

SCIENTIFIC PROGRAM



International Conference
«Current Problems in Catalysis»
CPC-2023

September, 25–29 2023

Kyiv

SCIENTIFIC PROGRAM

25 September 2023 (Monday)

Opening of the Symposium

10.00-10.10

Opening speech:

Professor Vyacheslav.G. Koshechko

L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine

Morning

(offline session)

Chairperson:

Professor Svitlana M. Orlyk (Ukraine)

10.10-10.35 **P-1 Heterogeneous Catalysis for Fuel Production**

P.E. Strizhak

L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (*Ukraine*)

10.35-10.55 **O-1 Nanostructured SiC and TiC supports for cobalt and Co/Mn Fischer-Tropsch catalysts**

S.O. Alekseyev^{1,2}, N. Kruse²

¹Taras Shevchenko National University of Kyiv (*Ukraine*)

²Voiland School of Chemical Engineering and Bioengineering, Washington State University (*USA*)

10.55-11.15 **O-2 Transition metals oxides / N-hydroxyphthalimide systems in catalysis of the aerobic oxidation of benzylic C-H bonds**

I.A. Opeida¹, R.B. Sheparovych², W.Ya. Suprun³

¹L. M. Lytvynenko Institute of Physical-Organic Chemistry and Coal Chemistry, NAS of Ukraine (*Ukraine*)

²Department of Physical Chemistry of Fossil Fuels InPOCC (*Ukraine*)

³Institute of Chemical Technology, Martin-Luther-Universität Halle-Wittenberg, (*Germany*)

11.15-11.30 **S-1 Composite coating with photocatalytic properties**

I.S. Makyeyeva, N.B. Gruschak, M.I. Gook

Kyiv National University of Technology and Design (*Ukraine*)

11.30-12.00

Coffee Break

12.00-12.25 **P-2 Examples on the development of new catalytic processes**

V.V. Brei

Institute for Sorption and Endoecology Problems, NAS of Ukraine (*Ukraine*)

12.25-12.45 **O-3 Experience in the use of a catalytic fuel additive when burning bituminous coal**

I. Volchyn^{1,2}, V. Mokretskyy²

¹Thermal Energy Technology Institute, NAS of Ukraine (*Ukraine*)

²National University of Food Technologies (*Ukraine*)

12.45-13.00 **S-2 Vapor phase dealloying method for fabricating porous metallic materials**

*O.S. Roik¹, O.M. Yakovenko¹, V.E. Sokolskii¹, M.D. Akulcheva², N.V. Kotova¹,
N.V. Golovataya¹, P. Švec³, V.P. Kazimirov¹*

¹Taras Shevchenko National University of Kyiv (*Ukraine*)

²L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (*Ukraine*)

³Institute of Physics, Slovak Academy of Sciences (*Slovakia*)

13.00-14.00

Lunch

Evening

(offline session)

Chairperson:

Professor Valerii O. Zazhigalov (Ukraine)

14.00-14.25 **P-3 Prospects for the creation of new nanocomposite catalysts for the oxidative conversion of C₁₋₄-alkanes and carbon dioxide for the production of hydrogen/syngas and valuable organic compounds**

S.O. Soloviev

L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (*Ukraine*)

14.25-14.45 **O-4 Switchable multicomponent heterocyclizations with controlled chemoselectivity: application of catalysis**

V.A. Chebanov

State Scientific Institution "Institute for Single Crystals", NAS of Ukraine (*Ukraine*)

14.45-15.05 **O-5 Photoactive materials based on modified titanium dioxide: properties and perspectives for application in processes of ecological catalysis**

T.A. Khalyavka¹, N.D. Shcherban², S.V. Camyshan¹, G.V. Korzhak²

¹Institute for Sorption and Endoecology Problems, NAS of Ukraine (*Ukraine*)

²L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (*Ukraine*)

15.05-15.25 **O-6 Catalysis of hydrodehalogenation, C-C- and C-N-coupling reactions of haloarenes by carbene complexes of palladium chloride**

V.Sh. Saberov¹, O.S. Avksentiev¹, V.I. Yenya¹, G.F. Rayenko², N.I. Korotkikh¹

¹Institute of Organic Chemistry, NAS of Ukraine (*Ukraine*)

²L.M. Litvinenko Institute of Physical Organic and Coal Chemistry, NAS of Ukraine (*Ukraine*)

- 15.25-15.40 **S-3 Catalytic activity of an optimized aluminium-nickel-molybdenum catalyst**
D.S. Kamenskyh^{1,2}, T.V. Tkachenko¹, O.V. Markitan³, V.O. Yevdokymenko¹
¹V.P. Kukhar Institute of Bioorganic Chemistry and Petrochemistry, NAS of Ukraine (Ukraine)
²V. Bakul Institute for Superhard Materials, NAS of Ukraine (Ukraine)
³Chuiko Institute of Surface Chemistry, NAS of Ukraine (Ukraine)
- 15.40-16.05 *Coffee Break*
- 16.05-16.30 **P-4 Synthesis and study properties of nanocomposites as electrodes material for chemical power sources**
M.O. Danilov, I.A. Rusetskyi, S.S. Fomanyuk, G.Ya. Kolbasov
Institute of General and Inorganic Chemistry, NAS of Ukraine (Ukraine)
- 16.30-16.50 **O-7 Fumed silica as an efficient support for acrylic acid production catalysts**
R.V. Nebesnyi¹, O.M. Orobchuk¹, S.V. Khalameida², V.V. Sydoruk², V.V. Ivasiv¹
¹Lviv Polytechnic National University (Ukraine)
²Institute for Sorption and Endoecology Problems, NAS of Ukraine (Ukraine)
- 16.50-17.05 **S-4 Regeneration of poisoned Pd/C catalysts in the sodium formate dehydrogenation reaction as part of the "formate/bicarbonate" cycle**
V.M. Melnychuk, I.B. Bychko
L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (Ukraine)
- 17.05-17.20 *Discussion*

26 September 2023 (Tuesday)

Morning

(offline session)

Chairperson:

Professor Sergii O. Soloviev (Ukraine)

- 10.00-10.25 **P-5 Mechanochemistry and sonochemistry in nanosized materials and catalysts preparation**
V.O. Zazhigalov¹, O.V. Sachuk², O.V. Kiziun¹, O.A. Diyuk¹
¹Institute for Sorption and Problems of Endoecology, NAS of Ukraine (Ukraine)
²State Scientific Research Forensic of Centre of the MIA of Ukraine (Ukraine)
- 10.25-10.45 **O-8 Core-shell nanoparticles as hybrid electrocatalysts for water splitting**
I.V. Zatovsky¹, D.S. Butenko²
¹F.D. Ovcharenko Institute of Biocolloidal Chemistry, NAS of Ukraine (Ukraine)
²Southern University of Science and Technology (China)

- 10.45-11.05 **O-9 Production of ethyl esters of fatty acids from domestic plant oils: present and prospects**
*L.K. Patrylak^{1,2}, S.V. Konovalov¹, S.O. Zubenko¹, V.O. Yevdokymenko¹,
A.V. Yakovenko¹, D.Z. Davitadze¹*
¹V.P. Kukhar Institute of Bioorganic Chemistry and Petrochemistry, NAS of Ukraine (Ukraine)
²National Technical University of Ukraine “Igor Sikorskyi Kyiv Polytechnic Institute” (Ukraine)

- 11.05-11.25 **O-10 Mechanism of methanol conversion into dimethyl ether or formaldehyde on graphene-like materials with defects: quantum chemical study**
O.S. Karpenko¹, I.B. Bychko², P.E. Strizhak²
¹Chuiko Institute of Surface Chemistry, NAS of Ukraine (Ukraine)
²L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (Ukraine)

11.25-11.55

Coffee Break

- 11.55-12.20 **P-6 Hierarchical zeolites and their nanocomposites as cycloaddition reaction catalysts**
O.V. Shvets, M.M. Kurmach, D.V. Kyryliuk
L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (Ukraine)

- 12.20-12.40 **O-11 Hydrothermal approaches for synthesis of catalysts and their supports**
S. Khalameida, V. Sydorhuk
Institute for Sorption and Problems of Endoecology, NAS of Ukraine (Ukraine)

- 12.40-13.00 **O-12 Catalytic processes of renewable feedstocks and wastes conversion for hydrogen-rich synthesis gas and hydrogen production**
O.M. Dudnyk
Thermal Energy Technology Institute, NAS of Ukraine (Ukraine)

13.00-14.00

Lunch

Evening

Chairperson:

Professor Volodymyr V. Brei (Ukraine)

- 14.00-14.25 **P-7 Basic trends in catalysis of the hydrodehalogenation reaction of haloarenes**
N.I. Korotkikh¹, V.Sh. Saberov¹, O.S. Avksentiev¹, G.F. Rayenko², L.M. Vakhitova²
¹Institute of Organic Chemistry, NAS of Ukraine (Ukraine)
²L.M. Litvinenko Institute of Physical Organic and Coal Chemistry, NAS of Ukraine (Ukraine)

- 14.25-14.45 **O-13 Bioethanol steam reforming over ferrites: interplay of redox and acid-base properties**
L. Yu. Dolgikh
L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (Ukraine)

- 14.45-15.05 **O-14 Optimization of the methanol production process on the CHM-Y industrial catalyst**
M.M. Baran¹, T.V. Tkachenko¹, D.S. Kamenskyh^{1,2}, V.H. Burdeyny¹,
V.O. Yevdokymenko¹
¹V.P. Kukhar Institute of Bioorganic Chemistry and Petrochemistry, NAS of Ukraine (Ukraine)
²V. Bakul Institute for Superhard Materials, NAS of Ukraine (Ukraine)
- 15.05-15.25 **O-15 Mechanochemical, microwave and sonochemical modification of tin dioxide and its photocatalytic properties**
M. Samsonenko¹, S. Khalameida¹, V. Sydoruk¹, J. Skubiszewska-Zięba²,
V. Starchevsky³, L. Kotynska¹
¹Institute for Sorption and Problems of Endoecology, NAS of Ukraine (Ukraine)
²Maria Curie-Skłodowska University (Poland)
³Lviv Polytechnic National University (Ukraine)
- 15.25-15.40 **S-5 Chemoselective photoredox catalyzed fluoroalkylcyclization of N-allyl-4,5-dihydro-3H-benzo[b]azepin-2-amines**
I.Yu. Danyliuk, M.V. Vovk
¹Institute of Organic Chemistry, NAS of Ukraine (Ukraine)
- 15.40-16.00 **Coffee Break**
- 16.00-16.20 **O-16 Catalytic properties and resource characteristics of modified nickel composites in the processes of oxidative reforming of C₁-C₄ alkanes**
V.I. Chedryk¹, S.M. Orlyk¹, O.D. Vasylyev²
¹L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (Ukraine)
²I.M. Frantsevych Institute for Problems of Materials Sciences, NAS of Ukraine (Ukraine)
- 16.20-16.35 **S-6 Electrochromic and gasochromic processes of oxide films of transition metals**
S.S. Fomanyuk, V.O. Smilyk, I.A. Rusetskyi, M.O. Danilov, G.Ya. Kolbasov
Institute of General and Inorganic Chemistry, NAS of Ukraine (Ukraine)
- 16.55-16.50 **S-7 Oxygen recovery catalysts in models of lithium-air batteries**
I.S. Makyeyeva¹, D.V. Patlun¹, V.G. Khomenko¹, V.Z. Barsukov²
¹Kyiv National University of Technology and Design (Ukraine)
²Institute for Sorption and Problems of Endoecology, NAS of Ukraine (Ukraine)
- 16.50-17.15 **Discussion**

27 September 2023 (Wednesday)

Morning

(offline session)

Chairperson:

Professor Stepan Y. Kuchmiy (Ukraine)

10.00-10.25 **P-8 Progress in the catalytic properties of carbon nanomaterials in hydrogenation of organic substances**

I.B. Bychko

L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (*Ukraine*)

10.25-10.40 **S-8 Catalytic conversion of ethanol to ethylene on Ce-impregnated mesoporous silica with functional sulfonic and phosphonic groups**

N.G. Kobylinska¹, V.V. Tomina², O.A. Dudarko², D. Duraczyńska³, K. Pamin³, E. Serwicka³

¹A.V. Dumansky Institute of Colloid and Water Chemistry, NAS of Ukraine (*Ukraine*)

²Chuiko Institute of Surface Chemistry of the NAS of Ukraine (*Ukraine*)

³Jerzy Haber Institute of Catalysis and Surface Chemistry, Polish Academy of Sciences (*Poland*)

10.40-10.55 **S-9 Dehydration of bio-isobutanol into liner butene isomers over zeolites of different framework types (FER, MFI, FAU and BEA)**

O.V. Zikrata, O.V. Larina

L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (*Ukraine*)

10.55-11.10 **S-10 Gas phase synthesis of carbon nanospheres, structure and properties**

S.M. Pleskun, E.V. Polunkin, V.S. Pyliavskiy

V.P. Kukhar Institute of Bioorganic Chemistry and Petrochemistry, NAS of Ukraine (*Ukraine*)

11.10-11.25 **S-11 Binary and ternary electrolytic rhenium alloys as electrocatalysts of hydrogen evolution reaction**

Yu.S. Yaponseva, T.V. Maltseva, V.S. Kublanovsky

V.I. Vernadsky Institute of General and Inorganic Chemistry, NAS of Ukraine (*Ukraine*)

11.25-11.50

Coffee Break

11.50-12.10 **O-17 Carbon nanospheres: Synthesis in liquid phase, structure and properties**

E.V. Polunkin¹, S.M. Pleskun¹, V.S. Pyliavskiy¹, A.D. Rud², D.P. Vinnichenko³

¹V.P. Kukhar Institute of Bioorganic Chemistry and Petrochemistry, NAS of Ukraine (*Ukraine*)

²G.V. Kurdyumov Institute for Metal Physics, NAS of Ukraine (*Ukraine*)

³Institute of Pulse Research and Engineering, NAS of Ukraine (*Ukraine*)

- 12.10-12.25 **S-12 Size dependence of the Fermi level position in ZnO nanoparticles and its effect on the catalytic activity in CO oxidation**
O.Z. Didenko, G.R. Kosmambetova, P.E. Strizhak
 L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (*Ukraine*)
- 12.25-12.40 **S-13 Selective hydrogenation of polyfunctional organic compounds using catalysts based on rhenium sulphide**
A.S. Poturai¹, V.S. Subotin^{2,3}, S.V. Ryabukhin^{1,3,4}, D.M. Volochnyuk^{1,3,4}, S.V. Kolotilov²
¹Institute of Organic Chemistry, NAS of Ukraine (*Ukraine*)
²L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (*Ukraine*)
³Enamine Ltd. (*Ukraine*)
⁴Taras Shevchenko National University of Kyiv (*Ukraine*)
- 12.40-12.55 **S-14 Modelling the CPE phenomenon for methane reforming**
M.O. Vilboi¹, V.R. Trishch¹, G.S. Yablonsky², D. Constaes³
¹National Technical University of Ukraine «Igor Sikorsky Kyiv Polytechnic Institute»(*Ukraine*)
²Washington University in St. Louis (*USA*)
³Ghent University (*Belgium*)
- 12.55-13.10 **S-15 Comparative characteristics of the catalysis of the transesterification reaction by carbenes and the hydroxide form of anionite AB-17-8**
V.Sh. Saberov¹, O.S. Avksentiev¹, V.I. Yeny¹, G.F. Rayenko², N.I. Korotkikh¹
¹Institute of Organic Chemistry, NAS of Ukraine (*Ukraine*)
²L.M. Litvinenko Institute of Physical Organic and Coal Chemistry, NAS of Ukraine (*Ukraine*)

13.10-14.00

Lunch

Evening
(online session)

Chairperson:

Dr. Igor B. Bychko (Ukraine)

- 14.00-14.25 **P-9 The role of the catalysts' bifunctionality in the multistage processes**
S.M. Orlyk
 L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (*Ukraine*)
- 14.25-14.45 **O-18 Synthesis of new complex oxide acid catalysts and study of their properties**
N.P. Golub¹, Ye.O. Golub², A.A. Kozma¹, A.O. Kuznietsova¹, V.I. Gomonaj¹
¹Educational and Scientific Institute of Chemistry and Ecology, Uzhhorod National University (*Ukraine*)
²Faculty of Medicine, Uzhhorod National University (*Ukraine*)

- 14.45-15.00 **S-16 Kinetics and mechanism of methanol dehydration on acid sites of composite catalysts H-ZSM-5–Al₂O₃**
A.I. Trypolskii, N.V. Vlasenko, O.O. Zhokh
 L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (*Ukraine*)
- 15.00-15.15 **S-17 Mesoporous phosphate-stabilized tungsten-zirconium oxide composition as a catalysts for glycerol dehydration**
E.V. Senchylo, N.V. Vlasenko, G.R. Kosmambetova
 L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (*Ukraine*)
- 15.15-15.30 **S-18 Heterogeneous photoelectrocatalysis of porous ZnO plate with micro- and nano elements**
L. Hrytsak, V. Vasil'ev, B. Turko
¹Ivan Franko National University of Lviv (*Ukraine*)
- 15.30-15.45 **S-19 Removal of harmful emissions from electrode production in a catalytic reactor with a ferrite loading**
O.I. Ivanenko¹, S.D. Dovholap¹, A.I. Trypolskyi², P.E. Strizhak², T.A. Overchenko¹
¹National Technical University of Ukraine “Igor Sikorskyi Kyiv Polytechnic Institute” (*Ukraine*)
²L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (*Ukraine*)
- 15.45-16.00 **Coffee Break**
- 16.00-16.20 **O-19 Development of acid and bifunctional mixed oxides as effective catalysts for the transformations of renewable raw materials**
S.V. Prudius, N.L. Hes, O.I. Inshina, V.V. Brei
 Institute for Sorption and Endoecology Problems, NAS of Ukraine (*Ukraine*)
- 16.20-16.35 **S-20 Determination of thermochemical properties of divalent metal orthophosphates by semi-empirical methods**
A.A. Kozma¹, N.P. Golub¹, Ye.O. Golub², D.V. Davyda¹, V.I. Gomonaj¹
¹Educational and Scientific Institute of Chemistry and Ecology, Uzhhorod National University (*Ukraine*)
²Faculty of Medicine, Uzhhorod National University (*Ukraine*)
- 16.35-16.50 **S-21 Catalytic oxidation of sulfides at presence of Co^{II}, Fe^{III} and Mn^{II} complexes**
Yu.L. Lishchenko^{1,2}, S.O. Sotnik^{1,2}, A.S. Poturai^{2,3}, S.V. Ryabukhin^{2,3,4}, D.M. Volochnyuk^{2,3,4}, S.V. Kolotilov¹
¹L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (*Ukraine*)
²Enamine Ltd. (*Ukraine*)
³Institute of Organic Chemistry, NAS of Ukraine (*Ukraine*)
⁴Taras Shevchenko National University of Kyiv (*Ukraine*)

16.35-16.50 **S-22 Fabrication of electrocatalysts for green hydrogen production using deep eutectic solvents**

V.S. Protsenko, D.O. Makhota, O.D. Sukhatskyi, L.S. Bobrova, T.E. Butyrina, F.I. Danilov

Ukrainian State University of Chemical Technology (*Ukraine*)

16.50-17.15

Discussion

28 September 2023 (Thursday)

Morning

(online session)

Chairperson:

Professor Peter E. Strizhak (Ukraine)

9.30-9.55 **P-10 Nanocomposite catalysts with reduced or zero content of platinum group metals for hydrogenation of organic compounds**

S.V. Kolotilov

L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (*Ukraine*)

9.55-10.15 **O-20 Phase composition of MnO_x-Na₂WO₄/SiO₂ catalyst and thermodynamics of the size dependent stability of manganese oxides nanoparticles in the oxidative condensation of methane to C₂ hydrocarbons**

E.H. Ismailov¹, S.N. Osmanova^{1,2}, G.R. Azimova¹, A.N. Mammadov^{1,3}, D.B. Taghiyev¹, J.W. Thybaut⁴

¹Institute of Catalysis and Inorganic Chemistry (*Azerbaijan*)

²Khazar University (*Azerbaijan*)

³Azerbaijan Technical University (*Azerbaijan*)

⁴Ghent University (*Belgium*)

10.15-10.35 **O-21 Polyfunctional catalysts for tandem processes of C_{2,4} bio-alcohol conversion into industrially important organic compounds**

O.V. Larina

L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (*Ukraine*)

10.35-10.50 **S-23 Insight into structural and physicochemical properties of ZrO₂-SiO₂ monoliths with hierarchical pore structure. effect of zirconium precursor**

A. Ciemięga¹, K. Maresz¹, M. Sitarz², M. Krzywiecki³, J. Mrowiec-Białoń¹

¹Institute of Chemical Engineering Polish Academy of Sciences (*Poland*)

²AGH University of Science and Technology (*Poland*)

³Institute of Physics, CSE, Silesian University of Technology (*Poland*)

- 10.50-11.05 **S-24 Use of spent alumina in the production of an adsorbent for drying nitrogen at a catalytic reformer**
Kh.A. Nasullaev¹, I.S. Abdurakhmanova², Sh.T. Gulomov¹, R.G. Khadjiev³,
D.P. Turdieva¹
¹Uzbek Research Chemical-Pharmaceutical Institute (*Uzbekistan*)
²National University of Uzbekistan (*Uzbekistan*)
³Bukhara Oil Refinery Ltd. (*Uzbekistan*)
- 11.05-11.20 **S-25 Effects of cerium oxide on the activity of Fe-Ni/Al₂O₃ catalyst in the decomposition of methane**
N. Makayeva^{1,2}, G. Yergaziyeva^{1,2}, S. Soloviev³, N. Khudaibergenov⁴, M. Annisova¹,
M. Mambetova^{1,2}, K. Dossumov¹
¹Institute of Combustion Problems (*Kazakhstan*)
²Al-Farabi Kazakh National University (*Kazakhstan*)
³L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (*Ukraine*)
⁴Satbayev University (*Kazakhstan*)
- 11.20-11.50 **Coffee Break**
- 11.50-12.10 **O-22 Structural background of the synergetic bimetallic effect of NiMo/MgO catalysts in methane pyrolysis**
A. Beck¹, M. Németh¹, T.I. Korányi¹, Gy. Sáfrán¹, L. Borkó¹, Zs.E. Horváth¹, I. Rigó²,
A. Horváth¹
¹Centre for Energy Research (*Hungary*)
²Wigner Research Centre for Physics (*Hungary*)
- 12.10-12.30 **O-23 Methyl acetate production from methanol in vapor-phase tandem process on Ni-Cu based catalysts**
A.Yu. Kapran, L.M. Alekseenko, V.I. Chedryk
L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (*Ukraine*)
- 12.30-12.45 **S-26 Catalysis for CO₂ utilization using bio-resources**
M. Zabochnicka¹, P.E. Strizhak², G.R. Kosmambetova², S. Szufa³, R. Bhosale⁴,
G. Piechota⁵, G. Kumar⁶
¹Czestochowa University of Technology (*Poland*)
²L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (*Ukraine*)
³Lodz University of Technology (*Poland*)
⁴University of Tennessee (*USA*)
⁵GP CHEM. Laboratory of Biogas Research and Analysis (*Poland*)
⁶Institute of Chemistry Bioscience and Environmental Engineering, University of Stavanger (*Norway*)

12.45-13.00 **S-27 Ethanol conversion on copper catalysts**

M. Mambetova^{1,2}, *G. Yergaziyeva*^{2,3}, *K. Dossumov*^{1,2}

¹The Center of Physico-Chemical Methods of Research and Analysis (*Kazakhstan*)

²Institute of Combustion Problems (*Kazakhstan*)

³Al-Farabi Kazakh National University (*Kazakhstan*)

13.00-14.00

Lunch

Evening

(online session)

Chairperson:

Professor Sergii V. Kolotilov (Ukraine)

14.00-14.20 **O-24 Effect of temperature cycling on Ni-M (La-, Mg-) catalysts in CO₂ conversion of methane**

A.M. Manabayeva^{1,2}, *S.A. Tungatarova*^{2,3}, *D.Yu. Murzin*⁴

¹Kazakh-British Technical University (*Kazakhstan*)

²D.V. Sokolsky Institute of Fuel, Catalysis and Electrochemistry (*Kazakhstan*)

³Al-Farabi Kazakh National University (*Kazakhstan*)

⁴Abo Akademi University (*Finland*)

14.20-14.40 **O-25 Influence of nickel and copper additives on catalytic properties of Mg-Al-Y oxide catalyst in the guerbet condensation of ethanol and 1-butanol**

K.V. Valihura^{1,2}, *O.V. Larina*¹, *S.O. Soloviev*¹, *B. Alonso Fariñas*²,
*A.L. Villanueva Perales*², *J.F. Vidal Barrero*²

¹L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (*Ukraine*)

²Universidad de Sevilla (*Spain*)

14.40-15.00 **O-26 Efficient sugar hydrogenation over ru nanoparticles deposited onto mesoporous molecular sieves**

*N. Shcherban*¹, *G. Araujo-Barahona*², *I. Kopa*¹, *T. Salmi*², *D. Murzin*²

¹L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine

²Abo Akademi University (*Finland*)

15.00-15.15 **S-28 Intermediates in catalytic systems for metathesis of olefins based on WCl₆ and organoaluminium compounds according to dynamic light scattering and electron paramagnetic rezonance data**

S.N. Osmanova^{1,2}, *S.A. Suleymanova*¹, *T.G. Zeynalova*³, *E.H. Ismailov*¹

¹Institute of Catalysis and Inorganic Chemistry (*Azerbaijan*)

²Khazar University (*Azerbaijan*)

³Azerbaijan University of Architecture and Construction (*Azerbaijan*)

15.15-15.30 **S-29 Nickel phosphides based composite multifunctional electrocatalysts for oxygen reduction, oxygen and hydrogen evolution reactions**

O.O. Pariiska, D.O. Mazur, Ya.I. Kurys, V.G. Koshechko, V.D. Pokhodenko

L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (*Ukraine*)

15.30-15.50

Coffee Break

15.50-16.10 **O-27 Air-stable nickel catalysts for hydrogenation of organic compounds**

M.O. Ivanytsya^{1,2}, V.V. Subotin^{1,2}, A.V. Terebilenko^{1,3}, P.S. Yaremov¹, O.O. Pariiska¹, Y.M. Akimov³, I.E. Kotenko¹, T.M. Sabov⁴, M.M. Kurmach¹, S.V. Ryabukhin^{2,5,6}, D.M. Volochnyuk^{2,5,6}, S.V. Kolotilov¹

¹L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (*Ukraine*)

²Enamine Ltd. (*Ukraine*)

³M.G. Kholodny Institute of Botany, NAS of Ukraine (*Ukraine*)

⁴V.E. Lashkaryov Institute of Semiconductor Physics, NAS of Ukraine (*Ukraine*)

⁵Taras Shevchenko National University of Kyiv (*Ukraine*)

⁶Institute of Organic Chemistry, NAS of Ukraine (*Ukraine*)

16.10-16.25 **S-30 Titanosilicate zeolites as catalysts for epoxidation of cyclic olefines with H₂O₂**

M.M. Kurmach¹, A.O. Samotoi¹, S.O. Sotnik^{1,2,3}, P.S. Yaremov¹, O.V. Shvets¹, N.D. Shcherban¹

¹L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (*Ukraine*)

²Taras Shevchenko National University of Kyiv (*Ukraine*)

³Enamine Ltd. (*Ukraine*)

16.25-16.50 **P-11 Electronic models of catalytic processes**

N. Turaeva

Webster University, Saint Louis (USA)

16.50-17.10 **O-28 Catalytic cycle and deactivation: kinetic-thermodynamic interplay**

G.S. Yablonsky¹, Z.J.G. Gromotka², N.M. Ostrovskii³, D. Constaes²

¹Washington University, St. Louis (*USA*)

²Ghent University (*Belgium*)

³Euro Gas (*Serbia*)

17.10-17.30

Discussion

29 September 2023 (Friday)

Morning (online session)

Chairperson:

Dr. Olga V. Larina (Ukraine)

- 10.00-10.25 **P-12** **Happy photocatalysts and unhappy photocatalysts: to go beyond the identification problem**
B. Ohtani¹, M. Takashima²
¹Hokkaido University and Nonprofitable Organization touche NPO (*Japan*)
²Department of Energy Science and Engineering, Nagoya University (*Japan*)
- 10.25-10.45 **O-29** **Novel materials – efficient catalysts for methane decomposition and its oxidative conversion to hydrogen and/or synthesis gas**
K. Dossunov^{1,2}, M. Mambetova^{1,2}, G. Yergaziyeva², M. Anissova², N. Makayeva², N. Khudaibergenov²
¹The Center of Physico-Chemical Methods of Research and Analysis (*Kazakhstan*)
²Institute of Combustion Problems (*Kazakhstan*)
- 10.45-11.00 **S-31** **On the possibility of use of waste zeolite adsorbents of type A**
Sh.T. Gulomov, A.R. Sultanov
Uzbek Research Chemical-Pharmaceutical Institute (*Uzbekistan*)
- 11.00-11.15 **S-32** **Plasma-catalytic dry reforming of propane with chromium (III) oxide based catalysts in dielectric barrier discharge reactor**
D.E. Samoilenko¹, V.I. Kornaha², P. I. Kyriienko¹
¹L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (*Ukraine*)
²V.E. Lashkaryov Institute of Semiconductor Physics, NAS of Ukraine (*Ukraine*)
- 11.15-11.30 **S-33** **Hydrogenation of carbon dioxide to methanol at atmospheric pressure by bentonite-based catalysts with supported mono-, bi-, and tri-nuclear ferrocene derivatives**
A. I. Rustamova¹, S.N. Osmanova^{1,2}, Z.M. Mammadova¹, E.H. Ismailov¹
¹Institute of Catalysis and Inorganic Chemistry (*Azerbaijan*)
²Khazar University (*Azerbaijan*)
- 11.30-11.50 *Coffee Break*
- 11.50-12.10 **O-30** **Influence of oxygen evolution overvoltage on selectivity of oxygen transfer reactions**
O. Shmychkova, T. Luk'yanenko, A. Velichenko
Ukrainian State University of Chemical Technology (*Ukraine*)
- 12.10-12.30 **O-31** **Influence of the platinum surface state on the electrocatalytic selectivity of the electrochemical synthesis of sodium hypochlorite**
D.V. Girenko, A.B. Velichenko

Ukrainian State University of Chemical Technology (*Ukraine*)

12.30-12.45 **S-34** **On the thermodynamics of ethanol conversion into hydrogen and propylene**
Y.I. Pyatnitsky, L.Yu. Dolgikh, I.L. Stolyarchuk, L.M. Senchylo
L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (*Ukraine*)

12.45-13.00 **S-35** **Catalytic methods of decontamination and protection of the surface of different materials from contamination with radioactive dust**
S.A. Kurta, I.F. Myroniuk
Vasyl Stefanyk Precarpathian National University (*Ukraine*)

13.00-14.00

Lunch

Evening
(online session)

Chairperson:

Professor Peter E. Strizhak (Ukraine)

14.00-14.20 **O-32** **Methanol production from biogas**
L. Rodin¹, V. Kharitonov¹, A. Jakovičs²
¹Chemical Technological Company LLC (*Ukraine*)
²University of Latvia (*Latvia*)

14.20-14.40 **O-33** **The conversion of fructose to alkyl lactates and levulinic acid on sn-containing catalysts**
N.L. Hes, S.V. Prudius, A.M. Mylin, V.V. Brei
Institute for Sorption and Endoecology Problems, NAS of Ukraine (*Ukraine*)

14.40-14.55 **S-36** **Ternary nanostructures Ni(Co)/Pd as catalysts for the reduction of *p*-nitrophenol**
L.I. Bazylyak¹, A.R. Kytsya^{1,2}
¹L.M. Lytvynenko Institute of Physical-Organic Chemistry and Coal Chemistry, NAS of Ukraine (*Ukraine*)
²G.V. Karpenko Physico-Mechanical Institute, NAS of Ukraine (*Ukraine*)

14.55-15.10 **S-37** **Electrocatalytic conversion of carbon dioxide to formaldehyde and methanol**
V. Viazovyk, A. Kamensky
Cherkasy state technological university (*Ukraine*)

15.10-15.20

Coffee Break

15.20-15.35 **S-38** **Synthesis of the F-TiO₂/CuO particles via coprecipitation method**
D.S. Sofronov¹, O.M. Lebedynskiy², M. Rucki³, S.S. Minenko⁴
¹Institute for Single Crystals, NAS of Ukraine (*Ukraine*)
²State Scientific Institution «Institute for Single Crystals», NAS of Ukraine (*Ukraine*)
³Kazimierz Pulaski University of Technology and Humanities in Radom (*Poland*)
⁴Institute for Scintillation Materials, NAS of Ukraine (*Ukraine*)

15.35-15.50	S-39	Highly sensitive chemiluminescence determination of citrate ions based on the enhancement of the luminol reaction catalyzed by cobalt (II) <i>Yu.I. Mazna, N.G. Kobylinska, O.V. Zuy</i> A.V. Dumansky Institute of Colloid and Water Chemistry, NAS of Ukraine (<i>Ukraine</i>)
15.50-16.10	O-34	Catalytic properties of N-doped reduced graphene oxide in hydrogenation of ethylene and acetylene and direct ethane dehydrogenation processes <i>O.O. Abakumov, I.B. Bychko</i> L.V. Pysarzhevskii Institute of Physical Chemistry, NAS of Ukraine (<i>Ukraine</i>)
16.10-16.30	General Discussion	
16.30	Closing of the Conference	