TECHNICAL SESSIONS

MONDAY, JULY 11, 2022

K-08 Fundamentals of Boiling/Condensation Including Micro/Nano-Scale Effects I [Includes Molecular Level Simulation of Phase Change]
7/11/2022
8:30AM–10:10AM - India C

Chair: ***Amitabh Narain - Michigan Technological University***
Chair: ***Diana-Andra Borca-Tasciuc - Rensselaer Polytech Institute***
Co-Chair: ***Van P. Carey - University of California, Berkeley***
Co-Chair: ***Dong Liu - University of Houston***

Parameters of Micro-Nano Structured Surface on Condensation Heat Transfer Performance of Steam With Various Amounts of Non-Condensable Gas: A Theoretical Analysis
Technical Paper Publication: SHTC2022-81679
Benli Peng - Dalian Maritime University
Wenlong Sheng - Dalian Maritime University
Yong Zhou - Dalian Maritime University
Meizhuting Qiu - Dalian Maritime University
Zhengyu He - Dalian Maritime University

Comparison of Micro Fin Array Configurations for Heat Transfer Enhancement in Microchannels
Technical Paper Publication: SHTC2022-85752
Colton Frear - Florida Polytechnic University
Gerardo Carbajal - Florida Polytechnic University
Edwar Romero-Ramirez - Florida Polytechnic University

Data-Driven Modeling of Liquid-Vapor Interface Dynamics During Pool Boiling
Technical Paper Publication: SHTC2022-85582
Christy Dunlap - University of Arkansas
Hari Pandey - University of Arkansas
Han Hu - University of Arkansas

Heat Transfer Rate Predictions of the Air-Cooled Condenser With Machine Learning Algorithm Based on the Operating Big Data of the Power Plant
Technical Paper Publication: SHTC2022-83767
Kai Chen - Baidu Inc.
Xin Xie - Baidu Inc.
Yan Chu - China Huadian Corporation Ltd.
Meng Leng - China Huadian Corporation Ltd.
Jinyi Zhang - Baidu Inc.
Zhenwei Xu - China Huadian Corporation Ltd.
Feng Huang - Baidu Inc.
Heming Zhang - Tsinghua University

Water Thermodynamic Behavior Under Influence of Electric Field: A Molecular Dynamics Study
Technical Paper Publication: SHTC2022-83813
Malcolm Porterfield - Rensselaer Polytechnic Institute
Diana-Andra Borca-Tasciuc - Rensselaer Polytechnic Institute

K-09 Nanoscale Radiative Thermal Devices/Systems
7/11/2022
8:30AM–10:10AM - Freedom E

Chair: ***Richard Zhang - University of North Texas***

Self-Thermal Regulating VO2-Fabry-Perot Cavity Coating for Passive Radiative Cooling Device
Technical Presentation Only: SHTC2022-80428
Ken Araki - University of North Texas
Richard Zhang - University of North Texas

Dynamic Emissivity Control Mediated by Breaking of Inversion Symmetry: Dark Mode to Bright Mode Conversion
Technical Presentation Only: SHTC2022-83960
Alok Ghanekar - University of Southern California
Michelle Povinelli - University of Southern California

Active Directional Control of Emissivity With Quasi-Localized Guided Modes
Technical Presentation Only: SHTC2022-84370
Alok Ghanekar - University of Southern California
Michelle Povinelli - University of Southern California

Magnetic Resonance Imaging for 3D Thermometry
Technical Presentation Only: SHTC2022-97599
Darshan Darshan- University of Illinois at Urbana-Champaign
David Cahill - University of Illinois at Urbana-Champaign

Development of a Numerical Model to Assess Sensitivity for Fiber-Based Frequency-Domain Thermoreflectance Measurements
Technical Paper Publication: SHTC2022-80540
Ronald Warzoha - United States Naval Academy

K-16 Heat Transfer in Electronic Equipment
7/11/2022
8:30AM–10:10AM - Parlor B

Chair: ***Ronald Warzoha - United States Naval Academy***
Co-Chair: ***Raffaele Luca Amalfi - Seguente, LLC***
Co-Chair: ***Solomon Adera - University of Michigan***
Co-Chair: ***Filippo Cataldo - Wieland Provides Srl***

A Loop Heat Pipe for Vehicle CPU Cooling: Peak Performance and Partial Flooding and Dryout Regimes
Technical Paper Publication: SHTC2022-83836
Julio Ferreira - University of Michigan
Massoud Kaviany - University of Michigan
Vincent Dupont - Calyos AS
Olivier De Laet - Calyos AS
Thomas Nicolle - Calyos AS
Erik Yen - GM R&D Center

Optimal Design of Additively Manufactured Metal Lattice Heat Sinks for Electronics Cooling
Technical Paper Publication: SHTC2022-85400
Bharath Bharadwaj - Virginia Tech
Prashant Singh - Mississippi State University
Roop Mahajan - Virginia Tech

Hybrid Thermal Management System Combining Vapor Chamber and Composite Phase Change Heat Sink for High Heat Flux Electronic Devices
Technical Presentation Only: SHTC2022-88232
Junjie He - Xi'an Jiaotong University
Shihong Ma - Xi'an Jiaotong University
Qiuwang Wang - Xi'an Jiaotong University
Wenxiao Chu - Xi'an Jiaotong University

Heat Transfer Enhancement in Microchannel Heat Sink With Transverse Tesla Valve-Shaped Ribs for Cooling of High-Power Density Electronics
Technical Presentation Only: SHTC2022-88245
Jian-Fei Zhang - Xi'an Jiaotong University
Xing Xu - Xi'an Jiaotong University
Wei Gao - Xi'an Jiatong University
Zhiguo Qu - Xi'an Jiaotong University
Zhiyuan Jiang - Xi'an Jiaotong University

Improved Femtosecond 3D Light Field Lithography With a Phase-Controlled Spatial Light Modulator
Technical Paper Publication: SHTC2022-85681
Aravind Jakkinapalli - Texas A&M University
Sy-Bor Wen - TAMU

Design and Development of a Hybrid Thermal Management System for Electromechanical Actuator for Aircraft
Technical Presentation Only: SHTC2022-89150
Jiajun Xu - University of the District of Columbia
Andoniaina M Randriambololona - University of the District of Columbia
Kymani Brown - University of the District of Columbia
Kuuku Botchway - University of the District of Columbia

K-10 Heat Transfer Equipment I
7/11/2022
8:30AM–10:10AM - India D

Chair: ***Kashif Nawaz - Oak Ridge National Laboratory***
Co-Chair: ***Prashant Singh - North Carolina State University***

Effect of Hydraulic Diameter and Surface Roughness on Additively Manufactured Offset Strip Fin Heat Exchanger Performance
Technical Paper Publication: SHTC2022-80416
Teri Baker - The Pennsylvania State University
Michael Manahan - The Pennsylvania State University
Stephen Lynch - The Pennsylvania State University
Edward Reutzel - The Pennsylvania State University

Heat Transfer Enhancement in Spirally Corrugated Tube and V-Spirally Corrugated Tube: Computational and Numerical Study
Technical Paper Publication: SHTC2022-81790
Xin-Ji Chen - Institute of Process Equipment
Feng-Lei Wang - Qingdao Changlong Power Equipment Co., Ltd.
Chen Yang - Institute of Process Equipment
Zhi-Jiang Jin - Institute of Process Equipment
Jin-Yuan Qian - Institute of Process Equipment

Diffusion Bonded Compact Heat Exchanger in 740H for High Temperature and High Pressure Applications
Technical Paper Publication: SHTC2022-81837
Zhijun Jia - CompRex LLC
Tom Parlow - CompRex, LLC

Dane Kuhr - University of Wisconsin-Madison
Mark Anderson - University of Wisconsin-Madison
Brian Baker - Special Metals

Numerical Study on the Influence of Fin Parameters on the Flow and Heat Transfer Characteristics for 3-D Finned Flat Tube
Technical Presentation Only: SHTC2022-88238
Yudong Ding - Chongqing University
Yuheng Gu - Chongqing University
Xiang Yang - Chongqing University
Zhehao Zhang - Chongqing University
Xun Zhu - Chongqing University
Hong Wang - Chongqing University
Min Cheng - Chongqing University
Qiang Liao - Chongqing University

Flow and Heat Transfer Characteristics of Supercritical Rp-3 Kerosene in an Inclined Rectangular Channel Heated on One Side
Technical Presentation Only: SHTC2022-86203
Lie-Bin Jiang - Chongqing University
Gu-Yuan Li - Chongqing University
Jin Yu - Chongqing Jiaotong University
Bin-Bin Yu - Army Logistical Academy
Jia Jia Yu - Chong Qing University

Enhancing Data Center Efficiency by a Novel Phase-Change Heat Sink Architecture
Technical Presentation Only: SHTC2022-80216
Suhas Tamvada - University of Florida
Saeed Moghaddam - University of Florida

K-08 Fundamentals of Boiling/Condensation Including Micro/Nano-Scale Effects II [Includes Molecular Level Simulation of Phase Change]
7/11/2022
2:00PM–3:40PM - India C

Chair: ***Diana-Andra Borca-Tasciuc - Rensselaer Polytech Institute***
Chair***: Amitabh Narain, Michigan Technological University***
Co-Chair: ***An Zou, Syracuse University***
Co-Chair: ***Navdeep Dhillon, California State University – Long Beach***
Co-Chair: ***Ming-chang Lu, National Taiwan University***

A Combined Active and Passive Enhanced Nucleation Rate Flow- and Pool-Boiling Approach for Enabling New Science and Applications
Technical Presentation Only: SHTC2022-81625
Amitabh Narain - Michigan Technological University
Divya Pandya - Michigan Technological University
Noah Agata - Michigan Technological University
Logan Canull - Michigan Technological University
Vibhu Vivek - Vivek Technologies LLC
Soroush Sepahyar - Michigan Technological University
Atharva Rahane - Michigan Technological University

Determining Micro Droplet Profiles Using Reflection Interference Fringe (RIF) Technique
Technical Presentation Only: SHTC2022-90374
Iltai (Isaac) Kim - Texas A&M University-Corpus Christi
Yang Lie - Texas A&M University-Corpus Christi
Jasesung Park - Texas A&M University
Hyun-Joong Kim - CEKO
Hong-Chul Kim - CEKO

CaCO3 Crystallization in Droplet Evaporation on Surfaces With Microstructure
Technical Presentation Only: SHTC2022-84351
Hong-Qing Jin - University of Illinois at Urbana-Champaign
Sophie Wang - University of Illinois at Urbana-Champaign

The Effect of Real Gas Radiation on Laminar Natural Convection on a Vertical Plate
Technical Presentation Only: SHTC2022-88078
Nathan Hale - Brigham Young University
Brent Webb - Brigham Young University

Adiabatic Section Flow Resistance of Axial-Groove Heat Pipes for Slowly-Varying Meniscus Curvature
Technical Presentation Only: SHTC2022-94816
Marc Hodes - Tufts University
Andrew Daetz - Tufts University
Toby Kirk - Oxford University

K-20 Computational Methods for Materials Development and Manufacturing I
7/11/2022
2:00PM–3:40PM - Freedom G

Chair: ***Aaron Wemhoff - Villanova University***
Chair: ***Mohamed Abdelhady - National Research Council Canada***
Chair: ***Aaron Wemhoff - Villanova University***
Chair: ***Hamidreza Najafi - Florida Institute of Technology***
Chair: ***Shima Hajimirza - Stevens Institute of Technology***
Chair: ***Cheng-xian Lin - Florida International University***
Co-Chair: ***Like Li - Mississippi State University***
Co-Chair: ***Leitao Chen - Tennessee State University***

Heat Transfer Enhancement in V-Spirally Corrugated Tube: Computational and Numerical Study
Technical Presentation Only: SHTC2022-88041
Jin-Yuan Qian - Zhejiang University
Xin-Ji Chen - Zhejiang University
Feng-Lei Wang - Zhejiang University
Chen Yang - Zhejiang University

Adjoint-Based Shape Optimization of Mini-Channel Radiator Tubes Using a CAD-Based Parametrization
Technical Presentation Only: SHTC2022-90554
Praharsh Pai Raikar - VITO
Nitish Anand - VITO
Carlo De Servi - VITO
Matteo Pini - Technische Universität Delft

Heat Pipe-Based Enhanced Dehumidification System Modeling and Comparison
Technical Presentation Only: SHTC2022-96488
Tara Housen - Villanova University
Aaron Wemhoff - Villanova University

Developing Algebraic Correlations From Neural Networks
Technical Presentation Only: SHTC2022-97529
Lingnan Lin - National Institute of Standards and Technology
Mark Kedzierski - National Institute of Standards and Technology

Calculating Radiation View Factors Using Hybrid GRU-LSTM Recurrent Neural Networks
Technical Presentation Only: SHTC2022-97760

Alireza Kianimoqadam - University of Maine
Justin Lapp - University of Maine

Forward and Inverse Design of Spectral Emissivity Using Common Machine-Learning Models
Technical Presentation Only: SHTC2022-97667
Sean Lubner - Massachusetts Institute of Technology
Mahmoud Elzouka - Lawrence Berkeley National Lab
Charles Yang - Lawrence Berkeley National Lab
Alok Singh - Lawrence Berkeley National Lab
Minok Park - Lawrence Berkeley National Lab
Collin Guo - Lawrence Berkeley National Lab
Adrian Albert - Lawrence Berkeley National Lab
Vassilia Zorba - Lawrence Berkeley National Lab
Ravi Prasher - Lawrence Berkeley National Lab

K-19 Environmental Heat Transfer
7/11/2022
2:00PM–3:40PM - Freedom E

Chair: ***S.A. Sherif - University of Florida***
Co-Chair: ***Kashif Nawaz - Oak Ridge National Laboratory***
Co-Chair: ***Michael Pate - Texas A&M University***

A Numerical Study on the Effect of Physical Changes of Air Distribution Setup on the Heating Performance of a Forced Air Circulation System
Technical Paper Publication SHTC2022-84389
Vincent Akula - Idaho State University
Anish Sebastian - Idaho State University

Effects of Air Flow and Micro-Dust Layer on the Onset of Condensation for Solar Glass Applications
Technical Presentation Only: SHTC2022-97554
Mayameen Naser Reda - Chair of Thermodynamics
H.H. Al-Kayiem - Universiti Teknologi PETRONAS

Use of Genetic Algorithms to Extract Fundamental Heat Transfer Performance Parameters From Evaporative Cooler Test Data
Technical Paper Publication: SHTC2022-86172
Samuel Cabrera - University of California, Berkeley
Van P. Carey - University of California, Berkeley

Application of Particle Image Velocimetry to Molten Chloride Salts
Technical Presentation Only: SHTC2022-81525
Noah LeFrancois - McGill University
Valerie Lamenta - McGill University
Jovan Nedic - McGill University
Melanie Tetreault-Friend - McGill University

Growth of Zeolite Crystals on Surface
Technical Presentation Only: SHTC2022-93659
Ashok Thapa - Syracuse University
Shalabh C. Maroo - Syracuse University

Non-Equilibrium Energy Transport During Ultrafast Laser Sintering of Nanoparticles for Nanoscale Metal Printing
Technical Presentation Only: SHTC2022-81490
Chinmoy Podder - Texas A&M University
Heng Pan - Texas A&M University

K-10 Heat Transfer Equipment II
7/11/2022
2:00PM–3:40PM - India D

Chair: ***Kashif Nawaz- Oak Ridge National Laboratory***
Co-Chair: ***Prashant Sing h- North Carolina State University***
Co-Chair: ***Sandra Boetcher - Embry Riddle Aeronautical University***
Co-Chair: ***Ravi Annapradagga - Carrier Corporation***

Pool Boiling Heat Transfer Enhancement of Dielectric Fluids on Round Tubes Using Open-Cell Metal Foams
Technical Presentation Only: SHTC2022-87805
Cheng-Min Yang - Oak Ridge National Laboratory
Kashif Nawaz - Oak Ridge National Laboratory

HVAC Systems Improvement for Environment Control to Minimize the Covid 19 Infection Spreads
Technical Presentation Only: SHTC2022-88524
Nazia Afrin - St. Mary's University

Design PVDF Heat Exchanger in Recovering Water in Membrane Condenser
Technical Presentation Only: SHTC2022-90298
Eydhah Almatrafi - King Abdulaziz University
Mohammed Aljohani - King Abdulaziz University
Mohammed Alyoubi - King Abdulaziz University
Nouh Almutiri - King Abdulaziz University
Raed Almahalbadi - King Abdulaziz University

Computational Analysis of Enhanced Thermal-Hydrodynamic Characteristics of Metal Foams in Compact Heat Exchangers
Technical Presentation Only: SHTC2022-90434
Chaitanya Prasad Nanda - University of Cincinnati
Metodi Zlatinov - ERG Aerospace Corporation
Raj M. Manglik - University of Cincinnati

Thermal Stability of Cryogenic Fluid Flow in Microgravity
Technical Presentation Only: SHTC2022-97391
Qian Lei - New Jersey Institute of Technology
Boris Khusid - New Jersey Institute of Technology
Joel L. Plawsky - Rensselaer Polytechnic Institute
Corey Woodcock - Rensselaer Polytechnic Institute
David Money - Princeton CryoTech, Inc
Christopher Smith - Princeton CryoTech, Inc
Tom M. Conboy - Creare LLC
Mohammad Kassemi - Case Western Reserve University

Numerical Investigation on Shell and Tube Latent Thermal Energy Storage Partially Filled With Metal Foam and Corrugated Internal Tube
Technical Paper Publication: SHTC2022-81806
Bernardo Buonomo - Università degli studi della Campania "Luigi Vanvitelli"
Oronzio Manca - Università degli studi della Campania "Luigi Vanvitelli"
Sergio Nardini - Università degli studi della Campania "Luigi Vanvitelli"
Renato Elpidio Plomitallo - Università degli studi della Campania "Luigi Vanvitelli"

K-06 Heat and Mass Transfer in Renewable Energy Systems
7/11/2022
4:00PM–5:40PM - India C

Chair: ***Leitao Chen - Tennessee State University***
Co-Chair: ***Hohyun Lee - Santa Clara University***

Implementation of a Model Predictive Control Strategy to Regulate Temperature Inside a Plug-Flow Solar Reactor With Counter-Current Flow
Technical Paper Publication: SHTC2022-85609
Assaad Alsahlani - Purdue University Northwest
Kelvin Randhir - Michigan State University
Michael Hayes - Michigan State University
Philipp Schimmels - Michigan State University
Nesrin Ozalp - Purdue University Northwest
James Klausner - Michigan State University

Analysis of the Heat Transfer and Criterion of Freezing of Molten Salt Startup Flow in Relatively Cold Pipes
Technical Paper Publication: SHTC2022-81902
Ye Zhang - University of Arizona
Peiwen Li - University of Arizona

A Numerical Study of the Dominant Condensation Mechanism in Cross-Flow Transport
Technical Paper Publication: SHTC2022-81884
Saja Al-Rifai - Florida International University
Cheng-xian Lin - Florida International University

Convective Heat Transfer Potential of Particles/Airflow Through Single Cell Thick Additively Manufactured Octet-Shaped Lattice Frame Material
Technical Paper Publication: SHTC2022-81856
Youssef Aider - Mississippi State University
Heejin Cho - Mississippi State University
Prashant Singh - Mississippi State University

Design and Analysis of a Modular High-Temperature Recuperator for Multi-Method Additive Manufacturing
Technical Presentation Only: SHTC2022-81886
Jacob Bryan - Utah State University
Aiden Meek - Utah State University
Hailei Wang - Utah State University

Designing Porous Polymers for Passive Daytime Radiative Cooling
Technical Presentation Only: SHTC2022-96695
Yuan Yang - Columbia University

K-09 Characterizations of Nanoscale Thermal Transport
7/11/2022
4:00PM–5:40PM - Freedom E

Chair: ***Jun Liu - North Carolina State University***

A Revisit to the First-Principles Prediction of Interfacial Thermal Conductance of Layered Materials Using Diffuse Mismatch Model
Technical Paper Publication: SHTC2022-78001
Jixiong He - North Carolina State University
Jun Liu - North Carolina State University

Heat Diffusion Process in the Nonlinear Dynamics in Quasi One- Dimensional Molecules
Technical Paper Publication: SHTC2022-83352
Heeyuen Koh - Seoul National University
Maruyama Shigeo - University of Tokyo

Non-Intrusive Cooling System Fault Detection and Diagnostics Using Deep Learning of Acoustic Emission
Technical Paper Publication: SHTC2022-85429
Hari Pandey - University of Arkansas
Weston Waldo - University of Arkansas
Han Hu - University of Arkansas

Time-Dependent Solution of Unsteady Flow Equations for Nanoscale Heat and Mass Transfer, Advanced Fluidics, and High Energy Blast Propagations
Technical Paper Publication: SHTC2022-78044
Ramlala Sinha - Applied Engineering Consultants

Contact Thermal Resistance Between Boron Nitride Nanotubes With and Without a Polymer Interlayer
Technical Presentation Only: SHTC2022-81528
Zhiliang Pan - Vanderbilt University
Yi Tao - Southeast University
Matthew Fitzgerald - Vanderbilt University
Deyu Li - Vanderbilt University

Thermal Transport via Gas Conduction Within Nanoconfinement
Technical Presentation Only: SHTC2022-81599
Greg Acosta - University of Nebraska-Lincoln
Mohammad Ghashami - University of Nebraska-Lincoln

K-13 Condensation
7/11/2022
4:00PM–5:40PM - Freedom F

Chair: ***Vinod Srinivasan - University of Minnesota***
Co-Chair: ***Jovica Riznic - Canadian Nuclear Safety Commission***

Experimental and Modelling Analysis of a Large-Scale Two-Phase Loop Thermosyphon
Technical Paper Publication: SHTC2022-78822
Debraliz Isaac Aragones - Purdue University
Chien-Hua Chen - Advanced Cooling Technologies
Justin Weibel - Purdue University
David Warsinger - Purdue University
Richard Bonner - Advanced Cooling Technologies

Numerical Simulation on the Flow and Heat Transfer Characteristics of the Condenser Shell Side in a 3rd Generation Nuclear Power Plant
Technical Paper Publication: SHTC2022-85131
Dong Yan - Shandong Nuclear Power Company
Lin Chen - Shandong Nuclear Power Company
Yingpei Xia - Shandong Nuclear Power Company
Yueheng Sun - Shandong Nuclear Power Company

Condensation Heat Transfer Characteristics of Binary Vapor Mixtures of Immiscible Liquids
Technical Presentation Only: SHTC2022-88091
Qiang Liao - Chongqing University
Yuheng Gu - Chongqing University
Jinkui Jia - Chongqing University
Yudong Ding - Chongqing University
Hong Wang - Chongqing University

Min Cheng - Chongqing University
Xun Zhu - Chongqing University

Condensation Heat Transfer Characteristics of Binary Vapor Mixtures of Immiscible Liquids
Technical Presentation Only: SHTC2022-87444
Qiang Liao - Chongqing University
Yuheng Gu - Chongqing University
Jinkui Jia - Chongqing University
Yudong Ding - Chongqing University
Hong Wang - Chongqing University
Min Cheng - Chongqing University
Xun Zhu - Chongqing University

Prediction of Condensation Freezing Droplet Size on Nano-Textured Superhydrophobic Surfaces
Technical Presentation Only: SHTC2022-84381
Yuchen Shen - University of Illinois at Urbana-Champaign
Sophie Wang - University of Illinois at Urbana-Champaign

K-10 Heat Transfer Equipment III
7/11/2022
4:00PM–5:40PM - India D

Chair: ***Prashant Singh- North Carolina State University***
Co-Chair: ***Kashif Nawaz- Oak Ridge National Laboratory***
Co-Chair: ***Sandra Boetcher - Embry Riddle Aeronautical University***
Co-Chair: ***Arun Muley – Boeing***

Polymer Composite Heat Transfer Surfaces in Highly Corrosive Application
Technical Presentation Only: SHTC2022-83809
Abisolom Goitom - Technoform Tailored Solutions Holding GmbH
Nicolas Schiffer - Technoform Tailored Solutions Holding GmbH

Thermal Transport in Partially Porous Channel Flow
Technical Presentation Only: SHTC2022-83883
Shilpa Vijay - University of Southern California
Mitul Luhar - University of Southern California

A Computational Model to Predict the Transient Performance of a Thermal Energy Storage Unit Coupled With an Air Pre-Cooler for a Novel Dry-Cooling System for Power Plants
Technical Presentation Only: SHTC2022-84247
Rituja Kulkarni - University of Cincinnati
Milind Jog - University of Cincinnati
Raj Manglik - University of Cincinnati

Modeling of Local Heating in Thick Fiber Reinforced Thermoplastic Composites
Technical Presentation Only: SHTC2022-97756
James Gayton - University of Maine
Justin Lapp - University of Maine

Thermal Performance Tests for Foam-Based Microevaporator Cold Plates
Technical Presentation Only: SHTC2022-81813
Lucas Arrivo - Villanova University
Steven Schon - QuantaCool Corporation
Aaron Wemhoff - Villanova University

K-20 Computational Methods for Materials Development and Manufacturing II
7/11/2022
4:00PM–5:40PM - Freedom G

Chair: ***Mohamed Abdelhady - National Research Council Canada***
Chair: ***Aaron Wemhoff - Villanova University***
Chair: ***Hamidreza Najafi - Florida Institute of Technology***
Chair: ***Shima Hajimirza - Stevens Institute of Technology***
Chair: ***Cheng-xian Lin - Florida International University***
Co-Chair: ***Like Li - Mississippi State University***
Co-Chair: ***Leitao Chen - Tennessee State University***

Analysis of the Thermal-Moisture Induced Stresses in a Drying of a Cylindrical Log
Technical Presentation Only: SHTC2022-78119
Enayat Mahajerin - Saginaw Valley State University

Extension of Cylindrical Inclusion Percolation Theory Towards Non-Uniform Distributions
Technical Presentation Only: SHTC2022-81811
Anh Trinh - Villanova University
Aaron Wemhoff - Villanova University

Exploring the Effects of Minichannel Wall Distance on Falling Film Condensation: A Numerical Study
Technical Presentation Only: SHTC2022-85717
Shitiz Sehgal - Texas A&M University
Jorge Alvarado - Texas A&M University
Ibrahim Hassan - Texas A&M University-Qatar

Modeling Heat Transfer Including Radiation in Gravity-Driven Granular Flows Using Discrete Element Method
Technical Presentation Only: SHTC2022-87817
Bingjia Li - University of Michigan
Zijie Chen - University of Michigan
Rohini Bala Chandran - University of Michigan

Data-Driven Techniques to Obtain Radiative View Factor Correlations in Particulate Media
Technical Presentation Only: SHTC2022-87818
Zijie Chen - University of Michigan-Ann Arbor
Rohini Bala Chandran - University of Michigan-Ann Arbor

TUESDAY, JULY 12, 2022

K-09 First-Principles Prediction of Phonon and Electron Thermal Transport I
7/12/2022
8:30AM–10:10AM - Freedom E

Chair: ***Jun Liu - North Carolina State University***

Interface Thermal Resistance Between Monolayer WSe_2 and SiO_2: Raman Probing With Consideration of Optical-Acoustic Phonon Nonequilibrium
Technical Presentation Only: SHTC2022-85268
Nick Hunter - Iowa State University

Computational Discovery of Ultralow Thermal Conductivity Ternary Semiconductors
Technical Presentation Only: SHTC2022-86070
Ankit Jain – Indian Institute of Technology Bombay

Interfacial Thermal Resistance Between Nm-Thick MoS_2 and Quartz Substrate: A Critical Revisit Under Phonon Mode-Wide Thermal Non-Equilibrium
Technical Presentation Only: SHTC2022-87733
Hamidreza Zobeiri - Iowa State University

Experimental Mapping of Electron Thermal Transport in Metals
Technical Presentation Only: SHTC2022-91032
Mauricio Segovia - Purdue University
Xianfan Xu - Purdue University

Temperature-Dependent Excited State Lifetimes of Nitrogen Vacancy Centers in Individual Nanodiamonds
Technical Presentation Only: SHTC2022-97680
Andrea Pickel - University of Rochester
Dinesh Bommidi - University of Rochester

New Experimental Method for Determination of Energy Accommodation Coefficient
Technical Presentation Only: SHTC2022-97664
Greg Acosta - University of Nebraska-Lincoln
Mohammad Ghashami - University of Nebraska-Lincoln

K-13 Evaporation/Boiling I
7/12/2022
8:30AM–10:10AM - Freedom F

Chair: ***Vinod Srinivasan - University of Minnesota***
Co-Chair: ***Jovica Riznic - Canadian Nuclear Safety Commission***

Experimental Results of Simulation of a Combined Flash Evaporation and Phase Separation System for Desalination of Sea Water
Technical Paper Publication: SHTC2022-81203
Vasudevan Chandramouli - University of California, Los Angeles
Jin Jen - University of California, Los Angeles
Vijay Dhir - University of California, Los Angeles

Heat Transfer Measurements in Neutrally Buoyant Suspensions in the Inertial Regime
Technical Paper Publication: SHTC2022-85241
Merin A P - University of Minnesota
Vinod Srinivasan - University of Minnesota

Nucleate Pool Boiling of Water on a Heater of the Size of a Capillary Length
Technical Paper Publication: SHTC2022-84337
Julia Reed - University of California, Los Angeles
Vijay Dhir - University of California, Los Angeles

The Effect of Bubble Nucleation on the Performance of a Wickless Heat Pipe in Microgravity
Technical Presentation Only: SHTC2022-81765
Joel Plawsky - Rensselaer Polytechnic Institute
Jiaheng Yu - Rensselaer Polytechnic Institute
Anisha Pawar - Rensselaer Polytechnic Institute

K-20 Heat Transfer Enhancement
7/12/2022
8:30AM–10:10AM - Freedom G

Chair: ***Mohamed Abdelhady - National Research Council Canada***
Chair: ***Aaron Wemhoff - Villanova University***
Chair: ***Hamidreza Najafi - Florida Institute of Technology***
Chair: ***Shima Hajimirza - Stevens Institute of Technology***
Chair: ***Cheng-xian Lin - Florida International University***
Co-Chair: ***Like Li - Mississippi State University***
Co-Chair: ***Leitao Chen - Tennessee State University***

Investigations on Improving the Performance of Solid Desiccant Cooling Systems With Passive Radiative Sky Cooling Modules
Technical Paper Publication: SHTC2022-81659
Aiqiang Pan - City University of Hong Kong
Siru Chen - City University of Hong Kong
Tsz Chung Ho - City University of Hong Kong
Hau Him Lee - City University of Hong Kong
Chi Yan Tso - City University of Hong Kong

A New Battery Thermal Management System With Integrated Phase Change Materials and Cold Plate: A Numerical Study
Technical Paper Publication: SHTC2022-81860
Xinrui Xiang - Northeastern University
Ruibo Yang - Northeastern University
Ramaswamy Nagarajan - University of Massachusetts Lowell
Hongwei Sun - Northeastern University

Topology Optimization Design and Heat Transfer Performance of Cooling Channel Based on Fluid-Solid Coupling
Technical Paper Publication: SHTC2022-85175
Zhijian Duan - Northwestern Polytechnical University
Gongnan Xie -Northwestern Polytechnical University
Xinrong Ma - Xianyang Normal University

Effects of FIV on Forced Convection Heat Transfer From Two Tandem Cylinders of Unequal Diameters
Technical Paper Publication: SHTC2022-85589
Hamid Khan - Khalifa University of Science and Technology
Md. Islam - Khalifa University of Science & Technology
Yap Fatt - Khalifa University of Science and Technology
Isam Janajreh - Khalifa University of Science and Technology

Effects of Flow-Induced Vibration on Heat Transfer From a Circular and Square Cylinder With Different Attack Angle
Technical Paper Publication: SHTC2022-85599

Yuvraj Sarout - Khalifa University of Science & Technology
Md. Islam - Khalifa University of Science & Technology
Yap Fatt - Khalifa University of Science & Technology
Isam Janajreh - Khalifa University of Science & Technology

K-07 Thermophysical Properties
7/12/2022
8:30AM–10:10AM - India D

Chair: ***Xinwei Wang - Iowa State University***
Co-Chair: ***Troy Munro - Brigham Young University***

Tunable Hydraulic and Thermal Properties via 3-D Printing
Technical Presentation Only: SHTC2022-84363

Shilpa Vijay - University of Southern California
Taylor Mclaughlin - University of Southern California
Bryce Heitner - University of Southern California
Stara Shinsato - University of California, Berkeley
Mitul Luhar - University of Southern California

Thermo-Physical Properties of Drying Process of Dioscorea Alata
Technical Presentation Only: SHTC2022-97334

Emmanuel Nwadike - Nnamdi Azikiwe University
Andrew Azaka - Nnamdi Azikiwe University
Mathew Abonyi - Nnamdi Azikiwe University

The Effect of Real Gas Radiation on Laminar Developing Flow in a Channel
Technical Presentation Only: SHTC2022-88060

Kyle Pulsipher - Brigham Young University
Brent Webb - Brigham Young University

Natural Convection in a Square Enclosure With Radiatively Participating Real Gases
Technical Presentation Only: SHTC2022-87822

Brennen Clark - Brigham Young University
Brent Webb - Brigham Young University
Vladimir Solovjov - Brigham Young University

K-06 Thermal Storage in Energy Systems
7/12/2022
8:30AM–10:10AM - India C

Chair: ***Leitao Chen - Tennessee State University***

Design of a Thermal Energy Storage System for Heating a Sumaq Wasi House in Ayaviri, Puno (Peru) Using Combustion Gases From a Domestic Stove
Technical Presentation Only: SHTC2022-81883
Luz Estrada Torvisco - Universidad de Ingeniería y Tecnología
Carlos Rios Perez - Universidad de Ingeniería y Tecnología

Machine Learning Based Control of Multi-Temperature PCM Thermal Storage Assemblies – A Comparison of On/Off Versus Fully Modulating Valve Control
Technical Paper Publication: SHTC2022-86174
Alanna Cooney - University of California, Berkeley
Van Carey - University of California, Berkeley

Parametric Modelling Study of a High-Temperature Thermal Energy Storage System for Application in Solar Fuel Redox Cycles
Technical Presentation Only: SHTC2022-89249
Alon Lidor - ETH Zürich
Ewald Kleefstra - ETH Zürich
Aldo Steinfeld - ETH Zürich

Experimental Investigation of PCM Melting in a Vertical Capsule
Technical Presentation Only: SHTC2022-90460
Tomer Shockner - Ben-Gurion University
Gennady Ziskind - Ben-Gurion University

Effect of Phase Change Material Container Design on Hybrid Thermal Management System for a Battery Module
Technical Presentation Only: SHTC2022-90463
İsmail Gurkan Demirkiran - Izmir Institute of Technology
Erdal Cetkin - Izmir Institute of Technology

PCM Based Heat Sinks for Transient Passive Cooling of an Electronic Device With Localized Power Generation – Numerical and Parametric Study
Technical Presentation Only: SHTC2022-89849
Elad Koronio - Ben-Gurion University
Gennady Ziskind - Ben-Gurion University

K-06 Heat and Mass Transfer in Heating, Cooling, and Power Systems
7/12/2022
4:00PM–5:40PM - India C

Chair: ***Leitao Chen - Tennessee State University***

A Novel Dynamic Spacecraft Radiator Design With Annular Geometry and Varied Thickness Profiles for CubeSat Applications
Technical Paper Publication: SHTC2022-84329
Nicholas Debortolli - University of Dayton
Natalie Douglass - University of Dayton
David Warburton - University of Dayton
Jeremy Price - University of Dayton
Josh Cannon - Brigham Young University
Brian Iverson - Brigham Young University
Rydge Mulford - University of Dayton

Experimental Investigation and Heat Transfer Analysis of Innovative Thermal Mechanical Refrigeration System Compared to Electric Compressor
Technical Paper Publication: SHTC2022-85194
Ahmad Sleiti - Qatar University
Wahib Al-Ammari - Qatar University
Mohammed Al-Khawaja - Qatar University

Buoyancy-Driven Convection in Additively Manufactured Cubic Lattice: Effect of Lattice Aspect Ratio and Heating Orientation
Technical Paper Publication: SHTC2022-85740
Prashant Singh - Mississippi State University
Mantha S. Phanikumar - Michigan State University
Roop Mahajan - Virginia Tech

Uncertainty Analysis of Vapor Transport Measurement in a Hollow Fiber Membrane Module for Membrane Humidifier
Technical Paper Publication: SHTC2022-81761
Xuan Linh Nguyen - Chungnam National University
Sangseok Yu - Chungnam National University

Modeling and Simulation of Whole Air Supply System for Proton Exchange Membrane Fuel Cell Under Dynamic Operating Conditions
Technical Paper Publication: SHTC2022-81691
Hoang Nghia Vu - Chungnam National University
Sangseok Yu - Chungnam National University

Investigation of Passive Radiative Cooling Using Bio-Polymers
Technical Presentation Only: SHTC2022-97683
Zahra Kamali Khanghah - University of Nebraska-Lincoln
Mohammad Ghashami - University of Nebraska-Lincoln

K-20 Applications of CHT
7/12/2022
4:00PM–5:40PM - Freedom G

Chair: ***Mohamed Abdelhady - National Research Council Canada***
Chair: ***Hamidreza Najafi - Florida Institute of Technology***
Chair: ***Shima Hajimirza - Stevens Institute of Technology***
Chair: ***Cheng-xian Lin - Florida International University***
Co-Chair: ***Like Li - Mississippi State University***
Co-Chair: ***Leitao Chen - Tennessee State University***

Physics Assisted Long-Short-Term-Memory Network for Forecasting Fouling in Regenerative Air Preheater
Technical Paper Publication: SHTC2022-80475
Ashit Gupta - Tata Consultancy Services
Vishal Jadhav - Tata Consultancy Services
Anirudh Deodhar - Tata Consultancy Services
Venkataramana Runkana - Tata Consultancy Services

Anisotropy of Flow and Heat Transfer of Gaseous MHD Flows in a Circular Tube Under the Control of Transverse Magnetic Field: A Preliminary Study
Technical Paper Publication: SHTC2022-83763
Qijin Zhao - Army Academy of Armored Forces
Baoquan Mao - Army Academy of Armored Forces
Xianghua Bai - Army Academy of Armored Forces
Jintao Guo - Troop No. 96901 of PLA
Chunlin Chen - Army Academy of Armored Forces

Finite Element Conjugate Heat Transfer Strategy for Self and Applied Magnetoplasmadynamic (MPD) Thrusters
Technical Paper Publication: SHTC2022-85788
K. Joel Berry - Kettering University

Large Eddy Simulation of Random Pebble Bed Using the Spectral Element Method
Technical Paper Publication: SHTC2022-87117
Tri Nguyen - Penn State University
Elia Merzari - Penn State University
Haomin Yuan - Argonne National Laboratory
Dezhi Dai - Argonne National Laboratory
Brian Jackson - Kairos Power

K-18 Heat Transfer under Extreme Conditions
7/12/2022
4:00PM–5:40PM - India D

Chair: ***Qiang Liao - Chongqing University***
Co-Chair: ***Calvin Li - Villanova University***
Co-Chair: ***Zhiguo Qu - Xi'an Jiaotong University***
Co-Chair: ***Junjun Wu - Chongqing University***

Structural Design of Thermoelectric Power Generation System Based on Phase Transfer Materials
Technical Presentation Only: SHTC2022-87597
Ning Zhuang - Xi'an Jiaotong University
Peiqin Wu - Xi'an Jiaotong University
Qiuwang Wang - Xi'an Jiaotong University
Ting Ma - Xi`An Jiaotong University

Cold Model Experiments of Ash Deposition Characteristics of Flue Gas Across 3-D Finned Tubes
Technical Presentation Only: SHTC2022-88125
Yudong Ding - Chongqing University
Changshen Lu - Chongqing University
Junnan Zhang - Chongqing University
Xun Zhu - Chongqing University
Hong Wang - Chongqing University
Min Cheng - Chongqing University
Qiang Liao - Chongqing University

Temperature Discretized Design Method for Heat Exchangers With Trans- and Super-Critical Hydrogen
Technical Presentation Only: SHTC2022-88244
Chenglong Yang - Xi'an Jiaotong University
Zetian Tang - Xi'an Jiatong University
Zhiguo Qu - Xi'an Jiatong University
Jianfei Zhang - Xi'an Jiatong University
Zhiyuan Jiang - Xi'an Jiaotong University

Modeling the Influence of Heat Transfer on Gas Hydrate Formation
Technical Paper Publication: SHTC2022-79744
Aritra Kar - The University of Texas Austin
Palash Acharya - The University of Texas at Austin
Awan Bhati - The University of Texas at Austin
Arjang Shahriari - The University of Texas at Austin
Ashish Mhahdeshwar - ExxonMobil
Timothy A. Barckholtz - ExxonMobil
Vaibhav Bahadur - The University of Texas at Austin

Boundary Conditions for Modeling of a Lead Reverberatory Furnace

Technical Paper Publication: SHTC2022-81206
Nicholas Walla - Purdue University Northwest
Vitalis Anisiuba - Purdue University Northwest
Armin Silaen - Purdue University Northwest
Alexandra Anderson - Gopher Resource
Joseph Grogan - Gopher Resource
Chenn Zhou - Purdue University Northwest

High Phonon Scattering Rates Suppress Thermal Conductivity in Hyperstoichiometric Uranium Dioxide
Technical Presentation Only: SHTC2022-94546
Hao Ma - Oak Ridge National Laboratory
Matt Bryan - Oak Ridge National Laboratory
Judy Pang - Oak Ridge National Laboratory
Douglas Abernathy - Oak Ridge National Laboratory
Daniel Antonio - Idaho National Laboratory
Krzysztof Gofryk - Idaho National Laboratory
Michael Manley - Oak Ridge National Laboratory

K-13 Evaporation/Boiling II
7/12/2022
4:00PM–5:40PM - Freedom F

Chair: ***Vinod Srinivasan - University of Minnesota***
Co-Chair: ***Jovica Riznic - Canadian Nuclear Safety Commission***

Effects of Tube Geometry and Wettability on Liquid Flow and Evaporation Heat Transfer in Falling Film Flow
Technical Presentation Only: SHTC2022-83830
Hong-Qing Jin - University of Illinois at Urbana-Champaign
Sophie Wang - University of Illinois at Urbana Champaign

Porous Nanochannel Wicks Based Solar Vapor Generation Device
Technical Presentation Only: SHTC2022-96668
Durgesh Ranjan - Syracuse University
Shalabh Maroo - Syracuse University
An Zou - Syracuse University

Structural-Material-Operational-Performance Relationship for Enhanced Pool Boiling Surfaces Using Neural Network Model
Technical Presentation Only: SHTC2022-91012
Sadaf Mehdi - Wichita State University
Gisuk Hwang - Wichita State University

Hierarchical Porous Copper Surfaces for Capillary-Driven Condensation Heat Transfer Enhancement
Technical Presentation Only: SHTC2022-85423
Yajing Zhao - Massachusetts Institute of Technology
Samuel Cruz - Masachusetts Institute of Technology
Kyle Wilke - Massachusetts Institute of Technology
Amena Khatun - Massachusetts Institute of Technology
Carlos Díaz-Marín - Massachusetts Institute of Technology
Evelyn Wang - Massachusetts Institute of Technology

WEDNESDAY, JULY 13, 2022

K-06 Thermal Management of Battery Systems
7/13/2022

8:30AM–10:10AM - India C

Chair: ***Leitao Chen - Tennessee State University***

Validation of Vented Gas Characteristics From Thermal Runaway of Lithium-Ion Batteries Using LIM1TR
Technical Paper Publication: SHTC2022-79560
Ala' Qatramez - The University of Memphis
Andrew Kurzawski - Sandia National Laboratories
John Hewson - Sandia National Laboratories
Michael Parker - The University of Memphis
Adam Porter - The University of Memphis
Daniel Foti - The University of Memphis
Alexander Headley - The University of Memphis

Experimental Validation of Condensation Modeling for H2 Drying in Space-Based Electrolysis
Technical Presentation Only: SHTC2022-87908
Nasim Emadi - Colorado School of Mines
David Dickson - Colorado School of Mines
John Schmit - Colorado School of Mines
Christopher Dreyer - Colorado School of Mines
Michele Hollist - OxEon Energy, LLC
Joseph Hartvigsen - OxEon Energy, LLC
Gregory Jackson - Colorado School of Mines

Non-Uniform Heat Generation Model for a Li-Ion Battery Cell to Decrease Numerical Cost
Technical Presentation Only: SHTC2022-89088
Sinan Gocmen - Izmir Institute of Technology
Erdal Cetkin - Izmir Institute of Technology

Thermal Metrology for Measuring Lithium Concentration Gradients in Lithium-Ion Batteries (LIBs)
Technical Presentation Only: SHTC2022-97653
Yuqiang Zeng - Lawrence Berkeley National Laboratory
Divya Chalise - Lawrence Berkeley National Laboratory
Yanbao Fu - Lawrence Berkeley National Laboratory
Joseph Schaadt - Lawrence Berkeley National Laboratory
Sumanjeet Kaur - Lawrence Berkeley National Laboratory
Vince Battaglia - Lawrence Berkeley National Laboratory
Sean Lubner - Lawrence Berkeley National Laboratory
Ravi Prasher - Lawrence Berkeley National Laboratory

Thermal Wave Sensing of Electrochemical Information
Technical Presentation Only: SHTC2022-97590
Divya Challise - Lawrence Berkeley National Laboratory and University of California, Berkeley
Sean Lubner - Lawrence Berkeley National Laboratory and Massachusetts Institute of Technology
Yuqiang Zeng - Lawrence Berkeley National Laboratory
Sumanjeet Kaur - Lawrence Berkeley National Laboratory
Venkat Srinivasan - Argonne National Laboratory
Rob Jonson - Lawrence Berkeley National Laboratory
Joseph Schaadt - Stanford University and University of California, Berkeley
Akshey Dhar - Lawrence Berkeley National Laboratory and University of California, Berkeley
Mike Tucker - Lawrence Berkeley National Laboratory
Ravi Prasher - Lawrence Berkeley National Laboratory and University of California, Berkeley

K-13 Multiphase Flow
7/13/2022
8:30AM–10:10AM - Freedom F

Chair: ***Vinod Srinivasan - University of Minnesota***

Co-Chair: ***Jovica Riznic - Canadian Nuclear Safety Commission***

An Experimental Investigation of Flow Boiling Characteristics in Interconnected Microchannels With Different Slot Arrangement
Technical Paper Publication: SHTC2022-81624
Yun Li - Shanghai Jiao Tong University
Huiying Wu - Shanghai Jiao Tong University

Numerical Simulation of Multiple Bubble Interaction During Flow Boiling in Micro-Channels
Technical Paper Publication: SHTC2022-81866
Dewan Rahman - California State University, Northridge
Abhijit Mukherjee - California State University, Northridge

Anomalous Adverse Effect of Mass Velocity on Convective Flow Boiling in Microfin Tubes: Literature Review and Mechanistic Analysis
Technical Paper Publication: SHTC2022-82761
Lingnan Lin - National Institute of Standards and Technology
Mark Kedzierski - National Institute of Standards and Technology

Review of Datasets and Correlations for Two-Phase Flow Boiling Heat Transfer of Pure Ethanol and Ethanol/Water Binary Mixtures
Technical Paper Publication: SHTC2022-84340
Mohamed Elfaham - University of North Dakota
Clement Tang - University of North Dakota

A Two-Dimensional Numerical Study on Air/Mist Sweeping Jet Impingement Cooling
Technical Paper Publication: SHTC2022-81664
Ting Wang - University of New Orleans
Ramy Abdelmaksoud - University of New Orleans

Effects of Wettability, Porosity, and Subsequent Hydraulic Linkage on Convective Drying of Water From Porous Media
Technical Presentation Only: SHTC2022-81810
Partha P. Chakraborty - Kansas State University
Melanie Derby - Kansas State University

K-12 Aerospace Heat Transfer
7/13/2022
8:30AM–10:10AM - Freedom G

Chair: ***Ashwani Gupta - University of Maryland***
Co-Chair: ***Ryo Amano – University of Wisconsin-Milwaukee***

Europa Lander Terminal Sterilization Subsystem (TSS) Thermal Model Verification, Validation, and Uncertainty Quantification (VVUQ) Processes
Technical Paper Publication: SHTC2022-81162
Kevin Irick - Sandia National Laboratories
Tyler Voskuilen - Sandia National Laboratories
Philip Sakievich - Sandia National Laboratories

Heat Transfer on Fuel Injector Surface With Backward Facing Stepped Scramjet Flame Holder
Technical Paper Publication: SHTC2022-83853
Hyung Mo Bae - Yonsei University
Jihyuk Kim - Yonsei University
Juyeong Nam - Yonsei University
Injoong Chang - Yonsei University
Hee Koo Moon - Yonsei University
Hyung Hee Cho - Yonsei University

Thermal Fluid Assessment of Bluff Versus Streamlined Bodies With a Slot for Aligned Flow
Technical Paper Publication: SHTC2022-80024
Sultan Alshareef - University of Utah
Todd Harman - University of Utah
Timothy Ameel - University of Utah

An Experimental Study on Heat Transfer Performance of Jet Impingement Arrays
Technical Paper Publication: SHTC2022-81617
Jiahong Fu - Zhejiang University City College
Bengt Sundén - Lund University
Zhen Cao - Lund University

A Review on Film Cooling Research: Historical Developments in Hole Shapes, Measurement Techniques, Effects of Operating Conditions and Impact of Additive Manufacturing
Technical Paper Publication: SHTC2022-81803
Inderjot Kaur - Mississippi State University
Sandip Dutta - Clemson University
Prashant Singh - Mississippi State University

K-09 First-Principles Prediction of Phonon and Electron Thermal Transport II
7/13/2022
8:30AM–10:10AM - Freedom E

Chair: ***Richard Zhang - University of North Texas***

Modeling Phonon Backscattering in Axially Modulated Nanowires
Technical Presentation Only: SHTC2022-84231
Yingru Song - Rice University
Geoff Wehmeyer - Rice University

Analytical Development of Phononic Energy Propagation Between Thermal and Acoustic Waves
Technical Presentation Only: SHTC2022-84360
Rajib Mahamud - Texas A&M University
Hossain Ahmed - Georgia Southern University

Modeling the High-Frequency Periodic Heating of a Line-Heater-on-Substrate Structure: Towards a Ballistic 3ω Method
Technical Presentation Only: SHTC2022-85125
Tao Li - Southeast University
Zhen Chen - Southeast University

Modeling Frequency-Dependent Rectification in Heterojunction Thermal Diodes, {SHTC2022-84234}
Technical Presentation Only
Trevor Shimokusu - Rice University
Qing Zhu - Rice University
Natan Rivera - Rice University
Geoff Wehmeyer - Rice University

Research Funding Opportunities Panel: NSF and DOE
7/13/2022
10:30AM – 12:10PM – Liberty A

Chair: ***Satwinder S. Sadhal, University of Southern California***
Co-Chair: ***Milind A. Jog, University of Cincinnati***
Co-Chair: ***Mark Kedzierski, National Institute of Standards and Technology***

Panelists:

Dr. Ying Sun, Program Director, Thermal Transport Processes Program
National Science Foundation

Dr. Avi Shultz, Program Manager, Concentrating Solar-Thermal Power (CSP) Program,
U.S. Department of Energy's Solar Energy Technologies Office (SETO)