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No. 8 May 1, 2025

Thermal

Temperature-, Heat-, Energy-, Reaction-, Mass-related Alliance to Communicate within, and Publicize beyond, the World Thermal Science and Engineering Community

$2025 = 3^4 \cdot 5^2$

3 (1st, 2nd, 3rd Laws of Thermodynamics)
3 (W, J, K)
3 (Solid, Liquid, Gas)
3 (Conduction, Convection, Radiation)
5 (Africa, Asia, Europe, Oceania, The Americas)
and

5 (ICHMT AIHTC ASTFE AUTSE EUROTHERM)

Part 1

Part 2

www.ichmt.org | www.aihtc.org | www.astfe.org | www.autse-asia.org | www.eurothermcommittee.eu
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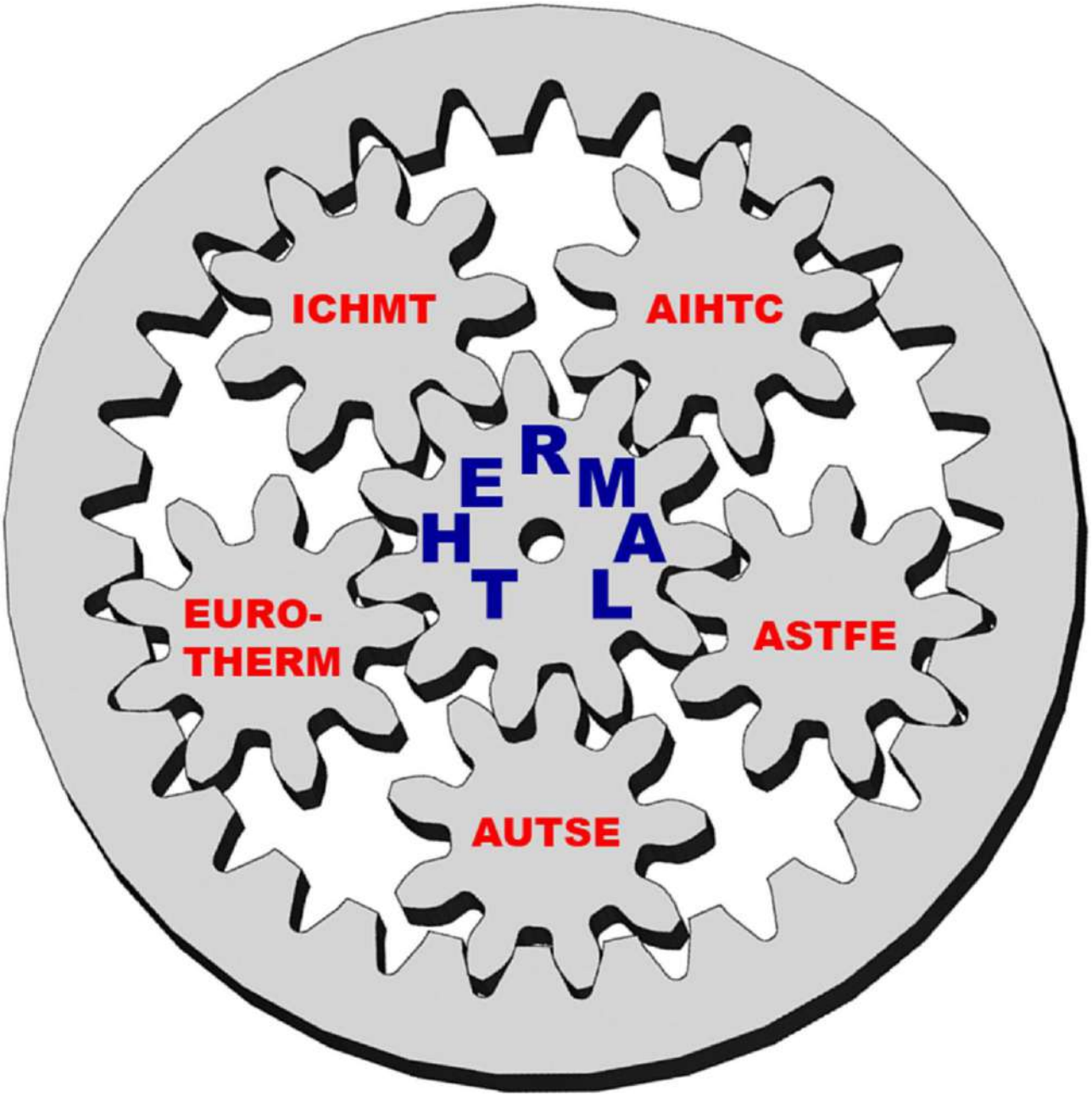
Contact us: thermal@begellhouse.com



Part 1

Epicyclic gearing (CAD)

Members in the five world organizations

(The order of ASTFE, EUROTHERM and AUTSE is changed corresponding to the geographical one.)

Member †	ICHMT	AIHTC	ASTFE	EUROTHERM	AUTSE
Australia					
Austria	?				
Belarus					
Belgium					
Brazil					
Canada					
China					
Chinese Taipei					
Czech Republic					
Egypt					
Finland					
France					
Germany					
Greece					
Hungary					
India					
Ireland					
Israel					
Italy					
Japan					
Mexico					
Morocco					
New Zealand					
Poland	?				
Portugal					
Romania					
Russia					
Serbia					
Singapore					
South Africa					
South Korea					
Slovenia					
Spain					
Sweden					
Switzerland	?				
Thailand					
The Netherlands					
Türkiye					
UAE					
UK					
USA					
40	**31? or 28?**	**19**	**2**	**16**	**8**

† The meaning of "Member" is different for the five world organizations.

ICHMT: Members are based on Member Institutions. https://www.ichmt.org/p/member-institutions

AIHTC: Members are based on Countries. http://www.aihtc.org/officers.html

ASTFE: USA (but, basically worldwide, particularly North America). https://www.astfe.org/about/

AUTSE: Members are based on Countries/Regions. http://autse-asia.org/?page_id=21

EUROTHERM: Members are based on Countries. http://www.eurothermcommittee.eu/membership.php

American Society of Thermal and Fluids Engineers (ASTFE)

Prof. Francine Battaglia, President
University at Buffalo, U.S.A., fbattagl@buffalo.edu

Prof. Lorenzo Cremaschi, Chair, Executive Committee
Auburn University, Auburn, U.S.A., lzc0047@auburn.edu

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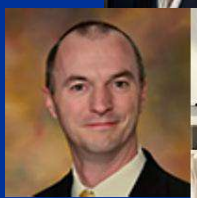

The 10th Thermal and Fluids Engineering Conference (TFEC 2025)
The 10th TFEC was held in hybrid mode during March 9-12, 2025 at George Washington University, Washington, DC, USA. The conference chair was Dr. Pamela Norris and the two co-chairs were Dr. Nesrin Ozalp and Dr. Kausik Sakar. The technical program chair was Dr. Like Li and the co-chair was Dr. Hamidreza Najafi.

The organizers helped create a very successful conference with 163 paper and abstract presentations, and 78 virtual presentations from participates in over 30 countries. The conference program on Sunday included two workshops: "Meshless Methods for Fluid Flow Simulations in Complex Domains" presented by Dr. Pratap Vanka and "Introduction to Modern Computational Fluid Dynamics" by Dr. Akshai Runchal. Each morning of the conference began with a distinguished plenary speaker followed by a panel with speakers from academia, industries and government agencies and then concurrent technical presentation sessions. The afternoons began with two concurrent keynote sessions as well as its signature Technology, Entrepreneurship and Communication (TEC-talk) session. The Tuesday luncheon included a keynote talk "On the Nexus of Climate, Energy and Air Quality in Complex Urban Environments" by Dr. Jorge Conzalez-Cruz. The luncheon also included a special celebration to recognize the Tenth Anniversary of ASTFE with a brief history of the formation of the Society. Following was the awards ceremony to recognize the newly elected ASTFE Fellows, the Thermal and Fluids Engineering Award, the Early Career Researcher Award, and the TFEC2025 best papers, best posters, and best reviewers. The in-person sessions ended on Wednesday and Friday concluded with the virtual presentations.

2025 ASTFE Thermal and Fluids Engineering Award

Ashwani K. Gupta
Distinguished University Professor, University of Maryland

For the development of high temperature air combustion technology and other contributions in combustion research that increase energy efficiency and reduce pollution and greenhouse gas emissions.

2025 ASTFE Early Career Researcher Award

Akanksha Menon
Assistant Professor, Woodruff School of Mechanical Engineering, Georgia Institute of Technology

For outstanding contributions to the fields of thermal-fluid sciences, functional materials, and renewable energy to develop decarbonized and efficient technologies for clean energy and water.

2025 ASTFE Fellows

Hongbin Ma

Efstathios E. Michaelides

Surya Pratap Vanka

Qiuwang Wang

EUROTHERM

Pedro Jorge Martins Coelho, Secretary
Instituto Superior Técnico, Universidade de Lisboa, Portugal
pedro.coelho@tecnico.ulisboa.pt

New Eurotherm members

Professors Ioannis Sarris, Wojciech Adamaczyk and Luigi Colombo are new Greek, Polish and Italian Eurotherm Committee members.

Ioannis E. Sarris holds a diploma in mechanical engineering (1995) from the Dept. of Mechanical Engineering, School of Engineering, University of Patras (Greece) and a PhD in Engineering (2001) from the Dept. of Mechanical (and Industrial) Engineering, School of Engineering, University of Thessaly (Greece). He is a Professor of Fluid Mechanics and Magnetohydrodynamics at the Mechanical Engineering Department of University of West Attica since 2020. He worked in various research projects and his research interests include the scientific areas of fluid mechanics and transport phenomena, magnetohydrodynamics of liquid metals and plasmas, fuel cells, natural convection, turbulent flow simulation using DNS and LES techniques, and industrial and environmental flows. He has published about 180 papers in peer-reviewed scientific journals and conference proceedings and presented his research achievements in several conferences and workshops.

Wojciech Adamczyk is a Professor at the Department of Thermal Technology of the Faculty of Energy and Environmental Engineering, Silesian University of Technology. He got the Ph.D. from the Silesian University of Technology in 2014, and the D.Sc. from the same university in 2018. His research interests include inverse methods to retrieve material properties, AI/ML for earlier detection of possible malfunction of industrial processes, ammonia as a fuel for SI and CI engines, modelling of physical systems and application of digital twins for the decarbonization of industries, modelling processes in the cardiovascular system, multiphase modelling of dense granular flows and simplified collision models for particle-particle interaction.

Luigi Colombo is professor at the Energy Department of Politecnico di Milano. After a degree in Electronic Engineering, majoring in Biomedicine, obtained at Politecnico di Milano, he obtained a PhD in Energetics, which reoriented his interests. At present, his skills concern fluid dynamics and heat transfer and, in particular, the experimental characterization of two-phase flows, namely liquid-liquid, liquid-gas and liquid-vapour. He teaches applied thermodynamics and thermofluid dynamics. On the institutional front, he coordinated the study program in Energy Engineering. He has about 100 publications referenced in Scopus, among which about one-third are papers in international journals.

Young Scientist Prize and Awards

The Eurotherm Committee confers, every four years, one Eurotherm Young Scientist Prize and two Eurotherm Awards. The prizes are presented at the European Thermal Sciences Conference. The candidates must have obtained within one of the Eurotherm countries a Ph.D. degree in the field of Thermal Sciences and Heat Transfer. They should be younger than 35 years at the date of the prize. Each European country is allowed to submit to the Prize Committee a maximum of two candidates for the Prize and the Awards. The Prize Committee is nominated every four years by the Eurotherm Committee and consists of six members chosen among its delegates. In 2024, the Prize Committee was constituted by Profs. Alberto Coronas, Denis Lemonnier, Andrzej Nowak, Björn Palm, Tim Persoons, Karl Ponweiser and Anton van Steenhoven (chair).

The 2024 Eurotherm Young Scientist Prize was awarded to Laura Nebot Andrés from Universitat Jaume I, Castelló de la Plana, Spain. Her Ph.D. thesis, entitled “Subcooling systems in transcritical CO_2 refrigeration cycles. Experimental evaluation of energy improvement”, was completed in 2022. In the context of societal challenges such as climate change, food and energy security, her work on

highcoefficient-of-performance CO_2 refrigeration systems makes an impactful contribution to technology and industry. The thesis balances thermodynamic analysis with experimental measurements and fits well in the Eurotherm scope of thermal sciences and heat transfer.

The two 2020 Eurotherm Young Scientist Awards were given to Arianna Berto, Università degli Studi di Padova, Italy, and Alekos Ioannis Garivalis from University of Pisa, Italy. Arianna Berto completed her Ph.D. in 2022 with a thesis entitled "Experimental investigation of film condensation through innovative techniques", also distinguished with the best Thesis award by the Italian Union of Thermofluid Dynamics in 2023. Her work opens up new prospects for optimizing cooling systems in such sensitive fields as electronics or space aeronautics and space applications. Alekos Ioannis Garivalis completed his Ph.D. in 2022 with a thesis entitled "Effect of an external electric field on bubbles and sessile drops in microgravity environment: interfacial dynamics and heat transfer". The thesis reports remarkable scientific achievements in the analysis of the influence of the external electric field on the vapour bubbles and evaporating sessile drops. Research hypotheses have been proved through some experiments performed in microgravity, including evaporation conducted on board a suborbital-sounding rocket. Theoretical and numerical models of electric forces in two-phase flow were refined and compared with experimental data.

9th European Thermal Sciences Conference

The 9th edition of the European Thermal Sciences Conference was organized under the auspices of the EUROTHERM Committee and hosted by the Faculty of Mechanical Engineering, University of Ljubljana, Slovenia. It was held at Hotel Rikli Balance, Bled, Slovenia, from 10 to 13 June 2024. Previous conferences were held in Birmingham (1992), Rome (1996), Heidelberg (2000), Birmingham (2004), Eindhoven (2008), Poitiers (2012), Krakow (2016), and Lisbon (2020).

The 9th European Thermal Sciences conference was chaired by Professor Božidar Šarler from the University of Ljubljana, Faculty of Mechanical Engineering, Ljubljana, Slovenia and Professor Laura Vanoli from the Parthenope University of Naples, Department of Engineering, Naples, Italy. The conference's scientific committee comprised the Eurotherm Committee members, the organizing committee from the heads of process and power engineering laboratories of the Faculty of Mechanical Engineering. The honorary committee comprised the Rector of the University of Ljubljana, Professor Gregor Majdič, and the Dean of the Faculty of Mechanical Engineering, Professor Mihael Sekavčnik. The Industrial Committee of the conference was presented by the heads of research of two major Slovenian metallurgical companies: Dr Peter Cvahte, Impol Aluminium Industry (www.impol.si) and Dr Miha Kovačič, Štore-Steel (www.store-steel.si). The conference was organised under the auspices of the Automatic Control Society of Slovenia, the Slovenian Society of Materials, the Slovenian Society of Mechanics, and the Slovenian Society of Simulation and Modelling. Cankarjev Dom, Cultural and Congress Centre provided the technical organization of the conference, together with the staff members of the Laboratory for Fluid Dynamics and Thermodynamics of the Faculty of Mechanical Engineering.

The conference program was organised in seven parallel sessions and a poster session. 348 participants arrived from 34 countries. Eight special sessions have been organised by Prof Miguel Muñoz Rojo, Spanish National Research Council, Spain and University of Twente, Netherlands & Prof Andrej Kitanovski, Faculty of Mechanical Engineering, University of Ljubljana, Slovenia: Thermal Control Devices and Thermal Circuits; Dr Dominic Groulx, Department of Mechanical Engineering, Dalhousie University, Canada & Dr Monica Delgado, Thermal Engineering and Energy Systems Group, University of Zaragoza, Spain: Thermal Energy Storage; Prof Sara Rainieri, University of Parma, Italy & Prof. Marcelo Colaço, Universidade Federal do Rio de Janeiro, Brazil: Morphology Optimized Design for Heat Exchangers; Prof Ching Shyang Chen, University of Southern Mississippi, USA & Dr Boštjan Mavrič, Institute of Metals and Technology, Slovenia: Advances in Meshfree Methods with Applications in Thermal Sciences; Prof Matteo Bucci, Massachusetts Institute of Technology, USA & Prof Iztok Golobič, Faculty of Mechanical Engineering, University of Ljubljana, Slovenia: Recent Advances in Boiling and Condensation Heat

Transfer; Prof Ryszard Białecki, Faculty of Energy and Environmental Engineering, Silesian University of Technology, Poland & Prof. Alain Kassab, Mechanical and Aerospace Engineering Department, University of Central Florida, USA: Advanced and Multiscale Computational Methods in Bioengineering; Dr Miha Založnik, CNRS - Institut Jean Lamour, France & Prof Božidar Šarler, Faculty of Mechanical Engineering, University of Ljubljana, Slovenia: Solidification Science and Technology.

Eight state-of-the-art plenary lectures were delivered by world-leading experts, namely Dr Saša Bajt, DESY, Germany: Managing high heat loads in extreme X-ray optics; Prof Matteo Bucci, Massachusetts Institute of Technology, United States: Far away, so close: high-resolution investigations of boiling heat transfer, from cryogenic fluids to high-pressure water; Prof Nirupam Chakraborti, Czech Technical University in Prague, Czech Republic: Data-driven evolutionary deep learning in high-temperature basic oxygen steelmaking operation; Prof Alain Kassab, University of Central Florida, USA: Multiscale modelling in congenital heart disease; Prof Wojciech Lipiński, The Cyprus Institute, Nicosia, Cyprus: Multiphase transport phenomena in high-temperature solar thermal systems; Prof Andreas Ludwig, Montan University Leoben, Austria: Multiphase/physic modelling of solidification with industrial relevance; Prof Perumal Nithiarasu, Swansea University, UK: Digital twins of thermal systems; Prof Dimos Poulikakos, ETH Zurich, Switzerland: The architecting of nanomaterials for water condensation applications.

Prof Božidar Šarer, Prof Laura Vanoli, and Dr Tadej Dobravec edited the conference proceedings, which were published in the Journal of Physics: Conference Series (https://iopscience.iop.org/issue/1742-6596/2766/1). The University of Ljubljana, Faculty of Mechanical Engineering, published the Book of abstracts of all the presentations (https://eurotherm2024.si/images/Book_of_abstracts.pdf). After the conference, the authors of the outstanding papers, selected by the members of the scientific committee, were invited to appear in special issues of several journals.

Professor Božidar Šarler, University of Ljubljana, Faculty of Mechanical Engineering, Slovenia

Conference venue: Bled, Slovenia

International Centre for Heat and Mass Transfer (ICHMT)

Prof. Yildiz Bayazitoglu, President
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Prof. Ilker Tari, Secretary General
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Tugba Gun, Executive Secretary
Middle East Technical University, Turkiye, ichmt@ichmt.org

We express our sincere gratitude to the heat transfer community for being an integral part of the ICHMT activities. Their involvement and collaborative efforts help to advance and shape the mission of ICHMT, which is: "To pursue excellence and foster the international exchange of science and engineering in all branches of heat and mass transfer through symposia, publications, and promotion of research, education and exchange of personnel for the benefit of people everywhere."

ICHMT organized one international symposium and sponsored six in 2024. Details of these meetings can be found on the web site, http://www.ichmt.org. ICHMT's official publisher Begell House Publishers, Inc. continued its support in publishing the symposium proceedings and maintained the ICHMT Digital Library.

Meetings Organized by ICHMT:

"8th International Symposium on Advances in Computational Heat Transfer, CHT-24", 26 – 30 May 2024, Istanbul, Turkiye. The Symposium Chairpersons were Yogesh Jaluria, Rutgers University, USA, Tuba Okutucu-Özyurt, İTÜ, Turkiye, and Ilker Tari, METU, Turkiye. Detailed information can be found on the Web site: www.ichmt.org/cht-24

Meetings Co-Sponsored by ICHMT:

"9th Thermal and Fluids Engineering Conference (Hybrid), TFEC-2024", Detailed information can be found on the Web site: https://www.astfe.org/tfec2024/

"15th International Conference on Thermal Engineering Theory and Applications, ICTEA-2024", Detailed information can be found on the Web site: https://www.ictea.ca/

"3rd Asian Conference on Thermal Sciences, ACTS 2024", Detailed information can be found on the Web site: https://acts3.sjtu.edu.cn/

"5th Int.Workshop on Nano-Micro Thermal Radiation, Nanorad2024", Detailed information can be found on the Web site: http://nanorad2024.org/index.html

"The International Conference on Energy Storage and Saving, ICENSS-24", Detailed information can be found on the Web site: http://icenss2024.com/index.html

"The 1st Int. Conf. on Heat and Mass Transfer in Porous Media: Fundamentals and Applications, HMT-PM 2024", Detailed information can be found on the Web site: http://ichmt-pm24.com/

The organization of several future meetings are in progress. These are listed below.

Meetings to be Organized by ICHMT:

"11th International Symposium on Radiative Transfer, RAD-25", 15 - 20 June, 2025, in Korumar Hotel, Kusadasi, Turkiye. The Symposium Chairmen are Kyle Daun, University of Waterloo, Canada and Fengshan Liu, National Research Council Canada. Detailed information can be found on the Web site: https://www.ichmt.org/rad-25

"**11th International Symposium on Turbulence Heat and Mass Transfer, THMT-25",** 21 - 25 June 2025, in Tokyo, Japan. The Symposium Co-Chairmen are K. Hanjalic, Delft University of Technology, The Netherlands; K. Suga, Osaka Metropolitan University, Osaka, Japan and M. Tanahashi, Institute of Science Tokyo, Japan. Detailed information can be found on the Web site: https://www.thmt-25.org/

"International Symposium on Low-Carbon Thermal Energy Science And Technology, LCET-2025", 15-17 October 2025 in Istanbul, Turkiye. The Symposium Chairmen are M. Pinar Mengüç, Özyeğin University, Istanbul, Turkiye; Wojciech Lipiński, The Cyprus Institute, Nicosia, Cyprus and Timothy Fisher, UCLA, Los Angeles, California, USA. Detailed information can be found on the Web site: https://www.ichmt.org/lcet-2025

Meetings to be Co-sponsored by ICHMT:

"10th Thermal and Fluids Engineering Conference (Hybrid), TFEC-2025", Detailed information can be found on the Web site: https://astfe.org/tfec2025/

"16th International Conference on Thermal Engineering Theory and Applications, ICTEA-2025", Detailed information can be found on the Web site: https://www.ictea.ca/

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Yildiz BAYAZITOGLU United States of America		
Vice Presidents		
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Secretary General		
Ilker TARI Turkiye		
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https://www.ichmt.org/p/officers-of-ichmt

Organization:

- 40 Member Institutions from 31 countries
- More than 300 Scientific Council members
- Officers: President, Vice Presidents, Secretary General, Executive Committee (15 members), Financial Auditors

Publications:

Proceedings of ICHMT Meetings
https://www.ichmt.org/p/proceedings-of-ichmt-meetings
Other Publications
https://www.ichmt.org/p/other-publications
ICHMT Digital Library
http://dl.begellhouse.com/references/1bb331655c289a0a.html

10th World Conference on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics – ExHFT-10

Professor Thodoris Karapantsios, President
Aristotle University, Thessaloniki, GREECE,

Professor Thodoris Karapantsios, President
Aristotle University, Thessaloniki, GREECE, karapant@chem.auth.gr

The 10th World Conference on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics (ExHFT-10) was held in Rhodes Island (Greece) from August 26th to August 30th, 2024. ExHFT-10 was the last of a series of conferences organized under the auspices of the Assembly of World Conferences on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics. The conference series launched in 1988 and ever since events have been successfully held in Dubrovnik (1988, 1991), Honolulu (1993), Brussels (1997), Thessaloniki (2001), Matsushima (2005), Krakow (2009), Lisbon (2013) and Iguazu Falls (2017). In 2024, the conference returned to the northern hemisphere. It kept the spirit of decentralization, away from big urban centers, and thus offered attendants a relaxed atmosphere for exchange of ideas, discussions and interactions. As in former ExHFT conferences, ExHFT-10 achieved the goal to set up an international forum of researchers from industry and academia where new research ideas, advanced methods, sophisticated instrumentation and thoughtful results were presented on heat transfer, fluid mechanics and thermodynamics. Apart from bringing together the well-established community in the field, ExHFT-10 managed to attract also young researchers who not only reported their work to a knowledgeable audience, but they also communicated present-day science and engineering problems in an effort to identify possible answers to their early career questions.

The conference was attended by 183 participants (75 students among them) from 28 different countries, making ExHFT-10 a truly international event (**Fig. 1**).

Fig. 1. Family photo of ExHFT-10 participants in Rodos Palace Hotel (Rhodes Island, Greece).

The number of extended abstract submissions reached 165 (**Fig. 2**).

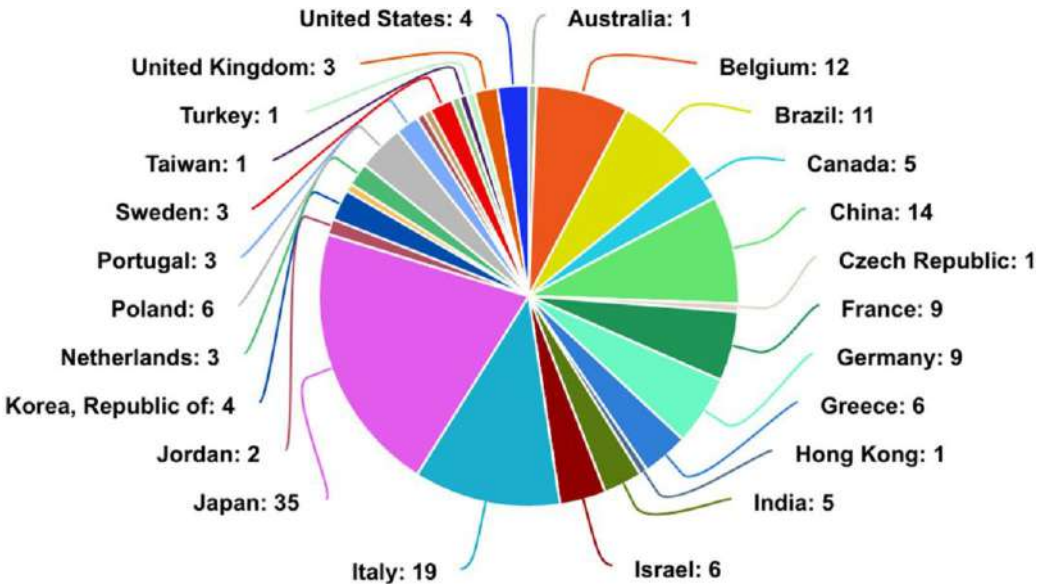

Fig. 2. Geographical origin of the 165 extended abstract submissions to ExHFT-10.

During ExHFT-10 conference, 5 plenary lectures and 8 keynote lectures were delivered by internationally recognized experts (**Fig. 3**). In the first plenary lecture, Prof. Nenad Miljkovic (University of Illinois, USA) shared his thoughts and experience on "Tailoring surface chemistry and surface roughness to enable the long-term stable dropwise condensation". In the second plenary lecture, Dr. Axel Sielaff (Technical University of Darmstadt, Germany) talked about his involvement in "A retrospective on experimental research in understanding microlayer and contact line evaporation". In the third plenary lecture, Prof. Serhiy Yarusevych (University of Waterloo, Canada) discussed about "Laminar separation bubbles: From airfoils to finite wings", while the fourth plenary lecture was given by Prof. Thomas Schutzius (University of California, USA) and entitled "From fundamentals of crystallization fouling on nanomaterials to rational design of scalephobic surfaces". In the last plenary lecture, Prof. Lin Chen (Chinese Academy of Sciences, China) talked about "Quantifications on supercritical fluid dynamics by pixelated interferometry: Critical phenomena and phase non-equilibrium".

The titles and presenters of the 8 keynote lectures (KL) are listed below:

- KL1: Overview of thermosyphon and heat pipe technologies (Prof. Marcia Mantelli - Federal University of Santa Catarina, Brazil)
- KL2: In-vitro and in-vivo detection and characterization of sub-millimeter bubbles in liquid flows through highly sensitive electrical impedance measurements (Dr. Sotiris Evgenidis - Aristotle University of Thessaloniki, Greece)
- KL3: Droplet impact onto superhydrophobic surfaces (Prof. Dongsheng Wen - Technical University of Munich, Germany)
- KL4: Boiing heat transfer for electronics cooling at high heat fluxes (Prof. Zan Wu -Zhejiang University, China)
- KL5: On the Quenching of Spray Cooling - When does it occur? (Prof. Yasuyuki Takata - Kyushu University, Japan)
- KL6: Film characteristics and heat transfer during condensation in a small diameter channel (Prof. Stefano Bortolin - University of Padova, Italy)
- KL7: Mach-Zehnder interferometry for fluid physics experiments involving contact lines and phase change (Prof. Pierre Colinet - Univesite Libre de Bruxelles, Belgium)
- KL8: Recent developments in measuring the smallest velocity scales (Prof. Philippe Bardet - The George Washington University, USA)


Prof. N. Miljkovic

Dr. A. Sielaff


Prof. S. Yarusevych


Prof. T. Schutzius


Prof. L. Chen


Prof. M. Mantelli


Dr. S. Evgenidis


Prof. D. Wen


Prof. Zan Wu


Prof. Y. Takata


Prof. S. Bortolin


Prof. P. Colinet


Prof. P. Bardet

Fig. 3. Plenary/keynote speakers.

The program of ExHFT-10 conference included 21 sessions for oral presentations (**Fig. 4**), whose topics were the following: Heat Exchangers (1-2-3), Advanced energy systems (1-2), Fluid mechanics (1-2-3), Heat and mass transfer (1-2), Heat and fluid flow in micro/nano scale (1-2), Aerospace and aeronautical technology, Advanced environmental systems (1-2), Multiphase flows (1-2), Measurement techniques and image processing (1-2), Turbulence and Thermodynamics. In total, 125 oral presentations were given during the five days of the conference. Moreover, 40 posters were presented in a single poster session (**Fig. 5**). Full papers for oral presentations as well as 3-page abstracts for poster presentations were published in ExHFT-10 conference proceedings. Additionally, a selection of the best papers presented in ExHFT-10 will appear in Special Issues of *Experimental Thermal and Fluid Science* and *Applied Thermal Engineering* (Elsevier), after going through the formal journal review process (currently in progress).

Fig. 4. Oral presentation.

Fig. 5. Poster session.

The third day of the conference (August 28th) included two key events of ExHFT-10. Prof. Kemal Hanjalić was awarded with "2024 Nusselt-Reynolds Prize" for his outstanding contributions to the modeling of turbulent fluid flow and heat transfer, which constitute the cornerstone of computational fluid dynamics (CFD), and for devising smart experiments to support his arguments and validate the models (**Fig. 6**).

Fig. 6. Award of Prof. Kemal Hanjalić with "2024 Nusselt-Reynolds Prize"
(from left to right: Prof. T. Karapantsios, Prof. B. Launder, Prof. K. Hanjalić, Prof. J. Barbosa).

On the evening of August 28th, ExHFT-10 gala dinner took place at Kallithea Springs, a magnificent seaside monument. Kallithea Springs is one of Rhodes most beautiful sites known for its unique architecture, pebble mosaics, seaside gardens, therapeutical waters, and beach. During the gala dinner, ExHFT-10 participants had the opportunity to taste local delicacies and enjoy local folklore music and dances (**Fig. 7**).

Fig. 7. Gala dinner at Kallithea Springs in Rhodes.

Finally, Tianhan Chen and Koji Hasegawa received the "Best Poster Award" during the closing ceremony of ExHFT-10 on August 30th, for their poster entitled "Impact and boiling of single and multiple droplets on a heated solid surface" (**Fig. 8**).

Fig. 8. Award of Tianhan Chen and Koji Hasegawa with "Best Poster Award"
(from left to right: T. Chen, Prof. M. Mantelli, Prof. K. Hasegawa, Prof. M. Kostoglou).

ExHFT-11 will be held at Wyndham Beijing North Hotel, Beijing, China on August 15-18, 2025
Please visit the website:
https://www.exhft-11.com/

The 3rd Pacific Rim Thermal Engineering Conference (PRTEC2024) by JSME, KSME, and ASTFE

Mamoru Tanahashi and Shohji Tsushima


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Shohji Tsushima Osaka University, Japan
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The 3rd Pacific Rim Thermal Engineering Conference (PRTEC2024: https://www.jsme.or.jp/conference/PRTEC2024/index.html) was held from December 15th (Sun) to 19th (Thu), 2024 at the Hawaii Convention Center in Honolulu, Hawaii, USA (**Fig. 1**). This conference, which is part of the PRTEC series reorganized as the successor to the AJTEC series, is co-sponsored by the Japan Society of Mechanical Engineers (JSME), the Korean Society of Mechanical Engineers (KSME), and the American Society of Thermal and Fluids Engineers (ASTFE). The first conference was held in 2015, and the second in 2019, both in Hawaii, USA. The third conference was scheduled to be hosted by ASTFE in 2023 but was postponed for one year due to the impact of the COVID-19 pandemic and was then suddenly decided to be held under the leadership of the Thermal Engineering Division of the JSME. The three co-chairs were Prof. Mamoru Tanahashi (Institute of Science Tokyo), Prof. Ji Hwan Jeong (Pusan National University), and Prof. Yong X. Tao (Cleveland State University), while the three secretary general were Prof. Shohji Tsushima (Osaka University) who served as Executive Committee Chair, Prof. Jaeseon Lee (Ulsan National Institute of Science and Technology), and Prof. Vikrant C. Aute (University of Maryland).

Distinguished professors delivered the Plenary Lectures:

- Prof. Hirofumi Daiguji, The University of Tokyo, Japan, Gas Adsorption in Confined Nanospaces and its Application to HVAC Technology
- Prof. Kasuyoshi Fushinobu, Institute of Science Tokyo, Japan, Recent New Combination Example in Our Application-Oriented Heat and Mass Transfer Problems
- Prof. Ankur Jain, University of Texas, Arlington, USA, Thermal Transport in Lithium-Ion Cells and Battery Packs
- Prof. Yong Tae Kang, Korea University, Korea, Thermal Energy Storage for Plus Energy Building Application: Sorption Thermal Battery
- Prof. Yongchan Kim, Korea University, Korea, The Future of Heat Pumps: Pioneering The Path to a Sustainable Tomorrow
- Prof. Vish Prasad, University of North Texas, USA, Supercritical Fluids: Potential and Challenges

and 14 Keynote Lectures were given by the following speakers:

- Prof. Young Soo Chang, Kookmin University, Korea, Optimal Design of a Fin－Tube Heat Exchanger for Heat Pump using Low GWP Refrigerants
- Prof. Lorenzo Cremaschi, Auburn University, USA, Navigating the Journey to Decarbonization in Refrigeration Systems: From Low-GWP Refrigerants to Natural Alternatives and Beyond Vapor Compression Technologies
- Prof. Hiroshi Iwai, Kyoto University, Japan, Understanding and Designing Mesoscale Structure in Solid Oxide Cells
- Prof. Taesung Kim, Sungkyunkwan University, Korea, Thermal Management and Process Analysis in Chemical Mechanical Polishing
- Prof. Masamichi Kohno, Kyushu University, Japan, High-Pressure Torsion (HPT) Processing of Si, Ge and SiGe Composite and its Thermal/Electrical Properties
- Prof. Atsuki Komiya, Tohoku University, Japan, Resonance-Driven Heat Transfer Enhancement in a Natural Convection
- Prof. Hiroyuki Kumano, Aoyama Gakuin University, Comparison of Heat Transfer Performance of Phase Change Slurries
- Prof. Jaeseon Lee, Ulsan National Institute of Science and Technology (UNIST), Korea, Electricity Recovery by Electric Charge Separation of Air-Water Two-Phase Flow in Channels

- Prof. Seong Hyuk Lee, Chung-Ang University, Korea, Vapor Accumulation and Evaporation Characteristics of Multiple Binary Mixture Droplets
- Prof. Nenad Miljkovic, UIUC, USA, Tailoring Surfaces for Optimized Steam Condensation and Refrigerant Evaporation
- Prof. Saeed Moghaddam, University of Florida, USA, Opportunities and Challenges in Implementing Phase-Change Cooling for Next-Gen AI Chips and Ultra-Efficient Data Centers
- Dr. Kashif Nawaz, Oak Ridge National Laboratory, USA, High-Temperature Heat Pumps and Their Role in the Decarbonization of Buildings and Industry
- Prof. Jeeyoung Shin, Sookmyung Women's University, Korea, Effective Interface Control in All-Solid-State Batteries to Prevent Mixed Ionic-Electronic Conducting Interphase Formation
- Prof. Shuhei Takahashi, Gifu University, Japan, Latest on-Orbit Solid Combustion Experiments on the ISS/KIBO: Evaluating Fire Safety in Microgravity Environments

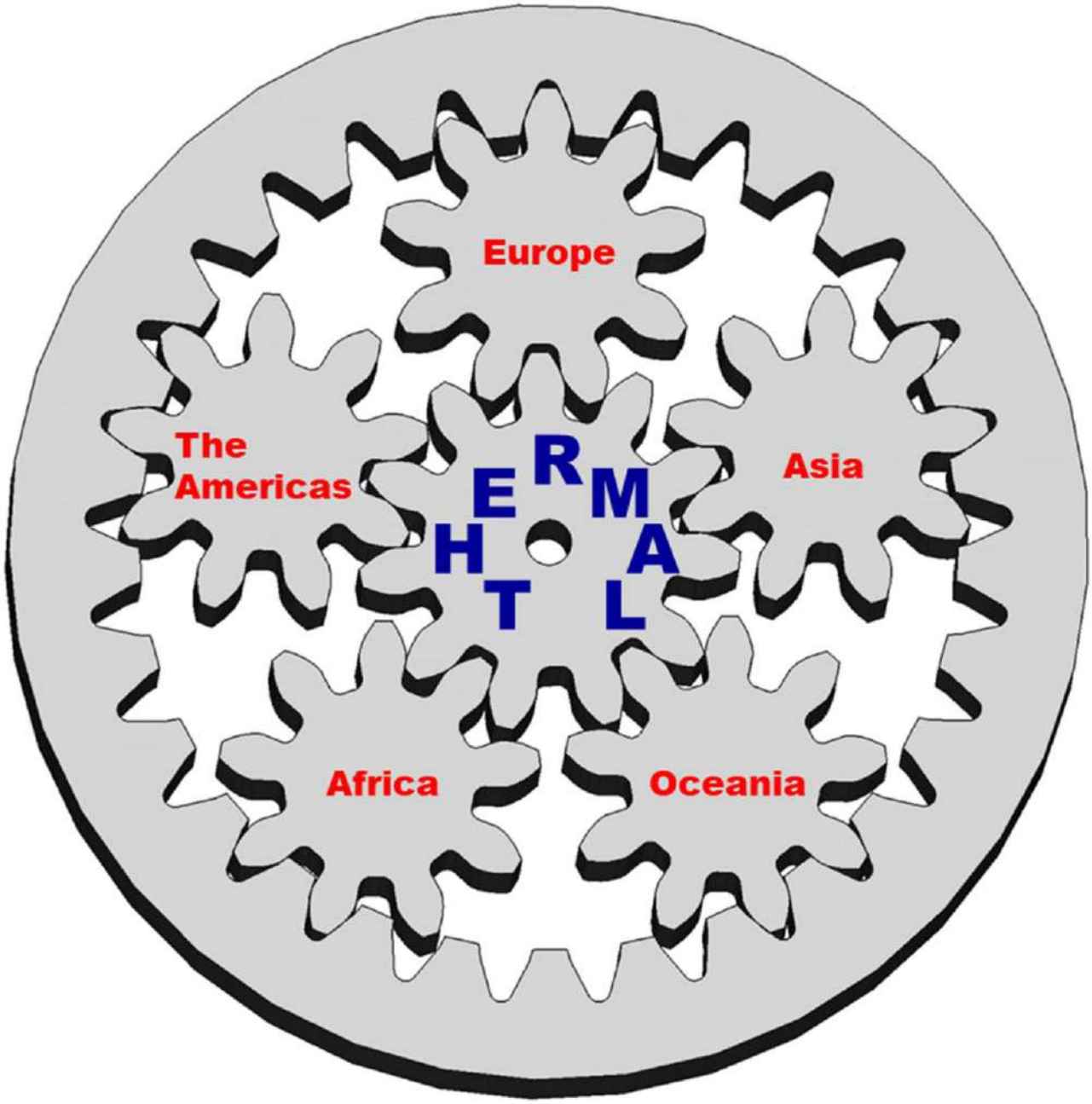
Fig. 1 View of the PRTEC2024 venue

A total of 214 presentations were given across 3 technical tracks and 16 topics, and 317 participants from 9 countries, including Japan (168), Korea (70), and the United States (32), attended the conference, making it a great success (**Fig. 2**). In addition, the Conference Banquet, held on Tuesday, December 17th at The Royal Hawaiian Resort Waikiki (**Fig. 3**), was attended by 210 people, providing a fulfilling opportunity for participants to deepen their interactions with each other and to fully enjoy the Hawaiian atmosphere.

Fig. 2 Session of the PRTEC2024

Finally, we would like to express our sincere gratitude to the track chairs and topic organizers, speakers, chairpersons, and members of the executive committee who worked hard to plan and run PRTEC2024. The next PRTEC, the 4th Pacific Rim Thermal Engineering Conference (4th PRTEC), is scheduled to be held near Hawaii from March 14th (Sun) to 18th (Thu), 2027, under the initiative of KSME. We hope you will start planning your attendance now.

Fig. 3 View from the banquet venue



Part 2

Epicyclic gearing (CAD)

Brazil, Member of ICHMT and AIHTC (2)

1. Report on the organization of the 18th International Heat Transfer Conference
2. ABCM – Brazilian Society of Mechanical Sciences and Engineering

Helcio Orlande and Gherhardt Ribatski


Helcio Orlande, Dept. of Mech. Eng., Federal University of Rio de Janeiro, UFRJ, helcio@mecanica.coppe.ufrj.br

Gherhardt Ribatski, Dept. of Mech. Eng., University of São Paulo, USP – São Carlos, ribatski@sc.usp.br

1. Report on the organization of the 18th International Heat Transfer Conference – IHTC-18 (https://ihtc18.org/)

IHTC-18 will take place in Rio de Janeiro, Brazil, during August 02-07, 2026. The conference is organized under the auspices of the Brazilian Society of Mechanical Sciences and Engineering – ABCM (https://abcm.org.br/) and of the Assembly of International Heat Transfer Conference – AIHTC (https://aihtc.org/). ABCM is the Brazilian Representative National Organization in AIHTC.

As the most important event worldwide on heat transfer, thermal sciences and thermal engineering, the goal of IHTC-18 is to provide a forum for the exchange of ideas, methods and results on fundamental and applied topics in these areas. Following IHTC's tradition, IHTC-18 will consist of Plenary and Keynote Lectures presented by internationally recognized experts, discussion panels, and presentation of original research papers. IHTC-18 will be held at the Conference Center of the Windsor Hotel Complex in Barra da Tijuca. Barra da Tijuca is a modern seaside district of Rio de Janeiro, which can be easily reached from the International and the National Airports.

Regarding the organizational aspects of IHTC-18, the activities pursued since early 2024 include:

- Websites of AIHTC and IHTC-18 were prepared and launched (see **Figures 1a**, **b**). ABCM is hosting these sites.
- The "Mark your Calendar" announcement was released.
- The contract for the rental of the Conference Center at the Windsor Hotel Complex, where IHTC-18 will be held, was negotiated and signed by ABCM.
- The contract with a conference organization company was negotiated and signed by ABCM.
- Begell House Inc. has provided the template for the papers to be included in the proceedings. Plenary, keynote and regular conference papers will be published in the International Heat Transfer Conference Digital Library, which is maintained by Begell House Inc. (https://www.ihtcdigitallibrary.com/).
- New members were invited to join the Scientific, Financial and Executive Committees.
- AIHTC Delegates were asked to provide the names of Regional Editors to the Organizing Committee, as well as to suggest possible Keynote Lecturers from their world region.
- The conference budget has been revised and registration fees updated.
- A proposal was prepared to an official agency of the Brazilian government.
- A new system is being developed by ABCM for the submission and review of IHTC-18 abstracts and papers (see **Figure 2**). This system is being thoroughly tested by ABCM and by the Organizing Committee. Registrations and payments will also be handled through this system.

Figure 1a IHTC-18 Website

Figure 1b AIHTC Website

Figure 2 New system for the submission and review of abstracts and papers for IHTC-18

Important dates for IHTC-18 are presented in **Table 1**, while **Table 2** shows the registration fees. Early-bird fees apply to registrations until June 05, 2026. At least one author needs to be registered by July 03, 2026 for the paper to be included in the proceedings and in the conference program. Each registration can be associated with the publication of one single paper. The registration fee includes the welcome reception, everyday lunchbox, coffee breaks, conference material and banquet dinner.

Table 1 IHTC-18 Important Dates

Call for papers and abstract submission site opens	June 01, 2025
Abstract submission deadline	September 05, 2025
Author notification of abstract acceptance	October 05, 2025
Deadline for submission of full draft paper for review	December 05, 2025
Online registration and hotel booking sites open	January 4, 2026
Full paper review complete and electronic copyright form submission opens	March 1, 2026
Revised paper submission deadline	April 10, 2026
Final acceptance of revised paper	May 15, 2026
Early registration deadline (deadline for early-bird registration fees)	June 05, 2026
Online registration deadline (at least one author needs to be registered by this date for the paper to be included in the proceedings and in the conference program)	July 03, 2026

Table 2 IHTC-18 Registration Fees

Category	**Early-Bird (until June 05, 2026)**	**Regular**
Professionals (US Dollars)	$ 900	$ 1000
Students (US Dollars)	$ 550	$ 650

The IHTC-18 Organizing Committee is chaired by Helcio Orlande and Gherhardt Ribatski, and also includes: (i) Scientific Committee co-chairs: Angela Nieckele and Jader Barbosa Jr.; (ii) Financial Committee co-chairs: Jurandir Yanagihara and Marcelo Colaço; (iii) Executive Committee co-chairs: Leandro Sphaier and Francis França.

2. ABCM – Brazilian Society of Mechanical Sciences and Engineering (https://abcm.org.br/)

The major organization that congregates thermal scientists in Brazil is **ABCM – Brazilian Society of Mechanical Sciences and Engineering**. ABCM was founded on April 19, 1975. It is a non-profit organization with about 700 individual members and 4 institutional members. Although ABCM is a general mechanical engineering organization, it counts with 19 Technical Committees, many of them related to thermal sciences. ABCM is the Representative National Organization in AIHTC and in ICHMT.

ABCM regularly promotes 12 scientific conferences. The largest conference held under the auspices of ABCM is **COBEM, the International Congress of Mechanical Engineering**, which has been taking place every other year since 1971, and counts with about 1100 participants. The **Brazilian Congress of Thermal Sciences – ENCIT** is held every other year since 1986 and counts with about 400 participants. The 20th edition of ENCIT was held during November 10 to 14, 2024, in Foz do Iguaçu (https://eventos.abcm.org.br/encit2024/). Other ABCM regular events related to thermal sciences include: EPTT – The International Spring School on Transition and Turbulence, EBECEM – The Brazilian Meeting on Boiling, Condensation and Gas-Liquid Multiphase Flow, EVR – Summer School on Refrigeration and EdC – School on Combustion.

The **Journal of the Brazilian Society of Mechanical Sciences and Engineering** (JBSMSE - ISSN: 1678-5878) has been published regularly since 1979. The purpose of the JBSMSE Journal is to publish articles of permanent interest dealing with research, development and design related to science and technology in Mechanical Sciences and Engineering, encompassing interfaces with other branches of Engineering, as well as with Physics and Applied Mathematics. The JBSMSE Journal is currently published by Springer (https://www.springer.com/journal/40430) and it is indexed in JCR. ABCM also regularly publishes online the journal **Thermal Engineering** (https://abcm.org.br/pb/thermal-engineering), which counts with technical and scientific contributions.

India, Member of ICHMT, AIHTC, AUTSE (2)

Indian Society for Heat and Mass Transfer (ISHMT)

P. K. Vijayan and Arvind Pattamatta

Prof. P. K. Vijayan – President
Indian Institute of Technology Jammu
Vijayan.pallippattu@iitjammu.ac.in

Prof. Arvind Pattamatta – Secretary
Indian Institute of Technology Madras,
arvindp@iitm.ac.in

A Two-Day Workshop on 'Multiphase Flows and Applications to Heat Transfer' January 2025
The workshop took place on January 6–7, 2025, at the ICSR Hall, IIT Madras, Chennai, India. It was organized by Prof. Arvind Pattamatta from the Department of Mechanical Engineering, IIT Madras. Titled **"A Two-Day Workshop on Multiphase Flows and Applications to Heat Transfer,"** the event offered an immersive and informative experience focused on the latest advancements in multiphase flow and heat transfer. Over the two days, participants engaged with state-of-the-art research and gained valuable knowledge on emerging trends in the field. The workshop featured a diverse panel of expert speakers, including leading researchers and industry professionals, who delivered insightful lectures and interactive sessions on a wide range of relevant topics. Designed for engineers, researchers, and professionals alike, the workshop aimed to provide attendees with cutting-edge insights and current developments in multiphase flows and heat transfer.

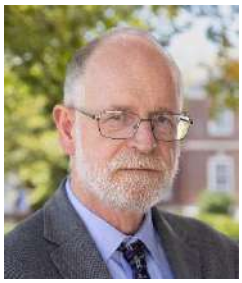
ISHMT Best Ph.D thesis awards 2024

Dr. Shubham Sharma, IISc Bengaluru
Secondary Atomisation of a Droplet in Diverse Interaction Settings.

Dr. Tibin M Thomas, IIT Madras
Atmospheric Water Vapor Condensation on Engineered Surfaces.

ISHMT Golden Jubilee Lecture Series 2024

To commemorate the 50th anniversary of ISHMT's establishment, the 'Golden Jubilee Lecture Series' was inaugurated as a webinar initiative. Over the past two years, the series has successfully hosted 15 online lectures, featuring renowned experts in the field of thermal sciences. The details of the three Webinars hosted in the previous year are given below:



Numerical Simulations and Modeling of Multiphase Flows
Prof. Gretar Tryggvason
Professor & Head of the Department of Mechanical Engineering, Johns Hopkins University, USA

Optical and Thermal Evaporation
Professor Gang Chen
Department of Mechanical Engineering, Massachusetts Institute of Technology, USA

State Estimation and Predictive Control Applied to the Treatment of the Hypoxic-Ischemic Encephalopathy in Neonates
Helcio R. B. Orlande
Department of Mechanical Engineering, COPPE, Federal University of Rio de Janeiro, RJ, Brazil

Japan, Member of ICHMT, AIHTC, AUTSE (5)

Report on JSME Thermal Engineering Conference 2024

Masato Mikami and Ken-ichiro Tanoue

Masato Mikami, Organizing Committee Chair, Yamaguchi University, mmikami@yamaguchi-u.ac.jp
Ken-ichiro Tanoue, Organizing Committee Secretary, Yamaguchi University, tano@yamaguchi-u.ac.jp

Thermal Engineering Conference 2024, an annual conference of the Thermal Engineering Division (TED) of the Japan Society of Mechanical Engineers (JSME), was held on October 5-6, 2024 in Yamaguchi City, Yamaguchi Prefecture, Japan. Yamaguchi City was selected by the New York Times as the third place out of 52 places in the world to visit in 2024. There were 218 presentations in the Organized Sessions (OSs) and three talks in the Thermal Engineering Workshop, which were attended by 406 participants including invited guests. In addition, about 40 ordinary citizens also attended the Special Lecture, which was open to the general public, making the event a great success.

The presentations at the Thermal Engineering Conference are traditionally OS-oriented. This year, we had 16 OSs. Although we accepted applications for a general session at the time of application, all the presentations were assigned to the OSs, and therefore, the organizers were entrusted with handling the order of presentations and the selection of chairs for all the sessions. Except for OS-15, for which no applications were received, the OSs for this conference were as follows:

OS-1: External Combustion Engine and Exhaust Heat Utilization Technology
OS-2: Fire and Explosion
OS-3: Thermal Management of Electronic Equipment and Devices
OS-4: Heat Transfer, Flow, and Mass Transfer Phenomena in Porous Media and Their Applications (from Macro to Nano Scale)
OS-5: Advances in Turbulent Heat Transfer Research
OS-6: Advances in Research Related to Fuel Cells, Electrolysis, and Rechargeable Batteries
OS-7: Advances in Micro Energy
OS-8: Advances in Biomass Conversion from a Thermal Engineering Perspective
OS-9: Heat Transfer and Flow with Solidification and Melting
OS-10: Radiative Heat Transfer Control
OS-11: Combustion Research for Future Energy Conversion and Propulsion Systems
OS-12: Advances in Boiling and Condensation Heat Transfer and Multiphase Flow
OS-13: Wettability Control and Droplet Dynamics
OS-14: Nanoscale Thermal Control
OS-16: Thermal Engineering Collection 2024

Here, OS-16, Thermal Engineering Collection 2024, planned by the Publication Committee, is a session to present educational videos. Due to the venue, OS-11 was held in the main hall, which was too large for a regular OS session; as a result, the students who gave presentations in OS-11 probably would have felt as if they were giving plenary lectures, even though they had a sense of tension (Fig. 1).

Fig. 1 A student presenting in the main hall (OS-11)

The Thermal Engineering Workshop was held in the form of a luncheon seminar to discuss the future of thermal engineering and thermal technology with industry and academia. The following three lectures were made.

- "Coal Utilization in Power Generation: Then and Now," Shinsuke Suzuki, Electric Power Development Co., Ltd.

- "Copper Alloys for Electronic Materials at Kobe Steel, Ltd.," Koya Nomura, Kobe Steel, Ltd.
- "Development of High Temperature Processes in the Steel Industry Using Digital Twin," Tomoyuki Kawashima, JFE Steel Corporation

In the Special Lecture, Mr. Hiroshi Sakurai, Chairman of Asahi Shuzo Co., Ltd., a sake (rice wine) brewery located in Iwakuni City, Yamaguchi Prefecture, well known for a sake named "*Dassai*," gave a talk entitled "A Pinch is an Opportunity! -Made possible only by a small sake brewery deep in the mountains of Yamaguchi-" (Fig. 2). This special lecture was open to the general public, attracting about 200 participants. He talked about the dynamic history of his company, how he changed his way of thinking from being one of the most unsuccessful sake breweries on the losing side to a customer happiness-oriented approach, how he created "*Junmai Daiginjo*," a type of sake with 50% or less rice remaining (over 50% polished) and no distilled alcohol added, which had no market at the time, against local opposition, and how he expanded into the Tokyo market and overseas markets such as France and New York. He talked in a quiet but passionate tone about his mindset of "Chasing the last 5 meters to turn a negative into a positive!" He received many questions from the audience. Some of them asked for advice on the current pinch point of Japan's declining international status of research capabilities. All of the questions were answered and advised in detail, and the question-and-answer session went on beyond the scheduled time. The pinch that Mr. Sakurai experienced was incomparable to the current situation of the university, and we felt that we should not whine about it.

Fig. 2 Special Public Lecture by Mr. Sakurai

After the Special Lecture, the presentation ceremony of TED Awards and the Division General Awards was held by the Division Award Committee (Fig. 3). The winners of the awards are as follows:

International Achievement Award: Prof. Osamu Fujita, Hokkaido Univ. / Research Achievement Award: Dr. Takaharu Tsuruta, President, Nishi-Nippon Inst. Technol. / Research Achievement Award: Prof. Kazuhiko Suga, Osaka Metropolitan Univ. / Achievement Award: Prof. Shoji Tsushima, Osaka Univ. / Contribution Award: Prof. Hitoshi Asano, Kobe Univ. / Contribution Award: Prof. Naoya Sakoda, Kyushu Univ. / Contribution Award: Prof. Shohei Chiashi, The Univ. of Tokyo


Fig. 3 Award ceremony

In addition to the above, the Young Outstanding Lecture Fellow Award was also presented to the winners.

On the evening of the first day, we took a shuttle bus from the venue to Yuda Onsen Hot Spring and had a banquet (Fig. 4). Prof. Naoki Shikazono, the Director of TED, gave a toast. Local delicacies ("*kawara soba*" noodle and blowfish sushi) were prepared for everyone. A local sake corner was set up with six different types of "*Junmai Daiginjyo*," Yamaguchi's finest selection of sake (Fig. 4). The smiles on everyone's face were impressive, and we believe that the participants of TED, which has a large number of sake lovers, were also satisfied with the local sake corner. Since I (Mikami) said, in the opening address of the banquet, "Tomorrow is tomorrow, let's enjoy this evening!," which might not be appropriate for the Chair of the Organizing Committee (OC), everyone must have enjoyed the night in Yamaguchi even more after the banquet.


Fig. 4 Banquet at Yuda Onsen Hot Spring

In preparing for this conference, as the Chair and Secretary of OC, we requested that each of the committees and OSs involved do what they could so that the small OC could concentrate on venue management, which was not customary. we feel that it was with such cooperation that we were able to successfully conclude the Thermal Engineering Conference 2024. We would like to express our gratitude again to everyone involved.

Mexico, Member of ICHMT (1)

Report on 30th Mexican International Congress in Mechanical Engineering (SOMIM 2024)

Abel Hernandez-Guerrero and J. Luis Luviano-Ortiz

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University of Guanajuato, Mexico, abel@ugto.mx
https://somim.org.mx

These are the 2024 activities that were carried out by SOMIM, the Mexican Society of Mechanical Engineers:

The Annual International Mechanical Engineering Congress was held at the City of Queretaro, in Central Mexico, with the support of the Polytechnic University of Queretaro. There were tracks in just about all the ME domain: Mechanical Design, Manufacturing and Materials, Mechatronics, Theoretical Mechanics, Thermal-Fluids, and Education in Engineering. There was an attendance of more than 100 researchers and more than 250 students from many national universities.

145 works were presented with 6 keynote speakers sessions:

- Ernesto Hernández, Ford Motors Company, “Quality in the auto-mechanical industry, a luxury or a need ?”
- Marcelo del Valle, Kiewit, “The Mechanical Engineer in EPC, beyond the productive, commercial, and service sectors”
- Salvador M. Aceves, Technological Institute of Celaya, “Transport technologies to mitigate the environmental pollution and the climatic change”
- Ilse Cervantes, CICATA, “Perspectives in electro-mobility in Mexico”
- Ángel Iván García, CIDESI, “Additive manufacturing and artificial intelligence, key technologies in the 4RI”
- Crescencio García, Monterrey Tech, “Collaborative robots in mechanical engineering: towards a new era in automation”

Also, throughout the year many webinars were organized in different fields with specialized people providing the most-up-to-date developments in those areas.

Student activities are also supported year-around by the society via the SOMIM Student Chapters; SOMIM has a close collaboration with the American Society of Mechanical Engineers (ASME).

Specialized courses were also offered providing information on new techniques and discussion of new emerging fields, such as in aerospace, material, and composites-based design, etc.

Other smaller conferences were also supported by the society such as the Aerospace Week 2024.

Morocco, Member of ICHMT (3)

9th International Thermal Sciences Congress AMT'2026, ENSA, Marrakech

The 9th edition of International Thermal Sciences Congress AMT'2026, ENSA, Marrakech

Prof. Hamza Faraji, Cadi Ayyad University, Morocco, President of 9th edition of International Thermal Sciences Congress AMT'2026 (hamza.faraji@uca.ac.ma)

Prof. Brahim Benhamou, Cadi Ayyad University Marrakech, Secretary General of Moroccan Association of Thermal Sciences AMT (bbenhamou@uca.ac.ma)

The International Thermal Sciences Congress is a biennial scientific event organized by the Moroccan Association of Thermal Sciences (AMT), in collaboration with a higher education institution. For its 9th edition, AMT'2026 will be organized in partnership with National School of Applied Sciences of Cadi Ayyad University, and will take place in the vibrant city of Marrakech, Morocco, on April 2026.

The main topic of AMT'2026 is "*Thermal Sciences and Digitization: Towards Intelligent and Sustainable Systems*". The subtopics are: *Heat and mass transfer and fluid mechanics, Materials for energy and the environment, Renewable energies and energy efficiency, Numerical modeling and digital twins in thermal engineering and Artificial intelligence and intelligent sensors in thermal applications*. The scientific program will include plenary keynotes delivered by internationally renowned experts, along with oral and poster sessions where participants will have the opportunity to present and discuss their latest research findings.

Since its inception in 2010, the AMT Congress has been a premier platform for scientific discussions on thermal sciences and industrial and engineering applications. The conference typically features over 150 scientific contributions, with high quality papers published in indexed journals

In this special 9th edition, we extend a cordial invitation to international researchers in thermal sciences to contribute to the AMT'2026 success as participants and, why not, as distinguished plenary speakers, to share expertise and insights with our scientific community. Your presence will undoubtedly enrich the discussions and elevate the impact of this prestigious event.

We look forward to welcoming you to Marrakech in 2026, for an enriching scientific event at the heart of the international research community in thermal sciences. Recognized worldwide for its cultural and scientific appeal, Marrakech provides an exceptional environment for fostering academic exchanges while offering a unique experience to all participants.

Marrakech City

Cadi Ayyad University Conference Center

Poland, Member of ICHMT, AIHTC, Eurotherm (2)

International Conference on Cleaner Energy Transition (ICCET2024)

Dariusz Mikielewicz and Janusz S. Szmyd


Dariusz Mikielewicz, corresp. member of Polish Academy of Sciences, Faculty of Mech. Eng. and Ship Technology, Gdańsk University of Technology, dariusz.mikielewicz@pg.edu.pl
Janusz S. Szmyd, AGH University of Science and Technology in Cracow, Faculty of Energy and Fuels, janusz.szmyd@agh.edu.pl

The International Conference on Cleaner Energy Transition (ICCET 2024) was held at Cracow University of Technology from 21-23 October 2024. The conference aimed to bring together leading researchers, policy makers and professionals from the renewable energy industry to discuss critical topics related to the energy transition. The focus was on sustainable technologies such as renewable energy systems, energy storage, cleaner energy policies and energy efficiency improvements. The ICCET conference series will continue and will serve in the future as a platform to present the latest research results, share best practices and foster collaboration between universities both nationally and internationally.

Professor Jan Taler's 50th anniversary of scientific activity

The conference was also an opportunity to celebrate the golden jubilee of the 50-years of scientific career of Professor Jan Taler, Corresponding Member of the Polish Academy of Sciences and an outstanding specialist in the field of energy. Professor Jan Taler's jubilee was attended by more than 230 guests from Poland and abroad, including the Rector of the Cracow University of Technology, Prof. Andrzej Szarata, PhD, Vice-Chancellor for Science of the Cracow University of Technology, Magdalena Niemczewska-Wójcik, PhD, and the Dean of the Faculty of Environmental Engineering and Energy, Prof. Stanisław Rybicki, PhD. The ceremony was honoured with the presence of the Deans of other Faculties of Cracow University of Technology: prof. Magdalena Kozień-Woźniak, PhD, Magdalena Kozień-Woźniak (Architecture Faculty), prof. dr hab. inż. Jerzy A. Sładek (Mechanical Engineering Faculty), Janusz Mikuła, DSc, prof. PK (Materials Engineering and Physics Faculty), Maciej Sułowicz, DSc, prof. PK (Electrical and Computer Engineering Faculty), Paweł Pławiak, DSc, prof. PK (IT and Telecommunications Faculty). Also present were representatives of the authorities of other Polish universities in persons of Józef Ciuła, DSc, prof. AAS - Rector of Academy of Applied Sciences in Nowy Sącz, Rafał Kobyłecki, DSc, prof. PCz. - Deputy Rector for Development of Częstochowa University of Technology, Artur Maciąg, DSc, prof. PŚ - Deputy Rector for Education of Kielce University of Technology, Prof. Dariusz Mikielewicz, Corresponding Member of the Polish Academy of Sciences - Deputy Rector for Research of Gdansk University of Technology, Grzegorz Przydatek, DSc, prof. AAS – Deputy Rector for Science of Academy of Applied Sciences in Nowy Sącz, Monika Motak, DSc, prof. AGH - Dean of the Faculty of Energy and Fuels of AGH University of Science and Technology in Cracow, Piotr Szulc, DSc, prof. PWr - Dean of the Faculty of Mechanical Engineering and Power Engineering of Wroclaw University of Science Technology. Chairmen of the Committees of the Polish Academy of Sciences: prof. Krzysztof Badyda, DSc (Warsaw University of Technology, Chairman of the Committee of Thermodynamics and Combustion of Polish Academy of Sciences), prof. Błażej Skoczeń, DSc, Corresponding Member of the Polish Academy of Sciences (Cracow University of Technology, Chairman of the Committee of Mechanics of the Polish Academy of Sciences), prof. Kazimierz Furtak, DSc (Rector of the Cracow University of Technology in years 2008-2016), prof. Andrzej Kraszewski, DSc, prof. Tadeusz Bohdal, DSc, (Rector of Koszalin University of Technology in years 2012-2020), prof. Janusz Cieśliński, DSc, (Vice Rector for Organisation of Gdansk University of Technology in years 2016-2019), prof. Jerzy Banaszek, DSc, (Dean of the Faculty of Power and Aeronautical Engineering, Warsaw University of Technology in years 2008-2016). Corresponding members of the Polish Academy of Sciences: prof. Jan Kiciński, DSc, (Institute of Fluid-Flow Machinery, Polish Academy of Sciences), prof. Ryszard Białecki, DS,c (Silesian University of Technology), Members of the Academic Board of Cracow University of Technology: prof. Wiesław Zima, DSc, and Stanisław Młynarski, PhD, and representatives of companies cooperating with the Department of Power Engineering of the Cracow University of Technology.

Professor Jan Taler is a Head of the Department of Power Engineering at the Faculty of Environmental Engineering and Power Engineering of the Cracow University of Technology. Professor Jan Taler's scientific output includes more than 430 scientific articles, of which more than 180 articles have been published in JCR journals. His works have been cited more than 3,200 times according to the Scopus database, and the Hirsch index is 30. Professor Jan Taler has promoted 6 professors and 9 employees with postdoctoral degrees. He was the supervisor in three proceedings for the award of an Honorary Doctorate of the Cracow University of Technology. He is an Honorary Professor of the Silesian University of Technology. He is the author or co-author of 12 books. Continuously since 2020, he has been listed in the TOP 2% of the world's best cited scientists according to Elsevier and Stanford University analysts. Professor Jan Taler is a world-renowned specialist in the fields of: thermal power engineering, mathematical modelling and research of heat exchangers, thermal stresses, modelling and research of flow and thermal processes, and monitoring of power machinery and equipment. He is an editor of the journals: Journal of Thermal Stresses (Taylor & Francis), Journal of Thermal Sciences (Springer), Recent Patents on Mechanical Engineering (Bentham Science).

The conference was organised in collaboration between:

1. Centre for Scientific Research Excellence at the Cracow University of Technology
2. Department of Energy of the Cracow University of Technology
3. Sustainable Process Integration Laboratory, Brno University of Technology, Czech Republic

The conference Chairs were:

1. Prof. Paweł Ocłoń, DSc, Director of the Research Centre of Excellence, Cracow University of Technology, Faculty of Environmental Engineering and Power Engineering, Professor at the Department of Power Engineering - ICCET 2024 conference organiser
2. Prof. Dr. Jan Taler, Corresponding Member of the Polish Academy of Sciences, Head of the Department of Energy, Faculty of Environmental Engineering and Energy - co-organiser of the ICCET 2024 conference
3. Prof. Dr. Ing. Petar Sabev Varbanov, Brno University of Technology - co-organiser of the ICCET 2024 conference
4. Piotr Cisek, PhD, prof. PK, Department of Energy, Cracow University of Technology, Faculty of Environmental Engineering and Energy - Chairman of the ICCET 2024 Conference Organizing Committee
5. Marek Majdak, PhD, Department of Energy, Cracow University of Technology, Faculty of Environmental Engineering and Energy - Vice-Chairman of the Organising Committee, Vice-Chairman of the Organizing Committee of the ICCET 2024 Conference

The following key research topics were addressed at the ICCET 2024 international conference:

- **Renewable energy systems**: advances in solar, wind, hydro, biomass and geothermal energy systems.
- Energy storage: innovations in electricity storage technology, heat storage, hydrogen energy storage and grid integration.
- **Energy efficiency**: increasing energy efficiency in buildings, industry and transport systems through intelligent energy management and low-carbon technologies.
- **Cleaner energy policy**: analyses of policies promoting cleaner energy, decarbonisation strategies and regulatory approaches to energy transition.
- **Sustainable infrastructure**: integration of renewable energy into the current energy infrastructure.

Fifteen plenary papers were presented at the conference, by leading national and international energy specialists:

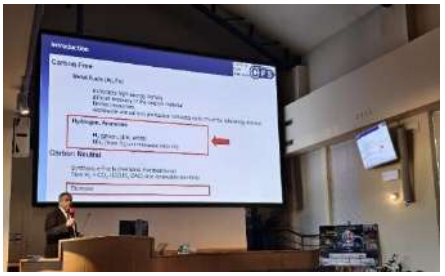
1. Hydrogen combustion for carbon neutrality: challenges and computational modelling, **Ali Cemal Benim**, Duesseldorf University of Applied Sciences, Germany
2. Technologies for the district heating of the future: **Wojciech Bujalski**, Director of the Institute of Heat Engineering, Warsaw University of Technology
3. RESHeat project presentation, **Piotr Cisek**, Deputy Project Manager Horizon 2020 RESHeat, Cracow University of Technology
4. High-efficiency cogeneration power system from gas turbine fueled with low carbon emissions, **Fei Duan**, Nanyang Technological University, Singapore
5. Commodifying heat for a sustainable future, **Kamel Hooman**, Delft University of Technology, Netherlands
6. Distributed generation, smart community and smart residential - is this our future?, **Jan Kicinski**, Corresponding Member of the Polish Academy of Sciences, Institute of Fluid-Flow Machinery, Polish Academy of Sciences

7. Energy transformation - challenges to armed forces, **Major General Artur Kępczyński**, Head of the Inspectorate of Support for the Polish Armed Forces.
8. Nature-inspired solutions for building efficiency, **Vivien Lin Lu**, Hong Kong Polytechnic University, Hong Kong
9. Sustainable smart manufacturing - current reality and future prospect, **Yang Liu**, Linkoping University, Sweden
10. Catalytic processes in the service of energy storage, **Piotr Michorczyk**, Dean of the Faculty of Chemical Engineering and Technology, Cracow University of Technology
11. Photovoltaic technologies: current state, applications, and future challenges, **Sandro Nižetić**, University of Split, Croatia
12. Power electronics - the key to energy transformation, **Adam Ruszczyk**, Hitachi Energy Services Sp. z o. o.
13. A new method for flow-thermal and strength calculations of supercritical steam superheaters, **Jan Taler**, Corresponding Member of the Polish Academy of Sciences, Cracow University of Technology, Head of the Department of Power Engineering
14. Spatio-temporal thermal resistance control for gravity driven solid granule thermal processes, **Qiuwang Wang**, Xi'an Jiaotong University, China
15. Circular economy: maximizing resource efficiency through thermochemical conversion technologies, **Sebastian Werle**, Vice-Rector for Science, Silesian University of Technology, Silesian University of Technology

A total of 135 papers were presented at the Conference (77 as presentations, 58 as posters). The conference was attended by 181 scientists from 19 countries including: Poland, Czech Republic, Italy, Netherlands, Sweden, Slovakia, Germany, Ireland, France, Iraq, India, China, Hong-Kong, Serbia, Singapore, Croatia, Portugal, Hungary and Norway.

Sponsors of the conference were Hitachi Energy, Sefako SA, GUNT, and the Municipal District Heating Company of Cracow.

ICCET Conference Photos:



South Africa, Member of AIHTC (3)

14th South African Conference on Computational and Applied Mechanics SACAM 2025

Philip Loveday

14th South African Conference on Computational and Applied Mechanics (SACAM 2025)

Philip Loveday : School of Mechanical, Industrial. & Aeronautical Engineering, Univ. of the Witwatersrand, Philip.loveday@wits.ac.za

The 14th South African Conference on Computational and Applied Mechanics (SACAM 2025) was held on 21 to 23 January 2025 at University of Witwatersrand in Johannesburg.

SACAM is a premier international conference on Computational and Applied Mechanics on the African continent that attracts local and international participants. SACAM is held every two years under the auspices of the South African Association for Applied Mechanics (SAAM) as a forum for presenting current computational and applied mechanics developments. The main function of SACAM is to bring together engineers, scientists and applied mathematicians from academia, research institutions and industry to encourage scientific engagement and exchange of ideas in applied and computational mechanics. The conference covers a wide range of topics which include thermodynamics and heat transfer, both from thermal-fluids and solid / structural mechanics perspectives. The following thermal related presentations were presented at SACAM 2025: “Modelling of bubble population statistics in slag foaming using the dynamic multiple marker method”; “CFD analysis of heat transfer in a shaft furnace using the immersed boundary method”; “Accelerating thermo-chemical equilibrium calculations in 2- to 4-component systems with physics-informed neural networking”; “Effect of placing of the coolant risers in a micro reactor on the thermal-fluid behaviour during a DLOFC”; “Numerical investigation of heat transfer enhancement in hybrid nanofluid flow through variable cross-sectional tubes”; “Numerical analysis of heat transfer and entropy generation in nanofluid motion over an expanding surface under oscillating magnetic fields– a Crank-Nicolson finite differential method approach”; “Thermal and magnetohydrodynamic effects of hybrid ferrofluids in jet impingement cooling systems”; “A modified effectiveness-NTU method for combined heat and mass transfer in air cooling and dehumidifying coils”; and “Thermal effects of accelerating bodies; Modelling the melting behaviour of granular heaps”. Four keynote addresses were also presented.

In the first keynote Prof Schalk Kok from the University of Pretoria shared his thoughts and experience on “Recent advances in surrogate modelling”. Although he focused primarily on structural applications, the methodologies he discussed can also be applied to thermal problems.

In the second keynote address Prof Claudia Polese from the University of the Witwatersrand talked about her involvement in “Shaping South Africa's Future: Innovations in Advanced Manufacturing”. The keynote amongst others discussed laser shot peening and touched on friction welding.

The third keynote was a joint presentation by Dr Alfred Bogaers of Ex-Mente and Prof Quinn Reynolds of Mintek and the Stellenbosch University. Their keynote dealt with “Life at 1500°C - a multi-physics modelling journey through pyrometallurgy” and discussed the tremendous challenges that are encountered when modelling pyrometallurgical problems. It is especially the temperature dependence and the interaction between the physical and chemical processes that are challenging to simulate. The aggressive environment also makes the collection of data for validation extremely difficult to almost impossible.

The final keynote was given by Dr Mehdi Safari of Mintek and dealt with “Applications of Computational Fluid Dynamics for Mineral Processing”. He discussed the wide range of mineral processing procedures where Computational Fluid Dynamics are applied to understand the flow and heat transfer and possibly improve the procedures.

The abstracts of the presentations that were submitted were reviewed by the members of the conference scientific committee to determine whether an abstract satisfied the conference criteria. The authors of the presentations that were accepted and presented could submit the manuscripts of their papers for review and possible inclusion in the proceedings of the conference. The authors of a selection of promising papers will also be invited to extend and submit their manuscripts to be considered for publication in a special edition of a selected journal.

A workshop was also presented on "Using the PyAnsys environment for setting up and running Ansys simulations" and attended by several conference participants. PyAnsys has already been used successfully by some South African researchers to couple 3D and 1D methodologies to simulate air-cooled heat exchanger configurations.

The Organising Committee of SACAM 2025 were:

Chair
Prof. Philip Loveday
University of the Witwatersrand, Johannesburg

Members
Dr Alfred Bogaers
EX MENTE
Prof. Claudia Polese
University of the Witwatersrand, Johannesburg
Dr David Reinecke
CSIR
Mr Francesco Pietra
University of the Witwatersrand, Johannesburg
Mr John Jones
University of the Witwatersrand, Johannesburg
Dr Kevin Pereira
University of the Witwatersrand, Johannesburg
Ms Makhosazana Moyo
University of the Witwatersrand, Johannesburg
Mr Markus Erwee
Samancor
Prof. Mohsen Sharifpur
University of the Witwatersrand, Johannesburg
Prof. Quinn Reynolds
Mintek
Dr Randall Paton
University of the Witwatersrand, Johannesburg
Prof. Robert Reid
University of the Witwatersrand, Johannesburg
Mr Wesley Dharmalingum
University of the Witwatersrand, Johannesburg
Dr Willem Roos

South Korea, Member of ICHMT, AIHTC, AUTSE (5)

1. 2024 Spring Conference of Thermal Engineering Division, KSME

Professor, Seong Hyuk Lee, School of Mech. Eng., Chung-Ang University, shlee89@cau.ac.kr

The 2024 Spring Conference of the Thermal Engineering Division of the Korean Society of Mechanical Engineers was held from April 24 to 27, 2024, at the Ramada Plaza Jeju Hotel on Jeju Island. This annual conference provided a platform for collaboration, knowledge exchange, and the presentation of groundbreaking research.

Under the leadership of the Conference Chairman, Professor Seong Hyuk Lee, the Organizing Committee meticulously hosted an academically profound conference, showcasing cutting-edge technologies and innovations in thermal engineering. The conference commenced with an opening speech by Professor Jungho Kim, President of the Thermal Engineering Division, setting the stage for four days of scholarly discourse, collaboration, and knowledge dissemination. In particular, Vice President Hoon Wee of Samsung Electronics delivered a lecture titled “Technological Challenges and Current Responses in the Home Appliance Industry.” His presentation offered valuable insights into the evolving landscape of home appliance technology and the industry’s challenges.

The 2024 Spring Conference of the Thermal Engineering Division brought together 646 participants from various fields, exemplifying the scientific community's global reach and collaborative spirit. These diverse perspectives enriched the discussions and fostered an environment ripe for interdisciplinary insights and cross-border collaborations. The focal point of the conference lay in the multitude of papers and presentations that encapsulated the cutting edge of thermal engineering. An impressive total of 346 papers were presented, showcasing a depth of ongoing research efforts in the field of energy storage, heat and mass transfer, fuel cells, phase change heat transfer, thermal system control/measurement, conduction/radiation heat dissipation technology, and refrigeration and cryogenic technology. Furthermore, Professor Man Yeong Ha from Pusan National University and Professor Minsung Kim from Chung-Ang University were honored with the Thermal Engineering Academic Award. Additionally, Professor Dong In Yu from Pukyung National University and Professor Moon Soo Park from Sungkyunkwan University received the Young Researcher Awards.

Five informative lectures functioned as foundational sources of knowledge, delving into fundamental aspects of thermal engineering, disseminating invaluable insights, and stimulating discussions on critical topics. The conference featured an impressive lineup of eight keynote speeches, each representing a reservoir of wisdom that steered participants through the forefront of innovation and technological advancements within the field.

Moreover, four special sessions facilitated profound insights and fostered engaging debates, contributing significantly to the scholarly discourse in thermal engineering and two short courses were opened. A total of 346 oral and poster presentations offered a dynamic platform enabling researchers to effectively communicate their findings, exchange ideas, and gain invaluable feedback from their peers.

2. Future Development Workshop 2024: Advances in Thermal Engineering

Professor, Taesung Kim, School of Mech. Eng., Sungkyunkwan University, tkim@skku.edu

The Future Development Committee held its annual workshop at Pukyong National University from August 30 to 31, 2024. The workshop featured eight invited talks from academia, industry, and a national laboratory. It aimed to build a strong global network that supports state-of-the-art research in thermal engineering. The workshop also aimed to address the growing global demand for energy and explore sustainable solutions for efficient energy supply and consumption.

Professor Taesung Kim of Sungkyunkwan University, Vice Chairman of the Thermal Engineering Division and Chairman of the Future Development Committee, delivered the opening address. Professor Jae Sung Yun from the University of Surrey in the UK presented research on halide perovskite solar cells for next-generation space photovoltaics. Professor Soonwook Hong from Chonnam National University discussed the fabrication and characterization of solid oxide fuel cells using thin film deposition processes such as atomic layer deposition. Professor Doojoon Jang from Sungkyunkwan University presented findings on intrinsically stretchable, thermoelectric materials for highly sustainable thermal energy harvesting. Professor Dongchan Lee from the University of Seoul shared insights into boiling heat transfer phenomena and mechanisms in plate heat exchangers. Dr. Dong Hwan Shin and Dr. Chan Ho Song from the Korea Institute of Machinery & Materials (KIMM) introduced KIMM's ongoing research on thermal ground planes and heat pumps. Dr. Nak Hoon Kim from LG Electronics shared insights into the role of thermal engineering in consumer electronics, while Dr. Jae Yeon Kim from Hyundai Motor Company discussed challenges in future mobility and associated thermal energy systems.

The workshop provided a platform for experts to exchange knowledge on cutting-edge research in thermal engineering, laying the groundwork for future advancements in the field. The event successfully brought together renowned scholars and researchers, fostering collaboration and innovation in pursuing sustainable energy solutions.

Türkiye, Member of ICHMT (5)

1. Selected Activities of Sectoral Institutions in 2024-25: ASHRAE Turkish Chapter, TOBB HVAC Assembly, MMO, TTMD and ISIB, Atilla Biyikoglu
2. 25th Congress of Thermal Sciences and Technology (ULIBTK'25), Atilla Biyikoglu

1. Selected Activities of Sectoral Institutions in 2024-25: ASHRAE Turkish Chapter, TOBB HVAC Assembly, MMO, TTMD and ISIB

Atilla Biyikoglu, Dept. of Mech. Eng., The University of Gazi, 2024-2025 Vice-President of ASHRAE Turkish Chapter abiyik@gazi.edu.tr

ASHRAE Turkish Chapter is pleased to announce Distinguished Lecturer (DL) program on "Survival in the Digital Age: Reliability Concerns for Data Center IT Equipment and Effects on Mission Critical Facilities and Operations " by Christopher Muller and "Are VRF's Green and Sustainable?" by Farhan Mehboob onTuesday, May 13th, 2025 at the Lazzoni Hotel in Istanbul.

The TOBB HVAC Assembly is pleased to announce the 9th International Institute of Refrigeration (IIR) Conference on Sustainability and the Cold Chain (ICCC 2026) will be held in Istanbul from 12-14 April 2026. The conference, organized by IIR with the partnership of Turkish HVAC&R Exporters Association (İSİB), will serve as a vital platform for industry leaders, researchers, and practitioners to connect, exchange ideas, and explore innovative solutions to the challenges facing the modern cold chain and sustainable refrigeration sectors. The conference will focus on critical themes, including **decarbonizing**, **sustainable food and cold chains**, **reducing energy consumption**, and i**ntegrating renewable energy and heat recovery technologies**, offering actionable insights for advancing global sustainability.

The 16th National Installation Engineering Congress and the Teskon&Sodex Fair was held by MMO on April 16-19, 2025 at the Izmir MMO Tepekule Convention and Exhibition Center. The main theme this year was "Installation Engineering and Artificial Intelligence," which brought together professionals from across the industry.

TTMD was organized XVI TTMD International HVAC&R Technologies Online Symposium between 22-24 October 2024. The main theme of the Symposium is Embodied Energy and Carbon Emissions in HVAC System Design.

2. Report on 25th Congress of Thermal Sciences and Technology (ULIBTK'25)

Atilla Biyikoglu Dept. of Mech. Eng., Gazi Univ. abiyik@gazi.edu.tr

The 25th International Participation Thermal Science and Technology Congress (ULIBTK'25) will be held in Adana on 10-12 September 2025, jointly by Adana Alparslan Türkeş University of Science and Technology and Turkish Thermal Science and Technology Association.

UK, Member of ICHMT, AIHTC, EUROTHERM (3)

Report on the 18th UK Heat Transfer Conference 9-11th September 2024, University of Birmingham

Raya Al-Dadah, Francesco Coletti and Tassos Karayiannis

Report on the 18th UK Heat Transfer Conference
9-11th September 2024, University of Birmingham



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Francesco Coletti, f.coletti@hexxcell.com
Tassos Karayiannis, Tassos.Karayiannis@brunel.ac.uk

Since 1984, The UK Heat Transfer Conference is the premier forum in the UK for the local and international heat transfer community to meet, disseminate ongoing work and discuss the latest advances in the Heat Transfer field.
The 18th UK Heat Transfer Conference was hosted by the University of Birmingham, under the aegis of the UK National Heat Transfer Committee, on 9th-11th September 2024 and was chaired by Dr. Raya AL-Dadah and Co-Chaired by Dr Adriano Sciacovelli.
There were six keynote lectures:

- Professor Ji Hwan Jeong, Busan University, Korea: "Heat transfer and fluid flow in open cell porous metal structures"
- Dr Francesco Coletti, Hexxcell Ltd. and Brunel University London: "Exploring Artificial Intelligence Applications to Heat Transfer: the Good, the Bad, the Hybrid"
- Professor Matteo Bucci, Massachusetts Institute of Technology, USA: "faraway, so close: high resolution investigations of boiling heat transfer, from cryogenics to high-pressure water"
- Professor Renato Cotta, Federal University of Rio de Janeiro: "Recent progresses on fundamentals and applications of computational integral transforms in heat and fluid flow"
- Professor Peter Ireland, University of Oxford: "The thermal journey to zero carbon flight"
- Dr Marilize Everts, University College London: "The basics, beauty and benefits of mixed connective flow ".

The scientific programme consisted of more than 140 oral presentations dealing with various aspects of heat transfer, from fundamentals to applications. The conference was well attended by more than 170 candidates from national and international academic institutions and industries.
The conference included a focussed industrial session organised by the UK Heat Transfer Society and several industrial contributions, by CalGavin Limited, TWI Limited, SynchroStor Limited, Graham Hart Limited, SheCanEngineer amongst others.
The conference also included 9 special sessions on the following topics:

- Current state and advances in Nuclear Engineering-including aspects of heat transfer.
- Nuclear Thermal Hydraulics.
- Current state and advancements in Heat Pipe Devices for Smart Thermal Management of Space and Ground applications.
- Heat transfer for Net-zero Energy Production and Energy Storage.
- Latest Advances in Heat Transfer in Sorption Systems.
- Heat Pumps: Enablers of Decarbonization.

The conference received sponsorship by Hexxcell Limited (Platinum sponsor), CalGavin Limited (Platinum sponsor), E J BowmanLimited (Gold sponsor), Graham Hart (Process Technology) Limited (Gold sponsor), SynchroStor Limited (Gold sponsor) and The UK Heat Transfer Society (Gold sponsor).