

Onsite Schedule

The 7th Sustainable Process Integration Laboratory Scientific Conference (SPIL'23)

in Conjunction with

Renewable Energy System for Residential Building Heating and Electricity Production (RESHeat) Workshop

Hotel Volarik, 22. dubna 1000/28

692 01 Mikulov, Czech republic

1-3 November 2023, Mikulov, Czech Republic



DAY 1

1 November 2023, Wednesday (*All the timing is based on GMT +1)	
08:30 – 09:00	Registration
09:00 – 09:15	<i>Session Chair: Petar Varbanov</i> Welcome address by Mr Petr Hladík, Minister of the Environment of the Czech Republic
09:15 – 09:30	Welcome address by Dean (Faculty of Mechanical Engineering) - Doc. Ing. Jiří Hlinka, PhD
09:30 – 10:00	SPIL Opening Presentation by Prof Petar Varbanov, Head of SPIL and Memorial Tribute to the Founder of SPIL - Professor Jiří Jaromír Klemeš
10:00 – 10:15	Photo session
10:15 – 10:45	Coffee Break and Poster Session
10:45 – 11:30	<i>Session Chair: Yee Van Fan</i> Plenary 1 – Prof Sandro Nižetić Photovoltaic technologies and applications in energy transition
11:30 – 12:30	Session 1 (<i>Co-chairs: Olga Arsenyeva, Árpád Tóth</i>) SPIL2023.0037 A Novel Self-condensation Liquid Carbon Dioxide Energy Storage System Integrated with High-temperature Thermal Energy Storage – Haoshui Yu SPIL2023.0024 Leucaena leucocephala and Montmorillonite Co-pyrolysis Biochar: A Study on Physicochemical Properties and Stability – Chun-Han Ko SPIL2023.0034 Municipal Solid Waste Reduction through Oxidative Liquefaction Process – Sebastian Werle SPIL2023.0038 Effect of Wall Structures and Peristalsis on Glucose Production in a Bionic Microreactor Loaded with Cellulase – Kai Lin
12:30 – 13:30	Welcome Reception and Lunch
13:30 – 14:15	<i>Session Chair: Petar Varbanov</i> Plenary 2 – Prof Ferenc Friedler Resilience of Processing Systems: Analysis and Synthesis
14:15 – 14:35	Session 2 (<i>Co-chairs: Agnes Csiba-Herczeg, Sebastian Werle</i>) Keynote 1 – Prof Jiri Kucerik (Biodegradable Bioplastics: Their Pros and Cons from the Environmental Perspective)
14:35 – 15:20	SPIL2023.0071 Quality targeting of mixed plastics via selection of processing pathway using superstructural representation and modelling – Qian Yee Ong SPIL2023.0007 Allocation of Environmental Impacts to Support Plastic Circular Economy: The Cooperative Game Methods – Chunyan Si SPIL2023.0026 Fashion Dictator or Sustainable Thinker - Practical Challenges of Environmental Awareness – Peter Csiba
15:20 – 15:40	Coffee Break and Poster Session
15:40 – 17:00	Pinch Analysis Workshop by Petar Varbanov Introduction and Step-by-Step Tutorial
	Free Time

2 November 2023, Thursday (*All the stated timing is based on GMT +1)	
09:00 – 09:30	Registration
09:30 – 10:30	<p>Session 3 (<i>Co-chairs: Sheng Zhang, Ting Pan</i>)</p> <p>SPIL2023.0046 Overview of Physical Methods for CO2 Capture – Jakov Baleta</p> <p>SPIL2023.0016 Investigation on distillation technology for removal of organic halogen compounds from pharmaceutical process wastewaters with life cycle analysis – Huyen Trang Do Thi</p> <p>SPIL2023.0017 Model development for separation of azeotropic mixtures: organophilic and hydrophilic pervaporations – Andras Jozsef Toth</p> <p>SPIL2023.0030 Optimal Allocation in Response to Watershed Water Pollutant Emissions and Ecological Compensation Funds under Uncertainty – Linhuan He</p>
10:30 – 11:00	Coffee Break
11:00 – 13:00	RESHeat Workshop Opening– Prof Pawel Ocloń; RESHeat Workshop Photo Session
13:00 – 14:00	Lunch
14:00 – 14:45	<p><i>Session Chair: Petro Kapustenko</i></p> <p>Plenary 3 – Prof Zdravko Kravanja: The role of mathematical programming in a combined holistic approach to the synthesis of sustainable production systems</p>
14:45 – 16:00	<p>RESHeat Session (<i>Co-chairs: Pawel Ocloń, Petar Varbanov</i>)</p> <p>SPIL2023.0002 Plate Heat Exchangers for condensation processes: recent developments and future perspectives – Petro Kapustenko</p> <p>SPIL2023.0070 Mathematical model of energy efficiency for the intelligent residential heating systems – Olga Arsenyeva</p> <p>SPIL2023.0072 Uncovering the European power infrastructure: Digital twin and multivariate analysis – Sin Yong Teng</p> <p>SPIL2023.0025 Optimisation of a hybrid PV panels-energy storage-grid in the electricity operation for residents based on the RESHeat system – Ting Pan</p> <p>SPIL2023.0058 Reducing the per Unit Energy Need of Manufacturing: Comparison of Time Slot and Precedence Based Mathematical Models and Optimization Algorithms – Károly Kalauz</p>
16:00 – 16:30	Coffee Break
16:30 – 18:00	<p>Session 4 (<i>Co-chairs: Jiří Kučerík, Linhuan He</i>)</p> <p>SPIL2023.0049 Evaluation of Green Investments Among Automotive Companies using Digital Reporting – Árpád Tóth</p> <p>SPIL2023.0029 The potential of the P-graph for optimising public service processes – a structured literature review – Boglárka Eisinger Balassa</p> <p>SPIL2023.0045 Linking financial and sustainability aspects of energy use through GRI standards and SDG targets – Péter Molnár</p> <p>SPIL2023.0048 Extraction and Comparative Analysis of Climate-related Financial Information from Digital Annual Reports – Alex Suta</p> <p>SPIL2023.0050 Measurement-Based Resistance Force Modelling – Zoltán Pusztai</p> <p>SPIL2023.0053 Resilience Analysis of an Automated Mobile Robot for Traffic Diversion Element Manipulation – Rudolf Krecht</p>
	Wine Cellar Testing and Dinner (Smart Casual)

DAY 3

3 November 2023, Friday

*All the stated timing is based on GMT +1

09:00 – 11:00	<p>RESHeat Panel Discussion – Sustainability and Efficiency of Solar Energy Systems for Building Heating and Electricity Production</p> <p>Panel Speakers: Paweł Ocloń, Petro Kapustenko, Jakov Baleta, Sin Yong Teng</p> <p>Moderators: Prof Petar Varbanov</p>
11:00 – 11:30	Closing and Award Ceremony
11:30 – 12:30	Lunch
12:30 – 15:30	Social Visit to Archeopark Pavlov
	Transfer to Vienna Airport (Based on Request)

Poster Presentation

SPIL2023.0018	Method development for removal of detergent material from process wastewater	Eniko Haaz
SPIL2023.0027	Impact of pretreatment on sun-blocking potentials of lignocellulosic biomass	Chun-Han Ko
SPIL2023.0028	Biomaterials in Starch-based Greaseproof Paper Coating	Fang-Chih Chang
SPIL2023.0042	Application of nanocellulose packaging materials for fruit preservation	Fang-Chih Chang
SPIL2023.0064	The Development of Renewable Energy for Residential Buildings Utilisation	Sheng Zhang
SPIL2023.0075	Greenhouse Gas Footprint of Polyethylene Production Considering Gradual Transition from Fossil to Bio-Based Plastics	Monika Dokl/ Yee Van Fan