JERZY HABER INSTITUTE OF CATALYSIS AND SURFACE CHEMISTRY
POLISH ACADEMY OF SCIENCES

KNOW Leading National Research Centers

RESEARCH REPORT

General information for years 2012 and 2013

Contents

Introduction

Research

The Jerzy Haber Institute of Catalysis and Surface Chemistry of the Polish Academy of Sciences is the only scientific institution in Poland and one of very few in the world devoted entirely to research in catalysis and the chemistry of interfaces. The Institute pursues interdisciplinary studies of phenomena occurring at gas-solid, gas-liquid and liquid-solid interfaces, combining significant aspects of chemistry, physics, chemical technology, material engineering, and more recently of biology and medicine. The fundamental theoretical and experimental studies carried out in the Institute are combined with applied research so that the results obtained can be used directly to improve materials, methods or technological processes.

The Institute employs over 120 people, of whom almost 90 are research staff. Approximately 50 PhD students are also involved in research.

The research activity of the Institute focuses on four fundamental areas:

1. Catalytic materials and processes for sustainable development
2. Physics and chemistry of surfaces and nanostructures – experiment and theory
3. Nanostructures of soft matter
4. Physics and chemistry in cultural heritage protection

In the area of catalysis, much effort is put into developing new, 'intelligent' materials with well-defined structure and properties, tuneable to the requirements of particular catalytic reactions. 'Green chemistry' reactions, optimised to improve energy-efficiency and to eliminate or limit side-products are just some of the major points of interest. Enzymes and their synthetic mimics are our dynamically developing research field. With the use of theoretical and experimental methods, we try to elucidate at the molecular level catalytic mechanisms of the studied systems and develop useful biocatalysts.

In the field of surface chemistry of dispersed systems, investigations are focused on the description of adsorption phenomena and understanding the mechanism of formation and stability of foams, nano and colloid particles and their interactions, processes of microencapsulation and the biocompatibility of materials. Experimental studies are carried out in close synergy with theoretical investigations. Quantum chemical methods are used as tools to identify and characterize various electronic and structural factors influencing the selectivity and direction of chemical processes in order to explain molecular mechanism of heterogeneous and enzymatic catalytic reactions. Further, solid state physics modelling methods, as well as molecular mechanics and Monte-Carlo simulation techniques are applied.

The investigation outcomes are turned into applications encompassing catalytic materials and processes for pollutant removal to protect the environment, the manufacturing of innovative biomedical materials and the improvement of materials and methods for cultural heritage conservation. By way of example, fundamental research elucidating mechanisms of adsorption of proteins on interfaces has a considerable application potential in the processes of protein separation and purification, effective immunological tests and enzymatic reactions in bioreactors.

The institute is equipped with state-of-the-art research facilities, in many cases unique on the national scale. The equipment of joint inter-institute laboratories is also used.

In 2012, we reviewed our organizational structure and introduced a new division into 13 research groups and 2 laboratories, which better reflects our key research areas, especialy the emerging ones:

Research groups

1. Adsorption
2. Cultural Heritage Research
3. Theoretical and Experimental Biocatalysis
4. Quantum Chemistry – Research on Catalysts and Catalytic Reactions
5. Functionalized Molecular Sieves
6. Acid-Base Catalysis
7. Catalysis in the Protection of Natural Environment
8. Colloids
9. Layered Minerals, Mesoporous Oxides, Nanostructures
10. Nanostructures of Soft Matter
11. Surface Nanostructures
12. Catalytic Processes for Clean Energy
13. Dispersed Systems

Laboratories:

1. XRD and Thermoanalysis Laboratory
2. Laboratory of Nanostructures and Surfaces

Education

Doctoral programmes at the third-cycle level are established within three frameworks:

The International Postgraduate School, organised in collaboration with the Faculty of Chemistry, Rzeszów University of Technology.

The Interdisciplinary Doctoral Programme ‘Advanced Materials for Modern Technologies and Future Energetics’ coordinated by the Faculty of Physics and Applied Computer Science, AGH University of Science and Technology and the Institute of Nuclear Physics, Polish Academy of Sciences.

The Interdisciplinary Doctoral Programme (MOL-MED), ‘Molecular Sciences for Medicine’, which runs in cooperation with the Institute of Pharmacology of the Polish Academy of Sciences, the Faculty of Chemistry of the Jagiellonian University and the Faculty of Medicine, Collegium Medicum of the Jagiellonian University.

In 2013, 5 doctoral students accomplished their international doctoral projects within the prpogramme ‘Krakow Interdisciplinary PhD-Project in Nanoscience and Nanostructures’ implemented in cooperation with the Faculty of Physics and Applied Computer Science of AGH University of Science and Technology.

In the framework of cooperation with high schools, several students have developed at the Institute their Master and Bachelor theses in the field of chemistry and environmental protection.

National and international cooperation

The Institute has a long-standing tradition of animating and coordinating research in the field of catalysis and surface science in Poland. For over forty years, the Institute has organised the annual National Catalytic Colloquium, a key event for the research community in the field.

The Institute intensifies the use of its research instructure by organizing joint laboratories with a number of research centres: the Centre for Surface and Nanostructure Research, the Interinstitute Laboratory of Enzymatic Catalysis and Biotechnology, the Laboratory of Electrochemistry and Surface Chemistry, Interdisciplinary Centre of Physical, Chemical and Medical Sciences, the National Laboratory for Surface Studies and SPINLAB – the National Centre of Magnetic Nanostructures for Applications in Spin Electronics.

We support the development of interdisciplinary research participating in several consortia and clusters as the Polish Technology Platform of Sustainable Chemistry, the National Consortium 'Polish Synchrotron', the Cluster Life Science, the Consortium 'Catalysis in the environmental protection' and the Consortium 'Nanotech'.

In July 2012, the Institute was granted prestigious status of the National Leading Research Centre KNOW in physical sciences for 2012 – 2017 in the framework of the Marian Smoluchowski Krakow Research Consortium 'Matter – energy – future'. The Consortium is formed by Faculty of Chemistry, Jagiellonian University; Faculty of Physics, Astronomy and Applied Computer Science, Jagiellonian University; Faculty of Physics and Applied Computer Science, AGH University of Science and Technology; the Jerzy Haber Institute of Catalysis and Surface Chemistry, Polish Academy of Sciences and the Henryk Niewodniczański Institute of Nuclear Physics, Polish Academy of Sciences.

The Institute is involved in extensive international cooperation. These activities include numerous bilateral international collaboration schemes, research projects of the successive Framework Programmes of the European Commission, as well as of the Operational Programmes: Innovative Economy and Human Capital, co-financed by the European Commission.

The Institute actively participates in the actions of the COST Initiative. Between 2012 and 2016, we coordinate COST Action CM1101 'Colloidal Aspects of Nanoscience for Innovative Processes and Materials' with the participation of 70 research organisations from 36 countries.

Popularising research

It is our firm belief that making scientific research easily understandable to society is of immense importance for gaining public support for investment in the field of science, both by state and private institutions. Therefore, every year, the Institute organizes Open-Door Days, during which visitors may listen to popular lectures, participate in spectacular laboratory presentations and attend poster sessions depicting the Institute's research. The Open-Door Days are aimed especially at young people from junior and senior high schools. They are very popular among local schools – every year the Institute receives approximately 1,000 visitors.

The Institute participates in the annual Krakow Science Festival in the city's Main Market Square. In 2013, we participated in the Science Picnic in Warsaw, Europe's largest outdoor event aimed to promote science, organized by Polish Radio and the Copernicus Science Centre.

Research groups and laboratories

Heads of the research groups in italics
Staff members and PhD students as on December 31, 2013

Adsorption
Associate Professor Tomasz Pańczyk DSc
Wojciech Płaziński PhD, Agnieszka Brzyska PhD, Paweł Wolski MSc, Łukasz Kończak MSc, Barbara Jachimska DSc
PhD students: Sylwia Świątek, Anna Jagusiak

Cultural Heritage Research
Michał Łukomski PhD
Professor Roman Kozłowski DSc, Łukasz Bratasz DSc, Marcin Strojecki PhD, Leszek Krzemień PhD, Arkadiusz Kupczak MSc
Agata Mleczkowska - PhD student

Theoretical and Experimental Biocatalysis
Associate Professor Tomasz Borowski DSc
Maciej Szaleniec DSc, Daniel Knack PhD, Anna Wójcik PhD, Joanna Opalińska-Piskorz MSc
PhD students: Agnieszka Dudzik, Agnieszka Rugor, Natalia Zawada, Mateusz Tataruch, Adam Stępniewski, Anna Miłaczewska

Quantum Chemistry - Research on Catalysts and Catalytic Reactions
Professor Małgorzata Witko DSc, Member of Polish Academy of Sciences
Associate Professor Renata Tokarz-Sobieraj DSc, Robert Gryboś PhD
PhD students: Agnieszka Drzewiecka-Matuszek, Piotr Niemiec

Functionalized Molecular Sieves
Professor Ewa Brocławik DSc, Member of Polish Academy of Arts and Sciences
Professor Bogdan Sulikowski DSc, Associate Professor Mirosław Derewiński DSc, Ewa Włoch PhD, Jerzy Podobiński MSc
PhD students: Katarzyna Onik, Łukasz Kuterasiński, Mariusz Gackowski, Anna Dziedzicka, Krystyna Durczyk

Acid-Base Catalysis
Professor Adam Bielański Dhc, Member of Polish Academy of Sciences and Polish Academy of Arts and Sciences
Anna Micek-Ilnicka DSc, Urszula Filek PhD
Aleksandra Czapla - PhD student

Catalysis in the Protection of Natural Environment
Dorota Rutkowska -Żbik PhD
Associate Professor Ryszard Grabowski DSc, Tadeusz Machej PhD, Łukasz Mokrzycki PhD, Małgorzata Ruggiero-Mikołajczyk PhD, Katarzyna Samson PhD, Michał Śliwa PhD, Wojciech Rojek MSc
PhD students: Jan Mizera, Agnieszka Kornas, Agata Żelazny

Colloids
Professor Zbigniew Adamczyk DSc, Member of Polish Academy of Arts and Sciences
Associate Professor Paweł Weroński DSc, Jakub Barbasz DSc, Anna Bratek-Skicki PhD, Krzysztof Jamroży PhD, Aneta Michna PhD, Małgorzata Nattich-Rak PhD, Lilianna Szyk-Warszyńska PhD, Monika Wasilewska PhD, Magdalena Oćwieja PhD, Katarzyna Kusak Eng
PhD students: Marta Kujda, Marta Sadowska, Paulina Żeliszewska, Katarzyna Kubiak, Kamila Sofińska, Przemysław Kapusta, Małgorzata Nosek, Piotr Batys, Michał Skoczek

XRD and Thermoanalysis Laboratory
Professor Wiesław Łasocha DSc
Katarzyna Luberda-Durnaś PhD, Dariusz Mucha PhD
PhD students: Anna Szymańska, Marta Grzesiak

Layered Minerals, Mesoporous Oxides, Nanostructures
Professor Ewa Serwicka-Bahranowska DSc
Elżbieta Bielańska PhD, Roman Dula PhD, Dorota Duraczyńska PhD, Robert Karcz PhD, Alicja Michalik-Zym PhD, Katarzyna Pamin PhD, Jan Połtowicz PhD, Małgorzata Zimowska PhD, Daria Napruszewska MSc, Joanna Kryściak-Czerwenka PhD
Joanna Olszówka - PhD student

Nanostructures of Soft Matter
Professor Piotr Warszyński DSc
Ewelina Jarek PhD, Marta Kolasińska-Sojka PhD, Grażyna Para PhD, Krzysztof Szczepanowicz PhD, Marzena Noworyta Eng, Associate Professor Paweł Nowak DSc, Grzegorz Mordarski PhD, Michał Mosiałek PhD, Dawid Wodka PhD, Grzegorz Potasiewicz MSc,
PhD students: Tomasz Kruk, Karolina Podgórna, Marta Łapczyńska, Magdalena Włodek, Justyna Dziedzic, Anna Pajor, Katarzyna Kilan, Marek Piotrowski, Małgorzata Krzak, Maciej Tatko

Surface Nanostructures
Professor Józef Korecki DSc
Jacek Gurgul PhD, Ewa Madej PhD, Robert Socha PhD, Nika Spiridis DSc, Dorota Wilgocka-Ślęzak PhD, Kinga Freindl PhD
PhD students: Barbara Wolanin, Tomasz Giela, Magdalena Szczepanik

Catalytic Processes for Clean Energy
Professor Alicja Drelinkiewicz DSc
Monika Góral-Kurbiel PhD, Robert Kosydar PhD, Erwin Lalik PhD, Leszek Matachowski PhD, Aleksandra Pacuła PhD
Phd students: Żaneta Kalemba-Jaje, Michał Kołodziej, Tomasz Szumełda

Dispersed Systems
Professor Kazimierz Małysa DSc
Marcel Krzan PhD, Jan Zawała PhD, Dominik Kosior PhD
Anna Niecikowska - PhD student

Research themes and projects

Leading National Research Centre as member of the Marian Smoluchowski Krakow Research Consortium "Matter-Energy-Future"

Statutory research – year 2012

Catalytic Materials and Processes for Sustainable Development

- Nanomaterials Based on Layered Minerals
- New Peroxo-Compounds of Mo(VI), W(VI) i V(V). Synthesis, Structural Studies and Applications in Processes of Oxidation
- Ceramic Foam Catalysts for Total Oxidation of Volatile Organic Compounds
- Photocatalytic Degradation Processes of Organic Pollutants in Water with the Simultaneous Action of Oxidant - Synergistic Effects
- Physicochemistry of Heteropolyacid – MOF Systems
- Assembling Nanoparticles of Zeolite MFI into Hierarchical Porous Materials
- Nanostuctured Composites Containing Carbon and Metal Oxides as the Catalysts for the Reation of Electrochemical Reduction and Oxidation of Hydrogen Peroxide
- Examination of the Reduction and Catalytic Properties of Au-MeOx/TiO_2 Systems in Oxidation of CO
- Synthesis of Salen Metallocomplexes with Electron-Acceptor Substituents – Investigation of the Influence of the Catalyst Structure on their Catalytic Properties in Rection of Phenol Oxidation
- Transformations of Terpene Hydrocarbons on Hierarchical Zeolite Catalysts: Catalysis and Physicochemical Properties of the Catalysts Studied by NMR
- Electrocatalytic Properties of Alloys Containing Transition Metals or Rare Earth Metals – Hydrogen Ionization and Hydrogen Evolution Reaction
- Transesterification of Triglycerides with Methanol in the Presence of Polymeric Catalysts
- Selective Hydrogenation Processes in the Presence of Ruthenium Catalysts

Physical Chemistry of Surfaces and Nanostructures – Experiment and Theory

- Structural Properties and Dynamics in Epitaxial Oxide and Metal Nanostructures Studied with Microscopic and Spectroscopic Techniques Radiation
- Analysis of the Element Electronic States on the Surfaces of Materials Active in Heterogeneous Reactions
- Structural and Electronic Factors in Catalytic Activity of Metal Sites in Nanoporous Materials: Quantum Chemical Investigations
- Theoretical Studies on the Reaction Mechanism of Intradiol Dioxygenases
- Catalytic Properties of Non-Stoichiometric Surfaces of V_2O_5 – Theoretical Modelling
- Adsorption Centers of Colloid Nanoparticles on Surfaces of Carbon Nanotubes
- Dynamics of the Calcium Alginate Formation: Computer Simulations
- Studies on Possibility of Selective Modification of Vitamin B_{12} – Potential Drug Carrier
- DFT Description of Catalytic Properties of Heteropolyacids with Keggin and Well-Dawson Structure

Soft Matter Nanostructures

- Physicochemical Background of the Colloid Enhancement Method for Protein Monolayer Detection at Solid/Electrolyte Interfaces
- Modeling the Adsorption of Nanoparticles - Multiscale Theoretical Description of the Adsorption Kinetics of Spherical Particles on the Homogenous Surface
- Influence of Electrical Charge on Kinetics of the Three Phase Contact Formation at Surfaces of Low Hydrophobicity
- Functional Polyelectrolyte Multilayers Films

Physical Chemistry in the Protection of Cultural Heritage

- Modeling of the Response of Historic Polychrome Wooden Objects to Changes of the Ambient Environmental Conditions

Statutory research – year 2013

- Nanomaterials Based on Layered Minerals
- New Peroxo-Compounds of Mo(VI), W(VI) i V(V). Synthesis, Structural Studies and Applications in Processes of Oxidation
- Photocatalytic Degradation Processes of Organic Pollutants in Water with the Simultaneous Action of Oxidant - Synergistic Effects
- Synthesis, Physicochemical and Catalytic Properties of bi-Cationic Salts of Heteropolyacids
- Materials with Wariable Porous Structures: Synthesis, Physicochemical and Catalytic Properties, Spectroscopic and Quantum-Chemical Studies
- New Materials for High Temperature Fuel Cells
- Catalytic Processes with Participation of Bio-Reagents
- Structural, Electron Eroperties and Dynamics of Surface and Nanostructures Studied with Microscopic and Spectroscopic Techniques Radiation in the Ultra High Vacuum Conditions
- Studies on the Mechanisms of Catalytic Reactions of non-Haem Enzymes Oxidizing Hydrocarbons
- Molecular Dynamics Methods in Studies of Biologically Active Systems
- Biomass Conversion: Dehydration of Bio-Butanol on Oxide-Type Catalysts
- Application of the Colloid Enhancement Method for the Determination of Topology and Electrokinetic Characteristics of Protein Monolayers at Solid/Electrolyte Interfaces
- Influence of the Liquid Film Size and Surface Electrical Charge on Kinetics of the Three Phase Contact Formation at Surfaces of Low Hydrophobicity
- Functional Polyelectrolyte Multilayers Films
- Physical Properties of Paint Layers at the Conditions of High Relative Humidity

Research Projects of the Ministry of Science and Higher Education

- N N204 028536 [2009-2012] Developing of the Methods of Formation Biologically Active Multilayers Contained Polyelectrolytes - Proteins - Dendrimers
- N N507 269936 [2009-2012] New Nanostructured Carbon Materials, Oxide Materials and their Composites as Components of Capacitors
- N N204 347737 [2009-2012] Theoretical and Experimental Analysis of Multilayered Spherical Colloidal Particles Porosity
- N N204 026438 [2010-2013] New Method of Evaluating Colloid Particle and Protein Interactions with Interfaces Based on Streaming Potential Measurements

- N N204 291238 [2010-2012] Modeling of Kinetics and Equilibrium of Heavy Metal Ion Sorption by Materials of Biological Origin
- N N204 269038 [2010-2013] Biocatalytic Synthesis of Chiral Alkylaromatic and Alkylheterocyclic Alcohols with Ethylbenzene Dehydrogenase - Theory and Experiment
- N N204 269238 [2010-2013] Functional Nanostructures of Manganese Oxides Doped with Other Metals
- N N507 616638 [2010-2013] Composite Cathodes for Solid Oxide Fuel Cells (SOFC) Working at Temperature 600^{o}C and Lower Containing Silver
- N N204 546439 [2010-2012] New Methods for Powder Diffraction Studies of Structural Materials, Partially Amorphous, Disordered and of Reduced Dimensionality
- N N204 546639 [2010-2013] Stability, Functionality and Mechanism of Creating Polymer-Casein Multilayer Structures
- N N204 205240 [2011-2014] Studies of Structure and Properties of a Magnetically Triggered Molecular Nanocontainer
- N N204 133640 [2011-2014] Influence of Micro- and Nano-bubbles at Hydrophobic Surfaces on Kinetic and Mechanism of the Three Phase Contact Formation in Milliseconds Timescale
- N N204 439640 [2011-2014] Quantum-chemical Studies on the Mechanism of Transmetallation Reaction of Porphyrin and its Selected Derivatives
- N N204 439040 [2011-2014] The New Multi-layered Systems with Controlled Architecture and Functionality
- N N209 757340 [2011-2014] Application of Membrane Emulsification for Formation of Nano- and Microcapsules' Cores

PhD Research Projects of the Ministry of Science and Higher Education

- N N204 179439 [2010-2012] Influence of Cationic Surfactants and pH on Kinetics of the Three-phase Contact Formation at Solid Surfaces of Low Hydrophobicity
- N N105 429140 [2011-2012] Structural Response of Roman Cement Mortars Due to Drying

"Sonata Bis" Research Projects of the National Science Centre

- ST4 [2013-2017] Computer Aided Design and Prediction of Properties of Drug Delivery Systems Based on the Structure of Carbon Nanotubes

"Sonata" Research Projects of the National Science Centre

- HS2 [2011-2014] Impact of Heating Historic Churches on Transfer and Deposition of Dust
- ST5 [2011-2014] New Pd-Pt/ Hybrid Nanocomposite Catatalysts for Oxygen Reduction in Polymer Electrolyte Membrane Fuel Cell
- ST5 [2011-2014] Functionalization of the Polymer Films as a Tool for Attainment of the Novel Materials of Broad Utility Spectrum
- ST4 [2012-2015] Conformational Changes of the Pyranose Rings: Computer Simulations
- ST5 [2012-2017] Targeted Drug Delivery Systems - Synthesis and Functionalization of Nanocarriers
- ST4 [2013-2017] The Mechanism of Regioselective Oxidation of Cholesterol Derivatives by a Novel Molybdenum Enzyme, Steroid 25-OH Dehydrogenase from *Stereolibacterium denitrificans*

"Opus" Research Projects of the National Science Centre

- HS2 [2011-2014] Mechanism of Damage of Panel Paintings Taking into Account Growth Ring Structure of Wood and Real World Climate Fluctuations
- ST8 [2011-2014] New Development in Technology of Stable and Biodegradable Foam Generation - for Industrial and Biomedical Applications
- ST5 [2012-2015] Influence of Glycerol as Non-Toxic and Biodegradable Solvent on the Mechanism of Phenol Oxidation
- ST4 [2012-2014] Properties of Chromium(VI), Molybdenum(VI) and Tungsten(VI) Monomeric Oxo Species on Amorphous Silica and Al-Modified Silica from Periodic DFT Simulations
- ST4 [2012-2015] Physicochemical and Catalytic Properties of Heteropolyacids Modified with Copper Ions. Theoretical Calculations vs. Experiment
- ST4 [2012-2016] Mechanism of Ionic Surfactant - Polyelectrolyte Interactions in the Process of Formation of New Generation of Nanocarrier
- NZ1 [2012-2017] Structure and Function of Acireductone Dioxygenases – Experimental and Computational Studies
- ST4 [2013-2016] The Surface Chemistry Studies of the Hybrid Catalysts as the Method for the Explanation of Their Catalytic Properties in the High Pressure Dimethyl Ether Synthesis from the H_2/CO_2 Mixture
- ST5 [2013-2016] Novel Layered Porous Materials Based on Zeolite Nanoclusters for the Liquid-Phase Catalytic Processes
- ST5 [2013-206] Design, Synthesis, and Physicochemical Characterization of Ruthenium Catalysts and Their Application in Hydrogenation od Prochiral Ketones
- ST4 [2013-2016] Dynamics of Oscillations in the Palladium/Hydrogen System
- ST4 [2013-2016] Adsorption Mechanisms of Anisotropic Proteins under Controlled Transport Conditions
- ST4 [2013-2016] Structure and Properties of Protein Layers: from Biomolecules to a Functional Layer (A Combined Experimental and Simulation Study)

"Preludium" Research Projects of the National Science Centre

- ST4 [2011-2013] Modeling of Catalytic Activity of Biological Nanostructures - Nonheme Iron Dioxygenases
- ST5 [2012-2013] The Influence of Base Metal Oxidation State in Au-Me-O/TiO_2 Systems on the Interaction between Gold Nanoparticles and the Support
- ST5 [2012-2014] Synthesis of biocompatible nanocarriers for selected neuroprotective agents
- ST4 [2013-2015 Improving the Method of Detection of Hydrogen Peroxide by Modifying Films Containing Prussian Blue Nanoparticles by Conductive Polymers and Reduced Graphene Oxide Sheets
- ST5 [2013-2016] Multilayer Polymer Films Containing Nanoparticles and Graphene as a Functional Coatings and Membranes
- ST5 [2013-2015] Electrokinetic Characteristics of Interaction between Recombinant HSA Monolayers and Ionic Ligands

"Harmonia" Research Projects of the National Science Centre

- ST4 [2013-2015] Visualizing the Local Reaction Kinetics: From the Mesoscopic to the Nanoscale

“Iuventus Plus” Programme Projects of the Ministry of Science and Higher Education

- IP2011 042471 [2012-2013] The Selected Aspects of Interactions between α-L-Guluronic acid, β-D-Mannuronic Acid and Bivalent Metal Ions
- IP2011 0353 71 [2012-2014] A New Method of Silver Sol Synthesis and Mechanism of Colloidal Particles Interaction with Heterogeneous Surfaces Determined by Electrokinetic Phenomena and AFM, Fluorescent Microscopy and QCM-D Techniques
- IP2012 006372 [2013-2015] The Advanced Theoretical Study on the Mutarotation Reaction of D-Glucopyranose
- IP2012 058972 [2013-2015] Magnetic Responsive Drug Delivery Systems with the Controlled Release Properties

"Mobility Plus" Programme Research Projects of the Ministry of Science and Higher Education

- [2011-2013] Factors Determining Stability of the Liquid Films Formed at Liquid/Gas and Liquid/Solid Interfaces under Dynamic Conditions

"Homing Plus" Programme Research Projects of the Polish Foundation for Science

- FNP 2010-1/8 [2010-2012] Structure and Electric Properties of the Composite Films Containing Conductive Nanoparticles

"Pomost" Programme Research Projects of the Polish Foundation for Science

- FNP 2011-3/7 [2011-2014] Selective Hydrogenolysis of Glycerol to Glycols via Acetol on Heterogeneous Metal/Metal Oxides Based Catalysts

Research Projects of the National Centre for Research and Development

- NCBiR SP/J/7/170071/12 2012-2015] Catalysts for Recombination of Hydrogen and Oxygen in Nuclear Reactors. Catalysts Activity as a Crucial Parameter Determining Safety of Recombiners Performance
- NCBiR SP//E/4/65786/10 [2011-2012] Influence of Surfactants on the Cellulose Hydrolysis
- NCBiR PBS2/A9/24/2013 [2013-2016] HERIVERDE Energy Efficiency of Museum and Library Institutions

"Leader" Programme Research Projects of the National Centre for Research and Development

- NCBiR LIDER/33/147/L-3/11/NCBR/2012 [2012-2015] Regioselective Oxidation of Cholesterol Derivatives with a Novel Molybdoenzyme – 25-OH Cholesterol Dehydrogenase

EC 6th Framework Programme Research Projects

- EC 6th FP ERA-NET MNT project [2008-2012] NANOREP II Surface Modification of Nano- and Micron Size Plastic Modifiers (SPR)

EC 7th Framework Programme Projects

- EC 7$_{th}$ FP CP-IP 229183-2 [2008-2013] NEXT-GTL Innovative Catalytic Technologies & Materials for Next Gas to Liquid Processes (IP)
- EC 7th FP NMP3-LA-2008-214261 [2008-2012] MUST Multi-level Protection of Materials for Vehicles by"Smart" Nanocontainers (CP)

- EC 7th FP 226898 [2009-2012] ROCARE Roman Cements for Architectural Restoration to New High Standards (CP)
- EC 7th FP CP-IP 228867-2 [2009-2013] F3 Factory Flexible, Fast and Future Factory - European Chemistry Consortium Begins the Journey into the Future of Production (IP)
- EC FP7-NMP-2012-CSA-6 [2012-2015] NanoIES Nanotechnology Education for Industry and Society (CSA)
- EC 7th 310420 [2013-2015] HYPERCONNECT Functional Joining of Dissimilar Materials Using Directed Self-Assembly of Nanoparticles by Capillary-Bridging (CP)

EU COST Actions

- EU COST Action CM1101 [2012-2016] Colloidal Aspects of Nanoscience for Innovative Processes and Materials

Projects of the Polish-Norwegian Research Programme

- [2013-2016] NANONEUCAR Nanoparticulate Delivery Systems for Therapies Against Neurodegenerative Diseases
- [2013-2015] FUNCLAY Synthesis and Functionality of Innovative Porous Clay Hybrid Nanostructures

Projects of EU Structural Funds Programmes

- PO IG 1.1.2 [2008-2013] MPD Krakow Interdisciplinary PhD Projects in Nanoscience and Advanced Nanostructures
- PO KL 4.1.1 [2008-2012] ISD Advanced Materials for the New Technologies and Energy of the Future
- PO IG 2.2. [2009-2012] SPINLAB National Centre of Magnetic Nanostructures for Applications in Spin Electronic
- PO IG 1.3.1. [2009-2014] BIOTRANSFORMACJE Biotransformations Useful in Pharmaceutical and Cosmetics Industry
- POIG 1.1.2. [2009-2014] FUNANO Functional Nano- and Microparticles, Synthesis aPnd Applications in Innovative Materials and Technologies
- PO IG 1.1.2. [2009-2013] VOX Development of Technology for Synthesis of Nanostructured Oxide Catalysts for Purification of Air from Toxic Volatile Organic Compounds
- PO KL 4.1.1 [2010-2015] ISD MOLMED Molecular Sciences for Medicine

Other International Projects

- Research project within the Polish-Austrian Scientific and Technological Cooperation [2009-2012] Fe monolayers on W(110): adsorption and magnetism
- Research project within the Polish-Austrian Scientific and Technological Cooperation [2009-2012] Visualizing the local reaction kinetics: from the mesoscopic to the nanoscale
- Research project within the Polish-French Scientific and Technological Cooperation Programme POLONIUM [2010-2012] Metal and oxide epitaxial nanostructures as seen by nuclear resonance scattering of synchrotron radiation
- Intergovernmental Polish-Slovak Project [2013-2015] Organo-Clays as Intermediates for the Synthesis of Functional Hybrid Materials
- Intergovernmental Polish-Ukrainian Project [2013-2014] Polyoxometalates Immobilized on Mesoporous Silicas for Selective Oxidation of Alkanes and Alkenes

Projects of the Consortium "Coal Fuel Cells" under auspices of the Ministry of Economy

- [2012-2013] Molten Carbonate Electrolyte Direct Carbon Fuel Cell (DC-MCFC)

Scientific output of the Institute

Printed scientific publications

2012

Reviews and chapters in monographs

1. Z. Adamczyk, M. Wasilewska, M. Nattich-Rak, J. Barbasz, “Mechanisms of Fibrinogen Adsorption on Mica”; in:"Proteins at Interfaces III State of the Art", ACS Books 2012, chapter 5, p.97-127, [ISBN 9780841227965]

2. W.Płaziński, A.Płazińska "Equilibrium and Kinetic Modeling of Adsorption at Solid/Solution Interfaces", in: "Application of Adsorbents for Water Pollution Control" (A. Bhatnagar, Ed.), Bentham Science Publishers 2012, p.32-80, [eISBN: 978-1-60805-269-1, ISBN: 978-1-60805-538-8]

3. M.Szaleniec "Biokatalityczne utlenianie węglowodorów alkiloaromatycznych i alkiloheterocyklicznych przez dehydrogenazę etylobenzenową", in: "Zastosowania metod statystycznych w badaniach naukowych IV" (J.Jakubowski, J.Wątroba, Eds.), Statsoft Polska, Kraków 2012, p.59-66 [ISBN 978-83-88724-64-0]

4. M.Wierzchoń, M.Orzechowski, J.Barbasz, "Interdyscyplinarność w naukach kognitywnych - science, fiction, czy science fiction?", in: "Interdyscyplinarnie o interdyscyplinarności" (A.Chmielewski, M.Dudzikowa, A.Grobler, Eds.)**,** Impuls, Kraków 2012, p.113-130 [ISBN 978-83-7587-958-2]

Articles in journals evaluated in Thomson Reuters Journal Citation Reports

1. M.Adamczak, H.J.Hoel, G.Gaudernack, J.Barbasz, K.Szczepanowicz, P.Warszyński "Polyelectrolyte Multilayer Capsules with Quantum Dots for Biomedical Applications", Colloids Surf. B, 90 (2012) 211-216

2. Z.Adamczyk "Modeling Adsorption of Colloids and Proteins"; Current Opinion Colloid Interface Sci., 17 (2012) 173-186

3. Z. Adamczyk, A. Bratek-Skicki, P. Dąbrowska, M. Nattich-Rak "Mechanisms of Fibrinogen Adsorption on Latex Particles Determined by Zeta Potential and AFM Measurements", Langmuir, 28 (2012) 474-485

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11. A.Dziedzicka, B.Sulikowski "Transformations of alpha-Pinene over Dealuminated Natural Clinoptilolite", 19th Zeolite Forum, Małe Ciche 2012

12. B.Gil, B.Marszałek, A.Micek-Ilnicka, N.Reimer, N.Stock "Post-synthetic Modification of Coordination Networks", 44th Symp. on Catalysis, Prague 2012

13. M.Grzesiak, W.Łasocha, W.Nitek, A.Rafalska-Łasocha "Badania nowych związków strontu z kwasami dikarboksylowymi", 54. Konwersatorium Krystalograficzne, Wrocław 2012

14. J.Handzlik, J.Kuźmińska, R.Gryboś, F.Tielens "Monomeric Cr(VI) Oxide Species Supported on Amorphous SiO_2 and AlO_x/SiO_2 - Cluster and Periodic DFT Studies", 14th Int. Conf. Theoretical Aspects of Catalysis, Vlissingen 2012

15. E.Jarek, M.Krzan, L.Szyk-Warszyńska, M.Orlof, K.Czapla, B.Korochwiec, P.Warszyński, K.Małysa, E.Rogalska, "Monitoring of Enzymatic Hydrolysis of Phospholipids at Solid/Liquid and Air/Water Interfaces by Dynamic Surfaces Activity of Its Products", 5th Int. Workshop Bubble and Drop Interfaces B&D 2012, Kraków 2012

16. M.Kolasińska-Sojka, G.Potasiewicz, A.Pajor-Swierzy, P.Warszyński "Electroactive Properties of the Multilayer Films Containing Prussian Blue Nanoparticles", 14th Int. Conf. Organized Molecular Films ICOMF14, Paris 2012

17. D.Kosior, J.Zawała, M.Krasowska, K.Małysa "On the Mechanism of the Action of Frothers in the Colliding Bubble Attachment to Hydrophobic Surfaces of Different Roughness", 26th Int. Mineral Processing Congr. IMPC 2012, New Delhi 2012

18. D.Kosior, J.Zawała, K.Małysa "Influence of the Surface Active Substances on the Bubble Impact Velocity, Bouncing and the Three Phase Contact Formation at Hydrophobic Solid Surfaces", 5th International Workshop "Bubble and Drop Interfaces", 20-24.05.2012 Krakow, Poland.

19. D.Kosior, J.Zawała, K.Małysa "Effect of the Frother Overdosage on Kinetics of the Three-Phase Contact Formation at Hydrophobic Surfaces", 19th Int. Symp. Surfactants in Solution SIS2012, Edmonton 2012

20. D.Kosior, J.Zawała, K.Małysa "Influence of the Impact Velocity on Stability of the Foam Films Formed by the Rising Bubbles", 9th European Conf. Foams, Emulsions and Applications EUFOAM 2012, Lisbon 2012

21. A.Kowal, R.R.Adzic, M.Mosiałek, G.Modarski, M.Kopczyk "Catalysts for Ethanol Oxidation in Ethanol Solid Oxide Fuel Cells (ESOFC)", Energy & Materials Research Conf. EMR 2012, Torremolinos 2012

22. A.Kowal, R.R.Adzic, M.Mosiałek, G.Mordarski, M.Kopczyk "Czysta energia z etanolu (synteza i własności katalizatorów do utleniania etanolu w ogniwach paliwowych)", 7. Kongres Technologii Chemicznej, Kraków 2012

23. R.Kozłowski "Restoration of Facades Based on Roman Cement Technology", Info-day 'Roman cement - history, properties, application possibilities', Freiburg 2012

24. R.Kozłowski "Zaprawy romańskie: mechanizm wiązania, właściwości, problemy konserwatorskie", Sesja Konserwatorska 'Cement romański w konserwacji zabytków', Zamek Królewski, Warszawa 2012

25. T.Kruk, K.Szczepanowicz, L.Szyk-Warszyńska, J.Stefańska, P.Warszyński "Multifunkcyjne wielowarstwowe powłoki polimerowe", 55. Zjazd PTChem i SITPChem, Białystok 2012

26. M.Krzan "Automatic and Direct Investigation of Bubble Motion in Aqueous Surfactant Solutions by Using Digital Image Processing Techniques", 3rd Int. Symp. Surface Imagining/Spectroscopy at the Solid/Liquid Interface, Krakow 2012

27. M.Krzan "Rheology of the Wet Surfactant Foams and Biofoams - a Review", 3. Krakowskie Warsztaty Reologiczne, Kraków 2012

28. M.Krzan, H.Caps, N.Vandewalle "High Stability of the Bovine Serum Albumine Foams Evidenced in Hele-Shaw Cell", 9th European Conf. Foams, Emulsions and Applications EUFOAM 2012, Lisbon 2012

29. M.Krzan, P.Zychowska, J.Zawała, K.Małysa "Monitoring of Waters Pollution by Measurements the Bubble Velocity Variations", 19th Int. Symp. Surfactants in Solution SIS2012, Edmonton 2012

30. K.Kubiak, Z.Adamczyk "Silver Nanoparticles Deposition", 7th Scientific Workshop for Postgraduate Students "Interfacial Phenomena in Theory and Practice" VII SUDOMIE 2012, Rybaki 2012

31. M.Kujda, Z.Adamczyk, M.Nattich-Rak, M.Adamczyk "Characteristic of KfrA Protein via AFM and Electrokinetics Measurements" 7th Scientific Workshop for Postgraduate Students "Interfacial Phenomena in Theory and Practice" VII SUDOMIE 2012, Rybaki 2012

32. W.Łasocha, A.Szymańska, W.Nitek,A.Rafalska-Łasocha "Synthesis and Crystal Structure of Few New Decavanadates", 27th European Crystallographic Meeting, Bergen 2012

33. M.Łukomski, J.Czop, M.Strojecki, Ł.Bratasz "Acoustic Emission Monitoring: on the Path to Rational Strategies for Collection Care", Conf. Climate for Collections: Standards and Uncertainties, Munchen 2012

34. M.Łukomski, M.Strojecki, Ł.Bratasz "Emisja Akustyczna jako narzędzie do planowania strategii zarządzania klimatem w muzeum", Konf. 'Analiza Chemiczna w Ochronie zabytków', Warszawa 2012

35. J.Matusik, M.Zimowska, T.Bajda "Modified Kaolinites and Halloysite with Anion Sorption Properties", 6th Mid-European Clay Conf.MECC'12, Prague 2012

36. A.Micek-Ilnicka, A.Bielański "Carbon Nanotubes as the Support for Heteropolyacid Catalysts", 19th Zeolite Forum, Małe Ciche 2012

37. A.Michna, Z.Adamczyk, K.Jamroży "Kinetyka osadzania fluorescencyjnych cząstek lateksowychna monowarstwach polielektrolitów", 55. Zjazd PTChem i SITPChem, Białystok 2012

38. E.Młyńczak, J.Gurgul, N.Spiridis, J.Korecki "Exchange Bias in Fe/CoO(001) and Fe/CoO(111) Bilayers", Joint European Magnetic Symp. JEMS 2012, Parma 2012

39. M.Morga, Z.Adamczyk, M.Oćwieja "Hematite Nanoparticle Monolayers - Streaming Potential Measurments", 7th Scientific Workshop for Postgraduate Students "Interfacial Phenomena in Theory and Practice" VII SUDOMIE 2012, Rybaki 2012

40. M.Morga, Z.Adamczyk, M.Oćwieja "Charakterystyka monowarstw nanocząstek hematytu na powierzchni miki w warunkach in situ metodą potencjału przepływu", 55. Zjazd PTChem i SITPChem, Białystok 2012

41. M.Nosek, P.Weroński "Application of Electrochemical Techniques to Study Colloidal Films", 7th Scientific Workshop for Postgraduate Students "Interfacial Phenomena in Theory and Practice" VII SUDOMIE 2012, Rybaki 2012

42. P.Nowak, A.Węgrzynowicz, K.Jakubiec, T.Chmielewski "Pyrite Oxidation and Inhibition by Certain Chemicals in Relation to the Problem of Acidity Generation in Acid Sulfate Soils", 7th Int. Acid Sulfate Soil Conf., Espoo 2012

43. M.Oćwieja, Z.Adamczyk "Mechanizmy adsorpcji oraz uwalniania nanocząstek srebra z powierzchni heterogenicznych", 55. Zjazd PTChem i SITPChem, Białystok 2012

44. M.Oćwieja, Z.Adamczyk, D.Synowiec, K.Małek "Synthesis of Silver Nanoparticles Suspension- SERS and other Applications", 7th Scientific Workshop for Postgraduate Students "Interfacial Phenomena in Theory and Practice" VII SUDOMIE 2012, Rybaki 2012

45. K.Onik, J.Podobiński, M.Derewiński "Zeolite Precursors Based Layer Materials - New Catalysts for the Liquid Phase Reactions", 11th Pannonian Int. Symp. on Catalysis, Obergurgl 2012

46. K.Onik, J.Podobiński, M.Derewiński "Catalytic Properties of New Laminar Materials Based on Nanoparticles of Zeolites", 19th Zeolite Forum, Małe Ciche 2012

47. K.Onik, J.Podobiński, M.Derewiński "Zeolite Seeds Precursors Incorporated in the Mesoporous Framework: Physicochemical and Catalytic Properties", 2. Warsztaty Naukowe ISD, Ochotnica Dolna 2012

48. A.Pajor-Świerzy, M.Kolasińska-Sojka, P.Warszyński "The Influence of Conductive Polyelectrolytes on the Formation of Electroactive Multilayer Films Containing Prussian Blue Nanoparticles", 9th Int. Symp. Polyelectrolytes ISP2012, Lausanne 2012

49. A.Pajor-Świerzy, P.Warszyński "Electroactive Multilayer Films of Polyelectrolytes and Prussian Blue Nanoparticles as a Sensitive Tool for H_2O_2 Detection", 1st Scientific Workshop of ISD Study, Zakopane 2012

50. H.Pálková, Ľ.Jankovič, V.Hronský, M.Zimowska, J.Madejová "Effect of Acid Treatment on the Organo-montmorillonite Structure", 6th Mid-European Clay Conf.MECC'12, Prague 2012

51. A.Płazińska, W.Płaziński, K.Jóźwiak "Interactions between Fenoterol and beta2-Adrenergic Receptor: the Stereoselective Binding and the Ligand Association/Dissociation Profiles", 5th Conversatory on Medicinal Chemistry, Lublin 2012

52. W.Płaziński, M.Drach "Calcium Binding by Alginates. Insight into the Molecular Details of the Process Dynamics", 6th Pacific Basin Conf. Adsorption Science and Technology, Taipei 2012

53. W.Płaziński, M.Drach "Calcium Binding by Alginates. Exploring the Free Energy Landscapes by the Transition Path Sampling Method", 22nd Int. Conf. Chemical Thermodynamics, Buzios 2012

54. W.Płaziński, A.Knyś-Dzieciuch "The 'Order-to-Disorder' Conformational Transition in CD44 Protein: an Umbrella Sampling Analysis", 5th Conversatory on Medicinal Chemistry, Lublin 2012

55. M.Radoń, E.Brocławik, K.Pierloot "Spin State Energetics of Heme-Related Models from DFT and ab initio Calculations", CECAM Conf. Spin States in Biochemistry and Inorganic Chemistry, Saragossa 2012

56. D.Rutkowska-Żbik, T.Korona "Możliwości kompleksowania porfiryny magnezu – badania metodą rachunku zaburzeń o adaptowanej symetrii", 55. Zjazd PTChem i SITPChem, Białystok 2012

57. D.Rutkowska-Żbik, R.Tokarz-Sobieraj, M.Witko "Alternatywna technologia przeróbki metanu: aromatyzacja na katalizatorze MoO_3/ZSM-5. Opis fazy aktywnej i mechanizmu reakcji", 7. Kongres Technologii Chemicznej, Kraków 2012

58. D.Rutkowska-Żbik, M.Witko "Transmetallation of Porphyrins: DFT Mechanistic Studies", 14th Int. Conf. Theoretical Aspects of Catalysis, Vlissingen 2012

59. D.Rutkowska-Żbik, M.Witko "Theoretical Modeling of Chlorophylls and Their Derivatives as Potential Therapeutic Agents", Conf. Modeling & Design of Molecular Materials 2012, Wroclaw 2012

60. R.Socha, M.Szczepanik-Ciba, B.Strzelczyk, E.Madej, B.Figarska, N.Spiridis, J.Korecki "Epitaxial Layers of Mixed Iron Manganese Oxides: Surface Properties and Reactivity", 16th Int. Conf. Solid Films and Surfaces, Genoa 2012

61. R.P.Socha, M.Zimowska, L.Matachowski, J.Gurgul, D.Mucha, J.Dziedzic "Silver Nanostructures Grown on Heteropolyacid Salts", 3rd Int. Symp. Surface Imagining/Spectroscopy at the Solid/Liquid Interface, Krakow 2012

62. B.Sulikowski, D.Szepietowska "Solid-state NMR Studies of Ultrastable Zeolite Y", 19th Zeolite Forum, Małe Ciche 2012

63. M.Szaleniec, A.Dudzik, M.Tataruch, K.Szymańska, A.Jarzębski, J. Bryjak, M.Witko "Zastosowanie dehydrogenazy (S)-1-fenyloetanolowej do syntezy chiralnych alkoholi drugorzędowych", 7. Kongres Technologii Chemicznej, Kraków 2012

64. M.Szaleniec, A.Dudzik, M.Tataruuch, M.Witko, D.Knack, J.Heider "Enantioselective Hydroxylation by Ethylbenzene Dehydrogenase - Origins of Enantioselectivity", 6th Int. Congr. Biocatalysis BIOCAT 2012, Hamburg 2012

65. K.Szczepanowicz, P.Warszyński "Polyelectrolyte Nanocapsules with Liquid Core: Their Application in Nanomedicine", 9th Int. Symp. Polyelectrolytes ISP2012, Lausanne 2012

66. L.Szyk-Warszyńska, K.Kilan, J.Piekoszewska, R.P.Socha, P.Warszyński "PLL/Casein and PLAr/Casein Multilayer Films- formation and stability", 26th Conf. European Colloid and Interface Society ECIS 2012, Malmo & Lund 2012

67. L.Szyk-Warszyńska, K.Kilan, P.Warszyński "Bild-up of poly-L-Arginine/Casein Multilayer Films on Solid Substrates", COST CM1101 Workshop Nano-biocolloidal materials and non-equilibrium self-assembly, Barcelona 2012

68. M.Ślęzak, T.Giela, D.Wilgocka-Ślęzak, A.Kozioł-Rachwał, T.Ślęzak, R.Zdyb, N.Spiridis, C.Quitmann, J.Raabe, J.Korecki, "Magnetic Properties of Fe Nanostructures on W(110) Studied with PEEM", 8th Int. Workshop on LEEM/PEEM, Hong Kong 2012

69. M.Tataruch, M.Szaleniec, J.Bryjak, K.Szymańska, A.Dudzik, J.Opalinska-Piskorz, M.Witko, A.Jarzębski, E.Luchter-Wasylewska, J.Heider "Immobilizowane dehydrogenazy etylobenzenowa i fenyloetanolowa jako narzędzia do biosyntezy chiralnie czystych składowych leków" 3. Ogólnopolskie Symp. Nowoczesne Techniki Badawcze w Ocenie Jakości Produktów Leczniczych, Lublin 2012

70. R.Tokarz-Sobieraj, R.Gryboś, D.Rutkowska-Żbik, P.Niemiec, M.Witko "Electronic Structure of Model Heteropolyacids and their Salts. Cluster and Periodic DFT Study", 15th Int. Congr. Catalysis, Munchen 2012

71. P.Warszyński, P.Dyshlovenko, Ph.Dejardin "Electrostatic Interaction between Spherical Particles with Dipolar Charge Distribution and a Charged Surface", COST CM1101 Workshop Discussion on Hydration Forces, Sofia 2012

72. P.Warszyński, M.Elżbieciak-Wodka, A.Pajor-Świerzy, M.Kolasińska-Sojka "Elektrochemical Probing of Polyelectrolyte Multilayers", 3rd Int. Symp. Surface Imagining/Spectroscopy at the Solid/Liquid Interface, Krakow 2012

73. J.Zawała, T.Dąbroś "Settling Properties of Aggregates in Paraffinic Bitumen Froth Treatment", 19th Int. Symp. Surfactants in Solution SIS2012, Edmonton 2012

74. M.Zimowska, H.Pálková, J.Madejová, R.Dula, K.Pamin, Z.Olejniczak, E.M.Serwicka "The Effect of Alumination Process on Surface Acidity of PCH Structures Derived from Laponite", 6th Mid-European Clay Conf.MECC'12, Prague 2012

75. M.Zimowska, H.Pálková, J.Madejová, R.Dula, K.Pamin, Z.Olejniczak, E.M.Serwicka "Acid Properties of Laponite-derived Porous Clay Heterostructures Modified by Doping with Aluminium", 19th Zeolite Forum, Małe Ciche 2012

2013

Plenary, keynote and invited lectures

1. Ł.Bratasz "Reviewing the Guidelines: Allowable Microclimatic Variations in Museums and Historic Buildings", Int. Scientific Workshop 'Heritage Science and Sustainable Development for the Preservation of Art and Cultural Assets - On the Way to the Green Museum', Berlin 2013

2. E.Brocławik, M.Radoń, A.Stępniewski "Nitric Oxide as a non-Innocent, Redox-Active Ligand in Catalytic and Biomimetic Systems: Resolution of Electron Transfer Processes", 6th Int. Annual Meeting 'Catalysis for Polluting Emissions Aftertreatment and Production of Renewable Energies', Groupement de Recherche International (GDRI CNRS-PAN), Wierzba 2013

3. E.Brocławik, A.Stępniewski, M.Radoń "Nitric Oxide as a non-Innocent Ligand in (Bio-)Inorganic Complexes: Charge Transfer Resolution", Conf. Current Trends in Theoretical Chemistry CTTC-VI, Kraków 2013

4. E.Brocławik, A.Stępniewski, M.Radoń "Nitric Oxide as a non-Innocent Ligand in (Bio-)Inorganic Complexes: Charge and Spin Transfer", 4th Georgian Bay Int. Conf. on Bioinorganic Chemistry, Parry Sound 2013

5. E.Brocławik, A.Stępniewski, M.Radoń "Tlenek azotu(II) jako „non-innocent" ligand w kompleksach (bio-)nieorganicznych: analiza kanałów przepływu ładunku", 56. Zjazd PTChem i SITPCh, Siedlce 2013

6. M. Derewiński "Kraking Katalityczny", 3. Warsztaty Naukowe ISD, Szczyrk 2013

7. J.Heider, M.Szaleniec, D.Knack, K.Sünwoldt "Ethylbenzene Dehydrogenase and Related Enzymes: Mechanism and Functions", 2013 Molybdenum & Tungsten Enzymes Conf., Sintra 2013

8. W.Łasocha "New Porous Materials and Catalysts - Scientific Results", Science Link Meeting 'Enhancement of Cross-border Cooperation between Research Infrastructures', Sankt Petersburg 2013

9. W.Łasocha "Metody krystalografii w sztuce". 3. Warsztaty Naukowe ISD, Szczyrk 2013

10. M.Łukomski "Speckle Interferometry in the Characterisation of Surface Damage in Art Objects", Int. Symp. 'Fundamentals of Laser Assisted Micro- and Nanotechnologies FLAMN-13', Sankt Petersburg 2013

11. M.Łukomski "Zarządzanie dziedzictwem kultury - wyzwanie dla nauk ścisłych", 2. Naukowe Warsztaty Wyjazdowe 'Medycyna regeneracyjna' ISD MOLMED, Zakopane 2013

12. K.Małysa, "Kinetics and Mechanism of the Liquid Films Rupture During the Bubble Collisions with Liquid/Gas and Liquid/Solid Interfaces", Seminar 'Layers at Interfaces' dedicated to 70th birthday of Professor Emil Chibowski, UMCS, Lublin 2013

13. B.Sulikowski "Five-Fold Symmetry in Science and Art", 16th National Conf. on Superconductivity and Strongly Correlated Systems, Zakopane 2013

14. B.Sulikowski "Symetria pięciokrotna w chemii i kulturze", 3. Warsztaty Naukowe ISD, Szczyrk 2013

15. M.Szaleniec, T.Borowski, M.Tataruch, A.Dudzik, D.Knack, M.Witko, J.Heider "Mechanizm i enancjoselektywność reakcji hydroksylacji węglowodorów przez dehydrogenazę etylobenzenową", 56. Zjazd PTChem i SITPCh, Siedlce 2013

16. M.Szaleniec, P.Dyshlovenko, L.Szyk-Warszyńska, P.Warszyński "Can Protein Adsorption be Described in Terms of Electrostatic Interactions ?", 4th Int. Conf. on Colloid Chemistry and Physicochemical Mechanics, Moscow 2013

17. P.Warszyński "Multilayer Funcional Coatings:Thin Films and Nanocapsules", Workshop 'Polymeric Nanostructurals Systems', Krakow 2013

18. P.Weroński "From Randomness to order: Modeling of Deposition of Colloidal Particles", 3. Warsztaty Naukowe ISD, Szczyrk 2013

19. M.Witko, P.Niemiec, R.Tokarz-Sobieraj, R.GryboS "Heteropolycompounds - What Can We Learn from DFT Studies", Symp.on Nanostructured Materials, Rzeszów 2013

20. M.Witko, P.Niemiec, R.Tokarz-Sobieraj, R.Gryboś, J.Haber "Electronic Properties of Modified Tungsten Heteropolyacids: DFT Modeling", 245th National Meeting of the American Chemical Society, New Orleans 2013

21. M.Witko, R.Tokarz-Sobieraj, P.Niemiec, R.Gryboś "Electronic Properties of Selected Heteropolyacids. DFT Modeling", 6th IDECAT/ERIC Conf. on Catalysis 'Design Advanced Multifunctional Catalysts for Sustainable Processes', Bressanone 2013

Oral presentations

1. Z.Adamczyk "Mechanism and Kinetics of Nanoparticle and Protein Adsorption", COST Action CM1101 WG2, WG3 & WG4 Meeting 'Functionalized Surfaces and Nanobiocomposites', Szeged 2013

2. Z.Adamczyk "Nanoparticles and Proteins at Surfaces: Revealing Universal Adsorption Mechanisms", 8th Summer School for Graduate Students 'Interfacial Phenomena in Theory and Practice', Sudomie 2013

3. P.Batys "Structure and Transport Properties of Colloidal Multilayers", 3. Warsztaty Naukowe ISD, Szczyrk 2013

4. P.Batys, P.Weroński "Controlling Structure and Surface Properties of LbL Multilayers", 27th Conf. of European Colloid and Interface Soc. ECIS, Sofia 2013

5. P.Batys, P.Weroński "Surface Properties of Particle Multilayers - Numerical Studies", 8th Summer School for Graduate Students 'Interfacial Phenomena in Theory and Practice', Sudomie 2013

6. P.Boroń, L.Chmielarz, J.Gurgul, K.Łątka, T.Shishido, J.-M.Krafft, S.Dźwigaj "SCR of NO with Ammonia on Fe-Containing Zeolite Catalysts", 45. Ogólnopolskie Kollokwium Katalityczne, Kraków 2013

7. T.Borowski, A.Miłaczewska, A.Wójcik "Insights into Reaction Mechanisms of Representative Mononuclear non-Heme Iron Enzymes. DFT Studies", Conf. Current Trends in Theoretical Chemistry VI, Kraków 2013

8. M.Cieśla, M.Wierzchoń, G.Mazgaj, J.Barbasz "Imlicit Learning Study Using Social Network", 1st Int. Avant-Conf. 'Trends in Interdisciplinary Studies', Toruń 2013

9. M.Cieśla, M.Wierzchoń, G.Mazgaj, J.Barbasz, I.Cieśla "Click The Bomb! The Imlicit Learning Study Using Social Network", 26th M.Smoluchowski Symp. on Statistical Physics, Kraków 2013

10. J.Dziedzic "Studies on the Photocatalytic Degradation of the Humic Substances Supported by Chemical Oxidation", 3. Warsztaty Naukowe ISD, Szczyrk 2013

11. J.Dziedzic, P.Nowak, P.Warszyński "Degradation of Industrial Dyes in Photocatalytic Process", 8th Summer School for Graduate Students 'Interfacial Phenomena in Theory and Practice', Sudomie 2013

12. A.Dziedzicka, B.Sulikowski "Modified, Natural Clinoptilolites from Slovakia and Mexico as Catalysts for Liquid-Phase Isomerization of α-Pinene", 17th Int. Zeolite Conf., Moscow 2013

13. A.Dziedzicka, B.Sulikowski "Właściwości fizykochemiczne i katalityczne modyfikowanego klinoptylolitu ze Słowacji", 3. Warsztaty Naukowe ISD, Szczyrk 2013

14. M.Elzbieciak-Wodka, K.Kilan, M.Kolasińska-Sojka, P.Warszyński "Effect of Electrostatics and Hydration on Formation and Permeability of Polyelectrolyte Multilayers", COST CM1101 WG2 & WG5 Meeting 'Balance of Interactions in Soft Matter Systems: Thermodynamics, Structure and Kinetics', Nicosia 2013

15. U.Filek, B.Sulikowski "Polyoxometalate in Catalysis", Joint Working Group Meeting COST Action 1203 - Polyoxometalate Chemistry for Molecular Nanoscience, Aveiro 2013

16. M.Gackowski "Deposition of Zeolite Nanoparticles onto Silica Monolith", 3. Warsztaty Naukowe ISD, Szczyrk 2013

17. J.Gao, J.Handzlik, R.GryboS, J.-M.Jehng, I.E.Wachs, S.Podkolzin "Spectroscopic and Computational Study of Cr and Mo Oxide Nanostructures in ZSM-5 for Methane Dehydroaromatization", 23rd North American Catalysis Society Meeting, Louisville 2013

18. T.Giela, D.Wilgocka-Ślęzak, M.Ślęzak, N.Spiridis, J.Korecki "The Investigation of High Temperature Tungsten Oxide Phases and Their Transitions with LEEM Microscopy", 8th Int. Conf. Solid State Surfaces and Interfaces, Smolenice 2013

19. M.Góra, B.Kozik, M.Nattich-Rak, K.Jamroży, M.Łuczyński "Application of Aqueous Solutions of Phosphates and Surfactants for Hydrothermal Biomass Pretreatment", 4th Int. Environmental Best Practices Conf., Olsztyn 2013

20. M.Grzesiak-Nowak "Metal-Organic Frameworks of Metals from s-block - New Barium and Strontium Dicarboxylates", 3. Warsztaty Naukowe ISD, Szczyrk 2013

21. M.Grzesiak-Nowak, A.Szymańska, G.Appleby, W.Łasocha "XRPD Structural Studies of New Group of Coordination Polymers10. Krajowe Symp. Użytkowników Promieniowania Synchrotronowego, Stalowa Wola 2013

22. B.Jachimska "Bovine Serum Albumin (BSA) Conformation Investigated by Quartz Crystal Microbalance (QCM-D) Measurements, Surface Plasmon Resonance (MP-SPR) and Atomic Force Microscopy (AFM) Measurements on a Silica Surface", 6th Int. Workshop on Surface Modification for Chemical and Biochemical Sensing SMCBS'2013, Łochów 2013

23. B.Jachimska "Structure of Adsorbed Dendrimer Monolayers Investigated by Combining QCM-D and MP-SPR Techniques", Int. SPR Workshop 'New Dimensions in Life Sciences', Kraków 2013

24. A.Jagusiak, B.Piekarska, T.Pańczyk, P.Laidler "Badanie właściwości kompleksów nanorurek węglowych i związków typu czerwieni kongo jako potencjalnych układów celowanego dostarczania leków", 3. Konf. Doktorantów Wydziału Lekarskiego i Farmaceutycznego Collegium Medicum UJ, Kraków 2013

25. M.Jaworska, E.Sikora, K.Szczepanowicz, J.Ogonowski "Wpływ rodzaju surfaktanta na fizykochemiczne właściwości nanoemulsji na bazie kwasu oleinowego", Forum-Innowacyjne Materiały, Lublin 2013

26. M.Jaworska, E.Sikora, K.Szczepanowicz, J.Ogonowski "Wpływ charakteru bazy emulsyjnej zawierającej kwas oleinowy na uwalnianie mentolu", Forum-Innowacyjne Materiały, Lublin 2013

27. M.Kolasińska-Sojka, A.Pajor-Świerzy, P.Warszyński "Electroactive Properties of the Multilayer Films Containing Prussian Blue Nanoparticles", 14th Int. Conf. on Organized Molecular Films (LB 14) ICOMF14, Paris 2013

28. D.Kosior, J.Zawała, K.Małysa "Bubble Bouncing and Kinetics of the Three-Phase Contact Formation at Hydrophobic Surface in n-Octanol Solution", 4th Int. Conf. on Colloid Chemistry and Physicochemical Mechanics, Moscow 2013

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34. M.Krzak "Anticorrosive Polymer Coatings with Water Barrier Properties Improved by Water Traps Addition", 3. Warsztaty Naukowe ISD, Szczyrk 2013

35. M.Krzak, K.Szczepanowicz, Z.Tabor, G.Mordarski, P.Nowak, P.Warszyński "'Smart' Nanocontainers and Water Traps as a Novel Approach to Active Anticorrosion Protection by Polymer Coatings", 6th Kurt Schwabe Symp., Kraków 2013

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38. L.Krzemień, M.Łukomski, M.Strojecki, Ł.Bratasz "The Effect of Growth Rings Structure on the Response of Wood Subjected to Changing Climate Conditions", Conf. 'Computational Plasticity XII - Fundamentals and Applications', na 2013

39. L.Krzemień, M.Łukomski "Time-Averaged Digital Speckle Pattern Interferometry for Investigation of Art Objects Surfaces", Conf. on New techniques for the Non-Invasive Investigation of the Surface and Subsurface Structure of Heritage Objects", Toruń 2013

40. K.Kubiak, Z.Adamczyk "Silver Nanoparticle Monolayers on PAH Modified Surfaces - QCM and AFM Studies", 8th Summer School for Graduate Students 'Interfacial Phenomena in Theory and Practice', Sudomie 2013

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42. K.Luberda-Durnaś "Hybrid Organic-Inorganic Layered Materials, Precursors of Semiconducting Nanostructures", Conf. Transdisciplinary Cooperation and Applications of Nanoscience, Kraków 2013

43. K.Luberda-Durnaś, D.Mucha, E.Bielańska, W.Łasocha "Hybrydowe organiczno-nieorganiczne materiały warstwowe będące prekursorami półprzewodników", 55 Konwersatorium Krystalograficzne, Wrocław 2013

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49. G.Mordarski "Węglowe ogniwa paliwowe z elektrolitem węglanowym". Konf. Węglowe Ogniwa Paliwowe, Bełchatów 2013

50. M.Mosiałek, M.Dudek, P.Nowak, R.P.Socha "Silver Migration Caused by Polarization at the $Ag|Al_{0.04}Sc_{.06}Zr_{.9}O_{.95}$ Interface", 6th Kurt Schwabe Symp., Kraków 2013

51. P.Niemiec, R.Tokarz-Sobieraj "Theoretical Description of Physicochemical Properties of Modified Cu-HPA: Influence of Cu Position in Keggin Anion", 3. Warsztaty Naukowe ISD, Szczyrk 2013

52. P.Niemiec, R.Tokarz-Sobieraj, M.Witko "Modified Heteropolyacids - DFT Cluster Calculations", Conf. Current Trends in Theoretical Chemistry CTTC-VI, Kraków 2013

53. M.Nosek "Cyclic Voltammetry Method for Examining Ion Transport Through Porous Layer", 3. Warsztaty Naukowe ISD, Szczyrk 2013

54. M.Nosek, P.Batys, P.Weroński, G.Mordarski "Effect of Densely Packed Monolayer on the Limiting Diffusion Current - Experimental View", Book of Abstracts. 8th Summer School for Graduate Students 'Interfacial Phenomena in Theory and Practice', Sudomie 2013, p. 50

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56. P.Nowak, G.Mordarski, W.Satora "Electrocrystallization of Rhenium and Its Alloys from Aqueous Solutions, 3rd Int. Conf. on By-Product Metals in Non-Ferrous Metals Industry 'On the Way to Complete Raw Materials Utilization", Wrocław 2013

57. P.Nowak, M.Przybyła, M.Tatko, M.Mosiałek, M.Zimowska, M.Dąbkowska, M.Ruggiero-Mikołajczyk "LSM-Ag Composite Material for Solid Oxide Fuel Cells", 13th E-MRS Conf. on Composites and Ceramic Materials - Technology, Application and Testing. Białowieża 2013

58. M.Oćwieja, Z.Adamczyk, M.Kujda, K.Małek, D.Synowiec "The Influence of Organic and Inorganic Stabilizing Agents on Antibacterial Properties of Silver Nanoparticles and the Enhancement Effect in SERS Measurements", 6. Krajowa Konf. Nanotechnologii NANO2013, Szczecin 2013

59. M.Oćwieja, Z.Adamczyk, M.Morga "Controlled Release of Silver Nanoparticles from Monolayers Deposited on PAH-Covered Mica", 14th European Student Colloid Conf., Potsdam-Golm 2013

60. M.Oćwieja, Z.Adamczyk, M.Morga, E.Bielańska "Synteza i charakterystyka fizykochemiczna stabilnych suspensji nanocząstek srebra do zastosowań katalitycznych", 45. Ogólnopolskie Kollokwium Katalityczne, Kraków 2013

61. K.Onik "Zeolite Seeds Precursors Incorporated in the Mesoporous Framework: Physicochemical and Catalytic Properties", 3. Warsztaty Naukowe ISD, Szczyrk 2013

62. Ł.Orzeł, D.Rutkowska-Żbik, R.van Eldik, L.Fiedor, M.Witko, G.Stochel "Transmetalation of Chlorophylls: Distort to Activate", 2nd EuCheMS Inorganic Chemistry Conf., Jerosolima 2013

63. Ł.Orzeł, G.Stochel, R.van Eldik, D.Rutkowska-Żbik, M.Świrski, M.Witko "Transmetalacja chlorofilu a - mechanizmy aktywacji", 17. Mikrosympozjum 'Kinetyczne metody badania mechanizmów reakcji w roztworach', Poznań 2013

64. M.Oszajca, W.Łasocha, "Udokładnianie struktur z uzyciem funkcji PDF", 10. Krajowe Symp. Użytkowników Promieniowania Synchrotronowego, Stalowa Wola 2013

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66. T.Pańczyk "A Magnetically Controlled Drug Delivery Vehicle. Mechanism of Action from Molecular Dynamics Simulations", 8th Int. Conf. on Fine Particle Magnetism, Perpignan 2013

67. M.Piotrowski, K.Szczepanowicz, D.Jantas, W.Lasoń, P.Warszyński "Nanocapsules for Neuroprotective Drugs: Synthesis and Evaluation of Chemical and Pharmacological Properties', 19th Int. Symp. on Microencapsulation, Pamplona 2013

68. W.Płaziński, M.Drach "Calcium Binding by Alginates: Structural and Dynamic Aspects", Book of Abstracts. 3rd Molecular Materials Meeting M3, Singapore 2013

69. W.Płaziński, M.Drach "The Structure of Calcium Alginate: Insights from the Molecular Modeling Studies", Int. Symp. on Atomistic Modeling for Mechanics and Multiphysics of Materials ISAM4, Tokyo 2013

70. W.Płaziński, M.Drach "Carbohydrate Ring Puckering: Transition Path Sampling Analysis", Conf. on Advances in Theory and Simulation of Non-Equilibrium System, London 2013

71. J.Radoń, F.Antretter, A.Sadlowska, M.Łukomski, Ł.Bratasz "Simulation of Energy Consumption for Dehumidification with Cooling in National Museum in Krakow", 3rd European Workshop on Cultural Heritage Preservation EWCHP 2013, Bolzano 2013

72. A.Rafalska-Łasocha, W.Łasocha, M.Grzesiak-Nowak, A.Pawlak, E.Nosek "Application of Crystallographic Methods to the Study of Paintings and Archaeolgical Objects", 28th European Crystallography Meeting, Coventry 2013

73. D.Rutkowska-Żbik, G.Mazur, A.Drzewiecka-Matuszek, K.Rzęsikowska, Ł.Orzeł, G.Stochel, M.Witko "Vitamin B12 as a Drug Carrier: DFT Studies", Conf. Modeling Interactions in Biomolecules VI, Marianske Lazne 2013

74. D.Rutkowska-Żbik, M.Oszajca, A.Drzewiecka-Matuszek, A.Franke, M.Brindell, G.Stochel, M.Witko, R.van Eldik "The Influence of N-Methylimidazole on the Reactivity of a Model Complex for Cpd II - A Combined Experimental and Theoretical Study", 16th Int. Symp. on Relations between Homogeneous and Heterogeneous Catalysis ISHHC-16, Sapporo 2013

75. D. Rutkowska-Żbik, R.Tokarz-Sobieraj, J.Korecki "Nauczanie nanotechnologii - stan obecny", ", 6. Krajowa Konf. Nanotechnologii NANO2013, Szczecin 2013

76. D.Rutkowska-Żbik, M.Witko "Catalysis Research at the Jerzy Haber Institute of Catalysis and Surface Chemistry Polish Academy of Sciences", 6th Int. Annual Meeting 'Catalysis for Polluting Emissions Aftertreatment and Production of Renewable Energies', Groupement de Recherche International (GDRI CNRS-PAN), Wierzba 2013

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78. M.Skoczek, P.Batys, P.Weroński, E.Luchter-Wasylewska "Molecular Dynamics Simulations of High-Cholesterol Containing Membrane Vesicles", 8th Summer School for Graduate Students 'Interfacial Phenomena in Theory and Practice', Sudomie 2013

79. R.P.Socha, M.Szczepanik-Ciba, B.Strzelczyk, N.Spiridis, J.Wojas, J.Korecki "Utlenianie CO na odwrotnym modelowym katalizatorze MnO/Pt(111)", 45. Ogólnopolskie Kollokwium Katalityczne, Kraków 2013

80. K.Sofińska, Z.Adamczyk, M.Nattich-Rak "Recombinat Human Serum Albumin (rHSA) Monolayers on Colloidal Carriers", 8th Summer School for Graduate Students 'Interfacial Phenomena in Theory and Practice', Sudomie 2013

81. P.Sten, S.Engblom, S.Heikkila, T.Andersson, P.Nowak "Toxic Metals and Acidity Generation by the Oxidation of Metal Sulfides Present in Soils - An Attempt of Prevention", Mineral Engineering Conf. MEC2013, Świeradów Zdrój 2013

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83. M.Strojecki, M.Łukomski, Ł.Bratasz "Acoustic Emission as a New Tool for the Assessment of Microclimate Instability Impact on Wooden Art Objects", Joint Interim Conf. 'ICOM-CC Heritage Wood: Research & Conservation in the 21st Century', Warszawa 2013

84. M.Szaleniec "Biokatalityczna synteza alkoholi chiralnych", Life Science Open Space, Kraków 2013

85. M.Szaleniec, A.Dudzik, M.Tataruch, T.Borowski, M.Witko, J.Heider "Alternatywne mechanizmy reakcji katalizowanych przez dehydrogenazę etylobenzenową - modelowanie DFT i badania chromatograficzne", 45. Ogólnopolskie Kollokwium Katalityczne, Kraków 2013

86. K.Szczepanowicz, S.Łukasiewicz, M.Dziedzicka-Wasylewska, P.Warszyński "Polyelectrolyte Nanocapsules as a Drug Carriers", Joint COST Action CM1101Meeting WG 3, WG 4, WG 5 'Synthesis, Kinetics and Catalytic Aspects of Biocolloids', La Valletta 2013

87. K.Szczepanowicz, M.Piotrowski, T.Kruk, K.Podgórna, P.Warszyński "Targeted Drug Delivery Systems Based on Polyelectrolyte Nanocapsules", 27th Conf. of European Colloid and Interface Soc. ECIS, Sofia 2013

88. A.Szymańska "Structural and Physicochemical Studies of Molybdenum Oxo-Peroxo and Oxo Complexes", 3. Warsztaty Naukowe ISD, Szczyrk 2013

89. M.Ślęzak, T.Giela, D.Wilgocka-Ślęzak, N.Spiridis, T.Ślęzak, M.Zając, M.Stankiewicz, N.Pilet, J.Raabe, C.Quitmann, J.Korecki "Prospects of X-Ray Photoemission Electron Microscopy at the First Beamline of Polish Synchrotron SOLARIS", 8th Int. Conf. Solid State Surfaces and Interfaces, Smolenice 2013

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92. M.Tatko, M.Mosiałek, M.Dudek, A.Kwapisz, M.Boruta, E.Bielańska, G.Mordarski "Kompozytowy materiał katodowy Ag-$La_{0.6}Sr_{0.4}Co_{0.8}Fe_{0.2O3}$ do zastosowania w stałotlenkowych ogniwach paliwowych", 13th E-MRS Conf. on Composites and Ceramic Materials - Technology, Application and Testing. Białowieża 2013

93. M.Tatko, M.Mosiałek, M.Dudek, G.Mordarski, E.Bielańska, J.Wojewoda-Budka, A.Michna "Composite Cathode Material Ag-$Ba_{0.5}Sr_{0.5}Co_{0.8}Fe_{0.2}O_3$ for Solid Oxide Fuel Cells", 6th Kurt Schwabe Symp., Kraków 2013

94. R.Tokarz-Sobieraj, P.Niemiec "Cu jako dodatkowy element w strukturze heteropolikwasów o geometrii Keggina", 56. Zjazd PTChem i SITPCh, Siedlce 2013

95. V.Ulaganathan, M.Krzan, M.Lotfi, S.S.Dukhin, K.Małysa, R.Miller "Influence of β-Lactoglobulin and Its Surfactant Mixtures", 27th Conf. of European Colloid and Interface Soc. ECIS, Sofia 2013

96. P.Warszyński, "On the origin of the surface charge at water/air interface", COST CM1101 Workshop 'Dynamic and Liquid Interfaces', Potsdam-Golm 2013Potsdam-Golm 2013

97. M.Zając, A.Bianco, C.J.Bocchetta, E.Busetto, J.Korecki, K.Kubal, F.Melka, M.Ostoja-Gajewski, M.Sikora, M.J.Stankiewicz, Ł.Walczak, A.I.Wawrzyniak, K.Wawrzyniak, Ł.Żytniak "First Beamline at Solaris", 10. Krajowe Symp. Użytkowników Promieniowania Synchrotronowego, Stalowa Wola 2013

98. J.Zawała, S.Dorbolo, N.Vandewalle, K.Małysa "Immortal Mubbles - Effect of Interface Vibrations on Bubble Coalescence Time at Pure Water Surface", 27th Conf. of European Colloid and Interface Soc. ECIS, Sofia 2013

99. J.Zawała, E.Małysa, M.Krzan, K.Małysa "Monitoring of Contamination of Environmental and Industrial Waters Using the Bubble Velocity Measurements - Advantages and Limitations", Mineral Engineering Conf. MEC 2013, Świeradow Zdroj 2013

100. W.Ziemnicka, P.Wolski, A.Brzyska, K.Woliński "Deformacje nanorurek węglowych w obecności sił zewnętrznych - symulacje kwantowo-chemiczne", Forum-Innowacyjne Materiały, Lublin 2013

101. P.Żeliszewska, A.Bratek-Skicki, Z.Adamczyk "Tuning Conformations and Stability of Fibrinogen Monolayers on Latex Patricles", 27th Conf. of European Colloid and Interface Soc. ECIS, Sofia 2013

102. P.Żeliszewska, A.Bratek-Skicki, Z.Adamczyk "Mechanism of Human Fibrinogen Adsorption on Latex Particles", 8th Summer School for Graduate Students 'Interfacial Phenomena in Theory and Practice', Sudomie 2013

Conferences and scientific events organized by the Institute

2012

1. XLIV Ogólnopolskie Kolokwium Katalityczne, Kraków, 14-16 marca 2012 (B.Sulikowski)

2. 4th Meeting X-Ray Techniques in Investigations of the Objects of Cultural Heritage. Celebrating the 100th Anniversary of Crystal X-Ray Diffraction, Krakow, May 17th-19th, 2012 (R.Kozłowski, W.Łasocha)

3. 5th International Workshop Bubble and Drop Interfaces B&S 2012, Krakow, May 20th-24th, 2012 (K.Małysa, B.Jachimska)

4. 3rd International Symposium on Surface Imaging / Spectroscopy at the Solid / Liquid Interface, Krakow, Mat 25th-June 1st, 2012 (P.Nowak)

5. 8th International Symposium Surface Heterogeneity Effects in Adsorption and Catalysis on Solids ISSHAC-8, Krakow, August 26th-31st, 2012 (W.Rudziński)

6. Sesja Jubileuszowa 100-lecia urodzin Profesora Adama Bielańskiego, Kraków, 14 grudnia 2012 (M.Witko)

2013

1. XLV Ogólnopolskie Kollokwium Katalityczne, Kraków13-15 marca 2013 (B.Sulikowski)

2. International SPR Workshop "New Dimensions in Life Sciences", Kraków, April 12th, 2013 (B.Jachimska)

3. HEREDITAS Centre Workshop "Identification, Conservation and Protection of Art Works Made of Polymeric Materials" ARTPLAST, Kraków, December 4th-5th, 2013 (M.Łukomski)