

SCIENTIFIC PROGRAM

MONDAY, APRIL 14, 2025

AURELIUS HALL

12:45–17:00

PLENARY SESSION

Chairpersons: J. Lederer, J. Lubojacký

12:45–13:00

Opening ceremony

*Assoc. Prof. Ing. Jaromír Lederer, Ph.D., ČSPCH president
Ing. Jaromír Lubojacký, MBA, President of the Program Committee*

13:00–13:05

Viktor Ettel Award

Assoc. Prof. Ing. Jaromír Lederer, Ph.D., ČSPCH president

13:05–13:20

How my professional life has been influenced by teachers and colleagues

*Ing. Jaromír Lubojacký, MBA, Ixa Consulting, Jistebník
(laureate of the Viktor Ettel Prize)*

13:20–13:40

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

13:40–14:10

The chemical industry's transition path to carbon neutrality – the impact on its competitiveness

Ing. Ivan Souček, CSc., SCHP ČR

14:10–14:35

„World oil outlook“ and how in our country

Ing. Jiří Hájek, MBA, ORLEN Unipetrol RPA

14:35–15:20

Coffee break with refreshments

15:20–15:45

Energy conversion as a unifying topic of economy decarbonisation

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

A half-century of polyolefins production

Ing. Ladislav Palovský, Orlen Unipetrol, RPA

16:35–17:00

Selenium – toxic, essential or medicinal?

Prof. Ing. Viktor Milata, DrSc., STU Bratislava

MONDAY, APRIL 14, 2025

FOYER + AURELIUS HALL

17:00 – 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.

AURELIUS HALL

21:00 The best poster award

TUESDAY, APRIL 15, 2025

CABERNET HALL

8:05 – 12:10 MATERIALS ENGINEERING, PROCESS ENGINEERING

Chairpersons: P. Novák (Prague), T. Opravil (Brno)

08:05–08:30

ME-1 Optimization of the preparation of iron silicide - nickel aluminide composite

P. Novák, S. Mestek, J. Duda, A. Michalcová, F. Průša (Prague)

08:30–08:55

ME-2 As-cast Al-Co alloys: Microstructure, phase constitution, and corrosion behavior

*M. Palcut¹, Ž. Gerhátová¹, P. Priputen¹, R. Tomšová², M. Kusý¹, M. Sahul¹
¹Trnava, ²Skalica (SK)*

08:55–09:20

ME-3 Biomass ash: A study of its leachability

K. Králová, P. Formáček, J. Konvalinka, K. Betáková, R. Šulc, M. Šídllová (Prague)

09:20–09:45

ME-4 Influence of the addition of municipal waste ash on the carbonation in cement mortars

L. Mauermann, M. Šídllová, K. Králová, K. Betáková, R. Šulc (Prague)

09:45–10:10

ME-5 Journey to longer tool life: Al_{0.67}Ti_{0.33}N hard thin films prepared by arc evaporation

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

10:10–10:30 Coffee break

10:30–10:55

ME-6 Binary phosphate glasses – preparation and dissolution

T. Pipota¹, D. S. Brauer², A. Helebrant¹

¹Prague, ²Jena (DE)

10:55–11:20

ME-7 High-temperature resistant high-entropy materials for thermal circuit components

F. Průša¹, J. Hruška², P. Vácha³, V. Nováček², P. Kratochvíl¹, H. Thürlová¹

¹Prague, ²Čelakovice, ³Husinec-Řež

11:20–11:45

ME-8 High-power microwave plasma gasification as a carbon source for CoCrFeNiMn alloy reinforcement

P. Kratochvíl, J. Riedl, F. Průša, F. Růžička, T. Vrba, J. Fathi (Prague)

11:45–12:10

PE-1 New technologies of process NIR and Raman spectrometry in the chemical industry.

M. Novotný (Brno)

12:10–13:40 Lunch

13:40 – 17:45 INORGANIC TECHNOLOGY

Chairperson: K. Bouzek (Prague)

13:40–14:05

IT-1 Influence of calcium sulphate on the quality of ns fertilizers

R. Štefancová, A. Andrášiová, M. Kučera (Bratislava, SK)

14:05–14:30

IT-2 Production of granulate calcium nitrate

T. Foltinovič, M. Kučera, P. Čopan, M. Peterka (Bratislava, SK)

14:30–14:55

~~**IT-3 Use of zeolite dust in the production of granulated zeolite**~~

~~*A. Andrášiová, R. Štefancová, M. Kučera (Bratislava, SK)*~~

cancelled

14:55–15:20

IT-4 Effect of phosphoric acid on the quality of modified tannate coatings

R. Košťúr, M. Zemanová (Bratislava, SK)

15:20–15:40 Coffee break

15:40–16:05

IT-5 Gasification of Oils in MSG Technology

V. Galek, P. Pražák, M. Kovář, D. Tůma (Husinec-Řež)

16:05–16:30

IT-6 Operating conditions of a mobile power source with a PEM fuel cell

M. Paidar¹, M. Prokop¹, F. Mazzeo¹, L. Polák²

¹Prague, ²Husinec-Řež

16:30–16:55

IT-7 Ion selective membranes swelling forces and their adaptation in an electromembrane separation unit

R. Kodým, D. Tichý, M. Němeček, D. Šnita, K. Bouzek (Prague)

16:55–17:20

IT-8 OSDA-Free Synthesis of Al-Rich BEA Zeolite: Kinetic Control and Control of Al Distribution in the Framework

R. Pilař, P. Sazama, J. Dědeček, K. Mlekodaj (Prague)

17:20–17:45

IT-9 PCB - a lasting environmental burden in Slovakia?

R. Števuľová, J. Hiveš, L. Štibrányi (Bratislava, SK)

TUESDAY, APRIL 15, 2025

SAUVIGNON HALL

8:05 – 12:10

APPLIED CATALYSIS AND ORGANIC TECHNOLOGY

Chairpersons: M. Veselý, E. vyskočilová (Prague)

08:05–08:30

COT-1 Molybdenum silicate microspheres prepared via a combined condensation approach and their catalytic activity in propylene metathesis

*D. Skoda¹, R. Zhu², B. Hanulíková¹, A. Styskalík³, V. Vykoukal³, T. Pokorný³, I. Kuritka¹, L. Simonikova³, D. P. Debecker⁴, C. Poleunis⁴, Y. Román-Leshkov²
¹Zlín, ²Cambridge, MA, USA, ³Brno, ⁴Louvain-La-Neuve, Belgium*

08:30–08:55

COT-2 Catalyst Management at ORLEN Unipetrol - Study of process conditions used for stabilization of spent catalyst

M. Chabr, Z. Chládek, J. Kocík, M. Zbuzek (Litvínov)

08:55–09:20

COT-3 Rhodium-catalysed hydroformylation of styrene using transition metal dichalcogenide supports

A. Shafiq, M. Pitínová, A. Krnáčová, I. Danylo, L. Koláčný, M. Veselý (Prague)

09:20–09:45

COT-4 Zeolite-catalysed gas-phase synthesis of an alternative fuel additive

Z. Silná, T. Soták (Bratislava, SK)

09:45–10:10

COT-5 Exploring 3D microstructural changes in working Pt-Co catalysts of a fuel cell via electron tomography

L. Koláčný, A. Michalcová, S. Havrilová, J.D. Buriánek, M. Veselý (Prague)

10:10–10:30 Coffee break

10:30–10:55

COT-6 Oxidative modification of cellulose

P. Grolmus, J. Harandza, M. Vajda, L. Žiak, M. Murín (Prievidza, SK)

10:55–11:20

**COT-7 High entropy transition metal phosphides for alkaline water splitting:
Balancing composition and activity**

R. Oriňaková¹, M. Strečková², A. Gubóová², M. Paračková¹ (Košice, SK)

11:20–11:45

**COT-8 Design of Transition metal phosphides as electrocatalysts for water
splitting**

M. Strečková, A. Gubóová, C. Bera, N. Podrojková, R. Oriňaková (Košice, SK)

12:10–13:40 Lunch

13:40 – 17:45 POLYMERS, COMPOSITES

Chairperson: A. Kuta (Prague)

13:40–14:05

PC-1 Natural-based antioxidants for natural rubber mixtures

D. Čadek, N. Perminov, A. Kuta (Prague)

14:05–14:30

PC-2 Natural rubber vulcanization activated by zinc oxide fibres

D. Březina¹, N. Joda², M. Rihová², J. M. Macak^{2,3}, D. Čadek¹

¹Prague, ²Brno, ³Pardubice

14:30–14:55

**PC-3 Modification of the properties of nitrile rubber blends with thermoplastic
starch and silanes?**

S. Trnková, D. Čadek, A. Kadeřábková (Prague)

14:55–15:20

**PC-4 In Situ formed Poly(Epsilon-Caprolactone) as a non-toxic plasticizer of
Poly(Vinyl Chloride)**

R. Kalousková, V. Tichá, Z. Hrdlička, J. Brožek (Prague)

15:20–15:40 Coffee break

15:40–16:05

**PC-5 Characterization of elastomer durability: Insight into compression set and
stress relaxation**

P. Zádrapa, S. Mrkvičková (Zlín)

16:05–16:30

PC-6 Recycling and Upgrading of plastic waste by solvent based methods

J. Klímošek, A. Bouz, L. Řiháková, D. Dendisová, V. Jančík, J. Kosek (Prague)

16:30–16:55

PC-7 Coupled thermogravimetric techniques for advanced polymer analyses

J. Uričář, A. Chodounská, R. Kalousková, A. Pražanová, J. Kočí, D. Pílnaj, J. Brožek (Prague)

16:55–17:20

PC-8 Separation of racemic mixtures using chiral non-porous membranes

J. Čížek, A. Zitková, P. Izák (Prague)

17:20–17:45

PC-9 Development of sustainable materials based on starch with natural fillers

V. Valiyev, D. Čadek (Prague)

TUESDAY, APRIL 15, 2025

FRANKOVKA HALL

8:05 – 12:10

DIGITÁLNÍ A ZELENÁ TRANSFORMACE PLASTIKÁŘSKÉHO PRŮMYSLU



**Spolufinancováno
Evropskou unií**



**MINISTERSTVO
PRŮMYSLU A OBCHODU**



**ČESKÁ TECHNOLOGICKÁ
PLATFORMA PLASTY**

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.

08:05–08:30

Z-1 Akční plán digitální a zelené transformace

R. Pjatkan, J. Reiss (ČTP PLASTY)

08:30–08:55

Z-2 Nedávné aktivity SUSCHEM CZ v udržitelné chemii

M. Šilhan (SUSCHEM CZ)

08:55–09:20

Z-3 Evropská a národní legislativa v oblasti recyklace plastů

P. Kulhánková (MPO ČR)

09:20–09:45

Z-4 Sběr, logistika a jejich digitalizace v odpadovém hospodářství

J. Murčo (CYRKL)

09:45–10:10

Z-5 Aktuální výzvy recyklace plastů

D. Hausner (Plastikářský klastr)

10:10–10:30 Kávová přestávka

10:30–10:55

Z-6 Tuhé alternativní palivo – z odpadu na vodík a uhlíkové nanočástice

M. Buryi (Oddělení plazmochemických technologií, Ústav fyziky plazmatu AV ČR)

10:55–11:20

Z-7 Značení a kontrola kvality recyklovaných termoplastů

L. Kubáč, R. Kořínková, D. Hausner (Centrum organické chemie, Plastikářský klastr)

11:20–11:45

Z-8 Postupy měření emise těkavých organických látek z plastových výrobků

J. Samsonek (ITC Zlín)

11:45–12:10

Z-9 Recyklační technologie pro Upcycling

I. Radič (MAS, Austria)

12:10–13:40 Lunch

13:40 – 15:20 CARBON NEUTRALITY

Chairpersons: I. Souček (Prague), T. Weidlich (Pardubice)

13:40–14:05

CN-1 Conditions for chemical Industry Carbon Neutrality 2050 – Technologies to be considered

I. Souček (Prague)

14:05–14:30

CN-2 Sustainable chemistry and the Green Deal

T. Weidlich (Pardubice)

14:30–14:55

CN-3 Evaluating the role of hydrogen as an energy carrier: perspectives on low-emission applications

D. Polakovičová, M. Variny (Bratislava)

14:55–15:20

CN-4 Decarbonisation of the chemical industry by electrification of pyrolysis furnaces

M. Bajus (Bratislava)

15:20–15:40 Coffee break

13:40 – 15:20 SYNTHESIS AND PRODUCTION OF DRUGS

Chairperson: P. Zámotný (Prague)

15:40–16:05

PT-1 New developments in the group of targeted carcinostatics – Antibody drug conjugates, ADC

B. Kratochvíl, E. Benešová, J. Čejka (Prague)

16:05–16:30

PT-2 Incorporation of biologically active substances into polysaccharide-based fibers

R. Hrdina¹, L. Burgert¹, P. Honcová¹, P. Bayerová¹, M. Černý¹, M. Bouška¹, I. Brožková¹, P. Mořková¹, M. Vydržalová¹, I. Stará¹, L. Michalíčková¹, R. Hrdina², M. Belhajová², Z. Musil², A. Vícha², T. Moravec², D. Netuka²
¹Pardubice, ²Prague

16:30–16:55

PT-3 (Dis)appearing polymorph

A. Benýšek Bartová¹, L. Kordić² (¹Opava, ²Zagreb, HR)

16:55–17:20

PT-4 Effective planning and evaluation of chemical processes in TAPI: DOE and reaction kinetics.

T. Holas (Opava-Komárov)

17:20–17:45

PT-5 Hot-Stage microscopy: Easy tool for preliminary study of API dissolution in a formulation intended for hot-melt extrusion

D. Novák, S. Römerová, L. Krejčík, P. Stasiak, O. Dammer, T. Školáková, P. Zámotný (Prague)

17:45–18:10

PT-6 DFT-based verification of crystal structures across the salt–cocrystal continuum

S. Chalupná, M. Hušák (Prague)

TUESDAY, APRIL 15, 2025

PÁLAVA HALL

8:05 – 17:20

OIL, GAS, COAL

Alternative raw materials, new technologies, biorefineries, fuels, biofuels

Chairpersons: J. Kocík (Litvínov), M. Hájek (Pardubice)

08:05–08:30

OP-1 Compatibility of crude oils and their products

A. Vráblík¹, D. Schlehöfer^{1,2}, A. Roudová¹, K. Chrudimská^{1,2}, H. Kittel²
¹Litvínov, ²Prague

08:30–08:55

OP-2 Hydrogen production by thermo-catalytic decomposition of secondary refinery feedstock

J. Kocík¹, L. Kaluža², M. Sádecký¹, K. Soukup², D. Ivan¹
¹Litvínov, ²Prague

08:55–09:20

OP-3 Co-processing of CNSL on BGHT7 in Slovnaft refinery

M. Kamocsa, M. Báhidský (Bratislava)

09:20–09:45

OP-4 Sustainable production of advanced biofuels via co-processing of post-fermentation corn oil and straight gas oil

M. Slezáčková, J. Mikulec, A. Peller, L. Danč, K. Izáková (Bratislava)

09:45–10:10

OP-5 Circular fuels - Producing Europe's sustainable aviation fuels technical aspects of the project

G. Blonkowski, Plock (PL)

10:10–10:30 Coffee break

10:30–10:55

OP-6 EtG gasoline and possible ways of determination in mixture with fossil gasoline

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

10:55–11:20

OP-7 Epoxidation of methyl esters from vegetable oils carried out by various ways

M. Hájek¹, D. Kocián¹, T. Hájek¹, D. Dvořáková¹, J. Kocík²

¹Pardubice, ²Litvínov

11:20–11:45

OP-8 Mixed plastic waste characterization via thermochemical processes

P. Lestinsky, R. Wdowkova, J. Strakosova, K. Klemecova, P. Marolek (Ostrava)

11:45–12:10

OP-9 Impact of quench tower malfunction on steam cracker yields and performance

P. Michalička¹, P. Vitiska¹, O. Ottensschläger²

¹Prague, ²Litvínov

12:10–13:40 Lunch

13:40–14:05

OP-10 Evaluation and optimization of the water quench column of Unipetrol's steam cracker

M. Kaňková¹, M. Malecký², J. Doskočil², J. Trejbal¹

¹Prague, ²Litvínov

14:05–14:30

OP-11 Coke balance during the decoking of pyrolysis heaters

P. Vitiska¹, P. Michalička¹, O. Ottensschläger²

¹Prague, ²Litvínov

14:30–14:55

OP-12 Study in the influence of feedstock type and process parameters of pyrolysis heaters on the formation of coke deposits

O. Ottensschläger¹, P. Vitiska², P. Michalička²

¹Litvínov, ²Prague

14:55–15:20

OP-13 Ni-Zeolite catalysts for Methane synthesis: Impact of synthesis conditions

G. Sádovská^{1,2}, N. Kostková^{1,2}, R. Pilař¹, J. Pastvová¹, J. Morávková¹, P. Sazama¹
¹Prague, ²Pardubice

15:20–15:40 Coffee break

15:40–16:05

OP-14 Determination of gaseous hydrocarbons by Raman spectroscopy

D. Tománek, T. Hlinčík (Prague)

16:05–16:30

OP-15 Thermometric titration

P. Barath, J. Balán (Metrohm Česká Republika, s.r.o.)

PROCESS ENGINEERING

16:30–16:55

PE-2 The realistic options for the decarbonization of ORLEN Unipetrol's Steam Cracker

J. Doskočil (Litvinov)

16:55–17:20

PE-3 Thermal plasma approach for the large-scale production of hydrogen and carbon as well as inorganic nanoparticles

M. Buryš¹, T. Hostinský^{1,2}, J. Zich^{1,2}, J. Fathi¹, A. Mašláni¹, S. Sharma¹
¹Prague, ²Pardubice

ECONOMY OF THE CHEMICAL INDUSTRY IN NEW CONDITIONS

17:20–17:45

E-14 Faster, easier and more efficient with Metrohm Spectroscopy

A. Daňhel, P. Barath (Metrohm Czech Republic, s.r.o.)

TUESDAY, APRIL 15, 2025

TRAMÍN HALL

8:05 – 17:20

ECONOMY OF THE CHEMICAL INDUSTRY IN NEW CONDITIONS

Chairpersons: J. Vávra, L. Branská (Pardubice), D. Čámská (Prague)

08:05–08:30

E-1 Current development of EU chemical Industry

I. Souček (Prague)

08:30–08:55

E-2 Market analysis methodology for assessing the market potential of innovations in the chemical industry

Š.-P. Náhlík, M. Jelínková, M. Fraenkl (Pardubice)

08:55–09:20

E-3 Preferred information and sources for assessing the reputation of chemical companies as potential employers

M. Gorčík, M. Jelínková (Pardubice)

09:20–09:45

E-4 Circular economy in the chemical industry: Opportunities and solutions

J. Vávra, A. Poklembová (Pardubice)

09:45–10:10

E-5 Efficiency of reverse logistics processes in an industrial enterprise

M. Zatrochová, M. Kuperová

10:10–10:30 Coffee break

10:30–10:55

E-6 Exploring sustainable packaging innovations: Are businesses addressing all key aspects?

M. Paták, L. Branská, M. Rejman, F. Mikšovský (Pardubice)

10:55–11:20

E-7 Social aspects of production from the perspective of consumers

L. Branska, M. Patak, T. Machova (Pardubice)

11:20–11:45

E-8 Management of selected social aspects in a chemical company through cooperation with a healthcare facility

K. Mencová, J. Holá, L. Branská (Pardubice)

11:45–12:10

E-9 Development of corporate insolvencies in the chemical industry

D. Čámská, J. Klečka (Prague)

12:10–13:40 Lunch

13:40–14:05

E-10 Accuracy of using industrial averages in the chemical industry

D. Čámská, J. Klečka (Prague)

14:05–14:30

E-11 The current state of Slovak winemaking as a sector of traditional biotechnology

M. Hornáček, M. Zatrochová (Bratislava, SK)

14:30–14:55

E-12 Consumption of energy drinks by czech generation z and y in the context of social responsibility

M. Znamínková, L. Tetřevová, M. Paták (Pardubice)

14:55–15:20

E-13 Economy and management of rainwater and wastewater utilization in tourism: Strategies, technologies, and current state in selected tourist destinations

M. Warhol, A. Lisník, J. Salamci, P. Bretz (Bratislava)

15:20–15:40 Coffee break

15:40 – 18:10 BIOTECHNOLOGY AND BIOREFINERY

Chairpersons: P. Patáková, B. Branská (Prague)

15:40–16:05

BIO-1 Two recycling approaches of polyurethane foam using fungi

M. Halecký, J. Mach, H. Beneš (Prague)

16:05–16:30

BIO-2 Valorization of agricultural and food waste in microbial biotechnology

P. Patakova¹, Z. Jandejsek²

¹Prague, ²Trhový Štěpánov

16:30–16:55

BIO-3 PolyHydroxyAlkanoate sythases: what is known and what remains to be discovered

K. Sedlar, I. Buchtikova, S. Obruca (Brno)

16:55–17:20

BIO-4 Bioconcrete production using cost-effective media from food industry by-products

H. Ottová, B. Halamová, K. Demnerová, P. Holeček, V. Nežerka, H. Stiborová (Prague)

17:20–17:45

BIO-5 The use of plant and animal wastes for the preparation of media for the endophytic bacteria cultivation

T. Hasek¹, Jandejsek Z.², P. Patakova¹

¹Prague, ²Trhový Štěpánov

17:45–18:10

BIO-6 Challenging the physiological triggers of metabolic shift in solventogenic clostridia

B. Branská, K. Koppová, D. Doubková (Prague)

WEDNESDAY, APRIL 16, 2025

PÁLAVA HALL

8:05 – 17:20 TECHNOLOGY FOR ENVIRONMENTAL PROTECTION

Chairpersons: L. Obalová, K. Kočí (Ostrava)

08:05–08:30

TE-1 Kutná Hora, risk elements and shredded carboard

C. Ash, V. Tejnecký, O. Drábek (Prague)

08:30–08:55

TE-2 Tribo-sorting of granular plastic waste

M. Drápela, M. Vaszi, J. Sklenářová, J. Perner, J. Kosek (Prague)

08:55–09:20

TE-3 Nitrication inhibitors on the surface of granular fertilizers

J. Majerniková, Z. Végh, M. Kučera, Z. Tokár (Bratislava, SK)

09:20–09:45

TE-4 Comparison of catalytic performances of Pt/Ti_xCe_yO_n catalysts and transition metal (Ti, Cu, Fe) and lanthanide (Ce) - based oxide catalysts for dichloromethane oxidation

A. Šlachtová^{1,2}, I. Troppová¹, S. Pitkaäho³, L. Matějová¹

¹Ostrava-Poruba, ²Oulu, FI

09:45–10:10

TE-5 Microwave transformation of waste HDPE into high-value products

M. Vastyl¹, M. J. Hill², A. Inayat¹, Y. Yao², P. Lestinsky⁴, L. Matejova¹

¹Ostrava, ²Calgary, Alberta, CA

10:10–10:35

TE-6 Effective material for removing boron from water

P. Czernek, P. Langer, M. Tokarčíková, D. Plachá (Ostrava)