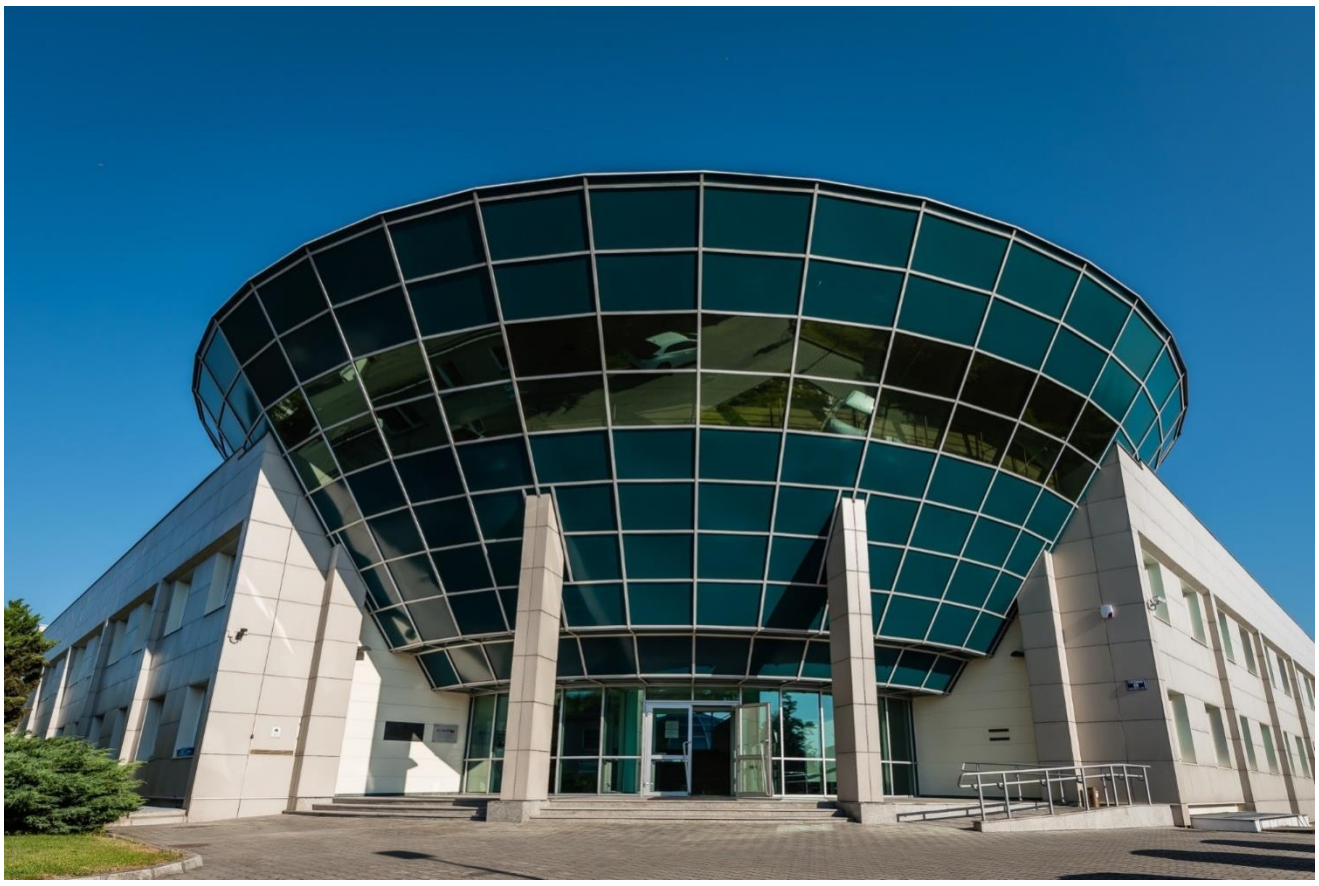
JERZY HABER INSTITUTE OF CATALYSIS AND SURFACE CHEMISTRY POLISH ACADEMY OF SCIENCES

KNOW Leading National Research Centers

HR EXCELLENCE IN RESEARCH

RESEARCH REPORT

GENERAL INFORMATION FOR YEARS 2017-2019



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Introduction

Research

The Jerzy Haber Institute of Catalysis and Surface Chemistry of the Polish Academy of Sciences (ICSC PAS) 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, biochemistry, medicine, chemical technology, biotechnology, material engineering and heritage science. 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 70 are research staff. The number of PhD students involved in research in ICSC PAS is in the range of 30-35, depending on the year and available resources. The recruitment in ICSC PAS is conducted according to the Open Transparent Merit-Based Recruitment Policy implement within actions of 'HR excellence in research'. The HR excellence logo is a prestigious award of European Commission recognizing institutions that align their human resource policies to EU 'Charter and Codex'. As all recruitments in ICSC PAS are conducted with help of EURAXESS platform a number of foreigners among scientific staff steadily increases.

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

- Catalytic processes and advanced materials for sustainable development
- Physics and chemistry of surfaces and nanostructures
- Nanostructures of soft matter
- 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. The work is targeted at application in processing of hydrocarbons, end-of-pipe environmental catalysis, CO_2 utilization, fuel cells and green chemistry reactions, and involves also the description of kinetic and mechanistic aspects of the studied processes

A wide range of experimental and theoretical tools are used to elucidate mechanisms of catalytic reactions on molecular level, i.e. to identify and characterize various electronic and structural factors influencing the selectivity and direction of chemical processes. In last 15 years the Institute expanded its expertise in the field of homogenous and heterogeneous catalysis in the direction of enzyme catalysis and biotechnology. Here also, a synergetic theoretical and experimental approach is applied to elucidate mechanisms of the studied systems and develop useful biocatalysts. In addition to standard chemical and physical methods, techniques such as microbiology, molecular biology and reaction engineering are used to obtain industrially ready biotechnologies. Recently, the Institute opened a new line of research dedicated to biodegradable bioplastic materials that are synthetized from renewable resources by specialized bacteria. These materials, formed in biotransformation process, are than characterized and further upgraded thanks to unique expertise of the Institute in surface chemistry.

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, nanometalic 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 that utilize a range of different approaches such as solid state physics modelling methods, molecular dynamics and Monte-Carlo simulations.

The investigation outcomes are turned into applications encompassing catalytic materials and processes for pollutant removal to protect the environment and to product of highly valuable fine chemicals and pharmaceuticals, to manufacture innovative biomedical materials as well as to improve materials and methods for cultural heritage conservation. For example, the 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.

ICSC PAS is equipped with state-of-the-art research facilities, in many cases unique on the national scale. The Institute shares its facilities in the frame of joint-laboratories within wide scientific community, with prime example of PEEM/XAS line of Solaris National Synchrotron Radiation Centre or Joint Laboratory of Biotechnology and Enzyme Catalysis.

In the years 2017-2019, our organizational structure consisted of nine research groups and five laboratories:

Research groups

Catalysis:

1. Theoretical and Experimental Biocatalysis
2. Heterogeneous Catalysis : Theory and Experiment
3. Layered Minerals, Mesoporous Oxides, Nanostructures
4. Catalytic Processes for Clean Energy

Surface chemistry:

5. Adsorption
6. Colloids
7. Soft Matter Nanostructures
8. Surface Nanostructures

Protection of cultural heritage:

9. Cultural Heritage Research

Laboratories:

1. Laboratory of XRD and Thermoanalysis
2. Laboratory of Nanostructures and Surfaces
3. Laboratory of Scanning Electron Microscope
4. Laboratory of Atomic Force Microscopy
5. Joint Laboratory of Biotechnology and Enzymatic Catalysis

Education

The Institute has a rich educational experience.

PhD studies

ICSC PAS has opened the International PhD Studies in 2000. They are conducted on a full-time basis and last for 4 years. 98% of graduates completed their studies defending their doctoral dissertation. As part of the International PhD Studies, 146 graduate students completed the study programme (77 conducting doctoral dissertations at the Institute, 34 from the Rzeszow University of Technology, 35 from the Cracow University of Technology). In the years 2008-2012 the Institute implemented the project "Krakow Interdisciplinary PhD-Projects in Nanoscience and Advanced Nanostructures" and participated in two Interdisciplinary PhD projects: as a coordinator – in the project "Molecular sciences for medicine", as a partner – in the project "Advanced materials for modern technologies and energy of the future".

Since 2017, the Institute opened PhD training in two new Interdisciplinary PhD projects:

1) as a coordinator (with May Institute of Pharmacology PAS, The Henryk Niewodniczanski Institute of Nuclear Physics PAS, Faculty of Chemistry and Faculty of Medicine Jagiellonian University) - in the project InterDokMed “PhD Studies in Interdisciplinarity for Innovative Medicine”, where 50 PhD students from different units (10 from Institute) implement a common framework program, covering classes in various fields and translational sciences; dissertations will be conducted under the supervision of two promoters representing different institutions and fields of science.

2) as a partner (with Faculty of Physics and Applied Computer Science AGH University Science and Technology as coordinator, The Henryk Niewodniczanski Institute of Nuclear Physics PAS, Faculty of Chemistry Jagiellonian University, Faculty of Materials Science and Ceramics AGH University Science and Technology) – in the project FCB "Physical, Chemical and Biophysical Foundations of Modern Technologies and Materials Engineering", where 75 PhD students (4 from Institute) have the opportunity to obtain a degree in the following disciplines: physics, chemistry, biophysics, material engineering and chemical technology.

On May 6, 2019, Institute with The Henryk Niewodniczański Institute of Nuclear Physics PAS, Maj Institute of Pharmacology PAS, Aleksander Krupkowski Institute of Metallurgy and Materials Science PAS and AGH University of Science and Technology signed the agreement on establishing a PhD school "Krakow Interdisciplinary Doctoral School". In October 2020, 30 PhD students (4 from Institute) started training and research as part of their doctoral dissertation.

Currently 34 PhD students carry out their doctoral dissertation at the Institute within the structures outlined above. PhD students of the Institute are leaders and investigators of many scientific projects (PRELUDIUM, DOCTUS) and obtain prestigious funded scholarships (including scholarships of the president of the Polish Academy of Sciences, scholarships in TEAM and OPUS projects).

In 2016, doctoral studies at the Institute obtained the international accreditation (for year 2016-2020) of the European Chemistry Thematic Network (ECTN) and received the status of "Chemistry Doctorate Eurolabel" (as the third center in the country and the only one of the PAS institutes).

The doctoral studies at the ICSC were awarded many times in the PROPAN competition for the most pro-doctoral institute of the Polish Academy of Sciences (in 2013 the second place, in 2014 and in 2015 the first place, in 2017 the second place, in 2018 the second place).

Others

As an expression of appreciation for the Institute in educational activities, the Institute participated in the implementation of the NanoEIS project "Nanotechnology Education for Industry and Society", FP7-CSA-SA. The project proposed a model curriculum for nanotechnology for first, second and third cycle studies.

The Institute takes active part in educating young staff. In the years 2017-2019, under the supervision of the Institute's employees 22 bachelor's, engineering and master's theses are created (9 in 2017, 7 in 2018, 6 in 2019). 139 students from Krakow Universities and even students of Krakow high schools undertakes their summer practices in the Institute (45 in 2017,45 in 2018, 49 in 2019).

In 2019 the Institute signed the special chemistry outreach agreement with 10th High School in Krakow which will be executed in forthcoming years.

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 more than fifty years, the Institute has organised the annual Polish Annual Conference on Catalysis, a key event for the research community in the field.

The Institute intensifies the use of its research infrastructure by organizing joint laboratories with a number of research centres: the Centre for Surface and Nanostructure Research, the Joint Laboratory of Biotechnology and Enzyme, 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’, the Consortium for participation of Poland in European Research Infrastructure for Heritage Science.

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 (in total 4). Between 2017 and 2019, we have participated in coordinated COST Actions such as ‘Explicit Control Over Spin-states

in Technology and Biochemistry', 'A New Network of European Bioimage Analyst to Advance Life Science Imaging' and 'Computational materials sciences for efficient water splitting with nanocrystals from abundant elements'.

The Institute participates in the ERASMUS+ network as well as National Agency for Academic Exchange Programme (PROM). Both PhD students and research staff benefit from research and training visits at foreign research institutions financed by these networks. In addition, the Institute regularly hosts visiting students from abroad.

The Institute organised also a whole range of scientific events, annual conferences and workshops (full list available in the 'Conferences and scientific events organized by the Institute' section of the report)

Science popularization

The Institute is involved in the promotion of science among the public. It organizes the popular competition for the Award of Jerzy Haber for the best Master Theses "in the field of chemistry, physics and the borderline of chemistry and biology, chemistry and physics or physics and biology regarding the issues of surface physicochemistry and/or catalysis". The application to the Jerzy Haber Award come from all academic units in Poland.

For 16 years the Institute has been actively promoting Science through the organization of the annual Open Days. The event is extremely popular among primary and secondary school students as the Institute is visited yearly by approximately 1,000 visitors. ICSC also participates in the organization of the annual Science Festival at the Main Market Square in Krakow, as well as participated in the 18th Science Picnic at the National Stadium in Warsaw. The Institute is also involved in various outreach initiative during which our employees conduct lectures and experimental shows dedicated for various stages of educational institutions (pre-schools, primary and secondary level). Furthermore, the Institute's employees regularly promote research in training for Polish museum workers organized by the National Institute of Museology and Collection Protection.

Statistics 2017-2019

	2017	2018	2019	Σ
Publications				
monographs	0	1	0	1
chapters in monographs	4	6	6	16
articles in journals evaluated in Thomson Reuter Journal Citation Reports	109	130	139	378
articles in other journals and books	10	8	6	24
Patents	5	1	1	7
Patent applications	2	3	0	5
Domestic research projects Σ	33	36	44	113
granted in a given year	12	8	10	30
International research projects Σ	6	7	15	28
granted in a given year	3	0	9	12
Participation in conferences				
invited lectures	27	22	17	66
orals	92	137	93	322
posters	140	216	142	498
Conferences &	4	6	6	16
Popular scientific events organized by the Institute	2	2	2	6
Scientific titles and degrees granted				
professor	1	0	1	2
DSc (habilitation) by ICSC	1	2	4	7
PhD (doctorate) by ICSC	9	3	4	16
PhD students	31	39	34	104

Research Groups and Laboratories

Heads of the research groups in italics
Staff members and PhD students as on December 31st, 2019

Adsorption

Professor Tomasz Pańczyk DSc

Associate Professor Barbara Jachimska DSc, Associate Professor Wojciech Płaziński DSc, Agnieszka Brzyska PhD, Paweł Wolski PhD

PhD students: Karolina Gawęda, Paulina Komorek, Karina Nester, Magdalena Szota, Patrycja Wojtoń

Cultural Heritage Research

Associate Professor Łukasz Bratasz DSc

Abdollahzadeh Jamalabadi PhD, Leszek Krzemień PhD, Michał Łukomski DSc, Lindsay Oakley PhD, Marcin Strojecki PhD, Magdalena Soboń MSc

Theoretical and Experimental Biocatalysis

Professor Tomasz Borowski DSc

Professor Maciej Szaleniec DSc, Maciej Guzik PhD, Sangita Kachhap PhD, Adam Kaczmarski MSc, Katarzyna Kurpiewska PhD, Anna Miłaczewska PhD, Magdalena Procner PhD, Mateusz Tataruch PhD, Agnieszka Wojtkiewicz PhD

PhD students: Justyna Andrys, Agnieszka Gibała, Michał Glanowski, Katarzyna Haraźna, Ewa Kot, Anna Kluza, Beata Mrugała, Justyna Prajsnar, Anna Sekuła, Wojciech Snoch, Agnieszka Winiarska, Patrycja Wójcik, Zuzanna Wojdyła

Heterogeneouse catalysis: theory and experiment

Associate Professor Dorota Rutkowska-Żbik DSc

Professor Małgorzata Witko DSc, Professor Mirosław Derewiński DSc, Associate Professor Renata Tokarz-Sobieraj DSc, Anna Micek-Ilnicka DSc, Agnieszka Drzewiecka-Matuszek PhD, Urszula Filek PhD, Mariusz Gackowski PhD, Małgorzata Ruggiero-Mikołajczyk PhD, Katarzyna Samson PhD, Michał Śliwa PhD, Małgorzata Zimowska PhD, Jerzy Podobiński MSc, Wojciech Rojek MSc

PhD students:, Joanna Miąsik, Natalia Ogrodowicz, Małgorzata Smoliło

Colloids

Professor Zbigniew Adamczyk DSc

Associate Professor Paweł Weroński DSc, Jakub Barbasz DSc, Aneta Michna DSc, Małgorzata Nattich-Rak DSc, Magdalena Oćwieja DSc, Piotr Batys PhD, Anna Bratek-Skicki PhD, Julia Maciejewska-Prończuk PhD, Maria Morga PhD, Marta Sadowska PhD, Lilianna Szyk-Warszyńska PhD, Monika Wasilewska PhD, Paulina Żeliszewska PhD, Katarzyna Kusak Eng, Elżbieta Porębska

PhD students: Agnieszka Kurek, Dawid Lupa, Karolina Pałka

XRD and Thermoanalysis Laboratory

Professor Wiesław Łasocha DSc

PhD Students: Adrianna Sławińska

Layered Minerals, Mesoporous Oxides, Nanostructures

Professor Ewa Serwicka-Bahranowska DSc

Katarzyna Pamin DSc, Roman Dula PhD, Dorota Duraczyńska PhD, Robert Karcz PhD, Joanna Kryściak-Czerwenka PhD, Joanna Olszówka PhD, Alicja Michalik PhD, Daria Napruszewska MSc

PhD students: Anna Walczyk

Nanostructures of Soft Matter

Professor Piotr Warszyński DSc

Associate Professor Krzysztof Szczepanowicz DSc, Associate Professor Jan Zawała DSc, Marta Kolasińska-Sojka DSc, Michał Mosiałek DSc, Georgi Gochev PhD, Ewelina Jarek PhD, Dzmitry Kharytonau PhD, Magdalena Kowacz PhD, Marcel Krzan PhD, Grzegorz Mordarski PhD, Anna Pajor-Świerzy PhD, Magdalena Włodek PhD, Marzena Noworyta Eng, Marta Szczęch MSc

PhD students: Mariusz Borkowski, Agnieszka Czakaj, Dorota Gaweł, Zofia Krasińska-Krawet, Piotr Skowron, Agata Wiertel-Pochopień

Surface Nanostructures

Professor Józef Korecki DSc

Associate Professor Nika Spiridis DSc, Jacek Gurgul DSc, Kinga Freindl, PhD, Ewa Madej PhD, Piotr Mazalski PhD, Ewa Młyńczak PhD, Robert Socha PhD, Dorota Wilgocka-Ślęzak PhD,

PhD students: Natalia Kwiatek, Joanna Wojas

Catalytic Processes for Clean Energy

Professor Alicja Drelinkiewicz DSc

Aleksandra Pacuła DSc, Robert Kosydar PhD, Erwin Lalik PhD

Research Themes and Projects

Leading National Research Centre as member of the Marian Smoluchowski Krakow Research Consortium "Matter-Energy-Future" [2012-2017]

STATUTORY RESEARCH

2017

Catalytic Materials and Processes for Sustainable Development

- Catalytic Processes Using Bio-Resources. Palladium Catalysts Reactivity Modification by Tungsten Hydrogen Bronzes – Professor Alicja Drelinkiewicz
- New Peroxo-compounds of Mo(VI), W(VI) and V(V). Synthesis, Structural Studies and Applications in Oxidation Processes – Professor Wiesław Łasocha
- Catalytic Oxide Systems for Production High Value Added Products – Components of Fuels and Plastics – Associate Professor Dorota Rutkowska-Żbik DSc
- Hydrogenation of Ketones in the Presence of Metallic Catalysts Supported on Micro- and Mesoporous Carriers – Professor Ewa Serwicka-Bahranowsk
- Selective Hydrogenation of Benzene over Metallic Catalysts – Professor Ewa Serwicka-Bahranowska
- Catalytic Oxidation of Cyclohexanone to ε-Caprolactone with Hydrogen Peroxide over Natural Basic Minerals – Professor Ewa Serwicka-Bahranowska
- Electrochemical Properties of Gold as a Material for Connectors in Solid Oxide Fuel Cells – Dr Michał Mosiałek DSc
- Enzymatic Processes – Basic and Applied Research. Selected Enzymes and Photocatalytic Set Free CO – Computational Research – Professor Tomasz Borowski
- Experimental and Theoretical Description of Heteropoly Compunds, Modified at the Central and Compensating Ions Position – Professor Małgorzata Witko

Physical Chemistry of Surfaces and Nanostructures – Experiment and Theory

- Novel Materials with Different Pore Structure: Synthesis, Physicochemical and Catalytic Properties, and Spectroscopic Studies – Professor Bogdan Sulikowski
- Structural, Electron Properties and Dynamics of Surface and Nanostructures Studied with Microscopic and Spectroscopic Techniques Radiation in the Ultra High Vacuum Conditions, Magnetic Properties of the CoO/Fe(001) System: Exchange-Bias in Function of Layer Thickness and Temperature – Professor Józef Korecki
- Studies of the Influence of Microscopic and Physicochemical Parameters on the Ability to Control the Properties of Systems with Biomedical Importance. Forced Structural Changes in Selected Oligosaccharides – Professor Tomasz Pańczyk

Soft Matter Nanostructures

- Topology of Protein Monolayers at the Solid/Electrolyte Interfaces and Mechanisms of Their Interactions with Ionic and Macromolecular Ligands. Determining Binding Efficiency of Divalent Cations to Serum Albumin Monolayers – Professor Zbigniew Adamczyk

- Determination of Mechanisms of Synthesis, Structure, and Transport Parameters of Supported Colloidal Particle Multilayers. Kinetic Aspoects of Spherical Particles Multilayers Formation Using "Layer-byLayer" Method – Associate Professor Paweł Weroński DSc
- Kinetics of Three-Phase Contact Formation at Quartz Surface in Solutions of Surface-Active Substances – Dr Jan Zawała DSc
- Functional Polyelectrolyte Multilayers Films – Professor Piotr Warszyński
- Properties of Degradable Surfactants as Emulsifiers/Nanoemulsion Stabilizers. Description of Adsorption of Esterquats and/or Amidequats Type Degradable Surfactants on Free Surface – Professor Piotr Warszyński

Physical Chemistry in the Protection of Cultural Heritage

- Quantitative Assessment of Risk to Heritage Objects Due to Microclimatic Conditions in the Environment – Professor Roman Kozłowski

2018

Catalytic Materials and Processes for Sustainable Development

- Catalytic Processes Using Bio-Resources. Pd-Ir Catalysts for Carbonyl Compounds Conversion – Professor Alicja Drelinkiewicz
- New Peroxo-compounds of Mo(VI), W(VI) and V(V). Synthesis, Structural Studies and Applications in Oxidation Processes – Professor Wiesław Łasocha
- Catalytic Oxide Systems for Production High Value Added Products – Components of Fuels and Plastics. Studies of Nature and Characters of Active Sites in System Cu-FAU31 as Catalysts for Furfural to Furan Hydrogenation – Associate Professor Dorota Rutkowska-Żbik DSc
- New Catalytic Materials for "Green Chemistry" Processes. Hydrotalcite Systems as Catalysts for Baeyer-Villiger Oxidation – Professor Ewa Serwicka-Bahranowsk
- Equivalent electrical circuit of the magnesium electrode corroding in indifferent electrolyte solutions – Dr Michał Mosiałek DSc
- Enzymatic Processes – Basic and Applied Research. Characteristics of Native and Immobilized (*R*)-1-Phenylethanol Dehydrogenase – Professor Tomasz Borowski
- Alcohols Dehydration on Modified Heteroplyacids – Professor Małgorzata Witko

Physical Chemistry of Surfaces and Nanostructures – Experiment and Theory

- Physicochemical Properties of Novel Zeolitic Materials Studied by Solid State NMR Spectroscopy – Professor Bogdan Sulikowski
- Structural, Electron and Dynamics Properties of Surface and Nanostructures Studied with Microscopic and Spectroscopic Techniques in the Ultra High Vacuum Conditions – Professor Józef Korecki
- Molecules with biological Importance in Reference to their Interaction with a Surface and Refining their Theoretical Description – Professor Tomasz Pańczyk

Soft Matter Nanostructures

- Topology of Protein Monolayers at the Solid/Electrolyte Interfaces and Mechanisms of Their Interactions with Ionic and Macromolecular Ligands. Mechanisms of Albumin Monolayesrts Formation on Heterogeneous Surfaces – Professor Zbigniew Adamczyk

- Determination of Mechanisms of Synthesis, Structure, and Transport Parameters of Supported Colloidal Particle Multilayers – Associate Professor Paweł Weroński DSc
- Influence of Initial Adsorption Coverage on Kinetics of Dynamic Adsorption Layer Formation – Associate Professor Jan Zawała DSc
- Functional Polyelectrolyte Multilayers Films. Antibacterial and Antiadhesive Mutlilayrered Nanocomposite Films – Professor Piotr Warszyński
- Properties of Degradable Surfactants as Emulsifiers/Nanoemulsion Stabilizers – Professor Piotr Warszyński
- Physicochemical Properties of Functional Nanocarriers Based on Dendrimer Systems – Associate Professor Barbara Jachimska DSc

Physical Chemistry in the Protection of Cultural Heritage

- Quantitative Assessment of Risk to Heritage Objects Due to Microclimatic Conditions in the Environment – Professor Roman Kozłowski

2019

Catalytic Materials and Processes for Sustainable Development

- The Pd-Ir catalysts of different Pd/Ir proportions; influence of Ir content on the hydrogenation of furfural – Professor Alicja Drelinkiewicz
- New peroxo and polyoxo compounds of Mo (VI), W (VI) and V (V). Synthesis, structural studies and applications in oxidation processes – Professor Wiesław Łasocha
- Studies of structural effects and influence of suport on the catalytic activity of copper-based systems – Associate Professor Dorota Rutkowska-Żbik DSc
- New catalytic materials for „green chemistry" processes – Professor Ewa Serwicka-Bahranowska
- New cathode materials for high-temperature fuel cells with reduced operating temperatures – Dr Michał Mosiałek DSc
- Enzymatic processes – basic and applied research – Professor Tomasz Borowski

Physical Chemistry of Surfaces and Nanostructures – Experiment and Theory

- Structural, electronic and dynamics properties of surface and nanostructures studied with microscopic and spectroscopic techniques under ultra-high vacuum conditions – Professor Józef Korecki
- Molecules with biological importance in reference to their interaction with a surface and refining their theoretical description – Professor Tomasz Pańczyk

Soft Matter Nanostructures

- Topology of protein monolayers at the solid/electrolyte interfaces and mechanisms of their interactions with ionic and macromolecular ligands. Influence of sensor topography on the kinetics of albumin adsorption – Professor Zbigniew Adamczyk
- Determination of mechanisms of synthesis, structure, and transport parameters of supported colloidal particle multilayers – Associate Professor Paweł Weroński DSc
- Influence of initial adsorption coverage at liquid/gas interface on stability of foam and wetting films under dynamic conditions – Associate Professor Jan Zawała DSc

- Functional multilayer polyelectrolyte films – Dr Marta Kolasińska-Sojka DSc
- Nanoparticles as neuroprotective substance carriers – Associate Professor Krzysztof Szczepanowicz DSc
- Physicochemical Properties of Functional Nanocarriers Based on Dendrimer Systems – Associate Professor Barbara Jachimska DSc

Physical Chemistry in the Protection of Cultural Heritage

- Quantitative Assessment of Risk to Heritage Objects Due to Microclimatic Conditions in the Environment – Professor Roman Kozłowski

RESEARCH PROJECTS

"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 – Professor Tomasz Pańczyk
- NZ1 [2015-2020] 2-Oxoglutarate Dependent Oxygenases in the Biosynthesis of Pharmacologically Active Alkaloids - Structure, Catalytic Mechanisms and Rational Redesign – Professor Tomasz Borowski
- ST4 [2016-2020] Molecular mechanics force field for structure, dynamics and conformation of carbohydrates involving furanoses – Associate Professor Wojciech Płaziński DSc

"Sonata" Research Projects of the National Science Centre

- ST5 [2012-2017] Targeted Drug Delivery Systems - Synthesis and Functionalization of Nanocarriers – Dr Krzysztof Szczepanowicz, DSc
- ST4 [2013-2017] The Mechanism of Regioselective Oxidation of Cholesterol Derivatives by a Novel Molybdenum Enzyme, Steroid 25-OH Dehydrogenase from *Stereolibacterium denitrificans* –Professor Maciej Szaleniec
- ST4 [2013-2017] Mechanism and Kinetics of Bubble Coalescence at Undisturbed and Vibrating, with Controlled Frequency and Amplitude, Liquid/gas Interfaces –Dr Jan Zawała DSc
- ST4 [2015-2018] New Protein Bilayer System Based on Antigen-Antibody Interactions – *In situ* Physicochemical Characteristics – dr Monika Wasilewska
- ST4 [2016-2019] Lipase-Mediated Biosynthesis of Novel Lactose Esters. Physicochemical and Anticancer Studies – Dr Maciej Guzik
- ST4 [2016-2019] Formation Mechanisms and Functionality of Nanoparticle Multilayers with Incorporated Biomolecules – Dr Maria Morga
- ST4 [2016-2019] Bio Oligo/Polysaccharides under the External Forces – Dr Agnieszka Brzyska
- ST4 [2017-2020] Influence of ZrO_2 Crystallographic Structure on Activity of Cu/ZrO_2 and Cu/ZrO_2-ZnO Catalysts Doped with Ga, Mn, Ni in Low Temperature Steam Reforming of Bio-Ethanol – Dr Michał Śliwa
- ST5 [2019-2022] From a single molecule to smart material - understanding the polypeptide complexes formation and properties – Dr Piotr Batys

"Opus" Research Projects of the National Science Centre

- ST5 [2014-2017] Synthesis and Physicochemical Characterization of the Electrocatalysts Containing Non-noble (Fe, Mn) and Noble (Pd) Metals Deposited on Porous N-Doped Carbon Materials with Different Morphologies and Examination them in Oxygen Reduction Reaction – Dr Aleksandra Pacuła DSc
- ST5 [2014-2017] Innovative Total Oxidation Catalysts Derived from Organosmectites Intercalated with Reverse Micelles Containing Oxide/hydroxide Nanostructures – Professor Ewa Serwicka-Bahranowska
- NZ1 [2015-2018] 2-Oxoglutarate Dependent Oxygenases Catalyzing Atypical Oxidative Transformations - Structural and Mechanistic Studies –Professor Tomasz Borowski
- ST5 [2016-2019] Theranostic Nanocarriers for MRI Imaging – Professor Piotr Warszyński
- ST5 [2016-2019] A New Generation of Hierarchical Y and Omega Zeolite Catalysts: Advanced IR and NMR Studies and Molecular Modeling – Professor Ewa Brocławik

- ST5 [2016-2019] Nanoparticle Monolayers of Controlled Heterogeneity and Structure as Efficient Antifoulong Substrates – Professor Zbigniew Adamczyk
- ST3 [2017-2020] Magnetic Nanoparticles on Periodic Iron Oxide Templates: Control of Magnetism Using Particle Substrate Interaction and External Electric Field – Associate Professor Nika Spiridis DSc
- ST8 [2017-2020] Development of Modern Generation Technology of Stable Biological Surface Film for Various Bio-Medical Applications (Antibacterial or Regeneration Properties) – Dr Marcel Krzan
- ST4 [2017-2020] The Mechanism of Regioselective Oxidative Dehydrogenation of 3-Ketosteroids Catalyzed by Δ^1-Cholest-4-en-3-one Dehydrogenase from *Sterolibacterium denitrificans* – Professor Maciej Szaleniec
- ST4 [2017-2020] Theoretical and Experimental Studies on the Mechanism of Oxidative Dehydrogenation (ODH) of Light Alkanes over Vanadium-containing Hierarchical Zeolite Materials – Associate Professor Dorotra Rutkowska-Żbik DSc
- ST8 [2017-2020] The Influence of Counterions on the Formation and Functionality of Polyelectrolyte Membranes – Dr Marta Kolasińska-Sojka DSc
- ST5 [2017-2020] Dendrimers as a Platform for Designing Biologically Active Carrier – Associate Professor Barbara Jachmimska DSc
- ST8 [2018-2021] In Search of Effective and Environmental Friendly Frothers and Emulsifiers – Quantitative Description of Thin Liquid Film Stability in Solutions of „Green" Surfactants – Associate Professor Jan Zawała DSc
- ST4 [2018-2021] pH Stimuli Responsive Surfactants and Copolymers for Nanovehicles Formation – Professor Piotr Warszyński
- ST4 [2018-2021] Studies of the Interactions of Carbon Nanotubes with Telomeric DNA by Means of the Molecular Dynamics Simulations – Professor Tomasz Pańczyk
- ST5 [2018-2021] Biopolymers as Templates for Preparation of Nanostructured Hydrotalcite-Like Materials and their Calcined Mixed Oxides Derivatives for Catalytic Applications – Professor Ewa Serwicka-Bahranowska
- ST8 [2019-2022] New polysaccharide-based biomaterials as an effective platform for adsorption and release fibroblast growth factors: applications in diagnostics and treatment of diseases of affluence – Dr Aneta Michna DSc
- ST5 [2019-2022] Novel composites of smectite minerals and TiO_2 nanoparticles prepared by inverse microemulsion method for photocatalytic applications – Professor Ewa Serwicka-Bahranowska

"Preludium" Research Projects of the National Science Centre

- ST4 [2016-2017] Polyelectrolyte-Lipids Films with Incorporation Hydrophobic Nanoparticles – Magdalena Włodek MSc
- ST5 [2017-2019] Synthesis of Theranostic Biopolymer-Based Nanoparticles – Marta Szczęch MSc
- ST4 [2017-2019] Functional Hybrid Nanomaterials Based on poly(Amidoamine) PAMAM Dendrimers – Karolina Tokarczyk MSc
- ST4 [2018-2020] Effect of Controlled Adsorption Time on Kinetics of Three-Phase Contact Formation at Solid Surfaces with Different Hydrophobicity –Agata Wiertel-Pochopień MSc

- ST4 [2018-2020] Tungsten-Containing Aldehyde Oxidoreductase from *Aromatoleum aromaticum* - Study of Catalytic Reaction Mechanism – Agnieszka Winiarska MSc

"Fuga" Research Projects of the National Science Centre

- ST3 [2015-2018] High Resolution Analysis of the Spatial Properties of Structured Magnetic Nanostructures – Dr Piotr Mazalski
- ST4 [2015-2018] Effect of Electromagnetic Radiation in the Infrared Range on Protein-Surface Interactions – Dr Marta Kowacz

"Miniatura" Research Projects of the National Science Centre

- ST4 [2017-2018] The Role of Hydrogen Molybdenum and Tungsten Bronzes in Hydrogenation of Bioreagent 5-Hydroxymethylfurfural over Pd/MoO_3 and Pd/WO_3 Catalysts – Dr Robert Kosydar
- ST5 [2017-2018] Stabilization of the Catalytic Activity of 1-(*R*)-Phenylethanol Dehydrogenase by Immobilization on Polylysine – Dr Mateusz Tataruch
- ST4 [2018-2019] Hydrotalcite-Like Heterogeneous Catalysts for Baeyer-Villiger Type Oxidation of Steroids to Corresponding Lactones with Hydrogen Peroxide – Dr Robert Karcz
- ST4 [2018-2019] Searching of Novel Bacterial Ketosteroid Dehydrogenases for Oxidative Dehydrogenation of Steroids – Dr Agnieszka Wojtkiewicz
- ST4 [2019-2020] Investigation of docking of aliphatic hydrocarbons on zeolite active centers by molecular dynamics - scientific internship – Dr Agnieszka Drzewiecka-Matuszek
- ST3 [2019-2020] Optimization of magnetic measurements of ultrathin epitaxial ferromagnetic metals layers by magnetic circular dichroism (XMCD) – Dr Kinga Freindl
- ST5 [2019-2020] Physicochemical Characterization of Stimuli-Responsive Smart-Materials. Short Scientific Visit in Lutkenhaus Lab at Texas A&M Universitty – Dr Piotr Batys
- ST4 [2019-2020] Preliminary examination on the impact of rare-earth alloying on corrosion mechanisms of magnesium alloys and its prevention by inorganic inhibitors – Dr Dimitri Kharitonov
- ST5 [2019-2020] 'Confinement effect' - 5-fluorouracil in mesopores –Dr Mariusz Gackowski
- ST4 [2019-2020] Isothermal titration calorimetry (ITC) in biochemical characterization of α-ketoglutarate dependent enzymes. Internship at McGill University in prof. Mittermaier group – Dr Anna Miłaczewska
- ST4 [2019-2020] The influence of transition metals doping into oxide systems on photocatalytic removal of volatile organic compounds – Dr Urszula Filek

"Beethoven" Research Projects of the National Science Centre

- ST3 [2018-2021] Domain Wall Dynamics and Magnetic Texture Behavior in Magnetic Films with Dzyaloshinskii-Moriya Interaction – Dr Piotr Mazalski

“Beethoven Life 1” Research Projects of the National Science Centre

- NZ1 [2020-2023] Structure and function of fumarate-adding glycyl radical enzymes: biochemistry, modeling and application (FAEREACTION) – Professor Maciej Szaleniec

“Premia na Horyzoncie 2” Programme Projects of the Ministry of Science and Higher Education

- [2019-2020] ENERGY-X Transformative Chemistry for a Sustainable Energy Future – Associate Professor Dorota Rutkowska-Żbik DSc and Prossor Małgorzata Witko
- [2019-2022] Innovative and affordable service for PC monitoring of individual Cultural Artefacts during display, storage, handling and transport – Associate Professor Łukasz Bratasz DSc

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

- [2016-2019] Determination of the Influence of Surface Properties of Silver Nanoparticles on Their Cytotoxic Activity Towards the Human Cells of Immune System and the Cells of Connective Tissues – Dr Magdalena Oćwieja DSc

Applied Research Programme Projects of the National Centre for Research and Development

- [2013-2017] HERIVERDE Energy Efficiency of Museum and Library Institutions – Associate Professor Łukasz Bratasz DSc

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

- [2017-2019] New Functionalised Polymers for Biomedical Applications – Dr Maciej Guzik

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

- [2019-2021] Vegetable oil biorefining technology for production of advanced composite materials – Dr Maciej Guzik

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

- [2017-2019] Development of methodology of Synthesis and Stabilization of Metal Nanoparticles for Conductive Materials – Dr Anna Pajor-Świerzy

"Polskie Powroty – Polish Returns" Programme Research Projects of the Polish National Agency for Academic Exchange

- [2018-2022] CRAQELURE – Associate Professor Łukasz Bratasz DSc

Exchange of PhD Students and Academic Staff Programme Projects of the Polish National Agency for Academic Exchange

- PROM [2018-2020] International Scholarship Exchange of PhD Candidates and Academic Staff (ICSC PAS) – Professor Tomasz Borowski

Bilateral Scientific Exchange Programme Projects of the Polish National Agency for Academic Exchange

- Germany [2019-2020] Smart Liquid/Gas Interfaces with Photo-Switchable Surfactants (Smart Air-Water Interfaces with Photo-Switchable Surfactants and their Role on the Stabilization of Responsive Foam) – Dr Marcel Krzan
- Czech Republic [2019-2020] Methane Selective Oxidation to Methanol of Over Metallozeolites Catalysts – Associate Professor Dorota Rutkowska-Żbik DSc
- Germany [2019-2020] Understanding Molecular Aspects of the Protein Misfolding Process: *in situ* Spectroscopic and Microscopic Studies – Associate Professor Barbara Jachimska DSc

EC Horizon 2020 Framework Programme Projects

- Horizon 2020 ENERGY-X (CSA) [2019-2020] ENERGY-X Transformative Chemistry for a Sustainable Energy Future – Associate Professor Dorota Rutkowska-Żbik DSc and Professor Małgorzata Witko DSc
- Horizon 2020 CollectionCare [2019-2021] Innovative and affordable service for PC monitoring of individual Cultural Artefacts during display, storage, handling and transport transport – Associate Professor Łukasz Bratasz DSc

EU COST Actions

- EC COST CM 1305 [2012-2018] ECOSTBio Explicit Control Over Spin-states in Technology and Biochemistry – Professor Ewa Brocławik DSc
- EC COST CA15124 [2016-2020] NEUBIAS A New Network of European Bioimage Analyst to Advance Life Science Imaging – Dr Marcel Krzan
- EC COST 18234 [2019-2023] Computational materials sciences for efficient water splitting with nanocrystals from abundant elements – Professor Małgorzata Witko

Projects of the Norwegian Research Council

- NRC 274749 SyMBoL [2018-2021] Sustainable Management of heritage Buildings in a Long-term Perspective – Professor Roman Kozłowski

Projects of EU Structural Funds Programmes

- POWER ŚSD InterDokMed [2017-2022] InterDokMed Regional PhD Studies Multidisciplinarity for Innovative Medicine – Associated Professor Renata Tokarz-Sobieraj DSc
- POWER IŚSD FCB [2017-2022] FCB Multidisciplinary Regional PhD Studies 'Physical, Chemical, and Biophysical Base for Modern Material Sciences – Associate Professor Anna Micek-Ilnicka

Other International Projects

- Intergovernmental Polish-Slovak Project [2016-2018] Immobilization of Metal Nanoparticles on Organo-Modified Layered Silicates – Dr Małgorzata Zimowska
- Intergovernmental Polish-Italian Project [2017-2019] Biocompatible Particle-Stabilized Foams and Emulsions as Carriers for Healing Agents – Dr Marcel Krzan
- Intergovernmental Polish-Czech Project [2017-2019] Role of interfacial properties in dynamics of bubbles and drops – Associate Professor Jan Zawała DSc
- Intergovernmental Polish-Bulgarian Project [2018-2020] Biocompatible Particle-Stabilized Foams and Emulsions as Carriers for Biomedical Application – Dr Marcel Krzan
- Intergovernmental Polish-Ukrainian Project [2018-2019] Synthesis of Novel Organic-Inorganic Hybrid Materials to Use as Catalysts for Fine Organic Synthesis – Professor Ewa Serwicka-Bahranowska
- Intergovernmental Polish-Italian Project [2019-2021] Biocompatibile foams and emulsions stabilized by natural surfactants and particles for bio-medical applications – Dr Marcel Krzan
- EIG Concert Japan project X-MEM [2019-2022] X-MEM Outperfoming Functionality: Composite/Mixed Matrix Porous Materials in Membrane-Based Processes – Dr Aleksandra Pacuła DSc

Other Scientific Activities

- [2017] Roughness of Model Random Surfaces – Dr Paweł Weroński DSc
- [2016-2018] Acoustic Emission Monitoring of Historical Furniture in Knole, UK - Dr Marcin Strojecki

Scientific Output of the Institute

Printed scientific publications

2017

Chapters in monographs

1. E. Brocławik, M. Radoń "Wybrane zastosowania nowoczesnych metod chemii kwantowej", in "Podstawy i perspektywy chemii koordynacyjnej. Tom 2. Perspektywy i zastosowania chemii koordynacyjnej" (Z. Stasicka, G. Stochel, eds.), Wydawnictwo Uniwersytetu Jagiellońskiego, Kraków 2017, Chapter 20 [ISBN 9788323341673]

2. V. Honcharov, V. Zazhigalov, Z. Sawlowicz, R. Socha, J. Gurgul "Structural, Catalytic, and Thermal Properties of Stainless Steel with Nanoscale Metal Surface Layer", in: "Nanophysics, Nanomaterials, Interface Studies, and Applications" (O. Fesenko, L. Yatsenko, eds.), Springer Proceedings in Physics, vol.195, Springer 2017, pp. 355-364 [ISBN 978-3-319-56244-5]

3. M. Oćwieja "Tuning the Properties of Silver Monolayers for Biological Applications", in: "Silver Nanoparticles for Biological Devices: Biocompability and Toxicity" (E.Cao, ed.), CRC Press, Boca Raton 2017, pp. 37-54 [ISBN 9781498725330]

4. A. Płazińska, W. Płaziński, M. Koliński "Binding Affinities of Gi and Gs Proteins to the b2-Adrenergic Receptor: Insights from the Coarse-grained Molecular Dynamics Simulations", Proc. Int. Conf. on Computational Modeling & Simulation ICCMS-2017 (S. Weerasinghe, ed.), Faculty of Science, University of Colombo, Colombo 2017, pp. 280-283 [ISBN 978-955-703-0110-1]

Articles in journals evaluated in Thomson Reuters Journal Citation Reports

1. K. Bahranowski, A. Gaweł, A. Klimek, A. Michalik-Zym, B.D. Napruszewska, M. Nattich-Rak, M. Rogowska, E.M. Serwicka "Influence of Purification Method of Na-Montmorillonite on Textural Properties of Clay Mineral Composites with TiO_2 Nanoparticles", Appl. Clay Sci., 140 (2017) 75-80

2. A. Barbasz, M. Oćwieja, M. Roman "Toxicity of Silver Nanoparticles Towards Tumoral Human Cell Lines U-937 and HL-60", Colloids Surf. B, 156 (2017) 397-404

3. A. Barbasz, M. Oćwieja, S. Walas "Toxicological Effects of Three Types of Silver Nanoparticles and Their Salt Precursors Acting on Human U-937 and HL-60 Cells", Toxicol. Mech. Methods, 27 (2017) 58-71

4. S. Basąg, F.Kovanda, Z. Piwowarska, A. Kowalczyk, K. Pamin, L. Chmielarz "Hydrotalcite-Derived Co-Containing Mixed Metal Oxide Catalysts for Methanol Incineration", J. Therm. Anal. Calorim., 129 (2017) 1301-1311

5. P. Batys, S. Luukkonen, M. Sammalkorpi "Ability of Poisson-Boltzmann Equation to Capture Molecular Dynamics Predicted Ion Distribution around Polyelectrolytes, Phys. Chem. Chem. Phys., 19 (2017) 24583-24593

6. A. Biessikirski, Ł. Kuterasiński, J. Pyra, M. Dworzak "On the Comparison of Emulsion Bulk Explosives Obtained from Aqueous Ammonium Nitrate Solutions", Przem. Chem., 96 (2017) 571-574

7. E. Brocławik, K. Góra-Marek, M. Radoń, T. Bucko, A. Stępniewski "The Dependence on Ammonia Pretreatment of N-O Activation by Co(II) Sites in Zeolites: a DFT and *ab initio* Molecular Dynamics Study", J. Mol. Model., 23 (2017) 160-173

8. M. Cieśla, J. Barbasz "Surface Fine Structure Influence on Saturated Random Packings", J. Chem. Phys., 146 (2017) 054706

9. M. Dąbkowska, M. Adamczak, J. Barbasz, M. Cieśla, B. Machaliński "Adsorption/Desorption Transition of Recombinant Human Neurotrophin 4: Physicochemical Characterization", Langmuir, 33 (2017) 9548-9557

10. W. Dec, M. Mosiałek, R.P. Socha, M. Jaworska-Kik, W. Simka, J. Michalska "Characterization of Desulfovibrio Desulfuricans Biofilm on High-alloyed Stainless Steel: XPS and Electrochemical Studies", Mater. Chem. Phys., 195 (2017) 28-39

11. P. Dubiela, R. Aina, D. Polak, S. Geiselhart, P. Humeniuk, B. Bohle, S. Alessandri, R. Del Conte, F. Cantini, T. Borowski, M. Bublin, K. Hoffmann-Sommergruber "Enhanced Pru p 3 IgE-binding Activity by Selective Free Fatty Acid Interaction", J. Allergy Clinical Immunol., 140 (2017) 1728-1731

12. M. Elżbieciak-Wodka, M. Kolasińska-Sojka, P. Warszyński "Effect of mono- and divalent ions on the formation and permeability of polyelectrolyte multilayer films", J. Electroanal. Chem., 789 (2017) 123-132

13. F. Frasca, A.M. Siani, G.R. Casale, M. Pedone, Ł. Bratasz, M. Strojecki, A. Mleczkowska "Assessment of Indoor Climate of Mogiła Abbey in Kraków (Poland) and the Application of the Analogues Method to Predict Microclimate Indoor Conditions", Environ. Sci. Pollut. Res., 24 (2017) 13895-13907

14. K. Gawęda, W. Płaziński "Pyranose Ring Conformations in Mono- and Oligosaccharides: a Combined MD and DFT Approach", Phys. Chem. Chem. Phys., 19 (2017) 20760-20772

15. T. Giela, D. Wilgocka-Ślęzak, M. Ślęzak, N. Spiridis, J. Korecki "LEEM Study of High-temperature Oxygen Structures on W(110) and Their Transformations", Appl. Surf. Sci., 425 (2017) 314-320

16. J. Gurgul, E. Młyńczak, A. Kozioł-Rachwał, K. Matlak, K. Freindl, E. Madej, N. Spiridis, T. Ślęzak, J. Korecki "Magnetic Properties of Epitaxial CoO/Fe(001) Bilayers: The Onset of Exchange Bias as a Function of Sub-layer Thickness and Temperature", Phys. Rev. B, 96 (2017) 104421

17. A.Y. Gyurova, A. Michna, L. Nikolov, E. Mileva "Self-assembly of Four- and Two-antennary Oligoglycines in Aqueous Medium", Colloids Surf. A, 519 (2017) 106-116

18. A. Jagusiak, B. Piekarska, T. Pańczyk, M. Jemiola-Rzeminska, E. Bielańska, B. Stopa, G. Zemanek, J. Rybarska, I. Roterman, L. Konieczny "Dispersion of Single-wall Carbon Nanotubes with Supramolecular Congo Red - Properties of the Complexes and Mechanism of the Interaction", Beilstein J. Nanotechnol., 8 (2017) 636-648

19. M.Jarosz, RP.Socha, P.Jóźwik, G.D.Sulka "Amperometric Glucose Sensor Based on the Ni(OH)2/Al(OH)4− Electrode Obtained from a Thin Ni3Al Foil", Appl. Surf. Sci., 408 (2017) 96-102

20. P.J. Jodłowski, R.J. Jedrzejczyk, D.K. Chlebda, A. Dziedzicka, Ł. Kuterasiński, A. Gancarczyk, M. Sitarz "Non-Noble Metal Oxide Catalysts for Methane Catalytic Combustion: Sonochemical Synthesis and Characterisation", Nanomater., 7 (2017) 174

21. P.J. Jodłowski, Ł. Kuterasiński, R.J. Jedrzejczyk, D. Chlebda, A. Gancarczyk, S. Basag, L. Chmielarz "DeNO(x) Abatement Modelling over Sonically Prepared Copper USY and ZSM5 Structured Catalysts", Catalyst, 7 (2017) 205

22. M. Kaczmarska, D. Zydek, J. Wilkłacz-Potoczny, M. Fornal, T. Grodzicki, E. Kochowska, K. Kozak, Ł. Gocal, W. Pohorecki, K. Matlak, J. Korecki, K. Burda "The Influence of Very Small Doses of Alpha Radiation on the Stability of Erythrocytes", Microsc. Res. Tech., 80 92017) 131-144

23. R. Karcz, J. Dedecek, B. Supronowicz, H.M. Thomas, P. Klein, E. Tabor, P. Sazama, V. Pashkova, S. Sklenak "TNU-9 Zeolite: Aluminum Distribution and Extra-Framework Sites of Divalent Cations", Chem: European. J., 37 (2017) 8857-8870

24. R. Karcz, P. Niemiec, K. Pamin, J. Połtowicz, J. Kryściak-Czerwenka, B.D. Napruszewska, A. Michalik-Zym, M. Witko, R. Tokarz-Sobieraj, E.M. Serwicka "Effect of Cobalt Location in Keggin-type Heteropoly Catalysts on Aerobic Oxidation of Cyclooctane: Experimental and Theoretical Study", Appl. Catal. A, 542 (2017) 317-326

25. M. Kolasińska-Sojka, M. Włodek, M. Szuwarzyński, S. Kereiche, L. Kovacik, P. Warszyński "Properties of POPC/POPE supported lipid bilayers modified with hydrophobic quantum dots on polyelectrolyte cushions", Colloids Surf. B, 158 (2017) 667-674

26. A. Kornas, R. Grabowski, M. Śliwa, K. Samson, M. Ruggiero-Mikołajczyk, A. Żelazny "Dimethyl Ether Synthesis from CO_2 Hydrogenation over Hybrid Catalysts: Effects of Preparation Methods", React. Kinet. Mech. Catal., 121 (2017) 317-327

27. P.B. Kowalczuk, J. Zawała, J. Drzymała "Concentration at the Minimum Bubble Velocity (CMV) for Various Types of Flotation Frothers", Minerals, 7 (2017) 118

28. A. Kozioł-Rachwał, T. Nozaki, K. Freindl, J. Korecki, S. Yuasa, Y. Suzuki "Enhancement of Perpendicular Magnetic Anisotropy and Its Electric Field-induced Change through Interface Engineering in Cr/Fe/MgO", Sci. Rep., 7 (2017) 5993

29. A. Kozioł-Rachwał, W. Skowroński, M. Frankowski, J. Chęciński, S. Ziętek, P. Rzeszut, M. Ślęzak, K. Matlak, T. Ślęzak, T. Stobiecki, J. Korecki "Interlayer Exchange Coupling, Dipolar Coupling and Magnetoresistance in Fe/MgO/Fe Trilayers with a Subnanometer MgO Barrier", J. Magnet. Magnet. Mater., 424 (2017) 189-193

30. K. Kubiak-Ossowska, K. Tokarczyk, B. Jachimska, P. Mulheran, "Bovine Serum Albumin Adsorption Mechanism at Silica Surface Revealed by Molecular Dynamics and Experimental Study", J. Phys. Chem. B, 121 (2017) 3975-3986

31. E. Lalik, G. Mordarski, R.P. Socha, A. Drelinkiewicz "Chaotic Variations of Electrical Conductance in Powdered Pd Correlating with Oscillatory Sorption of D_2" Phys. Chem. Chem. Phys. 19 (2017) 7040-7053

32. M. Lipiński, R.P. Socha, A. Kędra, K. Gawlińska, G. Kulesza-Matlak, Ł. Major, K. Drabczyk, K. Łaba, Z. Starowicz, K. Gwóźdź, A. Góral, E. Popko "Studying of Perovskite Nanoparticles in PMMA Matrix Used as Light Converter for Silicon Solar Cell", Archiv. Metallurgy Mater., 62 (2017) 1731-1737

33. M. Łomzik, O. Mazuryk, D. Rutkowska-Żbik, G. Stochel, P.C. Gross, M. Brindell "New Ruthenium Compounds Bearing Semicarbazone 2-Formylopyridine Moiety: Playing with Auxiliary Ligands for Tuning the Mechanism of Biological Activity", J. Inorg. Biochem. 175 (2017) 80-91

34. S. Łukasiewicz, E. Błasiak, K. Szczepanowicz, K. Guzik, M. Bzowska, P. Warszyński, M. Dziedzicka-Wasylewska "The Interaction of Clozapine Loaded Nanocapsules with the hCMEC/D3 Cells – In vitro Model of Blood Brain Barrier", Colloids Surf. B, 159 (2017) 200-210

35. M. Łukomski, M. Strojecki, B. Pretzel, N. Blades, W.L. Beltran, A. Freeman "Acoustic Emission Monitoring of Micro-damage in Wooden Art Objects to Assess Climate Management Strategies", Insight, 59:5 (2017) 256-264

36. J. Maciejewska-Prończuk, M. Morga, Z.Adamczyk, M. Oćwieja, M. Zimowska "Homogenous Gold Nanoparticle Monolayers - QCM and Electrokinetic Characteristics", Colloids Surf. A, 514 (2017) 226-235

37. E. Madej, N. Spiridis, R.P. Socha, B. Wolanin, J. Korecki "The Nucleation, Growth and Thermal Stability of Iron Clusters on a TiO_2(110) Surface", Appl. Surf. Sci., 416 (2017) 144-151

38. M. Madej-Lachowska, J. Słoczyński "Methanol as a High Purity Hydrogen Source for Fuel Cells: A Brief Review of Catalysts and Rate Expressions", Chem. Proc. Eng., 38 (2017) 147-162

39. A. Magdziarz, J.C. Colmenares, O. Chernyayeva, D. Lisovytskiy, J. Grzonka, K. Kurzydłowski, K. Freindl, J. Korecki "Insight into the Synthesis Procedure of Fe^{3+}/TiO_2-Based Photocatalyst Applied in the Selective photo-oxidation of Benzyl aAcohol under Sun-imitating Lamp", Ultrasonics Sonochem., 38 (2017) 189-196

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56. A. Płazinska, W. Płazinski, M. Koliński "Binding Affinities of Gi and Gs Proteins to the b2-Adrenergic Receptor: Insights from the Coarse-grained Molecular Dynamics Simulations", Int. Conf. on Computational Modeling & Simulation ICCMS-2017, Colombo 2017

57. W. Płazinski "Recent Advances in Modeling of Ring Distortion in Hexopyranoses", 17th European Carbohydrate Symp. EUROCARB 2017, Barcelona 2017

58. S. Przemieniecki, T. Kurowski, A. Gorczyca, M. Oćwieja "Zastosowanie nanocząstek srebra i tytanu oraz fungicydów na bazie mankozebu przeciwko sprawcom mokrej zgnilizny bulw ziemniaka rodzaju Pectobacterium", Konf. "Dziś i jutro fitopatologii", Olsztyn 2017

59. A. Rugor, A. Wójcik-Augustyn, S. Mordalski, M. Szaleniec "Reaction Mechanism of Sterol Hydroxylation by Steroid C25 Dehydrogenase, 10th Molybdenym and Tungstate Enzyme Conf., Santa Fe 2017

60. A. Rugor, A. Wójcik-Augustyn, E. Niedziałkowska, S. Mordalski, J. Staroń, A. Bojarski, M. Szaleniec "Reaction Mechanism of Sterol Hydroxylation by Steroid C25 Dehydrogenase:

Homology Model, Reactivity and Isoenzymatic Diversity", 49. Ogólnopolskie Kolokwium Katalityczne, Kraków 2017

61. D. Rutkowska-Żbik, Ł. Orzeł, R. Tokarz-Sobieraj, M. Witko "Transmetallation of Porphyrinoids – Insights from DFT Studies", Workshop CAT-ICBS 2017 "Catalysis with Ions, Complexes, Biological Systems, Clusters and Surfaces", Rende 2017

62. R.P. Socha, P. Panek, M. Juel, P. Zięba, I. Kaus, P. Warszyński "Ogniwa typu dwustronnego jako efekt projektu InlinePV (Bifacial Cells as a Result of InlinePV Project)", 7 Symp. "Fotowoltaika i Transparentna elektronika – perspektywy rozwoju", Świeradów-Zdrój 2017

63. K. Sofińska, M. Guzik "Structure Topography and Local Mechanical Properties of PHA and PLA for Medical Applications", Int. Conf. & Exhibition NanoTech Poland 2017, Poznań 2017

64. A. van der Straeten, A. Bratek-Skicki, C.C Dupont-Gillain "Polyelectrolyte Interactions to Control and Tune Protein Immobilization at Interfaces. Applications in Biocatalysis and Separation Technology", AVS 64th Int. Symp. & Exhibition, Tampa 2017

65. M. Strojecki, L. Krzemień, A. Kupczak, R. Kozłowski, A. Działo, M. Łukomski, Ł. Bratasz "Direct Tracing of Micro-damage to Support Indoor Climate Management", 3rd Int. Conf. on Science and Engineering in Arts, Heritage and Archaeology, Brighton 2017

66. M. Szaleniec, I. Stawoska, A. Dudzik, M. Wasylewski, M. Jemioła-Rzemińska, A. Skoczowski "DFT-based prediction of reactivity of alcohol dehydrogenase", 49. Ogólnopolskie Kolokwium Katalityczne, Kraków 2017

67. K. Szczepanowicz, T. Kruk, A. Bzowska, A. Karabasz, P. Warszyński "Pygylated Polyelectrolyte Nanocapsules for Biomedical Applications", 12 Szkoła Letnia dla Doktorantów oraz Młodych Pracowników Nauki "Zjawiska Międzyfazowe w Teorii i Praktyce", Sudomie 201

68. K. Szczepanowicz, W. Swiątek, W.P. Węglarz, P. Warszyński "Theranostic Polyelectrolyte Nanocapsules", 9th Int. Conf. on Nanomaterials - Research & Application, Brno 2017

69. M. Szczęch, K. Szczepanowicz, W.P. Węglarz, P. Warszyński "Polymeric Nanocarriers Modified by Layer by Layer Approach for Theranostic Application", 9th Int. Conf. on Nanomaterials - Research & Application, Brno 2017

70. M. Szczęch, K. Szczepanowicz, D. Jantas, S. Łukasiewicz, E. Błasiak, M. Dziedzicka-Wasylewska, W. Lasoń, P. Warszyński "Synthesis of the Polymer-based Nanoparticles for Biomedical Application", 12 Szkoła Letnia dla Doktorantów oraz Młodych Pracowników Nauki "Zjawiska Międzyfazowe w Teorii i Praktyce", Sudomie 201

71. M. Ślezak, T. Ślęzak, P. Dróżdż, K. Matlak, J. Korecki "Adsorption Induced in Plane Magnetic Anisotropy in Epitaxial bcc Co/Fe Films", 62nd Annual Conf. on Magnetism and Magnetic Materials, Pittsburgh 2017

72. S. Świątek, R. Stokłosa, B. Jachimska "Samoorganizacja wołowej β-laktoglobuliny na powierzchni złota z zastosowaniem mikrowagi kwarcowej z monitorowaną dyssypacja energii (QCM-D)", 60 Zjazd Naukowy Polskiego Towarzystwa Chemicznego, Wrocław 2017

73. W. Świątek, K. Szczepanowicz, T. Kruk, P. Warszyński "Polyelectrolyte Multilayer Films as the 'Antifouling' Coatings", Int. Conf. & Exhibition NanoTech Poland 2017, Poznań 2017

74. W. Świątek, K. Szczepanowicz, T. Kruk, P. Warszyński "Modyfikacja multiwarstw polielektrolitowych w celu eliminacji adsorpcji białek", Ogólnokrajowa Konf. Naukowa "Badania Młodych Naukowców", Kraków 2017

75. W. Świątek, K. Szczepanowicz, T. Kruk, P. Warszyński "Modified Polyelectrolyte Multilayer Films as the 'Antifouling' Coatings Preventing Non-specific Proteins Adsorption", 60 Zjazd Naukowy Polskiego Towarzystwa Chemicznego, Wrocław 2017

76. K. Tokarczyk, B. Jachimska "Stability and Adsorption Properties of Polyelectrolyte on the Hydrophilic and Hydrophobic Surfaces", 49. Ogólnopolskie Kolokwium Katalityczne, Kraków 2017

77. K. Tokarczyk, K. Kubiak-Ossowska, P. Mulheran, B. Jachimska "Negatively Charged Protein Adsorption to Negatively Charged Surface", ARCHIE-WeSt Users' Forum, Strathclyde 2017

78. K. Tokarczyk, K. Kubiak-Ossowska, P. Mulheran, B. Jachimska "Negatively Charged Protein Adsorption to Negatively Charged Surface. Molecular Dynamics Case Study of BSA Adsorption on Silica", CCP5 Annual General Meeting "Materials Modelling: Simulation Meets Experiment", Strathclyde 2017

79. R. Tokarz-Sobieraj, P. Niemiec, M. Witko "Oxygen Adsorption and Activation on Metal Center in Modified Keggin Anion. DFT Calculations", 8th World Congr. on Oxidation Catalysis & 12th European Workshop Meeting in Innovation in Selective Oxidation Catalysis, Kraków 2017

80. M. Tsirigotis-Maniecka, L. Szyk-Warszyńska, R. Gancarz, P. Warszyński, K.A. Wilk "Mikronosniki hydrozelowe dla terapeutycznych substancji pochodzenia roslinnego", 60. Zjazd Naukowy Polskiego Towarzystwa Chemicznego, Wrocław 2017

81. A. Wiertel, C. Karaguzel, J. Zawała, O. Sahbaz, K. Małysa "Effect of Mixed Cationic and Non-Ionic Surface-active Substances on Kinetics of Bubble Attachment and Quartz Flotation", 7th Bubble and Drops Int. Workshop, Lyon 2017

82. M. Witko, R. Tokarz-Sobieraj, D. Rutkowska-Żbik, M. Szaleniec, R. Gryboś "Role of Molybdenum in Hetero, Homo, and Enzymatic Catalysis: Selected Examples Studied by Theory Approach", 13th European Congr. on Catalysis EuropaCat 2017, Florence 2017

83. M. Wlodek, A. Slastanova, L. Islas, L. Zhou, M. Kolasińska-Sojka, P. Warszyński,W.H. Briscoe "Structural Evolution of POPC/POPE Supported Lipid Bilayers Intercalated with Quantum Dots", 31st Conf. of European Colloid and Interface Society ECIS 2017, Madrid 2017

84. P. Wolski, T. Pańczyk "Teoretyczne badania adsorpcji doksorubicyny i wybranych cząsteczek barwników na powierzchni jednościennych nanorurek węglowych", Konf. FGF "Fizykochemia granic faz – metody instrumentalne", Lublin 2017

85. M. Zając, A. Bianco, E. Busetto, J. Korecki, M. Sikora, M.J. Stankiewicz, M. Ślęzak, A.I. Wawrzyniak "PEEM/XAS Beamline at SOLARIS", EUSpec COST Action WG2-WG5 Meeting "Recent advances in spectroscopy: experiment and theory", Kraków 2017

86. M. Zając, T. Giela, J. Korecki, M. Sikora, M.J. Stankiewicz, A.I. Wawrzyniak "Status and First Results of the PEEM/XAS Beamline Commissioning Process", 12th National Symp. of the Synchrotron Radiation Users, KSUPS'17, Gdańsk 2017

87. Y. Zhang, P. Batys, F. Li, J. Lutkenhuas, M. Sammalkorpi "Effect of Water on the Thermal Transition Observed in Polyelectrolyte Complexes", APS March Meeting, New Orleans 2017

88. Y. Zhang, J. Lutkenhuas, M. Sammalkorpi, P. Batys "Effect of Water on the Thermal Transition Observed in Polyelectrolyte Complexes", 254th ACS National Meeting, Washington DC 2017

89. Y. Zhang, J. Lutkenhuas, M. Sammalkorpi, P. Batys "The Effect of Water on the Thermal Transition Observed in Polyelectrolyte Complexes (PECs)", 6th Texas Soft Matter Meeting, Houston TX 2017

90. M. Zimowska, H. Pálková, D. Duraczyńska, L. Lityńska-Dobrzyńska, G. Mordarski, Ľ. Jankovič, J. Madejová, E.M. Serwicka "Nanocząstki Ru immobilizowane na organicznych pochodnych minerałów ilastych jako katalizatory uwodornienia 2-butanonu", 49. Ogólnopolskie Kolokwium Katalityczne, Kraków 2017

91. A. Żelazny, K. Samson, M. Śliwa, M. Ruggiero-Mikołajczyk, A. Kornas, J. Podobiński, D. Rutkowska-Żbik "Wpływ Ce i Ru jako promotorów katalizatorów miedziowych w reakcji hydrogenolizy glicerolu", 49. Ogólnopolskie Kolokwium Katalityczne, Kraków 2017

92. A. Żelazny, K. Samson, A. Kornas, M. Ruggiero-Mikołajczyk, M. Śliwa, W. Rojek, D. Rutkowska-Żbik "Hydrogenolysis of Glycerol over Copper and Copper-silver Based Catalysts: Ru and Ce as Promoters", 13th European Congr. on Catalysis EuropaCat 2017, Florence 2017

2018

Plenary, keynote and invited lectures

1. Z. Adamczyk "Adsorpcja białek – w poszukiwaniu uniwersalnego mechanizmu", 61. Zjazd Naukowy PTChem, Kraków 17-21 September 2018

2. Z. Adamczyk "Protein Adsorption: Quest for a Universal Mechanisms", 13th Summer School for and Young Researchers "Interfacial Phenomena in Theory and Practice", Sudomie 2018

3. J. Datka, M. Gackowski, K. Tarach, Ł. Kuterasiński, J. Podobiński, S. Jarczewski, B. Sulikowski, P. Kuśtrowski "Hierarchical Zeolites Y: Catalysts of Very High Acidity, Good Mesoporosity and Superior Activity", Int. Conf. on Catalysis and Surface Chemistry 2018 & 50. Ogólnopolskie Kolokwium Katalityczne, Kraków 2018

4. M. Guzik "Bacterial Polymers in Medicine", Konf. Inter Nano Poland, Katowice 2018

5. J. Heider, M. Szaleniec "Catalytic Principles of Some Unusual Microbial Metalloenzymes Involved in Anaerobic Degradation Pathways", Int. Conf. on Catalysis and Surface Chemistry 2018 & 50. Ogólnopolskie Kolokwium Katalityczne, Kraków 2018

6. B. Jachimska "Combining Surface Plasmon Resonance and Quartz Crystal Microbalance to Determine Hydration of Dendrimer Monolayers", BIT's 6th Annual Conf. of AnalytiX 2018 Session 307: Advances in Applied Spectroscopy, Miami 2018

7. F. Karimov, E. Langseth, J. Yang, Ch. Simon, D.S.Y. Leung, M. Amiry-Moghaddam, K. Szczepanowicz, P. Warszyński "Hybrid Organic Inorganic Nanocarriers for Drug Delivery", Int. Conf. on Catalysis and Surface Chemistry 2018 & 50. Ogólnopolskie Kolokwium Katalityczne, Kraków 2018

8. A. Leszczyńska, P. Radzik, E. Szefer, K. Haraźna, K. Pielichowski "The Dependence of Thermal Stability of Cellulose Nanocrystals (CNCs) on Hydrolysis and Freeze Drying Conditions", 61.Zjazd Naukowy PTChem, Kraków, 17-21 September 2018
9. W. Łasocha, A. Rafalska-Łasocha, M. Grzesiak-Nowak, M. Oszajca "Badania wybranych pigmentów azowych przy użyciu metod dyfraktometrii proszkowej", Malvern Panalytical Users Meeting, Zakopane 2018
10. P. Mazalski, Z. Kurant, A. Kozioł-Rachwał, J. Fassbender, A. Wawro, A. Maziewski, "Magnetic Properties of Ultrathin Magnetic Films Driven by Proximity of a Noble Metal and Ion Irradiation", 14th Int. Workshop on Magnetism and Superconductivity at the Nanoscale, Coma Ruga 2018
11. B.D. Napruszewska, A. Walczyk, A. Michalik, R. Dula, D. Duraczyńska, W. Rojek, P. Nowak, L. Lityńska-Dobrzyńska, E.M. Serwicka "Composites of Exfoliated Organo-Clays and Hydrotalcites/Oxyhydroxides Prepared by Inverse Microemulsion for Catalytic Applications" 61.Zjazd Naukowy PTChem, Kraków, 17-21 September 2018
12. M. Oćwieja, A. Barbasz, N. Pierges "Modelowanie właściwości powierzchniowych nanocząstek srebra dla zastosowań analitycznych i medycznych", 61. Zjazd Naukowy PTChem, Kraków 17-21 September 2018
13. T. Pańczyk "Nanorurka węglowa jako innowacyjny, czuły na pH i pole magnetyczne nośnik leków. Badanie metodą dynamiki molekularnej", Ogólnopolska Konf. Naukowa "Innowacje w praktyce", Lublin 2018
14. M. Radoń, G. Drabik, J. Szklarzewicz, E. Brocławik "Enegretyka stanów sinowych: dokładne obliczenia metodami chemii kwantowej oraz uwzględnienie wpływu srodowiska", 61. Zjazd Naukowy PTChem, Kraków 17-21 September 2018
15. K. Samson, W. Rojek, M. Ruggiero-Mikołajczyk, M. Śliwa, Ł. Kuterasiński, D. Rutkowska-Żbik "Synthesis of 2-Methylfuran and Furan via Hydrogenation of Furfural and Furfurol over Chromite-Based Catalysts", Int. Conf. Energy and Fuels 2018, Kraków 2018
16. M. Szaleniec "Czym jest biogospodarka?", Konf. "Małopolska biogospodarka po stronie szans czy zagrożeń?", Kraków 2018
17. P. Weroński "Roughness of Surface Decorated with Randomly Distributed Pillars", 5th Int. Symp. on Surface Imaging/Spectroscopy at the Solid/Liquid Interface, Kraków, 2018
18. M. Witko "Kataliza wókół nas", 22. Wykład im. prof. Antoniego Basińskiego, Uniwersytert Mikołaja Kopernika, Toruń 2018
19. M. Witko, R. Tokarz-Sobieraj, R. Gryboś, A. Micek-Ilnicka, U. Filek "Properties of Modified Heteropolyacids from Theory and Experiment, 4th Int. Symp. on Chemistry for Energy Conversion and Storage ChemEner2018, Berlin 2018
20. M. Witko, R. Tokarz-Sobieraj, A. Micek-Ilnicka, U.Filek "Theory and. Experiment on Modified Heteropolyacids", 7th EuCheMS Chemistry Congr., Liverpool 2018
21. J. Zawała "Influence of Interfacial Mobility on Bubble Motion and Collision Kinetics at Interfaces - Experiment and Modeling", 8th Int. Berlin Workshop on Transport Phenomena with Moving Boundaries, Berlin 2018

22. M. Zimowska, H. Pálková, J. Madejová, R.P. Socha "FTIR Spectroscopy to Study Formation and Functionalisation of Porous Clay Heterostructures Derived from Laponite", 55th Annual Meeting Clay Minerals Society "Applications of Infrared Spectroscopy to Clay Mineral Systems", Urbana-Champaign 2018

Oral presentations

1. P. Batys, Y. Zhang, J.T. O'Neal, L. Li, J.L. Lutkenhaus, M. Sammalkorpi "The Molecular Origin of the Glass Transition in Polyelectrolyte Assemblies", 61.Zjazd Naukowy PTChem, Kraków, 17-21 Septemper 2018
2. T. Borowski, M. Popova, L.M. Berrau "Mechanizm uwalniania CO z photoCORM o strukturze 3-hydroxybenzo[g]chinolonu", 61.Zjazd Naukowy PTChem, Kraków, 17-21 September 2018
3. T. Borowski, M. Radoń, A. Wójcik-Augustyn, A. Miłaczewska, Z. Wojdyła "Reaction Mechanisms of 2-Oxoglutarate Dependent Dioxygenases Studied with Computational Methods", Int. Conf. on Catalysis and Surface Chemistry 2018 & 50. Ogólnopolskie Kolokwium Katalityczne, Kraków 2018
4. B. Bożek, D. Mucha, A. Sławińska, M. Grzywa, A.Szymańsk1, K. Pamin, J. Połtowicz, M. Oszajca, W. Łasocha "New Polyoxometalates and Their Catalytic Applications", Int. Conf. on Catalysis and Surface Chemistry 2018 & 50. Ogólnopolskie Kolokwium Katalityczne, Kraków 2018
5. Ł. Bratasz "Proces nasycania spękań w warstwach malarskich", 18. Konf. "Analiza Chemiczna w Ochronie Zabytków", Warszawa 2018
6. E. Brocławik, J. Datka, P. Rejmak "Nowe właściwości silnych centrów kwasowych w dealuminowanym mazzycie: badania IR za pomocą sorpcji CO oraz modelowanie periodycznymi metodami DFT61. Zjazd Naukowy PTChem, Kraków, 17-21 September 2018
7. E. Broclawik, P. Rejmak, J. Datka "The Interaction of CO with Exceptionally Acidic OH Groups in High-Silica Y Zeolites: DFT Modeling and IR Experiment", Int. Conf. on Catalysis and Surface Chemistry 2018 & 50. Ogólnopolskie Kolokwium Katalityczne, Kraków 2018
8. A. Brzyska "Biooligosacharydu pod wpływem sił rozciągających – symulacja eksperymentu AFM", 61.Zjazd Naukowy PTChem, Kraków, 17-21 September 2018
9. A. Brzyska "The EGO Simulation of the AFM experiments for the selected (bio)oligosaccharides", 9th Conversatory of Medical Chemistry, Lublin 2018
10. A. Brzyska "Metoda EGO w symulacjach eksperymentu AFM dla wybranych bio(oligo)sacharydów",
    10. Sem. "Badania prowadzone metodami skaningowej mikroskopii bliskich oddziaływań STM/AFM 2018", Zakopane 2018
11. A. Czakaj, M. Kabat, E. Jarek, M. Krzan, P. Warszyński "Foaming and Emulsifying Properties of Cellulose Nanofibres – Lauroyl Ethyl Arginate", 61.Zjazd Naukowy PTChem, Kraków, 17-21 Sepember 2018
12. P. Dróżdż, M. Ślęzak, K. Matlak, B. Matlak, K. Freindl, D. Wilgocka-Ślęzak, N. Spiridis, J. Korecki, T. Ślęzak "Switching of Co Magnetization Driven by Antiferromagnetic-

Ferromagnetic Phase Transition of FeRh Alloy in Co/FeRh Bilayers" 23rd Int. Colloquium on Magnetic Films and Surfaces ICMFS-2018, Santa Cruz 2018

13. A. Drzewiecka-Matuszek, M. Witko, D. Rutkowska-Żbik "Quantum-Chemical Investigation of Iron Porphyrin Reactivity in Selected Oxidation Reactions", Int. Conf. on Catalysis and Surface Chemistry 2018 & 50. Ogólnopolskie Kolokwium Katalityczne, Kraków 2018

14. A. Drzewiecka-Matuszek, M. Smoliło, K. Samson, S. Dźwigaj, D. Rutkowska-Żbik "Joint Theoretical and Experimental Characterisation of Vanadium Centres Introduced into Beta Zeolite", Int. Conf. on Theoretical Aspects of Catalysis ICTAC 2018, Los Angeles 2018

15. M. Duda, M. Oszajca, W. Łasocha "Authentication of Ancient Arrow Heads Using Powder XD-Ray Diffractometry and Scanning Electron Microscopy", 7th Meeting on X-Ray and other Techniques in Investigations of the Objects of Cultural Heritage, Krakow 2018

16. M. Dudek, B. Lis, M. Mosiałek, S. Daugela, T. Salkus, A. Kezionis, R. Lach, J. Morgiel "Ba0.95Ca0.05Ce0.9Y0.1O3 as an Electrolyte for Proton-Conducting Fuel Cells", 5th Int. Symp. on Surface Imaging/Spectroscopy at the Solid/Liquid Interface, Kraków 2018

17. D. Duraczyńska, A. Michalik-Zym, B.D. Napruszewska, R.P. Socha, M. Zimowska, E.M. Serwicka-Bahranowska "Ruthenium Catalysts for Hydrogenation of Selected Ketones", Int. Conf. on Catalysis and Surface Chemistry 2018 & 50. Ogólnopolskie Kolokwium Katalityczne, Kraków 2018

18. U. Filek, R.P. Socha, D. Duraczyńska, D. Mucha, K. Tarach, K. Góra-Marek, M. Witko "Direct Synthesis of Ethyl Acetate from Ethanol over Palladium Supported on 12-Tungstophosphoric Acid and Its Phosphorus-Tungsten Bronze", Int. Conf. on Catalysis and Surface Chemistry 2018 & 50. Ogólnopolskie Kolokwium Katalityczne, Kraków 2018

19. K. Freindl, J. Korecki, N. Kwiatek, J. Wojas, N. Spiridis "Phase Transformations in Iron Oxide Films on Pt(111)", Int. Conf. on Catalysis and Surface Chemistry 2018 & 50. Ogólnopolskie Kolokwium Katalityczne, Kraków 2018

20. K. Freindl, J. Korecki, N. Kwiatek, J. Wojas, N. Spiridis "Phase Transformation in Iron Oxide Films on Pt(111)", 11th Int. Workshop on Oxide Surfaces, Granada 2018

21. M. Gackowski, J. Podobiński, J. Datka, M. Hunger "FT-IR and MAS NMR Studies of n-Hexane Adsorption on Acidic Zeolites", Int. Conf. on Catalysis and Surface Chemistry 2018 & 50. Ogólnopolskie Kolokwium Katalityczne, Kraków 2018

22. M. Gackowski, K. Tarach, Ł. Kuterasiński, J. Podobiński, B. Sulikowski, J. Datka "Spetroscopic Studies on Desilication of Ultrastable Zeolite Y". 22nd Zeolite Forum, Niepołomice 2018

23. D. Gaweł, A. Pajor-Świerzy, K. Szczsepanowicz, R. Socha, P. Warszyński "Optymalizacja metody syntezy oraz charakterystyka nanocząstek metalicznych typu core-shell jako komponentów materiałów przewodzących", 61.Zjazd Naukowy PTChem, Kraków, 17-21 September 2018

24. A. González Guillén, K. Luberda-Durnaś, M. Oszajca, M. Gryl, S. Bartkiewicz, A. Miniewicz, W. Łasocha "Synthesis, XRPD Structure Solution and Optical Properties of Organic-Inorganic Hybrid Layered Materials: A Solvent-Free Ligand-Controlled Dimensionality Approach", 60. Konwersatorium Krystalograficzne, Wrocław 2018

25. J. Gronwald, J. Barbbasz, Ł. Lasyk, P. Żuk, A. Prusaczyk, T. Włodarczyk, E. Prokurat, W. Olszewski, M. Bidziński "Evaluation of the Constructed Device along with the Software for Digital Archiving, Sending the Data and Supporting the Diagnosis of Cervical Cancer", Conf. on Clinical Genetics of Cancer, Szczecin 2018

26. M. Guzik "Polyhydroxyalkanoates: Bacterial Polymers for Biomedical Applications", Int. Conf. on Catalysis and Surface Chemistry 2018 & 50. Ogólnopolskie Kolokwium Katalityczne, Kraków 2018

27. M. Guzik, K. Sofińska, K. Haraźna, T. Witko, D. Solarz, K. Stępień "Bacterial Polymer - Polyhydroxyalkanoate - a Promising Material for Biomedical Applications", 5th Global Conf. on Polymer and Composite Materials, Kitakjusiu 2018

28. K. Haraźna, P. Radzik, M. Witko, A. Bojarski, M. Guzik "Physicochemical Characterization of Polyhydroxyoctanoate (PHO) Polymer", Int. Conf. on Catalysis and Surface Chemistry 2018 & 50. Ogólnopolskie Kolokwium Katalityczne, Kraków 2018

29. K. Haraźna, W. Snoch, M. Witko, A.J. Bojarski, M. Guzik "Fizykochemiczna charakterystyka bakteryjnego poliestru - polihydroksynonanianu (PHN)". 6. Łódzkie Symp. Doktorantów Chemii, Łódź 2018

30. K. Haraźna, M. Witko, A.J. Bojarski, M. Guzik "Enzymatic Modification of Polyhydroxyoctanoate (PHO) and Its Oligomers by Diclofenac as a Way of Manufacturing a Novel Functionalized Biopolymer for Medical Applications", 4th Symp. on Biotransformations for Pharmaceutical and Cosmetic Industry; Trzebnica 2018

31. K. Haraźna, M. Witko, A.J. Bojarski, M. Guzik "Polimery do zastosowań medycznych - polihydroksyalkaniany (PHA)". 1. Konf. Doktorantów UJ, Kraków 2018

32. B. Jachimska "Physicochemical Characterisation of PAMAM Dendrimer as a Multifunctional Nanocarriers", Int. Workshop on Polyelectrolytes in Chemistry, Biology and Technology 2018, Singapore 2018

33. B. Jachimska "Self-Assembling Behavior of Proteins: Effect of the Interaction between Protein and Surface", 22nd Topical ISE Meeting "Japan Materials Engineering and Process Optimization at Electrified Solid/Liquid Interfaces", Tokyo 2018

34. E. Jarek, G. Para, W. Barzyk, K.A. Wilk, K. Lunkenheimer, P. Warszyński "Adsorption of Ionic Surfactants: Model and Experiment at ICSC PAS", Int. Conf. on Catalysis and Surface Chemistry 2018 & 50. Ogólnopolskie Kolokwium Katalityczne, Kraków 2018

35. E. Jarek, E. Santini, A. Czakaj, M. Kabat, F. Ravera, L. Liggieri, P. Warszyński, M. Krzan "Surface Properties od Aponin and Chitosan Solutions in Relation to Their Foamability", 61.Zjazd Naukowy PTChem, Kraków, 17-21 Sepember 2018

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128. J. Wojas, N. Kwiatek, K. Freindl, E. Madej, J. Korecki, N. Spiridis "Adsorpcja metali na powierzchniach Fe3O4(111)", 10. Sem. "Badania prowadzone metodami skaningowej mikroskopii bliskich oddziaływań STM/AFM", Zakopane 2018

129. Z. Wojdyła, T .Borowski "The Role of the Binding Pocket of Dioxygenase AsqJ in Reaction Selectivity - A QM/MM Study", Quantum Bio·Inorganic Chemistry IV Meeting, Bath 2018

130. M. Wojtkiewicz, P. Wójcik, M. Sroczyk, M. Oszajca, K. Sofińska, J. Barbasz, O. Zastawny, M. Guzik, E. Romero, M.W. Fraaije, M. Szaleniec "Aggregating Flavoprotein as a Catalyst for 1-Dehydro-3-ketosteroids Production", 9th Int. Cong. on Biocatalysis, Hamburg 2018

131. P. Wójcik, A. Wojtkiewicz, M. Sroczyk, M. Oszajca, E. Romero, M.W. Fraaije, M. Szaleniec "Catalytic Characterisation of Cholest-4-en-3-one Δ1-Dehydrogenase, a Catalyst for Anabolic Steroids Production", Int. Conf. on Catalysis and Surface Chemistry 2018 & 50. Ogólnopolskie Kolokwium Katalityczne, Kraków 2018

132. A. Wójcik-Augustyn, A.J. Johansson, T. Borowski "Onsight ito Reaction Mechanism of ATP Sulfyraze. Theoretical Studies", 61.Zjazd Naukowy PTChem, Kraków, 17-21 September 2018

133. P. Wójcik, A. Wojtkiewicz, M. Sroczyk, O. Zastawny, M. Oszajca, E. Romero, M.W. Fraaije, M. Szaleniec "Cholest-4-en-3-one Δ1-Dehydrogenase - A New Tool for Anabolic Steroids Production", 4th Symp. on Biotransformations for Pharmaceutical and Cosmetic Industry; Trzebnica 2018

134. M. Zając, T. Giela, J. Korecki, M. Sikora, M.J. Stankiewicz, M. Ślęzak, A.I. Wawrzyniak, D. Wilgocka-Ślęzak "PEEM/XAS Beamline at SOLARIS: Status of the Commissioning and First Results", 17th Int. Conf. on X-ray Absorption Fine Structure, Kraków 2018

135. Y. Zhang, P. Batys, M. Sammalkorpi, J.L. Lutkenhaus "Thermal Transitions in Hydrated PDADMA-PSS Complexes", 255th ACS National Meeting & Exposition, New Orleans 2018

136. Y. Zhang, P. Batys, M. Sammalkorpi, J.L. Lutkenhaus "How Water, Salt, and pH Universally Influence the Glass Transition in Polyelectrolyte Complexes", 255th ACS National Meeting & Exposition, New Orleans 2018

137. M. Zimowska, J. Gurgul, H. Pálková, L. Lityńska-Dobrzyńska, Z. Olejniczak, R.P. Socha, E. Scholtzova, K. Łątka "Structural Rearrangements of Fe Doped Crystalline-Amorphous Porous Clay Heterostructures Derived from Laponite", Int. Conf. on Catalysis and Surface Chemistry 2018 & 50. Ogólnopolskie Kolokwium Katalityczne, Kraków 2018

2019

Plenary, keynote and invited lectures

1. M. Guzik, K. Haraźna, T. Witko, E. Cichoń, S.Skibiński, A. Zima, A. Ślósarczyk, I. Roy "Development of polyhydroxyalkanoate-based biomaterials for bone tissue regeneration" 3rd International Conference and Exhibition on Polymer Chemistry and Materials Engineering Singapor 2019

2. B. Jachimska "Development of dendrimer based drug delivery system" Surface Modification for Chemical and Biochemical Sensing 2019", Żelechów 2019

3. T. Korona, M. Chojecki, S. Yourdkhani, D. Rutkowska-Żbik "On the Applicability of Various Partitioning Schemes to Intermolecular Interactions", 62. Zjazd Naukowy PTChem, Warszawa 2019

4. P. Mazalski, P. Kuświk, B. Anastaziak, I. Sveklo, Z. Kurant, A. Wawro, A. Maziewski "Magnetic domains in ferromagnetic and ferro-/antiferromagnetic sandwich layers with perpendicular magnetization", 15th International Workshop on Magnetism and Superconductivity at the nanoscale, Comaruga 2019

5. M. Mosiałek "Wspomnienia z Instytutu Chemii Fizycznej Polskiej Akademii Nauk", Zjazd Absolwentów z okazji Jubileuszu 45-lecia Wydziału Energetyki i Paliw, Kraków 2019

6. M. Oćwieja, Z. Adamczyk, D. Lupa, J. Maciejewska-Prończuk, M. Morga, A. Michna, M. Nattich-Rak, A. Pomorska, M. Wasilewska "Noble metal nanoparticle layers of tunable coverage, structure and charge" Lithuanian chemists conference chemistry and chemical technology, Wilno, 2019

7. A. Pacuła "Porous carbon materials doped with nitrogen and their composites with transition metals", LI Ogólnopolskie Kolokwium Katalityczne, Kraków, 2019

8. T. Pańczyk "Nanorurki węglowe jako nośniki leków. Analiza możliwości ich wykorzystania przy użyciu metod dynamiki molekularnej", IV Interdyscyplinarna Konferencja Nano & BioMateriały – od teorii do aplikacji, Toruń 2019

9. W. Płaziński "Enhanced-sampling MD simulations", School on molecular computational biochemistry, Kraków 2019

10. D. Rutkowska-Żbik, A. Kornas, M. Śliwa, K. Samson, R. Grabowski, M. Ruggiero, K. Góra-Marek "Hydrogenation of CO2 to Methanol over Cu-Ag/ZrO2 Catalyst: Influence of Polymorphic Zirconia Phases, Copper Electronic State, and Silver Doping", SUNRISE POLAND Stakeholder Workshop Centre of New Technologies, Warszawa 2019

11. E.M. Serwicka "Nanostructural catalysts derived from clay minerals", NanoOstrava 2019 – 6th Nanomaterials and Nanotechnology Meeting, Technical University of Ostrava, Ostrawa 2019
12. K. Szczepanowicz, M. Szczęch, T. Kruk, P. Warszyński "Polymer nanocarriers formed by the sequential adsorption as potential targeted and theranostic delivery systems" 62. Zjazd Naukowy PTChem, Warszawa 2019
13. L. Szyk-Warszyńska, K. Raszka, P. Warszyński "Analiza wielowarstwowych filmów kazeinowo-polipeptydowych metodami elipsometrii, mikrowagi kwarcowej i spektroskopii ATR FTiR" Fizykochemia granic faz – metody instrumentalne, Lublin 2019
14. R. Tokarz-Sobieraj, P. Niemiec "Modyfikowane heteropolikwasy jako katalizatory reakcji kwasowych i redoksowych – przewidywania reaktywności metodami teoretycznymi (DFT)", 62. Zjazd Naukowy PTChem, Warszawa, 2019
15. P. Warszyński „Fundusze Europejskie w Instytucie Katalizy i Fizykochemii Powierzchni im. Jerzego Habera PAN, 15 lat Polski w Unii Europejskiej" PAU, Kraków 2019
16. M. Witko, R. Tokarz-Sobieraj, D. Rutkowska-Żbik "Układy X-O (X = metal przejściowy) w katalizie. Badania metodą DFT", 62. Zjazd Naukowy PTChem, Warszawa 2019
17. M. Śliwa, W. Rojek, A. Kornas, A. Żelazny, M. Smoliło, K. Samson, M. Ruggiero, Ł. Kuterasiński, J. Podobiński, J. Datka, D. Rutkowska-Żbik "Układy miedziowe jako katalizatory uwodornienia dwutlenku węgla i związków otrzymywanych z biomasy", 62. Zjazd Naukowy PTChem, Warszawa 2019

Oral presentations

1. Z. Adamczyk, "Mechanisms of nanoparticle and protein monolayer formation at solid substrates, Interfacial Phenomena in Theory and Practice" The XIVth Summer School for Postgraduate Students and Young Researchers, June 24-28, 2019, Sudomie.
2. M. Aronson, Ł. Bratasz, O. Noble, S. Simon, E. Stegmaier, D. Thicket. "Moth or Butterfly: A Study of Light and Risk in Louis Kahn's Yale Center for British Art", Konferenz der Fachgruppe Präventive Konservierung in Weimar - IM FOKUS: LICHT!, Weimar, 2019.
3. Barbasz, M. Oćwieja "Toksyczność nanoczastek srebra biofunkcjonalizowanych cysteiną wobec wybranych komórek ludzkiego układu immunologicznego" IV Interdyscyplinarna Konferencja Nano&BioMateriały -od teorii do Aplikacji, Toruń 2019
4. R. Boardman, S. Butts, C. DeNatale, C. Sease, N. Utrup, T. White, Ł. Bratasz, S. Simon "Rethinking Climate Control Strategies in Yale Peabody Museum Collection", Annual Meeting of The Society for the Preservation of Natural History Collections, Chicago 2019
5. A. Brzyska, K. Woliński "Biooligosacharydy pod wpływem sił zewnętrznych- symulacje eksperymentów AFM na pojedynczej molekule", IV Ogólnopolska Konferencja Naukowa "Nanotechnologia wobec oczekiwań XX w.", Lublin 2019
6. A. Brzyska, K. Woliński "Conformational Changes in Nigeran Oligosaccharides under Extrenal Forces", XVth International Conference on Molecular Spectroscopy - From Molecules to Molecular Materials, Biological Molecular Systems and Nanostructures, Wrocław-Wojanów 2019

7. O. Cusola, S. Kivisto, S. Vierros, P. Batys, M. Ago, B. L. Tardy, L. G. Greca, M. B. Roncero, M. Sammalkorpi, O. J. Rojas "Stratification of lignin particles in waterborne systems via evaporation-induced self-assembly", 257th ACS National Meeting and Exposition, Orlando, Florida, 2019

8. A. Czakaj, M. Krzan, P. Warszyński, "Linear viscoelastic properties of cellulose nanocrystals – lauroyl ethyl arginate", Annual European Rheology Conference AERC 2019, Prohors 2019

9. S. Engblom, E. Högfors-Rönnholm, P. Stén, S. Christel, S. Fröjdö, T. Lillhonga, P. Nowak, P. Österholm, M. Dopson "Mitigating the effects of an acid sulfate soil the importance of macropore surfaces" Conference: European Geosciences Union General, Wiedeń 2019

10. M. Gackowski, K. Szczepanowicz "'Confinement effect' w mezoporowatych zeolitach. Optymalizacja wprowadzania ibuprofenu do dealuminowanego zeolitu Y" YUPPAS NMR, Centrum Badań Molekularnych i Makromolekularnych Polskiej Akademii Nauk, Łódź 2019

11. D. Gawel, J. Zawała "Investigation of stability of emulsion films under dynamic conditions", XIV Szkoła Letnia dla Doktorantów i Młodych pracowników Nauki, Sudomie, 2019

12. A. Gibała, J. Szaleniec, L. Szyk-Warszyńska, M. Szaleniec, T. Gosiewski "Biofilm tworzony przez bakterie w przewlekłym zapaleniu zatok a nawroty uciążliwych nawrotów choroby", XI Ogólnopolskie Sympozjum z cyklu: Biofilm tworzony przez drobnoustroje w patogenezie zakażeń, Kudowa-Zdrój 2019

13. M. Glanowski, M. Szaleniec, A. Bojarski „Modeling of 3-ketosteroid Δ1-dehydrogenases" LI Ogólnopolskie Kolokwium Katalityczne, Kraków 2019

14. M. Guzik, K. Haraźna, T. Witko, K. Stępień, M. Seta, E. Cichoń, S. Skibiński „Polyhydroxyalkanoates in tissue regeneration", International Conference on Smart Materials Technologies, St.Petersburg, 2019

15. M. Guzik „Produkcja i zastosowania polimeru syntetyzowanego bakteryjnie – polihydroksyalkanianu", 62. Zjazd Naukowy PTChem, Warszawa 2019

16. M. Guzik, "Biopolymers - New demo case proposal from Małopolska", Konferencja Life Science Open Space, Kraków 2019

17. K. Haraźna, L. Szyk-Warszyńska, M. Witko, M. Guzik "Preparation, characterisation and modification of bacterial polyester - polyhydroxyoctanoate (PHO) and construction of wound patches", 7th international seminar on modern polymeric materials for environmental applications, Kraków 2019

18. J.L. Lutkenhaus, M. Sammalkorpi, P.S. Martinez, P. Batys "Time-Temperature and Time-Water Superposition Principles Applied to Poly (allylamine)/Poly (acrylic acid) Complexes", American Chemical Society National Meeting, Orlando 2019

19. B. Jachimska "Physicochemical characterisation of PAMAM dendrimer as multifunctional nanocarriers", American Chemical Society National Meeting, Orlando 2019

20. B. Jachimska, S. Świątek "Lactoglobulin as a platform for designing biologically active carriers", 25th International Symposium on Bioelectrochemistry and Bioenergetics of the Bioelectrochemical Society, Limerick 2019

21. E. Jarek, K.A. Wilk P. Warszyński "Molecular basis of esterquat and amidoquat surfactants surface activity", 8th Conference Bubble and Drop, Sofia 2019

22. M. Kabat, P. Warszyński, M. Krzan, A. Czakaj, E. Jarek "Otrzymywanie oraz charakterystyka fizykochemiczna emulsji wytworzonych przy użyciu biosurfaktantów i białka", Konferencja "Fizykochemia bez granic" Uniwersytet Marii Curie-Skłodowskiej, Lublin 2019

23. S. Kachhap, T. Borowski "Understanding the catalytic mechanism of M. tuberculosis DapB: DFT calculations", Quantum BioInorganic Chemistry Conference, Marseille 2019

24. A. Kannan, P. Gao, J. Zawała, G.G. Fuller, "Surfactant-laden bubble dynamics on porous, aerophilic polymer films", American Chemical Society National Meeting, Orlando 2019

25. R. Karcz, A. Michalik, B.D. Napruszewska, E.M. Serwicka, A. Klimek, K. Bahranowski "H2O2/nitrile/bicarbonate system for catalytic Baeyer-Villiger oxidation of cyclohexanone to ε-caprolactone over Mg-Al hydrotalcite catalysts", LI Ogólnopolskie Kolokwium Katalityczne, Kraków 2019

26. J. Kargul, M. Witko, D. Rutkowska-Żbik "Nowa inicjatywa europejska: projekty SUNRISE i Energy-X" 62. Zjazd Naukowy PTChem, Warszawa 2019

27. P. Komorek, E. Martin, M. Wałek, I. Brand, B. Jachimska, "Changes in protein's II-structure as a result of its interactions with a gold surface – favorable conditions for aggregates formation", VII Sympozjum Doktorantów Chemii, Łódź 2019

28. P. Komorek, S. Świątek, B. Jachimska "Laktoglobulina jako naturalny nośnik leków przeciwnowotworowych", "Kuźnia Młodych Talentów – Akademii Młodych Uczonych PAN", Jabłonna 2019

29. P. Komorek, I. Brand, B. Jachimska "Changes In Lysozyme's II-Structure as a Result of its Interaction with a Gold Surface – Preferred Conditions for Lysozyme's Aggregates Formation in Neurodegenerative Disease Development", 3rd Wroclaw Scientific Meetings, Wrocław 2019

30. P. Komorek, E. Martin, M. Wałek, I. Brand, B. Jachimska "Changes in protein's secondary structure as a result of its interaction with a gold surface", American Chemical Society National Meeting, Orlando 2019

31. T. Korona, S. Yourdkhani, M. Chojecki, E. Masoumifeshani, D. Rutkowska-Żbik "On the Applicability of Various Partitioning Schemes to Intermolecular Interactions" 10th Triennial Congress of the International Society for Theoretical Chemical Physics (ISTCP 2019), Tromso 2019

32. R. Kosydar, E. Lalik, D. Duraczyńska, J. Gurgul, G. Mordarski, L. Lityńska-Dobrzyńska, A. Drelinkiewicz "Rola wodorowych brązów molibdenowych i wolframowych w uwodornieniu biosurowca 5-hydroksymetylofurfuralu na katalizatorach Pd/MoO3 i Pd/WO3" LI Ogólnopolskie Kolokwium Katalityczne, Kraków 2019

33. R. Kosydar, E. Lalik, J. Gurgul, D. Duraczyńska, A. Drelinkiewicz "Uwodornianie 5 hydroksymetylofurfuralu (HMF) w obecności Pd/MoO3 i Pd/WO3; wpływ brązów wodorowych na aktywność i selektywność reakcji" 62. Zjazd Naukowy PTChem, Warszawa 2019

34. Ł. Kuterasiński, M. Gackowski, W. Rojek, P. Jodłowski "Hierarchiczne katalizatory zeolitowe typu MFI i FAU otrzymane w obecności ultradźwięków: badania właściwości fizykochemicznych i katalitycznych" LI Ogólnopolskie Kolokwium Katalityczne, Kraków 2019

35. Ł. Kuterasiński, J. Podobiński, W. Rojek, D. Rutkowska-Żbik, J. Datka "Cu Ions in Zeolites CuY – IR Experiments and Catalytic Studies", XVth International Conference on Molecular Spectroscopy. From molecules to molecular materials, biological molecular systems and nanostructures, Wojanów 2019

36. Lupa, J. Maciejewska-Prończuk, M. Morga, M. Oćwieja, Z. Adamczyk "Funkcjonalne nano- i mikrocząstki – synteza oraz charakterystyka", Klaster Life Science Open Space, Kraków 2019

37. D. Lupa, M. Oćwieja, N. Piergies, A. Baliś, Cz. Paluszkiewicz, Z. Adamczyk "Gold nanoparticles immobilized on silica particles - promising substrates for surface enhanced Raman spectroscopy, Interfacial Phenomena in Theory and Practice", The XIVth Summer School for Postgraduate Students, and Young Researchers, Sudomie 2019

38. D. Lupa, M. Oćwieja, Z. Adamczyk "Noble metal nanoparticle monolayers deposited on colloidal carriers - novel systems for controlled release", 3rd Wroclaw Scientific Meeting, Wrocław 2019

39. J.L. Lutkenhaus, M. Sammalkorpi, P.S. Martinez, P. Batys, "Time-Temperature and Time-Water Superposition Principles Applied to Poly (allylamine)/Poly (acrylic acid) Complexes", 2019 AIChE Annual Meeting, Orlando 2019

40. N. Łopuszyńska, K. Jasiński, K. Szczepanowicz, P. Warszyński, W. P. Węglarz "The application of the 3D UTE sequence at a high field for 19F magnetic resonance imaging of theranostic nanocapsules", ISMRM Workshop on Ultrahigh Field Magnetic Resonance: Technological Advances, Translational Research Promises & Clinical Applications, Dubrovnik 2019

41. N. Łopuszyńska, K. Jasiński, K. Szczepanowicz, P. Warszyński, W. P. Węglarz, "Visualization of the distribution of 19F nuclei in Nafion loaded theranostic nanocapsules with the 3D Ultra-Short Echo Time pulse sequence at 9.4T", 10th Kraków Workshop on Novel Applications of Imaging and Spectroscopy in Medicine, Biology and Material Sciences, Kraków 2019

42. P. Mazalski, B. Anastaziak, P. Kuświk, Z. Kurant, I. Sveklo, A. Maziewski, "Temperature evolution of magnetic domain structure and anisotropy in ferro-/antiferromagnetic layers", The Joint European Magnetic Symposia (JEMS2019), Uppsala 2019

43. P. Mazalski, P. Kuświk, A. Rogalev, A. Wawro, A. Maziewski "Magnetic properties of different ultrathin films studied by synchrotron radiation", Polish Scientific Network, Poznań 2019

44. M. Morga, Z. Adamczyk, D. Kosior, P. Batys "From macroscopic studies to microscopic properties: unravelling the conformation and adsorption mechanisms of poly-L-lysine at solid/liquid interfaces" Book of Abstracts: LIV Zakopane School of Physics, Zakopane 2019

45. M. Mosiałek, M. Krzan, M. Zimowska, D. Kharitonov "Composite yttrium iron cobaltite–lanthanum strontium manganese oxide cathode material for solid oxide fuel cells, Composites and ceramic materials – technology, application and testing", Białowieża 2019

46. B. D. Napruszewska, A. Michalik, A. Walczyk, J. Kryściak-Czerwenka, D. Duraczyńska, R. Dula, E. M. Serwicka "Rola odczynnika strącającego w syntezie preparatów hydrotalkitowych" LI Ogólnopolskie Kolokwium Katalityczne, Kraków 2019

47. B.D. Napruszewska, A. Michalik, A. Walczyk, J. Kryściak-Czerwenka, D. Duraczyńska, R. Dula, E. M. Serwicka "Role of the precipitating agent in hydrotalcite synthesis" School of Catalysis, Libice, 2019

48. N. Ogrodowicz, M. Śliwa, U. Filek, A. Micek-Ilnicka "Katalizatory typu heteropolikwas-nośnik w dehydratacji n-butanolu", 62. Zjazd Naukowy PTChem, Warszawa 2019

49. N. Ogrodowicz, E. Lalik, A. Micek-Ilnicka "Odwadnianie alkoholi – niestandardowe zastosowanie spektroskopii FTIR do oznaczania kwasowości stałych katalizatorów", 51. OKK, Kraków 2019

50. D. Orsi, D. Bernardi, K. Szczepanowicz, M. Szczech, P. Warszyński, L. Cristofolini "Layer-by-Layer nanostructures for X-ray Excited Photodynamic Therapy", 8th Conference Bubble & Drop, Sofia 2019

51. M. Oćwieja, M. Morga "Properties of monolayers formed from cysteine-sabilized silver nanoparticles", 62. Zjazd Naukowy PTCHem, Warszawa 2019

52. M. Oćwieja, Z. Adamczyk, D. Lupa, J. Maciejewska-Prończuk, M. Morga, A. Michna, M. Nattich-Rak, A. Pomorska, M. Wasilewska "Noble metal nanoparticle layers of tunable coverage, structure and charge", Lithuanian Chemists Conference Chemistry and Chemical Technology, Wilno 2019

53. A. Pajor-Świerzy, D. Gaweł, R. Socha, R. Pawłowski, P. Warszyński, K. Szczepanowicz "The optimization of methods of synthesis of nickel nanoparticles with silver nanoshell as component of conductive materials", World Nanotechnology Conference, Dubaj 2019

54. A. Pajor-Świerzy, D. Gaweł, R. Socha, R. Pawłowski, P. Warszyński, K. Szczepanowicz "Metallic ink based on nickel NPs with silver nanoshell for preparation of conductive materials", International Conference on Materials and Nanomaterials (MNs-19), Paryż 2019

55. A. Pajor-Świerzy, R. Socha, R.Pawłowski, P. Warszyński, K. Szczepanowicz "Synthesis and characterization of nickel-silver core-shell nanoparticles for fabrication of conductive inks", 5th International Conference on Modern Approaches in Science, Technology and Engineering (STECONF), Berlin 2019

56. K. Pałka, P. Weroński "Effect of particle polydispersity on structure and surface properties of colloidal particle multilayers", 17th European Student Colloid Conference, Varna June 2019

57. K. Pałka, P. Weroński "Effect of particle bimodality on structure and surface properties of colloidal particle multilayers", Interfacial Phenomena in Theory and Practice, Sudomie 2019

58. T. Pańczyk, P. Wolski, P. Wojtoń "Stabilność niekanonicznych form telomerycznego DNA badana przy użyciu dynamiki molekularnej", FGF Fizykochemia granic faz, Lublin 13-17.05.2019

59. T. Pańczyk, P. Wolski "Charakterystyka struktury dendrymerów PAMAM zaadsorbowanych na powierzchni złota. Badania dynamiką molekularną"; FGF Fizykochemia granic faz, Lublin 2019

60. T. Pańczyk, P. Wolski „Deformacje dendrymerów poli(amidoaminowych) na powierzchni złota: Badania dynamiką molekularną”; VI Ogólnopolska konferencja naukowa Innowacje w Praktyce, Lublin 2019

61. T. Pańczyk, P. Wolski "Interaction of Carbon Nanotubes with Nanoparticles, Dyes or DNA Fragments as a Fundamental Factor for the Designe of Drug Carriers. Insights from Molecular Dynamics Studies", 1st International Conference on Noncovalent Interactions, Lisbona 2019

62. T. Pańczyk, P. Wolski, P. Wojtoń "Interaction of Telomeric DNA i-motif with Carbon Nanotubes. A Molecular Dynamics Analysis of the Structure and Stability", NANOTECH FRANCE, Paris 2019

63. N. Piergies, A. Dazzi, A. Deniset-Besseau, J. Mathurin, M. Oćwieja, C. Paluszkiewicz, W. Kwiatek "Lablee-free characterization of drugs distribution onto potential colloidal nanocarrier monolayers by AFM-IR" LIV Zakopane School of Physics, Zakopane 2019

64. N. Piergies, M. Oćwieja, C. Paluszkiewicz, W. Kwiatek "Temperature and time-dependent SERS investigations insights into drug-nanocarrier conjugates stability" XV International Conference on Molecular Spectroscopy - from molecules to molecular materials: Molecular Biological Systems and Nanostructures, Wojanów 2019

65. N. Piergies, A. Dazzi, A. Deniset-Besseau, J. Mathurin, M. Ocwieja, C. Paluszkiewicz, W. Kwiatek "Spectroscopy insigths into the drug-nanocarrier interactions- SERS and AFM-IR studies" 4th Annual European Forum on Nanoscal IR Spectroscopy", Amsterdam 2019

66. Pomorska, Z. Adamczyk, M. Nattich-Rak, M. Wasilewska, M. Sadowska "Dynamic hydration function of human serum albumin adsorbed at silicon oxide Surface", LIV Zakopane School of Physics, Zakopane 2019

67. W. Płaziński, K. Nester, K. Gawęda "Recent advances in methodologies for molecular modeling of carbohydrate polymers", The 8th Asian Conference on Colloid & Interface Science, Kathmandu 2019

68. P. Rejmak, M. Gackowski, Ł. Kuterasiński, J. Podobiński, A. Korzeniowska, B. Sulikowski, J. Datka, E. Brocławik "Physicochemical and catalytic properties of active sites in hierarchical mazzite zeolites revealed by IR and NMR spectroscopies combined with DFT modeling", LI Ogólnopolskie Kolokwium Katalityczne, Kraków 2019

69. R. Sadek, K. Chałupka, W. Maniukiewicz, M. Lasoń-Rydel, P. Mierczynski, J. Gurgul, J. Rynkowski, S. Dzwigaj "Wpływ dodatku niklu na aktywność zeolitowych katalizatorów kobaltowych w syntezie Fischera-Tropscha", LI Ogólnopolskie Kolokwium Katalityczne, Kraków 2019

70. E. Santini, E. Jarek, F. Ravera, L. Liggieri, P. Warszyński, M. Krzan, "Surface properties and foamability of saponin and saponin-chitosan systems", 8th Conference Bubble and Drop, Sofia 2019

71. S. Simon, Ł. Bratasz, T. White, C. Sease, N. Utrup, S. Butts, J. Paquette, R. Boardman, W. Altenhöner, Z. Risiko "Energieeffizienz und Konservierung – ein Green New Deal für Kultureinrichtungen Schützen", Pflegen und Erhalten – Entwicklungen in der präventiven Konservierung Beiträge des 13. Konservierungswissenschaftlichen Kolloquiums in Berlin/Brandenburg, Berlin, 2019

72. M. Smoliło, K. Samson, J. Podobiński, M. Ruggiero-Mikołajczyk, A. Drzewiecka-Matuszek, D. Duraczyńska, D. Rutkowska-Żbik, L. Valentin, F. Averseng, Y. Millot, S. Dzwigaj "Synthesis and physicochemical characterization of vanadium-containing BEA zeolite for Oxidative

Dehydrogenation (ODH) of light alkanes", LI Ogólnopolskie Kolokwium Katalityczne, Kraków 2019

73. M. Smoliło, K. Samson, J. Podobiński, M. Ruggiero-Mikołajczyk, A. Drzewiecka-Matuszek, D. Duraczyńska, D. Rutkowska-Żbik, L. Valentin, F. Averseng, Y. Millot, S. Dzwigaj "Synthesis and Physicochemical Characterization of Vanadium-containing BEA zeolite for Oxidative Dehydrogenation (ODH) of Light Alkanes", School on Catalysis, Liblice 2019
74. N. Sobuś, B. Michorczyk, M. Piotrowski, Ł. Kuterasiński, D.K. Chlebda, J. Łojewska, R.J. Jędrzejczyk, P.J. Jodłowski, I. Czekaj "Design of sonically prepared Cu-, Co- and Fe-zeolite catalysts for selective conversion of lactic acid into acrylic acid", LI Ogólnopolskie Kolokwium Katalityczne, Kraków 2019
75. N. Spiridis, K. Freindl, E. Madej, N. Kwiatek, J. Wojas, P. Dróżdż, D. Wilgocka-Ślęzak, J. Korecki "Reduction of Fe3O4 Films on Pt(111) - Surface Structure vs. Composition" 9th International Workshop on Surface Physics, Trzebnica 2019
76. D. Staśko, A. Pajor-Świerzy, G. Mordarski, P. Warszyński, K. Szczepanowicz "Synthesis and characterization of air-stable nickel-silver core-shell nanoparticles", XIV Szkoła letnia dla doktorantów oraz młodych pracowników nauki "Zjawiska międzyfazowe w teorii i praktyce", Sudomie 2019
77. M. Strojecki, A. Mleczkowska, Ł. Bratasz, R. Kozłowski "Zabrudzenia historycznych wnętrz cząstkami pyłu zawieszonego", Konferencja "Analiza Chemiczna w Ochronie zabytków", Warszawa 2019
78. M. Strojecki "Mikroklimat i warunki ekspozycyjne w Zamku Królewskim na Wawelu", Prezentacja prac konserwatorskich i działań z zakresu ochrony dzieł sztuki w Zamku Królewskim na Wawelu zrealizowanych w ramach projektu "Wawel – dziedzictwo dla przyszłości", Kraków 2019
79. R. Studzińska, R. Kołodziejska, W. Płaziński, D. Kupczyk, T. Kosmalski, B. Modzelewska-Banachiewicz "Synteza nowych pochodnych N-metyloaminotiazol-4(5H)-onu oraz ich interakcje z 11β-HSD1", 62. Zjazd Naukowy PTChem, Warszawa 2019
80. P. Summa, K. Marcinowski, B. Samojeden, D. Rutkowska-Żbik, M. Motak „Comparison of nano-oxide products from solution combustion synthesis and thermal decomposition of hydrotalcites” 62. Zjazd Naukowy PTChem, Warszawa 2019
81. M. Szaleniec, P. Wójcik, A.M. Wojtkiewicz, M. Flejszar, O. Zastawny, M. Guzik, E. Romero, M.W. Fraaije "Biocatalytic oxidative dehydrogenation of steroids by 3-ketosteroid dehydrogenase from Stereolibacterium denitrificans", LI Ogólnopolskie Kolokwium Katalityczne, Kraków 2019
82. M. Szaleniec, P. Wójcik, M. Glanowski, A. M. Wojtkiewicz, M. Procner, B. Mrugała, O. Zastawny, M. Guzik, E. Niedziałkowska, W. Minor, K. Świderek, V. Moliner "Combining kinetic studies with theoretical modeling – case study for ketosteroid dehydrogenases" Trends in Enzyme Catalysis, Merging theory and experiment, Benicassim 2019
83. M. Szaleniec, P. Wójcik, M. Glanowski, A. M. Wojtkiewicz, M. Procner, B. Mrugała, O. Zastawny, M. Guzik, E. Niedziałkowska, W. Minor, K. Świderek, V. Moliner "Combining

kinetic studies with theoretical modeling – case study for ketosteroid dehydrogenases", Summer School of Chemical Biology, Hirshegg 2019

84. M. Szczech, P. Warszyński, K. Szczepanowicz "Bio-polymeric nanoparticles as hydrophobic drug‘s carriers for biomedical application", 1st CA17140 Conference, Riga 2019

85. M. Szczęch, A. Karabasz, N.Łopuszyńska, M. Bzowska, W.P. Węglarz, P.Warszyński, K. Szczepanowicz "Polymeric nanoparticles for theranostic", 1st CA17140 Conference, Riga 2019

86. L. Szyk-Warszyńska, Z. Krasińska-Krawet, K. Raszka, P. Warszyński "Formation of casein and polypeptide multilayer films and binding of calcium", The 9th International Workshop on Surface Modification for Chemical and Biochemical Sensing, Żelechów 2019

87. M. Tsirigotis-Maniecka, L. Szyk-Warszyńska, P. Warszyński, K. A. Wilk "Encapsulation stability and pH-dependent release kinetics of phytopharmaceuticals from polysaccharide-based microparticles", 33rd Conference of the European Colloid and Interface Society, Leuven 2019

88. Wiertel-Pochopień, J. Zawała "Stabilność filmów zwilżających tworzonych przez pęcherzyk uderzający w powierzchnię kwarcu w roztworach kationowych surfaktantów", "Fizykochemia granic faz – metody instrumentalne", Lublin 2019

89. Winiarska, F. Arndt, M. Szaleniec, J. Heider, A. Bodzoń-Kułakowska "Biochemical characteristics of an aldehyde oxidoreductase from Aromatoleum aromaticum", LI Ogólnopolskie Kolokwium Katalityczne, Kraków 2019

90. M. Witko, D. Rutkowska-Żbik, A. Drzewiecka-Matuszek, K. Samson, R. Tokarz-Sobieraj "Probing surface oxygen species on Mo and V containing systems", 49. EuropaCat 2019, Aachen 2019

91. M. Włodek, M. Szuwarzyński, M. Kolasińska-Sojka, P. Warszyński, W.H. Briscoe "Structural evolution of quantum dots containing SLBs", 8th Conference Bubble and Drop, Sofia, 2019

92. M. Włodek, M. Szuwarzyński, M. Kolasińska-Sojka, P. Warszyński, W.H. Briscoe "Structural evolution of quantum-dot endowed fluorescent lipid bilayers on polymer cushion via liposome fusion", 33rd Conference of the European Colloid and Interface Society, Leuven 2019

93. M. Śliwa, W. Rojek, A. Kornas, A. Żelazny, M. Smoliło, K. Samson, M. Ruggiero, Ł. Kuterasiński, J. Podobiński, J. Datka, D. Rutkowska-Żbik, "Układy miedziowe jako katalizatory uwodornienia dwutlenku węgla i związków otrzymywanych z biomasy" 62. Zjazd Naukowy PTChem, Warszawa 2019

Conferences and scientific events organized by the Institute

2017

1. 49. Ogólnopolskie Kolokwium Katalityczne, Kraków 15-17 March 2017
2. European School on Interfacial Engineering: Fundamentals, Applications, and Analytical Methods, ESIE 2017, Kraków 3-6 April 2017
3. PANel Wiedzy – spotkanie naukowe Rady Samorządu Doktorantów Polskiej Akademii Nauk, Kraków 19 May 2017
4. 17. Festiwal Nauki i Sztuki "W zgodzie z naturą", Rynek Główny, Kraków 25-27 May 2017
5. Dzień Otwarty IKiFP PAN, Kraków 12 June 2017
6. 8th World Congress on Oxidation Catalysis & 12th European Workshop Meeting in Innovation in Selective Oxidation Catalysis, Krakow 3-8 September 2017

2018

1. International Conference on Catalysis and Surface Chemistry & 50. Ogólnopolskie Kolokwium Katalityczne, Kraków 18-23 March 2018
2. Workshop “Quartz Crystal Microbalance with Dissipation Monitoring (QCM-D)”, Kraków 11 May 2018
3. 7th Meeting "X-Ray and other Techniques in Investigations of the Objects of Cultural Heritage", Kraków 7-19 May 2018
4. 18. Festiwal Nauki i Sztuki "Moc rozumu” Rynek Główny, Kraków 17-19 May 2018
5. 5th International Symposium on Surface Imaging/Spectroscopy at the Solid/Liquid Interface, Kraków 6-9 June 2018
6. Dzień Otwarty IKiFP PAN, Kraków 15 June 2018
7. 10th International Symposium Effects of Surface Heterogeneity in Adsorption, Catalysis and related Phenomena ISSHAC-10, Lublin 27-31 August 2018
8. 61. Zjazd Naukowy Polskiego Towarzystwa Chemicznego, Kraków 17-21 September 2018

2019

1. School on Molecular Computational Biochemistry SMCB, Kraków 11-14 March 2019
2. Polish Annual Conference on Catalysis, Kraków 20-23 March 2019
3. Dzień Otwarty IKiFP PAN, Kraków 11 June 2019
4. Workshop on Data Collection and Structure Solving in Macromolecular X-ray Diffraction, Kraków 12-16 July 2019
5. 62. Zjazd Naukowy Polskiego Towarzystwa Chemicznego, Warszawa 2-6 September.2019
6. 32nd Marian Smoluchowski Symposium on Statistical Physics, Kraków 18-21 September 2019
7. XIX edycja Festiwalu Nauki i Sztuki w Krakowie, Kraków 16-19 May 2019
8. Analiza Chemiczna w Ochronie Zabytków, Warszawa 5-6 December 2019

Career Advencement

2017

Professor

1. T. Borowski

Doctorate of Science (DSc)

1. K. Szczepanowicz, "Polyelectrolyte Nanocarriers for Biomedical Application"

Doctor of Philosophy (PhD)

1. A. Drzewiecka-Matuszek "Quantum-chemical investigation of iron and manganese porphyrins reactivity in selected oxidation reactions" (supervisor D. Rutkowska-Żbik)
2. J. Piotrowska "Catalytic Oxidation of Cyclohexanone to ε-Caprolactone with Hydrogen Peroxide over Synthetic and Natural Basic Minerals" (supervisor E. Serwicka-Bahranowska)
3. K. Podgórna "Polymer Hydrogels as Carriers of Active Compounds" (supervisor P. Warszyński, auxiliary supervisor K. Szczepanowicz)
4. M. Sadowska "Mechanism of irreversible nanoparticles adsorption on colloids particles" (supervisor Z. Adamczyk)
5. A. Stępniewski "Electronic factors responsible for the activity of transition metal centers in zeolites and complexes of catalytic importance" (supervisor E. Brocławik)
6. T. Szumełda "The effect of bimetallic Pd-X (X = Au, Ir) particles structure in supported catalysts on the C=O/C=C selectivity in hydrogenation of unsaturated carbonyl reagents" (supervisor A. Drelinkiewicz)
7. M. Włodek "Polyelectrolyte-Lipid Films with Embedded Hydrophobic Quantum Dots" (supervisor P. Warszyński, auxiliary supervisor M. Kolasińska-Sojka)
8. B. Wolanin "Titanium oxides nanostructures on W(001) functionalized with metals" (supervisor N. Spirids)
9. P. Wolski "Molecular modelling of adsorption of doxorubicin and selected dye molecules on single-walled carbon nanotubes" (supervisor T. Pańczyk)

2018

Doctorate of Science (DSc)

1. M. Kolasińska- Sojka "Multilayer nanocomposite films"
2. A. Michna "Determination of macroion adsorption mechanisms and stability of macroion monolayers adsorbed on solid surfaces"

Doctor of Philosophy (PhD)

1. A. Kornas "Dimethyl ether synthesis in CO2 hydrogenation reaction with participationof hybrid catalysts modified by Ga, Cr, Mn and Ag additives" (supervisor D. Rutkowska-Żbik)

2. A. Mleczkowska "Particles in historic religious buildings - sources, transport and deposition" (supervisor Ł. Bratasz)

3. A. Żelazny "Hydrogenolysis of glycerol with the use of copper and copper-silver catalysts deposited on oxide supports" (supervisor R. Grabowski, D. Rutkowska-Żbik)

2019

Professor

1. M. Szaleniec

Doctorate of Science (DSc)

1. A. Pacuła "Porous carbon materials doped with nitrogen and their composites with transition metals"

2. M. Nattich-Rak "A quantitative analysis of protein monolayer structure and molecule orientation using the colloid enhancement method"

3. M. Oćwieja "Determination of the influence of functionalization of silver and gold nanoparticles by low molecular mass aminothiols on the processes of their self-assembly on boundary surfaces"

4. K. Pamin "Catalysts with defined structures applied in the reaction of selective oxidation in liquid phase"

Doctor of Philosophy (PhD)

1. B. Bożek "New polyoxo compounds of molybdenum(VI) as catalysts for oxidation reactions" (supervisor W. Łasocha)

2. J. Maciejewska-Prończuk "Mechanism of formation of noble metal nanoparticle layers at the solid - electrolyte interface" (supervisor Z. Adamczyk)

3. S. Świątek "Functional layers of bovine β-lactoglobulin as perspective drug carriers" (supervisor B. Jachimska)

4. K. Tokarczyk "Physicochemical characteristics of polyelectrolyte structures based on dendrimers and proteins" (supervisor B. Jachimska)

Awards

2017

1. First prize in the fifth edition of the ProPAN 2015 competition for the most pro-PhD institute of the Polish Academy of Sciences organized by the National Team of Doctoral Students and the Doctoral Student Union of the Polish Academy of Sciences
2. A.Rugor - award for poster presentation, Royal Society of Chemistry Books, 10th Molybdenym and Tungstate Enzyme Conf., Santa Fe 2017
3. M. Szaleniec - the prize of Włodzimierz Kołos, III Department of the Polish Academy of Sciences
4. K. Tokarczyk - doctoral scholarship of the President of the Polish Academy of Sciences
5. P. Wolski - award for the best oral presentation, FGF Conference "Physical chemistry of phase boundaries - instrumental methods", Lublin 2017

2018

1. Second prize in the sixth edition of the ProPAN 2018 competition for the most prodocant institute of the Polish Academy of Sciences organized by the National Representation of Doctoral Students and the Doctoral Student Union of Polish Academy of Sciences
2. Ł.Bratasz - laureate of the Polish NAWA program Returns
3. E. Brocławik - active Polish Academy of Skills membership
4. E. Brocławik - director of the Polish Academy of Skills' Faculty of Exact and Technical Sciences
5. B. Grzybowska-Świerkosz - Officer's Cross of the Order of Polonia Restituta awarded by the President of the Republic of Poland
6. D. Lupa - doctoral scholarship of the President of the Polish Academy of Sciences
7. P. Komorek - winner of the VIII edition of the 'Road to Harvard' competition
8. M. Witko - Officer's Cross of the Order of Polonia Restituta awarded by the President of the Republic of Poland
9. A. Zbigniew, E. Brocławik, D. Mirosław, K. Roman, E. Serwicka-Bahranowska, S. Bogdan, P. Warszyński, R. Grabowski, J. Słoczyński, R. Tokarz-Sobieraj, T. Machej - Golden Cross of Merit awarded by the President of the Republic of Poland
10. T. Borowski, T. Pańczyk, M. Łukomski, W. Płaziński, D. Rutkowska-Żbik, N. Spiridis, M. Szaleniec, E. Bielańska - Silver Cross of Merit awarded by the President of the Republic of Poland
11. J. Janas, A. Kowal, G. Para, H. Piekarska-Sadowska, J. Rodakiewicz-Nowak - Bronze Cross of Merit awarded by the President of the Republic of Poland
12. M. Witko - membership of the European Academy of Sciences

2019

1. Ł. Bratasz - chairman of the Technical Committee 311 "Protection of Cultural Property" of the Polish Committee for Standardization
2. B. Jachimska - winner of the Polish Intelligent Development Award

3. M. Mosiałek - member of the Scientific Committee of the Conference: Energy, Fuels and Environment
4. A. Pajor-Świerzy - winner of the IKiFP PAN development project
5. D. Rutkowska-Żbik - deputy chairman of the Cracow branch of PTChem for 2019-2021
6. P. Skowron - chairman of the Doctoral Students' Union of the Polish Academy of Sciences
7. W. Witko - V-ce President of EFCATS
8. M. Witko - full member of the Polish Academy of Sciences