



FFHMT
2025

**PROCEEDINGS OF THE 12TH
INTERNATIONAL CONFERENCE ON FLUID
FLOW, HEAT AND MASS TRANSFER
(FFHMT 2025)**

**July 15, 2025 - July 17, 2025 | Imperial College London
Conference Center, London, United Kingdom**

**© COPYRIGHT 2025, INTERNATIONAL ASET INC. – ALL
RIGHTS RESERVED.**

ISBN: 978-1-990800-58-0 | ISSN: 2369-3029

TABLE OF CONTENTS

Welcome Message from the Conference Chair.....	3
About FFHMT 2025.....	4
Scientific Committee.....	5
Keynote Speakers.....	7
List of Papers	13
Sponsors	26
Journal Special Issue.....	27
FFHMT 2026.....	28
Ethics & Malpractice	29
Contact Us	34

WELCOME MESSAGE FROM THE CONFERENCE CHAIR

On behalf of the International Academy of Science, Engineering and Technology (International ASET Inc.), the organizing committee would like to welcome you to the 12th International Conference of Fluid Flow, Heat and Mass Transfer (FFHMT 2025).

FFHMT 2025 is aimed to become one of the leading international annual conferences in the fields of heat, momentum, and mass transfer. This conference will provide excellent opportunities to the scientists, researchers, industrial engineers, and university students to present their research achievements and to develop new collaborations and partnerships with experts in the field.

FFHMT is a series of international conferences held yearly. These conferences focus on all aspects of fluid flow, heat and mass transfer. **The 12th International Conference of Fluid Flow, Heat and Mass Transfer (FFHMT 2025)** is going to be held in a hybrid format, i.e. in person as well as online.

In the twelfth meeting of this conference, four Plenary Speakers and one keynote speaker will share their expertise with the aim of exposing participants to a wide spectrum of applications, and to foster crosspollination of ideas and develop new research interests. In addition, approximately 68 papers will be presented from professors, students, and researchers across the world.

We thank you for your participation and contribution to the 12th International Conference of Fluid Flow, Heat and Mass Transfer (FFHMT 2025). We wish you a very successful and enjoyable experience.

Dr. Boguslaw Kruczek

University of Ottawa, Canada

Conference Chair and Proceedings Editor

FFHMT 2025

Dr. Wael H. Ahmed

University of Guelph, Canada

Conference Co-Chair

FFHMT 2025

[Return to Top](#)

ABOUT FFHMT 2025

The International Conference on Fluid Flow, Heat and Mass Transfer (FFHMT) aims to become the leading annual conference in fields related to traditional and modern transport phenomena. The goal of FFHMT 2025 is to gather scholars from all over the world to present advances in the fields of transport phenomena and to foster an environment conducive to exchanging ideas and information. This conference will also provide an ideal environment to develop new collaborations and meet experts on the fundamentals, applications, and products of the mentioned fields.

FFHMT is a series of international conferences held yearly. These conferences focus on all aspects of fluid flow, heat and mass transfer. After successfully holding FFHMT'14 to FFHMT'24 in Canada, FFHMT 2025 is hosted in Imperial College London Conference Center, London, United Kingdom this year. FFHMT 2025 is going to be held in a hybrid format, i.e. in person as well as online.

FFHMT is an acronym for **F**luid, **F**low, **H**eat, and **M**ass Transfer.

- All papers were peer-reviewed
- The conference proceedings are published under an ISSN and ISBN number
- Each paper is assigned a unique DOI number by [Crossref](#)
- The conference proceedings are indexed by [Scopus](#) and [Google Scholar](#)
- The proceedings are permanently archived in [Portico](#) (one of the largest community-supported digital archives in the world)

Google Scholar



Crossref

Scopus



PORTICO

[Return to Top](#)

SCIENTIFIC COMMITTEE

We would like to thank the following for accepting to act as a member of the Scientific Committee for the FFHMT 2025 Conference:

Scientific Committee Chairs



Dr. Boguslaw Kruczek
University of Ottawa, Canada
Conference Chair



Dr. Wael H. Ahmed
University of Guelph, Canada
Conference Co-Chair

Scientific Committee Members

- **Dr. Chamil Abeykoon**, The University of Manchester, UK
- **Dr. Rayhaneh Akhavan**, University of Michigan-Ann Arbor, USA
- **Dr. Sanjeev Chandra**, University of London, UK
- **Dr. Jiangtao Cheng**, Virginia Tech, USA
- **Dr. Lixin Cheng**, Sheffield Hallam University, UK
- **Dr. Yusuf Chisti**, Massey University, New Zealand
- **Dr. Sadegh Dabiri**, Purdue University, USA
- **Dr. Yulong Ding**, University of Birmingham, UK
- **Dr. Jerzy M. Floryan**, The University of Western Ontario, Canada
- **Dr. Dana Grecov**, University of British Columbia, Canada
- **Dr. Mohamed Hamed**, McMaster university, Canada
- **Dr. Hui Hu**, Iowa State University, USA
- **Dr. Yogesh Jaluria**, Rutgers University, USA
- **Dr. Huan-Jang Keh**, National Taiwan University, Taiwan
- **Dr. RAJEEV JAIMAN**, University of British Columbia, Canada
- **Dr. Konstantinos Kontis**, University of Glasgow, Russia
- **Dr. Lyes Kadem**, Concordia University, Canada
- **Dr. Nikolai Kozlov**, Institute of Continuous Media Mechanics UrB RAS, UK

SCIENTIFIC COMMITTEE

We would like to thank the following for accepting to act as a member of the Scientific Committee for the FFHMT 2025 Conference:

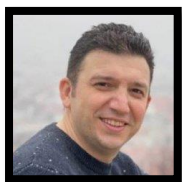
Scientific Committee Members

- **Dr. Marcello Iasiello**, Università degli Studi di Napoli Federico II, Italy
- **Dr. Philippe Lavoie**, University of Toronto, Canada
- **Dr. Nader Masmoudi**, New York University, UAE
- **Dr. Gerardo Maria Mauro**, Università degli studi del Sannio, Italy
- **Dr. Marc Miscevic**, Université Toulouse III - Paul Sabatier, France
- **Dr. Robert J. Martinuzzi**, University of Calgary, Canada
- **Dr. Mohammad Azizur Rahman**, Texas A&M University at Qatar
- **Dr. Karthik Remella**, Ansys, USA
- **Dr. Ziad Saghir**, Ryerson University, Canada
- **Dr. Ahmet Selamet**, The Ohio State University, USA
- **Dr. Lian Shen**, University of Minnesota, USA
- **Dr. Jules Thibault**, University of Ottawa, Canada
- **Dr. Junfeng Zhang**, Laurentian University, USA

PLENARY/KEYNOTE SPEAKERS

The keynote information for the 12th International Conference of Fluid Flow, Heat and Mass Transfer (FFHMT 2025) is as follows:

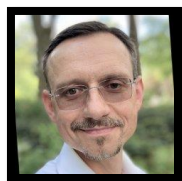
Plenary Speakers



[Dr. Ahmad Arabkoohsar](#)
Technical University of
Denmark, Denmark



[Dr. Sarit Kumar Das](#)
Indian Institute of
Technology Madras, India

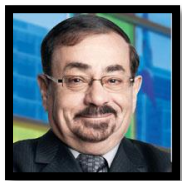


[Dr. Andrei G. Fedorov](#)
Georgia Institute of Technology,
USA



[Dr. Alamgir Karim](#)
University of Houston,
USA

Keynote Speaker



[Dr. Wagdi George Habashi](#)
McGill University, Canada

FFHMT 2025 PLENARY SPEAKER



Titles: Dynamic Analysis of Thermochemical Heat Transformers for Industrial Heat Recovery

Dr. Ahmad Arabkoohsar, Technical University of Denmark, Denmark

[View Abstract](#)

[Return to Top](#)

Ahmad Arabkoohsar holds a PhD degree in Mechanical Engineering and has several years of research experience on energy sustainability in top institutes of different countries. He is currently an Associate Professor at Department of Energy at Aalborg University. His research is mainly on Thermal Energy Systems, System Integration and Sector Coupling, District Heating and Cooling, Energy Storage, and Renewable Energy Technologies

FFHMT 2025 PLENARY SPEAKER



Titles: Water Management of A PEM Fuel Cell with Super-Hydrophobic Flow Channels, an Experimental and Computational Study

Dr. Sarit Kumar Das, Indian Institute of Technology Madras, India

[Return to Top](#)

Sarit K. Das is an Institute Professor at the Indian Institute of Technology Madras, Chennai. He is the first occupant of the V. Balakrishnan Chair Professorship at the Department of Mechanical Engineering. He is the former Director of the Indian Institute of Technology, Ropar and the former Dean (Research) of IIT Madras. The research group of Prof. Das works on various aspects of thermo fluidics like heat and mass transfer in industrial equipment such as heat exchangers and fuel cells, multiphase flow and energy conversion. Water management in PEM fuel cells and thermal management of battery stack are the two active areas in this direction. The group is known to be one of the leading groups on Nanofluids in the world. Another area of focus of the group is bio-microfluidics with the focus on medical diagnostics, developing organ-on-chip platforms for drug delivery and understanding physiological and pathological states related to cardiovascular diseases, renal transport and cancer metastasis. The group has also works on desalination techniques such as FCDI (Flow Electrode Capacitive Deionization) and HDH (Humidification and Dehumidification) systems. Prof. Das is a Fellow of the National Academy of Sciences, India (NASI) and the Indian National Academy of Engineering (INAE). He was a Peabody Visiting Professor at MIT, Cambridge and a visiting Professor – Lund University, Sweden. He was conferred with the prestigious India Citation Awards 2012 by Thomson Reuters. He has published more than 450 research articles and six books. He is the most cited mechanical engineer of India. Prof. Das is a member of the editorial boards of Heat Transfer Engineering, Taylor & Francis Publishers.

FFHMT 2025 PLENARY SPEAKER



Titles: Extreme Dynamics of Nanoelectrospray Droplets in Complex Gas Flows to Enable New Modes of Direct-Write Nanomanufacturing

Dr. Andrei G. Fedorov, Georgia Institute of Technology, USA

[View Abstract](#)

[Return to Top](#)

Andrei G. Fedorov is Rae S. and Frank H. Neely Chaired Professor in the School of Mechanical Engineering and the Petit Institute for Bioengineering and Biosciences at Georgia Tech. His current research focuses on electron-beam-mediated nanomanufacturing, MEMS-enabled bioanalytical instrumentation, thermal management of high performance electronics, and power generation with synergetic CO₂ capture (<http://www.me.gatech.edu/faculty/fedorov>). Fedorov authored/co-authored over 200 archival articles in premier technical journals. His research has led to development of new technologies for various applications, resulting in over 50 issued US patents and pending patent applications. For his inventions of biomedical devices, the World Technology Network (WTN), in cooperation with AAAS Science Magazine, CNN and leading technology companies, selected Fedorov as a WTN Associate and one of the twenty five “most innovative people and organizations in the science and technology world” nominated for the 2005 World Technology Award in Health and Medicine. He was recognized with the US National Aeronautics and Space Administration (NASA) Invention & Contribution Board Award for development of catalytic reactor technologies, as well as multiple inventor recognition awards from the Semiconductor Research Corporation (SRC) and Microelectronics Advanced Research Corporation (MARCO).

FFHMT 2025 PLENARY SPEAKER



Titles: Plasma-Treated Nanoporous Graphene
Oxide Membranes For Molecular Separation

**Dr. Andrei G. Fedorov, Georgia Institute of
Technology, USA**

[View Abstract](#)

[Return to Top](#)

Dr. Alamgir Karim, the Dow Chair Professor and Director of the Doctoral Materials Program at the University of Houston, is a distinguished researcher with a diverse range of interests and contributions to the field of polymer nanotechnology. His work spans multiple areas with a particular focus on thin films, surfaces, and interfaces, exploring their applications in energy, sustainability, and human health. Dr. Karim's research extends to the fascinating realm of polymer nanocomposites, including nanoparticle polymer systems, polymer blend phase separation, and block copolymer thin film ordering. Additionally, his expertise encompasses the development of innovative materials such as elastomers-based systems and polymer thin films for functional applications. His impressive h-index of 70, extensive publication record, and leadership in organizing international conferences highlight his significant contributions to the field of polymer research. Furthermore, Dr. Karim's work intersects with emerging areas of study, such as the use of graphene oxide membranes for desalination and investigations into dielectric properties and separation applications, reinforcing his commitment to pushing the boundaries of materials science and engineering. In addition, Dr. Karim is a Fellow of the American Physical Society and the American Association for the Advancement of Science, as well as a recipient of the prestigious Keck Foundation Award.

FFHMT 2025 KEYNOTE SPEAKER



Titles: A Path to Enabling a Wider Use of Controlled-Accuracy 3D CFD-CHT in Industry and Academia

Dr. Wagdi George Habashi, McGill University, Canada

[View Abstract](#)

[Return to Top](#)

Wagdi Habashi is a Professor of Mechanical Engineering Department at McGill University in Montreal and directs its Computational Fluid Dynamics Laboratory. He has held successive Industrial Research Chairs, singly and in cooperation, with Bombardier (aircraft), Bell (helicopters), CAE (simulators) Lockheed Martin (hypersonic transport), and Silicon Graphics (High Performance Computing).

Professor Habashi holds a PhD in Aeronautical Engineering from Cornell and has over 500 scientific publications, a third of them with industry.

Dr. Habashi established Newmerical Technologies International (NTI), developer of the FENSAP-ICE In-Flight Icing Simulation System and commercialized since 2015 by Ansys worldwide. Following this, Professor Habashi started CERTIF-ICE, specializing in in-flight icing certification, and responsible for the successful natural icing campaigns, in Canada, of China's COMAC's ARJ21 (turbofan) and AVIC's Y-12F (turboprop).

Habashi is a Knight of the Order of Québec, a recipient of the Queen Elizabeth II Diamond Jubilee Medal, a Fellow of the Academy of Sciences of the Royal Society of Canada, the Canadian Academy of Engineering, the American Institute of Aeronautics and Astronautics, the American Society of Mechanical Engineers and Pratt & Whitney Canada.

He is the recipient of a multitude of scientific and industrial awards among them the Steacie, Killam, Floyd, McCurdy and several others.

LIST OF PAPERS

The following papers were presented at the 12th International Conference on Fluid Flow, Heat and Mass Transfer (FFHMT 2025).

Plenary & Keynote Speakers Session

Dynamic Analysis of Thermochemical Heat Transformers for Industrial Heat Recovery

Authors: Ahmad Arabkoohsar

A Path to Enabling a Wider Use of Controlled-Accuracy 3D CFD-CHT in Industry and Academia

Authors: Wagdi George Habashi

Extreme Dynamics of Nanoelectrospray Droplets in Complex Gas Flows to Enable New Modes of Direct-Write Nanomanufacturing

Authors: Andrei G. Fedorov

Plasma-Treated Nanoporous Graphene Oxide Membranes For Molecular Separation

Authors: Alamgir Karim

LIST OF PAPERS

CFD

CFD-driven Topology Optimization for Design of Isothermal Catalytic Planar Microreactors

Authors: Yuna Yamanishi, Osamu Tonomura, Ken-Ichiro Sotowa

Numerical Investigation of Dynamic Stall on a NACA 4412 Airfoil under Harmonic Pitching using URANS

Authors: Cedrick Bryll C. Sison, Wilfredo R. Ruiz, Jaime P. Honra

Thermal Performance Optimization of Lithium-Ion Battery Pack: A Numerical Study

Authors: Roshan Devidas Bhagat, Samir Deshmukh

Effect of Channel Aspect Ratio on the Convective Heat Transfer of Supercritical CO₂ for Compact Solar Receivers

Authors: AR Shanmugam, Pankaj Kumar, Ki Sun Park

Impact of Limb Diameter on Passive Two-Phase Flow in Closed Loop Pulsating Heat Pipes: A Numerical Study

Authors: Roshan Devidas Bhagat, Samir Deshmukh

Application of Singular Value Decomposition and Autoencoder for Supersonic Flow over Backward Facing Step

Authors: Shivam Sanjay Singh, Rudra N. Roy

Stagnation Point Flow of a Non-Newtonian Williamson Fluid over a Stretching/Shrinking Sheet: Existence Proofs, Dual Solutions, and a Stability Analysis

Authors: Dibjyoti Mondal, Abhijit Das

LIST OF PAPERS

CFD

Numerical Study of Nanofluid-Based Cooling in Porous-Finned Enclosures

Authors: Pankaj Kumar, AR Shanmugam, Ki Sun Park

Velocity and Turbulent Kinetic Energy Prediction with DarcyForchheimer Model for Water Intakes

Authors: Cumhur Ozbey, Serhat Kucukali

Form and Friction Drag Coefficients of Fine Screens: Streamlined and Rectangular Bar Profiles

Authors: Cumhur Ozbey, Serhat Kucukali

Surface Tension and Contact Angle Modelling in Multiphase Lagrangian Differencing Dynamics

Authors: Manigandan Paneer, Josip Bašić, Damir Sedlar Chong Peng

CFD Investigation of Turbulent Cross-Flow Behavior in Tube Bundles: In-Line Vs Staggered Configuration

Authors: Yacine Kahil, Abdelkrim Benlefkki, Zakaria Rahmani

Design of Bio-Inspired Novel Flow Fields for Effective Distribution of Electrolyte in Large-Scale Redox Flow Batteries

Authors: Raveendra Gundlapalli, Rama Niteesh Kamireddy, Gaurav Jaiswal

CFD Modelling for Recalcitrant Aldehyde Oxidations in VUV/UV Photoreactors

Authors: Hongjun Ye, Xiaodong Ruan, Rui Su, Yingnan Shen, Jing Wang, Liang Hu

Dynamic Temperature Prediction for the Charging Process of the Fixed Chamber

Authors: Yi Zhang, Yan Gao, Zhipeng Xu, Gaoming Zhang, Bin Zhou, Yupei Zhang, Liang Hu

LIST OF PAPERS

CFD

Adjoint-Based Shape Optimization Of Fin Geometry Using An Isothermal Streamwise Periodic Flow Solver

Authors: Nitish Anand

Computational Study of Melting and Solidification in a Prototype Four-pass Thermal Storage Module

Authors: Luca Crnjac, Kamran Siddiqui, Anthony Straatman

Effects of Oscillating Injection Conditions of CO₂ onto its Adsorption Performance within a Packed-Bed Reactor

Authors: Ali M. Sefidan, Jari Vepsalainen

Visualization of Flow in a Control Valve with a Three-stage Perforated Cage via Computational Fluid Dynamics

Authors: Yuki Kurosawa, Chongho Youn

Diagnosis of a Leaky Pipeline Carrying Multiphase Flow under Plug Flow Conditions

Authors: Hicham Ferroudji, Wahib A. Al-Ammari, Abinash Barooah , Ibrahim Hassan, Rashid Hassan, Ahmad K. Sleiti, Sina Rezaei Gomari, Mohammad Azizur Rahman

CFD Modelling for Recalcitrant Aldehyde Oxidations in VUV/UV Photoreactors

Authors: Hongjun Ye, Xiaodong Ruan, Rui Su, Yingnan Shen, Jing Wang, Liang Hu

An End-to-End Methodology for CFD-based Parametric Optimisation of Propeller Boss Cap Fins

Authors: Divya Mehta, Om Inamdar, Gokul Rajaraman, Neeraj Kumbhakarna

LIST OF PAPERS

CFD

Investigation of Performance Characteristics of Centrifugal and Mixed Flow Impellers in Electronically Commutated Turbomachinery

Authors: Mohammad Abu Shahzer, Youn-Sung Kim, Jin-Hyuk Kim

Enhancing Ammonia Adsorption Equilibrium Time on a Sensitive Surface Through Flow Field Optimization: A CFD Approach

Authors: Adel Fahes, Rémi Gautier, Souria Hamidouche, Puwit CHONGCHAROEN, Caroline Duc, Nathalie Redon, Serge Russeil

Computational Simulation of Heat Source Influence on Particulate Behavior and Deposition in Indoor Residential Room

Authors: Benyamine Meberika, Fezzioui Naima, Zebach Bachir

The Curious Case Of A NACA 0012 Airfoil: Are We Learning Something New?

Authors: Rasha Al Jahdali, Lisandro Dalcin, Gianmarco Mengaldo, Matteo Parsani

Numerical Investigation of Passive Flow Control Using Grooves and Dimples for LPT Blades

Authors: Shubham Katiyar, Ravi Kumar

Numerical study on Coupled Heat and Mass Transfer in Masonry Wall

Authors: Fezzioui Naima, Mourad Bendekhis, Mébirika Benyamine

Numerical And Experimental Characterisation Of The Flow And Heat Distribution Of A Cross-Draft Combustor

Authors: NF Nthatisi, FH Conradie, JR Bunt, HWJP Neomagus

LIST OF PAPERS

Experimental Fluid Flow and Heat Transfer

Influence of Temperature on Xylem Nutrient Transport in Plants

Authors: Jinmay Kalita, Sumit Kumar Mehta, Suraj Panja, Pranab Kumar Mondal, Somchai Wongwises

Experimental Investigations on the Wetting Behaviours of Liquid Metals for Advanced Nuclear Applications

Authors: Abhishek Saraswat, Rajendraprasad Bhattacharyay, Paritosh Chaudhuri, Sateesh Gedupudi

Inclined Drain Structure on the Combi Boilers Main Heat Exchanger

Authors: Emrecan TANKUT, Yalçın ÖTER

Characteristics of Carbon Dioxide Separation from Air-CO₂ Mixture by Narrow Nozzle Vortex Tube under Low Pressures

Authors: Hiep Hoang Le, Ngoc Van Trinh, Woo Jongbin, Wansung Pae, Sangseok Yu

Numerical and Experimental Investigation of Heat Transfer and Convective Flow Patterns between Semi-Transparent Horizontal Insulating Screen Layers

Authors: Vitaly Haslavsky and Helena Vitoshkin

Advantages and Limitations of Uniform Wall Temperature Experimental and Numerical Investigations

Authors: Deniél Steyn, Ken J. Craig, Marilize Everts

LIST OF PAPERS

Experimental Fluid Flow and Heat Transfer

Experimental Study of Axial Fan Performances Operating In Constrained Environment: Application of Axial and Combined Axial–Radial Blockage

Authors: A. Larabi, A. Mammeri, T. Azzam, M. Pereira , F. Ravelet, M. Mekadem, H. Oualli and F. Bakir

Investigation of Immersion Cooling in Battery Packs with PIV and Simultaneous Heat Flux Measurement in an Optical Oil Flow Channel

Authors: Bastian Rüppel, Lukas Weiß, Ioannis K. Karathanassis, Timothy Smith, Manolis Gavaises, Michael Wensing

Fluid Flow and Heat Transfer

Thermal Conductivity of Disordered Media from Quasi-Phonon Modes

Authors: Alexander Fullmer, Jacob Eapen

Smart Predictive Maintenance of Heat Exchangers Using AI and Near-Infrared (NIR) Spectroscopy

Authors: Omran ABUSHAMMALA, Wazen SHBAIR, Rainier HREIZ, Cécile Lemaitre

Static and Dynamic Wetting Behaviors of Droplets on Micro-Nano Pillar-Structured Superhydrophobic Surfaces

Authors: Jiarui Shi, Shinan Chang, Haifeng Qi

LIST OF PAPERS

Transport Phenomena in Porous Media

Determining the Diffusion Coefficient for Articular Cartilage Modelled As Homogeneous and Porous Material

Authors: Anna Skorupa, Alicja Piasecka-Belkhat

An Analytical Model of a Hollow Fiber Membrane Humidifier in Hydrogen Fuel Cell Systems Using Response Surface Method

Authors: Xuan Linh Nguyen, Thanh Tai Phan, Byeongrok Chu, Wansung Pae , Sangseok Yu

Vapor Concentration within the PEMFC Bipolar Plate over Long Term Operation

Authors: Ngoc Dat Nguyen, Van Thai Nguyen, Jongbin Woo, Sangseok Yu

The Comprehensive Comparison of Water Transport Characteristics through Different Types of Nafion Membrane

Authors: Ngoc Van Trinh, Ngoc Dat Nguyen, Hiep Hoang Le, Younghyeon Kim, Sangseok Yu

LIST OF PAPERS

Two and Multiphase Flow and Heat Transfer

Improvement of Ladle Shroud Designs and its Effect on Fluid Flow Behaviour for Steelmaking through Computational Fluid Dynamics

Authors: Daniel Gonzalez-Morales, Mihaela Minea Isac, Roderick Guthrie

Experimental Investigation of Two-Phase Flows in Microchannels & Onset of Flooding For $\text{NH}_3/\text{H}_2\text{O}$ Absorption Systems Using Simulating Fluids

Authors: SLEIMAN Jana, STUTZ Benoit, CHANDEZ Bertrand, PHAN Hai Trieu

Process Level Investigation of the Flue Gas Latent Heat Recovery Using a Condensing Heat Exchanger in a Biomass-Fired Boiler

Authors: Zaina Abrahams, Leon Malan, Pieter Rousseau

A Study of Slurry Flow in Annular Jet Pump for Optimized Specific Energy Consumption—A Mixture Model Approach

Authors: Sadia Riaz, Jussi Aaltonen, and Kari Koskinen

A Method for Calibrating a Thermo-Fluid Model of a Hybrid Biomass Boiler Using Low Fidelity Plant Data

Authors: Pierre Mikhail Bosch, Wim Fuls

Numerical Investigation of Passive Flow Control Using Grooves and Dimples for LPT Blades

Authors: Shubham Katiyar, Ravi Kumar

LIST OF PAPERS

Two and Multiphase Flow and Heat Transfer

Effect of Surface Tension and Gas–Liquid Density Ratio on the Wave Height and Interfacial Shear Stress in Annular Flows

Authors: Huacheng Zhang, Yutaro Umehara, Naoki Horiguchi, Hiroyuki Yoshida, Shoji Mori

Improvement of Ladle Shroud Designs and its Effect on Fluid Flow Behaviour for Steelmaking through Computational Fluid Dynamics

Authors: Daniel Gonzalez-Morales, Mihaela Minea Isac, Roderick Guthrie

Experiments of Pool Boiling Critical Heat Flux Under Local Heating

Authors: Tomio Okawa, Daichi Yanagita, Yasuo Koizumi

Effect of the Vessel Aspect Ratio on the Separation Efficiency of Oil-Water Separator

Authors: Hwan-Gyo Kim, Hyun-Su Jeong, Dong-Hyun Kim, Ho-Jin Choi, Youn-Jea Kim

Stability Analysis of Magnetoconvection in a Fluid-Porous System with Thermal Effects

Authors: Anil Kumar, and D. Bhargavi

LIST OF PAPERS

Energy Conversion and Storage

[A Modelling Of a Battery Chiller for Analysis of Thermal Management System of Heavy-Duty Fuel Cell Electric Vehicles](#)

Authors: Thanh Tai Phan, Xuan Linh Nguyen, Jongbin Woo, Sangseok Yu

[Enhancing Performance of District Heating Systems Using CO₂ as a Working Fluid by Operation Optimization](#)

Authors: Meisam Sadi, Rikke C. Pedersen, Jakob Worm, Robert Pratter, Ahmad Arabkoohsar

Heat Transfer Enhancement

[Experimental Investigation of Using Porous Bodies to Enhance the Solar Still Performance](#)

Authors: Abdulaziz Alasiri, Karim Choubani

[Dilute Viscoelastic Fluids for Enhanced Heat Transfer in Immersion Cooling Concepts](#)

Authors: Joseph Rosenfeld, Mehdi Seddiq, Bastian Rüppel, Lukas Weiß, Hendrik Reese, Ioannis Karathanassis, Timothy Smith, Gareth Brown, Michael Wensing, Manolis Gavaises

[Two-Phase Heat Transfer Performance of Ethylene Glycol-Water Binary Mixture in Nucleate Pool Boiling](#)

Authors: Ravi Raushan, Yogesh M. Nimdeo

[A Hybrid Surface Design for Superior Condensation Heat Transfer](#)

Authors: Xu Chen, Tsz Chung Ho, Chi Yan Tso

LIST OF PAPERS

Posters Session

Numerical Simulation of Aerodynamics for Modified Triangular and S1210 Airfoils Under Martian Conditions

Authors: Wen-Chung Wu, Saswata Daw, Durgawati Sharma

BBlood Simulations in an Arterial Model Automatically Reconstructed Using Optical Computed Tomography

Authors: Kyung Eun Lee, Labin Kim

Renewable Energy

Thermodynamic Superiority of Calcium Hydroxide-Based Thermochemical Energy Storage over Ammonia-Based Systems in Concentrated Solar Power

Authors: Soheil Khosravi, Henk Huinink, Ahmad Arabkoohsar

Dynamic Analysis of the Solid-Gas Thermochemical Heat Transformers for Industrial Heat Recovery

Authors: Mohammad Hossein Nabat, Hamid Reza Rahbari, Anders Christiansen Erlandsson, Ahmad Arabkoohsar

Design of Bio-Inspired Novel Flow Fields for Effective Distribution of Electrolyte in Large-Scale Redox Flow Batteries

Authors: Raveendra Gundlapalli, Rama Niteesh Kamireddy, Gaurav Jaiswal

LIST OF PAPERS

Nanofluid Heat Transfer

Experimental Investigation on Heat Transfer Performance of Titanium Oxide - Water and Ethylene Glycol Nanofluid in a Plate Heat Exchanger

Authors: Palesa Helen Mlangeni, Zhongjie Huan, Thembelani Sithebe, Vasudeva Rao Veeredhi

An Experimental Evaluation of Thermal Conductivity of Colloidal Suspension of Carbon-Rich Fly Ash Microparticles and Diamond-Nano Powder (DNP) in Jet-A Fuel

Authors: Ahmed Aboalhamayie

Comparative Study of RANS and LES for Transient Flow Characteristics in an EC Fan

Authors: Duc-Anh Nguyen, Mohammad Abu Shahzer, Jin-Hyuk Kim

Improvement of Thermosyphons by Modifying the Evaporator Surface

Authors: L. Reinecke, P. Lattig, and M.H. Buschmann

SPONSORS

International ASET Inc. would like to thank the following sponsors for their support of FFHMT 2025:



[Return to Top](#)

JOURNAL PUBLICATION

Selected articles from the conference will be published in the [Journal of Fluid Flow, Heat and Mass Transfer \(JFFHMT\)](#) after a secondary review process.

This journal has adopted to the open-access model, meaning all free access to the journal's articles and content with no need for subscription. This ensures larger audience and therefore higher citations.

All published papers of JFFHMT will be submitted to **Scopus and Google Scholar**. Additionally, they will be permanently archived in Portico (one of the largest community-supported digital archives in the world) and will be assigned unique DOIs.

Please visit the following website for the respected journal: **JFFHMT:** <https://jffhmt.avestia.com>

FFHMT 2026

The 13th International Conference on Fluid Flow, Heat and Mass Transfer (FFHMT 2026) will be held on June 09, 2026 – June 11, 2026 in Barcelona, Spain.

FFHMT 2026 13th International Conference on Fluid Flow, Heat and Mass Transfer

June 09, 2026 – June 11, 2026 | Barcelona, Spain

www.2026.ffhmt.com

For inquiries and to obtain further information on the congress,
please visit the [website](http://www.2026.ffhmt.com)

You can also email info@ffhmt.com or call us at: +1-613-834-9999

[Return to Top](#)

ETHICS & MALPRACTICE

At International ASET Inc., we take matters that relate to ethics in publishing very seriously. We believe that the peer-review publication process is a vital building block of academia, and its integrity must be maintained at all costs, which is why every article will be peer-reviewed by several experts in the field. Under peer-review, experts in the related fields are required to provide opinions and comments on the improvements of the submissions.

We are proud of our efforts towards abiding by the guidelines of ethics, integrity, and high standards in publishing.

Following are the ethics guidelines set by the organizers for the authors and the reviewers of the conference:

Scientific Committees

Scientific committees consisting of experts in the fields are established. The committees oversee the peer-review and publication process. To see the scientific committee members, please follow the link: [Scientific Committee](#)

Equality and Decisions

One or more reviewer, scientific committee member, or chair, (internal or external), are responsible for evaluating the relevance of the submitted manuscripts to the proceedings, technical and scientific merit, originally, and impact. These evaluations are to be carried out regardless of ethnicity, religion, gender, sexual orientation, political beliefs, and institutions. Successive to peer-review, the Chair has full authority and is solely responsible for the published content and the process thereof.

Confidentiality

Scientific committee member(s) and publishing staff may not disclose manuscripts or their content, directly or indirectly, to anyone other than individuals invited to review the manuscript (whether they accept or not), other reviewers of the same publications, and publishing staff.

Conflicts of Interest

Scientific committee member(s) and publishing staff may not utilize the contents of submitted manuscripts whether accepted or rejected, directly or indirectly for their own research purposes without prior written consent by the authors.

ETHICS & MALPRACTICE

Reviewers

Contribution to Decisions

In order for final decisions to be made regarding acceptance or rejection of papers, we rely on peer-review. Peer-review is the process of experts in the field reading, understanding, and objectively commenting on submitted papers. Through peer-review, scholars give back to the academic and scientific community by helping the chair(s) make decisions regarding manuscripts.

Promptness

Reviewers should promptly notify the chair(s) if they are unable or unqualified to carry out their reviewing duties. Reviewers should do their best to provide the reviews to the chair(s) as promptly as possible, and within the designated time-frame.

Acknowledgment of Source

The reviewer should notify the chair(s) if they find any similarities in the paper being reviewed and any other work that has been published previously.

Confidentiality

Reviewers must not share the contents of the manuscripts they receive for review, regardless of their decision to review or contents of the review, directly or indirectly, with anyone other than the person who has assigned the review.

Fairness

Reviewers should review manuscripts fairly and objectively, with supporting evidence or arguments, regardless of personal feelings or biases.

Conflicts of Interest:

Invited reviewers should immediately inform the chair(s) in case of a conflict of interest based on competitive, collaborative, personal, family, and other relationships with the authors or people involved in the work.

ETHICS & MALPRACTICE

Authors

Reporting Standards

The paper being submitted for the proceedings should be based on clear objective, discussion, and references. The findings, data, and the arguments being used in the paper should be accurate. It is author's responsibility to guarantee the authenticity of the data in the paper.

Authorship

Only persons who have significantly contributed to the work and the manuscript can be named authors on a paper. These contributions include the idea/concept, design, experiments, evaluation, analysis, drafting or revision of the manuscript, and others. Authors must all have agreed to be named as such and for the manuscript to be submitted. Anyone who has contributed based on the above, but the level of contribution is not significant, may appear in the acknowledgement section of the manuscript.

Acknowledgement of Source

Acknowledgement to other's work being used in the paper must be given at all times. Authors of the paper should give comprehensive credit where it is necessary, by citing the work, they use for supporting their own research.

Accuracy, Originality, and Plagiarism

Authors should describe their work and the results of their work accurately and in full. The level of provided accuracy and detail should be such that a reader can replicate the work independently. Inaccurate, incomplete, fraudulent, and misleading statements are considered unacceptable and unethical. Direct or indirect use of other people's work is not allowed, unless properly cited. Previous works that have influenced the current work should also be cited. Presenting someone else's work as one's own is strictly prohibited and is considered plagiarism.

Data and Material

Authors are encouraged to share their data, software, or other sharable material online, provided copyright and ownership laws surrounding that particular project permit. Authors may also be asked to share such material with the chair(s), and/or reviewers, and must be willing to do so if asked.

ETHICS & MALPRACTICE

Dual Submissions

Submitting a manuscript to more than one venue (conference, journal, etc) simultaneously is not allowed. Presenting previously published work to be considered as a new submission, without a significant new interpretation or analysis, is prohibited.

Conflicts of Interest

Authors must notify the chair(s) at the time of submission, if any factor outside the scope of the research has influenced any step of the work and manuscript writing. Examples of such factors include but are not limited to funding, grants, advisory and consultancy, stock ownership, current or past employment, and memberships, among others. All funding sources should be disclosed in the manuscript.

Animal and Human Subjects

Works involving human and/or animal subjects must ensure that the work has abided by institutional guidelines, and pre-approved by required bodies. Moreover, consent must be acquired from participants, and privacy of subjects must be ensured. All of the above must be specified with clear statements in the manuscript.

Hazardous Material

It should clearly be identified in the manuscripts if the works have involved hazardous chemicals and material, or devices that can be harmful.

Reporting of Mistakes, Errata, and Retractions

If an author identifies a major error in a published paper, he/she must immediately inform the publisher. Regardless of whether a significant error is reported by the authors of the work or other readers, authors are obligated to take the necessary steps to correct the issue. It is decided on a case-by-case basis whether an erratum will be submitted to notify future readers of the error and correction, or whether the paper will be retracted. Unethical/plagiarism issues mostly result in a retraction, while unintended mistakes will mostly result in the publication of an erratum.

ETHICS & MALPRACTICE

Publisher

Errata and Retractions

The publisher takes the necessary steps to prevent mistakes, academic and scientific misconduct, and unethical behavior, both intended and unintended. When mistakes are reported, the publisher works with chair(s) and authors to publish an erratum clarifying the issue. In cases where the mistakes are severe and significant, the paper might be retracted. If unethical behavior, plagiarism, academic and scientific misconduct, or other such activities are proven to have taken place by an author or authors, the publisher will retract the paper.

Content and Archiving

The publisher preserves and stores all content digitally on their own servers, as well as through partnering with Portico (Digital Preservation and Electronic Archiving Service).

Copyright and Access:

The proceedings and related papers are all based on the open-access model, which means interested individuals and institutions can access the material for free.

Users are allowed to read, download, copy, distribute, print, search, or link to the full texts of the articles in this proceedings without asking prior permission from the publisher or the author. This is in accordance with the BOAI definition of open access.

Ownership and Management:

This conference-proceedings is managed and operated by the International ASET (International Academy of Science, Engineering, and Technology) and Avestia Publishing (the publishing arm of ASET).

Schedule:

This conference proceeding accompanies the conference, meaning a new proceedings will be published every year for the corresponding annual conference of this series.

CONTACT US

For inquiries and to obtain further information on the conferences, please visit our [website](#)
You can also email info@ffhmt.com or call us at: +1-613-834-9999

[Return to Top](#)