PROGRAM

9th International Symposium on

ADVANCES IN COMPUTATIONAL HEAT TRANSFER – CHT-24

May 26 – 30, 2024

TIMES ARE GMT+3 (ISTANBUL TIME)

Program at a Glance
May 26 - 30, 2024

	Sunday, 26 May, 2024		
17:00 - 19:00	Registration at Conference Center		
19:00	Welcome Cocktail		
	Monday, 27 May, 2024		
8:00 - 17:00	Registration at Conference Center		
8:30 - 8:50	Opening Ceremony		Lecture Hall
8:50 - 9:35	Hewitt-Goldstein Award Speech	Ming-Jia Li Chair: Yogesh Jaluria	Lecture Hall
9:35 - 10:05	Coffee Break		
	Lecture Hall	D104	D103
10:10 - 10:55	Keynote Lecture 1-1 Chair: Brent Webb M. Pınar Mengüç	Keynote Lecture 1-2 Chair: Ali Beşkök Kazuya Tatsumi	
11:00 - 12:20	Session 1-2-A Chair: M. Pınar Mengüç 112, 132, 134, 282	Session 1-2-B Chair: Kazuya Tatsumi 177, 196, 251	Session 1-2-C Chair: Senem Şentürk-Lüle 116, 117, 131
12:20 - 14:15	Free time		
	Lecture Hall	D104	D103
14:15 - 15:00	Keynote Lecture 1-3 Chair: Kemal Hanjalic Pedro J. M. Coelho	Keynote Lecture 1-4 Chair: M. Sheremet Ankur Jain	
15:10 - 16:30	Session 1-4-A Chair: Pedro J.M. Coelho 144, 148, 242	Session 1-4-B Chair: Ankur Jain 113, 120, 184, 216	Session 1-4-C Chair: Kazuya Tatsumi 259, 260, 236
16:30 - 17:00	Coffee Break		
17:00 - 18-20	Session 1-5-A Chair: Paolo di Marco 158, 172, 220, 276	Session 1-5-B Chair: Yıldız Bayazıtoğlu 135, 145, 181	Session 1-5-C Chair: İlker Tarı 115
	Tuesday, 28 May, 2024		
8:00 - 17:00	Registration at Conference Center		
	Lecture Hall	D104	D103
9:00 - 9:45	Keynote Lecture 2-1 Chair: Yogesh Jaluria Satish Kumar	Keynote Lecture 2-2 Chair: Peter Stephan Mikhail Sheremet	
9:45 - 10:15	Coffee Break		
10:20 - 12:20	Session 2-2-A Chair: Satish Kumar 164, 165, 170, 180, 183, 190	Session 2-2-B Chair: Wojciech Lipinski 110, 125, 178, 192, 195	Session 2-2-C Chair: Tuba Okutucu-Özyurt 230, 241, 244, , 283
12:20 - 14:15	Free time		
	Lecture Hall	D104	
14:15 - 15:00	Keynote Lecture 2-3 Chair: Nesrin Özalp S. A. Sherif	Keynote Lecture 2-4 Chair: Dongsheng Wen Qiuwang Wang	
15:00 - 15:30	Coffee Break		
15:30 - 16:50	Session 2-4-A Chair: Jacques Padet 214, 224, 147 122,	Session 2-4-B Chair: Qiuwang Wang 179, 254, 269	
	Wednesday, 29 May, 2024		
8:00 - 17:00	Registration at Conference Center		
	Lecture Hall	D104	
9:00 - 9:45	Keynote Lecture 3-1 Chair: Yogesh Jaluria K. Muralidhar	Keynote Lecture 3-2 Chair: S. A. Sherif Nesrin Özalp	
9:45 - 10:15	Coffee Break		
10:20 - 12:20	Session 3-2-A Chair: K. Muralidhar 127, 162, 197, 238, 280, 281	Session 3-2-B Chair: Nesrin Özalp 204, 207, 208, 253, 186	
12:20 - 14:15	Free time		
	Lecture Hall	D104	
14:15 - 15:00	Keynote Lecture 3-3 Chair: T. Okutucu-Özyu Debjyoti Banerjee	Keynote Lecture 3-4 Chair: Üner Çolak Ali Beşkök	
15:00 - 15:30	Coffee Break		
15:30 - 17:30	Session 3-4-A Chair: İlker Tarı 256, 258, 271, 278, 140, 187	Session 3-4-B Chair: Sevan Karabetoğlu 111, 130, 174, 205, 121	
20:00	Social Dinner		
	Thursday, 30 May, 2024		
8:00 - 17:00	Registration at Conference Center		
	Lecture Hall	D104	
9:00 - 9:45	Keynote Lecture 4-1 Chair: Y. Bayazıtoğlu Leonid Dombrovsky	Keynote Lecture 4-2 Chair: Nazlı Dönmezer Dongsheng Wen	
9:45 - 10:15	Coffee Break		
10:20 - 12:20	Session 4-2-A Chair: Leonid Dombrovsky 139, 154, 194, 210, 213, 279	Session 4-2-B Chair: Dongsheng Wen 137, 169, 193, 270, 274	
12:20 - 14:15	Free time		
	Lecture Hall	D104	
14:15 - 15:00	Keynote Lecture 4-3 Chair: L. Dombrovsky Wojciech Lipinski	Keynote Lecture 4-4 Chair: T. Okutucu-Özyurt Hakan Ertürk	
15:00 - 15:30	Coffee Break		
15:30 - 17:30	Session 4-4-A Chair: Wojciech Lipinski 176, 188, 191, 275	Session 4-4-B Chair: Hakan Ertürk 277, 150, 163, 199	
17:40 - 18:00	Closing Ceremony		Lecture Hall

PROGRAM PER DAY

Sunday, 26 May 2024

17:00- 19:00	**Registration at Conference Center**
19:00	**Welcome Cocktail**

Monday, 27 May 2024

08:00- 17:00	**Registration at Conference Center**

Lecture Hall

8:30 - 8:50	**Opening Ceremony**
8:50 - 9:35	**Hewitt-Goldstein Award Speech,** **Ming-Jia Li** **Chairperson: Yogesh Jaluria**
9:35 - 10:05	**Coffee Break**

Lecture Hall

10:10 - 10:55 **Keynote Lecture 1-1, Radiation:**
Radiative Transfer and Computational Challenges, *by **M. Pınar Mengüç**, Ozyegin University, Turkiye*
Chairperson: Brent Webb

11:00 - 12:20 **Technical Session 1-2-A: Radiation**
Chairperson: M. Pınar Mengüç

CHT-24-112 Propagation of collimated radiation in highly scattering media: Approximate solution and its verification, *by Leonid Dombrovsky, and Jaona Randrianalisoa*

CHT-24-132 Inverse Design of Pigmented Coatings for Radiative Cooling, *by Seren Dincer, Refet Ali Yalcin and Hakan Erturk*

CHT-24-134 Machine Learning Based Spectral Model for Participating Medium for Monte Carlo Method, *by Selim Dincer, İlker Tarı, and Hakan Ertürk*

CHT-24-282 Consideration of Particle Wave Diffraction to Enhance Spacecraft Radiation Shielding, *by David Warden*

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10:10 - 10:55 **Keynote Lecture 1-2: Micro and Nanoscale Heat Transfer:**
Current and Heat Transfer Paths in Nanowire Network Structure, *by **Kazuya Tatsumi**, Kyoto University, Japan*
Chairperson: Ali Beşkök

11:00 - 12:20 **Technical Session 1-2-B: Internal Flow and Heat Transfer**
Chairperson: Kazuya Tatsumi

CHT-24-177 Energy, Entropy, And Exergy Analyses of Sudden Expansion Tube with Convex Surface Using Ferrofluid, *by Emrehan Gürsoy, Mehmet Gurdal, Engin Gedik, Kamil Arslan*

CHT-24-196 Mixed Convection of Fluid with Temperature-Dependent Viscosity in A Channel in The Presence of Porous Material, *by Marina Astanina, and Mikhail Sheremet*

CHT-24-251 Heat transfer and flow simulation in tapered roller bearings using CFD, *by Zaaquib Ahmed, Ilya T'Jollyn, Wim Beyne, Toon Demeester, Mohammadreza Banakermani, Dieter Fauconnier, and Michel De Paepe*

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11:00 - 12:20 **Technical Session 1-2-C: Open Forum 1**
Chairperson: Senem Şentürk-Lüle

CHT-24-116 Heat Transfer Augmentation Through the Sliding-Wall Concept, *by Jafar Ghazanfarian, and Zahra Shomali*

CHT-24-117 A Thermal Analysis of a Functionally Graded Gyroid as a Heat Sink, *by Marcello Iasiello, Vitaliano Alessandro Anacreonte, Marcello Iasiello, Gerardo Maria Mauro, Assunta Andreozzi, Nicola Bianco, and Wilson K. S. Chiu*

CHT-24-131 An Effective Mass Transfer Approach on Washer Dryer Machines, *by Mert Umutlu, Tuba Okutucu Ozyurt, Songul Bayraktar, and Ehsan Tuzcuoglu*

12:20 - 14:15 **Free Time**

Lecture Hall

14:15 - 15:00 **Keynote Lecture 1-3: Turbulence:**
Progress In the Modelling of Turbulence-Radiation Interaction in Large-Eddy Simulation of Turbulent Reactive Flows, *by **Pedro J. M. Coelho**, Instituto Superior Técnico, Universidade de Lisboa, Portugal*

Chairperson: Kemal Hanjalic

15:10 - 16:30 **Technical Session 1-4-A: Biological Heat Transfer**
Chairperson: Pedro J. M. Coelho

CHT-24-144 Laser ablation for prostate cancer therapies: mathematical modelling, *by Giovanni Napoli, Assunta Andreozzi, Marcello Iasiello, and Giuseppe Peter Vanoli*

CHT-24-148 Numerical Simulation of a Short Pulse Gaussian-Beam Laser Applied to Cutaneous Tumours, *by Pedro J. Coelho*

CHT-24-242 Simulating the Coupled Heat and Mass Transfer of a Plant in a Vertical Farm, *by Wito Plas, Toon Demeester, and Michel De Paepe*

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14:15 - 15:00 **Keynote Lecture 1-4: Solidification and Melting:**
Melting and Solidification in Multilayer Geometries, *by **Ankur Jain,** University of Texas at Arlington, USA*
Chairperson: Mikhail Sheremet

15:10 - 16:30 **Technical Session 1-4-B: Solidification and Melting 1**
Chairperson: Ankur Jain

CHT-24-113 A Simple Approach to Modeling Heat Transfer During Solar Heating and Melting of Lake or Sea Ice, *by Leonid Dombrovsky,*

CHT-24-120 Numerical Analysis of Frost Formation Finned Tube Heat Exchangers, *by Alper Abdusoglu, Kaan Demirhan, Altug Melik Basol, and Mehmet Arik*

CHT-24-184 Shell and Corrugated Tube TES Filled with PCM and Metal Foam Considering a Not Constant Section Configuration*, by Renato Elpidio Plomitallo, Bernardo Buonomo, Oronzio Manca, and Sergio Nardini*

CHT-24-216 Porosity Effects of Melting Process for Phase Change Material (PCM) with Metal Foam Structures with Kelvin Cells, *by Oronzio Manca, Safa Sabet, Bernardo Buonomo, Huseyin Kaya, and Rahmatollah Khodabandeh*

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15:10 - 16:30 **Technical Session 1-4-C: Micro and Nanoscale Heat Transfer:**
Chairperson: Kazuya Tatsumi

CHT-24-259 Critical conditions of Puffing/Micro-explosion of composite droplets, *by Pavel Strizhak, and Dmitrii Antonov*

CHT-24-260 Mathematical Model of Child Droplets Formation During Micro-explosion of Two-liquid Droplets, *by Roman Fedorenko, Antonov Dmitrii, and Pavel Strizhak*

CHT-24-236 Effect of the Spiral Fins and Divergence Plenum on Controlling Cell Temperature for Air-Cooled BTMS, *by Manosh C. Paul, Ali Alzwayi*

16:30 - 17:00 **Coffee Break**

Lecture Hall

17:00 - 18:20 **Technical Session 1-5-A: Computational Methods 1:**
Chairperson: Paolo di Marco

CHT-24-158 Physical Modeling of Heat and Mass Transfer Near the Contact Line with The Volume-Of-Fluid Method, *by Johannes Kind, Axel Sielaff, and Peter Stephan*

CHT-24-172 Spectral Heat Transfer Coefficient for Convection, *by Li He*

CHT-24-220 Low-Rank Approximation with Time-Dependent Bases for Uncertainty Quantification for Transient Heat Transfer Problems, by *Hessam Babaee.*

CHT-24-276 Non-Equilibrium Numerical Model for Heat and Moisture Transfer in Building Materials, *by Piotr Łapka, and Michał Wasik*

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17:00 - 18:20 **Technical Session 1-5-B: Turbulence:**
Chairperson: Yıldız Bayazıtoğlu

CHT-24-135 On The Interaction Between the Processes of Intensive Evaporation and Bulk Condensation Near the Interfacial Surface, *by Naum M. Kortsensteyn, Leonid V. Petrov, Artem V. Rudov, Arseny K. Yastrebov*

CHT-24-145 Turbulent Flow Symmetry-Breaking in Periodic Porous Media in The Intermediate-Porosity Regime, by *Vishal Srikanth, and Andrey V Kuznetsov*

CHT-24-181 Numerical Modelling of The Interaction of The Complex Heat Transfer and Phase Change Transient Processes of Water Droplets in The High Temperature Gas Flow, *By Monika Maziukienė, Gintautas Miliauskas, and Egidijus Puida*

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17:00 - 18:20 **Technical Session 1-5-C: Natural Convection 1: Chairperson: İlker Tarı**

CHT-24-115 Using ANSYS-Fluent for Computing Free Convection in Open-Cell Metal Foam, *by Nihad Dukhan, Mark Schumack, Ming Liang, And Mahmoud Ghannam*

Tuesday, 28 May 2024

08:00- 17:00 **Registration at Conference Center**

Lecture Hall

09:00 - 09:45 **Keynote Lecture 2-1: Thermal Management:**
Advanced Thermal Management of Electric Machines, *by* ***Satish Kumar****, Georgia Institute of Technology, USA*
Chairperson: Yogesh Jaluria

09:45 - 10:15 **Coffee Break**

10:20 - 12:20 **Technical Session 2-2-A: Open Forum 2:**
Chairperson: Satish Kumar

CHT-24-164 Surrogate models for zeotropic mixtures in heat exchangers using machine learning, *by Alexandra Welp, Maximilian Reese, Dominik Freund, and Burak Atakan*

CHT-24-165 Numerical and Experimental Analysis of Gyroid Type Structures with Triply Periodic Minimal Surfaces, *by Kourosh Naji, Ahmet Kasidecioglu, Ozgur Ertunc, Altug Melik Basol*

CHT-24-170 Thermal Analysis on Catalyst Filled Heat Exchangers for Ortho-Para Hydrogen Conversion*, by Sarng Woo Karng, Baekjin Kim, Dong Hee Hong, Gwang Hoon Rhee*

CHT-24-180 A Future Demand Prediction Based Approach for The Design of Pelton Turbines on Irrigation Channels, *by Ece Ayli, Abdul Rahman Sabra Kaak, Kutay Celebioglu, Zafer Bozkus, Oguzhan Ulucak , Ece Ayli, Selin Aradag*

CHT-24-183 Frosting performances of an ultra-low temperature surface simulated by an improved heat and mass model, *by Kaihan Xie, Wenke Zhao, Yaning Zhang, Wei Wang, and Bingxi Li*

CHT-24-190 On State Laws and Heat Transfer in String-based Plasma, *by Geert Dijkhuis*

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09:00 - 09:45 **Keynote Lecture 2-2: Solidification and Melting:**
Mathematical Modeling of Heat and Mass Transfer in Phase Change Materials During Melting/Solidification, *by Mikhail Sheremet, Tomsk State University, Russia*

Chairperson: Peter Stephan

09:45 - 10:15 **Coffee Break**

10:20 - 12:20 **Technical Session 2-2-B: Energy 1:**
Chairperson: Wojciech Lipinski

CHT-24-110 Modelling And Numerical Simulations of Heat and Mass Transfer Through Entire Equipment of Hydrogen Refuelling Station, *by Vladimir Molkov, Hazhir Ebne-Abassi, and Dmitriy Makarov*

CHT-24-125 Enhancing Volumetric Solar Receiver Performance with Graded Porous Structures: A Numerical Investigation, *by Sonika Sharma, And Prabal Talukdar*

CHT-24-178 Integrating Solar Tower Technology for Industrial Process Heat*, by Yusuf Karakas, Sevan Karabetoglu, and Tuba Okutucu-Ozyurt*

CHT-24-192 Effect Of Pcm and Metal Foam on Thermal Energy Storage of Parallel Plates, *by Huseyin Kaya, Safa Sabet, Berbarfo Buonomo, and Oronzio Manca*

CHT-24-195 2d Simulation of Photovoltaic Thermal Panel Module with A Layer of Phase Change Material and Metal Foam, *by Oronzio Manca, Bernardo Buonomo, Maria Rita Golia, and Sergio Nardini*

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10:20 - 12:20 **Technical Session 2-2-C: Open Forum 3:**
Chairperson: Tuba Okutucu-Özyurt

CHT-24-283 The Effects of Temperature-Dependent Thermal Properties on Localized Heating Induced Thermal Size Effects with Kinetic Collective Model, *by Amir Abdolhosseinzadeh, and Nazli Donmezer*

CHT-24-230 Laboratory Study of Hot-Water Temperature and Injection Rate Effects on Hot-Water Flooding in Heavy Oil Reservoirs, *by Yongan Gu, Jiangyuan Yao, and Wei Zou*

CHT-24-241 Modeling Of Phase Change Transitions in ANSYS Fluent Including Thermal Hysteresis*, by Maitas Goderis, Adam Buruzs, Fabrizia Giordano, and Tilman Barz*

CHT-24-244 Experimental And Detailed Kinetic Modeling Study of The Effect of Strain Rate on Laminar Counterflow Flames of Jet-A Surrogate Fuel, *by Olawole Abiola Kuti*

12:20 - 14:15 **Free Time**

Lecture Hall

14:15 - 15:00 **Keynote Lecture 2-3: Energy:**
Heat Transfer and Ice Accretion on Aircraft Wings in Supercooled Clouds, **S. A. Sherif**, University of Florida, USA
Chairperson: Nesrin Özalp

15:00 - 15:30 **Coffee Break**

15:30- 16:50 **Technical Session 2-4-A: Open Forum 4:**
Chairperson: Jacques Padet

CHT-24-214 Effect of Self-Sustained Oscillations of a Cooling Jet on Thermal Comfort Parameters in Indoor Spaces, *by Nikolay Ivanov, Marina Zasimova, Ekaterina Stepasheva, and Anna Krasikova*

CHT-24-224 Energy Optimization in Natural Phenomena and its Implications for Applications in Technology*, by Yogesh Jaluria*

CHT-24-147 Flow Characteristics and Heat Transfer in a Two-Pass Channel with Interconnecting Slots, *by Zia Ud Din Taj, Kohei Fukuda, Majed Etemadi, Ram Balachandar, and Ronald Barron*

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14:15 - 15:00 **Keynote Lecture 2-4: Computational Methods:**
Local Thermal Resistance Method: A Computational Heat Transfer Method for Precise Analysis and Optimisation of Heat Transfer Processes, *by **Qiuwang Wang**, Xi'an Jiaotong University, China*

Chairperson: Dongsheng Wen

15:00 - 15:30 **Coffee Break**

15:30- 16:50 **Technical Session 2-4-B: Computational Methods 2:**

Chairperson: Qiuwang Wang

CHT-24-122 Optimizing The Serpentine Channels of a Liquid-Flow-Through (LFT) Cooled Cold Plate Using CFD Analysis for Enhanced Cooling Performance, *by Barbaros Çetin, Deniz Aldemir, and Mehmet Yener*

CHT-24-179 Comparison Of Continuous and Discontinuous Elements in Boundary Element Method for Heat Transfer Problems with Non-Linear Boundary Conditions, *by Barbaros Cetin, Artun Alp Oztas, Alp Iskit, Can Onol, and Besim Baranoglu*

CHT-24-254 Advancing Electric Machine Lumped Parameter Thermal Modelling: A Novel Spatial and Temporal Discretization Methodology*, by Jasper Nonneman, Ilya T'jollyn, and Michel De Paepe*

CHT-24-269 A Multiscale-Model Data Fusion Methodology for Thermal Interfacial Property Predictions of ZrB2-SiC Composite Materials, *by Yingfei Cao, Jin Zhao, Guice Yao, and Dongsheng Wen*

Wednesday, 29 May 2024

08:00- 17:00 **Registration at Conference Center**

Lecture Hall

09:00 - 09:45 **Keynote Lecture 3-1: Biological Heat Transfer:**
Diffusive Flux Modeling of RBC Transport During Blood Flow in Microchannels, *by* ***Krishnamurthy Muralidhar****, Indian Institute of Technology Kanpur, India*

Chairperson: Yogesh Jaluria

09:45 - 10:15 **Coffee Break**

10:20 - 12:20 **Technical Session 3-2-A: Forced Convection:**

Chairperson: Krishnamurthy Muralidhar

CHT-24-127 Control Of Heat Transfer Characteristics in Helicoid Heat Exchangers with Strong Dependence of Oil Viscosity on Temperature, *by Kurmanova D., Jaichibekov N., Volkov K., and Zhumanbayeva A.*

CHT-24-162 Exploiting Flow Maldistribution to Improve the Thermal Performance of Crossflow Microchannel Heat Sinks, *by Carlo Nonino, and Stefano Savino*

CHT-24-197 Thermal Analysis on Catalyst Filled Heat Exchangers for Ortho-Para Hydrogen Conversion*, by Sarng Woo Karng, Baekjin Kim, Dong Hee Hong, and Gwang Hoon Rhee*

CHT-24-238 Investigation Of Heat Transfer Performance with Impinging Jets on Surfaces with Multiple Cylindrical Protrusions, *by Tamer Çalışır, Hazar Yuksel, Senol Baskaya*

CHT-24-280 Numerical Analysis of Microchannel Heat Sink for Cooling of An Electronic Component, *by Yogesh Jaluria, and Eslam Al Qawasmeh*

CHT-24-281 Combined Radiation and Convection in Developing Flow in A Parallel Plate Channel with Real Gas Behavior, *By Kyle Pulsipher, and Brent W. Webb*

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09:00 - 09:45 **Keynote Lecture 3-2: Energy:**
Computational Modeling and Design Optimization of a Solar Reactor and the Integration of Supersonic Turbomachinery for Hydrogen Production, *by **Nesrin Ozalp**, Illinois State University, USA*

Chairperson: S. A. Sherif

09:45 - 10:15 **Coffee Break**

10:20 - 12:20 **Technical Session 3-2-B: Energy 2:**

Chairperson: Nesrin Ozalp

CHT-24-204 CFD Modelling of Temperature Distribution on PV Modules in a Ground-Mounted PV System in Australia, *by Svetlana Tkachenko, Phillip Hamer, Tingyi Zhang, Ruby Klisser, Zibo Zhou, Rhett Evans, Mattias Juhl, Charitha de Silva, Victoria Timchenko, Bram Hoex*

CHT-24-207 Performance Characterization of Non-Vacuum CPC Type Receiver for Linear Fresnel System: CFD Calculation and Experimental Assessment, *by Ahmed Al Mers, and Yousra Filali Baba*

CHT-24-208 Novel Modeling Tool for Dynamic Behavior Forecast and Management of CSP Plant Coupled to TES System*, by Yousra Filali Baba, Ahmed Al Mers, and Tauseef-Ur Rehman*

CHT-24-253 Numerical Parametric Analysis of Charging/Discharging Low-Temperature Thermochemical Storage Unit, *by Piotr Łapka, Mateusz Młynarczyk, Natalia Mikos-Nuszkiewicz, And Piotr Furmański*

CHT-24-186 Large Eddy Simulations of Active Grid Turbulence Generators, *by Alper Akardere, Aziz Mert Karul, And Ozgur Ertunc*

12:20 - 14:15 **Free Time**

Lecture Hall

14:15 - 15:00 **Keynote Lecture 3-3: Micro and Nanoscale Heat Transfer:** nanoFin Effect (nFE), *by **Debjyoti Banerjee**, Texas A&M University College of Engineering, 3127 TAMU, USA*

Chairperson: Tuba Okutucu-Özyurt

15:00 - 15:30 **Coffee Break**

15:30- 17:30 **Technical Session 3-4-A: Energy:**

Chairperson: İlker Tarı

CHT-24-256 Lithium-Ion Battery Cooling with Water-Based Nanofluids, *By İlber Deniz Ulaş Ceylan, Mustafa Berker Uysal, Elif Begum Elcioglu*

CHT-24-258 Analysis of the thermal behavior of the concrete/PCM wall combined with a solar collector in three different climatic zones in Morocco*, by Mustapha Faraji*

CHT-24-271 Coupled Heat and Mass Transport in Air-Gap Diffusion Distillation for Clean Water Production, *By Akanksha K. Menon*

CHT-24-278 Computational Modeling of an Open Loop Thermochemical Energy Storage Reactor, *by Alper Saygin, Allannah M. Duffy, Srinivas Garimella*

CHT-24-140 Aerosol dispersion in a room-sized enclosed turbulent natural convection flow, by Jordi Pallares, Akim Lavrinenko, Cristian Marchioli, Saltore Cito* and Alexandre Fabregat

CHT-24-187 2-D Shape Optimization of Wind Tunnel Guide Vanes for Achieving Uniform Flow*, by Aziz Mert Karul, Alper Akardere, and Ozgur Ertunc*

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14:15 - 15:00 **Keynote Lecture 3-4: Micro and Nanoscale Heat Transfer:** Nanoscale Meniscus Dynamics in Evaporating Thin Films, *by **Ali Beşkök**, Southern Methodist University, USA*

Chairperson: Üner Çolak

15:00 - 15:30 **Coffee Break**

15:30- 17:30 **Technical Session 3-4-B: Thermal Management:**

Chairperson: Sevan Karabetoglu

CHT-24-111 The Complex WSi2N4 Material as the Thermal Management Solution of the MOSFETs*, By Zahra Shomali*

CHT-24-130 Mathematical Modeling of Grooved Heat Pipe for Cooling of Cylindrical Battery Cell, *by Vahit Corumlu, Barbaros Cetin, Zafer Dursunkaya*

CHT-24-174 Thermal Management Using Deep Cavities in Hypersonic Flow*,* By *David R. Emerson, Jian Fang, and Benzi John.*

CHT-24-205 The Effect of Fan Coil Unit Layout on Air Quality and Thermal Comfort in Classroom, *by Svetlana Tkachenko, Hengrui Liu, Chris Menictas, Peter Swan, Victoria Timchenko*

CHT-24-121 Inside The PCM Melting Evolution: a CFD Investigation of Periodic Structures to Enhance Thermal Diffusion, *by Andrea Fragnito, Nicola Bianco, Marcello Iasiello, Gerardo Maria Mauro*

Thursday, 30 May 2024

08:00- 17:00 **Registration at Conference Center**

Lecture Hall

09:00 - 09:45 **Keynote Lecture 4-1: Radiation:**
Simple Approach to Modeling Heat Transfer During Solar Heating and Melting of Lake or Sea Ice, *by* ***Leonid Dombrovsky****, Joint Institute for High Temperatures (RAS), Russia*

Chairperson: Yıldız Bayazıtoğlu

09:45 - 10:15 **Coffee Break**

10:20 - 12:20 **Technical Session 4-2-A: Natural Convection:**

Chairperson: Leonid Dombrovsky

CHT-24-139 A Numerical Study of Natural Convective Heat Transfer Across a Vertical Rectangular Enclosure with One Vertical Surface Being Heated and The Other Vertical Surface Being Cooled and Inclined at A Relatively Small Angle to The Vertical, *by Nesrin Ozalp, Patrick Oosthuizen*

CHT-24-154 Impact Of Unsteady Flow on Natural Convection Along a Vertical Plate with Random 3d Roughness, *By Tse-Yu Chen, Chung-Gang, Li*

CHT-24-194 Influence Of Tilt Angles and Different Models of Fluid Viscosity on Coupled Natural Convection in A Differentially Heated Closed Square Cavity with A Baffle*, by Alibek Issakhov, Aidana Sabyrkulova, Aizhan Abylkassymova*

CHT-24-210 Effect of a Rectangular Porous Layer on Entropy Generation During Thermosolutal Natural Convection Under Ltne Approach and Non-Uniform Heating and Salting, *by Abdeslam Omara, Abderrahim Bourouis, Rabah Bouchair*

CHT-24-213 Numerical Modeling of Heat Transfer from Finned Pipes Cooled by Natural Convection, *by Marina Zasimova, Vladimir Ris, Anastasia Filatova, Alexey Pozhilov and Nikolay Ivanov*

CHT-24-279 Cfd Analysis for The Improvement of Heat Transfer in Porous Media, *by Ranjit Singh, Sanjairaj Vijayavenkataraman, Sunil Kumar*

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09:00 - 09:45 **Keynote Lecture 4-2: Computational Methods:**
Multiscale Simulation of Transport Phenomenon Across a Reactive Interface, *by **Dongsheng Wen**, Technical University of Munich, Germany*

Chairperson: Nazlı Dönmezer

09:45 - 10:15 **Coffee Break**

10:20 - 12:20 **Technical Session 4-2-B: Combustion:**

Chairperson: Dongsheng Wen

CHT-24-137 Hydrogen Under-Expanded Jet Flames: Validation of CFD Model Against Experimentally Measured Data, *by Mina Kazemi, Sile Brennan, and Vladimir Molkov*

CHT-24-169 On The Effect of Spray Modelling of a Turbulent Swirl-Stabilized Flame in a Model Spray Combustor, *by Ozgur Ertunc, Deniz Imamoglu.*

CHT-24-193 Propagation Speeds of Hydrogen-Enriched Fuel-Air Mixtures*, by Venera Giurcan, Codina Movileanu, Maria Mitu*

CHT-24-270 Multi-Scale Modelling: Thermophysical Properties Prediction During High-Temperature Pyrolysis of Composites and Thermal Response Evaluation by Scale-Bridging Reactive Molecular Dynamics, *By Ju Tang*

CHT-24-274 Ignition And Quenching of Multifuel-Air Explosions in Deflagration Regime, *by Codina Movileanu, Venera Giurcan*

12:20 - 14:15 **Free Time**

Lecture Hall

14:15 - 15:00 **Keynote Lecture 4-3: Single and Multiphase Flow:**
Advances in Numerical Modelling of Multiphase Transport Phenomena in High-Temperature Solar Thermal Systems, *by* ***Wojciech Lipinski****, The Cyprus Institute, Cyprus*

Chairperson: Leonid Dombrovsky

15:00 - 15:30 **Coffee Break**

15:30- 17:30 **Technical Session 4-4-A: Solidification and Melting:**
Chairperson: Wojciech Lipinski

CHT-24-176 Thermal Performance of Buildings Using Phase Change Materials: Cellular Automata Modeling*, by Yasser Khaddor, Abdes-Samed Bernoussi*

CHT-24-188 Energy Consumption Performances of a Dynamic Snow-Melting Process Using a Novel Heat and Mass Transfer Model, *by Wenke Zhao, Kaihan Xie, Yaning Zhang, Wei Wang and Bingxi Li*

CHT-24-191 Simultaneous Close-Contact Melting at Different Melting Temperatures in A Cylindrical Enclosure*, by Özgür Bayer, Seyedmohsen Baghaei Oskouei, and Elyas Salamatbakhsh*

CHT-24-275 Numerical simulation of a Phase Change Material/Water Cylindrical Heat Exchanger: A Smart PCM Mobile Bathroom*, by Mustapha Faraji*

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14:15 - 15:00 **Keynote Lecture 4-4: Radiation:**
Radiative Heat Transfer in Particulate Medium: Methods, Metrics and Revised Regime Map, *by **Hakan Erturk**, Bogazici University, Turkiye*

Chairperson: Tuba Okutucu-Özyurt

15:00 - 15:30 **Coffee Break**

15:30- 17:30 **Technical Session 4-4-B: Radiation 2:**

Chairperson: Hakan Erturk

CHT-24-277 DNI Prediction Using Deep Learning for Optimization of Concentrated Solar Power (CSP) Plants, *by Kashif Liaqat, Kashif Liaqat, Muhammad Saud Ul Hassan, Laura Schaefer, And Alexander J. Zolan.*

CHT-24-150 Inverse Design of Metamaterial-based Ideal Emitters for a Thermophotovoltaic System via Bayesian Optimization, *by Yigithan Mehmet Kose, Hakan Erturk*

CHT-24-163 Thermal Discrete Dipole Approximation with Surface Interactions, *by Ege Sukru Tahmaz, and Hakan Erturk*

CHT-24-199 Radiative Thermal Diode Driven by Nonreciprocal Surface Models in A Nanowire*, by Yong Zhang*

17:40 - 18:00 **Closing Ceremony at Lecture Hall**