# FINAL CONFERENCE PROGRAM

## Schedule at a glance

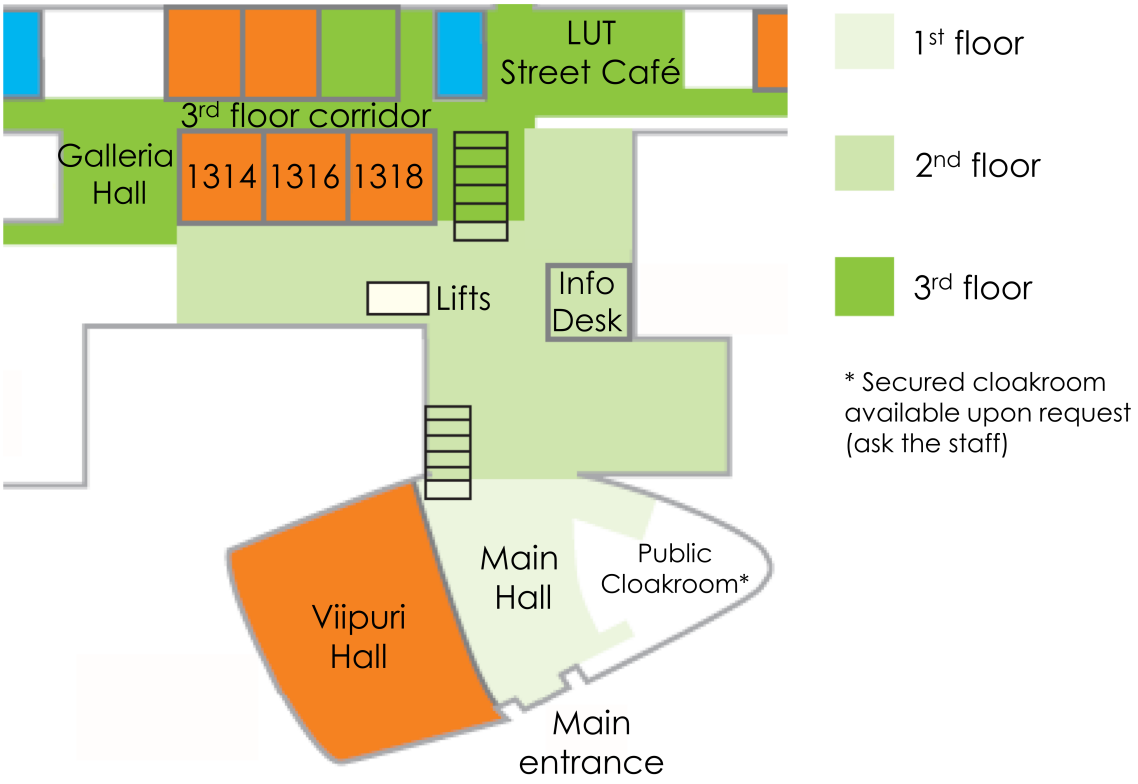
| TUESDAY, 9th SEPTEMBER 2025 | | | |
|---|---|---|---|
| 8:30 - 9:15 | Registration, Main Hall | | |
| 9:15 - 9:30 | Welcome to ORC2025, Viipuri Hall | | |
| 9:30 - 9:45 | Welcome to LUT, Viipuri Hall | | |
| 9:45 - 10:30 | Keynote I: Supercritical CO2, Viipuri Hall | | |
| 10:30 - 11:00 | Coffee break, Main Hall | | |
| 11:00 - 12:00 | Session 1A, 1318 | Session 1B, 1316 | Session 1C, 1314 |
| 12:00 - 13:00 | Lunch, Main Hall | | |
| 13:00 - 14:40 | Session 2A, 1318 | Session 2B, 1316 | Session 2C, 1314 |
| 14:40 - 15:30 | Coffee break, 3rd Floor corridor | | TEHAG & OEMs Meeting, 1316 |
| 15:30 - 16:30 | Poster session, Galleria Hall | | |
| 16:30 - 18:30 | Welcome reception, LUT Street Café | | |

| WEDNESDAY, 10th SEPTEMBER 2025 | | | |
|---|---|---|---|
| 8:45 - 9:45 | Session 3A, 1318 | Session 3B, 1316 | Session 3C, 1314 |
| 9:45 - 10:15 | Coffee break, Main Hall | | |
| 10:15 - 11:00 | Keynote II: Heat pump technology, Viipuri Hall | | |
| 11:00 - 12:00 | Session 4A, 1318 | Session 4B, 1316 | Session 4C, 1314 |
| 12:00 - 13:00 | Lunch, Main Hall | | |
| 13:00 - 14:40 | Session 5A, 1318 | Session 5B, 1316 | Session 5C, 1314 |
| 14:40 - 15:30 | Coffee break, 3rd Floor corridor | | |
| 15:30 - 16:30 | Session 6A, 1318 | Session 6B, 1316 | |
| 16:30 - 17:30 | KCORC General Assembly, 1316 | | |
| 19:00 - 22:00 | Gala Dinner, Lappeenranta Harbour | | |

| THURSDAY, 11th SEPTEMBER 2025 | | | |
|---|---|---|---|
| 8:45 - 9:45 | Session 7A, 1318 | Session 7B, 1316 | Session 7C, 1314 |
| 9:45 - 10:15 | Coffee break, Main Hall | | |
| 10:15 - 11:00 | Plenary session: Sponsor Pitch, Viipuri Hall | | |
| 11:00 - 12:00 | Session 8A, 1318 | Session 8B, 1316 | Session 8C, 1314 |
| 12:00 - 13:00 | Lunch, Main Hall | | |
| 13:00 - 14:40 | Session 9A, 1318 | Session 9B, 1316 | Session 9C, 1314 |
| 14:40 - 15:30 | Coffee break, 3rd Floor corridor | | |
| 15:30 - 18:00 | Lab tour & Company visit (SpinDrive) | | |
| 18:00 - 21:00 | Sauna Experience | | |

| FRIDAY, 12th SEPTEMBER 2025 | |
|---|---|
| 08:00-14:00 | Technical tour to ORC site in Espoo |

## Venue map


LUT
Street Café
3rd floor corridor
Galleria
Hall
1314
1316
1318
Lifts
Info
Desk
Main
Hall
Public
Cloakroom*
Viipuri
Hall
Main
entrance
1st floor
2nd floor
3rd floor
* Secured cloakroom
available upon request
(ask the staff)

# Tuesday 9 September 2025

**08:30–09:15** Registration (Main Hall)

**09:15–09:30** Welcome to ORC2025 (Viipuri Hall)
*Prof. Teemu Turunen-Saaresti, Conference Chair*

**09:30–09:45** Welcome to LUT University (Viipuri Hall)
*Prof. Mari Kallioinen-Mänttäri, LUT University Provost*

**09:45–10:30** Keynote I (Viipuri Hall)

Keynote I, Viipuri Hall – State of the Art in Supercritical CO2 Power Systems
*Dr. Tim Allison, Machinery Department Director at Southwest Research Institute®*

Dr. Tim Allison is the Machinery Department Director at Southwest Research Institute® where he leads an organization that focuses on R&D for the energy industry. His research experience includes analysis, fabrication, and testing of turbomachinery and systems for advanced power or oil & gas applications including high-pressure turbomachinery, centrifugal compressors, expanders, gas turbines, reciprocating compressors, and test rigs for bearings, seals, blade dynamics, and aerodynamic performance. Dr. Allison holds two patents, has authored three book chapters and co-edited one book, and has published over 70 articles on various turbomachinery topics. He received the best tutorial/paper awards from the ASME Oil & Gas and Supercritical CO2 Power Cycle Committees in 2010, 2014, 2015, and 2018. He is a past chairman of the ASME Oil & Gas Applications Committee, past and current co-chair for the Thermal-Chemical-Mechanical Energy Storage Workshop, a member of the Supercritical CO2 Symposium Planning Committee, and an Associate Editor for the ASME Journal of Engineering for Gas Turbines & Power.

**10:30–11:00** *Coffee break* (Main Hall)

**11:00–12:00** Parallel sessions 1A (room 1318), 1B (room 1316), 1C (room 1314)

Session 1A, room 1318 – Components I
*Chair: Mirko Morini*

25 min Marco Oliveti, Giacomo Persico
*Development and validation of a mean-line code for design optimization and off-design analysis of Organic Rankine Cycle axial turbines*

25 min Joshua Adam Kelly, Alessandro Cappiello, Matteo Pini, Piero Colonna
*CAD-Based Optimisation of a Supersonic Stator Vane for an ORC Expander*

Session 1B, room 1316 – Cycle concepts I
*Chair: Konstantinos Braimakis*

25 min Benoît Payebien, Nicolas Tauveron, Nadia Caney
*Theoretical and thermodynamic study of innovative Carnot battery types*

25 min Dario Alfani, Marco Astolfi
*Off-Design Analysis of ORC-based Carnot Batteries: Performance Assessment and Insights into Components Design*

Session 1C, room 1314 – Market deployment I
*Chair: Florian Heberle*

25 min Aitor Cendoya, Frederic Ransy, Olivier Dumont, Bentao Guo, Vincent Lemort
*Design, component selection and critical considerations for the development of a 50 kWe Carnot Battery coupled to waste heat*

25 min Piotr Klonowicz, Łukasz Jędrzejewski, Łukasz Antczak, Dawid Zaniewski, Piotr Klimaszewski
*Performance evaluation of a high-temperature ORC unit with a nominal power of 30 kWe*

**12:00–13:00** *Lunch* (Main Hall)

**13:00–14:40** Parallel sessions 2A (room 1318), 2B (room 1316), 2C (room 1314)

Session 2A, room 1318 – Components II
*Chair: Michele Pinelli*

25 min Piotr Kolasiński, Sindu Daniarta, Dawid Sowa, Szymon Lech, Przemyslaw Błasiak
*Modelling the influence of the volumetric expander working chamber geometry on the two-phase expansion processes*

25 min Saverio Ottaviano, Chiara Poletto, Lisa Branchini, Andrea De Pascale
*Modelling analysis of partial evaporation Organic Rankine Cycle with volumetric expander*

25 min Dawid Sowa, Szymon Lech, Piotr Kolasiński, Sindu Daniarta
*Modelling of fin-and-tube based Thermal Energy Storage for use with Organic Rankine Cycle*

Session 2B, room 1316 – Experiments I
*Chair: Alberto Guardone*

25 min Joshua Bäumer, Leander Hake, Hilmar Apmann, Stefan aus der Wiesche
*Development of a new test section with an annular ring cascade for testing ORC turbines manufactured using powder bed fusion*

25 min Stefan aus der Wiesche, Leander Hake
*Experimental evidence for supersonic loss reduction through turbine blades with suction side profile bending*

25 min Matteo Majer, Adam Head, Carlo De Servi, Piero Colonna, Matteo Pini
*The ORCHID turbine: a test rig for experimental research on high-temperature supersonic Organic Rankine Cycle turbines*

Session 2C, room 1314 – Supercritical $CO_2$ I
*Chair: Marco Astolfi*

25 min Bentao Guo, Vincent Lemort, Aitor Cendoya
*A Fixed-Charge Control Strategy of Trans-critical CO2 Rankine Cycle*

25 min Zhi Ling, Xuan Wang, Rui Wang, Yurong Wang, Hua Tian
*A zero-leakage all-in-one supercritical CO2 expansion generator solution*

25 min Giovanny López-Muñoz, Leonard Muke, Francesco Crespi, David Sánchez
*Exploring the Potential of Directly Fired Supercritical Carbon Dioxide Power Cycles: A Comparative Thermodynamic Approach*

**14:40–15:30** *Coffee break* (3rd Floor Corridor)

**15:00–16:30** TEHAG invites ORC Manufacturers to exchange on future targets (room 1316)

**15:30–16:30** Poster session (Galleria Hall)

| Poster session, Galleria Hall | |
|---|---|
| 1 | Florian Heberle, Jaromir Jeßberger, Cordin Arpagaus, Leon Brendel, Stefan Bertsch, Dieter Brüggemann<br>*Collaborative online tool for high-temperature heat pumps: www.high-temperature-heat-pumps.com* |
| 2 | Takeshi Yasunaga, Tetsuya Tashiro, Makoto Tsubota<br>*Practical Application of 3D Metal Printing for Manufacturing Test Plates in Low-Temperature-Driven ORC Plate Heat Exchangers* |
| 3 | Elie Ghanatos, Nicolas Tauveron, Corélie Guenard, Stéphane Colasson, Vincent Lemort, Titouan Janod, Basile Chaudoir<br>*EU project SEHRENE* |
| 4 | Swann Thuillet, Sylvanus Gbenou, Mathias Fonlupt<br>*Dynamic modeling of a thermo-gravity compression system in a PULSE engine for low-grade waste heat recovery* |
| 5 | Dawid Zaniewski, Łukasz Antczak, Łukasz Jędrzejewski, Piotr Klonowicz, Piotr Klimaszewski<br>*ORC system operation outside the permissible control range: operational challenges and adaptive modifications on the example of the 300 kWel power plant dedicated to recovering waste heat from process exhaust gases* |
| 6 | Johan Manuel Gonzalez, José Matias Garrido, Héctor Quinteros-Lama<br>*Selection of thermal oils for heat transfer from a low/medium-temperature thermal source to a working fluid used in an organic Rankine cycle* |
| 7 | Marie Peeters, Elise Neven, Olivier Dumont, Vincent Lemort<br>*Preliminary Experimental Investigation of a 10-kWe Thermally Integrated Pumped Thermal Energy Storage System Using a Reversible Organic Rankine Cycle/Heat Pump* |
| 8 | Basile Chaudoir, Samuel Gendebien, Vincent Lemort<br>*Design optimization of shell-and-tube heat exchangers: an open-source discretized approach for any phase configuration* |
| 9 | Tryfon Roumpedakis, Florian Kaufmann, Christopher Schifflechner, Ludwig Irrgang, Sotirios Karellas<br>*Optimizing the design of a reversible ORC system: development of a ANN model for air-cooled condenser* |
| 10 | Aaron Wesemann, Jannik von Zabienski, Moritz Westermeier, Hartmut Spliethoff, Christopher Schifflechner<br>*First design concept of a digital twin mirroring a reversible 20 kWel Organic Rankine Cycle test rig* |
| 11 | Marco Astolfi<br>*A critical review of the performance indexes for Thermally Integrated Carnot Batteries* |
| 12 | James Bull, Jed Pound, James M. Buick, Jovana Radulovic<br>*Variation of Pinch Point and Approach Temperature in Geothermal ORC: Balancing Cycle Efficiency and Heat Exchanger Sizing* |
| 13 | Karthik Bhairapurada, Charlotte Piquet, Arthur Leroux, Nordine Belaissaoui<br>*Design and Manufacturing of $sCO_2$ Turbomachinery for the SCO2OP-TES Carnot Battery* |

**16:30–18:30** *Welcome reception* (LUT Street Café)

# Wednesday 10 September 2025

**08:45–09:45** Parallel sessions 3A (room 1318), 3B (room 1316), 3C (room 1314)

Session 3A, room 1318 – Thermodynamics & Fluids I
*Chair: Piero Colonna*

25 min Réka Kustán, Attila R. Imre
*Visualization of the simple thermodynamic processes related to heat-to-power and power-to-heat cycles*

25 min Marta Zocca, Marta Pederzolli, Teemu Turunen-Saaresti, Alberto Guardone
*Investigation of similarity parameters in isentropic supersonic expansions of organic vapors*

Session 3B, room 1316 – Cycle concepts II
*Chair: Sotirios Karellas*

25 min Sindu Daniarta, Piotr Kolasiński, Attila R. Imre
*Design and analysis of Organic Rankine Cycle from subcritical to transcritical operations*

25 min Amalia Stainchaouer, Christopher Schifflechner, Hartmut Spliethoff
*Off-design and voyage-based optimization of low- and medium- grade ORC systems for enhanced ocean-going vessels performance*

Session 3C, room 1314 – Heat pump technology I
*Chair: Nicolas Tauveron*

25 min Albert Vocel, Vaclav Novotny, Jan Spale, Vaclav Vodicka, Karel Sosna, Michal Kolovratnik
*Electrothermal Energy Storage Carnot Battery Demonstrator with discharging via ORC*

25 min Antonios Charalampidis, Nikolaos Sarantopoulos, Aris Leontaritis, Tryfon Roumpedakis, Sotirios Karellas
*Experimental Investigation of a Reversible Heat Pump/ORC for Combined Heating, Cooling, and Electricity Production*

**09:45–10:15** *Coffee break* (Main Hall)

**10:15–11:00** Keynote II (Viipuri Hall)

Keynote II, Viipuri Hall – Charge reduction – experiences from the heat pump industry
*Prof. Björn Palm, Senior Professor at Division of Applied thermodynamics and refrigeration, Department of Energy Technology, KTH Royal Institute of Technology*

Prof. Björn Palm is senior professor in energy technology at KTH, Royal Institute of Technology, Stockholm, Sweden, where he for more than 20 years was heading the Division of Applied Thermodynamics and Refrigeration. His research covers components and systems for heat pumps and refrigeration systems, from microstructures of boiling surfaces, to combinations of heat pumps and thermal energy storage for load shifting in the energy system. Publications include two-phase flow in plate heat exchangers and microchannels, nanofluids and enhancement of heat transfer, thermal energy storage, geothermal heat pumps and heat transfer in the ground. A special interest has been the application of natural refrigerants like hydrocarbons and carbon dioxide, but also the use of ammonia in small systems. This has led to investigations of how to design systems with minimum charge of refrigerant. Safety with flammable refrigerants and charge reduction are topics of ongoing research.

**11:00–12:00** Parallel sessions 4A (room 1318), 4B (room 1316), 4C (room 1314)

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| | Session 4A, room 1318 – Components III<br>*Chair: Antti Uusitalo* |
| 25 min | Robin Gautier, Nicolas Tauveron, Pierre Dumoulin<br>*Study of an Axial Micro-Turbine with 1D Model Including Various Fluids or Zeotropic Mixtures and Validated against Experimental Results* |
| 25 min | Alessandro Cappiello, Joshua A. Kelly, Piero Colonna, Matteo Pini<br>*On the verification of design guidelines for supersonic ORC vanes by means of adjoint-based shape optimization* |
| | Session 4B, room 1316 – Experiments II<br>*Chair: Carlo De Servi* |
| 25 min | Xander van Heule, Michel De Paepe, Steven Lecompte<br>*Experimental investigation of the non-equilibrium expansion phenomena within a reciprocating expander* |
| 25 min | Rodrigo Branco, João S. Pereira, José Baranda<br>*Development of an experimental setup to study the influence of heating methods on flow boiling heat transfer correlations in ORC applications* |
| | Session 4C, room 1314 – Market deployment II<br>*Chair: Aki Grönman* |
| 25 min | Vaclav Novotny, Jan Spale, Jan Syblik, Jan Stepanek<br>*Potential of ORC applications for nuclear microreactors* |
| 25 min | Veronica Schwarz, Andreas Schuster, Richard Aumann, Sven Schlotz, Marcel Flipse, Jonah van Sluijs, Andreas Grill, Jens-Patrick Springer<br>*Market Experience: ORC Applications in the Marine Sector* |

**12:00–13:00** *Lunch* (Main Hall)

**13:00–14:40** Parallel sessions 5A (room 1318), 5B (room 1316), 5C (room 1314)

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| | Session 5A, room 1318 – A session by the FlexGeo project<br>*Chair: Christopher Schifflechner* |
| 25 min | Jannik von Zabienski, Florian Kaufmann, Piero Gei, Hartmut Spliethoff, Christopher Schifflechner<br>*Working fluid/oil separation in a reversible ORC test rig with a twin-screw machine: Lessons learned and remaining challenges* |
| 25 min | Christopher Schifflechner, Marco Astolfi, Sotirios Karellas, Tryfonas Roumpedakis, Marcus Budt, Maximilian Weitzer, George Kosmadakis, Vincent Lemort<br>*Bringing reversible ORC-heat pump systems into the market: A perspective on the current obstacles and future application potential* |
| 25 min | Panel discussion |

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| | Session 5B, room 1316 – Cycle concepts III<br>*Chair: Vaclav Novotny* |
| 25 min | Julian Gundelwein, Marco Griesbach, Florian Heberle, Dieter Brüggemann<br>*Dynamic Behavior of an Organic Rankine Cycles for Waste Heat Recovery with focus on Heat Exchanger modeling* |
| 25 min | Matteo Carlo D'Incalci, Dario Alfani, Paola Bombarda<br>*Preliminary Analysis of an Electro-Thermal Energy Storage System for Geothermal Applications* |
| 25 min | Shih-Yen Hu, Jie-Mou Jhang, Jui-Ching Hsieh, Chen-Hao Liao, Omid Ali Zargar<br>*Thermodynamic, Environmental, and Economic Analysis of a Biomass Polygeneration System with Carbon Capture* |
| | Session 5C, room 1314 – Heat pump technology II<br>*Chair: Piotr Kolasiński* |
| 25 min | Jaromir Jeßberger, Florian Heberle, Dieter Brüggemann<br>*Experimental optimization of the part load behaviour of a high-temperature heat pump* |
| 25 min | Echezona Nnaemeka Obika, Florian Heberle, Jaromir Jeßberger, Dieter Brüggemann<br>*Thermodynamic analysis of potential working fluids for high-temperature heat pumps in cascade configuration* |
| 25 min | Tryfon Roumpedakis, Matthaios Papatheocharis, Antonios Charalampidis, Konstantinos Braimakis, Sotirios Karellas<br>*Artificial neural network of a reversible small scale hybrid heat pump-adsorption chiller* |

**14:40–15:30** *Coffee break* (3rd Floor Corridor)

**15:30–16:30** Parallel sessions 6A (room 1318), 6B (room 1316)

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| | Session 6A, room 1318 – Thermodynamics & Fluids II<br>*Chair: Takeshi Yasunaga* |
| 25 min | Lorenzo Galieti, Dario Alfani, Paolo Silva, Paola Bombarda, Piero Colonna, Carlo De Servi<br>*Integrated thermo-economic optimization and working fluid selection for ORC plants operating with zeotropic mixtures* |
| 25 min | Hannah Cortnum, Maximilian Weitzer, Nora Elhaus, Jürgen Karl<br>*CO2-based zeotropic mixtures for reversible HP-ORC systems – Exploiting temperature glide for enhanced performance* |
| | Session 6B, room 1316 – Experiments II<br>*Chair: Stefan aus der Wiesche* |
| 25 min | Omnia Elbaz, Tala El Samad, Martin T. White, Abdulnaser Sayma<br>*Numerical and experimental study of supersonic nozzle for organic Rankine cycle turbine* |
| 25 min | Riccardo Gioia, Alessandro Romei, Andrea Spinelli<br>*Facility commissioning for experiments on liquid-to-vapor expansion of organic fluids* |

**16:30–17:30** KCORC General Assembly (room 1316)

**19:00–22:00** *Gala dinner aboard M/S Camilla, departing from Lappeenranta Harbor – Satama*, (view map). *Travel to the harbor is individual.*

## Thursday 11 September 2025

**08:45–09:45** Parallel sessions 7A (room 1318), 7B (room 1316), 7C (room 1314)

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| | Session 7A, room 1318 – Components IV<br>*Chair: Henrik Öhman* |
| 25 min | Philipp Streit, Jan Spale, Vaclav Vodicka, Vaclav Novotny, Lukas Völfl, Andreas P. Weiß, Michal Kolovratnik<br>*Design, optimization and experimental investigation of various small-scale ORC expanders in a biomass cogeneration plant* |
| 25 min | Takeshi Yasunaga, Tetsuya Tashiro, Ristiyanto Adiptra, Dwiyoga Nugroho, Kevin Fontaine, Yasuhiro Ohtsu<br>*Theoretical Optimization of Plate-Type Condenser Geometry for Low-Temperature ORC: Case of Ocean Thermal Energy* |
| | Session 7B, room 1316 – Experiments IV<br>*Chair: Fabio Fatigati* |
| 25 min | Hsien-Ta Tsai, Jui-Ching Hsieh, Yi-Chi Hsieh<br>*Experimental Performance Analysis of a Rotary Vane Expander in Micro-ORC Systems for Low-Grade Heat Utilization* |
| 25 min | Vaclav Vodicka, Jan Spale, Zbynek Zeleny, Vaclav Novotny, Jakub Mascuch<br>*Experimental Experience from Long-term Operation of a Rotary Vane Expander* |
| | Session 7C, room 1314 – Supercritical $CO_2$ II<br>*Chair: Giacomo Persico* |
| 25 min | Seyedehsan Rafiee, Aki Grönman, Antti Uusitalo, Teemu Turunen-Saaresti<br>*Off-design analysis on effect of temperature ratio on Supercritical Carbon Dioxide (sCO2) Radial Outflow Turbine (ROT) efficiency* |
| 25 min | Arooj Arooj, Giuseppe Petruccelli, Antti Uusitalo, Teemu Turunen-Saaresti<br>*Computational Fluid Dynamics Analysis of Two-Phase Flow Heat Transfer in Condenser with Hydrocarbons* |

**09:45–10:15** *Coffee break* (Main Hall)

**10:15–11:00** Plenary session (Viipuri Hall)

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| | Plenary session, Viipuri Hall – Sponsor pitch<br>*Chair: Teemu Turunen-Saaresti* |
| 15 min | ENOGIA |
| 15 min | Marani Sp. z o. o. |
| 15 min | SpinDrive Oy |

**11:00–12:00** Parallel sessions 8A (room 1318), 8B (room 1316), 8C (room 1314)

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|---|---|
| | Session 8A, room 1318 – Thermodynamics & Fluids II<br>*Chair: Attila R. Imre* |
| 25 min | Sherryn Sherryn, Rizqi Dian Anggara, Bintang Putra Megantara, Sindu Daniarta, Nazrul Effendy, Piotr Kolasiński<br>*A selection of working fluids for ocean thermal energy conversion using partial evaporator and two-phase expander* |
| 25 min | Afra Bakhit, Antti Uusitalo, Teemu Turunen-Saaresti<br>*Comparative Analysis of Working Fluids and Thermodynamic Parameters on ORC System and Turbine Design* |

Session 8B, room 1316 – Experiments V
*Chair: Páll Valdimarsson*

25 min Konstantinos Braimakis, Aris-Dimitrios Leontaritis, Tryfon Roumpedakis, Efstratios Varvagiannis, Ioanna Kermida, Antonis Charalampidis, Nikolaos Karkalos, Nikolaos Sarantopoulos, Sotirios Karellas
*Experimental demonstration of an Organic Rankine Cycle-ejector cooling cycle prototype for vessel engine waste heat recovery*

25 min Pengcheng Liu, Xuan Wang, Hua Tian, Qiyao Zuo, Weijia Meng
*Experimental study on on-board performance of ORC waste heat recovery system for internal combustion engine*

Session 8C, room 1314 – Market deployment III
*Chair: Paola Bombarda*

25 min Giorgia Ruffato, Luca Vanini, Diego Milesi
*The Gemini turbine: A breakthrough in radial outflow turbine design for large-scale geothermal application*

25 min Veronica Schwarz, Andreas Schuster, Richard Aumann, Sven Schlotz, Markus Lintl, Yvonne Reissner, Jonas Freischmann
*Market Experience: ORC Applications in the Cement Sector*

**12:00–13:00** *Lunch* (Main Hall)

**13:00–14:40** Parallel sessions 9A (room 1318), 9B (room 1316), 9C (room 1314)

Session 9A, room 1318 – Components V
*Chair: Matteo Pini*

25 min Nicola Aldi, Michele Pinelli, Mattia Piovan, Alessio Suman, Nicola Zanini, Agostino Gambarotta, Mirko Morini, Costanza Saletti
*Simulating ORC expanders: CFD investigation and lumped parameter model identification*

25 min Pangbo Ren, Graham Cox, Maria Vera-Morales, Stewart Watson, Albert Demargne
*Investigation of a novel low-speed radial re-entry turbine for small-scale waste heat recovery*

25 min Nikolaos Karkalos, Konstantinos Braimakis, Aris-Dimitrios Leontaritis, Tryfon Roumpedakis, Efstratios Varvagiannis, Ioanna Keramida, Antonios Charalampidis, Nikolaos Sarantopoulos, Sotirios Karellas
*A comparison of 2-D and 3-D Computational Fluid Dynamics approaches for the prediction of ejector devices performance*

Session 9B, room 1316 – Cycle concepts IV
*Chair: Andrea De Pascale*

25 min Attila R. Imre, Réka Kustán
*How can self-consumption for heat engines be reduced to make them a viable alternative to utilize small heat sources for power production?*

25 min José Vasco Mota, Márcio Santos, José Ribeiro, Jorge André
*Techno-economic assessment of ORC-based Configurations for Low to Medium Temperature waste heat recovery*

| Session 9C, room 1314 – Plant Dynamics & control<br>*Chair: Steven Lecompte* | |
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| 25 min | Andres Hernandez, Fredy Ruiz, Vincent Lemort<br>*Data-driven nonlinear modeling for superheating degree in organic Rankine cycle systems* |
| 25 min | Fabio Fatigati, Giammarco Di Giovine, Marco Di Bartolomeo, Davide Di Battista, Roberto Cipollone<br>*Development of a novel control to boost the cogenerating performances of an ORC-based unit fed by a very low-temperature hot source* |
| 25 min | Moritz Westermeier, Aaron Wesemann, Arnaud Bruch, Lea Yvernault, Konstantinos Braimakis, Sotirios Karellas, Michel Beaughon, Aldo Serafino, Christopher Schifflechner, Hartmut Spliethoff<br>*Dynamic Simulation of a 2 MW ORC for Industrial Waste Heat Recovery with a Large-Scale Thermal Energy Storage System* |

**14:40–15:30** *Coffee break* (3rd Floor Corridor)

**15:30–18:00** Guided tour of the Laboratory of Fluid Dynamics (inside LUT Campus) and visit to company SpinDrive (walking distance from LUT Campus, view map).
The guided tours start from the meeting point in the 3rd Floor Corridor.

**18:00–21:00** Sauna Experience at LUT Rantasauna (view map) and at Vierula sauna (view map), both walking distance from LUT Campus.
We walk to the saunas from the meeting point in the 3rd Floor Corridor.

## Friday 12 September 2025

**08:00–14:00** Technical tour to the Blominmäki Wastewater Treatment Plant in Espoo (view map)

A bus departs from Lappeenranta city center at 08:00 and takes participants to the site. After the visit, the bus continues to Helsinki Airport, arriving before 14:00. The detailed timetable and meeting point are shared via email with registered participants.