

Conference Program

May 24, Wednesday

9:00 – 9:45 Registration of participants

10:00 – 10:10 Opening of the Conference in the Chuiko Institute of Surface Chemistry of NAS of Ukraine

Academician of NAS of Ukraine, Professor M. Kartel

Oral Session 1

Chair: *Professor M. Kartel*

10:10 – 10:35 V.V. Turov, T.V. Krupskaya, A.P. Golovan, L.S. Andriyko, M.T. Kartel. **A binding of water by cellulose matrix of medicinal plants and nanosilica (on the sample of *Hibiscus sabdariffa*)** (*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).

10:35 – 11:00 N.S. Voloshina, L.N. Ognichenko, V.E. Kuz'min, G.L. Kamalov. **Structural factors of crown ethers interaction with aerosil surface** (*A.V. Bogatsky Physico-Chemical Institute, NAS of Ukraine, Odessa*).

11:00 – 11:20 coffee break

Oral Session 2

Chair: *PhD (Chem.) Yu. Bolbukh*

11:20 – 11:40 A.W. Marczewski, A. Deryło-Marczewska, M. Sęczkowska. **Simple models and equations of adsorption kinetics in practical application** (*Faculty of Chemistry, Maria Curie-Skłodowska University, Lublin, Poland*).

11:40 – 12:00 A. Derylo-Marczewska¹, M. Blachnio¹, A.W. Marczewski¹, T.M. Budnyak², V.A. Tertykh². **Adsorption properties of chitosan-silica composites towards selected dyes** (¹*Faculty of Chemistry, Maria Curie-Skłodowska University, Lublin, Poland*, ²*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).

12:00 – 12:15 Ie.V. Dukhopelnikov, E.G. Berezhnyak, N.A. Gladkovska, D.A. Pesina, A.A. Herus. **Interaction of magnetite nanoparticles with negatively charged dyes** (*O.Ya. Usikov Institute for Radiophysics and Electronics NAS of Ukraine, Kharkiv*).

12:15 – 12:30 L.M. Soldatkina, M.A. Zavrishko. **Cetylpyridinium bromide-modified corn stalks for removal of Acid Red from aqueous solution** (*Odessa I.I. Mechnikov National University, Ukraine*).

12:30 – 12:45 L.M. Soldatkina, V.O. Novotna. **Adsorption removal of anthocyanins from red cabbage extracts by bentonite: statistical analysis of main and interaction effects** (*Odessa I.I. Mechnikov National University, Ukraine*).

12:45 – 13:00 L.N. Ponomarova¹, Yu.S. Dzyazko², Y.M. Volkovich³, V.E. Sosenkin³. **Organic-inorganic ion exchangers based on the strongly and weakly acidic polymeric matrices** (¹*Sumy National Agrarian University, Ukraine*, ²*V.I. Vernadskii Institute of General and Inorganic Chemistry, NAS of Ukraine, Kyiv*, ³*A.N. Frumkin Institute of Physical Chemistry and Electrochemistry of the RAS, Moscow*).

13:00 – 13:15 Z.Yu. Bunina^{1,2}, K.Yu. Bryleva^{1,2}, K.M. Belikov^{1,2}. Sorption performance of ethylene glycol dimethacrylate and methacrylic acid copolymers with different cross-link ratio towards rare earth elements (¹State Scientific Institution “Institute for Single Crystals”, Kharkiv, ²Faculty of Chemistry, V.N. Karazin Kharkiv National University, Ukraine).

13:15 – 14:00 break

Oral Session 3

Chair: *PhD (Chem.) O. Kazakova*

14:00 – 14:20 V.E. Kuz'min¹, L.N. Ognichenko¹, I.F. Burdina², N.G. Sizochenko³. Features of inorganic nanoparticles modelling. Nano-QSAR for cytotoxicity of metal oxides (¹A.V. Bogatsky Physico-Chemical Institute, NAS of Ukraine, Odessa, ²Odessa National Medical University, Ukraine, ³Interdisciplinary Center for Nanotoxicity, Jackson State University, USA).

14:20 – 14:40 A.N. Herega, Yu.V. Kryvchenko. Concept of nearest neighborhood at the percolation model of surface defects (Odessa National Academy of Food Technologies, Ukraine).

14:40 – 14:55 I. Malinowska¹, M. Studziński¹, H. Malinowski². The influence of static magnetic field on silica gel free interphase energy (¹Planar Chromatography Department, Chair of Physical Chemistry, Faculty of Chemistry, Maria Curie-Skłodowska University, Lublin, Poland, ²Joint Institute of Nuclear Research, Vexler and Baldin Laboratory of High Energy Physics, Dubna, Russia).

14:55 – 15:10 V.S. Farafonov, A.V. Lebed, N.O. Mchedlov-Petrosyan. Localization of the standard Reichardt's indicator in micelles of ionic surfactants from MD simulations (Department of Chemistry, V.N. Karazin Kharkiv National University, Ukraine).

15:10 – 15:25 O.D. Kochkodan, R.S. Zhyla, T.S. Semenenko. Bulk and surface properties of binary mixtures of surfactants (National University of Life and Environmental Sciences of Ukraine, Kyiv).

15:25 – 15:40 N.M. Permyakova¹, T.B. Zheltonozhskaya¹, M.V. Ignatovskaya², V.I. Maksin², O.N. Iakubchak², D.O. Klymchuk³. Stimuli-responsive properties of special micellar nanocarriers and their application for delivery of vitamin E and its analogues (¹Taras Shevchenko National University of Kiev, Ukraine, ²National University of Life and Environmental Sciences of Ukraine, ³M.G. Kholodny Institute of Botany, NAS of Ukraine, Kyiv).

15:40 – 15:55 A.A. Yanovska^{1,2}, S.B. Bolshanina¹, A.S. Stanislavov^{1,2}, V.N. Kuznetsov^{1,2}, A.B. Mospan¹, V.Yu. Illiashenko², Yu.V. Rogulsky². Synthesis and characterization of Cu-loaded hydroxyapatite-alginate microspheres (¹Sumy State University, Ukraine, ²Institute of Applied Physics, NAS of Ukraine, Sumy).

15:55 – 16:10 M. Sęczkowska, A.W. Marczewski, A. Deryło-Marczewska, A. Chrzanowska. Study of influence of process conditions on adsorption kinetics for 4-nitrophenol on active carbon (¹Faculty of Chemistry, Maria Curie-Skłodowska University, Lublin, Poland).

16:10 – 16:30 coffee break

16:30 – 17:15 Poster session I (1-65)

May 25, Thursday

Oral Session 4

Chair: *PhD (Phys. & Math.) S. Snegir*

10:00 – 10:20 S.I. Pokutnyi. New nanoheterostructures: artificial atoms and quasimolecules (*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).

10:20 – 10:40 O.Yu. Semchuk. Features of absorption and emission of laser irradiation by free electrons in ferromagnetic semiconductors (*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).

10:40 – 10:55 A. Ievtushenko¹, P. Lytvyn², A. Korchovy², V. Karpyna¹, O. Olifan¹, S. Korichev¹, S. Starik³, S. Tkach³, E. Kuzmenko³, V. Baturin⁴, O. Karpenko⁴, G. Lashkarev¹. **The structure, morphology and optical properties of nanostructured NiO thin films deposited by magnetron sputtering at diverse conditions** (¹*I. Frantsevich Institute for Problems of Material Science, NAS of Ukraine,* ²*V. Lashkarev Institute of Semiconductor Physics, NAS of Ukraine,* ³*V. Bakul Institute for Superhard Materials, NAS of Ukraine, Kyiv,* ⁴*Institute of Applied Physics, NAS of Ukraine, Sumy*).

10:55 – 11:10 S.V. Dukarov, S.I. Petrushenko, V.N. Sukhov, O.I. Skryl. **Solubility in thin Cu-Pb and Cu-Bi films** (*V.N. Karazin Kharkiv National University, Ukraine*).

11:10 – 11:25 S.I. Petrushenko, S.V. Dukarov, V.N. Sukhov, O.O. Nevgasimov. **Thermal dispersion of polycrystalline Cu and Cu-Pb films** (*V.N. Karazin Kharkiv National University, Ukraine*).

11:25 – 11:45 coffee break

Oral Session 5

Chair: *PhD (Chem.) O. Linnik*

11:45 – 12:05 I.Yu. Zavaliv¹, Yu.V. Verbovytsky¹, A.R. Kytsya², P.Yu. Zavalij³, P.Ya. Lyuty¹. **Influence of nano-additives on hydrogenation properties of R-Mg-Ni-based composites** (¹*Physico-Mechanical Institute, NAS of Ukraine,* ²*Department of Physical Chemistry of Fossil Fuels InPOCC, NAS of Ukraine, Lviv,* ³*Department of Chemistry and Biochemistry, University of Maryland, USA*).

12:05 – 12:20 I.V. Levchenko, V.M. Tomashyk, I.B. Stratiychuk, G.P. Malanych, A.A. Korchovy¹, S.B. Kryvyi. **Features of the interaction between InAs, InSb, GaAs and GaSb and (NH₄)₂Cr₂O₇-HBr-C₄H₆O₆ mixtures** (*V. Lashkaryov Institute of Semiconductor Physics, NAS of Ukraine, Kyiv*).

12:20 – 12:35 O.V. Sachuk, V.A. Zazhigalov. **Physicochemical studies of mechanochemically modified CeO₂-MoO₃ system** (*Institute for Sorption and Problems of Endoecology, NAS of Ukraine, Kyiv*).

12:35 – 12:50 G.V. Lisachuk, R.V. Krivobok, E.V. Chefranov, O.M. Lapuzina, P.S. Korablova, I.G. Krasnyuk. **The structure and phase composition of the radiotransparent ceramics** (*National Technical University «Kharkiv Polytechnic Institute», Ukraine*).

12:50 – 13:05 V.V. Paventko, E.M. Pakhlov, L.P. Golovkova, V.M. Gun'ko. **Mechanochemical preparation of powder composites with pollen and inorganic carriers** (*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).

13:05 – 14:00 break

Oral Session 6

Chair: *PhD (Chem.) T. Gromovoy*

14:00 – 14:20 S.S. Kotsyuda¹, P.V. Vakuliuk¹, I.M. Furtat¹, A.P. Lebed¹, O.O. Bilyayeva², **A.A. Golub¹**. **Hybrid antibacterial nanocomposites based on silica** (¹*National University of Kyiv-Mohyla Academy, Faculty of Natural Sciences*, ²*P.L. Shupik National Medical Academy of Postgraduate Education, Kyiv, Ukraine*).

14:20 – 14:40 **O.A. Viltanyuk¹**, R.A. Lutkovskyy², N.M. Rezanova³. **Justification efficacy of nanocomposite mesh implants for treatment of abdominal hernias** (^{1,2}*Vinnitsa National Pirogov Memorial Medical University, Ukraine*, ³*Kyiv National University of Technology and Design, Ukraine*).

14:40 – 15:00 **T.B. Zheltonozhskaya¹**, N.M. Permyakova¹, D.O. Klymchuk², L.R. Kunitskaya¹, V.I. Maksin³, O.O. Kravchenko³. **Silver nanoparticle formation in micelles and micelle-like structures of heteropolymers** (¹*Taras Shevchenko National University of Kyiv, Ukraine*, ²*M.G. Kholodny Institute of Botany, NAS of Ukraine*, ³*National University of Life and Environmental Sciences of Ukraine, Kyiv*).

15:00 – 15:15 Iu.P. Mukha, **N.V. Vityuk**, A.M. Eremenko. **Mono- and bimetallic nanoparticles of silver and gold for cancer treatment** (*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).

15:15 – 15:30 **O.O. Kravchenko¹**, V.I. Maksin¹, T.B. Zheltonozhskaya², N.M. Permyakova². **Biological activity and toxicity assessment of polymer/silver composition** (¹*National University of Life and Environmental Sciences of Ukraine, Kyiv*, ²*Taras Shevchenko National University of Kyiv, Ukraine*).

15:30 – 15:45 **G.A. Dolynskiy**, O.M. Lavrynenko, Yu.S. Shchukin. **Enzyme mimetic activity of nanosized cerium dioxide following different surface modification** (*Institute for Problems in Material Science, NAS of Ukraine, Kyiv*).

15:45 – 16:00 **A. Chrzanowska**, A. Derylo-Marczewska, A.W. Marczewski, M. Sęczkowska. **Structural and surface properties of biocomposite protein/mesoporous silica** (*Faculty of Chemistry, Maria Curie-Skłodowska University, Lublin, Poland*).

16:00 – 16:15 **M. Zienkiewicz-Strzalka**, A. Derylo-Marczewska, M. Blachnio. **Silver nanoparticles in composite systems** (*Faculty of Chemistry, Maria Curie-Skłodowska University, Lublin, Poland*).

16:15 – 16:35 coffee break

16:35 – 17:15 *Poster session II (66-127)*

17:15 Conference Closing

Poster presentations

1. Theory of chemical structure and reactivity of solid surface

1. **E.M. Demianenko¹**, O.S. Kukolevska², A.G. Grebenyuk¹, I.I. Gerashchenko¹. **Simulation of adsorption complexes of 2-hydroxyethyl methacrylate on silica surface** (¹*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*, ²*Vinnytsia National Pirogov memorial Medical University, Ukraine*).
2. **R. Meshkini Far**, A. Dyachenko, O. Bieda, E. Ischenko. **Surface composition effect of Ni-Fe catalysts in the reaction of CO₂ methanation** (*Faculty of Chemistry, Taras Shevchenko National University of Kyiv, Ukraine*).
3. **A.A. Kravchenko**, E.M. Demianenko, O.V. Filonenko, A.G. Grebenyuk, V.V. Lobanov, M.I. Terets. **A quantum chemical analysis of dependence of the protolytic properties of polysilicate acids on the composition and spatial structures of their molecules** (*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).
4. **D.B. Nasiedkin**, Yu.V. Plyuto, A.G. Grebenyuk. **DFT study on reactivity of graphite carbon atoms in basal-plane positions** (*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).
5. **A.M. Puziy¹**, O.I. Poddubnaya¹, T.Yu. Gromovoy². **LDI-ToF investigation of carbon catalyst's surface** (¹*Institute for Sorption and Problems of Endoecology, NAS of Ukraine*, ²*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).
6. **O. Smirnova**, A. Grebenyuk, V. Lobanov. **Theoretical investigation of pollutant species adsorption on oxygen vacancies or pure and nitrogen-doped titania** (*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).
7. **M.I. Terebinska**, O.I. Tkachuk, V.V. Lobanov. **Effect of SiO₂ dielectric film on the properties of Ge quantum dots** (*Chuiko Institute of Surface Chemistry of NAS of Ukraine, Kyiv*).
8. **A.V. Vakaliuk**, L.M. Grishchenko, T.M. Bezugla. **Acid-base catalysts based on carbon fibers** (*Taras Shevchenko National University of Kyiv, Ukraine*).

2. Physical chemistry of surface phenomena

9. **O. Ananina¹**, N. Lvova². **Modeling of fluorine atoms interaction with the fluorinated diamond surface** (¹*Zaporizhzhya National University, Physical Faculty, Ukraine*, ²*Technological Institute for Superhard and Novel Carbon Materials, Troitsk, Russia*).
10. **O.E. Bashchak¹**, I.A. Kovalchuk¹, V.Yu. Tobilko², B.Yu. Kornilovych^{1,2}. **Pillared layer silicates with iron nanoparticles for heavy metals removal from aqueous solution** (¹*Institute for Sorption and Problems of Endoecology, NAS of Ukraine, Kyiv*, ²*Igor Sikorsky Kyiv Polytechnic Institute, Ukraine*).
11. **M. Blachnio**, M. Zienkiewicz-Strzałka, A. Derylo-Marczewska, A.W. Marczewski, Sz. Winter. **Studies of dyes adsorption equilibria and kinetics on activated carbons** (*Faculty of Chemistry, Maria Curie-Skłodowska University, Lublin, Poland*).

12. **M. Blachnio**, M. Zienkiewicz-Strzałka, A. Derylo-Marczewska, A.W. Marczewski. **Influence of structural and surface properties of activated carbon on adsorption of pesticides – adsorption equilibrium and kinetics** (*Faculty of Chemistry, Maria Curie-Skłodowska University, Lublin, Poland*).
13. **Yu. Bolbukh**¹, P. Klonos², V. Tertykh¹, P. Pissis². **Polyvinylidene fluoride films with bifunctional silica nanofillers** (¹*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*, ²*National Technical University of Athens, Physics Department, Greece*).
14. **A. Chrzanowska**, A. Derylo-Marczewska, M. Sęczkowska. **UV-Vis DRS and ATR-FTIR spectroscopic studies of porous MCF silica surface with adsorbed lysozyme** (*Faculty of Chemistry, Maria Curie-Skłodowska University, Lublin, Poland*).
15. **A. Derylo-Marczewska**¹, M. Blachnio¹, A.W. Marczewski¹, T.M. Budnyak², V.A. Tertykh². **Hybrid composites and their application for removal of sulfonated azo dyes from aqueous solutions** (¹*Faculty of Chemistry, Maria Curie-Skłodowska University, Lublin, Poland*, ²*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).
16. **Ye.M. Fadieiev**, S.S. Smola, N.V. Rusakova. **Immobilization of luminescent Eu(III) β -diketonato-1,10-phenanthroline complexes on aerosils** (*A.V. Bogatsky Physico-Chemical Institute, NAS of Ukraine, Odessa*).
17. **T.V. Fesenko**, O.A. Kazakova, I.V. Laguta, O.N. Stavinskaya. **Ionization of flavonols in mass spectrometric experiment** (*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).
18. **Yu.S. Fetisova**¹, V.V. Sliesarenko², O.A. Dudarko², **Yu.L. Zub**². **Adsorption of lead(II) and cadmium(II) ions by mesoporous silica functionalized with diethylphosphatoethyltriethoxysilane via direct template method** (¹*National University of "Kyiv-Mohyla Academy", Ukraine*, ²*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).
19. **V. Galysh**^{1,2}, M. Kartel¹, W. Janusz³, E. Skwarek³. **Strontium ions sorption on composite sorbent based on lignocellulose and hydrated antimony pentoxide** (¹*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*, ²*National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Ukraine*, ³*Department of Radiochemistry and Colloid Chemistry, Maria Curie-Skłodowska University, Lublin, Poland*).
20. **O.V. Goncharuk**¹, A.P. Ugnivenko², K. Terpilowski³, E. Skwarek³, V.M. Gun'ko¹. **Effect of ethonium adsorption on structure formation in nanosilica dispersions** (¹*Chuiko Institute of Surface Chemistry, NAS of Ukraine*, ²*Department for Biotechnical Problems of Diagnostic, IPCC, NAS of Ukraine, Kyiv*, ³*Faculty of Chemistry, Maria Curie-Skłodowska University, Lublin, Poland*).
21. **A.M. Kostruba**¹, B.I. Rachiy², R.Y. Musiy³. **New ellipsometric technique for characterization of ultrathin thermo-responsive coatings in liquid ambient** (¹*Lviv University of Commerce and Economic*, ²*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*, ³*Department of Physical Chemistry of Fossil Fuels InPOCC, NAS of Ukraine, Lviv*).
22. **T. Kulik**¹, B. Palianytsia¹, K. Kulyk², M. Larsson², M. Kartel¹. **The surface complexes of carboxylic acids and their thermal transformations into important "green" chemicals** (¹*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*, ²*Stockholm University, AlbaNova University Center, Department of Physics, Sweden*).

23. **T.N. Lygovitskaya¹, S.S. Naboichenko². Intermolecular interactions of like-charged oligomeric electrolytes and surfactants in aqueous media** (¹Saratov National Research University named after N.G. Chernyshevsky, ²Ural Federal University named after the first President of Russia B. N. Yeltsin, Ekaterinburg, Russia).
24. **F.D. Manilevich, L.F. Kozin, A.I. Lisogor, A.V. Kutsyi. Regularities of hydrogen evolution from water at modified tungsten carbide based cathodes** (*V.I. Vernadsky Institute of General and Inorganic Chemistry, NAS of Ukraine, Kyiv*).
25. **A.W. Marczewski, M. Sęczkowska, A. Deryło-Marczewska. Study of dyes adsorption on carbon materials in the multicomponent system** (*Faculty of Chemistry, Maria Curie-Skłodowska University, Lublin, Poland*).
26. **O.O. Ovcharenko, N.D. Sakhnenko, M.V. Ved'. Corrosion resistance of nanocomposite electrochemical coatings Ni-Al₂O₃** (*National Technical University "Kharkiv Polytechnic Institute", Ukraine*).
27. **O.A. Ozerov¹, V.I. Kovalchuk², E.K. Zholkovskiy³. Broadening of analyte bands in electroosmotic flow through microchannels with different zeta potentials of walls. Pre-Taylor asymptotic regime** (¹F. D. Ovcharenko Institute of Biocolloidal Chemistry, NAS of Ukraine, Kyiv).
28. **V.A. Petrova, V.V. Garbuz. Sorption-desorption of nitrogen on the surface turbostratic graphene-like boron nitride** (*Institute for Problems of Materials Science, NAS of Ukraine, Department for Methods of Analyses of the Inorganic Materials, Kyiv*).
29. **O.S. Remez¹, T.M. Budnyak¹, Ie.V. Pylypchuk¹, D. Sternik², V.M. Gun'ko¹, V.A. Tertykh¹. Adsorption of levofloxacin by glutaraldehyde-crosslinked chitosan-silica cryogels** (¹Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv, ²Faculty of Chemistry, Maria Curie-Skłodowska University, Lublin, Poland).
30. **M. Sęczkowska¹, M.V. Galaburda², V.M. Bogatyrov², A. Deryło-Marczewska¹, A.W. Marczewski¹, A. Chrzanowska¹. Preparation and characterization of carbon adsorbents from agricultural wastes** (¹Faculty of Chemistry, Maria Curie-Skłodowska University, Lublin, Poland, ²Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv).
31. **S. Sevostianov¹, Yu. Bolbukh¹, P. Klonos², V. Tertykh¹, P. Pissis². Composites based on lignin and chemically modified silicas** (¹Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv, ²National Technical University of Athens, Physics Department, Greece).
32. **V.V. Sliesarenko¹, Yu.S. Fetisova², O.A. Dudarko¹, Yu.L. Zub¹. Protolytic properties of mesoporous silica functionalized with diethylphosphatoethyltriethoxysilane** (¹Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv, ²National University of "Kyiv-Mohyla Academy", Ukraine).
33. **S. Snegir^{1,2}. Diarylethene derivatives for design of downscaled contact electrodes made of Au nanoparticle assemblies** (¹Chuiko Institute of Surface Chemistry, NAS of Ukraine, ²Institut des Nanosciences de Paris, Sorbonne Universités UPMC Univ Paris-06, CNRS-UMR 7588, France).
34. **A.F. Tymchuk, V.V. Tymchuk. Natural polymers as adsorbents and flocculants** (*Odessa I.I. Mechnikov National University, Ukraine*).
35. **M. Zhlyudenko, O. Bieda, A. Dyachenko, S. Gaidai, E. Ischenko. Thermodesorption study of surface of bulk Co-Fe catalysts for the reaction of CO₂ hydrogenation** (*Faculty of Chemistry, Taras Shevchenko National University of Kyiv, Ukraine*).

36. **M. Zienkiewicz-Strzalka**, A. Derylo-Marczewska, M. Blachnio, S. Pikus. **Small-angle X-ray scattering (SAXS) of porous composites** (*Faculty of Chemistry, Maria Curie-Skłodowska University, Lublin, Poland*).

3. Chemistry, physics and technology of nanomaterials

37. P.P. Gorbyk, I.V. Dubrovin, **N.V. Abramov**. **Synthesis and magnetic properties of yttrium iron garnet nanoparticles** (*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).
38. L.P. Oleksenko, N.P. Maksymovych, I.P. Matushko, **H.O. Arinarkhova**. **Influence of the platinum additives on sensitivity to H₂ adsorption of semiconductor hydrogen sensors based on nanosized tin dioxide** (*Faculty of Chemistry, Taras Shevchenko National University of Kyiv, Ukraine*).
39. **O.V. Besspalko**^{1,2}, N.V. Stolyarchuk², V.V. Tomina², M. Vaclavikova³, I.V. Melnyk^{2,3}. **Functionalization of magnetite nanoparticles with mercaptopropyl groups using 1,2-bis(triethoxysilyl)ethane** (¹*National University of Kyiv-Mohyla Academy, Kyiv, Ukraine*, ²*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv, Ukraine*, ³*Institute of Geotechnics SAS, Kosice, Slovak Republic*).
40. **V.M. Bogatyrov**¹, M.V. Galaburda¹, O.I. Oranska¹, J. Skubiszewska-Zięba², B. Charmas², M.A. Komar³, I.I. Voitko³. **Synthesis and adsorption characteristics of Co/C composites produced from sunflower seed shells** (¹*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*, ²*Faculty of Chemistry, Maria Curie-Skłodowska University, Lublin, Poland*, ³*National Aviation University, Kyiv, Ukraine*).
41. **V.M. Bogatyrov**¹, M.V. Galaburda¹, O.I. Oranska¹, Yu.I. Gornikov¹, L.O. Yakovenko¹, K.S. Tsyganenko², Ya.I. Savchuk². **Synthesis and algicidal effect of disperse silica, modified with Cu and Zn oxides compounds** (¹*Chuiko Institute of Surface Chemistry, NAS of Ukraine*, ²*Zabolotny Institute of Microbiology and Virology, NAS of Ukraine, Kyiv*).
42. **S.V. Bondarchuk**. **The number of electronic states at the Fermi level as a criterion of impact sensitivity** (*Bogdan Khmelnytsky Cherkasy National University, Ukraine*).
43. **M.V. Bondarenko**¹, T.A. Khalyavka¹, I.S. Petrik², S.V. Camyshan¹, N.N. Tsyba¹. **Photocatalytic properties of S/C/TiO₂ nanocomposites** (¹*Institute for Sorption and Problems of Endoecology NAS of Ukraine*, ²*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).
44. L.V. Karabanova¹, **O.M. Bondaruk**¹, Yu.P. Gomza¹, S.D. Nesin¹, E.P. Voronin², L.V. Nosach². **Structure and thermodynamics of interactions in the nanocomposites based on PU/PHEMA matrix and nanofillers modified by aminoacids glycine and tryptophan** (¹*Institute of Macromolecular Chemistry of the NAS of Ukraine*, ²*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).
45. **M.N. Borovaya**¹, A.P. Naumenko², Ya.B. Blume¹, A.I. Yemets¹. **“Green” synthesis of CdS quantum dots by biological matrices** (¹*Institute of Food Biotechnology and Genomics, NAS of Ukraine, Kyiv*, ²*Faculty of Physics, Taras Shevchenko National University of Kyiv, Ukraine*).
46. **N.V. Bortnyk**, A.V. Brichka, O.M. Bakalinska, S.Ya. Brichka, M.T. Kartel. **Catalase mimetic activity of graphite decorated with nanoceria** (*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).

47. M. Ignatovych¹, **M. Borysenko**¹, L. Yakovenko¹, M. Veres², L. Himics², M. Koos². **Quartz glass with mono and double doped Cu and Cu-Eu nanospecies: as advanced optical materials** (¹*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*, ²*Institute of Solid State Physics and Optics HAS, Budapest, Hungary*).
48. **O.V. Davidova**¹, N.E. Drobyshevskaya¹, E.N. Poddenezhny¹, A.A. Boiko¹, M.V. Borysenko². **Thermochemical synthesis of luminescent materials in the Y₂O₃–ZnO system doped with Eu³⁺ ions** (¹*Sukhoi Gomel State Technical University, Belarus*, ²*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).
49. **Kh.V. Demydova**, I.Yu. Yevchuk, O.I. Demchyna, M.M. Zhyhailo. **Sol-gel synthesis and characterization of hybrid organic-inorganic membranes** (*Department of Physical Chemistry of Fossil Fuels L.M. Lytvynenko Institute of Physical-Organic Chemistry and Coal Chemistry, NAS of Ukraine, Lviv*).
50. **N. Dolaberidze**, V. Tsitsishvili, M. Nijaradze, N. Mirdzveli. **Preparation of fine dispersed sodalite by hydrothermal modification of natural clinoptilolite** (*Petre Melikishvili Institute of Physical and Organic Chemistry; Ivane Javakhishvili Tbilisi State University, Georgia*).
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52. **G.V. Fedorenko**, L.P. Oleksenko, N.P. Maxymovych, O.P. Ripko, G.I. Skolyar. **Nanosized Pt/SnO₂ materials and perspectives of their use in adsorption semiconductor sensors** (*Chemical Department, Taras Shevchenko National University of Kyiv, Ukraine*).
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58. **O.P. Grigoryeva**¹, A.M. Fainleib¹, O.N. Starostenko¹, K.G. Gusakova¹, D. Grande². **Nanostructured high performance heat-resistant polymer materials** (¹*Institute of Macromolecular Chemistry, NAS of Ukraine, Kyiv*, ²*Institut de Chimie et des Matériaux Paris-Est, UMR 7182 CNRS – Université Paris-Est Créteil Val-de-Marne, France*).

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60. D.E. Tahuilan-Anguiano¹, V. Meza-Laguna¹, E.V. Basiuk², **T.Yu. Gromovoy**³, V.A. Basiuk¹. **Nucleophilic addition of macrocyclic amines to fullerene C₆₀** (¹*Instituto de Ciencias Nucleares*, ²*Centro de Ciencias Aplicadas y Desarrollo Tecnológico, Universidad Nacional Autónoma de México, Mexico*, ³*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).
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62. **O.O. Havryliuk**, O.Yu. Semchuk. **Optimization of size of periodic structures for solar cells** (*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).
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65. **D. Ignatiuk**, O. Linnik. **Synthesis, optical and photocatalytic properties of nonporous platinum-doped titania films** (*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).
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71. **N.V. Kusyak**¹, N.M. Opanaschuk², A.P. Kusyak¹, A.L. Petranovska³, P.P. Gorbyk³. **Synthesis of magnetosensitive composites based on magnetite with carbon-deposited surface** (¹*Ivan Franko Zhytomyr State University*, ²*Zhytomyr National Agroecological University, Ukraine*, ³*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).

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74. **O.M. Lisova**, S.M. Makhno, G.M. Gunya, P.P. Gorbyk. **Synthesis of graphene nanoplatelets/(Ni-Co) composites and their properties** (Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv).
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76. **Iu. Mukha**, N. Vityuk, O. Severynovska, A. Eremenko. **Gold clusters generated with laser desorption/ionization** (Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv).
77. **O.V. Mykhailenko**¹, Yu.I. Prylutskyi¹, I.V. Komarov¹, A.V. Strungar². **Double-layer silicene as a molecular container for antiaromatic systems** (¹Taras Shevchenko National University of Kyiv, Ukraine, ²Vernadsky National Library of Ukraine, Kyiv).
78. **G.I. Nazarchuk**¹, I.V. Melnyk^{1,2}, M. Vaclavikova², Yu.L. Zub¹. **Comparative characteristic of sorption properties of mesoporous silica with thiourea ligand towards heavy metals** (¹Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv, ²Institute of Geotechnics, SAS, Kosice, Slovak Republic).
79. **L.V. Nosach**¹, E.F. Voronin¹, E.M. Pakhlov¹, V.M. Gun'ko¹, B. Charnas², J. Skubiszewska-Zięba². **Effect of mechanoactivation conditions on bulk density of fumed silica** (¹Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv, ²Faculty of Chemistry, Maria Curie-Skłodowska University, Lublin, Poland).
80. **O.I. Oranska**, A.V. Brichka, Yu.I. Gornikov. **Structure and optical properties of Nd₂O₃–, Nd_{9.33}Si₆O₂₆ – fumed silica composites** (Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv).
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82. **S.R. Petrusenko**¹, Ya.O. Vitushinska¹, V.V. Trachevsky², O.V. Mykhailenko¹. **Direct synthesis of some transition metal lactates** (¹Taras Shevchenko National University of Kyiv, Ukraine, ²Technical Center of NAS of Ukraine, Kyiv).
83. **Yu.K. Pirskey**¹, O.S. Krupennikova¹, G.A. Dolynskyi², O.M. Lavrynenko². **Cathodic reduction of oxygen in the presence of dispersed Fe₃O₄&Ag⁰ nanocomposites** (¹V.I. Vernadskii Institute of General and Inorganic Chemistry, NAS of Ukraine, ²I.M. Frantsevich Institute of Material Science Problems, NAS of Ukraine, Kyiv).
84. V. Turov¹, T. Lupascu², T. Krupska¹, **I. Povar**², O. Spinu². **Nanosilica action on the character of binding water in composite systems with the Enoxil biopreparation** (¹Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv, ²Institute of Chemistry of the Academy of Sciences of Moldova, Chisinau).

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86. **S.L. Prokopenko**, R.V. Mazurenko, G.M. Gunya, S.N. Makhno, P.P. Gorbyk. **Synthesis and electrical properties of ferrites MeFe_2O_4 (Me = Ni, Zn, Co)** (*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).
87. **Ie.V. Pylypchuk**¹, A.L. Petranovska¹, S.V. Gorobets², P.P. Gorbyk¹. **Synthesis boron and gadolinium-containing nanostructures** (¹*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*, ²*National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Ukraine*).
88. **N.M. Rezanova**, B.M. Savchenko, V.Y. Bulakh, A.V. Korshun, N.V. Sova, R.Sh. Iskandarov. **Compatibilization of nanofilled immiscible polymer blends** (*Kyiv National University of Technology and Design, Ukraine*).
89. **N.V. Roik**, L.A. Belykova, I.M. Trofymchuk, M.O. Dziazhko. **Functionalized mesoporous silicas for sorption removal of dyes from aqueous solutions** (*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).
90. **A. Rotaru**^{1,2,3}. **Textural, structural, diffusional and catalytic properties of $\text{Fe}_2\text{O}_3\text{-Cr}_2\text{O}_3$ system** (¹*INFLPR – National Institute for Laser, Plasma and Radiation Physics, Bucharest, Romania*, ²*Institute of Chemistry of the Academy of Sciences of Moldova, Chişinău*, ³*Central and Eastern European Committee for Thermal Analysis and Calorimetry (CEEC-TAC), Romania*).
91. **T.G. Shendrik**¹, V.M. Shevkoplyas¹, N.N. Tsyba². **Durable carbon sorbents from coal and coke chemical waste** (¹*L.M. Litvinenko Institute of Physical-Organic and Coal Chemistry, NAS of Ukraine*, ²*Institute for Sorption and Problems of Endoecology, NAS of Ukraine, Kyiv*).
92. **A.M. Sklyar**², O.V. Kalinkevich¹, V.D. Chivanov¹, S.V. Novikov¹, A.G. Ryabyshev¹, A.N. Kalinkevich¹, S.N. Danilchenko¹. **Characterization of chitosan iodide by temperature-programmed desorption mass spectrometry method** (¹*Institute of Applied Physics, NAS of Ukraine, Sumy*, ²*Sumy State Pedagogical University, Ukraine*).
93. I.A. Rusetskyi, **I.A. Slobodyanyuk**, M.O. Danilov, G.Ya. Kolbasov. **Nanocomposites based on graphene materials for the photoelectrochemical systems** (*V.I. Vernadskii Institute of General and Inorganic Chemistry, NAS of Ukraine, Kyiv*).
94. N. Chorna¹, **N. Smirnova**¹, O. Linnik¹, V. Vorobets², G. Kolbasov². **Photo- and electrocatalytic activity of nitrogen-doped iron titanate films** (¹*Chuiko Institute of Surface Chemistry, NAS of Ukraine*, ²*V.I. Vernadsky Institute of General and Inorganic Chemistry, NAS of Ukraine, Kyiv*).
95. **S.S. Smola**, Ye.M. Fadieiev, N.V. Rusakova. **Synthesis and luminescent properties of hybrid SiO_2 and $\text{SiO}_2/\text{TiO}_2$ materials doped with Ln(III) aminopolycarboxylates** (*A.V. Bogatsky Physico-Chemical Institute, NAS of Ukraine, Odessa*).
96. **D.L. Starokadomsky**. **Epoxy composites filled with initial and water-hardened inorganic binders (gypsum, cement, chalk)** (*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).
97. **G.M. Starukh**¹, V.L. Budzinska². **Application of organo/layered double hydroxides for the preparation of polyurethane nanocomposites** (¹*Chuiko Institute of Surface Chemistry, NAS of Ukraine*, ²*Institute of Macromolecular Chemistry, NAS of Ukraine, Kyiv*).

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103. E.V. Polunkin¹, T.M. Kameneva¹, **R.S. Zhyla**², P.A. Troshin³. **Antioxidant properties of exo-derivatives fullerene** (¹*Institute of Bioorganic Chemistry and Petrochemistry, NAS of Ukraine*, ²*National University of Life and Environmental Sciences of Ukraine, Kyiv*, ³*Institute of Problems of Chemical Physics of the RAS*).

4. Medical, biological and biochemical aspects of research of highly disperse materials

104. **M.V. Abramov**¹, A.P. Kussyak², O.M. Kaminskiy², S.P. Turanska¹, A.L. Petranovska¹, N.V. Kussyak², P.P. Gorbyk¹. **Magnetosensitive nanocomposites based on cisplatin and doxorubicin for application in oncology: control of size parameters and bioactivity** (¹*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*, ²*Ivan Franko Zhytomyr State University, Ukraine*).
105. **L.S. Andriyko**¹, V.M. Gun'ko¹, V.V. Turov¹, T.V. Krupska¹, A.I. Marynin², A.I. Ukrainets². **The interaction of doxorubicin with human serum albumin in the nanosilica presence** (¹*Chuiko Institute of Surface Chemistry, NAS of Ukraine*, ²*National University of Food Technology, Kyiv, Ukraine*).
106. **A.N. Bagatskaya**, R.V. Mazurenko, S.N. Makhno, P.P. Gorbyk. **Investigation of the endogenous metabolism of yeast cells *Saccharomyces cerevisiae* in an aqueous medium in the presence of graphene nanoplates** (*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).
107. **O.G. Bordunova**¹, E.G. Astrakhantseva¹, R.V. Denisov¹, A.G. Ryabishev², S.V. Novikov², E.V. Mironets², A.A. Stepanenko³, V.D. Chivanov². **The study of artificial bionanocomposite protective layer for hatching eggs** (¹*Sumy National Agrarian University*, ²*Institute of Applied Physics, NAS of Ukraine, Sumy*, ³*Sumy State University, Ukraine*).
108. **P.V. Byelyayev**. **Comparison of drugs efficacy on the basis of silica nanoparticle in the treatment of maxillofacial region inflammatory diseases** (*Vinnytsia National Pirogov Memorial Medical University, Ukraine*).

109. B.A. Movchan¹, A.V. Gornostai¹, **A.S. Fedchuk**², T.L. Grydina², M.N. Lebeduk², V.P. Lozitsky². **Antibacterial and antiviral activity of nanostructured composites with silver nanoparticles** (¹*E.O. Paton Electric Welding Institute, NAS of Ukraine, Kyiv*, ²*Odessa Research Centre Biological Testing Preparations, Ukraine*).
110. **I.I. Gerashchenko**¹, O.M. Chepliaka², A. Tausch³. **Nanocomposition for wound care Pathelen®: pharmaceutical and technological aspects** (¹*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*, ²*Vinnytsia National Pirogov memorial Medical University, Ukraine*, ³*Pathelen Health Care AG, Switzerland*).
111. **A.P. Golovan**¹, T.V. Krupska¹, T. Lupascu², M.T. Kartel¹, V.V. Turov¹. **Hydrated properties of initial tannin and tannin – methylsilica composite system** (¹*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*, ²*Institute of Chemistry, Academy of Sciences of Moldova, Chisinau*).
112. **L.P. Golovkova**, L.V. Nosach, E.F. Voronin, V.M. Gun'ko. **Measurement accuracy of gelatin adsorption onto nanosilica surface** (*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).
113. **N.Y. Klymenko**, I.V. Siora, E.A. Novikova, A.P. Golovan, T.V. Krupska, V.V. Turov. **Properties of model systems based on nanosilica for water bioremediation** (*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).
114. **R. Kozakevych**¹, Yu. Bolbukh¹, V. Tertykh¹, I. Povar², T. Lupascu². **Enoxil release from composites with silicas and polymer films** (¹*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*, ²*Institute of Chemistry of Academy of Sciences of Moldova, Chisinau*).
115. **T.V. Krupska**, K.O. Filatova, V.V. Turov. **Influence of organic solvents on a hydration of a polylactic acid** (*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*).
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118. **O.M. Nesterenko**^{1,3}, T.S. Gergelyuk^{1,3}, O.M. Perepelytsina¹, M.V. Sidorenko¹, O.M. Bakalinska², L.I. Ostapchenko³. **Investigation of the degree of binding and controlled release of doxorubicin from the surface of UDD and OLC** (¹*Department for Biotechnical Problems of Diagnostic, Institute for Problems of Cryobiology and Cryomedicine, NAS of Ukraine*, ²*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*, ³*Educational and Scientific Centre "Institute of Biology and Medicine", Taras Shevchenko National University of Kyiv, Ukraine*).
119. **I.S. Petrik**¹, A.M. Eremenko¹, N.P. Smirnova¹, O.I. Oranska¹, A.V. Rudenko². **Physicochemical properties of bimetallic Ag/Cu nanoparticles in bactericidal tissues** (¹*Chuiko Institute of Surface Chemistry, NAS of Ukraine*, ²*Institute of Urology, AMS of Ukraine, Kyiv*).
120. **I.S. Petrik**¹, A.M. Eremenko¹, N.P. Smirnova¹, A.V. Rudenko², Y.M. Samchenko³. **Combined acrylic hydrogels-cotton tissues modified with Ag and Cu nanoparticles for medical application** (¹*Chuiko Institute of Surface Chemistry, NAS of Ukraine*, ²*Institute of Urology, AMS of Ukraine*, ³*F.D. Ovcharenko Institute of Biocolloid Chemistry, NAS of Ukraine, Kyiv*).

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123. **Ie. Pylypchuk**¹, V. Synytsa², O. Klochkova², N. Antoniuk², P. Gorbyk¹. **In vitro activity of tamoxifen-loaded magnetite nanoparticles against MCF-7 breast cancer** (¹*Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv*, ²*National University of Kyiv-Mohyla Academy, Ukraine*).
124. **O.E. Sych**¹, O.M. Otychenko^{1,2}, L.S. Protsenko¹, O.M. Budylyna¹, I.V. Uvarova^{1,2}. **Effect of particle size on adsorption activity of biogenic hydroxyapatite towards methylene blue** (¹*Frantsevich Institute for Problems of Materials Science, NAS of Ukraine, Kyiv*, ²*National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Ukraine*).
125. **O.O. Viltsaniuk**. **Efficiency of using the drug based on silica nanoparticle in complex treatment of community-acquired pneumonia in patients with immunosuppression** (*Vinnitsa National Pirogov Memorial Medical University, Ukraine*).
126. **M.O. Vorobets**, V.V. Strebezhev. **The employment of filamentous fungus for high-porous surface formations of biocompatible substances** (*Chernivtsi National University, Ukraine*).
127. **A.A. Yanovska**^{1,2}, A.G. Ryabishev¹, S.V. Novikov¹, E.V. Mironets¹, A.A. Stepanenko², V.D. Chivanov¹, S.N. Danilchenko¹. **The study of thermal decomposition of carbonate apatites by the temperature-programmed desorption mass spectrometry technique (TPD-MS)** (¹*Institute of Applied Physics, NAS of Ukraine, Sumy*, ²*Sumy State University, Ukraine*).