

## **Onsite Schedule**

**A joint symposium of:**

**The 8th Sustainable Process Integration  
Laboratory (SPIL) Scientific Conference**

**CAPE Forum 2024  
Computer Aided Process Engineering**

**2nd International Scientific Conference  
on Cleaner Energy and Chemical  
Engineering for Sustainable Circular  
Economy: CLES-CE 2024**

**Brno University of Technology,  
Faculty of Mechanical Engineering,  
Brno, Czech Republic**

**2 - 3 September 2024**

DAY 1

2 September 2024, Monday (*All the timing is based on GMT +1)	
10:00 – 10:45	Registration
10:45 – 10:50	<b>Welcome address by Dean (Faculty of Mechanical Engineering)</b> Doc. Ing. Jiří Hlinka, PhD
10:50 – 11:00	<b>SPIL Opening Presentation by Prof Petar Varbanov, Head of SPIL and Memorial Tribute to the Founder of SPIL - Professor Jiří Jaromír Klemeš</b>
11:00 – 11:05	<b>Introduction of CAPE Forum 2024: Computer Aided Process Engineering – Prof Petro Kapustenko</b>
11:05 – 11:10	<b>Introduction of 2nd International Scientific Conference on Cleaner Energy and Chemical Engineering for Sustainable Circular Economy: CLES-CE 2024</b>
11:10 – 11:55	<i>Session Chair: Petar Varbanov</i> <b>Plenary 1</b> – Prof Venko Bechkov Hydrogen Production by Fermentation Methods – Perspectives and Challenges
11:55 – 12:10	Photo session
12:10 – 13:00	Lunch
13:00 – 13:45	<i>Session Chair: Petar Varbanov</i> <b>Plenary 2</b> – Prof Panos Seferlis CO <sub>2</sub> Capture, Utilization, Sequestration Chain: A Cyclic and Integrated Approach
13:50 – 15:10	<b>Session 1</b> <i>Session Chair: Petro Kapustenko</i>  <b>SPIL2024.0002 Stanislav Boldyrev:</b> Improvement of heat and shaft-work power integration of dual-stage pressure nitric acid plant  <b>SPIL2024.0010 Alexander Moravski:</b> Multi-parameter optimization of layered Ti <sub>3</sub> C <sub>2</sub> Mxene/PMMA nanocomposite under mechanical loading  <b>SPIL2024.0021 Apostol Apostolov:</b> Making Wine Less Alcoholic – a Nanomembrane Separation of Bioethanol from Bulgarian Red Wine  <b>SPIL2024.0005 Vlastimír Nevrlý:</b> Dynamic Waste Management: Adapting Collection Frequencies to Seasonal Variations in Biowaste Generation
15:10 – 15:40	Coffee Break
15:40 – 17:00	<b>Session 2</b> <i>Session Chair: Olga Arsenyeva</i>  <b>SPIL2024.0006 Jaroslav Pluskal:</b> Improving Waste Management Monitoring: Data-Driven Evaluation of Secondary Waste Composition  <b>SPIL2024.0025 László Buics:</b> Demand-Responsive Public Transportation Systems: Evaluating Challenges and Innovations for Sustainable Urban Mobility  <b>SPIL2024.0023 Boglárka Eisinger Balassa:</b> Comparative Life Cycle Assessment of Various Bridge Types: Evaluating Environmental Impact and Long-Term Sustainability  <b>SPIL2024.0026 Nikolett Gyurián Nagy:</b> The ambivalence of sustainable consumption: consumer decisions and their determinants
18:00	Brno - City tour

## DAY 2

### 3 September 2024, Tuesday (\*All the timing is based on GMT +1)

09:00 – 09:30	Registration
09:30 – 10:50	<p><b>Session 3</b> <a href="#"><i>Session Chair: Petar Sabev Varbanov</i></a></p> <p><b>SPIL2024.0033 Lidija Čuček:</b> Comparative environmental impact assessment of emerging smaller-scale decentralised ammonia production technologies</p> <p><b>SPIL2024.0018 Petro Kapustenko:</b> Mitigation of cooling water fouling in plate heat exchangers</p> <p><b>SPIL2024.0031 Olga Arsenyeva:</b> Estimation of heat transfer efficiency of heat exchangers with wavy structure of channels</p> <p><b>SPIL2024.0030 Petro Kapustenko:</b> Renewable Energy System for Residential Buildings – RESHeat Project</p>
10:50 – 11:15	Coffee Break
11:15 – 12:00	<p><a href="#"><i>Session Chair: Petro Kapustenko</i></a></p> <p><b>Plenary 3</b> – Prof Jiří Kučeřík Sustainable Agriculture and Some Carbon Sequestration Strategies</p>
12:00 – 13:00	Lunch
13:00 – 14:40	<p><b>Session 4</b> <a href="#"><i>Session Chair: Petro Kapustenko</i></a></p> <p><b>SPIL2024.0014 Loretta Salano:</b> Integration of an Autothermal Outer Electrified Reformer Technology for Methanol Production from Biogas: Enhanced Syngas Quality Production and CO<sub>2</sub> Capture and Utilization Assessment</p> <p><b>SPIL2024.0016 Simone Caspani:</b> Innovative Dry Gasification Process for Municipal Solid Waste Valorization</p> <p><b>SPIL2024.0013 Pingping Wang:</b> Prospective Life Cycle Optimization Framework for Integrating Carbon Capture and Storage/Utilization (CCS/CCU) in Cement Industry</p> <p><b>SPIL2024.0008 Ihsaan Ameer Furlonge:</b> Design, Simulation, and Optimisation of Sustainable Fertiliser Production: A Case Study of a Large-Scale Urea Facility in Italy</p> <p><b>SPIL2024.0032 Sin Yong Teng:</b> Debottlenecking potential in EU27 countries for renewable energy</p>
14:40 – 14:50	<b>Closing ceremony</b>