

2nd World Congress on Momentum, Heat and Mass Transfer (MHMT'17)

The congress consists of:

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| ENFHT'17 | 2nd International Conference on
Experimental and Numerical Flow and Heat Transfer |
| ICMTOD'17 | 2nd International Conference on Mass Transfer Operation and Devices |
| ICMFHT'17 | 2nd International Conference on Multiphase Flow and Heat Transfer |
| CSP'17 | 2nd International Conference on Combustion Science and Process |
| ICHTD'17 | 2nd International Conference on Heat Transfer Devices |
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*Registrants from the five conferences are permitted, and even encouraged,
to attend sessions from any of the five conferences.*

Thursday

April 6, 2017

3:00 PM - 5:00 PM **Registration**

Friday

April 7, 2017

8:00 AM - 9:00 AM **Registration**

Friday

April 7, 2017

9:00 AM - 9:15 AM **Official Opening of the Congress**

Chair: Dr. Lixin Cheng

9:15 AM - 10:00 AM **KEYNOTE LECTURE**

Session Chair:
Dr. Lixin Cheng **Modelling Of Automotive Fuel Droplet Heating and Evaporation:
Recent Results and Unsolved Problems**

Dr. Sergei Sazhin
University of Brighton, United Kingdom

10:00 AM - 10:45 AM **KEYNOTE LECTURE**

Session Chair:
Dr. Lixin Cheng **Experimental and Asymptotic Investigation of a Shear Stress
driven Rotary Wave**

Dr. Herbert Steinrück
Technische Universität Wien, Austria

10:45 AM - 11:05 AM **COFFEE BREAK**

11:05 AM - 1:05 PM **SESSION CHAIR:** Dr. Herbert Steinrück & Dr. Geoff Stevens

CFD

ENFHT 103 **Variational Approach of Constructing Reduced Fluid-Structure Interaction
Models in Bifurcated Networks**
11:05 - 11:25

A. S. Liberson, Y. Seyed Vahedein, D. A. Borkholder
Rocheste Institute of Technology, United States

ENFHT 123 **Control of Aerodynamic Noise Radiating from Cavity Flows by Introducing
Longitudinal Vortices**
11:25 - 11:35

Hiroshi Yokoyama
Toyohashi University of Technology, Japan

ENFHT 108 **Natural Convection Inside a Rectangular Enclosure with Two Discrete Heat
Sources Placed on Its Bottom Wall**
11:35 - 11:55

Mehmet Saglam, Bugra Sarper, Orhan Aydin
Karadeniz Technical University, Turkey

ENFHT 120 **Discrete Phase Modeling of Nanofluid Flow around a Circular Bluff Body**
11:55 - 12:05

R. Deepak Selvakumar, S. Dhinakaran
Indian Institute of Technology Indore, India

Friday

April 7, 2017

ENFHT 106 **Natural Convection Heat Transfer from Discretely Heated Vertical Channel: Effect of the Surface Radiation**
12:05 - 12:25

*Bugra Sarper, Mehmet Saglam, Orhan Aydin, Mete Avci
Gumushane University, Turkey*

ENFHT 104 **3D Numerical Investigating of Flow Field and Energy Separation in Counter-flow Vortex Tube**
12:25 - 12:45

*Mohammad O. Hamdan, Hashem M. Alargha, Ali Hilal-Alnaqbi, Bobby Mathew
American University of Sharjah, United Arab Emirates*

ICMFHT 102 **Numerical Modelling of a Direct Contact Condensation Experiment**
12:45 - 1:05

*Thomas Höhne, Stasys Gasiunas, Marijus Šeporaitis
Helmholtz-Zentrum Dresden - Rossendorf, Germany*

1:05 PM - 2:05 PM LUNCH

2:05 PM - 2:50 PM **KEYNOTE LECTURE**

Session Chair
Dr. Sergei Sazhin

On the Phenomenal Mechanisms and Prediction Methods of Flow Boiling Heat Transfer in Micro-Channels

*Dr. Lixin Cheng
Sheffield Hallam University, United Kingdom*

2:50 PM - 3:35 PM **KEYNOTE LECTURE**

Session Chair
Dr. Sergei Sazhin

Organic Transformations Catalysed by Low-Coordinate m-Terphenyl Complexes

*Dr. Deborah Kays
The University of Nottingham, United Kingdom*

3:35 PM - 3:55 PM COFFEE BREAK

3:55 PM - 6:05 PM **SESSION CHAIR:** Dr. Nabeel Al-Rawahi & Dr. Thomas Höhne

Multiphase Flow and Heat Transfer, CFD

ICMHFT 128 **Heat Transfer in the Boiling Regime of Impinging Liquid Jets**
3:55 - 4:15

*Steffen Waldeck, Udo Fritsching
University Bremen, Germany*

ICMHFT 104 **The Effect of Coalescence Behavior of Liquid on Bubble Column Hydrodynamics**
4:15 - 4:35

*Mojtaba Goraki Fard, Youssef Stiriba, Xavier F. Grau
Universitat Rovira i Virgili, Spain*

Friday

April 7, 2017

ICMHFT 108 **Simulation of Droplet Breakup and Evolving Rheology in
4:35 - 4:45 a High Shear Mixer**

Vipin Michael, Robert Prosser, Adam Kowalksi
University of Manchester, United Kingdom

ICMHFT 110 **Phase Transition Modeling for Cavitating Flows via a Hybrid Explicit
4:45 - 4:55 Residual Distribution Scheme**

Paola Bacigaluppi, Rémi Abgrall
Universität Zürich, Switzerland

ICMHFT 112 **Sharp Interface Level Set Method based Simulation and Energy Budget
4:55 - 5:05 Analysis of Falling Droplet Breakup Modes**

Yashraj Bhosale, Javed Shaikh, Atul Sharma
Indian Institute of Technology Bombay, India

ICMHFT 114 **CFD Simulation of Sodium Boiling in Heated Pipe using RPI Model
5:05 - 5:25**

M. Naveen Raj, K. Velusamy
Homi Bhabha National Institute / IGCAR, India

ICMHFT 122 **CFD Investigations of Effects of Cohesive Particles Proportion on
5:25 - 5:45 Fluidization of Binary Particles**

Liping Wei, Guodong Jiang, Haipeng Teng, Maosheng Zheng
Northwest University, China

ICMHFT 103 **A Numerical Study of Antisymmetric-Symmetric Mode of RB Convection
5:45 - 6:05 through on Time Evolution**

Fatima Zahra Benarab, Rasikh Tariq
Amar Telidji University, Algeria

Saturday

April 8, 2017

9:00 AM - 9:45 AM **KEYNOTE LECTURE**

Session Chair
Dr. Lixin Cheng

The Role of Nanoengineered Wettability in Phase Change Heat Transfer

Dr. Antonio Luis Moreira
Universidade de Lisboa, Portugal

9:45 AM - 10:30 AM **KEYNOTE LECTURE**

Session Chair
Dr. Lixin Cheng

Nano-Fluids in Heat Transfer: Research versus Applications

Dr. Andrzej Pacek
University of Birmingham, United Kingdom

10:30 AM - 10:50 AM **COFFEE BREAK**

10:30 AM - 12:00 PM **Poster Session**

ICMHFT 126 **Experimental Study on the Fire Spreading between Vehicles Using a Real Scale Fire Test**

Dabin Baek, Young Gi Park, Hong Sun Ryou
Chung-Ang University, South Korea

CSP 104 **Numerical Analyses of the Effect of Boiler Design on the Performance of a Liquid Fuelled Boiler**

Bilal Sungur, Bahattin Topaloglu, Hakan Ozcan,
Ondokuz Mayıs University, Turkey

CSP 110 **Development of a Catalytic Combustor with Thin-Honeycomb Substrate**

Byungchul Choi, Gyeongho Park, Daeseok Kim
Chonnam National University, South Korea

CSP 111 **Experimental and Numerical Investigation Into the Thermal Effects of Direct Fuel Injection in HCCI Engine**

Jacek Hunicz, Michal S. Geca, Maciej Mikulski, Robert Tyda
Lublin University of Technology, Poland

ICHTD 103 **Analysis of Transient Thermal Stresses in Annular Fin**

Hasan Bas, İbrahim Keles
Ondokuz Mayıs University, Turkey

ICHTD 106 **Experimental Investigation on the Condensation of R134a in a Multiport Flat Tube**

Paul Knipper, Dirk Bertsche, Thomas Wetzel
Karlsruhe Institute of Technology, Germany

Saturday

April 8, 2017

10:50 - 12:20 PM **SESSION CHAIR:** Dr. Antonio Luis Moreira & Dr. Alexander Liberson

Experimental Flow, Heat and Mass Transfer

ENFHT 110 **Thermal Performance of a Pulsating Heat Pipe with
Various Heating Conditions**

10:50 - 11:00

Dong Soo Jang, Seonggi Park, Hanseok Mun, Junyub Lim, Yongchan Kim
Korea University, South Korea

ENFHT 109 **Characteristic Analysis on Steam Generation of Steam Heat Pump**

11:00 - 11:10

Kibong Kim, Ki-Chang Chang, Hosang Ra, Yongchan Kim
University of Korea, South Korea

ENFHT 102 **Wake Characteristics of Vane-Type Vortex Generator**

11:10 - 11:30

HoJoon Shim, JongSung Lee, Hoon Chae, *Seung-O Park*
Advanced Institute of Science and Technology, South Korea

ICMTOD 101 **Hydrodynamic and Mass Transfer Performance of a Hybrid Pulsed Column
for Solvent Extraction**

11:30 - 11:50

Heng Yi, Yong Wang, Kathryn H. Smith, Weiyang Fei, *Geoffrey W. Stevens*
University of Melbourne, Australia

ICHTD 105 **Thermal Characterization of a Heat Transport System
for Satellite Application**

11:50 - 12:10

Paul Knipper, Sebastian Meinicke, Thomas Wetzel
Karlsruhe Institute of Technology, Germany

ICMFHT 120 **Detailed Characterization of Undeveloped Upwards Annular Flow using the
Brightness Based Laser Induced Fluorescence
Technique**

12:10 - 12:20

João Vasques, Mikhail Cherdantsev, Andrey Cherdantsev, David Hann, Buddhika
Hewakandamby, Barry Azzopardi
University of Nottingham, United Kingdom

12:20 PM - 12:25 PM OFFICIAL CONGRESS PHOTO

12:25 PM - 1:25 PM LUNCH

1:25 PM - 2:10 PM **KEYNOTE LECTURE**

Session Chair **Liquid-Liquid Two-Phase Flows in Small Channels
and the Effects of Polymeric Additives**
Dr. Andrzej Pacek

Dr. Panagiota Angeli
University College London, United Kingdom

Saturday

April 8, 2017

2:10 PM - 2:55 PM **KEYNOTE LECTURE**

Session Chair **Combustion Performance and Heat Transfer in CH₄/O₂ Model Rocket
Dr. Andrzej Pacek Combustors**

*Dr. Oskar J. Haidn
Technische University Munchen, Germany*

2:55 PM - 3:15 PM **COFFEE BREAK**

3:15 PM - 4:55 PM **SESSION CHAIR:** Dr. Oskar J. Haidn & Dr. Panagiota Angeli
Combustion & Fuels

CSP 102 **Burning Characteristics of Aluminized Solid Rocket Propellants with
3:15 - 3:25 Bimodal Oxidizer Size Distribution**

*Bachar Elzein, Jacques Xing, Étienne Robert, Nicholas Montoya
Ecole Polytechnique Montreal, Canada*

CSP 105 **Mathematical Modeling of Ignition of Droplets of Coal-Water Slurry
3:25 - 3:45 Containing Petrochemicals Using Ansys Fluent**

*Dmitrii V. Antonov, Ksenia Yu. Vershinina, Genii V. Kuznetsov, Pavel A. Strizhak
National Research Tomsk Polytechnic University, Russia*

CSP 107 **Experimental Study on the Combustion Properties of an Alcohol-to-Jet Fuel
3:45 - 5:05**

*Sandra Richter, Clemens Naumann, Uwe Riedel
German Aerospace Center, Institute of Combustion Technology, Germany*

CSP 108 **Stabilizing Ammonia-Hydrogen-Air Premixed Flames Using Porous Medium
5:05 - 5:15 Based Combustor**

*Hadi Nozari¹, Gizem Karaca², Onur Tuncer, Arif Karabeyoglu
¹KOC University, ²Istanbul Technical University, Turkey*

CSP 109 **Effect of Pilot Pre-Injection on Methane-Diesel Dual Fuel Engine
4:15 - 4:35 Combustion**

*Abdelrahman Hegab, Paul Shayler
The University of Nottingham, United Kingdom
Al-Azhar University, Egypt*

CSP 112 **Influence of Pilot Pre-Injection Mass on Partially Premixed Dual Fuel
4:35 - 4:55 (PPDF) Engine Combustion**

*Abdelrahman Hegab, Paul Shayler
The University of Nottingham, United Kingdom
Al-Azhar University, Egypt*

Saturday

April 8, 2017

7:00 PM - 9:00 PM Closing Ceremony