysts for coupling and dimerization-condensation reactions

Gábor Varga, Ákos Kukovecz, Zoltán Kónya, Pál Sipos, István Pálinkó, *Department of Organic Chemistry, University of Szeged, Dóm tér 8, Szeged, H-6720 Hungary*

10.40-11.00

O-2.17 α -Pinene oxide rearrangement over Fe/beta zeolite – influence of a solvent

E. Vyskočilová, L. Hašková, L. Červený, *Department of Organic Technology, Technická 5, Prague 6, UCT Prague, Czech Republic*

11.00-11.20 Coffee break

Chair: L. Obalová

11.20 - 12.00

KN-4.1 Catalytic hydrogenation for environmental protection and formation of value added products

A. Śrębowata, I. Goszewska, M. Zienkiewicz - Machnik, D. Giziński, E. Kowalewski, A. Kubas, W. Błachucki, S. Dzwigaj, G. Słowik, M. Pisarek, K. Matus, J. Sá, *Department Catalysis on Metals, Kasprzaka 44/52, PL-01224 Warszawa, Institute of Physical Chemistry PAS, Poland*

Emerging areas, electrochemistry, research on cultural heritage

12.00-12.20

O-8.1 Metal-organic framework UiO-66 for organophosphate catalytic degradation in aqueous environment

Daniel Bůžek, Jan Demel^a and Kamil Lang, *Institute of Inorganic Chemistry of the Czech Academy of Sciences, 250 68 Řež, Czech Republic*

12.20-12.40

O-8.2 Sequence driven behavior of versatile Cu-peptide complexes acting as electrocatalysts in the Oxygen Evolving Reaction (OER)

J. S. Pap, D. Lukács, Ł. Szyrwił, B. Setner, Z. Szewczuk, *Institute of Inorganic Chemistry of the Czech Academy of Sciences, 250 68 Řež, Czech Republic*

Environmental catalysis and photocatalysis

Grand Bellevue II

Chair: E. Hájeková

9.40-10.00

O-4.14 Design and investigation of molybdenum modified platinum surfaces for modeling of CO tolerant electrocatalysts

Á. Vass, I. Borbáth, I. Bakos, Z. Pászti, A. Tompos, *Institute of Materials and Environmental Chemistry, Magyar tudósok körútja 2., 1117 Budapest, Research Centre for Natural Sciences, HAS; Hungary*

10.00-10.20

O-4.15 Preparation of the floating carbon/TiO₂ materials for the removal of organic pollutants from water

T. Zelenka, D. Smékalová, *Department of Chemistry, 30. dubna 22, 701 03 Ostrava, University of Ostrava, Czech Republic*

Industrial catalytic processes

10.20-10.40

O-5.1 The role of ZSM-5 additives in FCC-treatment of oxygenate feeds. Study in MA-test

Pavol Hudec, Michal Horňáček, Peter Lovás, Ján Vlk, *Slovak University of Technology in Bratislava, Faculty of Chemical and Food Technology, Radlinského 9, 812 37 Bratislava, Slovakia*

10.40-11.00

O-5.2 Catalytic refinement of depolymerizates from polyethylene and polypropylene wastes

L. Hric, J. Witosová, Š. Wenchich, Z. Végh, E. Muntágová, M. Kučera, G. Kevický, V. Lazoríková, M. Králik, *Slovak University of Technology in Bratislava, Faculty of Chemical and Food Technology, Radlinského 9, 812 37 Bratislava, Slovakia*

13.00 - 15.00 Lunch

Environmental catalysis and photocatalysis

Grand Bellevue I
Chair: P. Klusoň

16.20 -17.00

KN-2.2 Nanoscaled metal fluorides: A new class of heterogeneous catalysts

E. Kemnitz, V. I. Parvulescu, S. M. Coman, *Department of Organic Chemistry, Biochemistry and Catalysis, Bdul Regina Elisabeta, 4-12, Bucharest 030016, Faculty of Chemistry, University of Bucharest, Romania*

17.00-17.20 Coffee break

Chair: R. Šebesta

17.20-18.20 Plenary lecture 3

Asymmetric aldol reaction promoted by tertiary amines

Jacek Mlynarski

Institute of Organic Chemistry, Polish Academy of Sciences, Warsaw, Poland
jacek.mlynarski@gmail.com

18.20-19.00 Posters

19.00 Dinner

After dinner posters

THURSDAY, 6.9.2018

Chair: J. Mlynarski

9.00-9.40

KN-3.1 Green chemistry methods in asymmetric organocatalysis

Radovan Šebesta, *Comenius University in Bratislava, Faculty of Natural Sciences, Department of Organic Chemistry, Mlynská dolina, Ilkovičova 6, 842 15 Bratislava, Slovakia*

Heterogeneous Catalysis

Grand Bellevue I
Chair: J. Ryczkowski

9.40-10.00

O-2.18 Structured deN₂O catalyst for the hospital installation – preparation composition, morphology and catalytic screening

S. Wójcik, K. Gębska, P. Indyka, Z. Sojka, A. Kotarba, *Faculty of Chemistry, Jagiellonian University in Krakow, Gronostajowa 2, 30-387 Krakow, Poland*

10.00-10.20

O-2.19 **Biogas upgrading by methanation of carbon dioxide**

W. Zawadzki, M. Rotko, M. Greluk, G. Słowik, A. Machocki, S. Turczyniak, W. Gac, *Department of Chemical Technology, Faculty of Chemistry, Maria-Curie-Skłodowska University, pl. M. Curie-Skłodowskiej 3, 20-031 Lublin, Poland*

10.20-10.40

O-2.20 **Biomass-derived levulinic acid hydroconversion over Co/silica catalysts**

M. R. Mihályi, Gy. Novodárszki, H. A. Solt, D. Deka, J. Hancsók, J. Valyon, *Institute of Materials and Environmental Chemistry, H-1117 Budapest, Magyar tudósok körútja 2, Research Centre for Natural Sciences, Hungarian Academy of Sciences, Hungary*

10.40-11.00

O **Modern gases for quality analysis**

T. Marcová

Messer Tatragas, spol. s.r.o., Chalupkova 9, 819 44 Bratislava, Slovak Republic

11.00-11.20 *Coffee break*

Catalysis-related materials, nanostructures and characterization

Grand Bellevue II

Chair: F. Lónyi

9.40-10.00

O-6.1 **Synthesis of nickel nanocatalysts by ultrasound irradiation under different conditions**

A. Ádám, M. Szabados, K. Musza, Z. Kónya, Á. Kukovecz, P. Sipos, I. Pálinkó, *Department of Organic Chemistry, Hungary, Material and Solution Structure Research Group, Institute of Chemistry, University of Szeged, Aradi Vértanúk tere 1, Szeged, H-6720 Hungary*

10.00-10.20

O-6.2 **The effect of conditions in the preparation of hydrotalcites for transesterification reactions**

M. Hornáček, A. Tholtová, J. Mikulec, B. Jambor, P. Hudec, E. Hájeková, *Department of Organic Technology, Catalysis and Petroleum, Faculty of Chemical and Food Technology, Slovak University of Technology, Radlinského 9, 812 37 Bratislava, Slovakia*

10.20-10.40

O-6.3 **Work function tuning of carbon nanotubes via oxygen plasma – surface functionalization versus amorphization**

J. Duch, M. Mazur, M. Golda-Cepa, W. Piskorz, A. Kotarba, *Faculty of Chemistry, Jagiellonian University, Gronostajowa 2, 30-387 Krakow, Poland*

10.40-11.00

O-6.4 **Transparent photocatalytic silica - titania based nanocomposite paints**

J. Kupčík, J. Šubrt, E. Pližingrová, M. Palkovská, J. Jirkovský, F. Peterka, M. Jakubičková, T. Sázaravská, *Institute of Inorganic Chemistry of the CAS, v.v.i., 250 68 Řež, Czech Republic*

11.00-11.20 *Coffee break*

Organocatalysis

Grand Bellevue I

Chair: J. Mlynarski

11,20-11,40

O-3.1 **Cinchona alkaloid derivatives in stereoselective synthesis of (hetero)cyclic compounds**

B. Formánek, M. Šimek, J. Veselý, *Department of Organic Chemistry, Hlavova 8, Prague 2, 128 00, Charles University, Czech Republic*

11,40-12,00

O-3.2 Camphor-Derived Bifunctional Organocatalysts – Synthesis and Application

Uroš Grošelj, Sebastijan Ričko, *Department of Organic Chemistry, Faculty of Chemistry and Chemical Technology, University of Ljubljana, Večna pot 113, SI – 1000 Ljubljana, Slovenia*

12,00-12,20

O-3.3 Design, synthesis and application of bifunctional chiral organocatalysts

J.Schörghumer, M. Waser, *Institute of Organic Chemistry, Johannes Kepler University, Altenberger Straße 69, 4040 Linz, Austria*

Catalysis-related materials, nanostructures and characterization

Grand Bellevue II

Chair: K. Föttinger

11,20-11,40

O-6.5 Au-graphene composites: preparation, characterization and catalytic activity

M.D. Lazar, G. Blanita, O. Grad, M. Dan, M. Mihet, L. Barbu-Tudoran, *National Institute for Research and Technology on Isotopic and Molecular Technologies – INCDTIM, 67-103 Donat Street, Cluj Napoca, Romania*

11,40-12,00

O-6.6 Pd/DNA as highly active and recyclable catalyst of Suzuki-Miyaura coupling and aminocarbonylation

M. Mart, W. Tylus, A.M. Trzeciak, *University of Wrocław, Faculty of Chemistry, Poland*

12,00-12,20

O-6.7 Influence of composition and morphology of the active phase on catalytic properties of cobalt-nickel nanomaterials in the steam reforming of ethanol

G. Słowik, M. Greluk, A. Machocki, *Department of Chemical Technology, 3 Marie Curie-Sklodowska Square, 20-031 Lublin, University of Maria Curie-Sklodowska, Poland*

12,20-12,40

O-6.8 Redox oxide nanocrystals - microscopic characterization, DFT modelling and relevance for catalytic applications

Zbigniew Sojka, Filip Zasada, Joanna Gryboś, *Faculty of Chemistry, Jagiellonian University,*

FRIDAY, 7.9.2018

Biocatalysis

Grand Bellevue I

Chair: M. Rebroš

9.00-9.40

KN-7.1 Employing ionic liquids to bridge the gap between biocatalysis and chemocatalysis

Dr. Andrew C. Marr and Dr. Martin Rebroš, *School of Chemistry and Chemical Engineering, Queen's University Ionic Liquid Laboratories, Queen's University Belfast, Belfast, N. Ireland*

Chair: Gy. Szöllösi

9.40-10.00

O-7.1 New pathway to artificial lignocellulosic material in one-pot enzymatic approach

S. Ion, C. Opris, B. Cojocaru, M. Tudorache, I. Zgura, A. Galca, A. Bodescu, M. Enache, G. Maria, V. Parvulescu, *Sos. Panduri no. 90-92 Faculty of Chemistry, University of Bucharest, Romania*

10.00-10.20

O-7.2 Biocatalysis - a tool for chemicals production

Martin Rebroš, Kristína Markošová, Vladimír Krasňan, Zuzana Hegyi, Tatiana Petrovičová, Michal Rosenberg, *Institute of Biotechnology, Faculty of Chemical and Food Technology STU in Bratislava, Radlinského 9, 812 37 Bratislava, Slovakia; martin.rebroš@stuba.sk*