MHMT
CONGRESS

5TH WORLD CONGRESS ON MOMENTUM, HEAT AND MASS TRANSFER (MHMT'20)

October 14, 2020 - October 16, 2020 | Virtual Conference

THE RAN'20 CONGRESS IS COMPOSED OF 2 CONFERENCES

ENFHT 2020

ICMFHT 2020

CSP 2020

OCTOBER 14

OCTOBER 15

OCTOBER 16

OUR PROGRAM SCHEDULE IS BASED ON EASTERN TIME (ET - OTTAWA TIME)

OCTOBER 14

10:00 AM – 12:00 PM **Registrations**

RAN'20 Scientific Committee Chair

Dr. Lixin Cheng

Sheffield Hallam University, UK
Congress Chair

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Dr. Tassos G. Karayiannis

Brunel University London, UK
Congress Co-Chair

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OCTOBER 15

7:00 AM - 8:00 AM	Registrations
8:00 AM - 8:10 AM	Official Opening
	Dr. Lixin Cheng, Sheffield Hallam University, UK
8:10 AM - 9:10 AM	PLENARY LECTURE
	Numerical Simulations of Complex Multiphase Flows: Opportunities and Challenges Dr. Gretar Tryggvason, Johns Hopkins University, USA
9:10 AM - 9:15 AM	BREAK
09:15 AM - 10:00 AM	ICMFHT KEYNOTE LECTURE
	Combustion for Net Zero Carbon Society Dr. Yannis Hardalupas, Imperial College London, UK
10:00 AM - 10:45 AM	ENFHT KEYNOTE LECTURE
	Thermal Management and System Optimization of Heat Transfer Performance using Nanotechnology: A Hybrid Thermal and Environmental Application Dr. Ziad Saghir, Ryerson University, Canada
10:45 AM - 10:50 AM	BREAK
10:50 AM - 11:35 AM	ENFHT KEYNOTE LECTURE
	Two-Phase Gas-Liquid Flow in Pipes with Different Orientations Dr.Afshin J. Ghajar, Oklahoma State University, USA

OCTOBER 15

Parallel Sessions

Room 1		Room 1	
11:35 AM - 12:50 PM	SESSION CFD I	11:35 AM - 12:20 PM	SESSION Experimental Measurements I
12:35 PM - 12:55 PM	Lunch Break	12:20 PM - 12:40 PM	Lunch Break
12:55 PM - 2:10 PM	SESSION CFD II	12:40 PM - 1:55 PM	SESSION Heat Transfer Enhancement I
2:10 PM - 3:25 PM	SESSION Combustion	1:55 PM - 3:20 PM	SESSION Boiling and Condensation Fundamentals and Processes I

PLENARY LECTURE

OCTOBER 15 | 8:10 AM - 9:10 AM | SESSION CHAIR: DR. LIXIN CHENG, SHEFFIELD HALLAM UNIVERSITY, UK

Titles: Numerical Simulations of Complex Multiphase Flows: Opportunities and Challenges

Dr. Gretar Tryggvason, Johns Hopkins University, USA

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Gretar Tryggvason is the Charles A. Miller, Jr. Distinguished Professor at the Johns Hopkins University and the head of the Department of Mechanical Engineering. He received his PhD from Brown University in 1985 and was on the faculty of the University of Michigan in Ann Arbor until 2000, when he moved to Worcester Polytechnic Institute as the head of the Department of Mechanical Engineering. Between 2010 and 2017, he was the Viola D. Hank professor at the University of Notre Dame and the chair of the Department of Aerospace and Mechanical Engineering.

Professor Tryggvason is well known for his contributions to computational fluid dynamics; particularly the development of methods for computations of multiphase flows and for pioneering direct numerical simulations of such flows. He served as the editor-in-chief of the Journal of Computational Physics 2002-2015, is a fellow of APS, ASME and AAAS, and the recipient of several awards, including the 2012 ASME Fluids Engineering Award and the 2019 ASTFE Award.

KEYNOTE LECTURE

OCTOBER 15 | 9:15 AM - 10:00 AM | SESSION CHAIR: DR. LIXIN CHENG, SHEFFIELD HALLAM UNIVERSITY, UK

Titles: Combustion for Net Zero Carbon Society

Dr. Yannis Hardalupas, Imperial College London, UK

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Dr. Yannis Hardalupas received his Mechanical Engineering degree from National Technical University of Athens, Greece, followed by a PhD at Imperial College London. He was awarded an EPSRC Advanced Research Fellowship for experimental research on combustion of liquid and solid fuels before joining the academic staff at Mechanical Engineering Department of Imperial College, where he was promoted to Professor in 2009. In 2000, he spent a year at Ricardo Consulting Engineers working on computational models for liquid atomization through a Royal Academy of Engineering industrial secondment award.

His research covers combustion, heat and mass transfer, liquid atomisation and sprays and the development and application of novel optical and laser diagnostics. The latter led to patents for instruments on powder sizing, planar droplet sizing, nanoparticle sizing and novel imaging devices. His research contributed to gas- and liquid- fuelled land-based gas turbines, coal burners, aeroengines, gasoline and Diesel engines and liquid propellant rocket engines. He also researched spray drying and Cleaning-In-Place processes for the chemical and food industry and ‘nanofluids’ as improved coolants for fusion and fission reactors.

He is a Fellow of the Institute of Physics and Associate Fellow and member of the technical committee of Propellants and Combustion of the American Institute of Aeronautics and Astronautics. He chairs the Combustion Physics Group of the Institute of Physics, is an Editor of Experimental Thermal and Fluid Science and serves at the advisory and editorial boards of Experiments in Fluids and Int. J. of Spray and Combustion Dynamics.

KEYNOTE LECTURE

OCTOBER 15 | 10:00 AM - 10:45 AM | SESSION CHAIR: DR. LIXIN CHENG, SHEFFIELD HALLAM UNIVERSITY, UK

Titles: Thermal Management and System Optimization of Heat Transfer Performance using Nanotechnology: A Hybrid Thermal and Environmental Application

Dr. Ziad Saghir, Ryerson University, Canada

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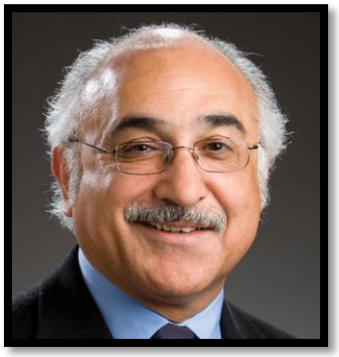
Prof M. Ziad Saghir is a Professor at Ryerson University and Canada's most experienced reduced-gravity researcher. He is Canada's top performer at leveraging departmental and provincial research funds with national (NSERC, CSA) and international funding agencies to pursue Canadian space science objectives onboard the International Space Station (ISS). His talent as a space scientist and university educator is consistently requested by the international space physical science mission community. He leads a group of very strong graduate students and post-docs that come from academia and industry, with interest in and application to deep hydrocarbon reservoirs. His innovation is recognized internationally through consistent invitations from European researchers that identify him as applying the maximum knowledge gained from long-duration gravity-driven phenomena in fluid physics to industrial processes. He has been PI or Co-I of Foton-M2 and M3 SCCO recoverable satellite missions (2007), the ISS SODI-IVIDIL (2009) and DSC (2010) missions, the ISS SODI-DCMIX mission (2011-15), and was the national coordinator of the CSA discipline working group on the role of gravity in metals and alloys. Canada's contribution to the SODI-DCMIX mission is to clarify the role of gravity on the movement of hydrocarbons across temperature gradients-important knowledge for Canada's deep oil reservoir sector (Hybernia Oil field and Northern exploration of oil reservoir deposits). Over the past decade, Prof. Saghir has been working in collaboration with TOTAL and researchers in France to apply innovation to benefit Canada's competitiveness in hydrocarbon extraction from oil reservoirs, a top priority of the Federal Government. He has published over 200 scientific journal paper related to energy. He is currently the chair of the International conference on Thermal Engineering (www.ictea.ca).

KEYNOTE LECTURE

OCTOBER 15 | 10:50 AM - 11:35 AM | SESSION CHAIR: DR. LIXIN CHENG, SHEFFIELD HALLAM UNIVERSITY, UK



Titles: Two-Phase Gas-Liquid Flow in Pipes with Different Orientations

Dr. Afshin J. Ghajar, Oklahoma State University, USA

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Dr. Afshin J. Ghajar is *Regents and John Brammer Endowed Professor* in the School of Mechanical and Aerospace Engineering at Oklahoma State University, Stillwater, Oklahoma, USA and an Honorary Professor of Xi'an Jiaotong University, Xi'an, China. He received his BS, MS, and PhD all in Mechanical Engineering from Oklahoma State University. His expertise is in experimental heat transfer/fluid mechanics and development of practical engineering correlations. Dr. Ghajar has made significant contributions to the field of thermal sciences through his experimental, empirical, and numerical works in heat transfer and stratification in sensible heat storage systems, heat transfer to non-Newtonian fluids, heat transfer in the transition region, and non-boiling heat transfer in two-phase flow. His current research is in two-phase flow heat transfer/ pressure drop studies in pipes with different orientations, heat transfer/pressure drop in mini/micro tubes, and mixed convective heat transfer/pressure drop in the transition region (plain and enhanced tubes). Dr. Ghajar has been a Summer Research Fellow at Wright Patterson AFB (Dayton, Ohio) and Dow Chemical Company (Freeport, Texas). He and his co-workers have published over 200 reviewed research papers and 10 book/handbook chapters. He has delivered numerous keynote and invited lectures at major technical conferences and institutions.

For more information Please visit : https://mhmtcongress.com/program

SESSION

CFD I

OCTOBER 15 | 11:35 AM - 12:35 PM | ROOM 1 | SESSION CHAIR: DR. ZIAD SAGHIR, RYERSON UNIVERSITY, CANADA

Titles: Modelling of Shear-induced Lift for Non-spherical Point Particles In Arbitrary Flows

ICMFHT ID 127
Time: 11:35 AM - 11:50 AM
Presenter: Jure Ravnik, University of Maribor, Slovenia
Authors: Jure Ravnik, Yan Cui, Matjaz Hribersek, Paul Steinmann

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Titles: Influence of Surface Tension on Pressure Variation in Microfluidic T-Junction

ICMFHT ID 116
Time: 11:50 AM - 12:05 PM
Presenter: Piyush Kumar, IIT Patna, India
Authors: Piyush Kumar, Manabendra Pathak

View Abstract

Titles: Numerical Study of Single Iron(III) Nitrate Nonahydrate/Ethanol Droplet Evaporation in Humid Air

ICMFHT ID 183
Time: 12:05 PM - 12:20 PM
Presenter: Praveen Narasu, IWR, Heidelberg University, Germany
Authors: Praveen Narasu, Alexander Keller, Maximilian Kohns, Hans Hasse, Eva Gutheil

View Abstract

Titles: A BEM Model For Heat Flux Exchange Between Particles And Fluid

ICMFHT ID 133
Time: 12:05 PM - 12:20 PM
Presenter: Praveen Narasu, IWR, Heidelberg University, Germany
Authors: Praveen Narasu, Alexander Keller, Maximilian Kohns, Hans Hasse, Eva Gutheil

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SESSION

EXPERIMENTAL MEASUREMENTS I

OCTOBER 15 | 11:35 AM - 12:20 PM | ROOM 2 | SESSION CHAIR: DR. AFSHIN J. GHAJAR, OKLAHOMA STATE UNIVERSITY, USA

Titles: Theoretical Analysis Of The Lifetime Of Sessile Evaporating Droplet With Surface Cooling Effect

ICMFHT ID 105
Time: 11:35 AM - 11:50 AM
Presenter: Yongpan Cheng, North China Electric Power University, China
Authors: Yongpan Cheng, Yang Shen, Jinliang Xu

View Abstract

Titles: Phase Separation Characteristics through Vertical Y Junction preceded by Elbow Tube

ICMFHT ID 122
Time: 11:50 AM - 12:05 PM
Presenter: Kosuke Miyawaki, Mitsubishi Electric Corporation, Japan
Authors: Kosuke Miyawaki, Yoji Onaka

View Abstract

Titles: Spray Structure of an Elliptical Effervescent Atomizer

ICMFHT ID 155
Time: 12:05 PM - 12:20 PM
Presenter: Sana Shaghaghian, Concordia University, Canada
Authors: Sana Shaghaghian, Mehdi Jadidi, Ali Dolatabadi

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SESSION

CFD II

OCTOBER 15 | 12:55 PM - 2:10 PM | ROOM 1 | SESSION CHAIR: DR. JOÃO MÁRIO RODRIGUES MIRANDA, UNIVERSITY OF PORTO, PORTUGAL

Titles: Hydrodynamics and Heat Transfer Characteristics of Free Surface Liquid Jet Impingement on a Convex Cylindrical Surface

ICMFHT ID 168
Time: 12:55 PM - 1:10 PM
Presenter: Kuldeep Baghel, Indian Institute of Technology Bombay, India
Authors: Kuldeep Baghel, Arunkumar Sridharan, Janani Muralidharan

View Abstract

Titles: Detailed CFD Modelling and Simulation for Optimising Gas Flows in a Complex Duct Arrangement

ICMFHT ID 174
Time: 01:10 PM – 01:25 PM
Presenter: Anupam, NCCBM, India
Authors: Anupam, V Ramachandrarao Maddali, Prateek Sharma, Anil K popuri, Ashutosh Saxena, B.N.Mohapatra

View Abstract

Titles: CFD-based Characterization of the Single-use Bioreactor XcellerexTM XDR-10 for Cell Culture Process Optimization

ICMFHT ID 185
Time: 01:25 PM - 01:40 PM
Presenter: Diana Kreitmayer, Universität Heidelberg, Germany
Authors: Diana Kreitmayer, Srikanth Gopireddy, Tomomi Matsuura, Shizuka Kondo, Hirofumi Kakihara, Koichi Nonaka, Nora Urbanetz, Eva Gutheil

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SESSION

CFD II

OCTOBER 15 | 12:55 PM - 2:10 PM | ROOM 1 | SESSION CHAIR: DR. JOÃO MÁRIO RODRIGUES MIRANDA, UNIVERSITY OF PORTO, PORTUGAL

Titles: Steady State Modeling of Highly Rotating and Viscous Flow using VOF Method for Rotary Glass Fiberization Process

ICMFHT ID 186
Time: 01:40 PM - 01:55 PM
Presenter: Rohit Sharma, Ansys Software Pvt. Ltd., India
Authors: ROHIT.S, VINAY.G, ALOK.K, PREM.A

View Abstract

Titles: Numerical Study on the Interface Evolution of the Unsteady Supercavity Flows with a Strong Gas Jet

ICMFHT ID 190
Time: 01:55 PM – 02:10 PM
Presenter: Xiang Min, National University of Defense Technology, China
Authors: Min Xiang, Xiaoyu Zhao, Zeyang Xie

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SESSION

HEAT TRANSFER ENHANCEMENT I

OCTOBER 15 | 12:40 PM - 1:55 PM | ROOM 2 | SESSION CHAIR: DR. LIXIN CHENG, SHEFFIELD HALLAM UNIVERSITY, UK

Titles: Investigation of Sequential and Simultaneous Crossflow Heat Exchangers for Automotive Application

ENFHT ID 117
Time: 12:40 PM - 12:55 PM
Presenter: Amir Fartaj, University of Windsor, Canada
Authors: Amir Fartaj, Mohammed Ismail, Mesbah G. Khan

View Abstract

Titles: Experimental Investigation of The Influences of Fluid Properties on Heat Transfer for Spray Cooling

ENFHT ID 122
Time: 12:55 PM – 01:10 PM
Presenter: Jessica Kansy, MAHLE International GmbH, Germany
Authors: Jessica Kansy, Thomas Kalmbach, Andrè Loges, Thomas Wetzel, Achim Wiebelt

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Titles: An Experimental Study with Condenser Embedded Adsorber

ENFHT ID 125
Time: 01:10 PM - 01:25 PM
Presenter: Gamze Gediz Ilis, Istanbul Okan University, Turkey
Authors: Gamze Gediz Ilis, Hasan Demir

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SESSION

HEAT TRANSFER ENHANCEMENT I

OCTOBER 15 | 12:40 PM - 1:55 PM | ROOM 2 | SESSION CHAIR: DR. LIXIN CHENG, SHEFFIELD HALLAM UNIVERSITY, UK

Titles: Investigating The Influence Of Macroscopic Surface Structures On The Thermal Contact Conductance Using Infrared Thermography.

ENFHT ID 166
Time: 01:25 PM - 01:40 PM
Presenter: Thorsten Helmig, Institute of Heat and Mass Transfer, RWTH Aachen University Germany
Authors: Thorsten Helmig, Faruk Al-Sibai, Reinhold Kneer, Michael Burghold

View Abstract

Titles: A Novel Wavy Channel Heat Exchanger: The Sine-helical Mixer

ENFHT ID 222
Time: 01:40 PM – 01:55 PM
Presenter: Abbas Aldor, SIAME Laboratory - E2S UPPA, France
Authors: Abbas Aldor, Yann Moguen, Kamal El Omari, Charbel Habchi, Pierre-Henri Cocquet, Yves Le Guer

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SESSION

COMBUSTION

OCTOBER 15 | 2:10 PM - 3:35 PM | ROOM 1 | SESSION CHAIR: DR. JOÃO MÁRIO RODRIGUES MIRANDA, UNIVERSITY OF PORTO, PORTUGAL

Titles: Optimization Of Coal/Biomass Blend Combustion In Circulating Fluidized Bed Reactor Using Novel Aspen Plus Models

CSP ID 112
Time: 02:10 PM - 02:25 PM
Presenter: Lyazzat Kulmukanova, Nazarbayev University, Kazakhstan
Authors: Lyazzat Kulmukanova, Dhawal Shah, Yerbol Sarbassov

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Titles: The Effect of Air Throttle on Combustion Process and Emission Formation in Marine Lean-Burn Gas Engines

CSP ID 117
Time: 2:25 PM - 2:40 PM
Presenter: Sadi tavakoli, Norwegian University of Science and Technology, Norway
Authors: Sadi Tavakoli, Jesper Schramm, Eilif Pedersen

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Titles: Reduced Order Chemical Kinetic Modeling for a Hydrogen Fueled Radical Farming Scramjet

CSP ID 106
Time: 2:40 PM - 2:55 PM
Presenter: Raoul Mazumdar, Royal Melbourne Institute of Technology (RMIT), Australia
Authors: Raoul Mazumdar, Hideaki Ogawa, Adrian Pudsey

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SESSION
COMBUSTION
OCTOBER 15 | 2:10 PM - 3:35 PM | ROOM 1 | SESSION CHAIR: DR. JOÃO MÁRIO RODRIGUES MIRANDA, UNIVERSITY OF PORTO, PORTUGAL

Titles: LES-CMC Simulations of Strong Swirling Confined Flames in a Model Gas Turbine Combustor

CSP ID 108
Time: 02:55 PM - 03:10 PM
Presenter: Pranit Gaikwad, Indian Institute of Technology Bombay (IITB), India
Authors: Pranit Gaikwad, S. Sreedhara

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Titles: Some Specific Aspects Related To The Use Of The Artificial Compressibility Methods To Simulate Unsteady Flows

CSP ID 107
Time: 03:10 PM – 03:25 PM
Presenter: Pascal Bruel, LMAP CNRS, France
Authors: Mariovane Donini, Fernando Fachini, Cesar Cristaldo, Pascal Bruel

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SESSION

BOILING AND CONDENSATION FUNDAMENTALS AND PROCESSES I

OCTOBER 15 | 1:55 PM - 3:20 PM | ROOM 2 | SESSION CHAIR: DR. LIXIN CHENG, SHEFFIELD HALLAM UNIVERSITY, UK

Titles: Dropwise condensation on nanostructured surface

Invited Speaker
Time: 01:55 PM - 02:15 PM
Presenter: Jinliang Xu, North China Electric Power University, China
Authors: Jinliang Xu and Jian Xie

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Titles: Experimental study of solid/liquid thermal shock in carbon dioxide

ICMFHT 114
Time: 2:15 PM - 2:30 PM
Presenter: Jean Muller CETHIL - INSA De Lyon France
Authors: Jean Muller, Romuald Rullière, Pierre Ruyer, Marc Clausse

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Titles: Enhancement of Pool Boiling Heat Transfer Performance by an Eco-Friendly Surfactant

ICMFHT 117
Time: 2:30 PM - 2:45 PM
Presenter: Rinku Kumar Gouda, Mechanical Engineering Department, IIT Patna India
Authors: Rinku Kumar Gouda, Mohd. Kaleem Khan, Manabendra Pathak

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SESSION

BOILING AND CONDENSATION FUNDAMENTALS AND PROCESSES I

OCTOBER 15 | 1:55 PM - 3:20 PM | ROOM 2 | SESSION CHAIR: DR. LIXIN CHENG, SHEFFIELD HALLAM UNIVERSITY, UK

Titles: Effect of Outlet Plenum Volume During Flow Boiling Inside Plain Parallel Microchannel

ICMFHT 119
Time: 02:45 PM - 03:00 PM
Presenter: Gaurav Hedau, India Institute of Technology Bombay, India
Authors: Gaurav Hedau, Rishi Raj, Sandip K. Saha

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Titles: Saturated Nucleate Boiling with HFE-7100 on a Plain Smooth Copper Surface

ICMFHT 123
Time: 03:00 PM – 03:15 PM
Presenter: Mohamed M Mahmoud, Brunel University London, UK
Authors: Mohamed M Mahmoud, Xiaoguang Fan, Atanas Ivanov, Tassos Karayiannis

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Titles: Flow Boiling Heat Transfer in Coated and Uncoated Plate Heat Exchangers

ICMFHT 111
Time: 03:15 PM – 03:20 PM
Presenter: Angela Mutumba, Brunel University London, UK
Authors: Angela Mutumba, Tassos Karayiannis, Francesco Coletti, Alex Reip

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OCTOBER 16

7:00 AM - 8:00 AM	Registrations
8:00 AM - 8:45 AM	ICMFHT KEYNOTE LECTURE
	Two-Mode Eddy-Viscosity Compressible Turbulence Model for Supercritical Fluid Dr. BoFeng Bai, Xi'an Jiaotong University, China
8:45 AM - 9:30 AM	ENFHT KEYNOTE LECTURE
	Mesoscale Simulation of Complex Transport Phenomena Far from Equilibrium Dr. Sauro Succi, Center for Life Nanosciences at La Sapienza, Italy
9:30 AM - 9:35 AM	Break
09:35 AM - 10:20 AM	ENFHT KEYNOTE LECTURE
	Effects of Supercritical Airfoil Upper Section Thickness Modification on Airfoil Lift Characteristics Dr. Vahid Motevalli, Tennessee Technological University, USA
10:20 AM - 11:05 AM	CSP KEYNOTE LECTURE
	Challenges and Opportunities of Bioenergy with CCS (BECCS) Technologies Dr. Lin Ma, The University of Sheffield, UK Dr. Ziad Saghir, Ryerson University, Canada
11:05 AM - 11:10 AM	BREAK
11:10 AM - 12:10 PM	WORKSHOP Advances in Experimental Study and Modeling of CO2 Fluid Flow and Heat Transfer

OCTOBER 16

12:10 PM - 12:30 PM		Lunch Break	
Parallel Sessions			
Room 1		Room 1	
12:30 AM - 01:35 PM	SESSION CFD III	12:30 AM - 02:05 PM	SESSION Boiling and Condensation Fundamentals and Processes II
01:35 PM – 01:40 PM	Break	02:05 PM - 02:10 PM	Break
1:40 PM - 3:00 PM	SESSION CFD IV	2:10 PM – 2:35 PM	SESSION Experimental Measurements II
3:00 PM - 3:35 PM	SESSION Heat Transfer Enhancement II		

KEYNOTE LECTURE

OCTOBER 16 | 8:00 - 8:45 | SESSION CHAIR: DR. TASSOS G. KARAYIANNIS, BRUNEL UNIVERSITY LONDON, UK

Titles: Two-Mode Eddy-Viscosity Compressible Turbulence Model for Supercritical Fluid

Dr. BoFeng Bai, Xi'an Jiaotong University, China

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Dr. BoFeng Bai is a Professor in the State Key Laboratory of Multiphase Flow in Power Engineering at Xi'an Jiaotong University. He received his BE, and Ph.D in Power Engineering & Engineering Thermophysics at Xi'an Jiaotong University in 1993 and 1999, respectively. His research area covers multiphase flow fundamentals and applications in thermal engineering, power engineering as well as petroleum engineering. He has published over 200 journal papers including Journal of Fluid Mechanics, International of Multiphase Flow, Physics of Fluids, et al, given over 20 invited lectures at technical conferences and institutions. He is the member of editorial board of Case Studies in Thermal Engineering (Elsevier) and Interfacial Phenomena and Heat Transfer (Begell House), the recipient of several awards, including China National Ten Thousand Talent Program and China National Funds for Distinguished Young Scientists.

KEYNOTE LECTURE

OCTOBER 16 | 8:45 AM - 9:30 AM | SESSION CHAIR: DR. TASSOS G. KARAYIANNIS, BRUNEL UNIVERSITY LONDON, UK

Titles: Mesoscale Simulation of Complex Transport Phenomena Far From Equilibrium

Dr. Sauro Succi, Center for Life Nanosciences at La Sapienza, Italy

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Dr. Sauro Succi holds a degree in Nuclear Engineering from the University of Bologna and a PhD in Plasma Physics from the EPFL, Lausanne, Switzerland. He has held a research staff position at the IBM European Center for Scientific and Engineering Computing, Rome. Till 2018 he served as a Director of Research at the Istituto Applicazioni Calcolo of the Italian National Research Council in Rome and he is also a Research Associate of the Physics Department of Harvard University and a regular Visiting Professor at the Institute of Applied Computational Science at the School of Engineering and Applied Sciences of Harvard University. Since 2019 he is a senior research executive and principal investigator at the Center for Life Nanosciences of the Italian Institute of Technology at La sapienza, Rome.
He has published extensively on a broad range of topics in computational statistical physics, including thermonuclear plasmas, fluid turbulence and combustion, micro and nano-biofluidics, as well as quantum-relativistic flows.
He is the author of the highly cited monograph ”The lattice Boltzmann equation for fluid dynamics and beyond”, (Oxford Univ. Press, 2001) and ”The
Lattice Boltzmann Equation for Complex States of Flowing Matter” (OUP, 2018).
Dr. Succi is an elected Fellow of the American Physical Society (1998), a member of the European Physical Society and an elected member of the
Academia Europaea (2015). He has received the Humboldt Prize in physics (2002), the Killam Award of the the University of Calgary (2005) and the Raman Chair of the Indian Academy of Sciences (2011). In 2017, he has been awarded a European Research Council Advanced Grant on computational design of mesoscale porous materials. He is the recipient of the 2017 APS Aneesur Rahman Prize for Computational Physics for seminal contributions to the development and application of the Lattice Boltzmann method and the 2019 Bernie J. Alder CECAM prize for exceptional contributions to the microscopic simulation of matter.

KEYNOTE LECTURE

OCTOBER 16 | 9:35 AM - 10:20 AM | SESSION CHAIR: DR. TASSOS G. KARAYIANNIS, BRUNEL UNIVERSITY LONDON, UK

Titles: Effects of Supercritical Airfoil Upper Section Thickness Modification on Airfoil Lift Characteristic

Dr. Vahid Motevalli, Tennessee Technological University, USA

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Vahid Motevalli is the Associate Dean for Research and Innovation in the College of Engineering since 2013 and Professor of Mechanical Engineering. He is responsible for the growth of externally funded research, research strategies and infrastructure, oversight of three research centers, and the college graduate program. Dr. Motevalli has more than 30 years of teaching, research and administrative experience in academia, government and industry with diverse research expertise in combustion, fire safety, hybrid-electric vehicles, aviation safety and security and transportation safety. These diverse research activities, thus far, have been supported by more than $17 million in external funding. He has over 100 technical publications in addition to reports, presentations and invited talks and has directed over 35 graduate students. His professional experience outside academia includes working at national and government laboratories (NIST, NRL), government (US Congress as ASME Congressional Fellow) and consulting.

KEYNOTE LECTURE

OCTOBER 16 | 10:20 AM - 11:05 AM | SESSION CHAIR: DR. TASSOS G. KARAYIANNIS, BRUNEL UNIVERSITY LONDON, UK

Titles: Challenges and Opportunities of Bioenergy with CCS (BECCS) Technologies

Dr. Lin Ma, The University of Sheffield, UK

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Professor Ma completed his PhD at the University of Leeds, then took a series of posts at the University before he took up the post of Professor of Fluid Dynamics in the Department of Mechanical Engineering at the University of Sheffield in 2015 as a member of the University Energy 2050 initiative. He has been working for many years on sustainable energy technologies and in particular on computational fluid dynamics (CFD) modelling of various energy processes and a wide range of industrial fluid flow, heat and mass transfer problems. His active research areas include carbon capture from power generation and industrial processes, clean coal/biomass/gas combustion technologies and pollutants formation prediction, fuel related ash deposition, slagging and fouling, future power plant multi-scale and dynamic simulation, etc.

WORKSHOP

OCTOBER 16 | 11:10 AM - 12:10 PM | SESSION CHAIR. DR. BOFENG BAI, DR. JINLING XU AND DR. LIXIN CHENG

Titles: Advances in Experimental Study and Modeling of CO2 Fluid Flow and Heat Transfer

Workshop Return to Top

We are pleased to announce a dedicated Workshop on Advances in Experimental Study and Modeling of CO2 Fluid Flow and Heat Transfer to explore the subject in more detail during ICMFHT'20. Please join our Speakers for their discussion on a variety of topics related advances of research on CO2 fluid flow and heat transfer including experimental research and modelling of evaporation heat transfer, two phase flow and supercritical CO2 inside channels and exchangers.

The workshop will be held by the following honoured speakers:

Dr. Bofeng Bai
State Key Laboratory of Multiphase Flow in Power Engineering
Xi'an Jiaotong University, China

Dr. Jinling Xu
School of Energy and Power Engineering
North Cina Electric Power University, China

Dr. Lixin Cheng
Department of Engineering and Mathmatics
Sheffield Hallam University, United Kingdom

SESSION

CFD III

OCTOBER 16| 12:30 PM - 1:35 PM | ROOM 1 | SESSION CHAIR: DR. TASSOS G. KARAYIANNIS, BRUNEL UNIVERSITY LONDON, UK

Titles: Generation of Green Energy Using Wastewater
ENFHT 196
Time: 12:35 PM - 12:50 PM
Presenter: Ghaleb Ibrahim, American University, UAE
Authors: Ghaleb Ibrahim, Salem Haggag
View Abstract

Titles: Experimental and Computational Modelling of Flow Distribution
ENFHT 148
Time: 12:30 AM - 12:35 AM
Presenter: Dominika Babička Fialová, Brno University of Technology, Czech Republic
Authors: Dominika Babička Fialová, Zdeněk Jegla
View Abstract

Titles: Laminar and Turbulent Boundary Layers on a Shark Fin
ENFHT 201
Time: 12:50 PM - 1:05 PM
Presenter: Shrey Kulkarni, Mahindra Ecole Centrale, India
Authors: Mahindra Ecole Centrale, Kartik Sunil, Prasad Pokkunuri, Husein Noble
View Abstract

Titles: Numerical Solution of Laminar Flow over Symmetric NACA Airfoils
ENFHT 200
Time: 01:05 PM - 1:20 PM
Presenter: Shashank Sadineni, Mahindra Ecole Centrale, India
Authors: Shashank Sadineni, Rahul Kotikalapudi, Prasad Pokkunuri, Prasanna M.S.S.
View Abstract

Titles: Numerical Study on the Effects of the Wick Structure of an Annular Heat Pipe on the Isothermal Performance
ENFHT 169
Time: 01:20 PM - 1:35 PM
Presenter: Hongzhe Zhang, Beijing University of Technology, China
Authors: Shashank Sadineni, Rahul Kotikalapudi
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SESSION

BOILING AND CONDENSATION FUNDAMENTALS AND PROCESSES II

OCTOBER 16| 12:30 PM - 2:05 PM | ROOM 2 | SESSION CHAIR. DR. VAHID MOTEVALLI, TENNESSEE TECHNOLOGICAL UNIVERSITY, USA

Titles: Numerical study of the effect surface properties in boiling

ICMFHT ID 169
Time: 12:30 - 12:45
Presenter: João Mário Rodrigues Miranda, University of Porto, Portugal
Authors: João Mário Rodrigues Miranda, E. Freitas, D. Bento, R. Lima, A. Moita, A. Moreira

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Titles: Experimental investigation of subcooled flow boiling of R245fa in a narrow horizontal annular duct

ICMFHT ID 170
Time: 12:45 - 12:50
Presenter: Boštjan Zajec, Jožef Stefan Institute, Reactor engineering division, Slovenia
Authors: Boštjan Zajec, Boštjan Končar, Marko Matkovič, Leon Cizelj

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Titles: Flow Boiling of HFE-7100 in Multi-Microchannels: Effect of Surface Material

ICMFHT ID 124
Time: 12:50 - 1:05
Presenter: Mohamed M Mahmoud, Brunel University London, United Kingdom
Authors: Mohamed M Mahmoud, Ali H. Al-Zaidi, Tassos Karayiannis

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Titles: Numerical Simulation Of Steam Bubble Condensation Using Thermal Phase Change Model

ICMFHT ID 180
Time: 12:40 PM – 01:00 PM
Presenter: Amine Ben Hadj Ali, ANSYS Germany GmbH, Germany
Authors: Amine Ben Hadj Ali, LIKITHA.S, ALOK.K, VINAY.G, HEMANT.P, AMINE.B, VISHESH.A

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SESSION

BOILING AND CONDENSATION FUNDAMENTALS AND PROCESSES II

OCTOBER 16| 12:30 PM - 2:05 PM | ROOM 2 | SESSION CHAIR. DR. VAHID MOTEVALLI, TENNESSEE TECHNOLOGICAL UNIVERSITY, USA

Titles: Flow Boiling Of Water In Square Cross Section Microchannel At Different Inlet Subcooling Conditions

ICMFHT ID 154
Time: 1:20 - 1:35
Presenter: Sofia Korniliou, Brunel University London, UK
Authors: Sofia Korniliou, Tassos Karayiannis

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Titles: Wettability Effect On Flow Boiling Characteristics Within Micro-passages
ICMFHT ID 149
Time: 1:35 - 1:50
Presenter: Konstantinos Vontas, University of Brighton, United Kingdom
Authors: Konstantinos Vontas, Manolia Andredaki, Anastasios Georgoulas, Nicolas Miché, Marco Marengo

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Titles: Effect of Channel Aspect Ratio on Flow Boiling Characteristics within Rectangular Micro-passages
ICMFHT ID 147
Time: 1:50 - 2:05
Presenter: Marco Marengo, University of Brighton, UK
Authors: Manolia Andredaki, Konstantinos Vontas, Anastasios Georgoulas, Nico Miché,

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SESSION

CFD IV

OCTOBER 16| 1:40 PM - 3:00 PM | ROOM 1 | SESSION CHAIR. DR. LIN MA THE UNIVERSITY OF SHEFFIELD, UK

Titles: Nitrogen-Galinstan Two Phase Pumping for MHD Power Generation Systems

ICMFHT ID 131
Time: 1:40 - 1:55
Presenter: Joshua Rosettani, University of Guelph, Canada
Authors: Wael H. Ahmed, Philip Geddis, Lijun WuBruce Clements, Josh Rosettani

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Titles: Numerical Study of a Novel Variable Diameter Cavitator Structure

ICMFHT ID 160
Time: 1:55 - 2:00
Presenter: Xiang Min, National University of Defense Technology, China
Authors: Xiang Min, Zeyang Xie , Min Xiang, Bo Liu, Weihua Zhang

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Titles: Numerical Simulation of A Radial Free Surface Liquid Jet Impinging on A Heated Surface

ICMFHT ID 184
Time: 2:00 - 2:15
Presenter: Amine Ben Hadj Ali, ANSYS Germany GmbH, Germany
Authors: LIKITHA.S, PATRICK.S, ALOK.K, AMINE.B, VINAY.G

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SESSION

CFD IV

OCTOBER 16| 1:40 PM - 3:00 PM | ROOM 1 | SESSION CHAIR. DR. LIN MA THE UNIVERSITY OF SHEFFIELD, UK

Titles: Numerical Simulation of Taylor Flow in the Entrance Region of Microchannels

ICMFHT ID 189
Time: 2:15 - 2:30
Presenter: Amin Etminan, Memorial University of Newfoundland, Canada
Authors: Amin Etminan, Yuri S. Muzychka, Kevin Pope

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Titles: CFD study of an Electrical Submersible Pump (ESP) handling Two-Phase Liquid-Liquid flow

ICMFHT ID 137
Time: 2:30 - 2:45
Presenter: Deisy Steffania Becerra Tuta, University of los Andes, Colombia
Authors: Deisy Steffania Becerra Tuta, Miguel Asuaje, Nicolás Ratkovich

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Titles: A Two-dimensional Numerical Model To Predict The Performance Of V-bar Splash Fill

ICMFHT ID 146
Time: 2:45 – 3:00
Presenter: Ankur Kumar Tiwari, Indian Institute of Technology Delhi, India
Authors: Ankur Kumar Tiwari, Sanjeev Jain, Sujay Karmakar

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SESSION
EXPERIMENTAL MEASUREMENTS II

OCTOBER 16| 2:10 PM - 2:35 PM | ROOM 2 | SESSION CHAIR. DR. VAHID MOTEVALLI, TENNESSEE TECHNOLOGICAL UNIVERSITY, USA

Titles: Real-time Monitoring of Multiphase Flow within Rock Miniplugs using 2D X-ray Imaging

ICMFHT ID 167
Time: 2:10 - 2:25
Presenter: Vera Pletneva, Schlumberger Moscow Research (SMR) Center, Russia
Authors: Vera Pletneva, Dmitry Korobkov, Ivan Yakimchuk

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Titles: Experimental Study on Evaporation properties during Spray Flash of Aqueous NaCl Solution

ENFHT ID 171
Time: 2:25 - 2:30
Presenter: Huihui Wang, Xi'an Jiaotong University, China
Authors: Huihui Wang, Dan Zhang, Shuran Zhao

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SESSION
HEAT TRANSFER ENHANCEMENT II

OCTOBER 16| 3:00 PM - 3:45 PM | ROOM 1 | SESSION CHAIR. DR. LIN MA THE UNIVERSITY OF SHEFFIELD, UK

Titles: Effect of Angular Velocity on Mass Fraction Distribution for Jets Impinging on Airfoil Leading-Edge Cavity

ENFHT ID 147
Time: 3:00 - 3:15
Presenter: Mohammad Hamdan, American University of Sharjah, UAE
Authors: Mohammad Hamdan, Amin Safi, Emad Elnajjar

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Titles: Heat Transfer in a Torus Electromagnetic Coupler Subjected to Cooling

ENFHT ID 223
Time: 3:15 - 3:30
Presenter: Fatima Zahera Boudara, Laboratoire SIAME - UPPA, France
Authors: Fatima Zahera Boudara, F.Z. Boudara, H. Bouzekri, Y. Benhammadi, P.-H. Cocquet, M. Rivaletto, L. Pécastaing, A. Silvestre de Ferron, S. Paquet, J-P. Brasile, Y. Le Guer

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Titles: Theoretical Experimental Analysis of Solar still

ENFHT ID 195
Time: 3:30 - 3:45
Presenter: Ghaleb Ibrahim, American University in Dubai, UAE
Authors: Ghaleb Ibrahim, Husham Ahmed

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