ISSN: 2637-3777

No. 9 March 9, 2026

Thermal

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

$$i\hbar\frac{\partial}{\partial t}\psi(\vec{r},t) = \left(-\frac{\hbar^2}{2m}\Delta + V(\vec{r},t)\right)\psi(\vec{r},t) = H\psi(\vec{r},t)$$

Centennial of Schrödinger Equation

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
The cover design by courtesy of Begell House Inc.
Contact us: thermal@begellhouse.com


I C HMT
IHTC
Since 1951
Part 1
EUROTHERM
AMERICAN SOCIETY OF THERMAL AND FLUIDS ENGINEERS
TSE
ASIAN UNION OF THERMAL SCIENCE & ENGINEERING

EUROTHERM

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

New Eurotherm member

Professor Alfredo Soldati is the new Austrian Eurotherm Committee member. He obtained his Ph.D. at the University of Udine, in Italy, in 1993. He is Professor of Fluid Mechanics at the Technical University of Wien, Austria, since 2016, and part-time Professor at the University of Udine, where he started his career as Assistant Professor until 2002, and continued as Associate Professor until 2006, and full Professor since then. He was guest professor at École Polytechnique Federale de Lausanne, Switzerland, in 2008, and Institute Natioanl Polytechnique de Toulouse, France, in 2011. He received the ASME Robert T. Knapp Award (2007), the ASME Lewis F. Moody Award (2015) and the ASME Freeman Scholar Award (2020). He is a fellow of the American Physical Society and European Society of Mechanics, and the Rector of the International Center for Mechanical Sciences. His main research field is turbulent multiphase flows with environmental and industrial applications. He has published more than 150 papers in peer-reviewed scientific journals.

Eurotherm Seminar No. 119 - Contribution of Thermal Energy Storage towards Decarbonization

The Eurotherm Seminar No. 119 on Contribution of Thermal Energy Storage towards Decarbonization (https://eurotherm.udl.cat/) will be held in Lleida, Spain, from 13th to 15th May, 2026. This seminar will bring together researchers and practitioners from academia and industry, who are working in the rapidly expanding field of thermal energy storage (TES). The most recent trends in such areas as novel storage materials, advanced storage concepts and configurations, TES for renewable energy systems, TES in buildings and industry, use of advanced techniques such as artificial intelligence in TES, and social, environmental, and educational aspects. Theoretical, numerical, and experimental approaches will be presented for the entire range of applications, from material characterization to complete storage systems. The most recent trends in areas such as novel storage materials, advanced storage concepts and configurations, TES for renewable energy systems, TES in buildings and industry, use of advanced techniques such as artificial intelligence in TES, and social, environmental, and educational aspects will be addressed. The seminar is chaired by Prof. Luisa F. Cabeza, from the University of Lleida, Spain, Dr. Cristina Prieto, University of Sevilla, Spain, Prof. Gennady Ziskind from the Ben Gurion University of the Negev, Israel, and Prof. Michel de Paepe, from the Ghent University, Belgium. Three previous Eurotherm seminars on this subject were organized with between 150 and 200 attendees, and about the same number of attendees is also expected this year.

Eurotherm Seminar No. 120 - Nanoscale and Microscale Heat Transfer IX

The Eurothem Seminar No. 120 on Nanoscale and Microscale Heat Transfer VII (https://premc.org/nmht2026/) will be held in Berlin from 20th to 24th April, 2026. This meeting gathers researchers working on heat transport on the micro-scale and below, bridging fundamental physics with nano-devices. On the micro-scale and below, heat can be transported by phonons, electrons, and photons/polaritons. Small scales or low temperatures come with exciting scientific

questions about the relevant material parameters, or the nature of transport. The Nanoscale and Microscale Heat Transfer conference is known for addressing all of these aspects, joining experiments, theory, and simulation. For the 2026 edition, it will broaden its scope towards non-equilibrium physics and ultrafast transients typical for photo-induced heat transport. The organizing committee is constituted by Svend-Age Biehs from Carl von Ossietzky Universität, Oldenburg, Germany, Carsten Henkel, University of Potsdam, Germany, and Konstantinos Termentzidis, INSA Lyon, France. It will be the 9th edition of a European series that started in the last century in Poitiers. Previous events happened in Santorini (2016), Levi (2018), Palermo (2022), and Girona (2024). This conference is recognised by the European Physical Society funded by the German Research Foundation.

International Centre for Heat and Mass Transfer (ICHMT)

Prof. Yildiz Bayazitoglu, President
Rice University, Houston, U.S.A., bayaz@rice.edu

Prof. Ilker Tari, Secretary General
Middle East Technical University, Turkiye, ilker@ichmt.org

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 three international symposia and sponsored three in 2025. 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:

"11th International Symposium on Radiative Transfer, RAD-25", 15 - 20 June, 2025, in Korumar Hotel, Kusadasi, Turkiye. The Symposium Chairmen were 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 July 2025, in Tokyo, Japan. The Symposium Co-Chairmen were 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/. Also, see the latest report (pp. 12-19).

"International Symposium on Low-Carbon Thermal Energy Science And Technology, LCET-2025", 15-17 October 2025 in Istanbul, Turkiye. The Symposium Chairmen were 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 Co-Sponsored by ICHMT:

"10th Thermal and Fluids Engineering Conference (Hybrid), TFEC-2025", 09 - 12 March 2025, partially online virtual and in person at George Washington University, Washington, DC, USA. The Symposium Co-Chairman was Pamela Norris, University of Delaware, USA. Detailed information can be found on the Web site: https://www.astfe.org/tfec2025/

"13th Mediterranean Combustion Symposium, MCS-25", 1 June – 05 June 2025, in Corfu, Greece. The Symposium Co-Chairmen were Federico Beretta, Consiglio Nazionale delle Ricerche, Napoli, Italy; Nevin Selcuk, Middle East Technical University, Ankara, Turkiye; Mohy S. Mansour, Cairo University, Cairo, Egypt and Andrea D'Anna, Università degli Studi di Napoli Federico II, Naples, Italy. Detailed information can be found on the Web site: https://www.mcs2025.com/

"16th International Conference on Thermal Engineering Theory and Applications, ICTEA-2025", 18 June – 20 June 2025, in Bucharest, Romania. The Symposium Co-Chairmen were M. Ziad Saghir, Ryerson University, Canada; Eden Mamut, "Ovidius" University of Constantza, Romania and Tudor Prisecaru, University Politehnica of Bucharest, Romania. Detailed information can be found on the Web site: https://www.ictea.ca/

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

Meetings to be Organized by ICHMT:

"8th Micro/Nanoscale Heat & Mass Transfer International Conference (MNHMT2027)", 9-11 January, 2027, in Napoli, Italy. The Symposium General Chairman is Yogesh Jaluria, Rutgers University, USA. Program Co-Chairs are Nicola Bianco, Università degli Studi di Napoli Federico II, Italy and Oronzio Manca, Università degli Studi della Campania «Luigi Vanvitelli», Italy. Detailed information can be found on the Web site: https://www.ichmt.org/mnhmt-2027

Meetings to be Co-sponsored by ICHMT:

"11th Thermal and Fluids Engineering Conference (Hybrid), TFEC-2026", 09 - 12 March 2026, partially in person and online virtual via Zoom and Whova at Arizona State University, Tempe, AZ, USA. The Symposium Chairman is Patrick Phelan, Arizona State University, USA. The Symposium Co-Chairmen are Ryan Milcarek, Arizona State University, USA and Hamidreza Najafi, Florida Institute of Technology, USA. Detailed information can be found on the Web site: https://www.astfe.org/tfec2026

"17th International Conference on Thermal Engineering Theory and Applications, ICTEA-2026", 22 – 24 June 2026, in Valletta, Malta. The Symposium Co-Chairmen are M. Ziad Saghir, Ryerson University, Canada and C. Yousif, University of Malta, Malta. Detailed information can be found on the Web site: https://www.ictea.ca/

"18th International Heat Transfer Conference, IHTC-18", 2 – 7 August 2026, Rio de Janeiro, Brazil. The symposium Chairman is Helcio Orlande, Federal University of Rio de Janeiro, UFRJ, Brazil. The symposium Vice-Chairman is Gherhardt Ribatski, University of São Paulo, USP – São Carlos, Brazil. Detailed information can be found on the Web site: https://ihtc18.org/

"The 2nd Int. Conf. on Heat and Mass Transfer in Porous Media: Fundamentals and Applications, HMT-PM 2026", 19 – 23 October 2026, Prague, Czech Republic. The Symposium Chairmen are Kamel Hooman, Delft University of Technology, The Netherlands; Moghtada Mobedi, Shizuoka University, Japan; W. Q. TAO, Xi'an Jiaotong University, China and Michal Schmirler, CTU in Prague, Czech Republic. Detailed information can be found on the Web site: https://hmt-pm2026.fs.cvut.cz/

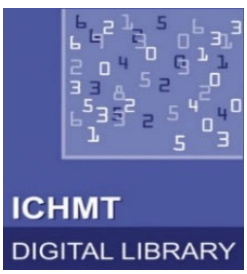
Officers of ICHMT

Executive Committee 1.1.2026 - 31.12.2026		
President		
Yildiz BAYAZITOGLU United States of America		
Vice Presidents		
Peter STEPHAN Germany	Hideo YOSHIDA Japan	
Secretary General		
Ilker TARI Turkiye		
Executive Committee Chairman	**Executive Committee Vice Chairman**	
Leonid DOMBROVSKY Russia	Brent WEBB United States of America	
Elected Executive Committee Members		
Pedro Jorge Martins COELHO Portugal	Siaka DEMBELE U.K.	Paolo DI MARCO Italy
Leonid DOMBROVSKY Russia	Abel HERNANDEZ-GUERRERO Mexico	Denis LEMONNIER France
Wojciech LIPINSKI Poland	Shigenao MARUYAMA Japan	M. Pinar MENGÜÇ Turkey
Abdulmajeed MOHAMAD Canada	Hélcio R. B. ORLANDE Brazil	Jacques PADET France
Aldo STEINFELD Switzerland	Qiuwang WANG China	Brent WEBB United States of America
Financial Auditors		
Kyle DAUN Canada	Yogesh JALURIA United States of America	Mikhail A. SHEREMET Russia
Past Presidents who are ex-officio voting members of the Executive Committee		
Kemal HANJALIC Bosnia Herzegovina	Terrence (Terry) SIMON United States of America	

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



Prompt Announcement: New Symposium organized by ICHMT

AdvEnMaT-26 – Advances in Energy Materials & Technologies

DATE : 21-23 October 2026
LOCATION : FMV Işık University, Şile, Istanbul, Turkey

OBJECTIVE

The scientific goal of this conference is to advance research and collaboration in energy and materials science by bringing together experts working on energy storage, energy conversion, sustainable materials, and intelligent technologies. There is a strong global need for efficient, reliable, and sustainable energy solutions. Developing advanced materials and high-performance devices is essential for addressing energy transition, climate change, and resource challenges. Rapid progress in batteries, supercapacitors, photovoltaics, hydrogen technologies, and low-dimensional materials makes this topic both highly important and timely. The conference is motivated by the need to connect fundamental research, such as defect engineering and advanced characterization, with practical applications and industrial implementation. It aims to foster interdisciplinary collaboration and accelerate innovation in energy materials and technologies.

CONTENTS

Advanced Energy Storage: Batteries (Li/Na-ion, solid-state), supercapacitors, redox-flow systems, hydrogen storage.
Energy Conversion Technologies: Photovoltaics, thermoelectrics, piezoelectric and triboelectric systems, fuel cells, electrolysis, solar fuels.
Functional & Low-Dimensional Materials: 2D materials, thin films, nanostructured materials, heterostructures, high-entropy systems, functional oxides.
Defect Engineering & Advanced Characterization: Defect physics and chemistry, spectroscopy, in situ/operando methods, charge transport, computational approaches.
Sustainable & Circular Energy Materials: Green synthesis, recycling of critical raw materials, battery second-life, lithium recovery, waste-to-value.
AI & Data-Driven Energy Design: Machine learning, multiscale modeling, digital optimization of materials and devices.
Industrial Applications & Energy Systems: Grid storage, electric mobility, flexible energy systems, power electronics and thermal management.

SCIENTIFIC COMMITTEE

Ilker Tari – Işık University,
Ali Taner Kuzu – Işık University
Hongwei Wu – University of Hertfordshire
Emre Erdem – Sabancı University
Ali Koşar – Sabancı University
Omid Moradi – Sabancı University
İpek Deniz Yıldırım – Sabancı University
Morteza Ghorbani – Sabancı University
Mina Namvari – SUNUM
Alp Yürüm – Sabancı University
Selmiye Gürsel Alkan – Sabancı

The website will be shortly available. Contact us: Ilker Tari, ilker@ichmt.org

Assembly for International Heat Transfer Conferences (AIHTC)

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

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

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. 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.

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. IHTC-18 will be held at the Conference Center of the Windsor Hotel Complex in Barra da Tijuca (see **Figure 1**). Barra da Tijuca is a modern seaside district of Rio de Janeiro, which can be easily reached from the International and the National Airports. The Windsor Hotel reservation website, with discounts for IHTC-18 participants, can be accessed at https://ihtc18.org/venue/.

Figure 1. Windsor Barra da Tijuca Hotel and Conference Center

Besides traditional award ceremonies and related Plenary Lectures, the IHTC-18 program counts with:
(i) 32 Keynote Lectures given by prominent scientists from 18 different countries (https://ihtc18.org/keynote-speakers/);
(ii) 8 Panel Discussions on important topics nowadays (https://ihtc18.org/panel-discussions/);
(iii) Presentations of regular papers accepted in a peer review process.

The review process of regular papers is conducted by the IHTC-18 Regional Editors (https://ihtc18.org/regional-editors/), who were appointed by the AIHTC Representative National Organizations. The review process is expected to be finished by March 1, 2026, and final papers need to be submitted by April 10, 2026. The number of submitted abstracts of regular papers was 898, which resulted in 595 submitted draft papers (currently under review). Abstracts were received from 47 different countries. The distribution of abstracts submitted per country (10 countries with most submissions) is presented in **Figure 2**.

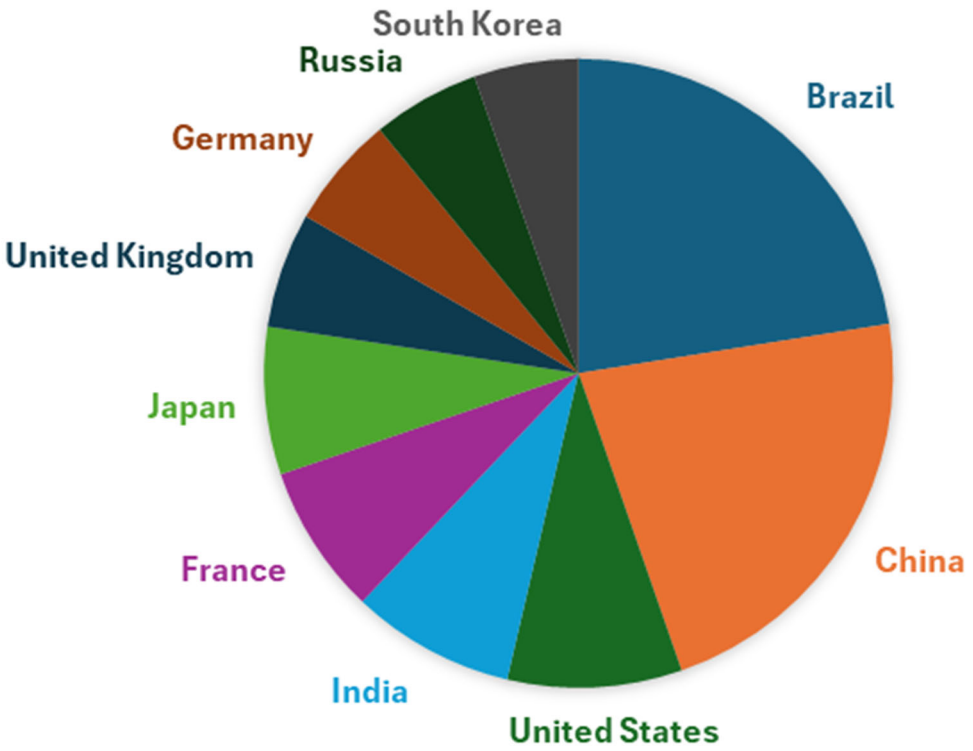


Figure 2. Distribution of abstracts submitted to IHTC-18 (10 countries with most submissions)

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/).

Table 1 shows the registration fees. Early-bird fees apply to registrations paid until June 5, 2026. At least one author needs to be registered by July 3, 2026 for the paper to be included in the proceedings and in the conference program. Each paid registration fee 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. Registration and fee payment are made at the author's area of the conference submission system. Payment can be made by bank transfer, credit card (a link is provided by the system) or via PayPal.

Table 1: IHTC-18 Registration Fees

Category	Early-Bird (until June 5, 2026)	Regular
Professionals (US Dollars)	$ 900	$ 1000
Students (US Dollars)	$ 550	$ 650

The IHTC-18 Organizing Committee has been successful in applications of financial support from two agencies of the Brazilian Government: CNPq, from the Ministry of Science and Technology, and CAPES, from the Ministry of Education. Additional proposals have been submitted to other Brazilian official agencies, and several potential sponsors/exhibitors have been contacted.

American Society of Thermal and Fluids Engineers (ASTFE)

Prof. Lorenzo Cremaschi, President
Auburn University, Auburn, Alabama, U.S.A.

Prof. Nesrin Ozalp, Executive Committee Vice Chair
Illinois State University, Normal, Illinois, U.S.A

Ms. Anastasia Paulsen, Managing Director
ASTFE, Danbury, Connecticut, U.S.A.

The 11th Thermal and Fluids Engineering Conference (TFEC 2026)

The 11th TFEC will be held in hybrid mode during March 9-12, 2026, at Arizona State University, Tempe, AZ, USA. The conference chair is Dr. Patrick Phelan, and the two co-chairs are Dr. Ryan Milcarek and Dr. Hamidreza Najafi. The Executive Committee Conference Liaison is Dr. Nesrin Ozalp. The technical program chair is Dr. Huseyin Bostanci, and the co-chair is Dr. Tianyu Yang.

The organizers developed a highly successful and rich conference, featuring 195 papers and abstract presentations conducted in person, and 54 virtual presentations. Overall, the speakers represented more than 30 countries. The conference program on Monday will include three courses: “Course on Fundamentals and Applications of Machine Learning in Thermal Management and Heat Transfer Technologies” presented by Dr. Van Carey; “Course on Modeling and Simulation of Heat Transfer and Thermofluidic Systems with Simscape Fluids” presented by Drs. Mehdi Vahap and Jon Loftin, and “Course on Introduction to Modern Computational Fluid Dynamics” by Dr. Akshai Runchal.

Plenary speakers include Dr. Suresh Garimella, President of University of Arizona, Matt Kapoupek, Vice President – Carbon Capture and Storage of Archer-Daniels-Midland Company (ADM), and Amit Sharma, Managing Director and CEO of Tata Consulting Engineers Limited (TCE). Keynote speakers include Ernest Chua Kian Jon from National University of Singapore, Srinivas Garimella from Georgia Institute of Technology, Jay P. Gore from Purdue University, Herb Hayden from Southwest Solar Technology, LLC, Sung Jin Kim from Korea Advanced Institute of Science & Technology, Nenad Miljkovic from University of Illinois at Urbana-Champaign, Karma Sawyer from Pacific Northwest National Laboratory and Kyle Squires from Arizona State University.
TEC - Technology, Entrepreneurship, Communications – Talks presentations will feature science, innovations and entrepreneurship for major topics on energy, water, environment and other forefront ideas. TEC Talks speakers include Hadi Ghasemi from University of Houston, Amy Marconnet from Purdue University, Xiulin Ruan from Purdue University, and J. Rene Villalobos from FreshKube Inc.

Each morning, the conference will begin with a plenary speaker presentation. Panels with speakers from academia, industries and government agencies will follow the plenary presentation and then concurrent technical presentation sessions will take place. The afternoons will begin with two concurrent keynote sessions as well as the TEC-talk session. The Wednesday luncheon will include a keynote talk “Scaling Excellence: Lessons from Designing a Comprehensive Engineering Enterprise” by Dean Kyle Squires, from Arizona State University. Following by the awards ceremony to recognize the newly elected ASTFE Fellows, the Thermal and Fluids Engineering Award, the Early Career Researcher Award, and the TFEC2026 best papers, best posters, and best reviewers. The in-person sessions will end on Thursday, March 12th and Friday, March 13th the program will conclude with virtual presentations.

The 2026 Thermal and Fluids Engineering Award, the 2026 Early Career Researcher Award, and the 2026 ASTFE Fellows are shown next.

2026 Thermal and Fluids Engineering Award

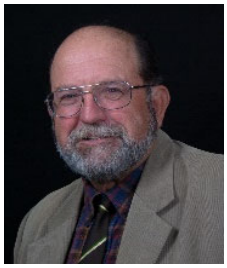
Dr. Vish Prasad
Professor,
Mechanical Engineering
University of North Texas
Denton, Texas, U.S.A.
"*For pioneering contributions to heat transfer in porous media, convective heat transfer, materials process modeling and simulation, transport phenomena of supercritical fluids, and new phase diagrams with liquid boundary and dwij point*."

2026 ASTFE Early Career Researcher Award

Dr. Kishan Bellur
Assistant Professor
Mechanical & Materials Engineering,
University of Cincinnati
Cincinnati, Ohio, U.S.A.
"*Integration of novel experiments with theory and multiscale modeling to uncover phase change physics, advancing sectors from terrestrial electronics cooling to microgravity fluid management*."

2026 ASTFE Fellows (listed in alphabetical order)

Dr. Samuel Graham
Dean of Engineering
University of Maryland,
College Park, Maryland, U.S.A.
"*For contributions in advancing thermal metrology techniques and the electro-thermal design of new Wide Bandgap electronic devices for RF, Power, and optoelectronic applications*."



Dr. Alain Jacques Kassab
Professor,
Mechanical and Aerospace Engineering
University of Central Florida
Orlando, Florida, U.S.A.
"*For contributions to inverse problems in heat transfer, advances in boundary elements and meshless methods in heat transfer and fluid flow, and developments in numerical modeling in congenital heart disease*."

Dr. Zhuomin Zhang
J. Erskine Love, Jr. Professor
George W. Woodruff School of Mechanical Engineering
Georgia Institute of Technology
Atlanta, Georgia, U.S.A.
"*For his pioneering contributions to the research and education of nanoscale heat transfer and near-field radiative heat transfer, and for his outstanding service and leadership in the field of thermal science and engineering*."

Dr. Yi Zheng
Associate Professor,
Department of Mechanical and Industrial Engineering
Northeastern University
Boston, Massachusetts, U.S.A.
"*For advances micro/nanoscale radiative heat transfer via functional energy materials and metamaterials, energy storage, and solar desalination for efficient, sustainable energy systems*."

11th International Symposium on Turbulence, Heat and Mass Transfer – THMT-25

Kazuhiko Suga, Mamoru Tanahashi and Kaoru Iwamoto



Kazuhiko Suga, Organizing Committee Chair; President, Heat Transfer Society of Japan; Professor Emeritus, Osaka Metropolitan University, Japan; Professor, Otemon Gakuin University, Japan, suga@omu.ac.jp

Mamoru Tanahashi, Organizing Committee Co-Chair; Vice-President, Heat Transfer Society of Japan; Vice-President, Combustion Society of Japan; Professor, Institute of Science Tokyo, Japan, tanahashi.m.9ca4@m.isct.ac.jp

Kaoru Iwamoto, Organizing Committee Secretary; Professor, Tokyo University of Agriculture and Technology, Japan, iwamotok@cc.tuat.ac.jp

1. Scope and Profile

The THMT symposium series is a triennial event organized by the International Centre for Heat and Mass Transfer (ICHMT). The series originated in 1982 as a joint ICHMT/IUTAM Symposium on Structure of Turbulence, Heat and Mass Transfer in Dubrovnik. The event was subsequently revived in 1994, with subsequent events held in Lisbon, Portugal (1994), Delft, The Netherlands (1997), Nagoya, Japan (2000), Antalya, Turkey (2003), Dubrovnik, Croatia (2006), Rome, Italy (2009), Palermo, Italy (2012), Sarajevo, Bosnia & Herzegovina (2015), and Rio de Janeiro, Brazil (2018). The 10th symposium (THMT-23) was held in Rome, Italy, in 2023.

The 11th symposium, THMT-25, took place in Tokyo, Japan, in 2025. Over the past 40 years, the event has evolved into a major ICHMT conference series, attracting a large number of attendees of different specialties and vocations. Despite decades of development, the science and engineering of heat and mass transfer is continuously being confronted with ever new challenges. The focus remains on multiple facets of heat and mass transfer, including those directly related to actual issues in sustainable development and climate change mitigation, as well as in bio and medical engineering. Recent scale expansion has been witnessed towards micro and nano scales and towards mega and giga scales encountered in the atmosphere, oceans, Earth interior, and outer space.

2. Organization and Committees

The event was sponsored by the International Centre for Heat and Mass Transfer and the Heat Transfer Society of Japan (HTSJ). Special thanks were extended to the Attendees & Session Chairs, the OC, EC, Paper Committee, Scientific Advisory Committee, and the student staff members.

2.1 Organizing/Executive Committees (OC/EC)

Role	Name and Affiliation
Chairman, THMT Organizing Committee	Kazuhiko Suga (President, HTSJ; Professor Emeritus, Osaka Metropolitan University, Japan; Professor, Otemon Gakuin University, Japan)
Co-Chairman, OC & Chairman, EC	Mamoru Tanahashi (Vice-President, HTSJ & Combustion Society of Japan; Professor, Institute of Science Tokyo, Japan)
Founding Honorary Chair	Kemo Hanjalić (Delft University of Technology, The Netherlands)
Secretary General (OC-Secretary)	Kaoru Iwamoto (Tokyo University of Agriculture and Technology, Japan)
Treasurer	Hirofumi Hattori (Nagoya Institute of Technology, Japan)
SAC Secretaries	Yosuke Hasegawa (The University of Tokyo, Japan) and Paolo Venturini (Sapienza University of Rome, Italy)
Web Manager	Takahiro Tsukahara (Tokyo University of Science, Japan)
OC Members	S. Benhamadouche (EDF Paris, France), D. Borello (Sapienza, University of Rome, Italy), T. J. Craft (The University of Manchester, UK), S. Girimaji (Texas A & M University, USA), W.-X. Huang (Tsinghua University, China), S. Jakirlić (Darmstadt University of Technology, Germany), R. Manceau (CNRS-University of Pau, France), S. V. Poroseva (University of New Mexico, USA), A.P. Silva Freire (Federal University of Rio de Janeiro, Brazil), R. Vinuesa (KTH Royal Institute of Technology, Sweden), B.-C. Wang (University of Manitoba, Canada)
EC Members	H. Mamori, Y. Kuwata, S. Hara, Y. Nabae, R. Araki (Various Japanese Institutions)

2.2 Scientific Advisory Committee (SAC)

The SAC included secretaries Y. Hasegawa (Asia/Pacific) and P. Venturini (Europe/America). Other members included V. Armenio, B. Basara, D. Bergstrom, B.J. Boersma, C. Casciola, H. Choi, A. Corsini, R. Cotta, L. Davidson, M. Fairweather, S. Fu, M. Hadžiabdić, H. Hattori, R.J.A. Howard, H. Iacovides, K. Iwamoto, S. Kenjereš, J. Klewicki, N. Kornev, S. Lardeau, J.B.R. Loureiro, H. Mamori, D. Markovich, E. Mastorakos, V. Michelassi, R. Mullyadzhanov, H. Nakamura, B. Niceno, M. Popovac, M. Van Reeuwijk, F. Rispoli, G.P. Romano, B. Rosic, S. Sarkar, R. Sandberg, E. Serre, J. Sesterhenn, A. Soldati, H.J. Sung, J.S. Szmyd, A. Tomboulides, T. Tsukahara, L. Vervisch, S. Wallin and X. Zhang.

3. Program Structure and Statistics

3.1 Paper Submissions and Presentations

The paper selection process led to the following statistics:

Item	Count	Notes
Extended Abstract Submission	285	
Abstracts Accepted for Oral Presentations	228	80% of submitted abstracts
Abstracts Accepted for Poster Presentations	40	14% of submitted abstracts
Full Papers Submitted	220	
Papers in the Final Program	211	74% of submitted abstracts
Papers Presented	208	Presented in 44 technical sessions
Invited Plenary Lectures	6	

3.2 Invited Plenary Lectures

The symposium featured 6 Invited Plenary Speakers. Each Plenary Lecture was allocated 40 minutes for the presentation, followed by 5 minutes for Q&A and transition. The speakers and their topics included:

1. **Professor Choongsik Bae** (KAIST, Korea): *"Turbulence Enhancement using Tumble Flow in Direct-Injection Spark-Ignition (DISI) Engines"*.
2. **Professor Nicholas Hutchins** (The University of Melbourne, Australia): *"Reynolds Analogy in Wall bounded Turbulence"*.
3. **Professor Dirk Lucas** (HZDR - Helmholtz-Zentrum Dresden-Rossendorf, Germany): *"3D Lagrangian Aspects of Bubbly Flows: Measurement, Turbulence and Collective Behavior"*.
4. **Professor Beverley J. McKeon** (Stanford University, USA): *"Prediction of turbulent flows: recent advances in low-order modeling of rough wall flows"*.
5. **Professor Osamu Nakabeppu** (Meiji University, Japan): *"Heat and Mass Transfer Measurement using Thin Film Sensors"*.
6. **Professor Nesrin Özalp** (Illinois State University, USA): *"Modeling and Design Optimization of a Supersonic Turbomachinery-Integrated Solar Reactor for Hydrogen Production"*.

As a token of appreciation, commemorative gifts were provided to the Plenary Speakers. These gifts were memorial crystals, each engraved with the speaker's name and the title of their lecture.

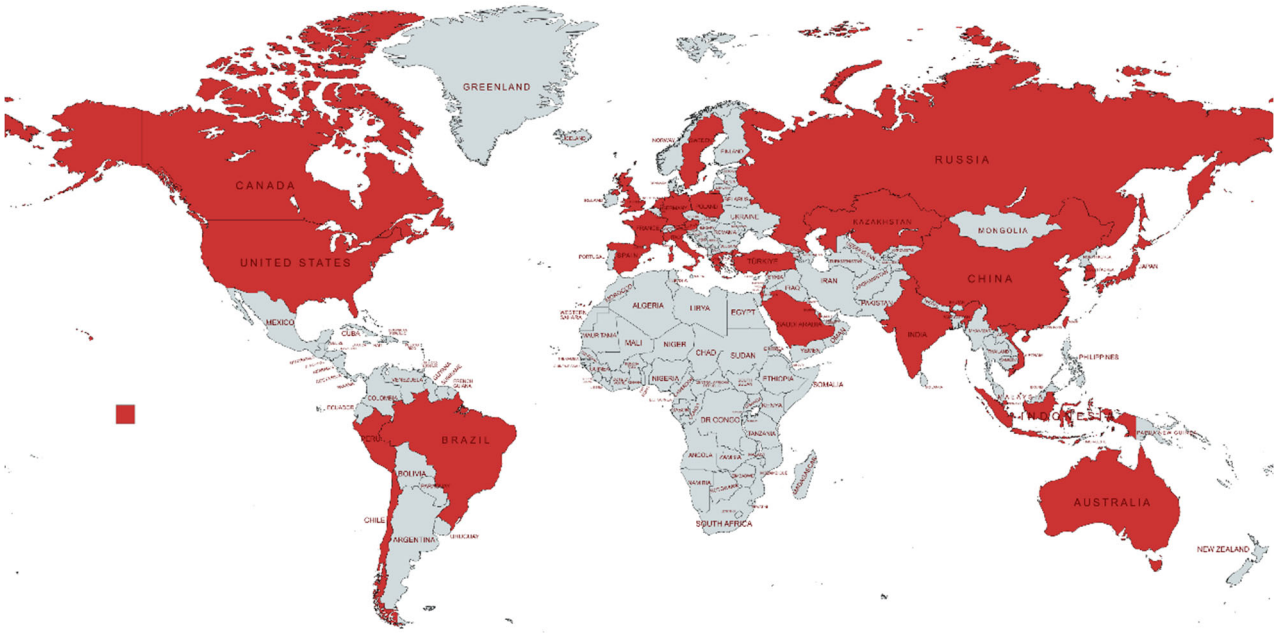
3.3 Oral Presentation Format

Each oral presentation was allocated 20 minutes, divided into 15 minutes for the talk, 4 minutes for Q&A, and 1 minute for speaker transition. Presenters were provided with a projector and an HDMI cable but were requested to bring their own laptop computers and any necessary adapters. Bell signals were used for timing: the first bell at 12 minutes, the second bell at 15 minutes (end of presentation), and the third bell at 19 minutes (end of Q&A).

3.4 Participation by Country

THMT-25 attracted 306 participants from 32 countries.

Country	Participants	Country	Participants
Japan	85	Netherlands	8
China	56	Spain	7
Canada	20	UK	7
Italy	19	India	5
France	16	Poland	4
Taiwan	14	Israel	3
Germany	13	Brazil	3
Korea	10	Hong Kong	3
USA	9	Kazakhstan	3
Other Countries	21	Includes Russia (3), US Islands (2), Peru (2), Viet Nam (2), Austria (2), Sweden (2), Australia (1), Chile (1), Greece (1), Indonesia (1), Qatar (1), Saudi Arabia (1), Singapore (1), Turkey (1)	



4. Venue and Social Events

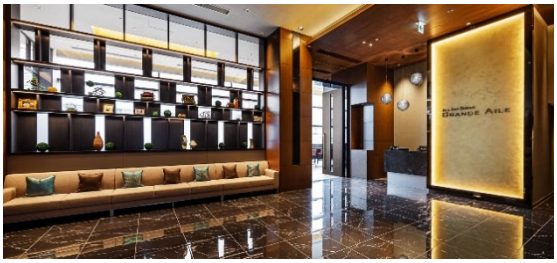
The conference was held in Tokyo, Japan, primarily at the Bellesalle Ariake Conference Center.

4.1 Registration and Welcome Reception

Registration was open on Monday, July 21 (16:00–19:30) at the Lobby of Hotel Villa Fontaine Grand Tokyo Ariake, which was also the location of the Welcome Reception. Registration continued from Tuesday, July 22, to Friday, July 25, at the Bellesalle Ariake Conference Center.

During registration, participants received their Name Tags (Name Holders), and the printed Program Booklet. The Program Booklet included information on accessing the online program and full paper PDFs (excluding the password) at the end of the booklet.

The Welcome Reception took place on Monday, July 21, from 16:30–19:30, at the All Day Dining GRANDE AILE within the Hotel Villa Fontaine Grand Tokyo Ariake. The reception offered attendees a lively social experience, featuring all-you-can-drink beverages, including alcohol, alongside an extensive buffet of Japanese and Western cuisine. The Japanese selection specifically included sashimi and seafood bowls.




4.2 Conference Banquet

The Gala Dinner (Banquet) was held on Wednesday, July 23, at the Hotel Chinzanso Tokyo. Shuttle bus transportation was provided from the conference venue to the banquet location. The banquet was included in all full conference registrations, and accompanying person tickets could be purchased for 38,500 JPY.

The evening began with guests viewing the Chinzanso Tokyo's famous "Sea of Clouds" (Unkai). Following this, a champagne welcome drink was served, accompanied by a duet performance featuring the violin and koto (Japanese harp). Dinner consisted of a full course of fusion cuisine combining Japanese and Western dishes. The event concluded with an energetic performance of Yosakoi dance.






4.3 Daily Catering and Activities

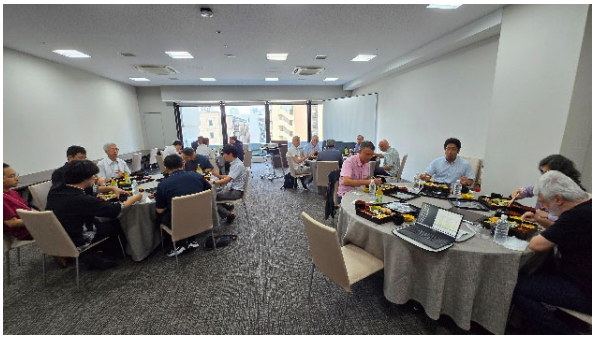
Coffee and refreshments were available in ROOM 9 and the Foyer. Meal coupons were distributed at registration, usable as cash at 31 eligible restaurants and cafés located on the 5th floor of Ariake Garden. Available cuisines included conveyor belt sushi, hamburgers, Japanese food, shabu-shabu, German cuisine, Chinese cuisine, okonomiyaki, yakiniku, ramen, and Indian/Thai cuisine.

A **Group Photo** of all participants was taken before lunch on July 23.

4.4 Special Dinners and Luncheons

Special Dinner (July 22): This special dinner was organized for the Plenary Speakers, Organizing Committee (OC), and Executive Committee (EC). The primary objectives were to host these key conference members and, as an internal discussion, to discuss the location of the next symposium, THMT-27. The dinner was held in the Ginza district. Attendees enjoyed a traditional Shabu-shabu experience, with a vegetarian option prepared.

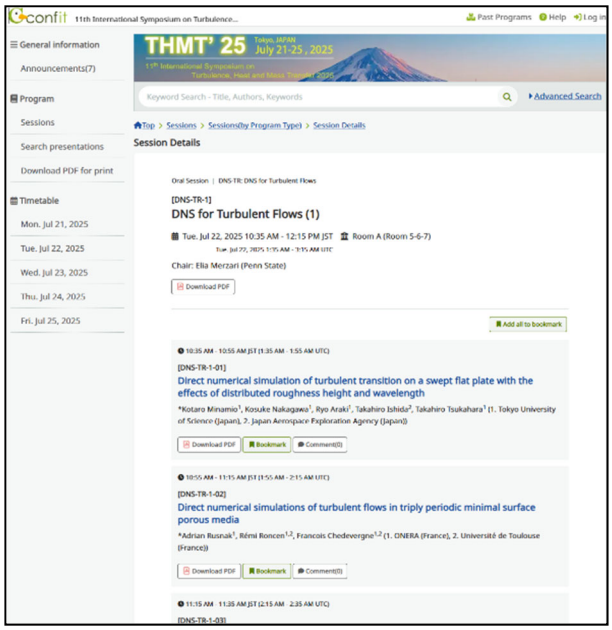
SAC Luncheon (July 24): This special luncheon was held for members of the Scientific Advisory Committee (SAC), Organizing Committee (OC), and Executive Committee (EC). The primary objective of the luncheon was to discuss the future development of the THMT symposium series in a relaxed and informal atmosphere. The attendees were served a premium Sukiyaki meal at ROOM 3 of the Bellesalle Ariake Conference Center.



5. Proceedings and Next Symposium (THMT-27)

5.1 Proceedings

No hardcover conference book was published for THMT-25. Digital proceedings were published by Begell House Inc., the publisher for all previous proceedings. Access to the online program and full paper PDFs was available through the Confit platform limited to registered participants.



5.2 Next Symposium

The 12th International Symposium on Turbulence, Heat and Mass Transfer (THMT-27) was announced during the closing ceremony.

- **Location:** Niagara Falls, Canada.
- **Date (Tentative):** June 16–19, 2027.
- **Host:** University of Manitoba.
- **Venue (Tentative):** Convention Center.

Niagara Falls is 120 km from the Toronto Airport, with transportation options including a shuttle bus ($10 per person), train ($30 per person), or taxi.


Europe
The Americas
Asia
Part 2
Africa
Oceania

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					
Cyprus					
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					
41	**31**	**19**	**2**	**17**	**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

Austria, Member of ICHMT, EUROTHERM (1)

Centennial of Schrödinger Equation
Stephan Sponar

Centennial of Schrödinger Equation

Privatdoz. Dipl.-Ing. Dr.techn. Stephan Sponar
Atominstitut, TU Wien, Vienna, Austria
stephan.sponar@tuwien.ac.at

Erwin Schrödinger's famous, beautiful and well-known wave equation is, without any doubt, at the very hard of modern quantum mechanics and has revolutionized the understanding of nature for generations of physicists and future physicists. It was exactly 100 years ago that Schrödinger submitted his seminal paper "Quantisierung als Eigenwertproblem (Erste Mitteilung)" ("Quantisation as an Eigenvalue Problem, Part I") to "Annalen der Physik" on January 27 th in the year 1926 – the rest is history [1].

Villa Dr. Herwig in Arosa, Switzerland

The location of this epochal discovery was Arosa, an Alpine "Kurort" in Switzerland, located at an altitude at of roughly 1800 meter over sea, close to the great peak of the Weisshorn. In this beautiful location Erwin Schrödinger spent his Christmas holidays 1925/26. Instead of skiing *Erwin Schrödinger* there laid the foundation of his so-called wave-mechanics, described by the (time dependent) Schrödinger equation, named after him, denoted as

$$\mathrm{i}\hbar\frac{\partial}{\partial t}\psi(\vec{r},t) = \left(-\frac{\hbar^2}{2m}\Delta + V(\vec{r},t)\right)\psi(\vec{r},t) = H\psi(\vec{r},t)$$

Here the operator H denotes the Hamiltonian of the system, $\hbar$ is the reduced Plank constant, m is the mass of the particle. The solution $\psi(r, t)$ is referred to as wave function, containing all physical information of the system under investigation. The physical interpretation of the wave function, as

expressed by Max Born, is the following: “the probability of finding a particle in a certain region of space (a.k.a. interval) is given by the wavefunction's squared modulus within this interval”. The question whether the wave function itself is a real physical object or just a mathematical tool to calculate probabilities is a subject of heated debates up to date [2]. Initial point of his wave approach was Schrödinger’s dissatisfaction with the, from his point of view, unfounded, quantum condition in Niels Bohr’s orbit theory [3].

Schrödinger’s wave mechanics provided a new way to describe physical systems at the atomic scale, for instance a Hydrogen atom, by identifying the allowed energies as eigenvalues of the Schrödinger equation. Schrödinger’s work paved the way for a wide range of modern technologies, ranging from semiconductors and lasers to emerging quantum devices and quantum sensors, used in quantum information processing and quantum communication.

Erwin Schrödinger 1933

There is a close relation between Schrödinger’s wave-mechanic and Heisenberg’s matrix mechanics developed by Werner Heisenberg, Max Born, and Pascual Jordan in 1925 [4]. Heisenberg’s theory was actually the first complete physical description of an arbitrary quantum system. Heisenberg’s matrix mechanics describes the temporal change, or time evolution, of matrices accounting for the system’s observables (physical quantities of interest). Therefore, Heisenberg’s Matrix mechanics is significantly closer to classical mechanics compared to Erwin Schrödinger's wave mechanics, which is a more abstract but compact description that has nevertheless prevailed. In Schrödinger’s wave mechanics, time evolution is governed by the wave function or the state vector of the system; the observables (e.g. position and momentum) are time-independent. Only through the measurement process – the interaction of the wave function and the observable –the actual measured value determined. In other words; during the quantum measurement process “reality is created”, in the sense of the Copenhagen school of Niels Bohr, Werner Heisenberg and Wolfgang Pauli. Not much later Schrödinger was also able to mathematically prove the full equivalence between his wave mechanics and Heisenberg’s matrix mechanics, demonstrating that two seemingly different formalisms described the very same underlying quantum physic.

Erwin Schrödinger was born on August 12, 1887, in Vienna, as the only child of Rudolf Schrödinger a botanist, and Georgine Emilia Brenda Bauer, the daughter of a chemistry professor at TU Wien. His wide spectrum of different interests dated already from his high school years ranging from scientific disciplines, where he participated in various coemptions, to the logic of ancient grammar and poetry.

After finishing high school Schrödinger became a student at the University of Vienna from 1906 to 1910. During that time, he came under the strong influence of Fritz Hasenöhrl, who was Ludwig Boltzmann's successor, and developed interest in eigenvalue problems in the physics of continuous media, laying the foundation for his ground breaking theory years later. During the World War I Erwin Schrödinger served as a commissioned officer in the Austrian fortress artillery. In 1921, Schrödinger moved to Zurich, Switzerland where he was offered an academic position as assistant of Max Wien. This position was followed by employments at Stuttgart as an extraordinary professor, Breslau as ordinary professor, and then again at the University of Zurich replacing Max von Laue. It was during this period in Schrödinger's scientific career when he made his great discovery the wave mechanic, for which he was awarded the Nobel Prize for physics in 1933, shared with Paul A.M. Dirac.

Annemarie and Erwin Schrödinger's gravesite (Alpbach, Tyrol Austria)
including Schrödinger equation

In 1927 Schrödinger succeeded Max Planck as Chair of Theoretical Physics at the University of Berlin. He held this position until the Nazi seizure of power in 1933, when he resigned his professorship in protest and emigrated to England, where he worked at Magdalen College, Oxford. However, in 1936 he returned to Austria and accepted a professorship at the University of Graz and in parallel became an honorary professor at the University of Vienna in the field of theoretical physics, until the annexation of Austria by the "German Reich" in 1938 forced him to flee again. First Schrödinger fled to Belgium in September 1938 where he was offered a visiting professorship at the University of Ghent. Only one later, in 1939, he was appointed by the then Prime Minister of Ireland, Éamon de Valera, to the newly founded Institute for Advanced Studies in Dublin, where he remained till the end of his active scientific career. After his retirement in 1956 Schrödinger returned to the now neutral Austria University of Ghent to become a "professor emeritus" at the University of Vienna. He died on the 4th of January, 1961 after a long illness.

References

[1] Schrödinger E, Quantization as a problem of proper values (Part IV), in Collected Papers on Wave Mechanics, New York, Providence, Rhode Island: AMS Chelsea Publishing, 2010, (Original: Annalen der Physik (4), vol. 81, pp. 109–139, 1926 [in German]), pp. 102–123 https://onlinelibrary.wiley.com/doi/10.1002/andp.19263861802

[2] R. Kastner, The Transactional Interpretation of Quantum Mechanics (Cambridge University Press, 2012).
[3] Bohr, N. "Atomic Theory and Mechanics1". Nature. 116 (2927): 845–852 (December 1925). Bibcode:1925Natur.116..845B. doi:10.1038/116845a0. ISSN 0028-0836
[4] W. Heisenberg, Über quantentheoretische Umdeutung kinematischer und mechanischer Beziehungen, Zeitschrift für Physik, 33, 879-893, 1925 (received July 29, 1925). [English translation in: B. L. van der Waerden, editor, Sources of Quantum Mechanics (Dover Publications, 1968) ISBN 0-486-61881-1 (English title: "Quantum-Theoretical Re-interpretation of Kinematic and Mechanical Relations")

Important locations of Schrödinger's trajectory: from 1887 (Vienna) to 1927 (Zurich)

Important locations of Schrödinger's trajectory: from 1927 (Berlin) to 1961 (Vienna)

Brazil, Member of ICHMT and AIHTC (3)

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

Helcio Orlande and Gherhardt Ribatski

Regarding IHTC-18 (August 2027), please see Part 1, AIHTC

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

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 Brazilian 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 21st edition of ENCIT will be held during November 08 to 12, 2026, in the city of Santos (https://eventos.abcm.org.br/encit2026/). Other ABCM regular events related to thermal sciences include: EPTT – The International Spring School on Transition and Turbulence, JEM – The Multiphase Flow Journey, 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 published by Springer (https://www.springer.com/journal/40430) and it is indexed in Web of Science. 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 (3)

1. Report on the 28th National and 6th International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTC-2025)
Pallippattu K. Vijayan, Hardik Kothadia and Arvind Pattamatta

2. Indian Society for Heat and Mass Transfer (ISHMT)
Pallippattu K. Vijayan and Arvind Pattamatta

1. Report on the 28th National and 6th International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTC-2025)

Pallippattu K. Vijayan, Department of Chemical Engineering, IIT Jammu, vijayan.pallippattu@iitjammu.ac.in
Hardik Kothadia, Department of Mechanical Engineering, IIT Jodhpur, hardikkothadia@iitj.ac.in
Arvind Pattamatta, Department of Mechanical Engineering, IIT Madras, arvindp@iitm.ac.in

The 28th National and 6th International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTC-2025) took place at the Indian Institute of Technology Jodhpur from December 9th to 12th, 2025. The conference is a biennial event organized by the Indian Society of Heat and Mass Transfer (ISHMT) in collaboration with the American Society of Thermal and Fluids Engineers (ASTFE). Since its inception in 1971, the conference has evolved into a prestigious platform for researchers, scientists, and industry professionals to share and discuss advancements in heat and mass transfer.

Inauguration of IHMTC-2025.

Prof. K.N. Seetharamu Medal and Prize-2025 awarded to Dr. Suvanjan Bhattacharyya, BITS Pilani

Conference Overview:
The IHMTC-2025 featured a rich program, including five (05) plenary lectures, eleven (11) keynote sessions, a n d seventy-eight (78) parallel sessions. The event focused on diverse themes related to energy, fluid flow, heat and mass transfer. The conference received a significant number of paper submissions, totaling 381 across 15 diverse themes. After a rigorous two-round review process, more than 350 papers were accepted, with an average of 2.5 reviews per paper. The 336 accepted papers were presented as oral presentations.

Prof. Arcot Ramachandran Endowment Lecture Plenary speaker, Prof. Sanjeev Chandra, University of Toronto, being felicitated.

IHMTC 2025 List of Speakers

Participation:

The conference witnessed participation with 398 delegates outside IIT Jodhpur from over 110 institutes, research organizations, and industries across India and abroad. Participants included representatives from 19 IITs, 18 NITs, and 13 central research organizations, as well as eminent universities and institutes from 9 countries. IHMTC- 2025 was supported by the Anusandhan National Research Foundation (ANRF), ATOSCOPE Instruments Pvt. Ltd., Board of Research in Nuclear Science (BRNS), and the Indian Space Research Organisation (ISRO) as Platinum sponsors and Begell House and COMSOL as Silver sponsors.

Cultural Programme

Conclusion:

The IHMTC-2025 provided a comprehensive platform for researchers and professionals in the heat and mass transfer community. The commitment to maintaining high standards in paper selection, the global participation, and the emphasis on industry collaboration underscored the success of the conference. The organizers expressed hope for a rewarding and enjoyable conference experience for all participants, highlighting the efforts made to ensure both technical enrichment and comfort. Feedback from attendees was encouraged to further enhance future conferences.

Group Photo

2. Indian Society for Heat and Mass Transfer (ISHMT)

Prof. Pallippattu K. Vijayan – President, Indian Society for Heat and Mass Transfer, Jammu Vijayan.pallippattu@iitjammu.ac.in

Prof. Arvind Pattamatta – Secretary, Indian Society for Heat and Mass Transfer, arvindp@iitm.ac.in

ISHMT Golden Jubilee Lecture Series 2025

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.

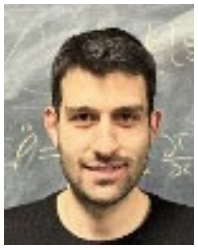
Food, Water, Comfort, Shelter: Putting heat to work, cool, clean, conserve, and preserve
Prof. Srinivas Garimella,
Georgia Institute of Technology, USA

Materials informatics for heat transfer and beyond
Prof. Junichiro Shiomi
Department of Mechanical Engineering, University of Tokyo, Japan

Swirl Cooling, a Promising Method for Cooling Gas Turbine Blades Prof. Dr.-Ing. Bernhard Weigand
Institute of Aerospace Thermodynamics, University of Stuttgart, Germany

Spacecraft environment & its effect on Thermal systems design
Dr. Venkata Raghavendra
Group Director, Thermal Systems Group, at ISRO's UR Rao Satellite Centre, India

Functional Solar Evaporators for Enhanced Clean Water Production
Dr. Daniel Orejon
Institute for Multiscale Thermofluids, School of Engineering, University of Edinburgh, UK



PINNs and Neural Operators for Heat Transfer Problems
Prof. Siavash Khodakarami
Division of Applied Mathematics, Brown University, Providence, RI, USA

PINNs and Neural Operators for Heat Transfer Problems
Prof. George Em Karniadakis
Division of Applied Mathematics, Brown University, Providence, RI, USA

ISHMT Best Ph. D thesis awards 2025

(i) Should be a member of ISHMT (ii) Thesis defense date between 1st July of the previous year to 30th June of the award year. (iii) Broad area of research: Thermal science and engineering. (iv) Synopsis of the thesis must be attached along with the Application form. (v) Application form will have information about the number of publications/patents etc. in addition to the affiliation, contact details etc. (vi) Last date for submitting the application form along with synopsis: 31st August.

Dr. Muddada Srinivasarao, IIT Kharagpur
Towards Net-Zero Emissions by Adopting MILD Combustion with Carbon-Free Fuels: Numerical and Experimental Analysis

Dr. Gautham Vadlamudi, Indian Institute of Science
Spatio-temporal Dynamics in Droplet Combustion under Diverse Flow Conditions

Japan, Member of ICHMT, AIHTC, AUTSE (6)

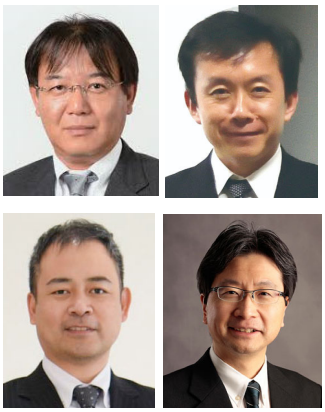
1. Report on The 62th National Heat Transfer Symposium of Japan and HTSJ International Heat Transfer Symposium

Mamoru Tanahashi, Kazuyoshi Fushinobu, Takushi Saito and Yoichi Murakami

2. Report on JSME Thermal Engineering Conference 2025

Ichiro Kano and Hiroki Gonome

1. Report on The 62th National Heat Transfer Symposium of Japan and HTSJ International Heat Transfer Symposium



Mamoru Tanahashi, Organizing Committee Chair of the 62th National Heat Transfer Symposium of Japan,
Institute of Science Tokyo, tanahashi.m.9ca4@m.isct.ac.jp
Kazuyoshi Fushinobu, Organizing Committee Chair of HTSJ International Heat Transfer Symposium,
Institute of Science Tokyo, fushinobu.k.4c25@m.isct.ac.jp
Takushi Saito, Organizing Committee Secretary General of the 62th National Heat Transfer Symposium of Japan,
Institute of Science Tokyo, saito.t.3e6c@m.isct.ac.jp
Yoichi Murakami, Organizing Committee Secretary General of HTSJ International Heat Transfer Symposium,
Institute of Science Tokyo, murakami.y.f5c0@m.isct.ac.jp

The 62nd National Heat Transfer Symposium of Japan was held at the Okinawa Convention Center in Ginowan City, Okinawa Prefecture, Japan, from Wednesday, May 14th to Saturday, May 17th, in conjunction with the HTSJ (the Heat Transfer Society of Japan) International Heat Transfer Symposium, which aims to further internationalize HTSJ. This symposium was organized by the Kanto (the region around Tokyo) branch of HTSJ. However, given the post-COVID-19 social situation, including rising prices, currency fluctuations, and increased inbound tourism, hosting the symposium in the Kanto region was expected to impose a significant burden on both organizers and participants in terms of venue and accommodation costs. For this reason, the symposium was held in Okinawa Prefecture, a remote location where the organizing committee chair and the host city are different. This was also the first time a national heat transfer symposium had been held in Okinawa Prefecture. As shown on **the map** to the right, Okinawa Prefecture is roughly equidistant from Tokyo, Japan, and Beijing, China, and is closer to Seoul, South Korea, and Taipei, Taiwan, than Tokyo.

In addition to planning the HTSJ International Symposium, we were also working on hosting other international conferences. This time, we were able to co-locate the IUTAM Symposium on Machine Learning in Diverse Fluid Mechanics (OC Chair: Professor Koji Fukagata at Keio University, and EC Chair: Professor Kaoru Iwamoto at Tokyo University of Agriculture and Technology), hosted by the International Union for Theoretical and Applied Mechanics (IUTAM), which took place from May 15th (Thurs) to 17th (Sat). This conference invited world-renowned researchers in machine learning to present the latest research results on machine learning in various fields of fluid mechanics, including heat transfer. Thanks to the generosity of the IUTAM Symposium organizers, all presentations were free for student participants of the heat transfer symposium and open to the general participants at a reduced registration fee. Furthermore, three of the invited speakers from the IUTAM Symposium also gave invited talks at the HTSJ international symposium.

The scale of this year's heat transfer symposium and international symposium is summarized below. The total number of participants was 726 (including 11 special and invited speakers), with 264 presentations at the heat transfer symposium (including one special presentation, two special corporate sessions, 12 manufacturing

sessions, and 53 best presentation award sessions) and 155 presentations at the international symposium (including 10 invited presentations), for a total of 419 presentations (see **Tables 1 & 2**). This is the highest number of presentations since the 43rd symposium (Nagoya, 2006), with 427 presentations. It is noteworthy that the number of presentations at the international symposium exceeded one-third of the total, and the presenters' nationalities were diverse, including the United States, the United Kingdom, South Korea, China, Germany, France, Portugal, and Indonesia. We believe that this international symposium will serve as an excellent opportunity to explore ways to further internationalize our HTSJ.

Fig. 1 The main lecture room and special lecture.

The special lecture at the 62nd National Heat Transfer Symposium was given by Professor Isao Sato, Emeritus Professor of Institute of Science Tokyo (**Fig. 1**). At the HTSJ International Heat Transfer Symposium, 10 internationally active researchers gave invited lectures.

Prof. Hee Chang Lim (Pusan National Univ.),
Prof. Annelies Vandersickel (DLR),
Prof. Bong Jae Lee (KAIST),
Dr. Pranowo (Yogyakarta Atma Jaya Univ.),
Prof. Amy Shen (OIST),
Prof. Hao Wang (Peking Univ.),
Dr. Jacqueline Chen (Sandia National Laboratories),
Prof. Heinz Pitsch (RWTH Aachen University),
Prof. Luis Carlos (Universidade de Aveiro),
Prof. Giovanni Giustini (University of Manchester).

The invited speakers were presented with *Kariyushi* (Okinawan dialect: auspicious) wear and a traditional Japanese *Fukusa* (silk wrapping cloth) (**Fig. 2**).

The Best Presentation Award session is positioned as a forum for young researchers and student members

Table 1 Organized sessions and number of presentations with invited presentations in ( )

OS name	62NHT	HTSJ Int.
Progress in heat transfer research with turbulence	13	(1)+3
Thermal and mass transport enhancement for thermal energy materials and systems	-	(1)+12
Radiative transfer and radiative properties	5	(1)+10
Thermal engineering on chemical process	-	(1)+12
Hydrogen, fuel cells and secondary batteries	21	6
Understanding and controlling wetting phenomena	8	(2)+18
The frontiers of combustion research	18	(2)+13
Biotransport and biothermodynamics	-	(1)+8
Recent advances in phase change phenomena and heat transfer	-	(1)+10
Total	65	(10)+92

Table 2 Geneal sessions and number of presentations

Session name	62NHT	HTSJ Int.
Boiling and condensation	16	3
Cooling of electronic devices	22	4
Forced convection	6	2
Heat pipes	10	2
Heat transfer in porous media	6	1
Mass transfer	0	2
Measurement techniques	15	0
Melting and solidification	7	3
Molecular dynamics	10	12
Multiphase flow	5	0
Natural convection	5	0
Renewable energy	3	1
Air conditioning and thermal equipment	6	9
Thermal properties	3	2
Nano/micro heat transfer	16	12
Thermoacoustics	1	0
Total	131	53

Fig. 2 Invited speakers at the HTSJ International Heat Transfer Symposium.

under the age of 28 to introduce their research, and brush up their presentation skills. This year, there were 53 entries, the highest number in recent years. The presentations were in poster format (**Fig. 3**), and seven young researchers received the Best Presentation Award.

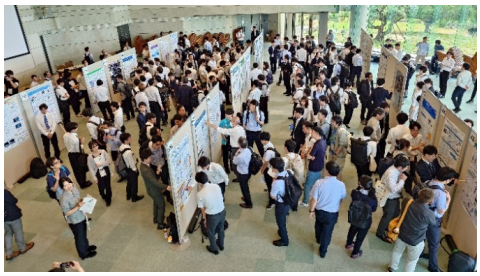


Fig.3 Best presentation award session

The banquet was held on Friday, May 16th at the Laguna Garden Hotel, which is within walking distance from the conference venue. The menu centered around Okinawan cuisine. Participants thoroughly enjoyed the menu, which included Okinawa's signature dishes such as Okinawa *soba* (buck wheat), *Jussi* (mixed rice), Okinawa *yakisoba*, and *Somen champuru*. Drinks included aged *awamori* (Okinawa's famous distilled spirits). With over 300 participants, the event was a great success (**Fig. 4**). A creative arrangement of Okinawa's traditional *Eisa* dance was also performed here, attracting the attention of attendees.

Fig. 4 Group photo at the banquet (with the Okinawan traditional dance *Eisa* team)

2. Report on JSME Thermal Engineering Conference 2025

Ichiro Kano, Organizing Committee Chair,
Yamagata University, kano@yz.yamagata-u.ac.jp
Hiroki Gonome, Organizing Committee Secretary,
Yamagata University, gonome@yz.yamagata-u.ac.jp

Thermal Engineering Conference 2025, an annual conference of the Thermal Engineering Division (TED) of the Japan Society of Mechanical Engineers (JSME), was held on October 4–5, 2025, in Yamagata City, Yamagata Prefecture, Japan. A total of 238 presentations were delivered at the conference, with 443 participants in attendance. The banquet was attended by 185 participants, including invited guests.

The conference featured 15 Organized Sessions (OS) and one General Session (GS), for a total of 16 sessions. Among them was “Thermal Engineering Collection 2025”, a special session showcasing educational videos organized by the Publications Committee.

As is customary, evaluations for the Young Researcher Presentation Awards were conducted. This year, 170 presentations were eligible for consideration. The evaluation results were submitted to the Division Awards Committee, and the final awards will be presented following formal review one year later.

Fig. 5 Presentation in progress

All sessions were well attended and fostered lively and engaging discussions (**Fig. 5**). In addition to the Organized Sessions, a General Session was also held. The OSs and the GS for this conference were as follows:

OS-1: Utilization of Unused Heat, External Combustion Engines, and Heat Pumps
OS-2: Fires and Explosions
OS-3: Thermal Management of Electronic Equipment and Devices

OS-4: Heat Transfer, Flow, and Mass Transport in Porous Media and Their Applications
OS-5: Advances in Turbulent Heat Transfer Research
OS-6: Advances in Research on Fuel Cells, Electrolysis, and Secondary Batteries
OS-7: Advances in Micro-Energy
OS-8: Thermal Engineering Approaches to Biomass Utilization
OS-9: Heat Transfer and Flow with Solidification and Melting
OS-10: Radiative Heat Transport 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-15: Thermal Engineering Collection 2025
GS: General Session

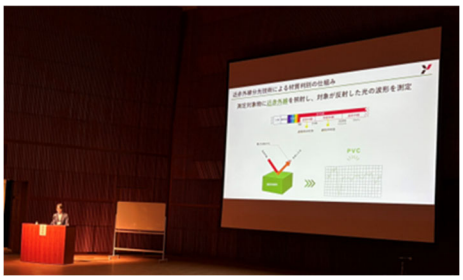


Fig. 6 Special Lecture

As a Special Lecture, Mr. Katsuhisa Todoroki, Director of Yamamoto Manufacturing Co., Ltd. (headquartered in Tendo City, Yamagata Prefecture), delivered a lecture (**Fig. 6**): “Knowing, Sorting, and Transforming: The Future of Plastic Recycling Created by ‘Plasir’”. In addition, a Thermal Engineering Workshop, organized by the Education Committee (Chair: Prof. Go Uemura, Hokkaido University), was held. Two invited lectures were presented: “What Can We Do Toward Achieving Carbon Neutrality by 2050? - Groundwater Thermal Energy Beneath Our Feet” / Speaker: Dr. Masahiko Katsuragi (Japan Groundwater Development Co., Ltd.) “Yamagata Prefecture’s Energy Strategy and Initiatives to Expand the Use of Thermal Energy” / Speaker: Mr. Nobuyuki Kasuya (Department of Environment and Energy, Yamagata Prefecture).

Following the special lectures, the Thermal Engineering Division Awards and General Division Awards Ceremony were conducted by the Division Awards Committee.

On the evening of the first day, the banquet was held (**Fig. 7**). A toast was proposed by Prof. Kazuyoshi Fushinobu, Head of the Thermal Engineering Division. Immediately after the toast, Professor Emeritus Ichiro Takahashi (art name, Kinzan Takahashi), a master performer of the Tozan-ryu *shakuhachi* school, who retired from Yamagata University in 2014, was invited to the stage to perform the *shakuhachi*. He was joined by Mr. Masahiro Yamaguchi (art name, Rinzan Yamaguchi), also a master performer of the Tozan-ryu school. Their profound and emotionally resonant performance added both dignity and warmth to the opening banquet of the conference. Later in the banquet, a traditional dance performance by Yamagata Maiko was presented with the support of a cultural promotion subsidy from Yamagata Prefecture. In the latter half of the banquet, the Thermal Engineering Collection 2025 Award Ceremony and introductions of the recipients of the Division and General Awards were held.

The Organizing Committee for this conference was not composed solely of faculty members from Yamagata University. In addition, we received extensive cooperation from faculty members of the Tohoku Branch of the Thermal Engineering Division. Associate Prof. Junnosuke Okajima of Tohoku University made significant contributions to the organization of the technical program, and Associate Prof. Takahiro Okabe of Hirosaki University provided invaluable support in the evaluation process for the Young Researcher Presentation Awards. We extend our sincere appreciation to them.

Finally, we would like to express our sincere gratitude to all members of the Organizing Committee, related parties, and especially the students who assisted with venue preparation and on-site operations, for their dedicated efforts in making the Thermal Engineering Conference 2025 a success.

Fig. 7 Banquet scenes

Mexico, Member of ICHMT (2)

Activities of the Mexican Society of Mechanical Engineers

Abel Hernandez-Guerrero and J. Luis Luviano-Ortiz

Activities of the Mexican Society of Mechanical Engineers

Abel Hernandez-Guerrero, Department of Mechanical Engineering,
University of Guanajuato, abel@ugto.mx

J. Luis Luviano-Ortiz, Department of Mechanical Engineering,
University of Guanajuato, luis.luviano@ugto.mx

Along the year the Mexican Society of Mechanical Engineers organized 33 webinars in all fields, mechanical design, manufacturing and materials, theoretical mechanics, thermal-fluids, education, etc. The webinars were well attended and were provided by experts in the field of different countries. The specific topics varied from bio-inspired design, to ChatGPT use in interpreting experimental results, to optical systems and spectroscopy for material characterization, to effect of renewable energy in electrical cars, etc. It is important to note that 1/3 of the webinars were provided by female professionals!

The annual congress was held September 24-27, at the city of Guanajuato, a beautiful and picturesque colonial town in the center of Mexico.
The congress gathered more than 500 attendees from 37 institutions/research centers/companies and there were 125 papers presented. There were top notch keynote lectures by the State Secretary of Economy ("Key issues in technological development, manufacturing and technology transfer in the world"), by a rep from the MABE company (MABE is a major Mexican multinational company that designs, produces, and distributes white goods (home appliances) to more than 70 countries worldwide. It is one of the largest appliance manufacturers in the world) giving a speech on "Design challenges, innovation and technology in the development of home appliances, from "made" in Mexico to "created" in Mexico"; by GE Vernova Gas Power "The future of energy", and by the GKN company "GKN facing the competitivity in the car engine business" (the car engine business spans high-capital manufacturing by major manufacturers like Toyota, Volkswagen, and Hyundai, to specialized aftermarket services including engine rebuilding, tuning, and repair. Key opportunities exist in performance upgrades, diagnostic services, and sustainable engine solutions. Success requires technical expertise, specialized equipment, and strong marketing to industrial or consumer clients).

During the congress there was a recognition to the professional development of 3 leading mechanical engineering researchers (note: one of the three recognitions is dedicated to a young-emerging professional).

There were 5 technical competitions to students in attendance, and 6 workshops were offered in SolidWorks, Welding Procedures, PLC, Geogebra, Coretools and TRIZ, and OpenFoam.

At the congress a big effort was carried out to incentivize the forming of student chapters to bring more professional activities throughout the country.

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

VII International Scientific and Technical Conference "Modern Power Systems and Units" (MPSU 2026)

Marek Majdak and Jan Taler

VII International Scientific and Technical Conference "Modern Power Systems and Units" (MPSU 2026)

Marek Majdak, Cracow University of Technology, Faculty of Environmental Engineering and Energy, Department of Energy, marek.majdak@pk.edu.pl
Jan Taler, corresp. member of Polish Academy of Sciences, Cracow University of Technology, Faculty of Environmental Engineering and Energy, Department of Energy, jan.taler@pk.edu.pl

VII International Scientific and Technical Conference "Modern Power Systems and Units" (MPSU 2026) will be organized by the Department of Energy of Cracow University of Technology at Cracow University of Technology from 20-22 May 2026. The MPSU 2026 conference is aimed to bring together leading researchers, policy makers and professionals from the thermal and renewable energy industry to discuss critical topics related to the energy transition.

The key topics of the MPSU 2026 will be:

Fuels and energy sources

- gasification of fuels
- co-firing of biomass and gaseous fuels
- economy and waste management
- incineration of municipal waste
- nuclear energy

Thermal energetics

- energy systems
- conventional power plants
- combustion
- nuclear technologies
- transmission of heat, gas and hot fuels
- power machines and equipment
- failure rate and diagnostics of machinery and energy management
- mathematical modeling in power engineering

Renewable energy sources

- geothermal energy
- wind energy
- hydropower
- photovoltaics
- solar collectors
- applications of renewable energy sources in buildings

Economic, ecological, social and legal aspects of energy conversion and use

- macroeconomic forecasts for economic development and energy demand
- costs of obtaining energy and its supply
- market systems in the energy sector

- establishing and approving tariffs
- market investment methods in power generation and transmission
- the impact of energy on the environment
- development of energy systems in market conditions
- rationalization of energy consumption
- intelligent energy systems
- the use of microgeneration

Basic energy problems

The MPSU 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.

The conference Chairs are:
1. Prof. Dr. Jan Taler, Corresponding Member of the Polish Academy of Sciences, Head of the Department of Energy, Faculty of Environmental Engineering and Energy – Head of the Scientific Committee of the MPSU 2026 Conference
2. Prof. Wiesław Zima, Department of Energy, Faculty of Environmental Engineering and Energy – Organiser of the MPSU 2026 Conference, Head of the Organizing Committee of the MPSU 2026 Conference
Secretary of the Organizing Committee of the MPSU 2026 Conference is Marek Majdak, PhD, Department of Energy, Cracow University of Technology, Faculty of Environmental Engineering and Energy

Seven plenary papers will be presented at the conference, by leading national and international energy specialists:
1. Geothermal energy utilization: an overview with emphasis on modelling challenges, **Ali Cemal Benim**, Duesseldorf University of Applied Sciences, Germany
2. Advances in flow boiling in small to microscale heat exchangers for cooling electronics, **Tassos Karayiannis**, Brunel University, United Kingdom
3. Smart Renewable Energy Systems in the Era of Climate Neutral Societies, **Henrik Lund**, Aalborg University, Denmark
4. The necessity of integrating novel dimensionless parameters with ANN for improved correlations: an application to heat and fluid flow in 3D Lattice Metal Frames, **Moghtada Mobedi**, Shizuoka University, Japan
5. Photovoltaic technologies and performance improvement by use of phase change materials, **Sandro Nižetić**, University of Split, Croatia
6. Carbon capture and storage and its role in decarbonization of the energy system, **Lars Nord**, Norwegian University of Science and Technology, Norway
7. Local Spatial Convective Heat Transfer Coefficient: Toward Optimized Design of Heat Transfer Systems, **Qiuwang Wang**, Xi'an Jiaotong University, China

South Africa, Member of AIHTC (4)

7th African Conference on Computational Mechanics AfriComp 7

Sebastian Skatulla

7h African Conference on Computational Mechanics (AfriComp 7)

Sebastian Skatulla: Department of Civil Engineering, University of Cape Town, Sebastian.skatulla@uct.ac.za

7th African Conference on Computational Mechanics (AfriComp 7) was held from 25 to 27 February 2026 at University of Cape Town Graduate School of Business in Cape Town.

The African Conference on Computational Mechanics (AfriComp) is a conference series with the main objective of providing a forum for researchers from academia and industry and students in computational mechanics on the African continent to interact with members of the computational mechanics community from around the world. In this way the conference series is seen as a key initiative aimed at promoting computational mechanics in Africa. Whereas the inaugural AfriComp has been held in Sun City (South Africa), the conference series meanwhile found its home in Cape Town. It is organized by the University of Cape Town under the auspices of the South African Association for Theoretical and Applied Mechanics (SAAM), the European Community on Computational Methods in Applied Sciences (ECCOMAS) and the International Association for Computational Mechanics (IACM). AfriComp7 received excellent support by researchers and practitioners all across South Africa and world wide, with authors being drawn from numerous research and industrial organisations. The technical programme comprised topics from the wide range of applied mechanics and mathematics including structural mechanics; fluid mechanics; biomechanics; damage and fracture mechanics; multi-scale mechanics; multi-physics; advanced numerical methods; optimisation and design; big data and machine learning. Some of the topics included thermodynamics and heat transfer, both from thermal-fluids and solid / structural mechanics perspectives. The following thermal related presentations were presented at AfriComp 7: “Validating Amhc as a Cancer Therapy Through in Vitro Experiments and Multiphysics Simulation” ; “Computational Modeling of Thermal‐Mechanical Coupling in Soft Biological Tissues: a Multiphysics Approach”; “Development of a Transient Finite Volume 1D Thermofluid Network Modelling Methodology for the Human Cardiovascular System”; “Coupled Multiphysics Models for Feed Throughput Estimation in Electric Arc Furnaces”; “Thermal‐Mechanical‐Chemical Coupled Model and Three‐Dimensional Damage Evaluation for Laser‐Ablated Cfrp”; “Dynamic Response of Materials During High Velocity Impact”; “Numerical Investigation into the Effect of Throat Passage Width on Sco2 Axial Turbine Stage Performance Using Computational Fluid Dynamics Simulations”: “Development of Performance and CFD Simulation Models for Surrogate‐Based Optimisation of Natural Draft Direct Dry Cooling Tower Shell Shape”; “Optimizing Perforated Plates for Flow Uniformity in Shock Tube Reactive Film Cooling”; “A Hybrid Approach to Heat Exchanger Design: Calibrating Empirical Correlations with a Cell‐by‐Cell Numerical Solver”; “Multifield Thermoplasticity and Its Application to Linear Friction Welding”; “Modelling Anisotropic Sea‐Ice Solidification Using the Phase‐Field Method”; “Development and Implementation of Numerical Models for Annual Performance Prediction of a 50 Mwe CSP Plant Using a Natural Draft Air–Cooled Condenser””. Six keynote addresses were also presented.

In the first keynote Prof Malebogo Ngoepe from the University of cape Town shared her insights on “Towards an Improved Understanding of The Role of Flow in Blood Clot Formation”.

In the second keynote address by Prof Surya Kalidindi from the Georgia Institute of Technology, he focused on “Accelerated development of materials using high-throughput strategies and AI/ML”

The third keynote was given by Prof Laura de Lorenzis of the University of ETH Zurich and dealt with "Neural operator learning for computational solid mechanics".

The fourth keynote was presented by Prof Daniel Wilke of University of Witwatersrand with the focus on "The Art and Science of Mismatch: Aligning Data, Models, Latent Spaces, Fidelity and Engineering Objectives".

In the fifth keynote Prof Annie Bekker shared her views on "SA Agulhas II – Flagship for Vessel 4.0". The SA Agulhas II is South African Antarctic research ship.

The final keynote address was given by Prof Karol Miller of the University of Western Australia, and he shared his insights on "The Engineer Will See You Now: Fixing What Medicine Can't".

Although none of the keynotes dealt explicitly with heat transfer, valuable lessons can be learned from them.

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 abstracts were published in a Book of Abstract to be available to all participants. The authors of the presentations that were accepted and presented could submit the manuscripts of their full papers for review and possible inclusion in the Special Issue "Current Problems and Advances in Computational and Applied Mechanics" of the open-access WoS-ESCI-accredited journal *Mathematical and Computational Applications*.

Local Organising Committee were:

Prof Sebastian Skatulla (Chairman)
Prof Perumal Nithiarasu (Honorary Chairman)
Prof Arnaud Malan (Honorary Chairman)
Dr Rukshani Heiyantuduwa (Secretary ACCCBE/CONVR)

The local organising committee was supported by an extensive Scientific Advisory Committee composed of international experts..

South Korea, Member of ICHMT, AIHTC, AUTSE (6)

1. 2025 Spring Conference of Thermal Engineering Division, KSME

Taesung Kim, Dept. of Mech. Eng., Sungkunkwan University, tkim@skku.edu

The annual Thermal Engineering Division 2025 Spring Conference of "The Korean Society of Mechanical Engineers," held from April 23rd to 26th, 2025, at Lotte Hotel Jeju in Jeju island, served as a forum for collaboration, knowledge exchange, and the unveiling of groundbreaking research. Under the stewardship of conference Chairman, Professor Taesung Kim, the Organizing Committee orchestrated an intellectually invigorating gathering that showcased the pinnacle of thermal engineering expertise and innovation. With the Chairman of the Thermal Engineering Division, Professor Seong Hyuk Lee, delivering the opening speech, the conference commenced on a note of utmost significance, setting the tone for four days of scholarly discourse, collaboration, and knowledge dissemination. In particular, Pil Hyun Yoon, Executive Director, LG Electronics delivered a lecture on "Energy-Saving Technologies Using Heat Pump Applications in Home Appliances and HVAC Systems."

With a total of 769 participants from various fields, the conference exemplified the global reach and collaborative spirit of the scientific community. These diverse perspectives not only enriched the discussions but also 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 400 papers were presented, showcasing a depth of ongoing research efforts in the field of energy storage, heat and mass transfer, fuel cell, phase change heat transfer, thermal system control/measurement, conduction/radiation heat dissipation technology, and refrigeration and cryogenic technology. Furthermore, Professor Hyung Hee Cho from Yonsei University and Professor Sung Jin Kim from Korea Advanced Institute of Science and Technology were honored with the Thermal Engineering Academic Award. Additionally, Professor Seung Hwan Ko from Seoul National University received the Namheon Academic Award, and Professor Tae Young Kim from Seoul National University of Science and Technology and Professor Jungwan Cho from Sungkyunkwan University received the Young Researcher Awards.

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

Moreover, seven special sessions facilitated profound insights and fostered engaging debates, contributing significantly to the scholarly discourse in thermal engineering. A total of 400 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 2025

Jaeseon Lee, Dept. of Mech. Eng., UNIST, jaeseonlee@unist.ac.kr

The Future Development Committee hosted its annual workshop, part of the spring academic lecture series, at the Korea Institute of Machinery and Materials (KIMM) from July 7–8, 2025. The event focused on addressing the rising global demand for energy and exploring sustainable strategies for efficient energy production and use. A total of 105 early-career researchers registered, and four invited talks were delivered by leading domestic and international experts in next-generation thermal engineering.

The workshop opened with remarks by Professor Jaeseon Lee of UNIST, Vice Chairman of the Thermal Engineering Division and Chair of the Future Development Committee. Presentations included Professor Jaesung Park (University of Nebraska–Lincoln) on thermo-fluidic applications of superhydrophobic surfaces, Professor Sangwoo Shin (SUNY Buffalo) on diffusion-driven particle transport in porous media, Professor Jiwoong Bae (Hanyang University) on phase transitions in semi-solid materials for advanced batteries, and Professor Siwon Yoon (Jeonbuk National University) on precise thermal control in smart farms and energy-saving technologies.

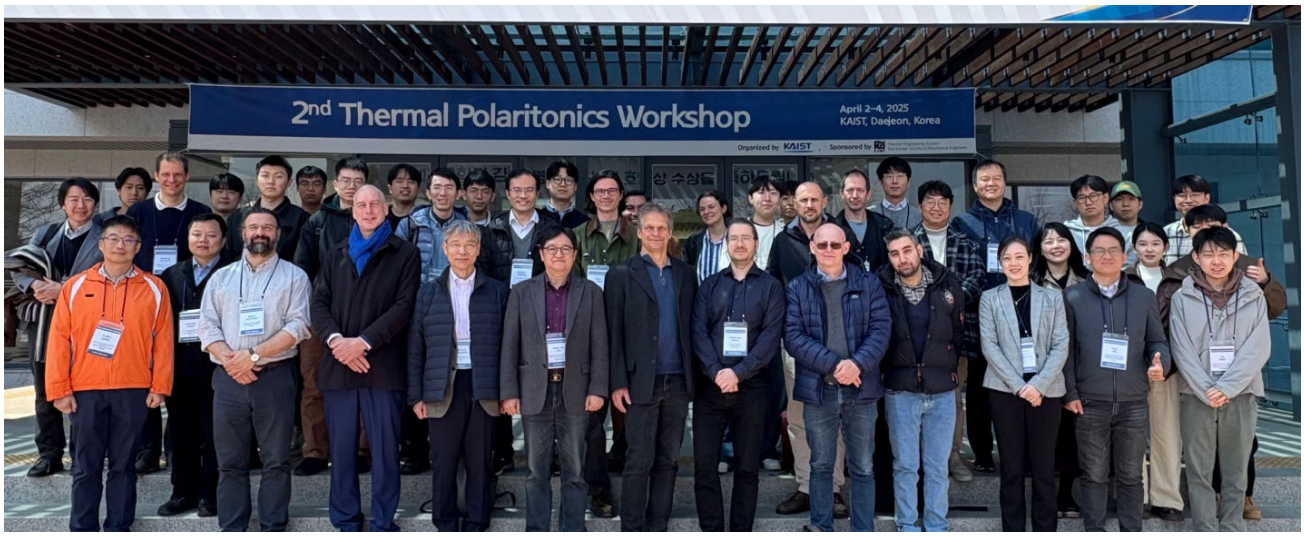
Overall, the workshop served as a forum for exchanging insights on frontier research in thermal engineering, strengthening collaboration among distinguished scholars, and paving the way for future innovations in sustainable energy solutions.

3. The 2nd Thermal Polaritonics Workshop

Bong Jae Lee, Dept. of Mech. Eng., KAIST, bongjae.lee@kaist.ac.kr

The 2nd Thermal Polaritonic Workshop was held at the Korea Advanced Institute of Science and Technology (KAIST) from April 2–4, 2025. This exclusive event brought together leading researchers and their teams specializing in thermal radiation and heat conduction facilitated by surface phonon-polaritons and surface plasmon-polaritons at the nano- and microscales.

The workshop featured a broad spectrum of topics, encompassing fundamental research, applied studies, and interdisciplinary approaches to polariton-mediated heat transfer in dielectric and metallic materials. The program included 18 invited talks and 9 poster presentations, with participation from 37 researchers representing 7 countries.



4. The 3rd Integrated Workshop on Electronics Cooling and Thermal Management (International Seminar on Thermal Management in High-Density Data Centers)

Jungho Lee, Dept. of Mech. Eng., Ajou University, jungholee@ajou.ac.kr

The 3rd Integrated Workshop on Electronics Cooling and Thermal Management, held as the International Seminar on Thermal Management in High-Density Data Centers, took place from August 11–12, 2025, at the Seoul Plaza Hotel. Organized by the Thermal Engineering Division of the Korean Society of Mechanical Engineers, the workshop brought together academia, industry, and government to address advanced thermal management solutions for data centers and electronic systems.

Professor Nenad Miljkovic (University of Illinois at Urbana–Champaign) introduced holistic rack-to-processor power and thermal co-design concepts to optimize future server and data center performance. Professor Saeed Moghaddam (University of Florida) highlighted the potential of phase-change cooling to enhance energy efficiency in AI and IoT-driven data centers. Professor Yoonjin Won (University of California, Irvine) presented machine learning applications for two-phase heat transfer, offering insights into intelligent thermal management.

In addition to these keynote lectures, distinguished scholars and industrial leaders shared research advances on direct-to-chip cooling, jet impingement methods, immersion cooling for EV batteries, and defense electronics applications. Two poster sessions featured 36 student presentations, providing a platform for early-career researchers to showcase their work and exchange ideas with experts.

The workshop was further supported by major companies including Hanwha Aerospace, LG Electronics, SK Innovation, and others, which not only sponsored the event but also presented their latest developments in high-efficiency cooling systems, immersion fluids, and industrial thermal solutions.

Overall, the workshop successfully fostered cross-disciplinary collaboration and knowledge exchange, emphasizing the importance of innovative cooling strategies for sustainable growth in data centers, AI computing, and electrified mobility.

Turkiye, Member of ICHMT (6)

1. Selected Activities of Sectoral Institutions in 2025: 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 2025: ASHRAE Turkish Chapter, TOBB HVAC Assembly, MMO, TTMD and ISIB

Atilla Biyikoglu, Dept. of Mech. Eng., The University of Gazi, 2022-2023 Vice-President of ASHRAE Turkish Chapter abiyik@gazi.edu.tr https://ashrae.org.tr/

TURKISH UNION OF CHAMBERS AND STOCK EXCHANGES (TOBB)
TURKISH AIR CONDITIONING (HVAC-R) ASSEMBLY

ASHRAE TC SECTOR MEETING - IUC - MECHANICAL ENGINEERING TECHNOLOGIES CLUB (MMTK)
December 24th, 2025 Istanbul University-Cerrahpaşa Faculty of Engineering, Block A Conference Hall

At the end of the event, the Turkish HVAC-R Assembly gifted 10 students with a copy of the book "Understanding Psychrometrics," co-authored by Dr. Şule Kapkın, PhD, the IUC MMTK Club Advisor.

ASHRAE TURKISH CHAPTER

MOU SIGNING CEREMONY TURKISH AND CAIRO CHAPTERS- OCTOBER 2025

ASHRAE TC CLIMATIZATION SUMMIT- MARMARA UNIVERSITY- DECEMBER 2025

HVAC-R INDUSTRY EXPORTERS ASSOCIATIONS (İSİB)

TURKISH HVAC&R PROMOTION IN SLOVAKIA AND THE CZECH REPUBLIC-MAY 2025

Turkish Society of HVAC and Sanitary Engineers (TTMD)

TTMD REPRESENTED INTERNATIONAL COLLABORATIONS AT ISK-SODEX ISTANBUL OCTOBER 2025

ISK-SODEX, a biennial event that brings together representatives from the HVAC industry worldwide under one roof and significantly contributes to the sector's growth momentum through the collaborations it fosters, has concluded. Organized by Deutsche Messe, in collaboration with Hannover Messe Sodeks Fuarcılık, TTMD, ISKAV, DOSİDER, İSKİD, and İZODER, and supported by POMSAD, SOSİAD, ESSİAD, MTMD, and KBSB, the ISK-SODEX Fair took place at the Istanbul Fair Center from October 22-25, 2025. This year, TTMD participated in the ISK-SODEX Fair together with its international partners IBPSA (International Building Performance Simulation Association), IEA ES TCP (International Energy Agency Energy Storage Technology Collaboration Program), and REHVA (Federation of European Heating, Ventilation and Air Conditioning Associations).

TMMOB FUTURE TECHNOLOGIES AND TECHNOLOGY POLICIES SYMPOSIUM, MAY 9-10, 2025

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 Thermal Science and Technology Congress with International Participation, ULIBTK'25, (https://ulibtk2025.atu.edu.tr/#!/) was organized by Adana Alparslan Turkes Science and Technology University under the leadership of the Turkish Society of Thermal Science and Technology in Adana/Turkey between Sept. 10-12, 2025.

OPENNING CEREMONY-25TH CONGRESS OF THERMAL SCIENCES AND TECHNOLOGY – ULIBTK'25

The aim of the congress is to bring together scientists and researchers and create a platform where the results of studies on heat science and technology are shared. The congress included new and original research and development studies on thermal systems, alternative and nuclear energy technologies. The 25th Thermal Science and Technology Congress with International Participation aims to bring together scientists, public and private sector researchers, and industrialists to produce joint projects. ULIBTK'25, with international participation, was held at Mechanical Engineering Department of Adana Alparslan Turkes Science and Technology University, Adana, Turkiye.

Topics of the Congress

• Alternative and Clean Energy Technologies
• Energy Conversion and Storage
• Energy Harvest and Environment
• Energy Policies and Energy Efficiency
• Artificial Intelligence Applications in Energy
• Power and Energy Engineering Applications
• Solar Energy and Fuel Cells
• Hydrogen and Nuclear Energy Applications
• Heating, Cooling and Ventilation Applications Congress
• Applications in Micro and Nano Dimensions

Important Dates:

Deadline for abstract submission	June 15th, 2025
Deadline for full paper submission	June 20th, 2025
Announcement of accepted papers	Aug 20th, 2025
Deadline for revised full papers	Aug 30th, 2025
Deadline for registration	Sept 1th, 2025
Date of Congress	Sept 10-12, 2025

Invited Speekers:

Prof. Dr. Amjad Anvari-Moghaddam, Aalborg Üniversitesi, Danimarka, "*Energizing the Transition: Challenges, Choices, and Chances Ahead*"
Prof. Dr. LP SIVAKUMAR, Rajalakshmi Engineering College, "Exploring the Impact of Artificial Intelligence on Energy Conservation Systems"
Prof. Dr. Yusuf ÇENGEL, University of Nevada, Mech. Eng. Dept.
Prof. Dr. Tahsin ENGİN, Istanbul Technical University, Mech. Eng. Dept.
Prof. Dr. Hüseyin GÜNERHAN, Ege University, Mech. Eng. Dept.
Prof. Dr. İsmail EKMEKÇİ, Istanbul Commerce University, Industrial Engineering
Prof. Dr. Adnan MİDİLLİ, Istanbul Technical University, Mech. Eng. Dept.
Prof. Dr. İrfan KURTBAŞ, Hitit University, Faculty of Engineering and Natural Sciences
Prof. Dr. Günnur KOÇAR, Ege University, Director of Biomass Energy Systems and Technologies Application and Research Center

Guest of honor

Orhan Aydın, President of TÜBİTAK

At the 25th International Congress on Thermal Science and Technology, a total of 206 oral presentations were delivered across 40 parallel sessions; 10 invited speakers presented, including 2 from abroad and 8 from within the country.

UK, Member of ICHMT, AIHTC, EUROTHERM (4)

1. 19th UK Heat Transfer Conference
Richard Law and Tassos Karayiannis

1. 19th UK Heat Transfer Conference

Dr Richard Law
Local Chair, Newcastle University
Richard.Law2@newcastle.ac.uk

Prof Tassos Karayiannis
National Committee Chair, Brunel University of London
Tassos.Karayiannis@brunel.ac.uk

The 19th edition of the UK Heat Transfer Conference will be hosted by Newcastle University in September 2026.

The UK Heat Transfer Conference is organised under the aegis of the UK National Heat Transfer Committee (https://www.uknhtc.org/) every two years. It 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 conference website can be viewed here https://conferences.ncl.ac.uk/ukhtc19/.

The call for abstracts is open until April 20th, 2026. All aspects of heat transfer and applications are relevant and welcomed. The list below is indicative of possible areas.

- Boiling, evaporation and condensation
- Computational heat transfer
- Cooling of high heat flux devices
- Drying
- Energy recovery, heat integration and process industry energy systems
- Enhanced heat transfer
- Environmental heat transfer
- Gas turbines, engines, combustion
- Heat exchangers
- Heat pipes
- Heat pumps and refrigeration
- Heat transfer at micro and nano scale
- Heat transfer in porous media
- Heat transfer technology for sustainable energy
- Multi-phase flow
- Single phase heat transfer
- Thermal energy storage
- Thermal management

The following Special Sessions will focus on applications in topical areas:

- Additive Manufacturing of Heat Transfer Devices - chaired by Dr Jonathan McDonough (Newcastle University)
- AI Applied to Heat Transfer - chaired by Dr Francesco Coletti (Hexxcell and Brunel University London)
- Cooling of Electronic Devices and Electrical Machines - chair TBC.
- Heat Pipes - chaired by Prof Yuying Yan (University of Nottingham)
- Heat Transfer in Chemical Reaction Engineering - chair TBC
- Nuclear Thermal Hydraulics - chaired by Prof Hector Iacovides (University of Manchester)
- Net Zero/Process Industry Decarbonisation - chair TBC
- Thermal Energy Storage - chaired by Prof Yulong Ding (University of Birmingham) and Prof Yasser Mahmoudi Larimi (University of Manchester)

We encourage researchers and industrialist both from the UK and internationally to join us in Newcastle in September 2026

General abstract submissions should be done via the EasyChair portal (see https://conferences.ncl.ac.uk/ukhtc19/callforabstracts/). If you would like to contribute to a special session, please reach out to the chair in the first instance (see contact details on website).