

# PROGRAM AT A GLANCE

**MONDAY, APRIL 15, 2024**

## AURELIUS HALL

- 12:45 Opening ceremony
- 13:00 Plenary session
- 17:30 Poster session, Welcome drink

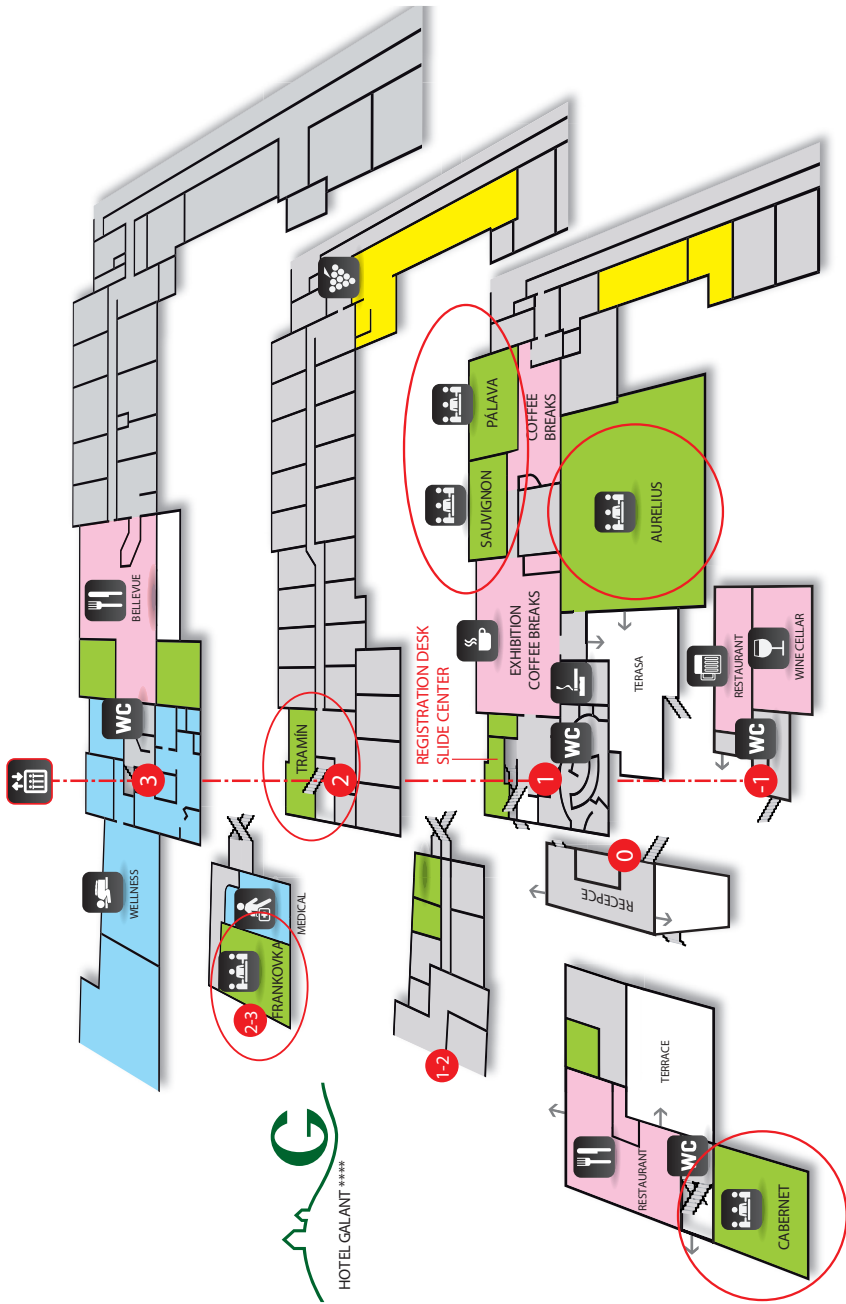
**TUESDAY, APRIL 16, 2024**

	CABERNET	SAUVIGNON	PÁLAVA	FRANKOVKA	TRAMÍN
8:05	Materials engineering	Applied catalysis and organic technology	Inorganic technology	Decarbonisation	Conference of CTP PLASTY
13:40		Oil, petrochemicals, biofuels	Chemical processes and devices	Pharmaceutical technology	Polymers, composites
14:55					
15:40			Technology for environmental protection		
17:20					
18:10		Closing			

**WEDNESDAY, APRIL 17, 2024**

	SAUVIGNON	PÁLAVA
8:05	Economics of chemical industry	Biotechnology and biorefinery
13:00	Closing	

# FLOOR PLAN – CONFERENCE HALLS



# SCIENTIFIC PROGRAM

MONDAY, APRIL 15, 2024

AURELIUS HALL

- 12:45–17:00**      **PLENARY SESSION**  
Chairpersons: Lederer J., Lubojacký J.
- 12:45–13:00**      **Opening**  
Assoc. Prof. Ing. Jaromír Lederer, Ph.D., ČSPCH president  
Ing. Jaromír Lubojacký, MBA, President of the Program Committee
- 13:00–13:15**      **Viktor Ettel Award**  
Assoc. Prof. Ing. Jaromír Lederer, Ph.D., ČSPCH president
- 13:15–13:30**      **Transforming energy into chemicals and fuels – POWER-TO-X-TECHNOLOGY**  
Prof. Ing. Martin Bajus, DrSc., STU Bratislava  
(laureate of the Viktor Ettel Prize)
- 13:30–13:50**      **MIT support for the decarbonisation of the Czech chemical industry**  
Ing. Eduard Muřický, Chief Director of the Economic Section of the MIT of the Czech Republic
- 13:50–14:20**      **Decarbonisation of the chemical industry – designing a transition pathway**  
Ing. Ivan Souček, CSc., SCHP ČR
- 14:20–14:45**      **Decarbonisation strategy at ORLEN Unipetrol**  
Ing. Martin Růžička, ORLEN Unipetrol
- 14:45–15:20**      Coffee break
- 15:20–15:45**      **“Green” hydrogen production by means of water electrolysis**  
Prof. Dr. Ing. Karel Bouzek, UCT Prague
- 15:45–16:10**      **Hydrogen strategy of the Czech Republic**  
Ing. Petr Mervart, Head of the MIT Hydrogen Strategy Department
- 16:10–16:35**      **4-Quinolone drugs and their perspective**  
Prof. Ing. Viktor Milata, DrSc., STU Bratislava
- 16:35–17:00**      **Investment in the expansion of amine production at the Wanhua Chemical plant in Ostrava**  
Mgr. Libor Dluhoš, Ph.D., BorsodChem MCHZ, Ostrava

## 17:30 – 22:00 POSTER SESSION, WELCOME DRINK

Chairperson: Krystyník P., Ústí nad Labem

The poster session program can be found on pages 21 – 27.  
We ask the authors to be present at their posters at least from 18:30 to 20:00.

## AURELIUS HALL

20:45–21:00 **A chemist's voyage: from water to wine in their career alchemy**  
Volařík M., Mikulov

21:00 **The best poster award**

## 8:05 – 18:10 MATERIALS ENGINEERING

Chairpersons: Novák P., Vojtěch D., Prague

8:05–8:30

MI-1 **Correlation of plastic deformation of metastable Cu-Ag Metal-Matrix composites**

Strakosova A.<sup>1</sup>, Průša F.<sup>1</sup>, Paidar V.<sup>1</sup>, Svoboda J.<sup>2</sup>, Lejček P.<sup>1</sup>, <sup>1</sup>Prague, <sup>2</sup>Vestec

8:30–8:55

MI-2 **Waste by-products as a source for carbides preparation for advanced alloys**

Průša F., Riedl J., Lucas C.R., Kratochvíl P., Thürlová H., Prague

8:55–9:20

MI-3 **Powder metallurgy preparation of silicide-aluminide composites**

Novák P.<sup>1</sup>, Skotnicová K.<sup>2</sup>, Szurman I.<sup>2</sup>, Mestek S.<sup>1</sup>, Tsepeleva A.<sup>1</sup>, Michalcová A.<sup>1</sup>, Průša F.<sup>1</sup>, <sup>1</sup>Prague, <sup>2</sup>Ostrava-Poruba

9:20–9:45

MI-4 **High-temperature oxidation of refractory high-entropy alloys prepared by powder metallurgy methods**

Thürlová H., Nováček V., Kratochvíl P., Ekrt O., Průša F., Prague

9:45–10:10

MI-5 **Ignition-resistant magnesium alloys containing calcium and yttrium**

Boukalová A., Nečas D., Kubásek J., Prague

10:10–10:30 **Coffee break**

10:30–10:55

**MI-6 The tin pest acceleration by means of the pink salt**  
Michalcová A.<sup>1</sup>, Fink D.<sup>1</sup>, Msallamová Š.<sup>1</sup>, Friák M.<sup>2</sup>, <sup>1</sup>Prague, <sup>2</sup>Brno

10:55–11:20

**MI-7 Possible tin pest blocking by addition of Au in Sn alloy**  
Fink D., Michalcová A., Msallamová Š., Prague

11:20–11:45

**MI-8 High-strength 18Ni300 maraging steel prepared by spark plasma sintering**  
Strakošová A., Průša F., Michalcová A., Vojtěch D., Prague

11:45–12:10

**MI-9 Heat treatment of additively manufactured high-strength maraging steel**  
Kvapil D., Strakošová A., Vojtěch D., Prague

12:10–13:40 Lunch

13:40–14:05

**MI-10 Structure-property correlation in lithium borophosphate glasses modified with niobium oxide**  
Hostinský T.<sup>1</sup>, Mošner P.<sup>1</sup>, Koudelka L.<sup>1</sup>, Tricot G.<sup>2</sup>, <sup>1</sup>Pardubice, <sup>2</sup>Lille, France

14:05–14:30

**MI-11 Influence of solution composition and in vitro test arrangement on the results of potential bioactivity of bioactive glass 45S5**  
Opavová K., Pánová K., Prague

14:30–14:55

**MI-12 Biodegradable zinc-based materials prepared by powder metallurgy processes**  
Nečas D.<sup>1</sup>, Blažek J.<sup>1</sup>, Dvorský D.<sup>1</sup>, Dobkowska A.<sup>2</sup>, Molak R.M.<sup>2</sup>, Kubásek J.<sup>1</sup>, <sup>1</sup>Prague, <sup>2</sup>Warsaw, Poland

14:55–15:20

**MI-13 Antimicrobial treatment of textile materials – wishes and reality**  
Hrdina R., Burgert L., Kalendová A., Bayerová P., Černý M., Bouška M., Brožková I., Mořková P., Vydřalová M., Stará I., Pardubice

15:20–15:40 Coffee break

15:40–16:05

**MI-14 Degradation of a new clinker-free calcium sulfate binder 3C due to freezing and thawing**  
Pulcová K., Šidlová M., Mauermann L., Šulc R., Prague

16:05–16:30

**MI-15 Hydrophobic heteroboroxine-based materials**  
Novák M., Srb M., Bouška M., Podzimek Š., Jambor R., Pardubice

16:30–16:55

**MI-16 Preparation and characterization of thin films for new generation of cutting tools**

Růžička F., Průša F., Vyskočil J., Prague

16:55–17:20

**MI-17 Ge-Sb-Te thin films fabricated by co-sputtering and pulsed laser deposition**

Bouška M.<sup>1</sup>, Nazabal V.<sup>1,2</sup>, Gutwirth J.<sup>1</sup>, Němec P.<sup>1</sup>, <sup>1</sup>Pardubice, <sup>2</sup>Rennes, France

17:20–17:45

**MI-18 Properties of a novel lignin-based urea formaldehyde resin as an adhesive for wood and wood composites**

Němec M.<sup>1</sup>, Prokůpek L.<sup>2</sup>, Obst V.<sup>2</sup>, Hýšek Š.<sup>3</sup>, <sup>1</sup>Prague, <sup>2</sup>Pardubice, <sup>3</sup>Vienna, Austria

17:45–18:10

**MI-19 Metallic and polymer-composite bipolar plates for PEMFC**

Ludvík J., Kouřil M., Prague

**TUESDAY, APRIL 16, 2024**

**SAUVIGNON HALL**

**8:05 – 10:55**

**APPLIED CATALYSIS AND ORGANIC TECHNOLOGY**

Chairpersons: Vyskočilová E., Veselý M., Prague

**8:05–8:30**

**COT-1 Highly Active Pt/Y-carbon catalyst in hydrogenation of benzene**

Sádovská G.<sup>1,2</sup>, Rastegar S.F.<sup>1</sup>, Pilař R.<sup>1</sup>, Morávková J.<sup>1</sup>, Parvulescu V.I.<sup>3</sup>, Pastvová J.<sup>1</sup>, Plšek J.<sup>1</sup>, Kaucký D.<sup>1</sup>, Kostková N.<sup>1,2</sup>, Sazama P.<sup>1</sup>,  
<sup>1</sup>Prague, <sup>2</sup>Pardubice, <sup>3</sup>Bucharest, Romania

**8:30–8:55**

**COT-2 Extractive recycling of textiles**

Trejbal J., Tomas M., Zapletal M., Prague

**8:55–9:20**

**COT-3 Electron tomography as a powerful tool for detailed investigation of catalysts microstructure**

Koláčný L., Michalcová A., Veselý M., Prague

**9:20–9:45**

**COT-4 Heterogeneous catalysts based on quaternary nitrogen salts**

Zitová K., Hudcová M., Bulavina V., Zelinková K., Vyskočilová E., Prague

**9:45–10:10**

**COT-5 Innovative approach for determining basicity in thermally labile materials**

Dolejšová Sekerová L., Paterová I., Vrbková E., Vyskočilová E., Prague

**10:10–10:30**

Coffee break

10:30–10:55

**COT-6 Catalytic activity distribution of individual catalyst particles in one catalyst batch**

Havrilová S., Koláčný L., Danylo I., Kikhtyanin O., Svobodová Pavlíčková V., Kubička D., Veselý M., Prague

12:10–13:40 Lunch

**13:40 – 18:10 OIL, PETROCHEMICALS, BIOFUELS**

Chairpersons: Kocík J., Litvinov, Hájek M., Pardubice

13:40–14:05

**OP-1 Quality adjustment of liquid fractions from waste plastics pyrolysis and their use in the coprocess of hydrotreating**

Ondrovič T., Mikulec J., Hájeková E., Peller A., Slezáčková M., Bratislava

14:05–14:30

**OP-2 The effect of the addition of pyrolysis oil from used tires on the yield structure of products during fluid catalytic cracking**

Pšenička M.<sup>1,2</sup>, Vondrášková K.<sup>1</sup>, <sup>1</sup>Ústí nad Labem, <sup>2</sup>Prague

14:30–14:55

**OP-3 Identification of the impurities in the liquid products of thermal cracking of waste polyolefin blends and their separation**

Slezáčková M., Mikulec J., Peller A., Danč L., Bratislava

14:55–15:20

**OP-4 Experience with the operation of new generations of pyrolysis heaters**

Ottenschläger O.<sup>1</sup>, Vítiska P.<sup>2</sup>, Michalička P.<sup>2</sup>, <sup>1</sup>Litvinov, <sup>2</sup>Prague

15:20–15:40 Coffee break

15:40–16:05

**OP-5 The use of multivariate statistics and mathematically modelled IR spectra for determination of HVO in diesel fuel**

Sihlovec F., Vrtiška D., Šimáček P., Prague

16:05–16:30

**OP-6 Chemical characterization of pyrolysis bio-oils from cellulose, hemicellulose, and lignin**

Staš M., Závodníková A., Erhart S., Günes G., Prague

16:30–16:55

**OP-7 Epoxidation of methyl esters of camelina sativa oil as a second-generation biofuel**

Hájek M.<sup>1</sup>, Kocián D.<sup>1</sup>, Malina J.<sup>1</sup>, Malisova M.<sup>2</sup>, <sup>1</sup>Pardubice, <sup>2</sup>Bratislava

16:55–17:20

**OP-8 Potential of heterogeneous catalysts for ethanol valorization**

Kocik J.<sup>1</sup>, Kaluža L.<sup>2</sup>, Tišler Z.<sup>1</sup>, Soukup K.<sup>2</sup>, <sup>1</sup>Ústí nad Labem, <sup>2</sup>Prague

17:20–17:45

**OP-9 Use of methyldicyclopentadiene for the production of resins**

Waňoušová S.<sup>1</sup>, Herink T.<sup>1</sup>, Perrot A.<sup>2</sup>, Hyršl J.<sup>2</sup>, Bandžuch J.<sup>2</sup>, Vlasák P.<sup>2</sup>, Kuntrová D.<sup>1</sup>, <sup>1</sup>Litvínov, <sup>2</sup>Pardubice

17:45–18:10

**OP-10 Pyrolysis of waste plastics – heteroatom removal and challenges**

Lestinsky P.<sup>1</sup>, Inayat A.<sup>1</sup>, Klemencova K.<sup>1</sup>, Grycova B.<sup>1</sup>, Wdowkova R.<sup>1</sup>, Snow J.<sup>2</sup>, <sup>1</sup>Ostrava, <sup>2</sup>Litvínov & Usti nad Labem

**TUESDAY, APRIL 16, 2024**

**PÁLAVA HALL**

**8:05 – 14:55 INORGANIC TECHNOLOGY**

Chairperson: Bouzek K., Prague

8:05–8:30

**IT-1 Zeolites in fertilizers**

Štefancová R., Lencsés L., Kučera M., Bratislava

8:30–8:55

**IT-2 Phosphate ash as an alternative waste source of phosphorus for fertilizer production**

Andrášiová A., Štefancová R., Kučera M., Bratislava

8:55–9:20

**IT-3 Crystallization kinetics of Al<sub>2</sub>O<sub>3</sub>-Yb<sub>2</sub>O<sub>3</sub>-Er<sub>2</sub>O<sub>3</sub> glasses**

Šedivá L.<sup>1,2</sup>, Pecušová B.<sup>2</sup>, Faturiková K.<sup>2</sup>, Valúchová J.<sup>2</sup>, Prnová A.<sup>2</sup>, Švančárek P.<sup>2</sup>, Michálková M.<sup>2</sup>, Galusek D.<sup>2</sup>, <sup>1</sup>Bratislava, <sup>2</sup>Trenčín

9:20–9:45

**IT-4 Composites based on phase change materials for heat energy storage**

Honcová P.<sup>1</sup>, Sádovská G.<sup>1,2</sup>, Kostková N.<sup>1</sup>, Košťál P.<sup>1</sup>, Pilař R.<sup>2</sup>, <sup>1</sup>Pardubice, <sup>2</sup>Prague

9:45–10:10

**IT-5 An experimental study of corrosion of metals used for latent heat storage**

Červenková A., Danielik V., Bratislava

10:10–10:30 Coffee break

10:30–10:55

**IT-6 Use of EIS to characterize modified tannate layers**

Koštúr R., Zemanová M., Bratislava



10:55–11:20

**IT-7 Possibility of underground hydrogen storage in the Czech Republic**

Mališ J., Pagáč M., Kaňa Š., Sasín M., Hodonín

11:20–11:45

**IT-8 Modelling of hydrogen production for hydrogen mobility: A comparison of renewable sources of energy**

Denk K., Paidar M., Hnát J., Bouzek K., Prague

11:45–12:10

**IT-9 Influence of the preparation method on performance of NiFe layered Double hydroxides for oxygen evolution in an alkaline environment**

Plevová M., Hnát J., Bouzek K., Prague

12:10–13:40 Lunch

13:40–14:05

**IT-10 Air purification system for fuel cell power generators**

Paidar M., Roubal J., Vejvoda V., Bouzek K., Prague

14:05–14:30

**IT-11 Fuel cell's metallic bipolar plates – advantages and challenges**

Hala M., Prokop M., Kodým R., [Bouzek K.](#), Prague

14:30–14:55

**IT-12 Composite membranes for CO<sub>2</sub> separation based on PIM-1**

Schwarzová H.<sup>1</sup>, Quémener D.<sup>2</sup>, Bernauer M.<sup>1</sup>, Iablochkin K.<sup>1</sup>, [Fila V.](#)<sup>1</sup>, <sup>1</sup>Prague, <sup>2</sup>Montpellier, France

**14:55 – 15:20 CHEMICAL PROCESSES AND DEVICES**

Chairperson: Jirout T., Prague

14:55–15:20

**CP-1 Glatt Ingenieurtechnik GmbH – From your product idea to industrial production**

Buchheim J., Vockenber T., Weimar, Germany

15:20–15:40 Coffee break

**15:40 – 18:10 TECHNOLOGY FOR ENVIRONMENTAL PROTECTION**

Chairpersons: Obalová L., Kočí K., Ostrava

15:40–16:05

**TE-1 Innovative removal of halogenated organic acids from polluted water in a spirit of circular economy**

Kamenická B., Weidlich T., Pardubice

16:05–16:30

**TE-2 Recycling of spent dye baths used for cotton dyeing with reactive dyes**

Vojtová I.<sup>1,2</sup>, Weidlich T.<sup>2</sup>, <sup>1</sup>Havlíčkův Brod, <sup>2</sup>Pardubice

16:30–16:55

**TE-3 Spreading, formation and capture of aerosol particles: the case of Covid-19**

Kosek J., Prague

16:55–17:20

**TE-4 Guanidine polymers as nitrification inhibitors for granular nitrogen fertilizers**

Majerníková J., Kučera M., Tokár Z., Foltinovič T., Bratislava

17:20–17:45

**TE-5 Biosludge management at MCHB WWT SLOVNAFT a.s**

Šenkár J., Pastorek R., Ivančinová I., Červenski J., Bratislava

17:45–18:10

**TE-6 Methylmercury effects and accumulation in two extremophile microalgae strains *Coccomyxa onubensis* and *Dunaliella salina* local to Andalusia (Spain)**

Simansky S.<sup>1,2</sup>, Holub J.<sup>2</sup>, Obracaj J.<sup>2</sup>, Marova I.<sup>2</sup>, Garbayo I.<sup>1</sup>, Torronteras R.<sup>1</sup>, Vilchez C.<sup>1</sup>, Gojkovic Z.<sup>1</sup>, <sup>1</sup>Huelva, Spain, <sup>2</sup>Brno

**TUESDAY, APRIL 16, 2024**

**FRANKOVKA HALL**

**8:05 – 11:20 DECARBONISATION**

Chairperson: Souček I., Prague

8:05–8:30

**D-1 Slovak hydrogen economy – case study of alternative fuels**

Kraviarová D., Janošovský J., Variny M., Bratislava

8:30–8:55

**D-2 Operating parameters optimization based on pilot testing of CO<sub>2</sub> membrane separation from flue gas**

Horký O., Brož P., Stráž pod Ralskem

8:55–9:20

**D-3 A new membrane for mix gas and flue gas separation**

Stanovský P., Žitková A., Bothová K., Izak P., Prague

9:20–9:45

**D-4 Development of a digital twin of a phenolic resin paper impregnation plant dryer**

Čižmár M.<sup>1,2</sup>, Řežucha M.<sup>2</sup>, Variny M.<sup>1</sup>, Lager D.<sup>2</sup>, Leitner G.<sup>3</sup>, Pleschutznič E.<sup>3</sup>, Mitterbauer M.<sup>3</sup>, Zimmerleiter R.<sup>4</sup>, Brandstetter M.<sup>4</sup>, Barz T.<sup>2</sup>  
<sup>1</sup>Bratislava, <sup>2</sup>Vienna, Austria, <sup>3</sup>St. Veit/Glan, Austria, <sup>4</sup>Linz, Austria

9:45–10:10

**D-5 Modeling and analysis of industrial steam network operation change with new steam source commissioning**

Variny M., Červeňanský I., Furda P., Kraviarová D., Bratislava

10:10–10:30 Coffee break

10:30–10:55

**D-6 Lessons from the past: application of a century-old method for pipeline networks modeling in industrial practice**

Furda P., Červeňanský I., Variny M., Čerňanská B., Hucík M., Bratislava

10:55–11:20

**D-7 Production of humic acid for potential reduction of human CO<sub>2</sub> emissions**

Weidlich T., Holomková M., Pardubice

11:20–11:45

**D-8 Defossilisation and decarbonisation. The energy frame of the future of chemical industry viewed by physical chemistry**

Dědeček J., Krtíl P., Prague

12:10–13:40 Lunch

**13:40 – 17:45 PHARMACEUTICAL TECHNOLOGY**

Chairperson: Zámstný P., Prague

13:40–14:05

**PH-1 3D printing of enteric capsules using extruded hypromellose filaments**

Komersová A.<sup>1</sup>, Muselík J.<sup>2</sup>, Franc A.<sup>2</sup>, Elbl J.<sup>2</sup>, Matzick K.<sup>1</sup>, <sup>1</sup>Pardubice, <sup>2</sup>Brno

14:05–14:30

**PH-2 Hardening of tablets: a detective story**

Šklubalová Z.<sup>1</sup>, Pěček D.<sup>2</sup>, Krejčík L.<sup>2</sup>, Svačinová P.<sup>1</sup>, Tranová T.<sup>1</sup>, Mužíková J.<sup>1</sup>, <sup>1</sup>Hradec Králové, <sup>2</sup>Prague

14:30–14:55

**PH-3 Roller compaction – advances in technology transfer and scale-up via various methods and tactics assisted by mathematical modelling**

Marinko N., Zámstný P., Prague

14:55–15:20

**PH-4 Drying monitoring – PAT in TEVA**

Holas T., Opava

15:20–15:40 Coffee break

15:40–16:05

**PH-5 How to characterize a solid API in pharmacy**

Kratochvíl B., Čejka J., Prague

16:05–16:30

**PH-6 Active substance prone to sticking - treatment in formulation for better processability**

Römerová, S., Šimek, M., Dammer, O., Beránek, J., Prague

16:30–16:55

**PH-7 Manufacture of antibiotics in Czech Republic**

Cvak L., Opava

16:55–17:20

**PH-8 Critical aspects in the preparation of active pharmaceutical ingredients**

Gabriel R., Bartova A., Opava

17:20–17:45

**PH-9 Impact of ultrasound for preparation of solid crystalline material**

Bártová Benýšek A.<sup>1,2</sup>, Gabriel R.<sup>1,2</sup>, Holas T.<sup>1</sup>, <sup>1</sup>Opava, <sup>2</sup>Olomouc

**TUESDAY, APRIL 16, 2024**

**TRAMÍN HALL**

**8:05 – 12:10**

**DIGITÁLNÍ A ZELENÁ TRANSFORMACE PLASTIKÁŘSKÉHO PRŮMYSLU**

Předsedající: Reiss J., Praha



Spolufinancováno  
Evropskou unií



Sekce Digitální a zelená transformace plastikářského průmyslu je realizována v rámci projektu CZ.01.01.01/07/23\_010/0001245 „Plasty V“, podporovaného v rámci OP TAK, programu Technologické platformy.

Upozorňujeme, že na našich akcích pořizujeme záznamy a fotodokumentaci pro účely prezentace a archivace.

**8:05–8:30**

**Digitální a zelená transformace z pohledu ČTP Plasty**

Pjatkan R., Reiss J., Souček I. (ČTP Plasty)

**8:30–8:55**

**Chemická recyklace plastů**

Reiss J., Pjatkan R., Souček I. (SHP ČR)

**8:55–9:20**

**Evropská regulace a recyklace plastů**

Kulhánková P. (MPO)

9:20–9:45

**Plnění závazných cílů v oblasti recyklace plastových obalů a chemická recyklace**  
Lukáč D. (EKO-KOM)

9:45–10:10

**Procesy chemické recyklace z pohledu ORLEN UniCRE**  
Hrtus D. (ORLEN UniCRE)

10:10–10:30 Kávová přestávka

10:30–10:55

**Recy-věci v číslech**  
Hausner D. (Plastikářský klastr)

10:55–11:20

**Digitalizovaný systém třídění plastů a jeho podpora pomocí cíleného značení**  
Kubáč L., Kořínková R., Hausner D. (Centrum organické chemie, Plastikářský klastr)

11:20–11:45

**Příspěvek SUSCHEM CZ k udržitelnosti českého chemického průmyslu**  
Mlčoch A. (SUSCHEM CZ)

11:45–12:10

**IRISS – pilotní projekt pro propojení komunit v oblasti SSbD**  
M. Šilhan (SUSCHEM CZ)

12:10–13:40 Oběd

**13:40 – 17:20 POLYMERS, COMPOSITES**

Chairperson: Kuta A., Prague

13:40–14:05

**PC-1 Sulphur vulcanization of rubbers**  
Kuta A., Prague

14:05–14:30

**PC-2 The influence of zinc compounds on vulcanization**  
Čadek D., Manligová E., Kuta A., Prague

14:30–14:55

**PC-3 Possibilities of 6PPD replacement in the rubber compounds**  
Balko J., Kelemen P., Kučera M., Bratislava

14:55–15:20

**PC-4 Treatise on devulcanization of waste rubber**  
Hrdlička Z., Prague

15:20–15:40 Coffee break

15:40–16:05

**PC-5 Use of waste lignin for modification of coniferous wood to increase fire resistance**

Holeček T., Hájková K., Šedivka A., Prague

16:05–16:30

**PC-6 Recent progress in polyester and polyamide nanocomposites with 2D fillers**

Uříčář J., Reinšteinová L., Benešová V., Brožek J., Prague

16:30–16:55

**PC-7 Nanostructured Cu/PEN composite: laser-textured surface and antibacterial potencial**

Pryjmaková J.<sup>1</sup>; Hryhoruk M.<sup>1</sup>, Veselý M.<sup>1</sup>, Vokatá B<sup>1</sup>, Hubáček T.<sup>2</sup>, Siegel J.<sup>1</sup>,  
<sup>1</sup>Prague, <sup>2</sup>České Budejovice

16:55–17:20

**PC-8 System for reducing the environmental impact of rubber waste processing**

Samiecová K., LAVARIS, Libčice nad Vltavou-Vodochody

**WEDNESDAY, APRIL 17, 2024**

**SAUVIGNON HALL**

**8:05 – 13:00**

**ECONOMICS OF CHEMICAL INDUSTRY**

Chairpersons: Vávra J., Branská L., Pardubice

8:05–8:30

**E-1 Development of the chemical industry (CZ-NACE 20) in the Czech Republic for the period 2020 to 2022**

Koťátková Stránská P., Košťálek J., Souček, I., Prague

8:30–8:55

**E-2 Analysis of the foreign trade of commodities of the chemical industry of the Czech Republic with the selected countries for the period of 2019-2022**

Koťátková Stránská P., Košťálek J., Prague

8:55–9:20

**E-3 Impacts of climate change on chemical enterprises**

Vávra J., Lochmanová N., Pardubice

9:20–9:45

**E-4 Projects fulfilling the goals of sustainability and the transition to a circular economy in the conditions of the chemical industry**

Strachotová D., Kutnohorská O., Prague

9:45–10:10

**E-5 Digital well-being and the tools to maintain it**

Botek M., Charvátová D., Diaz M., Prague

10:10–10:35

**E-6 Information needs of selected groups of external stakeholders for assessing the reputation of a chemical company**

Gorčík M., Jelinková M., Pardubice

10:35–10:55 Coffee break

10:55–11:20

**E-7 Collaboration in enhancing the sustainability of packaging for consumer chemical products**

Vognarová D., Branská L., Paták M., Pardubice

11:20–11:45

**E-8 Utilizing multi-criteria decision analysis for natural gas dehydration optimization**

Mócová M., Detko J.S., Kraviarová D., Janošovský J., Bratislava

11:45–12:10

**E-9 Bridging the knowledge gap: assessing competencies and skills for technical employees in economic and management sectors - a case study of chemical and food industries in Slovakia**

Katrenčík I., Zatrochová M., Bratislava

12:10–12:35

**E-10 Potential impacts of environmental education on the green economy**

Salnci J., Lisnik A., Majerník M., Bratislava

12:35–13:00

**E-11 How host and home country institutional complexities influences CSR engagement of an MNC: evidence from ESG disclosures of a German multinational chemical company and its indian subsidiary**

Prakash V., Pardubice

13:00–14:30 Lunch

**WEDNESDAY, APRIL 17, 2024**

**PÁLAVA HALL**

**8:05 – 12:35 BIOTECHNOLOGY AND BIOREFINERY**

Chairpersons: Patáková P., Branská B., Prague

8:05–8:30

**BI-1 Methylomes of caldimonas thermodepolymerans studied with the third generation sequencing platforms**

Seďlar K., Umair M., Buchtikova I., Bezdicek M., Obruca S., Brno

8:30–8:55

**BI-2 Impaired solventogenesis as a response to lignocellulose inhibitors in ABE fermentation**

Branská B., Koppová K., Prague

8:55–9:20

**BI-3 Sustainable *Limnospira maxima* (spirulina) photoautotrophic cultivation using artificial light sources: The influence of light spectra and intensity on biomass and pigment production and cost**

Vásquez C., Lucáková S., Mušálková P., Muzika F., Brányiková I., Prague

9:20–9:45

**BI-4 Stress conditions influencing the production of *Monascus* secondary metabolites**

Husáková M., Patáková P., Prague

9:45–10:10

**BI-5 Bacteria in plant growth promotion and protection**

Patakova P.<sup>1</sup>, Hasek T.<sup>1</sup>, Jandejsek Z.<sup>2</sup>, <sup>1</sup>Prague, <sup>2</sup>Trhovy Stepanov

10:10–10:35

**BI-6 Extracts from plant materials and evaluation of their biological activities**

Černá L., Bezděk M., Hromádková E., Novotná A., Pavelková V., Révayová K., Kubrová K., Svobodová A., Thumová K., Massyagutova A., Kaštánek P., Lovecká P., Prague

10:35–10:55

Coffee break

10:55–11:20

**BI-7 From waste to wonder: transforming feathers into nutrients used for microbial calcite precipitation**

Stiborová H., Kliková K., Ottová H., Holeček P., Nežerka V., Demnerová K., Prague

11:20–11:45

**BI-8 Recycling waste concrete fines using microbial calcite precipitation via various metabolic pathways**

Klikova K., Holecek P., Konakova D., Nezerka V., Demnerova K., Stiborova H., Prague

11:45–12:10

**BI-9 The properties of lavender paper as a potential waste material for paper production**

Hájková K., Bárta J., Sikora A., Prague

12:10–12:35

**BI-10 Determination of the properties of cotton pulp with the addition of nanocellulose**

Bárta J., Hájková K., Sikora A., Prague



17:30 – 22.00 POSTER SESSION, WELCOME DRINK

Chairperson: Krystyník P., Ústí nad Labem

We ask the authors to be present at their posters at least from 18:30 to 20:00.  
The best poster will be awarded in Aurelius Hall at 21:00.

## LIST OF POSTERS

### MATERIALS ENGINEERING

- MI-P1** Advancements in lightweight magnesium alloys with high resistance to ignition  
Hosová K., Kubásek J., Vojtěch D., Prague
- MI-P2** Biomass ash and its utilization possibilities from the perspective of civil engineering  
Králová K., Formáček P., Šulc R., Šídlová M., Prague
- MI-P3** Porous Ti-6Al-4V parts produced by selective laser melting  
Medová D., Strakošová A., Vojtěch D., Prague
- MI-P4** Characterization of hydroxyapatite powders for 3D printing applications  
Peciar P., Kručay P., Úradníček J., Veteška P., Bača L., Gašparovič L., Thurzo A., Janek M., Bratislava
- MI-P5** The impact of nitrogen implantation on the biodegradable Zn-0.8Mg-0.2Sr alloy  
Pinc J.<sup>1</sup>, Vlčák P.<sup>1</sup>, Lebeda M.<sup>1</sup>, Smola V.<sup>1</sup>, Vronka M.<sup>1</sup>, Drahokoupil J.<sup>1</sup>, Weiss Z.<sup>1</sup>, Svora P.<sup>1</sup>, Studecký T.<sup>2</sup>, Salvetr P.<sup>2</sup>, Horažďovský T.<sup>2</sup>, Čapek J.<sup>1</sup>, Školáková A.<sup>1</sup>, <sup>1</sup>Prague, <sup>2</sup>Dobřany
- MI-P6** Corrosion properties and bond strength in concrete conventional prestressing steel reinforcement with plasma sprayed SiC coating  
Pokorný P., Chobotský T., Prodanovic N., Steinerová V., Brožek V., Janata M., Kutílek Z., Prague
- MI-P7** Reactions of silicon carbide in water-stabilized plasma  
Brožek V., Janata M., Mastný L., Jankovský M., Pokorný P., Prague
- MI-P8** Separation of scandium and thorium from rare earth minerals  
Brožek V., Kohoutková M., Kutílek Z., Mastný L., Průša F., Randáková S., Řezanka P., Pokorný P., Prague

- MI-P9 Properties of austenitic stainless steel containing yttrium oxide**  
Pokorný J., Nečas D., Hlava T., Kubásek J., Prague
- MI-P10 Corrosion effect of organic buffers on bioactive glass**  
Přivrácká T., Opavová K., Pánová K., Prague
- MI-P11 Preparation of transition metal carbides with usage of carbon waste precursors**  
Riedl J., Průša F., Kratochvíl P., Thürlová H., Prague
- MI-P12 Microstructure of super duplex stainless steel prepared by powder metallurgy and additive technology**  
Salvetr P., Uhlík M., Brázda M., Dobřany
- MI-P13 Characterization of coated biodegradable Zn-0.8Mg-0.2Sr Alloy**  
Školáková A., Pinc J., Jablonská E., Školáková T., Veřtát P., Janebová B., Kutová A., Čapek J., Hosová K., Vojtěch D., Kubásek J., Prague
- MI-P14 Properties of laminates with an inorganic matrix depending on the curing temperature**  
Soukup A.<sup>1,2</sup>, Hájková P.<sup>1,2</sup>, Kohout J.<sup>1,2</sup>, Kohoutová E.<sup>1,2</sup>, Vakili M.<sup>1</sup>, <sup>1</sup>Ústí nad Labem, <sup>2</sup>Liberec
- MI-P15 Selective laser melting of binary Ti-30Nb alloy from an elemental powder mixture**  
Voňavková I., Vojtěch D., Prague

## APPLIED CATALYSIS AND ORGANIC TECHNOLOGY

- COT-P16 Chemical recycling of electro-waste by pyrolysis – monitoring of main chemical compounds in pyrolysis oil**  
Mídlu P., Oravová L., Barchánková I., Kuráš P., Ústí nad Labem
- COT-P17 Recycling of polypropylene waste obtained from automotive industry**  
Vasilkovová B., Ondrovič T., Hájeková E., Bratislava
- COT-P18 Substituted stilbenes in study of solid state fluorescence behavior dependence on carbazole position**  
Pauk K.<sup>1</sup>, Teichmanová K.<sup>1</sup>, Chernenko D.<sup>1</sup>, Vala M.<sup>2</sup>, Smolka R.<sup>2</sup>, Luňák S.<sup>2</sup>, Imramovský A.<sup>1</sup>, <sup>1</sup>Pardubice, <sup>2</sup>Brno
- COT-P19 Producing of 1,8-cineol from -terpineol using heteropolyacid as catalyst**  
Rejzková A., Plachý M., Vyskočilová E., Prague

## OIL, PETROCHEMICALS, BIOFUELS

- OP-P20 Assessment of propane-propylene fraction separation alternatives**  
Hříbík D., Furda P., Variny M., Bratislava
- OP-P21 Corrosion properties of pyrolysis oils from waste plastics and tyres**  
Lyko Vachková E., Maxa D., Prague
- OP-P22 Exploration of the environmental load at Horehronie in the village Predajná**  
Slezáčková M., Mikulec J., Danč L., Bratislava
- OP-P23 Rheological and frictional behavior of environmentally acceptable lubricants for maritime applications**  
Stavárek P.<sup>1</sup>, Večeř M.<sup>2</sup>, Krčková S.<sup>2</sup>, Zelenka L.<sup>3</sup>, Armada S.<sup>4</sup>, Bernat S.<sup>4</sup>  
<sup>1</sup>Prague, <sup>2</sup>Ostrava, <sup>3</sup>Jersin, <sup>4</sup>Trondheim, Norway

## INORGANIC TECHNOLOGY

- IT-P24 Effect of lime source on crystallisation of anorthite in ceramic production**  
Dvořáková P., Kloužková A., Kolářová M., Bednářová Z., Prague
- IT-P25 Study of the conversion reaction of sodium perchlorate and ammonium chloride**  
Lhotka M., Mastný L., Mauci D., Prague
- IT-P26 Effective preparation of ferrate by electrolysis**  
Števuřová R., Kerekeš K., Hivěš J., Bratislava

## CHEMICAL PROCESSES AND DEVICES

- CP-P27 Development of an automated molten salt regeneration system for carbon nanomaterials and graphite synthesis**  
Fekete R.<sup>1</sup>, Juriga M.<sup>1</sup>, Peciar P.<sup>1</sup>, Peciar M.<sup>1</sup>, Peciarová M.<sup>1</sup>, Esteves L.<sup>2</sup>, Cabeza Fabra L. F.<sup>3</sup>, Less H.<sup>4</sup>, Trofimov S.<sup>4</sup>, <sup>1</sup>Bratislava, <sup>2</sup>Porto, Portugal, <sup>3</sup>Lleida, Spain, <sup>4</sup>Tallinn, Estonia
- CP-P28 Improved visual analysis of patterns forming on the bottom of a mixed tank when reaching suspension in a solid-liquid system by experiment and lattice Boltzmann simulation**  
Randák F., Jirout T., Prague
- CP-P28 Glatt Ingenieurtechnik GmbH – From your product idea to industrial production**  
Vockenber T., Buchheim J., Weimar, Germany

## TECHNOLOGY FOR ENVIRONMENTAL PROTECTION

- TE-P30 Characterization of structurally different boron-doped diamond electrodes**  
Kuchtová G., Pardubice
- TE-P31 Treatment of phenolic industrial waste water by catalytic wet air oxidation using a CuMnFe mixed oxide catalyst in a continuous flow reactor**  
Peroutková K.<sup>1,2</sup>, Tišler Z.<sup>1</sup>, Kroužek J.<sup>2</sup>, <sup>1</sup>Ústí nad Labem, <sup>2</sup>Prague
- TE-P32 Exploring sustainable fuel solutions and fuel quality measurement options**  
Seidl J., Černý P., Kroj P., Scholtz V., Prague

## DECARBONISATION

- D-P33 Pilot tests results of membrane separation of CO<sub>2</sub> from gas boiler flue gas**  
P. Brož, O. Horký, Stráž pod Ralskem
- D-P34 Storage of thermal energy in Glauber's salt**  
Deáková A., Jirout T., Dostál M., Prague
- D-P35 Assessing the economic feasibility of e-fuels: A comparative study**  
Kurák T., Halabuk L., Bratislava
- D-P36 Energy optimization of separation process for production of asymmetric ethers**  
Variny M., Hlavatý L., Soták T., Magyarová Z., Bratislava
- D-P37 Recycling and upgrading of polymer materials by solvent based methods**  
Klimošek J., Řiháková L., Dendisová D., Jindrová K., Kosek J., Prague
- D-P38 The development of a plasma torch for a high-temperature gasification reactor**  
Müeck J., Kielar J., Najser J., Frantík J., Najser T., Ostrava
- D-P39 Role of the materials used in a charger unit in the triboelectric sorting of plastic waste**  
Sklenářová J., Drápela M., Vaszi M., Perner J., Kosek J., Prague
- D-P40 The possibility of hydrotreatment of pyrolysis oil from plastic waste**  
Kuhrovcová L., Hrtus D., Kašpárek A., Lederer J., Ústí nad Labem

## PHARMACEUTICAL TECHNOLOGY

- PH-P41 Enhancement of encapsulation and extension of release for hydrophilic antibiotics using plga nanoparticles via ion pairing**  
Frolov.V.<sup>1</sup>, Alharith A. A. H.<sup>2</sup>, Sovány, T.<sup>2</sup>, Snejdrova.E.<sup>1</sup>, <sup>1</sup>Hradec Kralové, <sup>2</sup>Szeged, Hungary

- PH-P42 Unexpected impurities in the production of prostaglandin analogues  
Tafluprost**  
Imramovský A.<sup>1</sup>, Pauk K.<sup>1</sup>, Schlenc Bajžíková K.<sup>2</sup>, Pavlík J.<sup>2</sup>, <sup>1</sup>Pardubice,  
<sup>2</sup>Neratovice
- PH-P43 Peptide carriers as a tool to improve properties of antimicrobial drugs**  
Krátký M.<sup>1</sup>, Horčič J.<sup>1</sup>, Uray K.<sup>2</sup>, Bösze Sz.<sup>2</sup>, <sup>1</sup>Hradec Králové, <sup>2</sup>Budapest, Hungary
- PH-P44 3D printed dosage form with active ingredient against Alzheimer's disease**  
Nevyhoštěná M., Komersová A., Macháčková J., Pejchal V., Pardubice
- PH-P45 Variability of particle properties of API as a factor determining the optimal mixing strategy**  
Novák D., Römerová S., Komínová P., Zámotný P., Stasiak P., Prague
- PH-P46 Synthesis of R-(1-(6-fluorobenzothiazol-2-yl)-3-(methylthio) propyl carbamates as potent alzheimer's disease drugs**  
Pejchal V., Pejchalová M., Štěpánková Š., Holadová T., Hylská M., Pardubice
- PH-P47 Deposition of drug micro-suspensions on a porous carrier to enhance drug delivery: The carrier capacity and release efficiency**  
Svehla O., Šembera F., Zámotný P., Prague

## POLYMERS, COMPOSITES

- PC-P48 Testing of the disinfectant activity of compounds based on biodegradable oligomers**  
Baslerová N., Olejník R., Pejchalová M., Pardubice
- PC-P49 Natural rubber vulcanization activated by different types of zinc oxide**  
Březina D., Čadek D., Kadeřábková A., Prague
- PC-P50 Recycling of PTFE waste products**  
Foitlová A., Melichar J., Mészáros M., Steiner V., Čelákovice
- PC-P51 Grinded walnut shells as rubber filler**  
Kadeřábková A., Ottová R., Prague
- PC-P52 Biopolymer-based FDM 3D printing**  
Macháčková J., Nevýhoštěná M., Matzick K., Komersová A., Pardubice
- PC-P53 Determination of the antimicrobial efficiency of coatings based on acrylate latexes with dispersed nanoparticles of conductive polymers and selenium**  
Pejchalová M., Kalendová A., Boštiková K., Pardubice
- PC-P54 Composite materials with antimicrobial properties based on biodegradable polymers**  
Škrlová K., Zágora J., Holešová S., Plachá D., Ostrava

- PC-P55 Bacterial cellulose and polypyrrole composites for efficient chromium (VI) ions removal**  
 Stríž R.<sup>1</sup>, Minisy I. M.<sup>2</sup>, Bober P.<sup>2</sup>, Taboubi O.<sup>2</sup>, Smilek J.<sup>1</sup>, Kovalcik A.<sup>1</sup>, <sup>1</sup>Brno, <sup>2</sup>Praha
- PC-P56 Development of biodegradable materials based on starch with natural fillers**  
 Valiyev V., Čadek D., Prague
- PC-P57 Systematic assesment of lignin solubility for nanoparticle preparation from various sources**  
 Vostrejs P., Hruskova L., Kovalcik A., Brno

## BIOTECHNOLOGY AND BIOREFINERY

- BI-P58 The development of the analytical profiles of fruit distillates during the distillation process**  
 Balák J., Ilko V., Jarošová I., Prague
- BI-P59 The impact of hydrogel bioinoculants in plant resistance to drought conditions**  
 Černayová D.<sup>1</sup>, Rousk J.<sup>2</sup>, Sedláček P.<sup>1</sup>, Obruča S.<sup>1</sup>, <sup>1</sup>Brno, <sup>2</sup>Lund, Sweden
- BI-P60 The use of hydrolysates made from food industry waste as culture medium for endophytic microorganisms**  
 Hasek T.<sup>1</sup>, Jandejsek Z.<sup>2</sup>, Patakova P.<sup>1</sup>, <sup>1</sup>Prague, <sup>2</sup>Trhovy Stepanov
- BI-P61 Small RNA analysis in *Caldimonas thermodepolymerans* provides insight into non-coding regulatory mechanisms**  
 Hermankova K., Kourilova X., Buchtikova I., Obruca S., Sedlar K., Brno
- BI-P62 Cultivation of carotenogenic yeast on various food industrial waste substrates**  
 Holub J., Chujanov O., Špačková D., Šimanský S., Obračaj J., Márová I., Brno
- BI-P63 Synthesizing polyhydroxyalkanoates from wheat bran hydrolysates via halophilic bacteria**  
 Hrabalová V., Kouřilová X., Nováčková I., Pořízka J., Diviš P., Obruča S., Brno
- BI-P64 Cultivation of *Clostridium butyricum* on *Limnospira maxima* substrates**  
 Klimentić M., Zijadić L., Vásquez Guevara C. M., Koppová K., Kastanek P., Branská B., Patáková P., Prague
- BI-P65 Impact of ferulic and coumaric acids on solventogenic clostridia**  
 Koppová K., Branská B., Prague
- BI-P66 Application of extractive biotransformation in system of two coupled membrane bioreactors**  
 Mihaľ M., Červeňanský I., Markoš J., Bratislava

- BI-P67 Bioinformatics analysis of *Caldimonas*' ability for biotransformation of ferulic acid into valuable products**  
Musilová J., Hrabalová V., Opial T., Obruča S., Sedlář K., Brno
- BI-P68 The wine industry by-products: antibacterial & prebiotic activity of extracts in relation to total phenolic compounds**  
Ottová M., Maňátková O., Prague
- BI-P69 Feather hydrolysate as a cost-effective culture medium for microbial-induced calcite precipitation**  
Ottová H., Halamová B., Demnerová K., Stiborová H., Prague
- BI-P70 Study of the effect of adaptation to continuous osmotic stress on the bacterium *Rhodospirillum rubrum***  
Pacasova V.-A., Fiala T., Slaninova E., Obruca S., Brno
- BI-P71 Multiparametric optimization of operating conditions of a membrane hybrid system for phenylacetaldehyde production**  
Paleš E. J., Mihaľ M., Bratislava
- BI-P72 Animal waste and its processing**  
Rousková M., Šabata S., Beneš F., Šolcová O., Prague
- BI-P73 Two is better than one – linking of thermophilic bacteria to enhance PHA production**  
Šlosárová K., Buchtiková I., Sedlář K., Dvořák P., Obruča S., Brno
- BI-P74 Kinetic perspective on biodegradable plastics degradability**  
Vodička J., Sedláček P., Obruča S., Brno

## GAS, COAL, FUEL

- G-P75 Benefits of an optimal-sized combined heat and power plant for an industrial enterprise**  
Variny M., Turinič N.F., Bratislava