23rd International Heat Pipe Conference (IHPC)

17th International Heat Pipe Symposium (IHPS)

May 24–28, 2026 | Gdańsk, Poland

Conference Programme

Sunday, May 24, 2026

Registration & Welcome

Time	Event
16:00–18:30	Participant Registration
18:30–20:00	Welcome Reception

Monday, May 25, 2026 Opening Ceremony • Keynote • Technical Sessions

Time	Event
08:00–09:00	Registration & Coffee Break
09:00–09:45	**Official Opening Ceremony**
09:45–10:30	**Plenary Session I** **Keynote Lecture I – Prof. Dariusz Mikielewicz** *Dissipation in modelling of complex two-phase flows* **Session Chair Prof. Marcia Barbosa Henriques Mantelli**
10:30–11:00	Coffee Break

	Technical Session I **FUNDAMENTAL STUDIES** **Session Chair Prof. Sauro Fillipeschi**	**Technical Session II** **ADDITIVE MANUFACTURING** **Session Chair Prof. Vincent Ayel**
11:00-13:00	**1.** *Study of boiling phenomena in porous medium for Heat Pipe application* M. Bois; B. Champel; M. Mariotto; M. Gradeck **2.** *Thermographic analysis on inner fluid dynamics of two-phase flows: preliminary validation in a two-phase loop* L. Pagliarini; K. G. Domiciano; L. Krambeck; M. B. H. Mantelli; F. Bozzoli; M. Mameli; S. Filippeschi **3.** *Preliminary Study on the Mechanisms of Phase Separation and Liquid Film Formation during Two-Phase Flow in a Bent U-Pipe* T. Duraziński; M. Stempniak; S. Pietrowicz; A. Nowak **4.** *Research on the thickness and asymmetry of liquid film in channels close to the capillary limit* T. Duraziński; D. Tsuneoka; J. Okajima; A. I. Nowak **5.** *Thermal Characterization of Spiral Pulsating Heat Pipes riding on the capillary limit in different gravity conditions* I. Marchi; L. Scateni; V. Dupont; N. Iwata; A. de Ryckel; S. Filippeschi; M. Mameli **6.** *Merit Number vs. Thermal Resistance: Rethinking Working Fluid Selection in Loop Heat Pipes* M. Bernagozzi; M. Marengo	**1.** *Experimental Comparison Between a Grooved 3D-Printed Heat Pipe and a Conventional Plain Copper Heat Pipe* M. Szydłowski; G. Górecki; M. Łęcki; A. Gutkowski **2.** *Additively Manufactured Triply Periodic Minimal Surface Wicks for Cylindrical Heat Pipes* S. W. Kang **3.** *Experimental Study on the Performance of 3D Printed Functional Structures Integrating Vapor Chambers and Phase Change Materials* H. Zhang; Y. Guo **4.** *Development of an Additively Manufactured Vapour Chamber for Heat Dissipation in Active Antennas. Design and Validation Campaign Results* S. V. Muñoz; S. Gilliland; F. J. Martín-Portugués Martín-Consuegra, **5.** *Heat Sink Design Using Additively Manufactured 2D Vapor Chambers and Laser-Welded Fins* B. Agostini; D. Torresin; A. Petrov **6.** *Simplified preliminary design tool for selecting working fluids in pulsating heat pipes* F. Kilinç; N. Riaud; V. Ayel; C. Romestant; M. Sabah
13:00–14:00	**Lunch**	

14:00–16:00	**Technical Session III** **PHP/OHP** **Session Chair Prof. Jocelyn Bonjour**	**Technical Session IV** **FUNDAMENTALS / NEW DEVELOPMENTS** **Session Chair Prof. Manfred Groll**
	1. *Simplified sizing tool for selecting working fluids in oscillating heat pipes* F. Kilinç; V. Ayel; N. Riaud; C. Romestant; M. Sabah **2.** *Experimental investigation of the thermal efficiency of asymmetrical Flower Shape Oscillating Heat Pipe* D. Mazur; C. Czajkowski; N. Qian; S. Pietrowicz **3.** *Experimental Studies on Startup Transients in a Flat Plate Pulsating Heat Pipe: Effect of Working Fluid and Orientation* A. Nadaf; S. Yadav; C. Nashine; M. Pandey **4.** *Effect of superhydrophilic/phobic surface on the performance of Flat Plate Pulsating Heat Pipes filled with water* K. Le Floch; V. Ayel; H. Geçim; N. Riaud; C. Romestant; C. Martin **5.** *Flat-Plate Pulsating Heat Pipe tested under microgravity conditions: Part B- Visualizations and activation mechanisms* N. Riaud; V. Ayel; C. Romestant; R. Kari; F. Sacchelli; L. Cattani; F. Bozzoli; J. Landi; E. Carrubba **6.** *Thermal performance and flow characterization of oscillating heat pipe under ultrasonic field* F. Jiang; J. Xu; N. Qian; Y. Xie; Y. Fu; M. Marengo	**1.** *Visualization of the geyser boiling phenomenon in two-phase thermosyphons operating with immiscible working fluids* F. G. Souza; L. H. R. Cisterna; M. B. H. Mantelli **2.** *Performance Map and Comparative Assessment of Mini Flat Heat Pipes* L. Krambeck; K. G. Domiciano; M. Marengo; M. Bernagozzi; M. B. H. Mantelli **3.** *Development and Transient Characterization of a Novel Biporous Wicked Stainless-Steel Miniature Loop Heat Pipe* S. Pratihari; T. Kumari; M. Pandey; M. Marengo **4.** *Operation of a Loop Heat Pipe–Vapor Chamber Hybrid Thermal Control System for High–Heat–Flux Heat Sources* S. Jeong; W. Joung **5.** *Bionic Two-Phase Heat Transfer Technology Inspired by the Water Transport System of Trees* H. Zhang; H. Bi; G. Li; Z. Jia; C. Liu; C. Wang; J. Miao **6.** *A Novel Heat Pipe for Internal Cooling for Cylindrical Cells in EV Battery Packs* C. S. Costa; L. Krambeck; D.K. Guessi; M. E. Beé; M. Bernagozzi; M. B. H. Mantelli
16:00–16:30	Coffee Break	
16:30–17:50	**Technical Session V** **PHP/OHP** **Session Chair Prof. Nattawut Tharawadee**	**Technical Session VI** **FUNDAMENTAL STUDIES** **Session Chair Prof. Shung Wen Kang**
	1. *Advanced stability analysis of oscillating heat pipes: characterizing start-up and overheating phenomena* C. Czajkowski; H. Ma; S. Pietrowicz **2.** *Development and validation of a novel 1D model of a pulsating heat pipe* P. Błasiak; M. Lewkowicz; C. Czajkowski; S. Pietrowicz **3.** *Flow Patterns of a Pulsating Heat Pipe Visualized Vertically and Horizontally* W. Qu; F. Liu; Z. Xue; B. Ai **4.** *Influence of non-condensable gas inside a pulsating heat pipe to optimize thermal stress during load cycles* C. Brede; S. Becker; F. Schwarz	**1.** *Water Azeotrope Heat Pipe Working Fluids – Introduction, Overview, and Fundamental* J. Rosenfeld **2.** *Effect of the groove structure on the heat transfer performance of porous wicks under saturated vapor conditions* R. Hashimoto; K. Odagiri; Y. Akizuki; H. Nagano; H. Ogawa **3.** *Study on the Mechanism of Subcooled Capillary Evaporation Heat Transfer in Porous Structures under High-Heat-Flux* H. Wang; Z. Zhao; X. Yang; J. Wei **4.** *Characterization of polymeric heat pipe with interconnected hollow fins* Y. Seyve; F. Lefèvre; S. Cioulachtjian; V. Sartre

Tuesday, May 26, 2026

Technical Sessions

<table>
<tr><th>Time</th><th colspan="2">Event</th></tr>
<tr><td>9:00–9:45</td><td colspan="2">Plenary Session II:
Keynote Lecture II Dr. Bruce Drolen
Satellite Thermal Management Lessons Learned: CCHPs, LHPs, and OHPs
Session Chair Prof. Joon Hong Boo</td></tr>
<tr><td rowspan="2">9:45–11:05</td><td>Technical Session VII
LHP
Session Chair Dr. Paweł Szymański</td><td>Technical Session VIII
NEW DEVELOPMENTS
Session Chair Prof. Marcia Barbosa Henriques Mantelli</td></tr>
<tr><td>1. Design and Evaluation of Thin Silicon Loop Heat Pipe Fabricated by MEMS M. Kurosaki; M. Hashimoto; R. Nomura; D. Jiang; M. Tada; N. Watanabe; H. Nagano; A. Ueno
2. Development of Multi-Evaporator Loop Heat Pipe for Low-Flux Solar Heat Transport M. Nishikawara; R. Hamada; T. Kuraishi; H. Yokoyama
3. Loop Heat Pipe transport capability Figure of merit based on critical point, temperature and pressure, for fast working fluid ranking V. Dupont; V. Christiaens; A. De Ryckel
4. Development of Silicon-based LHPs for thermal management of 3D-IC G. Xin; J. Shao; X. Cheng; D. Zhou; W. Du</td><td>1. Demonstration of High-Temperature Grooved Heat Pipes Fabricated by Additive Manufacturing S. Biswas; R. Meucci; R. Kulenovic; M. Werz; J. Starflinger
3. Characterization of Charging-Discharging Dynamics in Boiling-Assisted Thermal Storage: From Vapor Entrapment to Counter-Current Flow Limitation N. Tharawadee; N. Thuchayapong; W. Intagun; N. Soponpongpipat
3. Evaluation of the cooling behavior of different cooling concepts for 2-phase approaches under the influence of mechanical vibrations and shocks P. Ernst; F. Rohmann
4. Preliminary Temperature Measurement within a Pulsating Heat Pipe Using Calibrated Optical Fiber Sensors M. Stempniak; S. Pietrowicz; G. Statkiewicz-Barabach</td></tr>
<tr><td>11:05–11:30</td><td colspan="2">Coffee Break</td></tr>
</table>

11:30–13:10	**Technical Session IX** **THERMOSYPHONS AND LOOP THERMOSYPHONS** **Session Chair Prof. Wukchul Joung**	**Technical Session X** **HP, PHP AND OHP FOR SPACE APPLICATIONS** **Session Chair Prof. Mauro Mameli**
	1. *Modeling the Performance of an Inverted Thermosyphon during Vapor Transport* R. S. Calomeno; F. H. Milanez; M. B. H. Mantelli **2.** *Experimental study on the energy harvesting performance of thermosyphon heat pipes using surfactant-assisted CNT and CNF nanofluids* B. Badamaa; Y. Sung **3.** *Mitigating Geyser Boiling in a Loop Thermosyphon with a Meshed Annular Evaporator* L. Hatschbach; G. Gatti; A. Pereira; N. Pabon; F. dos Reis; M. B. H. Mantelli **4.** *Geometric Optimization of a Thermosyphon for Efficient Data Center Room Cooling* F. S. Almeida; A. S. Ribeiro; F. G. de Souza; A. S. Pereira; N. Y. L. Pabon; L. H. R. Cisterna; M. G. Ó. Mizgier; M. B. H. Mantelli **5.** *Experimental Comparison of Conventional and Loop Thermosyphons* P. Kumar; A. Khandelwal; S. Aalekh; S. Dash; A. Ambirajan; P. Dutta	**1.** *Thermal and microvibration characterization of a pulsating heat pipe (PHP) for space application* M. Wójcik; A. Jurkowski; K. Platek; Pietrowicz S.; A. Nowak; C. Czajkowski; T. Duraziński; P. Kołakowski; M. Kokot; V. Cleren **2.** *Experimental Investigation and On-Orbit Application of Flexible Heat Pipes for China Space Station* C. Liu; H. Yi; L. Li; L. Wang; L. Cui; W. Lv; J. Huang; H. Zhang; J. Miao **3.** *Development and Space Application of Deployable Thermal Radiators in China* L. Liu; Z. Fang; Q. Wu; H. Zhang; C. Liu; J. Huang; J. Miao **4.** *Design of Pulsating Heat Pipe Interfaces for the Thermal Control of Solar Panels in the EXCITE CubeSat Project* M. Mameli; F. Iafrati; S. Filippeschi **5.** *Oscillating Heat Pipe Enabled Lunar Thermal Storage* C. Wilson; S. Hilsenbeck; M. Merwin

13:10–14:00	Lunch	
14:00–16:00	**Technical Session XI** **VAPOR CHAMBERS AND HEAT PIPES** **Session Chair Prof. Hosei Nagano**	**Technical Session XII** **HIGH TEMPERATURE HEAT PIPES** **Session Chair Prof. Abhijit Date**
	1. *Design and characterisation of an aluminium nitride vapor chamber for power electronics thermal management* T. Camus; B. Champel; M. Mariotto; L. Sterna **2.** *Improving thermal efficiency in a wick-less vapor chamber by modifying surface wettability* I. Kurniawati; Y. Sung **3.** *Estimation and Validation of Permeability for Mesh–Groove Composite Wick Integrated in an Ultra-Thin Vapor Chamber* P.-J. Wang; S.-C. Wong **4.** *Experimental Investigation of Micro Channel Heat Pipes* N. Iwata; V. Dupont; C. Billet; Ch. Popper **5.** *Investigation of the Thermal Performance Optimization of Heat Pipes: Role of Orientation and Working Fluid Type* S. Devesh; V. Gumptapure; T. K. Hotta **6.** *Design of a Cryogenic Thermal Control System for Ground Validation of Space Power Transmission Systems Based on High-Temperature Superconducting Cables* Y. Wang; K. Xiao; G. Li; Q. Wu; H. Wang; S. Liu; F. Weng; H. Zhang; J. Miao	**1.** *Thermalhydraulics Benchmark on Modelling of Sodium Heat Pipes using Canadian Nuclear Laboratories Experiments* K. Podila, C. Azih, A. Morrelae, M. Anderson **2.** *Performance Comparison of Sodium Heat Pipes with Different Wicks* P. Maqueo; C. Azih; R. MacCoy; R. McGrath **3.** *Effect of Noncondensable Gas Pressure on Temperature Uniformity Characteristics of a Potassium Heat Pipe Furnace Liner* E. An; W. Joung **4.** *Replicability of heat transfer experiments with sintered wick alkali metal (sodium) heat pipes at temperatures up to 700°C* C. Azih; P. Maqueo; R. MacCoy; R. McGrath; M. Anderson; N. Rousseau **5.** *Experimental Investigation of a Potassium Heat Pipe at Different Inclination Angles* R. Meucci; A. Germini; S. I. C. Castro; R. Kulenovic; J. Starflinger
16:00–16:30	Coffee Break	
16:30–17:30	**Technical Session XIII** **LHP** **Session Chair Prof. Marco Marengo**	**Technical Session XIV** **PHP/OHP** **Session Chair Prof. Abhijit Date**
	1. *Comparison Between Stainless-Steel and Copper as Casing Materials for Ultra-Thin Loop Heat Pipes* K. D. Domiciano; L. Krambeck; M. E. Beé; M. B. H. Mantelli **2.** *Study for Optimizing Hydrodynamic Characteristics of Biporous Wicks in Loop Heat Pipes* R. Mizoguchi; M. Nishikawara; Y. Tsuji; S. Hongfei; A. Suzuki; M. Kobashi **3.** *Startup Characteristics of a kW-Class Loop Heat Pipe with the Evaporator under Adverse Orientation* H. Lan; L. Bai; Y. Zhang; S. Nie; G. Lin	**1.** *Experimental investigation on the electricity generation and heat dissipation ability of a ferrofluid pulsating heat pipe* T. P. Nguyen; V. H. Duong; T. N. Nguyen; V. C. Le; Q. B. P. Doan; V. T. Mai; T. T. H. Pham; S.-M. Seo; M. S. Lee; **2.** *Influence of Centrifugal Accelerations on Thermal Performance of Radial-Rotating Oscillating Heat Pipes* N. Qian; W. Ding; M. Marengo; S. Pietrowicz; J. Xu; Y. Fu **3.** *Energy partition analysis in the grinding of Inconel-718 superalloy with heat pipe grinding wheel under MQL condition* Y. Fu; C. Li; F. Jiang; S. Pietrowicz; M. Marengo; N. Qian

Wednesday, May 27, 2026

Keynotes • Technical Sessions • Poster Session• Guided Tour • Gala Dinner

<table>
<tr><th>Time</th><th colspan="2">Event</th></tr>
<tr><td>9:00–9:45</td><td colspan="2">Plenary Session III Keynote Lecture III Prof. Vincent Ayel
Flat Plate Pulsating Heat Pipes: operating principles and open issues, from ground to microgravity conditions
Session Chair Prof. Dariusz Mikielewicz</td></tr>
<tr><td>9:45–10:15</td><td colspan="2">Coffee Break</td></tr>
<tr><td rowspan="2">10:15-12:15</td><td>Technical Session XV
PHP/OHP
Session Chair Prof. Sławomir Pietrowicz</td><td>Technical Session XVI
HEAT PIPES APPLICATIONS
Session Chair Prof. Jay M. Ochterbeck</td></tr>
<tr><td>1. Characteristics of Oscillating Heat Pipe with Asymmetric Diameter Channel H. Nagai; A. Kawaguchi
2. Oscillating (Pulsating) Heat Pipe Operational Limits: Modeling and Validation B. Drolen; C. Wilson
3. Effect of sidewall thermal conductivity on the thermal performance of flat plate pulsating heat pipes A. S. Labalte; H. Fatahi; A. Kumar; Amnache A.; L. G. Fréchette
4. Studies of PHP with CASCO code and its experimental validation V. Nikolayev; S. Bajić; G. Boudier; E. Blondé; T. Coquard; M. Abela; M. Mameli; S. Fillipeschi
5. Oscillating Heat Pipe Radiators for Intermediate Temperature Applications A. Miller
6. Impact-Triggered Rapid Vapor Generation from Metastable Liquid During Oscillating Heat Pipe Startup Revealed by Neutron Imaging S. Mishkhas; J.-J. Peir; S.-L. Jeng; C.-C. Wang</td><td>1. Additively manufactured planar sodium heat pipe: Capillary performance of Inconel 718 wicks N. Hehmke; M. Weitzer; J. Karl
2. Experimental and Numerical Studies on Cooling of LED headlamp in automotive by Closed-Loop Pulsating Heat Pipe P. Charoensawan; N. Seehawong; M. Groll
3. Effect of thermal boundary conditions on the dynamic behavior of heat pipe for low-powered electronic devices C. Nashine; S. J. Hoque; S. K. Sarma; A. Iqbal
4. Experimental Investigation of Mini Channel Heat Pipes N. Iwata; V. Dupont; C Billet; Ch. Popper; A. De Ryckel</td></tr>
<tr><td>12:15–13:15</td><td colspan="2">Lunch</td></tr>
<tr><td>13:15–14:15</td><td colspan="2">Poster Session – Voting for the Best Poster</td></tr>
<tr><td>16:00–17:30</td><td colspan="2">Guided Tour – Walking Tour of Gdansk Old Town</td></tr>
<tr><td>18:30–22:30</td><td colspan="2">Gala Dinner – Great Armoury (Wielka Zbrojownia), Gdańsk
Award Ceremony (George Grover Medal, Donald M. Ernst Award)</td></tr>
</table>

Thursday, May 28, 2026

Round Table Discussion • Technical Sessions • Closing Ceremony

Time	Event	
09:15–10:30	Round Table Discussion on *Challenges and Opportunities for Heat Pipe Heat Exchangers in Industrial Applications* **Dr. Helen Skop**	
10:30–11:00	Coffee Break	
11:00–12:40	**Technical Session XVII** **HEAT PIPE APPLICATIONS** **Session Chair Prof. Amrit Ambirajan**	**Technical Session XVIII** **PHP AND LHP APPLICATIONS** **Session Chair Mr. Wolfgang Supper**
	1. *Numerical Study on Heat Pipe Cooling High Specific-power Motor in Near-space Solar UAV and Terrestrial Experiment Validation;* Z.-H. Xue; Y. Yu; W. Qu **2.** *Thermal Management of Large Area Heat Loads Using Ar-Loop Heat Pipe* N. Van Velson; R. Kumar; J. Sonnek; C. Tarau **3.** *Study on the Characteristics of a Loop Heat Pipe Applied to the Radiative Cooling System of a Space Optical Camera* J. J. Wen; R. Xie; B. Yang; J. Cheng; F. Cheng **4.** *A New Cesium Heat Pipe Surface Temperature Calibrator Developed at National Institute of Metrology (NIM)* X. Yan; Y. Feng; L. Wang; W. Wang **5.** *Inclination Effect on the Performance of Pulsating Heat Pipes for Electric Motor Cooling* H. Aziza, R. Boubaker, N. Iwata, V. Dupont, S. Harmand	**1.** *Exploratory Study of Pulsating Heat Pipes embedded as windings of an innovative Axial Flux Electric Motors* S. Filippeschi; M. Mameli; M. Petacco; N. Gori; C. Simonelli; L. Sani; A. Musolino **2.** *First application of cooling in superconducting magnets by cryogenic pulsating heat pipes* T. Dixit; G. Authelet; V. Stepanov; T. Lecrevisse; P. Fazilleau; B. Baudouy **3.** *Fused Deposition Modeling-Fabricated Pulsating Heat Pipe for Solar Thermal Desalination* T. Kulshrestha; M. K. Das; K. Muralidhar; I. Kong; A. Date, **4.** *Capillary Jet Loop, experimental demonstration of the cooling capability of a flat-dcc box component for secondary electronic thermal management* V. Dupont; C. Popper; A. De Ryckel **5.** *Effect of Inclination Angle against Gravity on the Start-up and Operating Performance of L-shaped Loop Heat Pipe* J. Cheng; R. Xie; X. Cui; J. Wen; B. Yang
12:40–13:20	**Closing Ceremony** Announcement of IHPC 2028 Host	
13:20–14:30	Lunch & Adjourn	