

**Maria Curie-Skłodowska University in Lublin**

**Faculty of Chemistry, Institute of Chemical Sciences**

**Polish Chemical Society**

**Łukasiewicz Research Network – New Chemical Syntheses Institute**



**UMCS**



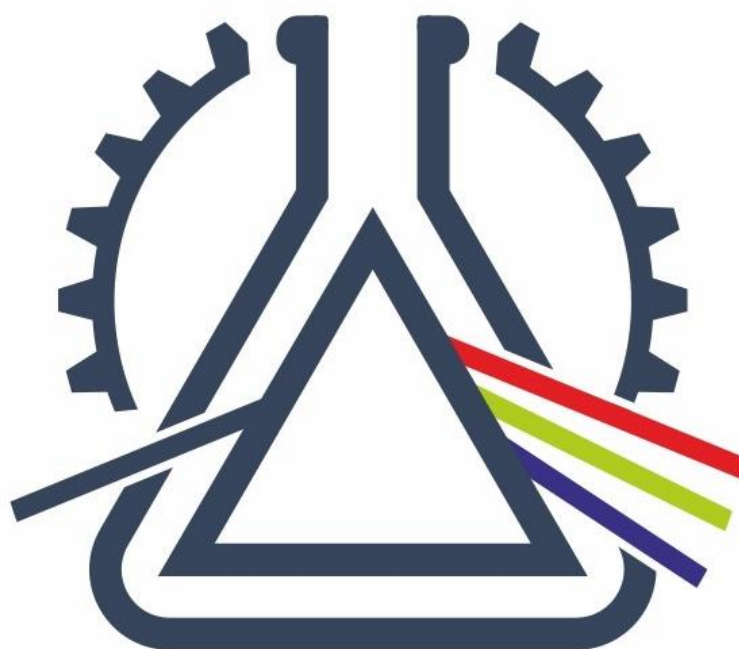
**UMCS**

INSTYTUT MARIA SKŁODOWSKICH



**Łukasiewicz**

New Chemical Syntheses Institute



**Agenda of**

**International Conference**

**Science and industry – challenges and opportunities**

**June 4-6, 2024, Lublin - Pulawy**

## Honorary Committee

Prof. dr hab. Radosław Dobrowolski, Rector of Maria Curie-Skłodowska University, Lublin  
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Prof. dr hab. Robert Pietrzak, UAM, Poznań

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Dr hab. Anna Przybył, prof. UAM, Poznan

Dr hab. Magdalena Regel-Rosocka, prof. PP, Poznan

Dr hab. Mariola Samsonowicz, prof. PB, Białystok

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Prof. dr hab. Marcin Sobczak, UM, Warsaw

Dr hab. Katarzyna Staszak, PP, Poznan

Dr hab. Katarzyna Szymczyk, prof. UMCS, Lublin

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Dr hab. Renata Świsłocka, prof. PB, Białystok

Prof. dr hab. inż. Andrzej Trochimczuk, PW, Wrocław

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Prof. dr hab. Tomasz Wasilewski, UTH, Radom

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Dr hab. Karolina Wieszczycka, prof. PP, Poznan

Prof. dr hab. Małgorzata Wiśniewska, UMCS, Lublin

Dr hab. Anna Wołowicz, UMCS, Lublin

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Prof. dr hab. Dorota Kołodyńska – Vice-President, UMCS, Lublin

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Dr hab. Monika Wawrzekiewicz – Member of the Committee, prof. UMCS, Lublin

Mgr Emil Zięba – Member of the Committee, KUL, Lublin

Dr hab. Marcin Konkol – Member of the Committee, Łukasiewicz – INS, Puławy

Mgr Magdalena Woźniakowska – Member of the Committee, Łukasiewicz – INS, Puławy

Dr Katarzyna Tyśkiewicz – Member of the Committee, Łukasiewicz-INS, Puławy

## Important information

**The conference takes place  
in the building of the Institute of Computer Science, 9 Akademicka St., 1<sup>st</sup> floor, room D105  
(entrance to the building from 2 M. Curie-Skłodowska Sq., between the buildings of the Department of  
Chemistry and the Department of Mathematics, Physics and Computer Science)  
and in Puławski Park Naukowo-Technologiczny, 1 Mościckiego St., Puławy.**

**Registration of participants and collection of conference materials  
will be held in the conference office (Institute of Computer Science, 1<sup>st</sup> floor)  
on 04.06.2024 from 8:00**

**The poster session will be held on 04.06.2024  
from 10:30 to 13:45 (lobby, 2<sup>nd</sup> floor),  
please hang up your posters in advance.  
Settlement of the competition for the best  
poster - at 14.45, room D105.**

**Lunches  
Restaurant "Basil"  
4a Maria Curie-Skłodowska Sq., Lublin  
(building of Faculty of Humanities).**

**The gala dinner will be held on 04.06.2024  
from 19:00 to 23:30 at the Mecure Hotel  
12 Raclawickie Ave., Lublin.**

**„Trip with Czartoryski Family“ - excursion on 05.06.24  
from 15.15 to 17.15 - registration at the conference office on 04.06.24.**

**Departure by bus to Puławski Park Naukowo-Technologiczny, 1 Mościckiego St.,  
on 05.06.24 at 9:00 from the Mercure Hotel, 12 Raclawickie Ave., Lublin**

<b>June 4, 2024</b> <b>Institute of Computer Science, 9 Akademicka St., Lublin, 1<sup>st</sup> floor, room D105</b>	
9:00 – 9:30	Opening ceremony of the conference: Vice-President prof. dr hab. Dorota Kołodyńska
<b>Session Chair: prof. dr hab. Dorota Kołodyńska, UMCS</b>	
9:30 – 10:00	<b>J. Dudka</b> , Preclinical studies in new drug development
10:00 – 10:15	<b>Z. Krupa</b> , J. Nizioł, T. Ruman, Laser ablation remote ionisation mass spectrometry imaging for detection of biomarkers and metabolites
10:15 – 10:45	Coffee break
10:30 – 13:45	Poster session, lobby, 2 <sup>nd</sup> floor
<b>Session Chair: prof. dr hab. Dorota Kołodyńska, UMCS</b>	
10:45 – 11:15	<b>S. Sokołowski</b> , Some comments concerning the interpretation of experimental data in the field of surface chemistry: misinterpretations, incorrect models, false, equations, etc.
11:15 – 11:30	<b>T. Wasilewski</b> , Management of hygiene cosmetic formulation towards reducing negative effects on the skin – considering functionality and economic aspects
11:30 – 12:00	<b>A. Nawrocka</b> , Arsenic speciation in fish and seafood samples
12:00 – 13:45	Lunch, Coffee break
<b>Session Chair: prof. dr hab. Beata Podkościelna, UMCS</b>	
13:45 – 14:00	<b>B. Rojek</b> , A. Bartyzel, A. Plenis, FTIR and TGA-FTIR in compatibility study of arbidol hydrochloride mixtures with excipients
14:00 – 14:15	<b>T. Banaszek</b> , A. B. Nowicka, M. Szybowicz, R. Wichniarek, W. Kuczko, D. Tomczak, M. Wojtyłko, A. Froelich, B. Jadach, T. Osmalek, Raman spectroscopy in the study of active pharmaceutical ingredients
14:15 – 14:30	<b>B. Czech</b> , A. Sokołowski, Phytotoxicity of biochars obtained from various raw materials
14:30 – 14:45	<b>A. Gładysz-Płaska</b> , A. Lipke, J. Padarz, M. Gajewska, E. Grabias-Blicharz, M. Majdan, Studies of thorium sorption on functionalized mesoporous silica
14:45 – 15:00	Settlement of the competition for the best poster
19:00 – 23:30	Gala dinner, Hotel Mercure, 12 Raclawickie Ave., Lublin

**June 5, 2024**  
**Puławski Park Naukowo-Technologiczny, 1 Mościckiego St., Puławy**

10:30 – 11:00	Opening coffee
11:00 – 11:15	Conference opening in Łukasiewicz-INS
<b>Session Chair: dr hab. Monika Wawrzkiwicz, prof. UMCS</b>	
11:15 – 11:55	<b>W. Vetter</b> , T. Hammerschick, F. Rüttler, M. Müller, Countercurrent chromatography methods for the isolation of bioactive lipid compounds
11:55 – 12:10	<b>K. Tyśkiewicz</b> , M. Gruba, M. Kondracka, R. Tyśkiewicz, A. Wziątek, M. Konkol, R. Wiejak, R. Kowalski, A. Bialek, Supercritical carbon dioxide extracts from clove buds with antifungal properties
12:10 – 12:30	Coffee break
<b>Session Chair: dr hab. Anna Wołowicz</b>	
12:30 – 12:45	<b>Z. Hordyjewicz-Baran</b> , T. Wasilewski, M. Zarębska, N. Stanek-Wandzel, A. Krzyszowska, M. Tomaka, Micellar extraction as a tool for the development of natural skin care cosmetics containing substances isolated from grapevine buds
12:45 – 13:00	<b>E. Nalewajko-Sieliwoniuk</b> , I. Wysocka, A. Kalinowska, Determination of antioxidants in edible oils using a flow system with chemiluminescence detection
13:00 – 13:15	<b>A. Myka</b> , R. Łyszczek, A. Bińczak, Polihalite: what kind of fertilizer is it?
13:15 – 14:30	Lunch and coffee break
<b>Session Chair: dr hab. Monika Wawrzkiwicz, prof. UMCS</b>	
14:30 – 14:45	<b>L. Senerovic</b> , M. Atanaskovic, A. Djokic, N. Stankovic, L. Djokic, I. Moric, Bioprospecting of microbial enzymes for industrial application
14:45 – 15:00	<b>A. Zdunek</b> , D. Kołodyńska, K. Borowik, Removal of fluoride ions from ammonium sulphate(VI) solutions by ion exchange resin
15:00 – 15:15	<b>A. Wołowicz</b> , Z. Hubicki, Comparison of adsorptive removal of vanadium(V) ions from aqueous solutions by various ion exchange resins
15:15 – 17:15	Trip with Czartoryski Family
18:00	Dinner, Dwór Bogucin, 108 A Bogucin, Garbów

**June 6, 2024**  
**Institute of Computer Science, 9 Akademicka St., Lublin, 1<sup>st</sup> floor, room D105**

**Session Chair: dr hab. Agnieszka Gładysz-Plaska, UMCS**

9:00 – 9:30	W. Stachowicz, M. Rzelewska-Piekut, W. Smulek, <b>M. Regel-Rosocka</b> , Bioorganic precipitation of platinum group metal nanoparticles
9:30 – 9:45	<b>T. Michałek</b> , M. Wojnicki, Improving the efficiency of palladium(II) cementation from dilute solutions by using silver-copper alloy powders
9:45 – 10:00	<b>A. Pawlak</b> , A. Nosal-Wiercińska, Research on the “cap-pair” effect for Bi(III) ions in aqueous-organic environments. Effect of selected ionic surfactants on the electrode process
10:00 – 10:30	Coffee break
<b>Session Chair: dr hab. Bożena Czech, prof. UMCS</b>	
10:30 – 10:45	<b>J. Karpińska</b> , U. Kotowska, W. Polińska, D. Kiejza, The use of peracetic acid for the degradation of selected group of organic pollutants – kinetic study
10:45 – 11:00	<b>M. Hryniewicka</b> , Biosurfactants and their applications in sample preparation techniques
11:00 – 11:15	<b>M. Goliszek</b> , K. Skrzypiec, B. Podkościelna, Lignin as a sustainable additive for polymer protective materials
11:15 – 11:30	<b>O. Kapusta</b> , M. Kaczmarczyk, M. Barczak, Synthesis of alginate hydrogels doped with iron microparticles: rheological and spectroscopic characterization
11:30 – 11:45	<b>K. Karpińska-Wlizło</b> , W. Gac, W. Zawadzki, G. Słowik, CO <sub>2</sub> hydrogenation in the presence of alumina and silica supported nickel catalysts
11:45 – 12:00	<b>M. Skrzetuszewski</b> , Ł. Litwiniuk, M. Zajkowski, S. Górnik, K. Hovorova, Testing the spectral characteristics of reflective materials using a multi-angle attachment
12:00 – 12:15	Closing ceremony of the conference: presidents prof. dr. hab. Zbigniew Hubicki and prof. dr hab. Dorota Kołodyńska
12:15 – 13:15	Lunch

## List of posters

**P1.** J. Miętus, P. Tobiasz, I. Zdaniewicz, F. Borys, K. Wojciechowski, A. Susdorf, H. Krawczyk

Study of substituted chalcones combined with azobenzenes - new photoswitches

**P2.** B. Rojek, A. Plenis

Piroxicam compatibility screening using spectroscopic techniques supported by thermal analysis

**P3.** L. Nosach, A. Chrzanowska, E. Skwarek

Formation of zinc sulfate and zinc acetate monolayers on nanosilica surface: modification and thermal transformations

**P4.** W. Korol, G. Bielecka, J. Rubaj, H. Nieściór

Determination of urea in high protein feed materials and compound and complementary feed by a spectrophotometric method

**P5.** J. Bąk, D. Kołodyńska

Hydrotalcite modified biochars (Zn/Al-LDH@BC, Co/Al-LDH@BC) as an example of effective sorbents for removing cerium(III) ions from aqueous media

**P6.** D. Paluch, A. Bazan-Woźniak, R. Pietrzak

X-ray photoelectron spectroscopy as an effective method for qualitative and quantitative surface analysis of carbon adsorbents derived from herbal materials

**P7.** R. Wolski, A. Bazan-Woźniak, R. Pietrzak

Activated carbons obtained from corn digest as adsorbents of pharmaceutical pollutants

**P8.** M. Wawrzekiewicz, B. Podkościelna, B. Tarasiuk

Synthesis, characterisation and application of new polymeric adsorbent containing starch for the removal of toxic dye

**P9.** D. Fila, Z. Hubicki, D. Kołodyńska

Influence of the type of crosslinking agents on the sorption properties of alginate hydrogel microspheres



**P10.** A. Wawruch, D. Fila, Z. Hubicki

Natural-based adsorbent in the sorption of critical raw materials

**P11.** A. Wawszczak, G. Józefaciuk, D. Kołodyńska

Optimization of cadmium ion sorption using bio-inspired matrices: experimental investigations

**P12.** B. Charmas, B. Wawrzaszek, K. Jedynak

Mechanochemical activation as an effective way of developing biocarbons surface and porosity

**P13.** B. Charmas, J. Skubiszewska-Zięba, K. Jedynak

Change in SiO<sub>2</sub> structure under hydrothermal conditions during mechanochemical milling

**P14.** B. Czech, A. Sokołowski

Phthalic acid esters in biochar-amended soil-vegetable system

**P15.** P. Radulski, B. Kaźmierczak, A. Kaczmarczyk

The use of spectroscopic methods for the analysis of biocarbon obtained from plant wastes

**P16.** B. Kaźmierczak, J. Drabik, P. Radulski, A. Kaczmarczyk, J. Molenda

The influence of pyrolysis temperature on qualitative changes in carbon materials obtained from tea bio-waste

**P17.** M. Wiśniewska, K. Tokarska, T. Urban, P. Nowicki

Production of activated biocarbons by microwave-assisted chemical activation of hardwood sawdust

**P18.** M. Wiśniewska, M. Gęca, P. Nowicki

Effect of the activation procedure on the adsorption properties of carbonaceous materials obtained from herbs towards ionic polymers

**P19.** S. Gustaw, J. Bąk, D. Kołodyńska

Biochar-based sorbents as materials in the sorption of arsenic(V) ions from aqueous solutions

**P20.** G. Wójcik, Z. Hubicki, K. Zinkowska

Sorption of nickel(II) ions on chelating ion exchanger

**P21.** J. Bok-Badura, A. Jakóbk-Kolon, B. Sagan-Szendzielorz

Sorption of cesium and strontium ions on hybrid pectin based sorbent

**P22.** M. Kalinowska, E. Gołębiewska, K. Koronkiewicz, M. Bieniek, A. Ziniewicz

Extraction of bioactive compounds from dandelion using modern extraction techniques

**P23.** M. Krystkiewicz, M. Kalinowska, G. Kolenda, K. Koronkiewicz, E. Gołębiewska, R. Choińska, J. Skibicki

Pressurized solvent extraction (PSE) of bioactive compounds from apple pomace

**P24.** H. Kuzmanenko, T. Okholina, W. Sofińska-Chmiel, U. Maciołek, M. Goliszek, M. Drewniak, J. Orzeł

Chemical analysis of kaolin from the Zhezheliv deposits from Vinnytsia region

**P25.** T. Okholina, H. Kuzmanenko, W. Sofińska-Chmiel, U. Maciołek, L. Gazda, E. Mendyk, K. Skrzypiec, J. Orzeł

Spectroscopic characterization of amber from Ukrainian and Lublin deposits

**P26.** I. Pańczuk-Figura, W. Sofińska-Chmiel, U. Maciołek

Chemical analysis of coffee with the addition of cinnamon, ginger and cardamon

**P27.** K. Lewtak, W. Sofińska-Chmiel, J. Wydrych, B. Sidorska, M. J. Fiołka

FTIR spectroscopy as a tool for changes in the cell wall of the fungus *Candida Albicans* after the action of compounds of animal and plant origin

**P28.** M. Fiałek, C. Wardak, M. Wardak

Potassium potentiometric sensors for testing the composition of pharmaceutical preparations

**P29.** M. Fiałek, M. Grabarczyk, M. Wardak

The influence of surfactive substances with different charge on the voltamperometric signal of gallium

**P30.** J. Lenik, C. Wardak

Construction and properties of ion selective electrodes for chlorhexidine determination

**P31.** K. Morawska, C. Wardak, J. Lenik, M. Wardak

Nitrate ion-selective electrodes with nanocomposite-modified ion-sensitive membrane

**P32.** I. Gęca, M. Korolczuk

Application of cold vapour stripping voltammetry for determination of total mercury

**P33.** M. Ochab, I. Gęca

Determination of folic acid by adsorptive stripping voltammetry using a bismuth film-coated gold microelectrode arrays

**P34.** D. Gorylewski, K. Tyszczyk-Rotko, K. Staniec, A. Keller

State-of-art electrode materials in voltammetry ultratrace analysis of acyclovir

**P35.** D. Gorylewski, K. Tyszczyk-Rotko, A. Keller, K. Staniec

Fast, simple and sensitive voltammetric determination of curcumin via various sensors

**P36.** J. Baran, A. Drozd, A. Lassak, M. Kondracka, A. Watros

Determination of selected micronutrients in dried plants by X-ray fluorescence

**P37.** A. Drozd, M. Paluch, D. Kołodyńska

Application of TG and DCS analyses to evaluate thermal properties of polyacrylate-based hydrogels

**P38.** J. Kapelewska, U. Klekotka, Alicja Piotrowska-Niczyporuk, U. Czyżewska, M. Bartoszewicz, J. Karpińska

Abiotic and biotic degradation of polyethylene – physicochemical properties changes

**P39.** M. I. Bolińska, J. Piekutin, U. Kotowska

Selected emerging organic pollutants of the aquatic environment and the possibilities of their removal from the water

**P40.** M. Goliszek, A. Chabros, M. Drewniak, W. Sofińska-Chmiel

Exploring the versatility of xerogels based on agar and gelatin

**P41.** B. Podkościelna, B. Tarasiuk, K. Młynarczyk, A. Puszka, K. Dawidek, A. Gryzińska

Synthesis and characterization of fire-resistant poly(urethane-methacrylate) materials

**P42.** K. Ciosmak, A. Puszka, A. Gryzińska, K. Dawidek, B. Podkościelna

Preparation and study of properties of soft poly(vinyl chloride) compositions with reduced flammability

**P43.** K. Dawidek, A. Gryzińska

The influence of screw rotation speed of extruder to gelation process of poly(vinyl chloride)

**P44.** M. Rogulska, M. Maciejewska

Studies on thermal and mechanical behavior of new biphenyl - derivative thermoplastic polyurethanes

**P45.** E. Krystkowiak

UV-VIS spectroscopy in the study of solute-solvent hydrogen bonding of donor and acceptor types

**P46.** B. Pawlak, K. Tyśkiewicz, M. Gruba, A. Wziątek, M. Konkol, G. Florkowski, Z. Fekner, V. M. Jiménez, J. Verspreet

Economical aspects of food by-products valorization by supercritical fluid extraction

**P47.** M. Groszek, R. Łyszczek, A. Ostasz

Spectroscopic characterization of cobalt(II) complexes with 4,4'-stilbenedicarboxylic acid and N-donor ligands

**P48.** A. Sabitova, K. Akimzhanova, B. Mussabayeva

Chalcophile elements composition of north-east Kazakhstan Salt Lakes' mud

**P49.** A. Sabitova, A. Abdrakhmanova

The effect of the composition of electrolytes on the anode-free lithium-ion batteries

**P50.** Ł. Rusek

Technology for producing controlled-release mineral fertilizers (CRFs) using biodegradable materials in the coating process

**P51.** Z. Idrisheva, I. Ostolska, E. Sandybaev, E. Skwarek, G. Daumova, M. Wiśniewska

Migration of radioactive isotopes in soils at rare earth and thorium ore processing sites

**P52.** A. Skrzypek, B. Paw, J. Matysiak

Innovative methods for the extraction of bioactive compounds from plant sources

**P53.** P. Muszyński, J. Matysiak

Statistical analysis of fluorescence spectra in application to vegetable oil identification

**P54.** E. Skwarek, K. Misiołek, P. Skwarek

Synthesis and study of selected properties of the hydroxyapatite/TiO<sub>2</sub> composite

**P55.** E. Skwarek, O. Goncharuk, L. Nosach, P. Skwarek

Characterization of selected properties of hydroxyapatite-chitosan composites

**P56.** K. Wrzesińska, J. Czerwiński

Iodine contrast agents - fate and occurrence in the environment

**P57.** K. Wrzesińska, J. Czerwiński

Pharmacology and applications of iodine contrast agents

**P58.** A. Kustovska, V. Paientko, O. Pinchuk, Y. Buyan, A. Bryazun, E. Skwarek

Study of the release of chlorophylls of the Lamiaceae family by the spectrophotometric method

**P59.** R. Choińska, A. Dąbrowska, R. Świsłocka, W. Lewandowski

The influence of the biodegradation process on the antioxidant properties of polyphenols

**P60.** N. Kowalczyk, G. Świdorski

Theoretical structural studies of picolinic acid - derived herbicides

**P61.** N. Kowalczyk, G. Tyniecka, E. Gołębiowska, G. Świdorski

Metal complexes with hydroxypicolinic acid - spectroscopic studies and thermal analysis

**P62.** R. Świsłocka, A.I. Ziniewicz

Physicochemical and biological properties of methoxybenzoic acids and their complexes with Cr(III) and Fe(III)

**P63.** A. Golonko, A. Szklaruk, R. Świsłocka, W. Lewandowski

Application of flavonoid potential for metal complexing in food technology and nutrition

**P64.** M. Samsonowicz, A. Antoniuk, A. Dowbysz

Amylase inhibitory activities of matcha tea aqueous extract

**P65.** U. Maciołek, J. Matusiak, E. Grządka, W. Franus

Functionalization of zeolite with cellulose ethers of different ionic nature

**P66.** M. Kosińska-Pezda, U. Maciołek, A. Nowicka, M. Drewniak

Synthesis, spectral characterization, and fluorescent properties in the solid state and solution of dysprosium(III) ions complex with nalidixic acid

**P67.** K. Tyśkiewicz, M. Gruba, M. Kondracka, A. Wziątek, M. Konkol, R. Wiejak, R. Kowalski, A. Białek

Optimization of total cost of manufacturing of clove buds scCO<sub>2</sub> extracts

**P68.** M. Józwicki, K. Skrzypiec, W. Józwicka, P. Janusz, A. Kiczor, P. Mergo, W. Sofińska-Chmiel

Spectroscopic and microscopic studies of uv filters in selected hair cosmetics

**P69.** P. Kluczyński, M. Emmons-Burzyńska, E. Jędrzejczak, M. Wysokowski, M. Regel-Rosocka

Green leaching agents for sustainable copper recovery from e-waste

**P70.** H. Nikolaichuk, E. Fornal

The effect of dietary flavonoids on proteins in Alzheimer disease

**P71.** H. Nikolaichuk, E. Fornal

The effect of dietary flavonoids on post-translational modification of proteins in the context of degenerative diseases

**P72.** T. Wasilewski, A. Krzyszowska, Z. Hordyjewicz-Baran

Coacervate as a form of hand wash cosmetic

**P73.** S. Walczyński, W. Korol

Near infrared reflectance spectrometry (NIRS) method in national and international feed comparative studies

**P74.** A. Žugić, J. Mudrić, N. Krgović, M. Tasić Kostov, V. M. Tadić

Encapsulation of green tea leaves extract by spray drying

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Suspension fertilizers based on waste phosphates from the production of polyols

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Assurance of the validity of the results of the analysis of toxic elements in food of animal origin

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Antioxidant activity of bee bread and drone brood homogenate in lipid peroxidation process and ferric(II) chelating assay



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