

PRTEC2019 Program Overview (ver. 2019-12-17 final)

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Friday, December 13, 2019

Time/room	Monarchy 4	Monarchy 1	Monarchy 2	Monarchy 3	Maui Suite 2	Maui Suite 3	Maui Suite 4	Lahaina 2	Lahaina 3
12:00-17:00	Registration (Registration Desk)								
17:15-19:15	Welcome Reception (Halona Kai)								

Saturday, December 14, 2019

Time/room	Monarchy 4	Monarchy 1	Monarchy 2	Monarchy 3	Maui Suite 2	Maui Suite 3	Maui Suite 4	Lahaina 2	Lahaina 3
8:30-9:00	Opening (Monarchy 4)								
9:00-9:40	PRTEC-2PL01: Plenary Lecture 1 (Monarchy 4) Prof. John K. Eaton, Stanford University, USA / Turbulent Thermal Transport: MRI Experiments, Large-Eddy Simulation, and Machine-Learning Models								
9:40-10:20	PRTEC-2PL02: Plenary Lecture 2 (Monarchy 4) Prof. Min Soo Kim, Seoul National University, Korea / Hydrogen Economy and Fuel Cell Technology								
10:20-10:40	Coffee Break								
10:40-12:00	Topic (c-3) : Thermal Properties at the Micro/Nano-scale - Thermal and Electrical Properties -	Topic (a-2): Computational Heat and Mass Transfer - Fundamentals 1 -	Topic (a-3): Phase Change Phenomena and Heat Transfer - Pool Boiling 1 -	Topic (b-4): Heat and Mass Transfer in Energy Devices - Heat Pipe -	Topic (b-5): Heat and Mass Transfer in Air Conditioners & Refrigeration 1	Topic (b-1): Fundamentals in Combustion 1	Topic (a-1): Convective Heat and Mass Transfer - Turbulence -	Topic (a-7): Heat Transfer in Manufacturing 1	Topic (c-2): Heat and Mass Transfer in MEMS 1
12:00-13:20	Lunch Break								
13:20-15:00	Panel Discussion 1 Emerging Topics in Nanoscale Thermal Transport	Topic (a-2): Computational Heat and Mass Transfer - Phase Change and Multiphase Flow 1 -	Topic (a-3): Phase Change Phenomena and Heat Transfer - Evaporation -	Topic (b-4): Heat and Mass Transfer in Energy Devices - Heat Exchanger -	Topic (b-5): Heat and Mass Transfer in Air Conditioners & Refrigeration 2	Topic (b-1): Fundamentals in Combustion 2	Topic (a-1): Convective Heat and Mass Transfer - Heat Exchangers -	Topic (a-7): Heat Transfer in Manufacturing 2	
15:00-15:20	Coffee Break								
15:20-15:50	PRTEC-2KL01 Prof. Osamu Nakabeppu, Meiji University, Japan		PRTEC-2KL02 Prof. Ying Sun, Drexel University, USA	PRTEC-2KL03 Prof. Yong Tae Kang, Korea University, Korea					
15:50-15:55	Break								
15:55-16:25	PRTEC-2KL04 Prof. Kenji Yasuoka, Keio University, Japan		PRTEC-2KL05 Dr. Jungho Lee, KIMM, Korea	PRTEC-2KL06 Prof. Dereje Agonafer, University of Texas Arlington, USA					
16:25-16:30	Break								
16:30-17:50	Topic (c-3) : Thermal Properties at the Micro/Nano-scale - Machine Learning and Optimization -	Topic (a-2): Computational Heat and Mass Transfer - Optimization and Control 1 -	Topic (a-3): Phase Change Phenomena and Heat Transfer - Pool Boiling 2 -	Topic (b-4): Heat and Mass Transfer in Energy Devices - Thermal Energy Storage -	Topic (b-5): Heat and Mass Transfer in Air Conditioners & Refrigeration 3	Topic (b-1): Fundamentals in Combustion 3	Topic (a-1): Convective Heat and Mass Transfer - Flow Characteristics -	Topic (a-7): Heat Transfer in Manufacturing 3	Topic (c-2): Heat and Mass Transfer in MEMS 2

Sunday, December 15, 2019

Time/room	Monarchy 4	Monarchy 1	Monarchy 2	Monarchy 3	Maui Suite 2	Maui Suite 3	Maui Suite 4	Lahaina 2	Lahaina 3
8:30-9:10	PRTEC-2PL03: Plenary Lecture 3 (Monarchy 4) Prof. Chi-Chuan Wang, National Chiao Tung University, Taiwan / Recent Progress of Novel Air-Cooled Heat Sinks for Electronic Cooling								
9:10-9:50	PRTEC-2PL04: Plenary Lecture 4 (Monarchy 4) Prof. Taku Ohara, Tohoku University, Japan / Thermal Energy Transfer in Liquids, Soft Matters and over the Interfaces: A Molecular View								
9:50-10:10	Coffee Break								
10:10-12:10	Topic (c-3): Thermal Properties at the Micro/Nano-scale - Micro, Nano-fluidics -	Topic (a-2): Computational Heat and Mass Transfer - Fundamentals 2 -	Topic (a-3): Phase Change Phenomena and Heat Transfer - Enhancement of Heat Flux -	Topic (b-4): Heat and Mass Transfer in Energy Devices - Thermal Management -	Topic (b-3): Heat and Mass Transfer in IC Engines 1	Topic (b-1): Fundamentals in Combustion 4	Topic (a-3): Phase Change Phenomena and Heat Transfer - Phase Change -	Topic (a-4): Radiative Heat Transfer - Radiative Transfer Modeling -	Topic (a-8): Thermo-Physical Properties 1
12:10-13:30	Lunch Break								
13:30-17:00	Round table on future of thermal engineering								

Monday, December 16, 2019

Time/room	Monarchy 4	Monarchy 1	Monarchy 2	Monarchy 3	Maui Suite 2	Maui Suite 3	Maui Suite 4	Lahaina 2	Lahaina 3
8:30-9:10	PRTEC-2PL05: Plenary Lecture 5 (Monarchy 4) Prof. Yuji Suzuki, The University of Tokyo, Japan / Electret-Based Thermal and Kinetic Energy Harvesting for Wearable Devices								
9:10-9:50	PRTEC-2PL06: Plenary Lecture 6 (Monarchy 4) Prof. Andrei G. Fedorov, Georgia Institute of Technology, USA / Thermal Dissipation at Extremes Using Confined Evaporating Liquid Films with Streaming Gas/Vapor Flows								
9:50-10:10	Coffee Break								
10:10-11:50	Panel Discussion 2 Response of Thermal Engineering to Global Challenges	Topic (a-2): Computational Heat and Mass Transfer - Applications -	Topic (a-3): Phase Change Phenomena and Heat Transfer - Two Phase Flow 1 -	Topic (b-4): Heat and Mass Transfer in Energy Devices - Solar & Thermal Systems (1) -	Topic (b-3): Heat Transfer and Combustion in IC Engines 2	Topic (b-1): Fundamentals in Combustion 5	Topic (a-3) Phase Change Phenomena and Heat Transfer - Solidification -	Topic (a-4): Radiative Heat Transfer - Radiative Cooling -	Topic (c-3): Thermal Properties at the Micro/Nano-scale - Heat Conduction -
11:50-13:10	Lunch Break								
13:10-13:40	PRTEC-2KL07 Prof. Jae Dong Chung, Sejong University, Korea		PRTEC-2KL08 Prof. Joerg Petrasch, Michigan State University, USA	PRTEC-2KL09 Prof. Hiroshi Kawanabe, Kyoto University, Japan					
13:40-13:45	Break								
13:45-14:15	PRTEC-2KL10 Prof. Hiroshi Suzuki, Kobe University, Japan		PRTEC-2KL11 Prof. Wilson K. S. Chiu, University of Connecticut, USA	PRTEC-2KL12 Prof Ji Hwan Jeong, Pusan National University, Korea					
14:15-14:35	Coffee Break								
14:35-16:15	Topic (a-1): Convective Heat and Mass Transfer - Natural Convection 1 -	Topic (a-2): Computational Heat and Mass Transfer - Optimization and Control 2 -	Topic (a-1): Convective Heat and Mass Transfer - Heat Transfer Enhancement -	Topic (b-4): Heat and Mass Transfer in Energy Devices - Solar & Thermal Systems (2) -	Topic (a-5): Biological Heat and Mass Transfer - Numerical Analysis and Measurement of Biological System -	Topic (b-1): Fundamentals in Combustion 6	Topic (c-1): Transport Phenomena in Nano and Molecular Scale Systems 1	Topic (a-4): Radiative Heat Transfer Radiative Transfer in Engineering Systems	Topic (c-3): Thermal Properties at the Micro/Nano-scale - Molecular Simulations -
16:15-16:25	Break								
16:25-17:45	Topic (a-1): Convective Heat and Mass Transfer - Natural Convection 2 -	Topic (a-2): Computational Heat and Mass Transfer - Fundamentals 3 -	Topic (a-3): Phase Change Phenomena and Heat Transfer - Bubble -	Topic (b-4): Heat and Mass Transfer in Energy Devices - Heat Pump -	Topic (a-5): Biological Heat and Mass Transfer - Response of Biological System under Thermal Environment -	Topic (b-1): Fundamentals in Combustion 7	Topic (c-1): Transport Phenomena in Nano and Molecular Scale Systems 2	Topic (a-4): Radiative Heat Transfer Radiative Properties	Topic (c-3): Thermal Properties at the Micro/Nano-scale - Thermal Properties Control and Measurements -
19:00-21:00	Conference Banquet – Drums of the Pacific Lu'au (Sunset Terrace)								

Tuesday, December 17, 2019

Time/room	Monarchy 4	Monarchy 1	Monarchy 2	Monarchy 3	Maui Suite 2	Maui Suite 3	Maui Suite 4	Lahaina 2	Lahaina 3
9:05-9:45	PRTEC-2PL07: Plenary Lecture 7 (Monarchy 4) Prof. Sung Jin Kim, KAIST, Korea / Journey Toward Flexible Thermal Superconductor								
9:45-9:50	Break								
9:50-10:20	PRTEC-2KL13 Prof. Tong Seop Kim, Inha University, Korea		PRTEC-2KL14 Prof. Akio Miyara, Saga University, Japan	PRTEC-2KL15 Prof. Asegun Henry, MIT, USA					
10:20-10:40	Coffee break								
10:40-12:20	Topic (a-1): Convective Heat and Mass Transfer - Microscale Convection -	Topic (a-2): Computational Heat and Mass Transfer - Phase Change and Multiphase Flow 2 -	Topic (a-3): Phase Change Phenomena and Heat Transfer - Two Phase Flow 2 -	Topic (b-4): Heat and Mass Transfer in Energy Devices - Fuel Cells (1) -	Topic (a-6): Measurements and Diagnostics 1	Topic (b-2): Heat and Mass Transfer in Combustion Systems - Turbulent Combustion -	Topic (a-3): Phase Change Phenomena and Heat Transfer - Cooling -	Topic (a-8): Thermo-Physical Properties 2	Topic (c-1): Transport Phenomena in Nano and Molecular Scale Systems 3
12:20-13:40	Lunch Break								
13:40-15:20	Topic (a-1): Convective Heat and Mass Transfer - Convection in Multiphase/ Multiscale Phenomena and Interfaces 1 -	Topic (a-2): Computational Heat and Mass Transfer - Optimization and Control 3 -	Topic (a-3): Phase Change Phenomena and Heat Transfer - Heat Pipe -	Topic (b-4): Heat and Mass Transfer in Energy Devices - Fuel Cells (2) -	Topic (a-6): Measurements and Diagnostics 2	Topic (b-2): Heat and Mass Transfer in Combustion Systems - Measurement in Combustion System -	Topic (a-3): Phase Change Phenomena and Heat Transfer - Condensation and Solidification -	Topic (a-8): Thermo-Physical Properties 3	Topic (c-1): Transport Phenomena in Nano and Molecular Scale Systems 4
15:20-15:40	Coffee Break								
15:40-17:00	Topic (a-1): Convective Heat and Mass Transfer - Convection in Multiphase/ Multiscale Phenomena and Interfaces 2 -	Topic (a-2): Computational Heat and Mass Transfer - Optimization and Control 4 -	Topic (b-4): Heat and Mass Transfer in Energy Devices - Reliability -	Topic (b-4): Heat and Mass Transfer in Energy Devices - Batteries -	Topic (b-4): Heat and Mass Transfer in Energy Devices - Power Generation and Reaction -	Topic (b-2): Heat and Mass Transfer in Combustion Systems - Combustion in Multiphase System -			Topic (c-1): Transport Phenomena in Nano and Molecular Scale Systems 5
17:00-17:05	Break								
17:05-17:25	Closing Remarks (Monarchy 4)								

Technical Sessions

Saturday, December 14, 2019

Session	10:40	11:00	11:20	11:40	
<p>Monarchy 4</p> <p>Topic (c-3): Thermal Properties at the Micro/Nano-scale - Thermal and Electrical Properties -</p> <p>Chairperson: Tengfei Luo (Univ. Notre Dame)</p>	<p><u>PRTEC-24386</u></p> <p>Prediction of Thermal Conductivity and Thermal Boundary Resistance in Bi2Te3-Sb2Te3 Interfaces and Multilayer Structures, Prabudhya Roy Chowdhury (Purdue Univ.), Jingjing Shi (Georgia Inst. Tech.), Xiulin Ruan (Purdue Univ.)</p>	<p><u>PRTEC-24042</u></p> <p>Thermal and Electrical Properties of Semiconductor Materials Processed by High Pressure Torsion (HPT), Mizuki Kashifuji (Kyushu Univ.), Kensuke Matsuda (Kyushu Univ.), Shenghong Ju (Univ. Tokyo), Sivasankaran Harish (Kyushu Univ.), Yoshifumi Ikoma (Kyushu Univ.), Makoto Arita (Kyushu Univ.), Shinji Muneto (Kyushu Univ.), Junichiro Shiomi (Univ. Tokyo), Zenji Horita (Kyushu Univ.), Yasuyuki Takata (Kyushu Univ.), Masamichi Kohno (Kyushu Univ.)</p>	<p><u>PRTEC-24267</u></p> <p>Interfacial Transport of Electron and Phonon in Silicon-Based Thermoelectric Materials, Issei Tsunekawa (Univ. Tokyo), Masato Ohnishi (Univ. Tokyo), Lei Feng (Univ. Tokyo), Junichiro Shiomi (Univ. Tokyo)</p>	<p><u>PRTEC-24355</u></p> <p>Thermoreflectance Measurement of the Spin Peltier Effect in the Pt/YIG System, Takumi Yamazaki (Nagoya Univ.), Ryo Iguchi (Natl. Inst. for Materials Sci.), Hosei Nagano (Nagoya Univ.), Ken-ichi Uchida (Natl. Inst. for Materials Sci.)</p>	
<p>Monarchy 1</p> <p>Topic (a-2): Computational Heat and Mass Transfer - Fundamentals 1-</p> <p>Chairperson: Yosuke Hasegawa (Univ. Tokyo)</p>	<p><u>PRTEC-24167</u></p> <p>Heat and Momentum Transports of Turbulent Spot in Plane Couette Flow, Koji Fukudome (Tokyo Univ. Sci.), Takahiro Tsukahara (Tokyo Univ. Sci.), Hiroya Mamori (Univ. Electro-Communications), Makoto Yamamoto (Tokyo Univ. Sci.)</p>	<p><u>PRTEC-24326</u></p> <p>Development of Turbulent Velocity and Thermal Boundary Layers in Pseudo Entrance Regions, Hirofumi Hattori (Nagoya Inst. Tech.), Haruka Tadano (Nagoya Inst. Tech.), Yosuke Inagawa (Nagoya Inst. Tech.), Tomoya Houra (Nagoya Inst. Tech.), Masato Tagawa (Nagoya Inst. Tech.)</p>	<p><u>PRTEC-24024</u></p> <p>Numerical Study of Hydrogen Cooling in Cryogenic Vortex Tubes with Smooth Transitions between Vortex Chamber and Main Tube, Konstantin Matveev (Washington State Univ.), Jacob Leachman (Washington State Univ.)</p>	<p><u>PRTEC-24147</u></p> <p>Numerical and Experimental Modeling of a Cylindrical Heat Pipe, Maryam Shafahi (California State Polytechnic Univ.), Michael Kato (Cal Poly Pomona), Omar Ortiz Hernandez (Cal Poly Pomona), Edgar H. Pablo (Cal Poly Pomona), Alexander Barton (Cal Poly Pomona), Laila Jallo (Cal Poly Pomona), Kevin Anderson (Cal Poly Pomona)</p>	
<p>Monarchy 2</p> <p>Topic (a-3): Phase Change Phenomena and Heat Transfer - Pool Boiling 1 -</p> <p>Chairperson: Jaeseon Lee (Ulsan Natl. Inst. Sci. Tech.)</p>	<p><u>PRTEC-24305</u></p> <p>Effect of Contaminant Adsorption on Critical Heat Flux during Pool Boiling, Youngsup Song (MIT), Daniel J. Preston (MIT), Lenan Zhang (MIT), Evelyn N. Wang (MIT)</p>	<p><u>PRTEC-24498</u></p> <p>Numerical Study of the Contact Line Effect on the Multi-Striped Patterned Wettability Surface for Pool Boiling, Jaeyong Cho (MFDL Yonsei Univ.), JongHyun Kim (MFDL Yonsei Univ.), JoonSang Lee (MFDL Yonsei Univ.)</p>	<p><u>PRTEC-24453</u></p> <p>Impact of Heater Size and Confinement on Nucleate Pool Boiling, Greg Stehle (Univ. Pittsburgh), Mark Kimber (Texas A&M Univ.)</p>	<p><u>PRTEC-24180</u></p> <p>Heat Transfer in Quenching Process, Arslan R. Zabirov (Natl. Research Univ. "Moscow Power Engineering Inst."), Victor V. Yagov (Natl. Research Univ. "Moscow Power Engineering Inst."), Pavel Kanin (Natl. Research Univ. "Moscow Power Engineering Inst."), Maxim Lexin (Natl. Research Univ. "Moscow Power Engineering Inst.")</p>	
<p>Monarchy 3</p> <p>Topic (b-4): Heat and Mass Transfer in Energy Devices - Heat Pipe -</p> <p>Chairperson: Kazuyoshi Fushinobu (Tokyo Inst. Tech.)</p>	<p><u>PRTEC-24076</u></p> <p>Influence of Vapor-Liquid Distribution on Startup Characteristics in a Loop Heat Pipe, Takuya Adachi (Tohoku Univ.), Koji Fujita (Tohoku Univ.), Hiroki Nagai (Tohoku Univ.)</p>	<p><u>PRTEC-24111</u></p> <p>Study on Influence of Hydrophobic Surface on Startup Characteristics of Oscillating Heat Pipe, Hiroki Nagasawa (Tohoku Univ.), Takuya Adachi (Tohoku Univ.), Koji Fujita (Tohoku Univ.), Hiroki Nagai (Tohoku Univ.)</p>	<p><u>PRTEC-24194</u></p> <p>Study on Loop Heat Pipe for kW-Class High Power Application with Flat-Type Evaporator, Yoshitada Aono (Nagoya Univ.), Ai Ueno (Nagoya Univ.), Noriyuki Watanabe (Nagoya Univ.), Hosi Nagano (Nagoya Univ.)</p>	<p><u>PRTEC-24209</u></p> <p>Investigation of Temperature Field and Pressure inside a Pulsating Heat Pipe using Temperature-Sensitive Paint, Keiko Ishii (Aoyama Gakuin Univ.), Rikiya Omata (Aoyama Gakuin Univ.), Koji Fumoto (Aoyama Gakuin Univ.)</p>	
<p>Maui Suite 2</p> <p>Topic (b-5): Heat and Mass Transfer in Air Conditioners & Refrigeration 1</p> <p>Chairperson: Sumanta Acharya (Illinois Inst. Tech.)</p>	<p><u>PRTEC-24205</u></p> <p>Thermal Properties of Tetracosane/Calcium Carbonate Core/Shell Microcapsules with Diameter of Less Than 2 Micrometer, Yutaka Yamada (Okayama Univ.), Akihiko Horibe (Okayama Univ.)</p>	<p><u>PRTEC-24265</u></p> <p>Flow and Heat Transfer Characteristics of a Suspension with Phase Change Material, Takashi Morimoto (Aoyama Gakuin Univ.), Hiroyuki Kumano (Aoyama Gakuin Univ.)</p>	<p><u>PRTEC-24234</u></p> <p>Disc-Type Sorbent Enthalpy Recovery Ventilator (SERV), Ecem Cerrah (Simon Fraser Univ.), Majid Bahrami (Simon Fraser Univ.)</p>	<p><u>PRTEC-24106</u></p> <p>Performance Testing of Fixed-Bed Regenerators for HVAC Applications, Easwaran N. Krishnan (Univ. Saskatchewan), Hadi Ramin (Univ. Saskatchewan), Carey J. Simonson (Univ. Saskatchewan)</p>	

Session	10:40	11:00	11:20	11:40	
Maui Suite 3 Topic (b-1): Fundamentals in Combustion 1 Chairperson: Tsukasa Hori (Osaka Univ.)	<u>PRTEC-24002</u> Effects of Gravity on the Characteristics of Biogas-Oxygen Counterflow Diffusion Flames in Smallscale Burners, Satoshi Kadowaki (Nagaoka Univ. Tech.), Kazuki Uehara (Nagaoka Univ. Tech.), Toshiyuki Katsumi (Nagaoka Univ. Tech.), Tsuneyoshi Matsuoka (Toyohashi Univ. Tech.), Yuji Nakamura (Toyohashi Univ. Tech.)	<u>PRTEC-24110</u> A Study on Properties of Carbon Dioxide and Helium Mixed Gas Added Hydrogen Flames Propagating in a Narrow Space, Naoki Iwamoto (Ehime Univ.), Masaya Nakahara (Ehime Univ.), Junichi Oguma (Ehime Univ.), Fumiaki Abe (Ehime Univ.), Kenichi Tokunaga (Ehime Univ.), Atsushi Ishihara (Saitama Inst. Tech.)	<u>PRTEC-24032</u> Direct Numerical Simulation of Steam Diluted Hydrogen-Oxygen Lifted Flames, Defne Kiran (Tokyo Inst. Tech.), Kosuke Osawa (Tokyo Inst. Tech.), Mohamed Shamma (Tokyo Inst. Tech.), Yuki Minamoto (Tokyo Inst. Tech.), Masayasu Shimura (Tokyo Inst. Tech.), Mamoru Tanahashi (Tokyo Inst. Tech.)	<u>PRTEC-24244</u> An Experimental Study for Breakup of Nanoparticle / N-Dodecane Droplet using a Pulse Laser, GyuMin Jang (KAIST), BongJae Lee (KAIST), Nam Il Kim (KAIST)	
Maui Suite 4 Topic (a-1): Convective Heat and Mass Transfer - Turbulence - Chairperson: Ryo Amano (Univ. Wisconsin, Milwaukee)	<u>PRTEC-24093</u> Decomposition of Friction Drag and Heat Transfer in Pulsating Turbulent Pipe Flow, Ryohei Yamaguchi (Tokyo Univ. Agriculture and Tech.), Akihiko Mitsuishi (Tokyo Univ. Agriculture and Tech.), Takaaki Shimura (Tokyo Univ. Agriculture and Tech.), Kaoru Iwamoto (Tokyo Univ. Agriculture and Tech.), Akira Murata (Tokyo Univ. Agriculture and Tech.)	<u>PRTEC-24073</u> Turbulence over Porous Walls with Structural Roughness of K- and D-Types, Ayumi Shimizu (Osaka Pref. Univ.), Yuki Okazaki (Osaka Pref. Univ.), Yusuke Kuwata (Osaka Pref. Univ.), Kazuhiko Suga (Osaka Pref. Univ.)	<u>PRTEC-24123</u> Heat Transfer Coefficients for Turbulent Boundary Layers: a Correlation for Laminar, Transitional, and Turbulent Flow, John H. Lienhard (MIT)	<u>PRTEC-24208</u> Influence of Large-Scale Intermittent Structure on Heat Transfer in the Transition Regime of Annular Poiseuille Flow, Takehiro Fukuda (Tokyo Univ. Sci.), Takahiro Tsukahara (Tokyo Univ. Sci.)	
Lahaina 2 Topic (a-7): Heat Transfer in Manufacturing 1 Chairperson: Suk Won Cha (Seoul Natl. Univ.)	<u>PRTEC-24376</u> Experimental and Theoretical Investigation of Heat Transfer Processes in Polymer Extrusion Based Additive Manufacturing, Ankur Jain (Univ. Texas at Arlington)	<u>PRTEC-24335</u> Effect of Compatibilizer on Thermal Resistance at Bonded Interface of Heterogeneous Polymers, Takushi Saito (Tokyo Inst. Tech.), Kento Yamada (Tokyo Inst. Tech.), Tatsuya Kawaguchi (Tokyo Inst. Tech.), Isao Satoh (Tokyo Inst. Tech.)	<u>PRTEC-24162</u> Numerical Study of Additively Manufactured Polymeric Bead-Spreading Architecture and the Improvements in Bead Shapes with Modified Nozzle Geometry, Easir A. Papon (Univ. Alabama), Anwarul Haque (Univ. Alabama), Muhammad A. Sharif (Univ. Alabama)	<u>PRTEC-24245</u> Numerical Analysis of Partially Filled Viscoelastic Fluid Around a Rotating Body, Kosuke Higashi (Kobe Steel LTD), Rikuto Higuchi (Tokyo Inst. Tech.), Kazuhisa Fukutani (Kobe Steel LTD), Tatsuya Kawaguchi (Tokyo Inst. Tech.), Isao Sato (Tokyo Inst. Tech.), Takushi Saito (Tokyo Inst. Tech.)	
Lahaina 3 Topic (c-2): Heat and Mass Transfer in MEMS 1 Chairperson: Yoshihiro Taguchi (Keio Univ.)	<u>PRTEC-24388</u> Height-Dependent, Surface Structure Enhanced, Intrachip Flow Boiling of Methanol, Jay D. Sircar (MIT), Yangying Zhu (Stanford Univ.), Sameer R. Rao (Univ. Utah), Dion Antao (Texas A&M Univ.), TieJun Zhang (Khalifa Univ.), Evelyn N. Wang (MIT)	<u>PRTEC-24356</u> Calibration Method of Wall Heat Flux Sensors with Hot Pulsating Jet Preliminary Experiment of Calibration, Makoto Kamata (Meiji Univ.), Yoshiaki Tomoto (Meiji Univ.), Osamu Nakabeppu (Meiji Univ.)	<u>PRTEC-24389</u> Numerical Study on Flow Near the Contact Line of a Locally Heated Micro Vapor Bubble, Shunsuke Fujimura (Tokyo Univ. Sci.), Takahiro Tsukahara (Tokyo Univ. Sci.)	<u>PRTEC-24403</u> Experimental Study on Evaporation Process and Particle Sedimentation in Pendant Droplets, Shun Tamura (Tokyo Univ. Sci.), Takahiro Tsukahara (Tokyo Univ. Sci.), Takayuki Osawa (Univ. Tokyo), Yosuke Hasegawa (Univ. Tokyo)	

Technical Sessions

Saturday, December 14, 2019

Session	13:20	13:40	14:00	14:20	14:40
Monarchy 4	<p>Panel Discussion 1 Emerging Topics in Nanoscale Thermal Transport Moderator: Xiulin Ruan (Purdue Univ.) Panelists: Prof. Tengfei Luo (Univ. Notre Dame), Prof. Yan Wang (Univ. Nevada), Prof. Yongjie Hu (UCLA), Prof. Junichiro Shiomi (Univ. Tokyo)</p>				
<p>Monarchy 1</p> <p>Topic (a-2): Computational Heat and Mass Transfer - Phase Change and Multiphase Flow 1 -</p> <p>Chairperson: Seong Hyuk Lee (Chung-Ang Univ.)</p>	<p><u>PRTEC-24327</u> Two-Phase Flow Three-Dimensional Numerical Simulation in Heat Pipes, Yukihide Ito (Tokyo Inst. Tech.), Manabu Kodama (Tokyo Inst. Tech.), Shuichiro Hirai (Tokyo Inst. Tech.)</p>	<p><u>PRTEC-24219</u> Direct Numerical Simulation of Wall Turbulence of Liquid Solidifying on Wall Surface, Takashi Ohta (Univ. Fukui), Takafumi Ichiyonagi (Univ. Fukui), Taisei Tanaka (Univ. Fukui)</p>	<p><u>PRTEC-24027</u> Similarity Solutions for Condensation on a Non-Isothermal Vertical Plate, Jian-Jun Shu (Nanyang Technological Univ.)</p>	<p><u>PRTEC-24037</u> Numerical Investigation of Correlation between Arc Plasma Fluctuation and Nanopowder Distribution, Masaya Shigeta (Osaka Univ.), Manabu Tanaka (Osaka Univ.), Emanuele Ghedini (Univ. Bologna)</p>	<p><u>PRTEC-24307</u> An Equivalent Numerical Model for the Flow Distribution of Multi-Phase Flow inside a PCHE Manifold, Jaehyun Park (Pusan Natl. Univ.), Alberto Mucci (Pusan Natl. Univ.), June Kee Min (Pusan Natl. Univ.)</p> <p style="color: red;">Canceled</p>
<p>Monarchy 2</p> <p>Topic (a-3): Phase Change Phenomena and Heat Transfer - Evaporation -</p> <p>Chairperson: Noriyuki Unno (Sanyo-Onoda City Univ.)</p>	<p><u>PRTEC-24304</u> Water Drops Evaporating on Hot-Spots: Influence of Contact Angle on Marangoni Instabilities, Yutaku Kita (Kyushu Univ.), Huacheng Zhang (Kyushu Univ.), Alexandros Askounis (Univ. East Anglia), Yasuyuki Takata (Kyushu Univ.), Khellil Sefiane (Univ. Edinburgh)</p>	<p><u>PRTEC-24362</u> Evaporation Characteristics of an Ethanol-Water Mixture Droplet using Surface Plasmon Resonance Imaging, Chan Ho Jeong (Chung Ang Univ.), Hyung-Ju Lee (Chung Ang Univ.), Dae Yun Kim (Golden Engineering), Chang Kyung Choi (Michigan Technological Univ.), Seong Hyuk Lee (Chung Ang Univ.)</p>	<p><u>PRTEC-24055</u> A Novel Method of Liquid Temperature Measurement in the Interfacial Region of an Evaporating Droplet using Surface Plasmon Resonance Imaging, Hyung Ju Lee (Chung-Ang Univ.), Chan Ho Jeong (Chung-Ang Univ.), Dae Yun Kim (Golden Engineering), Ui Joon Park (Chung-Ang Univ.), Seong Hyuk Lee (Chung-Ang Univ.)</p>	<p><u>PRTEC-24272</u> Fluid Motion and Evaporation Dynamics in Rough Thin Gap, Mitsuhiro Matsumoto (Kyoto Univ.), Kentaro Nagashima (Kyoto Univ.), Dike Xu (Kyoto Univ.)</p>	<p><u>PRTEC-24285</u> Analysis of the Combined Effect of Substrate Temperature and Relative Humidity on Evaporation of Organic Solvents, Sahar Andalib (Univ. California Los Angeles (UCLA)), Ali Alshehri (UCLA), Pirouz Kavehpour (UCLA)</p> <p style="color: red;">Canceled</p>
<p>Monarchy 3</p> <p>Topic (b-4): Heat and Mass Transfer in Energy Devices - Heat Exchanger -</p> <p>Chairperson: Yukinori Kametani (Univ. Tokyo)</p>	<p><u>PRTEC-24422</u> Flow Distribution Characteristics Depending Channel Location in Channel Laminated Chevron Plate, Honghyun Cho (Chosun Univ.), Yunchan Shin (Chosun Univ.), Jeonggyun Ham (Chosun Univ.)</p>	<p><u>PRTEC-24281</u> Thermal-Hydraulic Analysis of a Printed Circuit Heat Exchanger, Qingzi Zhu (MIT), Xu Tan (MIT), Bamdad Barari (MIT), Mehdi Pishahang (MIT), Caleb A. Amy (MIT), Colin C. Kelsall (MIT), Grigorios Itkos (Purdue Univ.), Asegun S. Henry (MIT), Kenneth Sandhage (Purdue Univ.)</p>	<p><u>PRTEC-24134</u> Distribution of Latent Heat Transfer as a Key Factor for Efficient Heat Recovery of Humid Exhaust Gas, Helen Skop (OCC), Nina Svirinovska (Smart Heat Co.)</p>	<p><u>PRTEC-24183</u> Numerical Investigation of Novel Tube Bundle Polymer Heat Exchanger with Sinusoidal Curve Tube, Heeseung Kang (Korea Univ.), Ukmin Han (Korea Univ.), Hongyoung Lim (Hanon systems), Jeongwan Han (Hanon systems), Hoseong Lee (Korea Univ.)</p>	<p><u>PRTEC-24434</u> Hybrid Metal-Polymer Heat Exchanger Tubes for Low Temperature Waste Heat Recovery, Manjunath C. Rajagopal (Univ. Illinois at Urbana-Champaign (UIUC)), Ho Chan Chang (UIUC), Timothy Man (UIUC), Yuquan Meng (UIUC), Gowtham Kuntumalla (UIUC), Sreenath Sundar (UIUC), Hanyang Zhao (UIUC), Srinivasa Salapaka (UIUC), Chenhui Shao (UIUC), Placid Ferreira (UIUC), Nenad Miljkovic (UIUC), and Sanjiv Sinha (UIUC)</p>
<p>Maui Suite 2</p> <p>Topic (b-5): Heat and Mass Transfer in Air Conditioners & Refrigeration 2</p> <p>Chairperson: Yutaka Yamada (Okayama Univ.)</p>	<p><u>PRTEC-24339</u> Numerical Prediction of Anti-Fogging Coatings Performance in Refrigerated Display Cabinets, Giulio Croce (Univ. Udine), Paola D'Agaro (Univ. Udine), Nicola Suzzi (Univ. Udine)</p>	<p><u>PRTEC-24089</u> Effect of Metallic Particles on Nucleation of Tetra-N-Butyl Ammonium Salt Hydrate, Yuki Koga (Aoyama Gakuin Univ.), Takashi Morimoto (Aoyama Gakuin Univ.), Satoshi Takeya (Natl. Inst. Adv. Ind. Sci. and Tech.), Takaaki Inada (Natl. Inst. Adv. Ind. Sci. and Tech.), Hiroyuki Kumano (Aoyama Gakuin Univ.)</p>	<p><u>PRTEC-24491</u> Performance Investigation of the Adsorption Chiller with Various Adsorbents, Jung-Gil Lee (Korea Inst. Industrial Tech.), Kyung-Jin Bae (Korea Inst. Industrial Tech.), In-Kwan Kim (World E&C Co., Ltd), Oh-Kyung Kwon (Korea Inst. Industrial Tech.)</p>	<p><u>PRTEC-24390</u> Calculation and Design of Binary Fractionating Condenser for Binary Fluid Ejector Refrigerating System, Olexiy Buyadgie (V.S.Martynovskiy Inst. Refrigeration, Cryogenic Technologies and EcoEnergetics), Oleksii Drakhnia (Kyushu Univ.), Dmytro Buyadgie (Wilson Engineering Technologies Inc), Takahiko Miyazaki (Kyushu Univ.)</p>	<p><u>PRTEC-24413</u> Design of a Novel Multi-Stage Vapor Compression and Ejector-Enhanced Combined Cooling and Heating Cycle, Mark William S. Mendoza (Univ. the Philippines), Menandro S. Berana (Univ. the Philippines Diliman)</p> <p style="color: red;">Canceled</p>

Session	13:20	13:40	14:00	14:20	14:40
Maui Suite 3 Topic (b-1): Fundamentals in Combustion 2 Chairperson: Jun Hayashi (Kyoto Univ.)	<u>PRTEC-24308</u> An Attempt to Use the Waste Plastic Decomposition Oil to Diesel Generator (Improvement by Additional O.D.O), Satoru Nakada (Kanto Gakuin Univ.), Keiichiro Sano (Kanto Gakuin Univ.), Katsuhiko Takeda (Kanto Gakuin Univ.)	<u>PRTEC-24318</u> Experimental Study on Combustion Improvement by Air Additional Gas Oil (Influence of Material of the Permeable Membrane), Takato Yamashita (Kanto Gakuin Univ.), Kazuhiko Ito (Kanto Gakuin Univ.), Katsuhiko Takeda (Kanto Gakuin Univ.)	<u>PRTEC-24452</u> Evaluating Droplet Burning Dynamics of Surrogate Fuels using Convolutional Neural Networks for Image Analyses, Yiren Shen (Stanford Univ.), Ujjwal Dalmia (Stanford Univ.), Yuhao Xu (Prairie View A&M Univ.)	<u>PRTEC-24466</u> Visualizaion of Droplet Breakup in High Weber Number Flow using Laser Rupture Method, Yasuaki Hattori (Gifu Univ.), Tomohiro Kamiya (Gifu Univ.), Makoto Asahara (Gifu Univ.), Takeshi Miyasaka (Gifu Univ.)	
Maui Suite 4 Topic (a-1): Convective Heat and Mass Transfer - Heat Exchangers - Chairperson: Jin Sub Kim (KIMM)	<u>PRTEC-24189</u> Experimental Study of a Novel Shape-Optimized Air-To-Refrigerant Heat Exchanger, Ellery Klein (Univ. Maryland), Jan Muehlbauer (Univ. Maryland), Yunho Hwang (Univ. Maryland), Vikrant C. Aute (Univ. Maryland)	<u>PRTEC-24501</u> Thermal Performance of Rectangular Heat Sinks with Staggered Arrangement, Seounghwan Hyeon (Hanyang Univ.), Youngchan Yoon (Hanyang Univ.), Kwan-Soo Lee (Hanyang Univ.)	<u>PRTEC-24306</u> Heat Transfer and Fluid Flow Characteristics of Air-Water Heat Exchanger Inserting Metallic Wire, Rei Miura (Univ. Yamanashi), Tetsuaki Takeda (Univ. Yamanashi)	<u>PRTEC-24130</u> Experimental Investigations on Supercritical Convection Heat Transfer Coefficient of R1234ze(E) for Supercritical Organic Rankine Cycle, Cheonkyu Lee (Korea Inst. Industrial Tech.), Hyo Jae Jeong (Korea Inst. Industrial Tech.), HyungYong Ji (Korea Inst. Industrial Tech.), Seon-Chang Kim (Korea Inst. Industrial Tech.)	<u>PRTEC-24019</u> Capillary-Assisted Evaporation Heat Transfer on CNT-TiO2 Nanocomposite-Coated Finned Plate, Sung Joo Hong (Chonbuk Natl. Univ.), Xu Liang (Chonbuk Natl. Univ.), Min Soo Kim (Chonbuk Natl. Univ.), Ik-Tae Im (Chonbuk Natl. Univ.), Chan Woo Park (Chonbuk Natl. Univ.)
Lahaina 2 Topic (a-7): Heat Transfer in Manufacturing 2 Chairperson: Takushi Saito (Tokyo Inst. Tech.)	<u>PRTEC-24040</u> The Bayesian Optimization for Controlling Transport Phenomena in Top-Seeded Solution Growth of SiC Crystal Growth, Yuto Takehara (Osaka Univ.), Atsushi Sekimoto (Osaka Univ.), Yasunori Okano (Osaka Univ.), Toru Ujihara (Nagoya Univ.), Sadik Dost (Univ. Victoria)	<u>PRTEC-24128</u> CFD Simulation Study of Energy and Productivity Analysis on Hot Stamping Furnace, Jae Hyuck Chang (Korea Univ.), Jinwoo Oh (Korea Univ.), Hoseong Lee (Korea Univ.)	<u>PRTEC-24440</u> Evaluation of the Relations between Hindered Diffusion Process of Protein and Membrane Structure, Atsuki Komiya (Tohoku Univ.), Ryo Watanabe (Tohoku Univ.), Hani A. Aldaftari (Tohoku Univ.), Shuichi Moriya (Tohoku Univ.), Sebastien Livi (INSA Lyon)	<u>PRTEC-24228</u> Analysis on Cooling Effects of Vacuum Chamber of Extreme Ultraviolet Lithography Machine, You-wei Yang (Harbin Inst. Tech.), Xue Chen (Harbin Inst. Tech.), Jian Qiu (Harbin Inst. Tech.), Xin-Lin Xia (Harbin Inst. Tech.), Pei Zhang (Harbin Inst. Tech.) Canceled	<u>PRTEC-24371</u> An Experimental Investigation of Bone Drilling Behaviors with Inclination, JuEun Lee (Univ. the Pacific), Zachary Matsumoto (Univ. the Pacific) Canceled
Lahaina 3					

Technical Sessions

Saturday, December 14, 2019

Session	16:30	16:50	17:10	17:30	
<p>Monarchy 4</p> <p>Topic (c-3) : Thermal Properties at the Micro/Nano-scale - Machine Learning and Optimization -</p> <p>Chairperson: Junichiro Shiomi (Univ. Tokyo)</p>	<p><u>PRTEC-24380</u></p> <p>Machine Learning Driven Discovery of the Lower Limit of Random Multilayer Thermal Conductivity, Prabudhya Roy Chowdhury (Purdue Univ.), Adam S. Garrett (Purdue Univ.), Xiulin Ruan (Purdue Univ.)</p>	<p><u>PRTEC-24045</u></p> <p>Combination of Machine Learning and Coarse-Grained Molecular Simulation for High-Performance Surfactant Materials, Noriyoshi Arai (Keio Univ.), Takuya Inokuchi (Lion Corp.)</p>	<p><u>PRTEC-24393</u></p> <p>Efficient Time Evolution Method for Molecular Dynamics using Machine Learning Approach, Daisuke Yuhara (Keio Univ.), Katsuhiko Endo (Keio Univ.), Taku Ozawa (JSOL Corp.), Yoshitsugu Kakemoto (JSOL Corp.), Hiroya Nitta (JSOL Corp.), Kosuke Ohata (JSOL Corp.), Kenji Yasuoka (Keio Univ.)</p>	<p><u>PRTEC-24495</u></p> <p>Design and Optimization of Surface Structures for Improved Passive Cooling, Mine Kaya (Texas A&M Univ.), Shima Hajimirza (Texas A&M Univ.)</p>	
<p>Monarchy 1</p> <p>Topic (a-2): Computational Heat and Mass Transfer - Optimization and Control 1 -</p> <p>Chairperson: Wilson Chiu (Univ. Connecticut)</p>	<p><u>PRTEC-24418</u></p> <p>Reliability Optimization of Microchannel Cooling Systems, Xiaobing Zhang (Rutgers Univ.), Yogesh Jaluria (Rutgers Univ.)</p>	<p><u>PRTEC-24127</u></p> <p>Topology Optimization of 2D Heat Conduction Problem for Various Thermal Boundary Conditions, Hyun Woo Cho (Pusan Natl. Univ.), Yong Gap Park (Rolls-Royce and Pusan Natl. Univ. Tech. Centre in Thermal Management), Man Yeong Ha (Pusan Natl. Univ.)</p>	<p><u>PRTEC-24345</u></p> <p>Topology Optimization of Heat Sinks under Fully Developed Condition, Gilho Lee (KAIST), Sung J. Kim (KAIST)</p>	<p><u>PRTEC-24384</u></p> <p>Applicability of Reynolds-Stress Model for Drag-Reducing Turbulent Flow over Backward-Facing Step, Kazuki Oda (Tokyo Univ. Sci.), Takahiro Tsukahara (Tokyo Univ. Sci.), Yasuo Kawaguchi (Tokyo Univ. Sci.)</p>	
<p>Monarchy 2</p> <p>Topic (a-3): Phase Change Phenomena and Heat Transfer - Pool Boiling 2 -</p> <p>Chairperson: Matteo Bucci (MIT)</p>	<p><u>PRTEC-24114</u></p> <p>Pool Boiling of Refrigerant on Pored Surfaces, Nae-Hyun Kim (Incheon Natl. Univ.), Anadi Mondal (Incheon Natl. Univ.), Yousaf Shah (Incheon Natl. Univ.), Sadaf Medhi (Incheon Natl. Univ.)</p>	<p><u>PRTEC-24277</u></p> <p>Experimental Study of Nucleate Pool Boiling Heat Transfer on a Copper Tube for Low GWP Refrigerants, Matthias Welzl (Univ. Bayreuth), Theresa Weith (Univ. Bayreuth), Florian Heberle (Univ. Bayreuth), Dieter Bruggemann (Univ. Bayreuth)</p>	<p><u>PRTEC-24329</u></p> <p>Pool Boiling in a Compact Vessel with Low Water Level, Noriyuki Unno (Sanyo-Onoda City Univ.), Kazuhisa Yuki (Sanyo-Onoda City Univ.), Risako Kibushi (Sanyo-Onoda City Univ.), Koichi Suzuki (Sanyo-Onoda City Univ.)</p>	<p><u>PRTEC-24287</u></p> <p>Thermal Management of Two-Phase Propellant Storage Tanks, Mohammad Kassemi (NASA Glenn Research Center), Olga Kartuzova (NASA Glenn Research Center)</p> <p>Cancelled</p>	
<p>Monarchy 3</p> <p>Topic (b-4): Heat and Mass Transfer in Energy Devices - Thermal Energy Storage -</p> <p>Chairperson: Hosei Nagano (Nagoya Univ.)</p>	<p><u>PRTEC-24220</u></p> <p>Thermal Response of Porous Silicon Carbide and Dense Alumina Heat Storage Balls for Regenerative Burner, Shigeto Okabe (Chubu Univ.), Taro Hirasawa (Chubu Univ.), Taketomo Kageyama (TYK Co., Ltd.), Osamu Takagi (TYK Co., Ltd.)</p>	<p><u>PRTEC-24447</u></p> <p>Kinetic Analysis on LiOH Hydration / Dehydration Behavior by Volumetric Method, Yugo Osaka (Kanazawa Univ.), Shota Morishita (Kanazawa Univ.), Takuya Tsujiguchi (Kanazawa Univ.), Akio Kodama (Kanazawa Univ.)</p>	<p><u>PRTEC-24450</u></p> <p>Adjoint-Based Optimization of Heat Transfer Surface in Latent Heat Thermal Storage System, Yukinori Kametani (Univ. Tokyo), Takumi Yuasa (Univ. Tokyo), Kei Matsumoto (Yazaki Corp.), Takahiro Shoda (Yazaki Corporation), Makoto Ishii (Yazaki Corp.), Yosuke Hasegawa (Univ. Tokyo)</p>	<p><u>PRTEC-24314</u></p> <p>Thermal Performance of a Packed Bed Cold Energy Storage using Supercritical Air as Heat Transfer Fluid, Zhirong Liao (North China Electric Power Univ.), Hua Zhong (North China Electric Power Univ.), Feng Ye (North China Electric Power Univ.), Xing Ju (North China Electric Power Univ.), Chao Xu (North China Electric Power Univ.), Xiaozhe Du (North China Electric Power Univ.)</p> <p>Cancelled</p>	
<p>Maui Suite 2</p> <p>Topic (b-5): Heat and Mass Transfer in Air Conditioners & Refrigeration 3</p> <p>Chairperson: Honghyun Cho (Chosun Univ.)</p>	<p><u>PRTEC-24184</u></p> <p>Performance Analysis and Optimization of a Waste Heat Driven Turbo-Compression Cooling System at Varying Heat Sink Temperatures, Derek Young (Colorado State Univ.), Nickolas Roberts (Colorado State Univ.), Todd M. Bandhauer (Colorado State Univ.)</p>	<p><u>PRTEC-24028</u></p> <p>Model Analysis of the Novel Twin Chamber Rotary Compressor, SangKyung Na (Pusan Natl. Univ.), Been Oh (Pusan Natl. Univ.), Taemin Lee (Pusan Natl. Univ.), GyungMin Choi (Pusan Natl. Univ.)</p>	<p><u>PRTEC-24138</u></p> <p>Calculation of the Human-Body Thermo-Physiological Exergy Balance Model for the Evaluation of Thermal Sensation, Rikiya Okabe (Tokyo City Univ.), Hideaki Nagano (Tokyo City Univ.), Masanori Shukuya (Tokyo City Univ.), Suguru Shiratori (Tokyo City Univ.), Kenjiro Shimano (Tokyo City Univ.), Kazuya Yokota (Mazda Motor Corp.), Toshihiro Kashima (Mazda Motor Corp.)</p>	<p><u>PRTEC-24052</u></p> <p>Measurement of Heat Exchange in the 4-Way Reversing Valve with Heat Transfer Suppressed Structure, Hiroyuki Toyoda (Hitachi, Ltd.), Hisashi Daisaka (Hitachi-Johnson controls air conditioning, Inc.), Keisuke Fukuhara (Hitachi-Johnson controls air conditioning, Inc.)</p>	

Session	16:30	16:50	17:10	17:30	
Maui Suite 3 Topic (b-1): Fundamentals in Combustion 3 Chairperson: Chae Hoon Sohn (Sejong Univ.)	<u>PRTEC-24431</u> Study on Effect of Nozzle Hole Length on Combustion Characteristics, Dittapoom Shinabuth (Tokyo Inst. Tech.), Tsuyoshi Nagasawa (Tokyo Inst. Tech.), Susumu Sato (Tokyo Inst. Tech.), Hidenori Kosaka (Tokyo Inst. Tech.)	<u>PRTEC-24337</u> Effects of Particle Residence Time and Flame Temperature on Particle Heating Rate of Pulverized Coal in Laminar Counterflow Hydrogen Diffusion Flame, Shinya Sawada (Osaka Univ.), Daisuke Okada (Osaka Univ.), Noriaki Nakatsuka (Osaka Univ.), Kazuki Tainaka (Central Research Inst. Electric Power Industry), Tsukasa Hori (Osaka Univ.), Hidetaka Higashino (Osaka Univ.), Jun Hayashi (Kyoto Univ.), Fumiteru Akamatsu (Osaka Univ.)	<u>PRTEC-24016</u> Experimental Study on Turbulent Spherical Flame Propagation Characteristics of Ammonia / Coal Particle Cloud Mixture in a Fan-Stirred Closed Vessel, Nozomu Hashimoto (Hokkaido Univ.), Khalid Hadi (Hokkaido Univ.), Ryo Ichimura (Hokkaido Univ.), Yu Xia (Hokkaido Univ.), Genya Hashimoto (Hokkaido Univ.), Osamu Fujita (Hokkaido Univ.)		
Maui Suite 4 Topic (a-1): Convective Heat and Mass Transfer - Flow Characteristics - Chairperson: Ichiro Kumagai (Meisei Univ.)	<u>PRTEC-24443</u> Transient Flow Characteristics in Rotating Coaxial Cylinders during Acceleration and Deceleration of Rotation Speed, Wataru Murakami (Univ. Tsukuba), Yutaka Abe (Univ. Tsukuba), Akiko Kaneko (Univ. Tsukuba)	<u>PRTEC-24224</u> Experimental Study on the Effect of Slope on the Plug-Holing Phenomena and Heat Release Rate in the Shallow Underground Tunnel, Ji Tae Kim (Chung Ang Univ.), Sun Ryou Hong (Chung Ang Univ.)	<u>PRTEC-24347</u> Heat Transfer from Horizontal Circular Disks in Fluids of Various Prandtl Numbers, C. J. Kobus (Oakland Univ.)	<u>PRTEC-24456</u> Performance of a Thermal Transient Anemometer (TTA) Cell for Non-Uniform Velocity Distributions, Sarah E. Plant (Michigan State Univ.), James Leung (Michigan State Univ.), Ronald Semel (Ford Motor Company), John Foss (Michigan State Univ.), James Klausner (Michigan State Univ.)	
Lahaina 2 Topic (a-7): Heat Transfer in Manufacturing 3 Chairperson: Shawn Putnam (Univ. Central Florida)	<u>PRTEC-24290</u> Study on Metal Nanowire Applied Air Filter, Seonggeun Han (Seoul Natl. Univ.), Seongmin Jeong (Seoul Natl. Univ.), Hyunmin Cho (Seoul Natl. Univ.), Seunghwan Ko (Seoul Natl. Univ.)	<u>PRTEC-24216</u> Development and Evaluation of Thermal Insulation Performance of Zero Stitch MLI using Polyetheretherketone Tag Pins, Takeshi Miyakita (JAXA), Masanori Saitoh (Orbital Engineering INC.), Shigenori Sakai (Toska Bano'k CO., LTD)	<u>PRTEC-24426</u> Development of Lubricating Equipment using Sprinkler-Liked Shape, Yusuke Kimoto (Mitsubishi electric corporation), Masamichi Kohno (Kyushu Univ.), Minoru Sato (Mitsubishi electric corporation)	<u>PRTEC-24061</u> Laser Induced Reductive Sintering of NiOx Nanoparticle for Fabrication of Robust Flexible Transparent Ni Conductor, Yeosang Yoon (Seoul Natl. Univ.), Vu Binh Nam (Gachon Univ.), Daeho Lee (Gachon Univ.), Seung Hwan Ko (Seoul Natl Univ.)	
Lahaina 3 Topic (c-2): Heat and Mass Transfer in MEMS 2 Chairperson: Osamu Nakabeppu (Meiji Univ.)	<u>PRTEC-24105</u> Design and Characteristic of Large Stroke Electrothermal MEMS Actuator, Masaaki Hashimoto (Keio Univ.), Yoshihiro Taguchi (Keio Univ.)	<u>PRTEC-24191</u> Effects of Non-Uniform Flow Distribution in Double-Layered Cross-Flow Microchannel Heat Sinks, Carlo Nonino (Univ. Udine), Stefano Savino (Univ. Udine)	<u>PRTEC-24361</u> Thermal Energy Harvesting using Metal Halide Perovskite Thin Films, Shirikant Saini (Kyushu Inst. Tech.), Tomohide Yabuki (Kyushu Inst. Tech.), Ajay K. Baranwal (Univ. Electro-Communications), Shuzi Hayase (Univ. Electro-Communications), Koji Miyazaki (Kyushu Inst. Tech.)		

Technical Sessions

Sunday, December 15, 2019

Session	10:10	10:30	10:50	11:10	11:30	11:50
<p>Monarchy 4</p> <p>Topic (c-3): Thermal Properties at the Micro/Nano-scale - Micro, Nano-fluidics -</p> <p>Chairperson: Masahiko Shibahara (Osaka Univ.)</p>	<p><u>PRTEC-24405</u></p> <p>Experimental Investigation on Photo-Thermal Conversion of MWCNT/Fe3O4 Hybrid Nanofluid under an External Magnetic Field, Tsogbilegt Boldoo (Chosun Univ.), Jeonggyun Ham (Chosun Univ.), Honghyun Cho (Chosun Univ.)</p>	<p><u>PRTEC-24270</u></p> <p>Vibrational Spectra Analysis of HOD Molecules in Alpha-D-Glucose Solution; a Molecular Dynamics Simulation Study, Shinjiro Nakamura (Keio Univ.), Katsufumi Tomobe (Keio Univ.), Eiji Yamamoto (Keio Univ.), Tatsuya Ishiyama (Univ. Toyama), Masato Yasui (Keio Univ.), Kenji Yasuoka (Keio Univ.)</p>	<p><u>PRTEC-24271</u></p> <p>Efficient Monte Carlo Molecular Simulation with Inverse Square Flow, Katsuhiro Endo (Keio Univ.), Daisuke Yuhara (Keio Univ.), Kenji Yasuoka (Keio Univ.)</p>	<p><u>PRTEC-24204</u></p> <p>Investigation of Solid-Liquid-Vapor Three-Phase Contact Region of Water Droplet, Shun Nakahara (Kyushu Inst. Tech.), Gyoko Nagayama (Kyushu Inst. Tech.)</p>	<p><u>PRTEC-24223</u></p> <p>Imbibition Rate of Capillary-Driven Flow in Open Rectangular Microchannel, Taishi Matsumoto (Kyushu Inst. Tech.), Gyoko Nagayama (Kyushu Inst. Tech.)</p>	
<p>Monarchy 1</p> <p>Topic (a-2): Computational Heat and Mass Transfer - Fundamentals 2 -</p> <p>Chairperson: Koji Fukudome (Tokyo Univ. Sci.)</p>	<p><u>PRTEC-24099</u></p> <p>Development of a New Wake Model by Validating with Results of On-Site Wind Resource Measurement, Yuki Fukatani (Toshiba Energy Systems), Takanori Uchida (Kyushu Univ.), Yoshihiro Taniyama (Toshiba Energy Systems)</p>	<p><u>PRTEC-24046</u></p> <p>Large-Eddy Simulation of Wind-Turbine Wakes under Various Atmospheric Stability Conditions, Takanori Uchida (Research Inst. for Applied Mechanics, Kyushu Univ.)</p>	<p><u>PRTEC-24293</u></p> <p>Evaluation of Out-Of-Plane Alternative for Constructal T-Shaped In-Plane Conductive Paths, Derli Dias do Amaral Jr (Southern Methodist Univ.), Jose Lage (Southern Methodist Univ.)</p>	<p><u>PRTEC-24410</u></p> <p>Numerical Investigation of Compressible Cross Jet with Temperature Difference, Yohei Inoue (Univ. Electro-Communications (UEC)), Takahiro Shimokawa (UEC), Hiroshi Maekawa (UEC)</p>	<p><u>PRTEC-24274</u></p> <p>Numerical Simulation of Thermal and Flow Characteristics for Open-Cell Porous Metal, Sung-Ho Park (Pusan Natl. Univ.), Ji Hwan Jeong (Pusan Natl. Univ.)</p>	
<p>Monarchy 2</p> <p>Topic (a-3): Phase Change Phenomena and Heat Transfer - Enhancement of Heat Flux -</p> <p>Chairperson: Yasuyuki Takata (Kyushu Univ.)</p>	<p><u>PRTEC-24083</u></p> <p>A Study on Transition Process to MEB by Changing Boiling Space, Kendai Kawakami (Kyushu Inst. Tech.), Shosuke Sakamoto (Kyushu Inst. Tech.), Hirofumi Tanigawa (Kyushu Inst. Tech.), Takaharu Tsuruta (Kyushu Inst. Tech.)</p>	<p><u>PRTEC-24140</u></p> <p>Numerical Evaluation and Analysis of Active Nucleation Site Density Models in Boiling, Achref Rabhi (Malardalens Hogskola), Rebei Bel-Fdhila (ABB AB)</p>	<p><u>PRTEC-24468</u></p> <p>About the Percolative Scale-Free Nature of the Boiling Crisis, Limiao Zhang (MIT), Jee Hyun Seong (MIT), Matteo Buccini (MIT)</p>	<p><u>PRTEC-24177</u></p> <p>Experimental Study on Heat Transfer Characteristic of Cellulose Nanofiber, Dongnyeok Choi (Handong Global Univ.), Kwon-Yeong Lee (Handong Global Univ.)</p>	<p><u>PRTEC-24342</u></p> <p>Enhancement of Boiling Heat Transfer by Electrolysis of Water, Takanori Tanaka (Kyushu Inst. Tech.), Koji Miyazaki (Kyushu Inst. Tech.), Tomohide Yabuki (Kyushu Inst. Tech.)</p>	<p><u>PRTEC-24243</u></p> <p>Experimental Study of Heat Transfer Characteristics of Horizontal Tube using R718 in Vacuum Pressure, Daegyoo Lee (Korea Inst. Industrial Tech.), Jin Man Kim (Korea Inst. Industrial Tech.), Dong An Cha (Korea Inst. Industrial Tech.), Seon-Chang Kim (Korea Inst. Industrial Tech.), Chaedong Kang (Chonbuk Natl. Univ.)</p>
<p>Monarchy 3</p> <p>Topic(b-4): Heat and Mass Transfer in Energy Devices - Thermal Management -</p> <p>Chairperson: Yaroslav Chudnovsky (Gas Technology Institute)</p>	<p><u>PRTEC-24112</u></p> <p>Numerical Simulation of Internal Flow in Large Isothermal Evaporator of Two-Phase Mechanically Pumped Fluid Loop, Takumi Hirata (Tohoku Univ.), Takuya Adachi (Tohoku Univ.), Koji Fujita (Tohoku Univ.), Hiroki Nagai (Tohoku Univ.)</p>	<p><u>PRTEC-24185</u></p> <p>Performance Comparison between ORVC and Absorption Technologies over a Range of Ambient Conditions, Shane Garland (Colorado State Univ.), Derek Young (Colorado State Univ.), John Simon (Colorado State Univ.), Alexander Rattner (Pennsylvania State Univ.), Todd Bandhauer (Colorado State Univ.)</p>	<p><u>PRTEC-24266</u></p> <p>Studying the Flow Dynamics and Surface-Bed Heat Transfer in a Fluidized Bed with Annular Distributor, Hamada M. Abdelmotalib (Minia Univ.), Mahamed H. Tawfik (Elminyia High Inst. for Engineering and Tech.), Mohamed R. Diab (Minia Univ.), Ik-Tae Im (Jeonbuk Natl. Univ.)</p> <p>Canceled</p>	<p><u>PRTEC-24036</u></p> <p>Development and Optimization of Dynamic Model of Poly-Generation Systems for Buildings in South Korea, Joonbyum Kim (Korea Univ.), Yujun Jung (Korea Univ.), Hoseong Lee (Korea Univ.)</p>	<p><u>PRTEC-24458</u></p> <p>Experiments to Inform Hydraulic Fracturing Contaminant Removal Process, Madeline Kier (Oregon State Univ.), Zachary Taie (Oregon State Univ.), Chris Hagen (Oregon State Univ.), Bahman Abbasi (Oregon State Univ.)</p>	<p><u>PRTEC-24449</u></p> <p>Performance of Thermochemical Heat Battery by using Reversible Alkali Halide Hydration Reaction, Noriyuki Kobayashi (Nagoya Univ.), Jun Li (Nagoya Univ.), Atsuhiko Ichinose (Nagoya Univ.)</p>
<p>Maui Suite 2</p> <p>Topic (b-3): Heat and Mass Transfer in IC Engines 1</p> <p>Chairperson: Tatsuya Kuboyama (Chiba Univ.)</p>	<p><u>PRTEC-24144</u></p> <p>Feasibility Study of Membrane Filter for Gasoline Particulate Filter Through Electron Microscopic Time-Lapse Visualization of Soot Trapping Process, Satoshi Ihara (Tokyo Inst. Tech.), Hiroyuki Kurita (Mazda Motor Corp.), Takashi Araki (Mazda Motor Corp.), Hiroshi Murakami (Mazda Motor Corp.), Katsunori Hanamura (Tokyo Inst. Tech.)</p>	<p><u>PRTEC-24202</u></p> <p>A Reduced Order Turbocharging Process Model for Passenger Car Engines, Kazuhide Togai (Osaka Sangyo Univ.), Naoto Fujinaga (Mitsubishi Motors Corp.)</p>	<p><u>PRTEC-24323</u></p> <p>Analysis of Flow and Heat Transfer of Wall-Impinging Diesel-Spray for Various Fuel Injection Condition using Large Eddy Simulation, Yusuke Ikemi (Kyoto Univ.), Hiroshi Kawanabe (Kyoto Univ.)</p>	<p><u>PRTEC-24482</u></p> <p>An Experimental Study on Performance and Emissions Characteristics of Alternate Fuel in IC Engine, Seungwon Park (AVL Korea)</p> <p>Canceled</p>		

Session	10:10	10:30	10:50	11:10	11:30	11:50
Maui Suite 3 Topic (b-1): Fundamentals in Combustion 4 Chairperson: Takeshi Yokomori (Keio Univ.)	<u>PRTEC-24116</u> Theoretical Study on Opposed-Flow Flame Spread over Thin Electric Wires, Yusuke Konno (Hokkaido Univ.), Nozomu Hashimoto (Hokkaido Univ.), Osamu Fujita (Hokkaido Univ.)	<u>PRTEC-24255</u> Effects of Vortexes Behind Flame Zone on the Lean Premixed Flames Extinction, Yuji Yahagi (Shibaura Inst. Tech.), Hirotoishi Shibagaki (Shibaura Inst. Tech.), Ikuyo Makino (Tohoku Univ.)	<u>PRTEC-24463</u> A Novel Fuel Reactivity Index Based on Separated Weak Flames in a Micro Flow Reactor with a Controlled Temperature Profile, Philipp Grajetzki (Tohoku Univ.), Hisashi Nakamura (Tohoku Univ.), Takuya Tezuka (Tohoku Univ.), Susumu Hasegawa (Tohoku Univ.), Kaoru Maruta (Tohoku Univ.)	<u>PRTEC-24464</u> Structures of Cool Flames of Pentane Isomers in a Micro Flow Reactor with a Controlled Temperature Profile, Hisashi Nakamura (Tohoku Univ.), Ryota Nakada (Tohoku Univ.), Takuya Tezuka (Tohoku Univ.), Susumu Hasegawa (Tohoku Univ.), Kaoru Maruta (Tohoku Univ.)	<u>PRTEC-24493</u> Effects of Lewis Number on Extinction Behaviors of SNG/Air Premixed Flame in Stagnation Area of Counterflow, Yeonse Kang (Suncheon Natl. Univ.), Keeman Lee (Suncheon Natl. Univ.)	
Maui Suite 4 Topic (a-3): Phase Change Phenomena and Heat Transfer - Phase Change - Chairperson: Hiroshi Suzuki (Kobe Univ.)	<u>PRTEC-24122</u> Experimental Study of Coil and Shell Phase Change Material Heat Exchanger: Early Results, Ajinkya Patil (Dalhousie Univ.), Dominic Groulx (Dalhousie Univ.)	<u>PRTEC-24136</u> Melting and Heat Transfer Behavior of Ceramic Capsule Encapsulated by Phase Change Material, Selvan Bellan (Niigata Univ.), Tatsuya Kodama (Niigata Univ.), Koji Matsubara (Niigata Univ.), Nobuyuki Gokon (Niigata Univ.), Hyun Seok Cho (Niigata Univ.)	<u>PRTEC-24196</u> Role of Metal Foam on Ice Storage Performance for a Circular Tank with Finned Tube, Xiaotian Han (Yangzhou Univ.), Liangyu Wu (Yangzhou Univ.), Peng Cao (Yangzhou Univ.), Cheng Yu (Southeast Univ.)	<u>PRTEC-24078</u> Thin Film Heat Transfer of Self-Rewetting Fluid Sessile Droplets Evaporating on Different Heated Substrates, Leping Zhou (North China Electric Power Univ.), Qiaobian Xu (North China Electric Power Univ.), Xiaoze Du (North China Electric Power Univ.)	<u>PRTEC-24485</u> Performance Assessment of Compact Type Battery Thermal Management System with PCM and Flat Plate Heat Pipe, Saleem Abbas (Chonbuk Natl. Univ.), Sung Joo Hong (Chonbuk Natl. Univ.), Chan Woo Park (Chonbuk Natl. Univ.)	<u>PRTEC-24150</u> Film Thickness Measurement in a Vertical Two-Phase Flow Composed of HFC134a Gas and Ethanol Liquid, Shoji Mori (Kyushu Univ.), Hiroyuki Yoshida (Japan Atomic Energy Agency)
Lahaina 2 Topic (a-4): Radiative Heat Transfer - Radiative Transfer Modeling - Chairperson: Shima Hazimirza (Texas A & M Univ.)	<u>PRTEC-24125</u> Accurate Linearization of Non-Gray Radiation Heat Transfer, John H. Lienhard (MIT)	<u>PRTEC-24081</u> RADNNET-MBL: A Neural Network Approach for the Evaluation of Absorptivity and Emissivity of Non-Gray Combustion Gas Mixture between Finite Areas and Volumes, Walter Yuen (Santa Clara Univ.), Wai Cheong Tam (Natl. Inst. Standards Tech.)	<u>PRTEC-24132</u> Using Artificial Neural Networks to Compute Radiation Distribution Factors, Mehran Yarahmadi (Virginia Tech.), Kevin McFall (Kennesaw State Univ.), J. Robert Mahan (Virginia Tech.)	<u>PRTEC-24229</u> Numerical Focusing of a Wide-Field-Angle Imaging Radiometer using an Artificial Neural Network, Mehran Yarahmadi (Virginia Tech.), J. Robert Mahan (Virginia Tech.), Kevin McFall (Kennesaw State Univ.), Anum Barki Ashraf (NASA Langley Research Center), Kory J. Priestley (NASA Langley Research Center), Mohan Shankar (NASA Langley Research Center)	<u>PRTEC-24378</u> Design and Use of an Apparatus for Investigating the Relationship between the Spectral Absorptivity of Gold-Black and its Manufacture, Nazia Munir (Virginia Tech.), J. R. Mahan (Virginia Tech.), Kory J. Priestley (NASA Langley Research Center)	
Lahaina 3 Topic (a-8): Thermo-Physical Properties 1 Chairperson: Chung-Hyun Goh (Univ. Texas at Tyler)	<u>PRTEC-24286</u> The Frank Twist Elastic Constant of Liquid Crystals from Orientational Perturbations, Paul E. Brumby (Keio Univ.), Takuma Nozawa (Keio Univ.), Andrew Haslam (Imperial College London), George Jackson (Imperial College London), Martin Schoen (Technische Universitat Berlin), Kenji Yasuoka (Keio Univ.)	<u>PRTEC-24113</u> Validation of a van der Waals Type Equation of State with Classical Mixing Rule for H2-O2 Mixture System by Molecular Simulation Employing an Improved ab-Initio Intermolecular Potential, Ryuji Takahashi (Kyushu Univ.), Nobuyuki Tsuboi (Kyushu Inst. Tech.), Takashi Tokumasu (Tohoku Univ.), Satoshi Watanabe (Kyushu Univ.), Shin-ichi Tsuda (Kyushu Univ.)	<u>PRTEC-24044</u> Interfacial Tension between Liquid Water and Model Oil Pressurized with Model Natural Gas, Masamichi Kodera (Keio Univ.), Ryo Ohmura (Keio Univ.)	<u>PRTEC-24276</u> Numerical & Experimental Analysis of Liquid- Liquid Ejector for Generation of Water/Oil Emulsion, Omer A. Salim (King Fahd Univ. Petroleum & Minerals), Jaber M. Alyami (King Fahd Univ. Petroleum and Minerals), Mohamed N. Noui-Mehidi (Saudi Aramco), Abdelsalam M. Alsarkhi (King Fahd Univ. Petroleum and Minerals) Canceled	<u>PRTEC-24500</u> Estimating the Entropy of Biomass, Yousef Haseli (Central Michigan Univ.) Canceled	<u>PRTEC-24064</u> An Integrated Design Approach to Predict Thermo-Physical Properties of Flexinol Shape Memory Alloys, Lucci Matthew (Univ. Texas at Tyler), Oyedele Joseph (Univ. Texas at Tyler), Chung-Hyun Goh (Univ. Texas at Tyler), Fredericka Brown (Univ. Texas at Tyler)

Technical Sessions

Monday, December 16, 2019

Session	10:10	10:30	10:50	11:10	11:30
Monarchy 4	<p>Panel Discussion 2 Response of Thermal Engineering to Global Challenges Moderator: Yogesh Jaluria (Rutgers University of Piscataway) Panelists: Prof. Yogesh Jaluria (Rutgers Univ. of Piscataway), Prof. James Klausner (Michigan State Univ.), Prof. John Lienhard (MIT), Prof. Dereje Agonafer (Univ. Texas at Arlington), Prof. Choongsik Bae (KAIST)</p>				
<p>Monarchy 1</p> <p>Topic (a-2): Computational Heat and Mass Transfer - Applications -</p> <p>Chairperson: June Kee Min (Pusan Natl. Univ.)</p>	<p><u>PRTEC-24369</u> Vehicle Simulation Including Multi-Dimensional Heat Management System, Jagun Koo (Chungnam Natl. Univ.), Sangseok Yu (Chungnam Natl. Univ.), Huiju Yang (Hanon Systems), Yongkil Cha (Hanon Systems), Youngseok Jang (Hanon Systems)</p>	<p><u>PRTEC-24178</u> Effect of Discharge Valve Configurations on the Performance of Reciprocating Air Compressor, Yeong Wan Je (Sungkyunkwan Univ.), Jea-Yeong Lee (Yujin Machinery), Sang-Youp Lee (Korea Inst. Sci. and Tech.), Youn-Jea Kim (Sungkyunkwan Univ.)</p>	<p><u>PRTEC-24011</u> CFD Study of Combined Water and Air Cooling in a High Speed Electric Motor, Jun Lin (Caif. State Polytechnic Univ. at Pomona), Kevin R. Anderson (Caif. State Polytechnic Univ. at Pomona)</p>	<p><u>PRTEC-24428</u> Study on the Performance Enhancement for Borehole Thermal Energy Storage System with Solar Energy, JungSoo Ok (Korea Univ.), HwanSuk Lim (Korea Univ.), Yong Tae Kang (Korea Univ.)</p>	<p><u>PRTEC-24360</u> 3D Analysis of Concentration and Flow using the MRC/MRV 90 Degree Flow Data and CFD Predictions from SIERRA/Fuego, Alexander L. Brown (Sandia Natl. Labs), Samuel T. Jones (American International College of Arts and Sci.s), Michael D. Clemenson (Sandia Natl. Labs), Michael J. Benson (United States Military Academy), Christopher J. Elkins (Stanford Univ.)</p>
<p>Monarchy 2</p> <p>Topic (a-3): Phase Change Phenomena and Heat Transfer - Two Phase Flow 1 -</p> <p>Chairperson: Takehiro Himeno (Univ. Tokyo)</p>	<p><u>PRTEC-24094</u> Temperature Distribution of a Boiling Heat Transfer in Flow Boiling in a Microgap Heat Sink, Hiroya Furuno (Shibaura Inst. Tech.), Manabu Tange (Shibaura Inst. Tech.)</p>	<p><u>PRTEC-24235</u> Effect of Hydrophobicity on Dewetting of Liquid Film of Two-Phase Flow in a Horizontal Tube, Seunghwan Lee (Ulsan Natl. Inst. Sci. and Tech.), Jaeseon Lee (Ulsan Natl. Inst. Sci. and Tech.)</p>	<p><u>PRTEC-24268</u> Experimental and Numerical Investigation on Boiling Flow of a Refrigerant FC72 in a Pipe, Yuta Takeuchi (Univ. Tokyo), Taiki Karakawa (Univ. Tokyo), Takehiro Himeno (Univ. Tokyo), Fuminori Takami (Panasonic Corp.), Yasuhiro Asaida (Panasonic Corp.), Xi Nan (Univ. Tokyo), Toshinori Watanabe (Univ. Tokyo)</p>	<p><u>PRTEC-24401</u> Prediction of Thermal Conductance at Liquid-Gas Interfaces using Molecular Dynamics Simulations, Zhi Liang (California State Univ., Fresno), Eric Bird (California State Univ., Fresno)</p>	<p><u>PRTEC-24499</u> Effect of Wettability Pattern on Heat Transfer during Flow Boiling in Microchannels, Jonghyun Kim (Yonsei Univ.), Joon Sang Lee (Yonsei Univ.)</p>
<p>Monarchy 3</p> <p>Topic (b-4): Heat and Mass Transfer in Energy Devices - Solar & Thermal Systems (1) -</p> <p>Chairperson: Brian Fronk (Oregon State Univ.)</p>	<p><u>PRTEC-24119</u> Efficiency and Loss Analysis of Solar Porous Receiver with Cubic Lattice Structure, Akihiro Ochiai (Niigata Univ.), Koji Matsubara (Niigata Univ.), Selvan Bellan (Niigata Univ.)</p>	<p><u>PRTEC-24227</u> Theoretic Analysis of Dish Solar Stirling CHP System Considering Temperature Irreversibility, Xiaotian Lai (Huazhong Univ. Sci. and Tech.), Rui Long (Huazhong Univ. Sci. and Tech.), Fang Yuan (Huazhong Univ. Sci. and Tech.), Zhichun Liu (Huazhong Univ. Sci. and Tech.), Wei Liu (Huazhong Univ. Sci. and Tech.)</p> <p style="color: red;">Canceled</p>	<p><u>PRTEC-24424</u> Modeling of a Hybrid Photovoltaic and Direct Solar Absorption Membrane Desalination System, Drake Norman (Univ. Tulsa), Todd Otanicar (Univ. Tulsa)</p>	<p><u>PRTEC-24039</u> Improving Thermophotovoltaic System Durability with a Protective Sweeping Gas Layer, Colin C. Kelsall (MIT), Caleb Amy (MIT), Asegun Henry (MIT)</p>	<p><u>PRTEC-24074</u> Direct Simulation of Solar Honeycomb Receiver with Highly Concentrated Irradiation Varying Porosity and Air Mass Flow Rate, Kota Kawasaki (Niigata Univ.), Koji Matsubara (Niigata Univ.), Selvan Bellan (Niigata Univ.)</p>
<p>Maui Suite 2</p> <p>Topic (b-3): Heat Transfer and Combustion in IC Engines 2</p> <p>Chairperson: Hiroshi Kawanabe (Kyoto Univ.)</p>	<p><u>PRTEC-24058</u> Reduced Chemical Kinetics Mechanism for the Two-Stage Ignition and Laminar Flame Velocity of Ethanol and Ethyl Tert-Butyl Ether Blended Gasoline Surrogate Fuel in Japanese Market, Keizo Hasegawa (Univ. Fukui), Yasuyuki Sakai (Univ. Fukui), Akira Miyoshi (Hiroshima Univ.)</p>	<p><u>PRTEC-24085</u> Improvement of Quasi-Steady State Heat Transfer Model at Intake Manifold using 1-D Engine Simulation, Emir Yilmaz (Sophia Univ.), Mitsuhisa Ichihyanagi (Sophia Univ.), Takashi Suzuki (Sophia Univ.)</p>	<p><u>PRTEC-24214</u> Effects of Spark Discharge Characteristics on Cycle-To-Cycle Variation of Ignition and Combustion Process in a Super Lean Burn Engine, Seima Tsuboi (Keio Univ.), Shinji Miyokawa (Keio Univ.), Masayoshi Matsuda (Keio Univ.), Takeshi Yokomori (Keio Univ.), Norimasa Iida (Keio Univ.)</p>	<p><u>PRTEC-24471</u> Effects of Flow Speed on Spark Ignition Process of Lean Gasoline Mixture under High Pressure Conditions using Rapid Compression Machine, Fangsi Ren (Univ. Tokyo), Naoto Takehara (Univ. Tokyo), Shinji Nakaya (Univ. Tokyo), Mitsuhiro Tsue (Univ. Tokyo), Kunihiko Sugauma (SUBARU Corp.)</p>	<p><u>PRTEC-24168</u> Combustion Chamber Performance for Gas Turbine Cycle, Ryoichi Amano (Univ. Wisconsin-Milwaukee), Osama Elsayed (Univ. Wisconsin-Milwaukee)</p>

Session	10:10	10:30	10:50	11:10	11:30
Maui Suite 3 Topic (b-1): Fundamentals in Combustion 5 Chairperson: Ryoichi Kurose (Kyoto Univ.)	<u>PRTEC-24331</u> Modeling of Minimum Ignition Energy Transition and Evolution from Ignition Kernel to Planar Flame, Tsukasa Hori (Osaka Univ.), Takumi Tanaka (Osaka Univ.), Fumiteru Akamatsu (Osaka Univ.)	<u>PRTEC-24430</u> Wall Chemical Effect on Cool Flame Ignition Behavior, Minhyeok Lee (Univ. Tokyo), Tomotaka Mizuno (Univ. Tokyo), Yong Fan (Natl. Inst. Adv. Ind. Sci. and Tech.), Yiguang Ju (Princeton Univ.), Yuji Suzuki (Univ. Tokyo)	<u>PRTEC-24104</u> A Study on Influence of Hydrogen Addition on Ignition and Combustion Characteristics of Ultra-Lean Propane Mixtures in High Swirl Flows, Masahiro Watanabe (Ehime Univ.), Masaya Nakahara (Ehime Univ.), Keiji Ueda (Ehime Univ.), Kyosuke Kurokawa (Ehime Univ.), Haruki Maeda (Ehime Univ.), Abe Fumiaki (Ehime Univ.), Kenichi Tokunaga (Ehime Univ.), Atsushi Ishihara (Saitama Inst. Tech.)	<u>PRTEC-24109</u> A Study on Properties of Ignition and Meso-Scale Flames for Hydrogen and Propane Mixtures in Isotropic and Homogeneous Turbulence, Kodai Tanimoto (Ehime Univ.), Masaya Nakahara (Ehime Univ.), Hisanobu Kudo (Ehime Univ.), Takamasa Kihara (Ehime Univ.), Fumiaki Abe (Ehime Univ.), Kenichi Tokunaga (Ehime Univ.), Atsushi Ishihara (Saitama Inst. Tech.)	
Maui Suite 4 Topic (a-3) Phase Change Phenomena and Heat Transfer - Solidification - Chairperson: Takaharu Tsuruta (Kyushu Inst. Tech.)	<u>PRTEC-24013</u> Numerical Investigation of Droplet Impact Conditions on SLD Icing using E-MPS Method, Takuya Wada (Tokyo Univ. Sci.), Koji Fukudome (Tokyo Univ. Sci.), Makoto Yamamoto (Tokyo Univ. Sci.)	<u>PRTEC-24321</u> Numerical Simulation on the Freezing of Deposited or Impinged Water Droplets on a Cold Surface, Seia Fujii (Kyoto Inst. Tech.), Daichi Utsumi (Kyoto Inst. Tech.), Yoshimichi Hagiwara (Kyoto Inst. Tech.)	<u>PRTEC-24296</u> Solidification Behavior of Molten Droplets Falling into Coolant, Kota Kawasaki (Univ. Tsukuba), Akiko Kaneko (Univ. Tsukuba), Yutaka Abe (Univ. Tsukuba)	<u>PRTEC-24310</u> The Freezing Inhibition of Droplets on Glass Surfaces Coated with Polypeptides Mimicking Winter Fluoride Antifreeze Protein, Kazuya Kasahara (Kyoto Inst. Tech.), Kazuya Koshio (Kyoto Inst. Tech.), Tomonori Waku (Kyoto Inst. Tech.), Peter W. Wilson (Southern Cross Univ.), Taishi Tonooka (Kyoto Inst. Tech.), Yoshimichi Hagiwara (Kyoto Inst. Tech.)	<u>PRTEC-24502</u> Frost Layer Growth Behavior under Cryogenic Condition, Haijun Jeong (Hanyang Univ.), Sungjoon Byun (Hanyang Univ.), Kwan-Soo Lee (Hanyang Univ.)
Lahaina 2 Topic (a-4): Radiative Heat Transfer - Radiative Cooling - Chairperson: Atsushi Sakurai (Niigata Univ.)	<u>PRTEC-24135</u> Polyethylene Aerogel Covers for Sub-Ambient Radiative Cooling, Arny Leroy (MIT), B. Bhatia, (MIT), C. C. Kelsall (MIT), A. Castillejo-Cuberos (Pontificia Univ. Católica de Chile), M. Di Capua H. (Pontificia Univ. Católica de Chile), L. Zhao (MIT), L. Zhang (MIT), A. M. Guzman (Pontificia Univ. Católica de Chile), E. N. Wang (MIT)	<u>PRTEC-24029</u> Stretchable Emitters Based on Corrugated Metals for Dynamic Thermal Radiation Control, Jaeho Lee (Univ. California, Irvine), Xiao Nie (Univ. California, Irvine), Jaeho Lee (Univ. California, Irvine)	<u>PRTEC-24370</u> Hierarchical Size Distribution of Nanoparticles for Enhancing Reflectance of the Solar Irradiation, Joseph Peoples (Purdue Univ.), Xiangyu Li (Purdue Univ.), Jun Qiu (Purdue Univ., Harbin Inst. Tech., Huazhong Univ.), Zhifeng Huang (Wuhan Univ.), Xiulin Ruan (Purdue Univ.)	<u>PRTEC-24372</u> Scalable Metal-Free Paint for Passive Radiative Cooling under Direct Sunlight, Xiangyu Li (Purdue Univ.), Joseph Peoples (Purdue Univ.), Zhifeng Huang (Wuhan Univ.), Jun Qiu (Purdue Univ., Harbin Inst. Tech., Huazhong Univ.), Xiulin Ruan (Purdue Univ.)	
Lahaina 3 Topic (c-3): Thermal Properties at the Micro/Nano-scale - Heat Conduction - Chairperson: Junichiro Shiomi (Univ. Tokyo)	<u>PRTEC-24472</u> Empirical Interatomic Potentials Optimized for Phonon Properties, Andrew Rohskopf (MIT), Asegun Henry (MIT)	<u>PRTEC-24165</u> Thermal Response Analysis for Thin Film with Various Thicknesses using Phonon Thermal Transport Simulation, Yuichiro Yamashita (Natl. Inst. Adv. Ind. Sci. and Tech.), Takashi Yagi (Natl. Inst. Adv. Ind. Sci. and Tech.)	<u>PRTEC-24473</u> Development of an Interatomic Potential to Model Thermal Conductance at GaAs-Ge Interfaces, Spencer Wyant (MIT), Asegun Henry (MIT)	<u>PRTEC-24210</u> Effective Thermal Conduction Tuning in Si Thin Film by Nanopillars, Xin Huang (Inst. Ind. Sci., Univ. Tokyo), Ryoto Yanagisawa (Inst. Ind. Sci., Univ. Tokyo), Daisuke Ohori (Inst. Fluid Sci., Tohoku Univ.), Seiji Samugawa (Inst. Fluid Sci., Tohoku Univ. / Advanced Inst. for Materials Research, Tohoku Univ.), Masahiro Nomura (Inst. Ind. Sci., Univ. Tokyo)	<u>PRTEC-24311</u> The Effect of Hydrophobicity on Interface Thermal Resistance between Metal and TIM, Yusuke Ira (Univ. Tokyo), Takashi Kodama (Univ. Tokyo), Junichiro Shiomi (Univ. Tokyo)

Technical Sessions

Monday, December 16, 2019

Session	14:35	14:55	15:15	15:35	15:55
<p>Monarchy 4</p> <p>Topic (a-1): Convective Heat and Mass Transfer - Natural Convection 1 -</p> <p>Chairperson: Atsuki Komiya (Tohoku Univ.)</p>	<p><u>PRTEC-24174</u></p> <p>A Numerical Study of Assisting Mixed Convective Heat Transfer from Horizontal Narrow Two-Sided Isothermal Flat Plates, Mohamed Elkhmri (Queen's Univ.), Patrick H. Oosthuizen (Queen's Univ.)</p>	<p><u>PRTEC-24146</u></p> <p>Experimental Investigation of Natural Air Convection Characteristics for Sodium-Cooled Fast Reactor Cooling, Dong-Wook Jerng (Chung-Ang Univ.), Ho Seon Ahn (Incheon Natl. Univ.), Kyoun Moon Kim (Incheon Natl. Univ.), Ji-Hwan Hwang (Chung-Ang Univ.)</p>	<p><u>PRTEC-24348</u></p> <p>An Experimental Investigation of Natural Convection Heat Transfer from Horizontal Upward Facing Circular Isothermal Surfaces at low Rayleigh Number, C. J. Kobus (Oakland Univ.), S. Labban (Oakland Univ.)</p>	<p><u>PRTEC-24035</u></p> <p>Numerical Analysis of Heat Transfer of Supercritical Nitrogen in a Vertical Tube, Hao Z. Lv (Dalian Univ. Tech.), Jing X. Zhu (Dalian Univ. Tech.), Qiang Li (Dalian Univ. Tech.)</p> <p>Canceled</p>	
<p>Monarchy 1</p> <p>Topic (a-2): Computational Heat and Mass Transfer - Optimization and Control 2 -</p> <p>Chairperson: Takehiro Tsukahara (Tokyo Univ. Sci.)</p>	<p><u>PRTEC-24084</u></p> <p>Torque Reduction Effect, Relaminarization Phenomenon, and Heat Transfer by Traveling Wave-Like Blowing and Suction in Turbulent Taylor-Couette Flow, Hiroya Mamori (Univ. Electro-Communications), Kohei Ogino (Tokyo Univ. Sci.), Koji Fukudome (Tokyo Univ. Sci.), Naoya Fukushima (Tokai Univ.), Makoto Yamamoto (Tokyo Univ. Sci.)</p>	<p><u>PRTEC-24018</u></p> <p>Understanding Heat Transfer in Directed Thermoplates, Imane Khalil (Univ. San Diego)</p>	<p><u>PRTEC-24346</u></p> <p>Effect of Rib Surface Features on Film-Cooling Performance of Turbine Blade, Hansol Yoo (Sungkyunkwan Univ.), Yeong Wan Je (Sungkyunkwan Univ.), Hyo_Geun Ji (Sungkyunkwan Univ.), Youn-Jea Kim (Sungkyunkwan Univ.)</p>	<p><u>PRTEC-24169</u></p> <p>Numerical Study on Blowing and Suction Locations for Improving Lift-To-Drag Ratio of a Clark-Y Airfoil, Masahiro Ohashi (Keio Univ.), Yuki Morita (Keio Univ.), Shiho Hirokawa (Keio Univ.), Koji Fukagata (Keio Univ.), Naoko Tokugawa (JAXA)</p>	<p><u>PRTEC-24309</u></p> <p>Numerical Investigation of Flow Control Effect by DBD Plasma Actuator Against Wing Tip Effect over Three-Dimensional Wing, Takumi Abe (Tokyo Univ. Sci.), Kengo Asada (Tokyo Univ. Sci.), Satoshi Sekimoto (Tokyo Univ. Sci.), Koji Fukudome (Tokyo Univ. Sci.), Tomoaki Tatsukawa (Tokyo Univ. Sci.), Hiroya Mamori (Univ. Electro-Communications), Kozo Fujii (Tokyo Univ. Sci.), Makoto Yamamoto (Tokyo Univ. Sci.)</p>
<p>Monarchy 2</p> <p>Topic (a-1): Convective Heat and Mass Transfer - Heat Transfer Enhancement -</p> <p>Chairperson: Feng C. Lai (Univ. Oklahoma)</p>	<p><u>PRTEC-24179</u></p> <p>Flow Control Around a Rectangular Cylinder using DBD Plasma Actuators, Shinnosuke Miyashita (Daido Univ.), Yoshiki Yokoyama (Daido Univ.), Yasuaki Kozato (Daido Univ.)</p>	<p><u>PRTEC-24232</u></p> <p>The Application of Longitudinal Vortex Generators in Flat Plate Solar Air Heaters, Zhimin Dong (Huazhong Univ. Sci. and Tech.), Hui Xiao (Huazhong Univ. Sci. and Tech.), Feng Shan (Huazhong Univ. Sci. and Tech.), Zhichun Liu (Huazhong Univ. Sci. and Tech.), Wei Liu (Huazhong Univ. Sci. and Tech.)</p>	<p><u>PRTEC-24124</u></p> <p>Exterior Conduction Shape Factors from Interior Conduction Shape Factors, John H. Lienhard (MIT)</p>	<p><u>PRTEC-24087</u></p> <p>Effect of Spatial Development on Convective Heat Transfer Enhancement in a Pipe with Transverse Vibration, Masahiro Takahashi (Tokyo Univ. Agriculture and Tech. (TUAT)), Akihiko Mitsui (TUAT), Takaaki Shimura (TUAT), Kaoru Iwamoto (TUAT), Akira Murata (TUAT)</p>	<p><u>PRTEC-24406</u></p> <p>EHD-Enhanced Forced Convection in a Horizontal Channel by Non-Symmetric Electric Field, Ming-Can Ke (Natl. Pingtung Univ. Sci. and Tech.), Feng C. Lai (Univ. Oklahoma), Jik-Chang Leong (Natl. Pingtung Univ. Sci. and Tech.)</p>
<p>Monarchy 3</p> <p>Topic (b-4): Heat and Mass Transfer in Energy Devices - Solar & Thermal Systems (2) -</p> <p>Chairperson: Yugo Osaka (Kanazawa Univ.)</p>	<p><u>PRTEC-24474</u></p> <p>Molten Salt Circulation Loop to Be Used as a New Generation of Concentrated Solar Power Plant, Bamdad Barari (MIT), Xu Tan (MIT), Mehdi Pishahang (MIT), Qingzi Zhu (MIT), Caleb Amy (MIT), Collin Kelsall (MIT), Michael Bichnevičius (MIT), Michael Nitzsche (MIT), Asegun Henry (MIT)</p>	<p><u>PRTEC-24049</u></p> <p>Pumps to Enable Efficient, High Temperature Heat Transfer, Caleb Amy (MIT), Collin C. Kelsall (MIT), Mehdi Pishahang (MIT), Xu Tan (MIT), Bamdad Barari (MIT), Qingzi Zhu (MIT), Asegun Henry (MIT)</p>	<p><u>PRTEC-24120</u></p> <p>Dynamic Simulation of a 50MW Solar Power Tower System for Peak Load Regulation, Qiang Zhang (North China Electric Power Univ.), Donghong Cao (North China Electric Power Univ.), Xiaozhe Du (North China Electric Power Univ.), Kaijun Jiang (North China Electric Power Univ.), Lijun Yang (North China Electric Power Univ.)</p> <p>Canceled</p>	<p><u>PRTEC-24166</u></p> <p>Management Strategy of Energy Storage and Supply for Expanding the Use of Renewable Energy, Hideyuki Chisaka (Gifu Univ.), Nobusuke Kobayashi (Gifu Univ.), Yoshinori Itaya (Gifu Univ.), Tsuguhiko Nakagawa (Gifu Univ.)</p>	
<p>Maui Suite 2</p> <p>Topic (a-5): Biological Heat and Mass Transfer - Numerical Analysis and Measurement of Biological System -</p> <p>Chairperson: Ryo Shirakashi (Univ. Tokyo)</p>	<p><u>PRTEC-24282</u></p> <p>Tunable Thermal Transport and Reversible Thermal Conductivity Switching in Topologically Networked Bio-Inspired Materials, John Tomko (Univ. Virginia), Abdon Pena-francesch (Pennsylvania State Univ.), Huihun Jung (Pennsylvania State Univ.), Madhusudan Tyagi (Natl. Inst. Standards), Benjamin Allen (Pennsylvania State Univ.), Melik Demirel (Pennsylvania State Univ.), Patrick Hopkins (Univ. Virginia)</p>	<p><u>PRTEC-24344</u></p> <p>Molecular Dynamics Simulation Study of the Molecular Mechanism of Anion Permeation Through Aquaporin-6, Eiji Yamamoto (Keio Univ.), Keehyoung Joo (Korea Inst. for Advanced Study), Jooyoung Lee (Korea Inst. for Advanced Study), Masato Yasui (Keio Univ.), Mark S. Sansom (Univ. Oxford)</p>	<p><u>PRTEC-24262</u></p> <p>In-Vivo PIV Measurement of the Blood Flow in the Heart of Medaka Embryo, Nao Ninomiya (Utsunomiya Univ.), Masaru Matsuda (Utsunomiya Univ.), Natsuo Araki (Utsunomiya Univ.), Narumi Yano (Utsunomiya Univ.)</p>	<p><u>PRTEC-24288</u></p> <p>Simulation of Natural Convection Heat Transfer within an Uncoiled Model of the Cochlea during Robotic Cochlear Implant Surgery, Fateme Esmailie (Univ. Utah), Mathieu Francoeur (Univ. Utah), Tim Ameal (Univ. Utah)</p>	<p><u>PRTEC-24100</u></p> <p>Numerical Analysis of Contact Irreversible Electroporation using a Multi-Layered Skin Model, Akira Nakashima (Kyushu Univ.), Kosaku Kurata (Kyushu Univ.), Yoko Tomo (Kyushu Univ.), Hiroshi Takamatsu (Kyushu Univ.)</p>

Session	14:35	14:55	15:15	15:35	15:55
Maui Suite 3 Topic (b-1): Fundamentals in Combustion 6 Chairperson: Nozomu Hashimoto (Hokkaido Univ.)	<u>PRTEC-24066</u> Topological Characteristics of High Karlovitz Number Turbulent Premixed Flames, Yutaro Nakagama (Tokyo Inst. Tech.), Takahiro Konagamitsu, (Tokyo Inst. Tech.), Yuki Minamoto (Tokyo Inst. Tech.), Masayasu Shimura (Tokyo Inst. Tech.), Mamoru Tanahashi (Tokyo Inst. Tech.)	<u>PRTEC-24068</u> Fundamental Analysis of Turbulent Combustion Modelling with Deep Learning, Ryota Nakazawa (Tokyo Inst. Tech.), Yuki Minamoto (Tokyo Inst. Tech.), Masayasu Shimura (Tokyo Inst. Tech.), Mamoru Tanahashi (Tokyo Inst. Tech.)	<u>PRTEC-24494</u> An Experimental Study on Noise Radiation and Coherent Vortices Behaviors in Impinging Jet Flames of Lean Condition, Juhan Kim (Sunchon Natl. Univ.), Keeman Lee (Sunchon Natl. Univ.)	<u>PRTEC-24298</u> Numerical Study on the Influences of Turbulence Scale on Spherical Hydrogen Flame Development, Hazim H. Shehab (Kyushu Univ.), Hiroaki Watanabe (Kyushu Univ.), Ryoichi Kurose (Kyoto Univ.), Toshiaki Kitagawa (Kyushu Univ.)	<u>PRTEC-24333</u> High Speed Doubled Stereoscopic PIV and OH PLIF/Chemiluminescence Measurements of Turbulent Swirling Lean Premixed Flames in a Transition Process of Combustion Oscillation, Yuki Atagi (Tokyo Inst. Tech.), Masayasu Shimura (Tokyo Inst. Tech.), Mamoru Tanahashi (Tokyo Inst. Tech.)
Maui Suite 4 Topic (c-1): Transport Phenomena in Nano and Molecular Scale Systems 1 Chairperson: Yoichi Murakami (Tokyo Tech.)	<u>PRTEC-24429</u> Measurement and Analysis of Adsorption and Transport of Water in Nanospace Materials, Hirofumi Daiguji (Univ. Tokyo), Wei-Lun Hsu (Univ. Tokyo), Jean-Jacques Delaunay (Univ. Tokyo), Shohei Chiashi (Univ. Tokyo), Ryotaro Matsuda (Nagoya Univ.), Akira Endo (Natl. Inst. Adv. Ind. Sci. Tech.)	<u>PRTEC-24419</u> Characterization of Quartz Tuning Fork Probes for Quantitative Measurement of Lateral Forces across Single Nanometer Vacuum Gaps, Cedric Shaskey (Univ. Utah), Amun Jarzembki (Univ. Utah), Andrew Jue (Univ. Utah), Keunhan Park (Univ. Utah)	<u>PRTEC-24420</u> Light-Guided Surface Bubble Movement, Tengfei Luo (Univ. Notre Dame), Qiushi Zhang (Univ. Notre Dame), Yunsong Pang (Univ. Notre Dame), Jarrod Schifffbauer (Univ. Notre Dame), Aleksander Jemcov (Univ. Notre Dame), Hsueh-Chia Chang (Univ. Notre Dame), Tengfei Luo (Univ. Notre Dame)	<u>PRTEC-24462</u> Nanoengineered Condenser Surfaces for Enhancing Transport in Thermal Desalination by Air Gap Membrane Distillation, Yashwant S. Yogi (Purdue Univ.), Sina Nejati (Purdue Univ.), Akshay K. Rao (Purdue Univ.), Rishav Roy (Purdue Univ.), Longnan Li (Univ. Illinois), Soumyadip Sett (Univ. Illinois), Abhimanyu Das (Purdue Univ.), Nenad Miljkovic (Univ. Illinois), Justin A. Weibel (Purdue Univ.), David Warsinger (Purdue Univ.)	<u>PRTEC-24154</u> Fundamental Study on Shape Reconstruction Technique Using Parametric Ultrasound, Hideharu Takahashi (Tokyo Inst. Tech.), Atsushi Ito (Tokyo Inst. Tech.), Hiroshige Kikura (Tokyo Inst. Tech.)
Lahaina 2 Topic (a-4): Radiative Heat Transfer Radiative Transfer in Engineering Systems Chairperson: Alexander Brown (Sandia National Lab)	<u>PRTEC-24193</u> Thermophotovoltaic Generation of Electricity by Near-Field Radiation Transfer using Schottky Diode Cells, Takumi Iguro (Tokyo Inst. Tech.), Han Tianyi (Tokyo Inst. Tech.), Vongsoasup Naphatsorn (Tokyo Inst. Tech.), Katsunori Hanamura (Tokyo Inst. Tech.) Canceled	<u>PRTEC-24187</u> Increase of Drying Rate by Wavelength-Selective Emitter with Metamaterial Structures in Infrared Ray Drying, Tsuyoshi Totani (Hokkaido Univ.), Atsushi Sakurai (Niigata Univ.), Tadaaki Nagao (Natl. Inst. Materials Sci.), Yoshio Kondo (NGK Insulators Ltd.)	<u>PRTEC-24067</u> An Improved Integral Equation Solution for Detection High Resolution Directional Radiative Signals, Bao-Hai Gao (Harbin Inst. Tech.), Hong Qi (Harbin Inst. Tech.), Lin-Yang Wei (Harbin Inst. Tech.), Ya-Tao Ren (Harbin Inst. Tech.), Li-Ming Ruan (Harbin Inst. Tech.), Peng Xiao (Harbin Inst. Tech.)	<u>PRTEC-24005</u> Researches on Simulation of Airplane's Skin Infrared Characteristics on Finite Element Method, Peng Xiao (Harbin Inst. Tech.), Lijuan Yin (Harbin Inst. Tech.), Lei Zhang (Harbin Inst. Tech.), Yuxie Ding (Shenyang Aircraft Design Inst.)	
Lahaina 3 Topic (c-3): Thermal Properties at the Micro/Nano-scale - Molecular Simulations - Chairperson: Yan Wang (Univ. Nevada at Reno)	<u>PRTEC-24108</u> Formation Process and Self-Assembled Structure of Tetrapod Nanoparticles using Dissipative Particle Dynamics Simulation, Yusuke Araki (Kindai Univ.), Yusei Kobayashi (Kindai Univ.), Noriyoshi Arai (Keio Univ.)	<u>PRTEC-24269</u> Proposal for New Random Number Generation Method for Dissipative Particle Dynamics, Kiyoshiro Okada (Keio Univ.), Paul Brumby (Keio Univ.), Kenji Yasuoka (Keio Univ.)	<u>PRTEC-24402</u> Replica Exchange Molecular Simulation of Trilayer Ice Structure in Slit Nanopore, Kazuaki Hirakawa (Keio Univ.), Kentaro Nomura (Kobe Univ.), Kenji Yasuoka (Keio Univ.)	<u>PRTEC-24414</u> Estimation of Cage Occupancy for Semiclathrate Hydrates by Ab Initio Calculation, Okuto Nakane (Kogakuin Univ.), Masaki Hiratsuka (Kogakuin Univ.), Akihisa Konno (Kogakuin Univ.), Shinichiro Ito (Kogakuin Univ.)	<u>PRTEC-24445</u> Evaluation of the Thermal Conductivity of Nanodiamond using Transient Molecular Dynamics Simulation, Hiroki Matsubara (Tohoku Univ.), Gota Kikugawa (Tohoku Univ.), Takeshi Bessho (Toyota Motor Corp.), Taku Ohara (Tohoku Univ.)

Technical Sessions

Monday, December 16, 2019

Session	16:25	16:45	17:05	17:25	
<p>Monarchy 4</p> <p>Topic (a-1): Convective Heat and Mass Transfer - Natural Convection 2 -</p> <p>Chairperson: Dong Hwan Shin (KIMM)</p>	<p><u>PRTEC-24316</u> Preliminary Experimental Study on Thermal Performance of the Branched-Fin Horizontal Cylindrical Heat Sink with Cross-Cuts Under Natural Convection, Donghyuk Kim (Ajou Univ.), Hyunjung Kim (Ajou Univ.), Jaisuk Yoo (Ajou Univ.), Dong-Kwon Kim (Ajou Univ)</p>	<p><u>PRTEC-24070</u> Study on Air Ingress Process When the Horizontal Coaxial Double Pipe Breaks, Naoki Saito (Univ. Yamanashi), Tetsuaki Takeda (Univ. Yamanashi)</p>	<p><u>PRTEC-24263</u> A Phenomenological Model for the Generation of Laminar Thermochemical Plumes in a Two-Layer Stratified Fluid, Ichiro Kumagai (Meisei Univ.), Anne Davaille (CNRS, Univ. Paris-Sud), Kei Kurita (Univ. Tokyo)</p>	<p><u>PRTEC-24264</u> A Numerical Study on the Mixed Convection Around a Slanted-Pin Fins in a Vertical Channel, Minbo Shim (Pusan Natl. Univ.), June Kee Min (Pusan Natl. Univ.)</p> <p>Cancelled</p>	
<p>Monarchy 1</p> <p>Topic (a-2): Computational Heat and Mass Transfer - Fundamentals 3 -</p> <p>Chairperson: Walter Yuen (Santa Clara Univ.)</p>	<p><u>PRTEC-24006</u> Numerical Study of Turbulent Buoyant Helium Plume by Means of Algebraic Reynolds Stress and Turbulent Scalar Flux Models, Hitoshi Sugiyama (Utsunomiya Univ.), Naoto Kato (Utsunomiya Univ.), Masahiro Ouchi (Shimizu Corp.), Saori Mogami (Fuji Electric FA Components & Systems Co., Ltd.), Atsuhiko Terada (Japan Atomic Energy Agency), Ryutaro Hino (Japan Atomic Energy Agency)</p>	<p><u>PRTEC-24082</u> Numerical Study of Forced Convective Heat Transfer in a Partially Blocked Rod Bundle, Dong-Hyeog Yoon (Korea Inst. Nuclear Safety), Young Seok Bang (Korea Inst. Nuclear Safety), Joo Suk Lee (Korea Inst. Nuclear Safety)</p>	<p><u>PRTEC-24051</u> The Zonal-Monte-Carlo (Zonal-MC) Method, an Efficient and Accurate Solution Method for Multi-Dimensional Radiative Heat Transfer in Isotropic Scattering Media, Walter Yuen (Santa Clara Univ.), Stephen Shephard (Lockheed Martin Space), Ezra Takara (Lockheed Martin Space)</p>	<p><u>PRTEC-24481</u> Linear Stability of a Convection in a Vertical Channel Filled with Nano-Fluid Saturated Porous Medium, Dipak Barman (Natl. Inst. Tech. Warangal), D. Srinivasacharya (Natl. Inst. Tech. Warangal)</p> <p>Cancelled</p>	
<p>Monarchy 2</p> <p>Topic (a-3): Phase Change Phenomena and Heat Transfer - Bubble -</p> <p>Chairperson: Shoji Mori (Kyushu Univ.)</p>	<p><u>PRTEC-24303</u> A New Analytical Model of Bubble Growth during Boiling, H. J. Cho (Univ. Nevada, Las Vegas), Evelyn N. Wang (MIT)</p>	<p><u>PRTEC-24343</u> Uniform Bubble Generation in Nanopores, Soumyadeep Paul (Univ. Tokyo), Wei-Lun Hsu (Univ. Tokyo), Ya-Lun Ho (Univ. Tokyo), Yusuke Ito (Univ. Tokyo), Mirco Magnini (Imperial College London), Lachlan R. Mason (Imperial College London), Omar K. Matar (Imperial College London), Hirofumi Daiguji (Univ. Tokyo)</p>	<p><u>PRTEC-24182</u> Study of Bubble Growth Models in Constant and Varying Pressure Field, Sachin Zanje (Indian Inst. Tech. Bombay), Kannan N. Iyer (Indian Inst. Tech. Bombay), Janani Srree M. (Indian Inst. Tech. Bombay), Hemant Puneekar (ANSYS Software Pvt. Ltd.), Vinay K. Gupta (ANSYS Software Pvt. Ltd.)</p>	<p><u>PRTEC-24137</u> Temperature Measurement Around Multiple Boiling Bubbles in a Confined Space using Two-Color Laser-Induced Fluorescence, Kosuke Kuribayashi (Shibaura Inst. Tech.), Ahmed Abdelghany (Shibaura Inst. Tech.), Ryota Kawasaki (Shibaura Inst. Tech.), Manabu Tange (Shibaura Inst. Tech.)</p>	
<p>Monarchy 3</p> <p>Topic (b-4): Heat and Mass Transfer in Energy Devices - Heat Pump -</p> <p>Chairperson: Cheonkyu Lee (KITECH)</p>	<p><u>PRTEC-24003</u> Performance Characteristics of a Novel Solar-Assisted Ground-Source Heat Pump using Two Evaporators, Minwoo Lee (Korea Univ.), Dowon Cha (Korea Univ.), Yongchan Kim (Korea Univ.)</p>	<p><u>PRTEC-24273</u> Thermal Performance of Hybrid Absorption Heat Pump System for Simultaneous Chilled Water and Steam Generation, Seung Min Lee (Chonbuk Natl. Univ.), Sung Joo Hong (Chonbuk Natl. Univ.), In Gwan Kim (World E&C Co.,Ltd), Kyung Jin Bae (Korea Inst. Industrial Tech.), Jung-Gil Lee (Korea Inst. Industrial Tech.), Oh Kyung Kwon (Korea Inst. Industrial Tech.), Chan Woo Park (Chonbuk Natl. Univ.)</p>	<p><u>PRTEC-24291</u> Operating Criteria and Thermal-Hydraulics of Ultra-Micro Steam Injector, Akihiro Futsuta (Univ. Tsukuba), Akiko Kaneko (Univ. Tsukuba), Yutaka Abe (Univ. Tsukuba), Yutaka Suzuki (WELCON Inc.)</p>	<p><u>PRTEC-24322</u> The Performance Test of Air Conditioner by Changing the Ejector and Expansion Valve, Junghyun H. Kim (Jeju Natl. Univ.), Youn C. Park (Jeju Natl. Univ.), Gwang S. Ko (Jeju Natl. Univ.), Ildong Kim (Samwon Engineering Co., LTD.)</p>	
<p>Maui Suite 2</p> <p>Topic (a-5): Biological Heat and Mass Transfer - Response of Biological System under Thermal Environment -</p> <p>Chairperson: Kosaku Kurata (Kyushu Univ.)</p>	<p><u>PRTEC-24407</u> Evaluation of Thermal Comfort According to Operating Conditions in Automotive Air Conditioning Considering of Radiation Energy in Summer, Minjung Lee (Chosun Univ.), Yunchan Shin (Chosun Univ.), Honghyun Cho (Chosun Univ.), Chasik Park (Hoseo Univ.)</p>	<p><u>PRTEC-24098</u> A Trial for Vitrification of Medaka Eggs with Microinjection of Cryoprotectants, Takahiro Aie (Kyushu Inst. Tech.), Junji Fukatani (Kyushu Inst. Tech.), Hirofumi Tanigawa (Kyushu Inst. Tech.), Takaharu Tsuruta (Kyushu Inst. Tech.)</p>	<p><u>PRTEC-24215</u> Inhibition of Intracellular Ice Formation in Embryonic Cells of Medaka Fish, Ryo Shirakashi (Univ. Tokyo), Masatake Aoki (Univ. Tokyo)</p>	<p><u>PRTEC-24432</u> Transient Heat Release during Induced Mitochondrial Thermogenesis, Manjunath C. Rajagopal (Univ. Illinois at Urbana-Champaign (UIUC)), Jeffrey W. Brown (UIUC), Dhruv Gelda (UIUC), Krishna V. Valavala (UIUC), Huan Wang (Innovative Neurosci. Inst.), Daniel A. Llano (UIUC), Rhanor Gillette (UIUC), Sanjiv Sinha (UIUC))</p>	

Session	16:25	16:45	17:05	17:25	
Maui Suite 3 Topic (b-1): Fundamentals in Combustion 7 Chairperson: Satoshi Kadowaki (Nagaoka Univ. Tech.)	<u>PRTEC-24015</u> Synchronization of Thermoacoustic Combustion Oscillations in a Model Rocket Combustor, Hajime Shibuya (Tokyo Univ. Sci.), Tatsuya Hashimoto (Tokyo Univ. Sci.), Hiroshi Gotoda (Tokyo Univ. Sci.), Yuya Ohmichi (JAXA), Shingo Matsuyama (JAXA)	<u>PRTEC-24102</u> Thermoacoustic Instability of Downward Propagating Flames in Small Diameter Tube, Ajit K. Dubey (Hokkaido Univ.), Yoichiro Koyama (Hokkaido Univ.), Nozomu Hashimoto (Hokkaido Univ.), Osamu Fujita (Hokkaido Univ.)	<u>PRTEC-24441</u> Roles of Species Back-Diffusion in Premixed Flame Response to Low-Frequency Mixture Composition Oscillations, Takuya Tomidokoro (Keio Univ.), Takeshi Yokomori (Keio Univ.), Hong G. Im (King Abdullah Univ. Sci. and Tech.), Toshihisa Ueda (Keio Univ.)	<u>PRTEC-24359</u> The Effect of Geometry on High Radiative Heat Flux Ignition of Combustible Materials, Alexander L. Brown (Sandia Natl. Labs), Jeffrey D. Engerer (Sandia Natl. Labs), Allen J. Ricks (Sandia Natl. Labs), Joshua M. Christian (Sandia Natl. Labs)	
Maui Suite 4 Topic (c-1): Transport Phenomena in Nano and Molecular Scale Systems 2 Chairperson: Jaeho Lee (Univ. California at Irvine)	<u>PRTEC-24241</u> Molecular Dynamics Study on Time Resolved Interfacial Thermal Resistance of Nanostructured Surface during Condensation, Masahiko Shibahara (Osaka Univ.), Kenshiro Matsui (Osaka Univ.), Kunio Fujiwara (Osaka Univ.), Yoshitaka Ueki (Osaka Univ.)	<u>PRTEC-24242</u> Molecular Simulation of Nanobubble Breakup on Aqueous Solution Surface, Katsuki Murata (Kyoto Univ.), Mitsuhiro Matsumoto (Kyoto Univ.)	<u>PRTEC-24251</u> Molecular Dynamics Simulation of a Heat Transfer Phenomena between a Water Droplet and a FeO Surface, Akinori Fukushima (Univ. Fukui), Niro Nagai (Univ. Fukui)	<u>PRTEC-24096</u> Recognition of Hydrophobic Coating Defect during Active Condensation using the Nucleation Sites Classification Approach, Jaehwan Shim (Kyung Hee Univ.), Donghyun Seo (Kyung Hee Univ.), Youngsuk Nam (Kyung Hee Univ.)	
Lahaina 2 Topic (a-4): Radiative Heat Transfer Radiative Properties Chairperson: Shima Hajimirza (Texas A & M Univ.)	<u>PRTEC-24160</u> Fabrication of Liquid-Metal Nano-Emulsion and Characterization of its Dispersion Stability, Joong Bae Kim (KAIST), Taeyeong Kim (KAIST), Hyun Jin Lee (Kookmin Univ.), Jungchul Lee (KAIST), Bong Jae Lee (KAIST)	<u>PRTEC-24479</u> Active Thermal Radiation Control Based on Graphene Metasurface, Kyohei Yada (Niigata Univ.), Atsushi Sakurai (Niigata Univ.)	<u>PRTEC-24378</u> Design and Use of an Apparatus for Investigating the Relationship between the Spectral Absorptivity of Gold-Black and its Manufacture, Nazia Munir (Virginia Tech.), J. R. Mahan (Virginia Tech.), Kory J. Priestley (NASA Langley Research Center) Moved to Sunday, Dec. 15, 11:30 at Lahaina 2		
Lahaina 3 Topic (c-3): Thermal Properties at the Micro/Nano-scale - Thermal Properties Control and Measurements - Chairperson: Hyunjin Lee (Kookmin Univ.)	<u>PRTEC-24391</u> Enabling 2-Dimensional Null-Point Scanning Thermal Microscopy by Enhancing its Performance and Convenience using Vacuum Environment, Juhang Cha (Korea Univ.), Hwijong Shin (Korea Univ.), Ohmyoung Kwon (Korea Univ.)	<u>PRTEC-24142</u> Investigation on Characteristics of Copper Oxidation from View-Point of Ice Adhesion Force, Youtaro Inaba (Chuo Univ.), Hiroki Abe (Chuo Univ.), Kazuomi Maezawa (Chuo Univ.), Rikuto Ayatani (Chuo Univ.), Koji Matsumoto (Chuo Univ.)	<u>PRTEC-24131</u> Characteristic Phase Behavior of Cholesteric Liquid Crystals Confined in Nanotubes, Hiroaki Tsujinoue (Kindai Univ.), Takuma Nozawa (Keio Univ.), Noriyoshi Arai (Keio Univ.)	<u>PRTEC-24190</u> Thermal Property Manipulation Through Ion Implantation of Crystalline Materials, Ethan A. Scott (Univ. Virginia), Khalid Hattar (Sandia Natl. Lab.), Jeffrey Braun (Univ. Virginia), Christina Rost (Univ. Virginia), John Gaskins (Univ. Virginia), Tingyu Bai (Univ. California Los Angeles (UCLA)), Yekan Wang (UCLA), Claire Ganski (UCLA), Mehrdad Fazli (Univ. Virginia), Keivan Esfarjani (Univ. Virginia), Mark Goorsky (UCLA), Patrick Hopkins (Univ. Virginia)	

Technical Sessions

Tuesday, December 17, 2019

Session	10:40	11:00	11:20	11:40	12:00
<p>Monarchy 4</p> <p>Topic (a-1): Convective Heat and Mass Transfer - Microscale Convection -</p> <p>Chairperson: Youngsuk Nam (Kyung Hee Univ.)</p>	<p><u>PRTEC-24060</u></p> <p>Preparation and Flow Visualization of Fluorescent Micro-Capsule Aqueous Solution Containing Temperature-Sensitive Magnetic Fluid, Ryota Aizawa (Aoyama Gakuin Univ.), Keiko Ishii (Aoyama Gakuin Univ.), Koji Fumoto (Aoyama Gakuin Univ.)</p>	<p><u>PRTEC-24152</u></p> <p>Timing Control and Alignment of Particles in Microchannel Flow using Dielectrophoretic Forces, Kazuya Tatsumi (Kyoto Univ.), Atasushi Noma (Kyoto Univ.), Renato Honma (Kyoto Univ.), Reiko Kuriyama (Kyoto Univ.), Kazuyoshi Nakabe (Kyoto Univ.)</p>	<p><u>PRTEC-24080</u></p> <p>Effect of Microchannel Aspect Ratio on Turbulent Heat Transfer of Supercritical Carbon Dioxide with a Non-Uniform Heat Flux Boundary Condition, Saad A. Jajja (Oregon State Univ.), Jessa M. Sequeira (Oregon State Univ.), Brian Fronk (Oregon State Univ.)</p>	<p><u>PRTEC-24374</u></p> <p>Experimental and Numerical Study of Nanofluid Convective Heat Transfer in Porous Micro-Channel, Cayley S. Delisle (Ryerson Univ.), M. Z. Saghir (Ryerson Univ.), Christopher A. Welsford (Ryerson Univ.)</p> <p>Canceled</p>	<p><u>PRTEC-24159</u></p> <p>Experimental Evaluation on the Effect of Porous Filled Micro-Channels on System Thermal Performance: Applications in Electronics Cooling, Christopher A. Welsford (Ryerson Univ.), Cayley S. Delisle (Ryerson Univ.), M. Ziad Saghir (Ryerson Univ.)</p> <p>Canceled</p>
<p>Monarchy 1</p> <p>Topic (a-2): Computational Heat and Mass Transfer - Phase Change and Multiphase Flow 2 -</p> <p>Chairperson: Yosuke Hasegawa (Univ. Tokyo)</p>	<p><u>PRTEC-24170</u></p> <p>3-D Numerical Simulation on the Dynamics of a Water Droplet Sliding on an Inclined Substrate, Zhicheng Yuan (Kyoto Univ.), Mitsuhiro Matsumoto (Kyoto Univ.), Ryoichi Kurose (Kyoto Univ.)</p>	<p><u>PRTEC-24497</u></p> <p>Surfactant Transport on Double Emulsion and its Influence on Interactions between Interfaces, Heemin Lee (Yonsei Univ.), Joonsang Lee (Yonsei Univ.)</p>	<p><u>PRTEC-24118</u></p> <p>Development of Two-Phase Lattice Boltzmann Method on Smoothed Surfaces, Makoto Sugimoto (Osaka Pref. Univ.), Masayuki Kaneda (Osaka Pref. Univ.), Kazuhiko Suga (Osaka Pref. Univ.)</p>	<p><u>PRTEC-24487</u></p> <p>Computational Study of Heat Generation in Gold Nanoparticles Solutions for Mild Hyperthermia Applications, Xi Gu (Univ. New South Wales Sydney), Victoria Timchenko (Univ. New South Wales Sydney), Darson Li (Univ. New South Wales Sydney), Guan Yeoh (Univ. New South Wales Sydney), Victoria Timchenko (Univ. New South Wales Sydney)</p>	<p><u>PRTEC-24503</u></p> <p>Numerical Simulation of Flat-Plate Pulsating Heat Pipes Hyung Yun Noh (KAIST), Sung Jin Kim (KAIST)</p>
<p>Monarchy 2</p> <p>Topic (a-3): Phase Change Phenomena and Heat Transfer - Two Phase Flow 2 -</p> <p>Chairperson: Jeremy Cho (UNLV)</p>	<p><u>PRTEC-24069</u></p> <p>CHF and Near-Wall Boiling Behaviors in Flow Boiling on a Vertical Surface, Hiroto Sakashita (Hokkaido Univ.)</p>	<p><u>PRTEC-24150</u></p> <p>Film Thickness Measurement in a Vertical Two-Phase Flow Composed of HFC134a Gas and Ethanol Liquid, Shoji Mori (Kyushu Univ.), Hiroyuki Yoshida (Japan Atomic Energy Agency)</p> <p>Moved to Sunday, Dec. 17 Maui Suite 4, 11:50-</p>	<p><u>PRTEC-24225</u></p> <p>Probable Causes of Unexpected Multiple Destructions of Heat Exchanger Tubes of Some Low Pressure Reheaters on Nuclear Power Plants with VVER-1000, Mikhail Gotovsky (Polzunov Inst.), Vitaly Lychakov (Polzunov Inst.), Vladimir Mikhaylov (Polzunov Inst.), Yuri Sukhorukov (Polzunov Inst.), Ekaterina Sukhorukova (Polzunov Inst.), Sergei Esin (Polzunov Inst.), Pavel Gilepp (Parovye Systemy Ltd)</p> <p>Canceled</p>	<p><u>PRTEC-24315</u></p> <p>Characterization of Net Coolant Flow Rate of Water to Circular Copper Surface Utilizing Two-Phase Particle Image Velocimetry, Matt Harrison (Oregon State Univ.), Joshua Gess (Oregon State Univ.)</p>	<p><u>PRTEC-24334</u></p> <p>Experimental Study on Battery Cell Thermal Management using Aluminum Thermal Ground Plane, Jinsub Kim (Korea Inst. Machinery and Materials (KIMM)), Dong Hwan Shin (KIMM), Yeonghwan Kim (KIMM), Jin Hyeuk Seo (KIMM), Jungho Lee (KIMM)</p>
<p>Monarchy 3</p> <p>Topic (b-4): Heat and Mass Transfer in Energy Devices - Fuel Cells (1) -</p> <p>Chairperson: Hiroshi Iwai (Kyoto Univ.)</p>	<p><u>PRTEC-24330</u></p> <p>Effects of Ammonia Addition on Direct Steam Methane Reforming Reaction on Ni-YSZ Catalyst, Katsuyuki Teramoto (Kyoto Univ.), Hiroshi Iwai (Kyoto Univ.), Masashi Kishimoto (Kyoto Univ.), Tomohisa Kawaguchi (Kyoto Univ.), Masashi Takemoto (Kyoto Univ.), Motohiro Saito (Kyoto Univ.), Hideo Yoshida (Kyoto Univ.)</p>	<p><u>PRTEC-24188</u></p> <p>Study on Water-Cooled Solid Oxide Fuel Cell Stack, Mungmuang Promsen (Univ. Tokyo), Yosuke Komatsu (Univ. Tokyo), Anna Sciazko (Univ. Tokyo), Shozo Kaneko (Univ. Tokyo), Naoki Shikazono (Univ. Tokyo)</p>	<p><u>PRTEC-24292</u></p> <p>Ni-GDC and Ni-YSZ Electrodes Operated in the Solid Oxide Electrolysis and Solid Oxide Fuel Cell Modes, Anna Sciazko (Univ. Tokyo), Takaaki Shimura (Tokyo Univ. Agriculture and Tech.), Yosuke Komatsu (Univ. Tokyo), Naoki Shikazono (Univ. Tokyo)</p>	<p><u>PRTEC-24351</u></p> <p>Experimental and Numerical Investigations on Mass Diffusion in Porous Electrodes for Solid Oxide Fuel Cells, Yosuke Komatsu (Univ. Tokyo), Anna Sciazko (Univ. Tokyo), Naoki Shikazono (Univ. Tokyo)</p>	<p><u>PRTEC-24217</u></p> <p>Development of a Hybrid Direct Carbon Fuel Cell using a Carbon Dispersed Ni/YSZ Anode for Higher Power Output, Hirotatsu Watanabe (Tokyo Inst. Tech.), Keisuke Goda (Tokyo Inst. Tech.), Katsunori Hanamura (Tokyo Inst. Tech.)</p>
<p>Maui Suite 2</p> <p>Topic (a-6): Measurements and Diagnostics 1</p> <p>Chairperson: Shawn Putnam (Univ. Central Florida)</p>	<p><u>PRTEC-24148</u></p> <p>Thermal Characterization of a BGA NVMe Solid State Drive in Mini-ITX System, Eung Chang Lee (KAIST), Heeyoub Kang (Samsung Electronics), Jungchul Lee (KAIST), Bong Jae Lee (KAIST)</p>	<p><u>PRTEC-24353</u></p> <p>A Steady-State Thermoreflectance Measurement System, John Gaskins (Univ. Virginia), Jeffrey Braun (Univ. Virginia), David Olson (Univ. Virginia), Patrick Hopkins (Univ. Virginia)</p>	<p><u>PRTEC-24090</u></p> <p>Two-Color-Laser Induced Fluorescence Thermometry using a Green Laser and a Dichroic Mirror, Ahmed Abdelghany (Shibaura Inst. Tech.), Kosuke Kuribayashi (Shibaura Inst. Tech.), Manabu Tange (Shibaura Inst. Tech.)</p>	<p><u>PRTEC-24399</u></p> <p>Characterization of Liquid Film Temperature Distribution Based on Fluorescent Anisotropy, Sakie Takeda (Tokyo Univ. Sci.), Ken Yamamoto (Tokyo Univ. Sci.), Masahiro Motosuke (Tokyo Univ. Sci.)</p>	<p><u>PRTEC-24206</u></p> <p>Visualization of Liquid Film for Film Cooling Formed on Combustion Chamber Wall of Bipropellant Thruster, Noritaka Sako (Kyoto Univ.), Jun Hayashi (Kyoto Univ.), Yu Daimon (JAXA), Hiroumi Tani (JAXA), Hiroshi Kawanabe (Kyoto Univ.)</p>

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Maui Suite 3 Topic (b-2): Heat and Mass Transfer in Combustion Systems - Turbulent Combustion - Chairperson: Hiroyuki Ito (Kanagawa Univ.)	<u>PRTEC-24461</u> Characteristics of Hydrogen-Air Premixed Flame in Swirling Flow, Takuya Takei (Gifu Univ.), Makoto Asahara (Gifu Univ.), Tei Saburi (Natl. Inst. Adv. Ind. Sci. and Tech.), Takeshi Miyasaka (Gifu Univ.), Katsuo Asato (Gifu Univ.), Shiro Kubota (Natl. Inst. Adv. Ind. Sci. and Tech.)	<u>PRTEC-24071</u> Control of Combustion Oscillation in a Swirl Combustor with a Circular DBD Plasma Actuator, Kento Sasaki (Tokyo Inst. Tech.), Masayasu Shimura (Tokyo Inst. Tech.), Mamoru Tanahashi (Tokyo Inst. Tech.)	<u>PRTEC-24297</u> Investigation on Flamelet Characteristics of a Three-Feed Non-Premixed Combustion System, Panlong Yu (Kyushu Univ.), Kento Yasui (Kyushu Univ.), Hiroaki Watanabe (Kyushu Univ.), Ryoichi Kurose (Kyoto Univ.), Toshiaki Kitagawa (Kyushu Univ.)	<u>PRTEC-24115</u> On Improvement of Accuracy in the Dynamic Mode Decomposition for Analysis of Dynamics Behaviors in a Reactive Flow Field, Hung Truyen Luong (Sejong Univ.), Yuangang Wang (Sejong Univ.), Chae Hoon Sohn (Sejong Univ.), Jeong Seok Kang (Korea Aerospace Univ.), Hong-Gye Sung (Korea Aerospace Univ.)	<u>PRTEC-24095</u> Effect of an Obstacle on Combustion Instabilities in a Spray Back-Step Combustor, Jun Nagao (Kyoto Univ.), Abhishek I. Pillai (Kyoto Univ.), Ryoichi Kurose (Kyoto Univ.)
Maui Suite 4 Topic (a-3): Phase Change Phenomena and Heat Transfer - Cooling - Chairperson: Eunseop Yeom (Pusan Natl. Univ.)	<u>PRTEC-24053</u> Experimental Study on Spray Cooling Heat Transfer of Liquid Nitrogen, Yeung Chan Kim (Andong Natl. Univ.) Canceled	<u>PRTEC-24246</u> Visualization of Droplet Impingement on Superheated Aluminum Surface, Eunseop Yeom (Pusan Natl. Univ.), Dongkuk Kang (Pusan Natl. Univ.), Daehee Kwon (Samsung Electro-mechanics)	<u>PRTEC-24302</u> Experimental Investigation on Droplet Impact and Bouncing Behavior on Heated Surface, Koji Hasegawa (Kogakuin Univ.), Ippei Muto (Kogakuin Univ.), Tomonobu Nara (Kogakuin Univ.)	<u>PRTEC-24141</u> Investigation on Influence of Dropping Ionic Surfactant Mixture to Nonionic Surfactant One on Supercooling Degree of Mixed Mixture, Hiroki Abe (Chuo Univ.), Kakeru Sato (Chuo Univ.), Rikuto Ayatani (Chuo Univ.), Yuri Umehara (Chuo Univ.), Koji Matsumoto (Chuo Univ.)	
Lahaina 2 Topic (a-8): Thermo-Physical Properties 2 Chairperson: Masamichi Kohno (Kyushu Univ.)	<u>PRTEC-24350</u> Measurement of Thermal Conductivity for Quartz using Back-Side Mirage Method, Gwantaek Kim (Ajou Univ.), Moojoong Kim (Ajou Univ.), Hyunjung Kim (Ajou Univ.), Dong-Kwon Kim (Ajou Univ.), Jaisuk Yoo (Ajou Univ.)	<u>PRTEC-24469</u> Thermal Behavior of Metal-Insulation Transition Materials during Phase Transition, Ai Ueno (Nagoya Univ.), Jihoon Kim (Nagoya Univ.), Hosei Nagano (Nagoya Univ.)	<u>PRTEC-24212</u> Thermal Conductivity Measurement of Liquid Metal with 3-Omega Method, Dongmin Kim (KAIST), Taeyeong Kim (KAIST), Jungchul Lee (KAIST), Bong Jae Lee (KAIST)	<u>PRTEC-24278</u> Thermal Conductivity and Diffusivity of Natural Graphite Sheet, Martin Cermak (Simon Fraser Univ.), Nicolas Perez (Inst. Natl. Sci. Appl. de Lyon), Majid Bahrami (Simon Fraser Univ.)	
Lahaina 3 Topic (c-1): Transport Phenomena in Nano and Molecular Scale Systems 3 Chairperson: Masahiko Shibahara (Osaka Univ.)	<u>PRTEC-24211</u> Machine Learning-Aided Local Structure Analysis for Liquid Crystal Polymers, Hideo Doi (Natl. Inst. Adv. Ind. Sci. and Tech.), Kazuaki Z. Takahashi (Natl. Inst. Adv. Ind. Sci. and Tech.), Kenji Tagashira (Research Association of High-Throughput Design and Development for Advanced Functional Materials), Jun-ichi Fukuda (Kyushu Univ.), Takeshi Aoyagi (Natl. Inst. Adv. Ind. Sci. and Tech.)	<u>PRTEC-24233</u> Structure and Dynamics of Amphiphilic Janus Particle Suspensions under Shear, Yusei Kobayashi (Kindai Univ.), Noriyoshi Arai (Keio Univ.), Arash Nikoubashman (Johannes Gutenberg Univ. Mainz)	<u>PRTEC-24279</u> Mobility of Micropancakes on Adsorbed Gas Layers, Hideaki Teshima (Kyushu Univ.), Naoto Nakamura (Kyushu Univ.), Yasuyuki Takata (Kyushu Univ.), Koji Takahashi (Kyushu Univ.)	<u>PRTEC-24065</u> Thermal Properties of Nanoparticles-Mixed Molten-Salt: Experimental and Molecular Dynamics Study, Yoshitaka Ueki (Osaka Univ.), Masahiko Shibahara (Osaka Univ.)	

Technical Sessions

Tuesday, December 17, 2019

Session	13:40	14:00	14:20	14:40	15:00
<p>Monarchy 4</p> <p>Topic (a-1): Convective Heat and Mass Transfer - Convection in Multiphase/Multiscale Phenomena and Interfaces 1 -</p> <p>Chairperson: Todd Otanicar (Boise State Univ.)</p>	<p><u>PRTEC-24400</u></p> <p>Changes in Hydrogen and Vapor Concentrations in a Sealed Container with a Newly Developed Hydrogen Recombination Catalyst, Kazuyuki Takase (Nagaoka Univ. Tech.), Genya Kawasaki (Nagaoka Univ. Tech.), Kohei Ueta (Nagaoka Univ. Tech.), Ky T. Vu (Nagaoka Univ. Tech.), Isamu Kudo (ADVAN ENG.Co.,Ltd)</p>	<p><u>PRTEC-24163</u></p> <p>Steady State Evaporation of Sessile Droplets of Ouzo and Ethanol/Water on a Hydrophobic Silicon Surface, Mazen Othayq (Univ. Tulsa), Todd Otanicar (Univ. Tulsa)</p>	<p><u>PRTEC-24026</u></p> <p>Visual Investigation of Droplets Falling Through an Oil/Water Column, Wenhao Wang (Harbin Eng. Univ.), Chen Wang (Harbin Eng. Univ.), Bin Zhao (Harbin Eng. Univ.)</p>	<p><u>PRTEC-24240</u></p> <p>Thermal and Solutal Marangoni Flows in Solution Liquid Film on Substrate with Circle Patterned Bank Structure, Jun Fukai (Kyushu Univ.), Jinghong Wang (Kyushu Univ.), Shuji Hironaka (Kyushu Univ.)</p>	
<p>Monarchy 1</p> <p>Topic (a-2): Computational Heat and Mass Transfer - Optimization and Control 3 -</p> <p>Chairperson: Hirofumi Hattori (Nagoya Inst. Tech.)</p>	<p><u>PRTEC-24358</u></p> <p>Effect of the Interface Dynamics on Heat Transfer over Super-Hydrophobic and Liquid-Infused Surfaces, Umberto Ciri (Univ. Texas at Dallas), Stefano Leonardi (Univ. Texas at Dallas)</p>	<p><u>PRTEC-24186</u></p> <p>Suppression of Vortex Shedding in Flow Around a Square Cylinder by Suboptimal Control, Yusuke Nabae (Keio Univ.), Yosuke Fujita (Keio Univ.), Koji Fukagata (Keio Univ.)</p>	<p><u>PRTEC-24444</u></p> <p>Optimal Large-Scale Control Input for Drag Reduction in Turbulent Channel Flow, Toshitaka Itoh (Univ. Tokyo), Yosuke Hasegawa (Univ. Tokyo)</p>	<p><u>PRTEC-24213</u></p> <p>Resolvent Analysis for Dissimilar Control in Turbulent Channel Flow, Riko Uekusa (Keio Univ.), Aika Kawagoe (Keio Univ.), Yusuke Nabae (Keio Univ.), Koji Fukagata (Keio Univ.)</p>	
<p>Monarchy 2</p> <p>Topic (a-3): Phase Change Phenomena and Heat Transfer - Heat Pipe -</p> <p>Chairperson: Chris Hagen (Oregon State Univ.)</p>	<p><u>PRTEC-24147</u></p> <p>Numerical and Experimental Modeling of a Cylindrical Heat Pipe, Maryam Shafahi (California State Polytechnic Univ.), Michael Kato (Cal Poly Pomona), Omar Ortiz Hernandez (Cal Poly Pomona), Edgar H. Pablo (Cal Poly Pomona), Alexander Barton (Cal Poly Pomona), Laila Jallo (Cal Poly Pomona), Kevin Anderson (Cal Poly Pomona) Moved to Saturday, Dec. 14 Monarchy 1, 11:40-</p>	<p><u>PRTEC-24301</u></p> <p>A Flat Plate Heat Pipe Made with a Thermal Spray Process, Chen Feng (Univ. Toronto), Michael J. Gibbons (Univ. Toronto), Marco Marengo (Univ. Brighton), Sanjeev Chandra (Univ. Toronto)</p>	<p><u>PRTEC-24021</u></p> <p>Thickness of a Liquid Film Formed during Oscillation of a Liquid Column in a Pulsating Heat Pipe (Measurement using a Forced Oscillation System), Masayoshi Miura (Kanagawa Univ.), Haruki Arai (Kanagawa Univ.), Hiroyuki Ito (Kanagawa Univ.)</p>	<p><u>PRTEC-24484</u></p> <p>Enhanced Thin Film Evaporation Heat Transfer from Canopy-Shaped Wick Structures, Kimihiro Tsuchiya (Toyota Motor North America), Evan Fleming (Toyota Motor North America), Gaohua Zhu (Toyota Motor North America)</p>	<p><u>PRTEC-24312</u></p> <p>An Ultrathin Vapor Chamber with Nanostructured Textile Wick and Wettability Patterned Evaporator, Yinchuang Yang (Hong Kong Univ. Sci. Tech. (HKUST)), Jian Li (HKUST), Dong Liao(HKUST), Huihe Qiu (HKUST)</p>
<p>Monarchy 3</p> <p>Topic (b-4): Heat and Mass Transfer in Energy Devices - Fuel Cells (2) -</p> <p>Chairperson: Yutaka Tabe (Hokkaido Univ.)</p>	<p><u>PRTEC-24101</u></p> <p>Enhanced Thermal Stability of Ultrathin Nanostructured Pt Cathode by PdO: in Situ Nanodecoration for Low-Temperature Solid Oxide Fuel Cell, Sangbong Ryu (Seoul Natl. Univ.), Wonjong Yu (Seoul Natl. Univ.), Suk Won Cha (Seoul Natl. Univ.)</p>	<p><u>PRTEC-24249</u></p> <p>Experimental Evaluation of Oxygen Transport Resistances and Influence of Catalyst Layer Structure in PEFC, Yutaka Tabe (Hokkaido Univ.), Keisuke Yada (Hokkaido Univ.), Takumi Iiri (Hokkaido Univ.), Takemi Chikahisa (Hokkaido Univ.)</p>	<p><u>PRTEC-24300</u></p> <p>In-Situ Measurements and Analysis of Mass Transfer in Polymer Electrolyte Fuel Cell Electrode Slurries during Drying Process, Takahiro Suzuki (Osaka Univ.), Tatsuaki Nagai (Osaka Univ.), Shohji Tsumishima (Osaka Univ.)</p>	<p><u>PRTEC-24258</u></p> <p>Prediction of Gas Oxygen Diffusivity in Porous Cathode Catalyst Layers of Polymer Electrolyte Fuel Cells: Effects of Capillary Condensation of Water and Swelling of Ionomer, Toshihiro Kaneko (Univ. Tokyo), Yuta Yoshimoto (Univ. Tokyo), Takuma Hori (Tokyo Univ. Agriculture and Tech.), Shu Takagi (Univ. Tokyo), Ikuya Kinefuchi (Univ. Tokyo)</p>	<p><u>PRTEC-24328</u></p> <p>Effects of PEFC Catalyst Ink's Solvent Composition on Catalyst Layer Structure and Performance, Xiaoqi Yang (Tokyo Inst. Tech.), Takashi Sasabe (Tokyo Inst. Tech.), Suguru Uemura (Tokyo Inst. Tech.), Shuichiro Hirai (Tokyo Inst. Tech.)</p>
<p>Maui Suite 2</p> <p>Topic (a-6): Measurements and Diagnostics 2</p> <p>Chairperson: Manabu Tange (Shibaura Inst. Tech.)</p>	<p><u>PRTEC-24467</u></p> <p>Laser-Scanning Fluorescence Thermography for Thermofluid Heat Transfer, Khan Md. Rabbi (Univ. Central Florida), Jake Carter (Univ. Central Florida), Juan Sanchez (Univ. Central Florida), Shawn A. Putnam (Univ. Central Florida)</p>	<p><u>PRTEC-24259</u></p> <p>Precision Evaluation of Phosphors for the Lifetime Method in Phosphor Thermometry, Kazuki Tsuchiya (Keio Univ.), Kento Sako (Keio Univ.), Naohiro Ishiwada (Keio Univ.), Takeshi Yokomori (Keio Univ.)</p>	<p><u>PRTEC-24207</u></p> <p>Experimental Study for Ultrasonic CT using POCS Method, Tohru Yamashita (Natl. Inst. Tech., Kumamoto College), Kaoru Furushima (Natl. Inst. Tech., Kumamoto College)</p>	<p><u>PRTEC-24397</u></p> <p>Estimation of Skin-Friction Field on a Backward-Facing Step (BFS) Model from TSP Images using Linear-Least-Squares Method, Jingqi Ma (Tohoku Univ.), Taekjin Lee (Tohoku Univ.), Chiaki Kawase (Tohoku Univ.), Lin Chen (Tohoku Univ.), Yuji Saito (Tohoku Univ.), Taku Nonomura (Tohoku Univ.), Keisuke Asai (Tohoku Univ.)</p>	<p><u>PRTEC-24332</u></p> <p>3D-Reconstruction of Density Field for High-Speed and High-Temperature Flow using Background-Oriented Schlieren, Takumi Sato (Tokai Univ.), Masanori Ota (Chiba Univ.), Toshiharu Mizukaki (Tokai Univ.)</p>

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Maui Suite 3 Topic (b-2): Heat and Mass Transfer in Combustion Systems - Measurement in Combustion System Chairperson: Yaroslav Chudnovsky (Gas Technology Institute)	<u>PRTEC-24320</u> Effectiveness Measurement for Effusion and Transpiration Cooling using Novel IR Thermography, Dong Hwan Shin (Korea Inst. Machinery & Materials (KIMM)), Jin Sub Kim (KIMM), Mingeon Kim (Korea Advanced Inst. Sci. and Tech. (KAIST)), Bong Jae Lee (KAIST), Jungho Lee (KIMM)	<u>PRTEC-24161</u> Efficient Method for Temperature Estimation with Heat Radiation Index CRI(R) - Application to Heat Damage in Exhaust System of Vehicle - , Koki Kawakami (Tokyo City Univ.), Hideaki Nagano (Tokyo City Univ.), Koichi Ishikawa (Mitsubishi Motors Corp.), Wang ZongGuang (Mitsubishi Motors Corp.), Itsuhei Kohri (Tokyo City Univ.), Suguru Shiratori (Tokyo City Univ.), Kenjiro Shimano (Tokyo City Univ.)	<u>PRTEC-24283</u> Spatially Probing Thermal Conductivity in Thermal Barrier Coating Systems, David H. Olson (Univ. Virginia), Kiumars Aryana (Univ. Virginia), John T. Gaskins (Univ. Virginia), John Tomko (Univ. Virginia), Jeroen Deijkers (Univ. Virginia), Cory Parker (Univ. Virginia), Valentina Avincola (Univ. Virginia), Jeffrey Braun (Univ. Virginia), Robert Golden (Rolls-Royce), Adam Chamberlain (Rolls-Royce), Gregory Harrington (Rolls-Royce), Haydn Wadley (Univ. Virginia), Elizabeth J. Opila (Univ. Virginia), Patrick Hopkins (Univ. Virginia)	<u>PRTEC-24221</u> Three-Dimensional Measurement on Thermal Structure of Six Clustered Methane-Air Diffusion Microflames, Yuta Uchida (Chubu Univ.), Haruumi Kondo (Nagoya Inst. Tech.), Zhaojin Diao (Univ. Kentucky), Taro Hirasawa (Chubu Univ.), Michael Winter (Univ. Kentucky), Yojiro Ishino (Nagoya Inst. Tech.), Koza Saito (Univ. Kentucky)	<u>PRTEC-24341</u> Thermodynamic Analysis of Hydrogen Combustion Power Generation Systems, Kotaro Takehana (Tokyo Inst. Tech.), Ken Okazaki (Tokyo Inst. Tech.), Tomohiro Nozaki (Tokyo Inst. Tech.)
Maui Suite 4 Topic (a-3): Phase Change Phenomena and Heat Transfer - Condensation and Solidification - Chairperson: JungGil Lee (KITECH)	<u>PRTEC-24054</u> Investigation on Influences of IPF of Ice Slurry and Storage Time on Cohesive Force, Yuri Umehara (Chuo Univ.), Kazuomi Maezawa (Chuo Univ.), Kakeru Sato (Chuo Univ.), Youtaro Inaba (Chuo Univ.), Koji Matsumoto (Chuo Univ.)	<u>PRTEC-24079</u> An Innovative Approach to Problem of Condenser in Industrial Cooling Application with Integrated Phase Change Material, Gulenay A. Kilic (Vocational School of Yalova Univ.), Enver Yalcin (Engineering Faculty of Balikesir Univ.)	<u>PRTEC-24200</u> Condensation Heat Transfer on Bi-Philic Surface with Wettability Gradient, Atsushi Tokunaga (Natl. Inst. Tech., Ube College), Takaharu Tsuruta (Kyushu Inst. Tech.)	<u>PRTEC-24239</u> Passive Anti-Flooding Superhydrophobic Condensers, Donghyun Seo (Kyung Hee Univ.), Jaehwan Shim (Kyung Hee Univ.), Byungyun Moon (Kyung Hee Univ.), Kyungjun Lee (Kyung Hee Univ.), Jooyoung Lee (Kyung Hee Univ.), Choongyeop Lee (Kyung Hee Univ.), Youngsuk Nam (Kyung Hee Univ.)	<u>PRTEC-24366</u> Enhancement of "Effective" Thermal Resistance of Building Insulation using Polyurethane Foam Incorporated with Phase Change Material, Weihuan Zhao (Univ. North Texas), Sheldon Shi (Univ. North Texas), Yong Tao (Nova Southeastern Univ.)
Lahaina 2 Topic (a-8): Thermo-Physical Properties 3 Chairperson: Jungchul Lee (KAIST)	<u>PRTEC-24041</u> Speed of Sound and Dielectric Constant Measurements for HFO-1336mzz(E) in the Gas Phase, Yuya Kano (Natl. Inst. Adv. Ind. Sci. and Tech.), Yohei Kayukawa (Natl. Inst. Adv. Ind. Sci. and Tech.), Yoshitaka Fujita (Natl. Inst. Adv. Ind. Sci. and Tech.)	<u>PRTEC-24043</u> Phase Equilibrium Condition Measurements of Methane + 1,1,1,3,3 - Pentafluoropropane + Water System, Tomoyuki Matsueda (Keio Univ.), Ryo Koyama (Keio Univ.), Ryo Ohmura (Keio Univ.)	<u>PRTEC-24129</u> Measurements of pvTx Properties for Refrigerant Mixtures R32/R1234Yf, Katsuyuki Tanaka (Nihon Univ.)	<u>PRTEC-24257</u> A PVT Property Measurement Apparatus for Carbon Dioxide + Noncondensable Gases Mixtures and Observation of Phase Equilibrium Including Near the Critical Points, Keisuke Abe (Kyushu Univ.), Kentaro Toshima (Kyushu Univ.), Yutaro Midorikawa (Kyushu Univ.), Yasuyuki Takata (Kyushu Univ.), Naoya Sakoda (Kyushu Univ.), Masamichi Kohno (Kyushu Univ.)	
Lahaina 3 Topic (c-1): Transport Phenomena in Nano and Molecular Scale Systems 4 Chairperson: Hirofumi Daiguji (Univ. Tokyo)	<u>PRTEC-24289</u> Photon Upconversion using Intermolecular Energy Transfer for Increasing Sunlight Utilization Efficiency: The Developments of Visible-to-Visible and Visible-to-UV Conversion Materials, Yoichi Murakami (Tokyo Inst. Tech.), Ayumu Motooka (Tokyo Inst. Tech.), Kazuki Niimi (Nippon Kayaku Co. Ltd.), Atsushi Kaiho (Nippon Kayaku Co. Ltd.), Noriko Kiyoyanagi (Nippon Kayaku Co. Ltd.)	<u>PRTEC-24395</u> Coherent and Incoherent Phonon Transport in Layered Structures, Pranay Chakraborty (Univ. Nevada), Tengfei Ma (Univ. Nevada), Xixi Guo (Univ. Nevada), Yan Wang (Univ. Nevada), Lei Cao (Univ. Nevada)	<u>PRTEC-24476</u> Phonon Contributions to Ionic Transport, Kiarash Gordiz (MIT), Sokseiha Muy (MIT), Yang Shao-Horn (MIT), Asegun Henry (MIT)	<u>PRTEC-24433</u> Specularity of ~100 GHz Acoustic Phonons at Rough Surfaces under Nanoscale Confinement, Dhruv Gelda (Univ. Illinois at Urbana-Champaign (UIUC)), Manjunath C. Rajagopal (UIUC), Marc Ghossoub (UIUC), Sanjiv Sinha (UIUC)	

Technical Sessions

Tuesday, December 17, 2019

Session	15:40	16:00	16:20	16:40	
<p>Monarchy 4</p> <p>Topic (a-1): Convective Heat and Mass Transfer - Convection in Multiphase/Multiscale Phenomena and Interfaces 2 -</p> <p>Chairperson: Kazuya Tatsumi (Kyoto Univ.)</p>	<p>PRTEC-24025</p> <p>Mass Transfer In a Three-Phase Liquid Column Agitated By a Spinning Rod, Zixuan Wang (Harbin Eng. Univ.), Zihao Xin (Harbin Eng. Univ.), Yanbo Liu (Harbin Eng. Univ.)</p>	<p>PRTEC-24088</p> <p>Temperature Distribution of a Vertical Wall Insulated by Falling Water Film under Radiative Heating, Aoshi Kono (Shibaura Inst. Tech.), Manabu Tange (Shibaura Inst. Tech.), Yoshifumi Ohmiya (Tokyo Univ. Sci.)</p>	<p>PRTEC-24435</p> <p>Jet-Impingement Heat Transfer Enhanced by Micro-Jets, Weicong Ma (Illinois Inst. Tech.), Sumanta Acharya (Illinois Inst. Tech.), Chen Tang (Illinois Inst. Tech.)</p>		
<p>Monarchy 1</p> <p>Topic (a-2): Computational Heat and Mass Transfer - Optimization and Control 4 -</p> <p>Chairperson: Koji Fukagata (Keio Univ.)</p>	<p>PRTEC-24394</p> <p>Three-Dimensional Multi-Objective Shape Optimization of a Cylinder in a Cross-Flow using Discrete Adjoint Method, Mahening Citra C. Vidya (Univ. Twente), Nijso A. Beishuizen (Bosch Thermotechnology), David de Kleine (Bosch Thermotechnology), Theodorus H. van der Meer (Univ. Twente)</p>	<p>PRTEC-24261</p> <p>The Effect of Sensitivity Analysis on the Finite-Volume Based Topology Optimization Procedure for an Aero-Thermal System, June Kee Min (Pusan Natl. Univ.), Jun Seok Lee (Pusan Natl. Univ.)</p>	<p>PRTEC-24004</p> <p>A Machine-Learned Turbulence Generator for the Channel Flow, Kai Fukami (Keio Univ.), Yusuke Nabae (Keio Univ.), Ken Kawai (Keio Univ.), Koji Fukagata (Keio Univ.)</p>	<p>PRTEC-24442</p> <p>Turbulent Flow Estimation Based on Wall Measurements by using Machine Learning Techniques, Zhuchen Liu (The Univ. Tokyo), Yosuke Hasegawa (The Univ. Tokyo)</p>	
<p>Monarchy 2</p> <p>Topic (b-4): Heat and Mass Transfer in Energy Devices - Reliability -</p> <p>Chairperson: Yong Tao Cleveland State Univ.)</p>	<p>PRTEC-24280</p> <p>Water Experiments on Thermal Striping at the Bottom of Upper Internal Structure of Japan Sodium-Cooled Fast Reactor, Jun Kobayashi (Japan Atomic Energy Agency (JAEA)), Kosuke Aizawa (JAEA), Toshiki Ezure (JAEA), Akikazu Kurihara (JAEA), Masaaki Tanaka (JAEA)</p>	<p>PRTEC-24475</p> <p>The Design and Analysis of a 6000 RPM Centrifugal Pump for High Temperature Molten Salt, Xu Tan (MIT), Bamdad Barari (MIT), Qingzi Zhu (MIT), Mehdi Pishahang (MIT), Caleb Amy (MIT), Colin Kelsall (MIT), Michael Bichnevicius (MIT), Michael Nitzsche (MIT), Asegun Henry (MIT)</p>	<p>PRTEC-24492</p> <p>Fluent and Mechanical Simulation on Corrosion Failure in District Heating System, Min Ji Song (Chungnam Natl. Univ.), Jeongmin Cho (Chungnam Natl. Univ.), Woo Cheol Kim (Korea District Heating Corp.), Tae Baek Ha (Korea District Heating Corp.), Soo Yeol Lee (Chungnam Natl. Univ.)</p>		
<p>Monarchy 3</p> <p>Topic (b-4): Heat and Mass Transfer in Energy Devices - Batteries -</p> <p>Chairperson: Jongsup Hong (Yonsei Univ.)</p>	<p>PRTEC-24457</p> <p>Localized Temperature Hotspot Induced Fast Lithium Growth and Short Circuit in Lithium Batteries, Yangying Zhu (Stanford Univ.), Jin Xie (ShanghaiTech Univ.), Allen Pei (Stanford Univ.), Yi Cui (Stanford Univ.)</p>	<p>PRTEC-24427</p> <p>Improvement of Electrochemical Performance and Heat Transfer by a Thin, Uniform Carbon Coating on Cathode Material for Sodium-Ion Batteries, Kwangjin Park (Gachon Univ.), Hoimyoung Choi (Gachon Univ.), Dongwook Han (Samsung Advanced Inst. Tech.), JeongKuk Shon (Samsung Advanced Inst. Tech.)</p> <p>Canceled</p>			
<p>Maui Suite 2</p> <p>Topic (b-4): Heat and Mass Transfer in Energy Devices - Power Generation and Reaction -</p> <p>Chairperson: Masahiro Motosuke (Tokyo Univ. Sci.)</p>	<p>PRTEC-24050</p> <p>Heat and Mass Transfer in Humidifying Regenerator for Sub-Atmospheric Hybrid Heat Engine, Yaroslav Chudnovsky (Gas Tech. Inst.), Aleksandr Kozlov (Gas Tech. Inst.)</p>	<p>PRTEC-24201</p> <p>Theoretical and Experimental Investigation of Water Binary Power Generation, Shoya Uenishi (Tokyo Univ. Marine Sci. and Tech.), Masahiro Osakabe (Tokyo Univ. Marine Sci. and Tech.)</p>	<p>PRTEC-24294</p> <p>Thermo-Galvanic Electric Power Generation Combined with Forced Convection Cooling: the Cell Development and Property Elucidations, Yutaka Ikeda (Tokyo Inst. Tech.), Kazuki Fukui (Tokyo Inst. Tech.), Yoichi Murakami (Tokyo Inst. Tech.)</p>	<p>PRTEC-24416</p> <p>Effect of Bubbling and Electronic Field on the Semiclathrate Hydrate Formation, Yuya Uenakamura (Kogakuin Univ.), Masaki Hiratsuka (Kogakuin Univ.), Shinichiro Ito (Kogakuin Univ.)</p>	

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Maui Suite 3 Topic (b-2): Heat and Mass Transfer in Combustion Systems - Combustion in Multiphase System - Chairperson: Bong Jae Lee (KAIST)	<u>PRTEC-24020</u> CFD Study of Non-Premixed Combustion in an Array of Forced Jets in a Porous Media, Daniel J. Trejo (California State Polytechnic Univ. at Pomona), Kevin R. Anderson (Caif. State Polytechnic Univ. at Pomona) Canceled	<u>PRTEC-24446</u> Study on Structural Control of Metal/Oxide Nanoparticles by Combustion Synthesis Method, Tsuyoshi Nagasawa (Tokyo Inst. Tech.), Kai Matsumoto (Tokyo Inst. Tech.), Susumu Sato (Tokyo Inst. Tech.), Hidenori Kosaka (Tokyo Inst. Tech.)	<u>PRTEC-24091</u> Influence of Temperature, Flow Rate and Oxygen Concentration of Oxidizer on the Flaming Combustion Behavior of Single Columned Biomass Briquette, Hiroyuki Ito (Kanagawa Univ.), Yuichi Nishimaki (Kanagawa Univ.), Masayoshi Miura (Kanagawa Univ.)	<u>PRTEC-24398</u> Experimental Study on Heating Transfer of Tubular Flame Burner with using Biogas, Jie Hu (Kitami Inst. Tech.), Kazuhiro Hayashida (Kitami Inst. Tech.), Takanobu Yamada (Kitami Inst. Tech.)	
Maui Suite 4					
Lahaina 2					
Lahaina 3 Topic (c-1): Transport Phenomena in Nano and Molecular Scale Systems 5 Chairperson: David Warsinger (Purdue Univ.)	<u>PRTEC-24295</u> Morphology of Water inside CNTs Depending on Wettability, Yoko Tomo (Kyushu Univ.), Ryo Matsushita (Kyushu Univ.), Qin-Yi Li (Kyushu Univ.), Tatsuya Ikuta (Kyushu Univ.), Koji Takahashi (Kyushu Univ.)	<u>PRTEC-24357</u> Passive Entrainment of Solid Contaminants from Pool Fires, Alexander L. Brown (Sandia Natl. Labs), Ethan T. Zepper (Sandia Natl. Labs), Flint Pierce (Sandia Natl. Labs), Joshua A. Hubbard (Sandia Natl. Labs)	<u>PRTEC-24396</u> Water-Ethanol Separation with Tip Charged Carbon Nanotubes, Yui Ono (Keio Univ.), Eiji Yamamoto (Keio Univ.), Kenji Yasuoka (Keio Univ.)	<u>PRTEC-24352</u> Tuning the Thermal Transport Properties of Carbon-based Nanocomposites and Thin Films, Ashutosh Giri (Univ. Virginia)	