IHTC-16 Technical Program

10 August, Friday							
	Room 1	Room 2	Room 309A	Room 309B	Room 310	Room 311A	Room 311B
8:30-9:10	**Registration**						
9:20-10:20							
10:20-10:40							
10:40-12:00							
12:30-14:00							
14:00-14:40	**ICHMT Meeting**						
14:40-15:00							
15:00-16:00							
16:00-18:00							
18:30-20:00	**Welcome Reception**						

11 August, Saturday							
	Room 1	Room 2	Room 309A	Room 309B	Room 310	Room 311A	Room 311B
8:30-9:10	Opening Ceremony	N/A	N/A	N/A	N/A	N/A	N/A
9:20-10:20	1*Plenary Lecture						
10:20-10:40	Coffee Break						
10:40-11:30	The Fourier Lecture						
11:30-12:20	The Nukiyama Award Lecture						
12:30-14:00	Lunch						
14:00-14:40	N/A	N/A	KN01	KN02	KN03	KN04	
14:40-15:00			Coffee Break				
15:00-16:00			BAE1	NMT1	CMS1	HTE1	CIP
16:00-18:00		Special Topic (Nano-scale)	Posters	Posters	Posters	Posters	Posters

12 August, Sunday						
	Room 2	Room 309A	Room 309B	Room 310	Room 311A	Room 311B
8:30-9:10	N/A	KN05	KN06	KN07	KN08	
9:20-10:20		COV1	COD1	TPM1	RAC	HTE2
10:20-10:40		Coffee Break				
10:40-12:20		Posters	Posters	Posters	Posters	Posters
12:30-14:00		Lunch				
14:00-14:40		KN09	KN10	KN11	KN12	KN13
14:40-15:00		Coffee Break				
15:00-16:00		BAE2	NMT2	NEE1	CTM1	COV2
16:00-18:00	Special topic (Energy Storage)	Posters	Posters	Posters	Posters	Posters

13 August, Monday					
	Room 309A	Room 309B	Room 310	Room 311A	Room 311B
8:30-9:10	KN14	KN15	KN16	KN17	
9:20-10:20	ECL	MPF1	CMS2	BMA	COD2
10:20-10:40	Coffee Break				
10:40-12:20	Posters	Posters	Posters	Posters	Posters
12:30-14:00	Lunch				
14:00-14:40	Break AIHTC committee meeting				
14:40-15:00					
15:00-16:00					
16:00-18:00					
18:30-20:00					

14 August, Tuesday						
	Room 2	Room 309A	Room 309B	Room 310	Room 311A	Room 311B
8:30-9:10	N/A	KN18	KN19	KN20	KN21	
9:20-10:20		BAE3	HTE3	NEE2	MMP	TPM2
10:20-10:40		Coffee Break				
10:40-12:20		Posters	Posters	Posters	Posters	Posters
12:30-14:00	Lunch					
14:00-14:40	N/A	KN22	KN23	KN24	KN25	
14:40-15:00		Coffee Break				
15:00-16:00		COV3	MPF2	HER1	ECS	PMA
16:00-18:00	Special Topic (New concept)	Posters	Posters	Posters	Posters	Posters
18:30-20:00	Banquet					

15 August, Wednesday						
	Room 2	Room 309A	Room 309B	Room 310	Room 311A	Room 311B
8:30-9:10	N/A	KN26	KN27	KN28	KN29	
9:20-10:20		BAE4	NEE3	CTM2	HER2	RTI
10:20-10:40		Coffee Break				
10:40-12:20		Posters	Posters	Posters	Posters	Posters
12:30-14:00	Lunch					
14:00-15:00	Special Topic (Data center cooling)	COV4	MPF3	CAT	MTR	MPE
15:00-15:20		Coffee Break				
15:20-16:00		Posters	Posters	Posters	Posters	Posters
16:00-17:00	N/A					
17:00-17:30	Closing Ceremony					

11 August, Saturday 14:00-18:00 Room 309A

Session subject: Boiling and Evaporation-1 (BAE1)

Session chairman:

Time	ID	Title, Author, Affiliation
14:00-14:40 Keynote	KN01	**Advances and challenges in droplets wetting and evaporation** Khellil Sefiane University of Edinburgh, UK
15:00-15:02	23152	**In situ temperature measurement of evaporation in micropillar wick structures using micro-raman spectroscopy** Lenan Zhang, Yangying Zhu, Sameer R. Rao, Kevin R. Bagnall, Dion S. Antao, Arny Leroy,Lin Zhao, Bikram Bhatia, Colin C. Kelsall, Evelyn N. Wang* Massachusetts Institute of Technology, USA
15:02-15:04	20805	**An experimental investigation of bubble dynamics of time periodic subcooled flow boiling in annular ducts due to wall heat flux oscillation** Chin-An Chen, Tsiang-Fa Lin, Wei-Mon Yan*, Mohammad Amani National Taipei University of Technology, Chinese Taipei
15:04-15:06	24179	**Evaporation of binary mixtures: Pools and droplets** Adam G. L. Williams, Pedro J. SÁEnz, George Karapetsas, Khellil Sefiane, Omar K Matar, Prashant Valluri* The University of Edinburgh, UK
15:06-15:08	23953	**Influence of localised heating on thermocapillary convection of pure water drops** Alexandros Askounis*, Huacheng Zhang, Dejian Zhang, Yutaku Kita, Gyoko Nagayama, Jungho Kim, Masamichi Kohno, Yasuyuki Takata, Khellil Sefiane Kyushu University, Japan
15:08-15:10	22585	**Convective flow inside and close to an evaporating sessile drop** Chafea Bouchenna, Mebrouk Ait Saada*, Salah Chikh, Lounès Tadrist University of Sciences and Technology Houari Boumediene, Algeria
15:10-15:12	24127	**Acoustic analysis on the dynamic motion of vapor-liquid interface in boiling crisis during the quenching process** Seok Bin Seo, In Cheol Bang* Ulsan National Institute of Science and Technology, Korea
15:12-15:14	22227	**Heat transfer analysis for cooling process of liquid nitrogen utilizing thin film evaporation** Fengmin Su*, Zhongyu Ma, Nannan Zhao, Yangbo Deng, Hongbin Ma Dalian Maritime University, China
15:14-15:16	22823	**Evaluation of some correlations for heat transfer during saturated boiling in mini/micro and conventional channels** Mirza M. Shah* Engineering Research Associates, USA
15:16-15:18	22043	**Role of easy-to-activate nucleation sites in pool boiling** Yi Liu, Ming-Chang Lu*, Dongyan Xu* The Chinese University of Hong Kong, Hongkong, China
15:18-15:20	23412	**Numerical simulation of film boiling on downward facing horizontal flat and curved surfaces** Nikhil Kumar Singh, B Premachandran* Indian Institute of Technology Delhi, India
15:20-15:22	23566	**Evaporation of single water droplet under laser irradiation** Pei Zhang, Chuang Sun*, Fengxian Sun, Zicheng Jin Harbin Institute of Technology, China
15:22-15:24	22252	**On the process of bubble growing and departure on Hydrophilic, Superhydrophobic and Biphilic surfaces.** Pedro Pontes, Emanuele Teodori, Ana Moita*, Antonio Moreira University of Lisbon, Portugal
15:24-15:26	22433	**Effect of surface morphology on subcooled flow boiling under the typical condition of internal combustion engines** Fei Dong*, Liuwendi Hou, Taotao Cao, Decai Song Jiangsu University, China

15:26-15:28	23832	**Aluminum micropost wicks with a circular hyperboloid shape for micro heat spreaders** Soosik Bang*, Seunggeol Ryu, Youngsuk Nam KyungHee University, Korea
15:28-15:30	22322	**An approximate model of incipience of highly intensive film boiling regime in subcooled liquids** Victor V. Yagov, Arslan R. Zabirov*, Pavel K. Kanin, Maxim A. Lexin National Research University “Moscow Power Engineering Institute” , Russia
15:30-15:32	23962	**Contribution of latent heat transfer in pool boiling** Takanori Tanaka*, Tomohide Yabuki, Koji Miyazaki Kyushu Institute of Technology, Japan
15:32-15:34	23281	**Hydrothermal wave control in a steady state evaporation droplet** Xin Zhong, Fei Duan* Nanyang Technological University, Singapore
15:34-15:36	22803	**Using planar laser-induced fluorescence to study the phase transformations of water droplets and water-based emulsions and suspensions** Roman Volkov, Maxim Piskunov*, Pavel Strizhak National Research Tomsk Polytechnic University, Russia
15:36-15:38	20788	**Critical heat flux enhancement for saturated pool boiling on downward-facing structured surfaces** Dawen Zhong, Ji'an Meng*, Zhixin Li North China Electric Power University, China
15:38-15:40	22231	**Effect of characteristic dimensions of surface structure and particles on the contact line motion of sessile suspended droplet evaporation** Yutaka Yamada*, Akihiko Horibe Okayama University, Japan
15:40-15:42	21908	**Experimental evaluation of the flow boiling heat transfer coefficient of DI-water inside microchannels under conditions close to the critical heat flux** Tiago Moreira, Francisco Nascimento, Gherhardt Ribatski* University of Sao Paulo, Brazil
15:42-15:44	20651	**Effect of nano-structure coating on thermal performance of thermosyphon boiling in micro-channels** Shuang-Fei Li, Ping-Yang Wang, Zhenhua Liu* Shanghai Jiao Tong University, China
15:44-15:46	22930	**Heat transfer and critical heat flux enhancement at boiling and evaporation in the liquid film flows on microstructured surfaces** Aleksandr Pavlenko*, Nikolay Pecherkin, Oleg Volodin Volodin, Denis Kuznetsov Kuznetsov Siberian Branch of Russian Academy of Sciences, Russia
15:46-15:48	22170	**Periodical heat transfer performance of coiled tube type molten salt steam generator** Zijian Huang, Jing Ding, Jianfeng Lu* Sun Yat-Sen University, China
15:48-15:50	20902	**Rising film evaporation: Fluid dynamics and heat transfer performance of a pilot plant** Stefan Jahnke, Tim Rittmeier, Stephan Scholl* Technical University of Braunschweig, Germany
15:50-15:52	21891	**Experimental investigation on cryogenic quenching characteristics of rock in liquid nitrogen and the enhancing effects of surface structuring** Ran Li, Chengcheng Zhang, Zhongwei Huang* China University of Petroleum-Beijing, China
15:52-15:54	21801	**Heat transfer intensification by surface structuration in spray cooling** Nadia Caney*, Wahid Cherief, Maria Cristina Riofrio, Jean Antoine Gruss, Francesc Madrid-Lozano University Grenoble Alpes, France
15:54-15:56	22198	**Achieve ultrafast and sustainable nucleate boiling during HFE-7100 flow boiling in parallel microchannels interconnected by micro-slots** Jiaxuan Ma, Wenming Li, Chen Li* University of South Carolina, USA

15:56-15:58	22172	**Numerical simulation of bubble growth in a rectangular microchannel** Le Lei, Kong Ling, Wen-Quan Tao* Xi'an Jiaotong University, China
15:58-16:00	23854	**Numerical analysis of liquid film formation and its evaporative heat transfer in microchannel** Junnosuke Okajima*, Peter Stephan Tohoku University, Japan
16:00-16:02	22684	**Control of pool boiling hydrodynamics through surface wettability patterning** Taylor P. Allred, Justin Weibel, Suresh V. Garimella* Purdue University, USA

11 August, Saturday 14:00-18:00 Room 309B

Session subject: Nano and Microscale Transport-1 (NMT1)

Session chairman:

Time	ID	Title, Author, Affiliation
14:00-14:40 Keynote	KN02	**Modeling of heat and mass transfer in human thermal and respiratory systems and its application to engineering and medical sciences** Jurandir Itizo Yanagihara University of São Paulo, Brazil
15:00-15:02	23288	**A novel improved layered effective medium approximation for ellipsometric parameters of microrough surfaces** Jun Qiu*, Yuanbin Liu, Linhua Liu* Harbin Institute of Technology, China
15:02-15:04	24211	**A three-dimensional analysis of localized transport phenomena in SOFC anode** Tomasz Prokop, Katarzyna Berent, Hiroshi Iwai, Janusz Szmyd, Grzegorz Brus* AGH University of Science and Technology, Poland
15:04-15:06	22397	**Adjustable thermal resistor by reversibly folding a graphene sheet** Meng An*, Qichen Song, Xiandong Chen, Zhan Peng, Jianfeng Zang, Nuo Yang Huazhong University of Science and Technology, China
15:06-15:08	22886	**Capillary-driven flow in open converging microchannels** Yuki Itahana, Shunya Gyotoku, Takaharu Tsuruta, Gyoko Nagayama* Kyushu Institute of Technology, Japan
15:08-15:10	22090	**Comparison of different machine learning methods for the prediction of thermal conductivities of composite materials** Hua Bao*,Shuaishuai Zhao Shanghai Jiao Tong University, China
15:10-15:12	23033	**High performance multi-insulator carbon nanotube tunnel diode arrays** Erik C. Anderson*, Thomas L. Bougher, Baratunde A. Cola Georgia Institute of Technology, USA
15:12-15:14	22237	**Coupling effects of nanostructures on the photovoltaic device performances in multi-physics** Yi-Peng Zhou, Ya-Ling He*, Du Shen Xi'an Jiaotong University, China
15:14-15:16	23031	**Detection of liquid-vapour interface in molecular dynamics simulation** Qiang Sheng, Jie Sun*, Xinyu You, Wen Wang, Huasheng Wang* Queen Mary University of London, UK
15:16-15:18	22725	**Enhancement of thermal conductivity of polyvinyl alcohol membrane using nano-fiber** Xiandong Chen, Shichen Deng*, Rulei Guo, Ni Tang, Zhan Peng, Hao Feng, Xiaobo Li, Jianfeng Zang, Nuo Yang Huazhong University of Science and Technology, China
15:18-15:20	22907	**Explosive evaporization of water and propanol on flat and nanostructured microheaters** Igor A. Kozulin*, Vladimir Kuznetsov Siberian Branch of Russian Academy of Sciences, Russia
15:20-15:22	24205	**Field synergy analysis for heat transfer enhancent on a microchannel heat sink with rectangular cross section** Heming Yun*, Xunhu Guo, Fangfang Ma, Baoming Chen, Yaping Ji Shandong Jianzhu University, China
15:22-15:24	22030	**Heat transfer performance evaluation of corrugated microchannel heat sinks** Ganbat Davaa*, Odgerel Jambal National Institute of Technology, Yuge College, Japan
15:24-15:26	24162	**Thermal conductivity modulation in Zr(Hf)SiS material system by substitutional atoms** Lei Li*, Jiahui Pan, Xue-Jun Yan, Yang-Yang Lv, Chen Di, Shu-Hua Yao, Yan-Bin Chen, Jian Zhou, Hong Lu, Yan-Feng Chen, Ming-Hui Lu Nanjing University, China

15:26-15:28	24428	**High thermal conductivity thin film for heat spreading enhancement in microelectronic measured using short pulsed photothermal technique** Mohammad Rammal*, Bertrand Garnier, Puvikkarasan Jayapragasam, Christophe Rodiet, Boubakeur Belkerk, Julien Camus, Abdou Djouadi The National Center for Scientific Research, France
15:28-15:30	23447	**Molecular dynamics simulation of the structure effect on interfacial thermal resistance between graphene and silicon** Aoran Fan, Weigang Ma, Xing Zhang* Tsinghua University, China
15:30-15:32	23260	**The heat and mass transport phenomena of a laser micropatterning process** Song-Lin Tsai, Chen-Jui Lan, Ming-Tsang Lee* National Chung Hsing University, Chinese Taipei
15:32-15:34	22210	**Influence of surface wettability and nanostructure on the generation of interfacial nanobubbles** Hideaki Teshima*, Takashi Nishiyama, Yasuyuki Takata, Koji Takahashi Kyushu university, Japan
15:34-15:36	23080	**Inhomogeneous thermal effect on ion transport in charged nanochannel** Yuankai Yang, Moran Wang* Tsinghua University, China
15:36-15:38	23204	**Thermal characterization, phonon spectral mapping, and control of the heat transfer in 2D Van Der Waals materials** Joon Sang Kang, Ming Ke, Man Li, Huan Wu, Nicolas Rongione, Huuduy Nguyen, Julia Diaz, Albert Rieck, Yongjie Hu* University of California, Los Angeles (UCLA), USA
15:38-15:40	23710	**Lattice Boltzmann modeling for slip flow and heat transfer of gaseous fluid in confined porous media** Zhenyu Liu, Zhiyu Mu, Huiying Wu* Shanghai Jiao Tong University, China
15:40-15:42	23055	**Thermal transport behaviors in lead halide perovskites** Wee-Liat Ong*, Giselle Elbaz, Evan A. Doud, Philip Kim, Daniel Paley, Xavier Roy, Jonathan A. Malen Zhejiang University/University of Illinois at Urbana-Champaign Institute, China
15:42-15:44	23417	**Method of the rupture film thickness measurement between approaching bubbles during coalescence process in water and ethanol pools** Takayuki Morokuma*, Takashi Ohara, Hiroaki Matsumoto, Yoshio Utaka Yokohama National University, Japan
15:44-15:46	22918	**Rarefied gas flow and heat transfer characteristics in an array of square cylinders by DSMC** Guang Yang*, Yiye Huang, Alexandros Terzis, Jingyi Wu, Bernhard Weigand Shanghai Jiao Tong University, China
15:46-15:48	23362	**Physiologically-based pharmacokinetic modeling of different size polyethylene glycol-coated gold nanoparticles in mice** Linjing Deng, Jinping Zhao, Yufeng Miao, Xu Hu, Qihong Deng* Central South University, China
15:48-15:50	23960	**Molecular dynamics study of thermal rectification based on domino effect** Xiaoliang Zhang*, Ronghui He, Liang Han, Zixiong Rao, Cun Zhang, Kunpeng Yuan, Chengzhi Hu, Dawei Tang*, Ming Hu* Dalian University of Technology, China
15:50-15:52	23792	**Molecular dynamics study on effects of structure on nucleation of water droplets** Kenshiro Matsui*, Kunio Fujiwara, Yoshitaka Ueki, Masahiko Shibahara Osaka University, Japan
15:52-15:54	23083	**Nanoscale view of the evaporating contact line profile of a sessile water droplet on silicon surface** Abbasali Abouei Mehrizi*, Qiao Liu, Hao Wang Peking University, China
15:54-15:56	23703	**Necking effects control thermal conductivity of phononic membranes** Roman Anufriev*, Aymeric Ramiere, Jeremie Maire, Masahiro Nomura The University of Tokyo, Japan

15:56-15:58	22486	**Thermal rectification in nanoscale confined fluids with nanopatterned surfaces** Fan Li, Guodong Xia, Jun Wang* Beijing University of Technology, China
15:58-16:00	22623	**Numerical study of conjugate heat transfer in evaporating thin liquid film of a sessile binary droplet on heated substrates** Qiaobian Xu, Leping Zhou* North China Electric Power University, China
16:00-16:02	23336	**A molecular dynamics study on thermophysical and transport properties of fluorinated alkane liquids** Gota Kikugawa*, Naoki Minami, Yingping Fang, Mitsuru Nemoto, Hiroki Matsubara, Taku Ohara Tohoku University, Japan

11 August, Saturday 14:00-18:00 Room 310

Session subject: Computational Methods and Simulation-1 (CMS1)

Session chairman:

Time	ID	Title, Author, Affiliation
14:00-14:40 Keynote	KN03	**Multiscale simulation for fluid flow and heat transfer problems: A brief review and further research needs** Wen-Quan Tao Xi'an Jiaotong University, China
15:00-15:02	22464	**A coupled lattice Boltzmann-finite difference approach for boiling two-phase flow with high density ratios** Shimpei Saito*, Yutaka Abe, Ken-Ichi Ebihara, Alessandro De Rosis, Akiko Kaneko, Kazuya Koyama University of Tsukuba, Japan
15:02-15:04	21773	**Concentration profiles of high pressure nozzle underexpanded jet flows impinging a vertical plate** Jinghu Hu, David Christopher* Tsinghua University, China
15:04-15:06	23036	**A numerical study of drying and preheating of food in a rotary dryer with superheated steam and air as the drying media** Atinder Singh, Partha Ghoshdastidar* Indian Institute of Technology Kanpur, India
15:06-15:08	23341	**Cfd simulations of exhaust reforming characteristics in catalytic packed bed reactors for a natural-gas engine** Zunhua Zhang, Pengpeng Jia, Shangsheng Feng, Junjie Liang, Gesheng Li* Wuhan University of Technology, China
15:08-15:10	23858	**A numerical study on the melting and heat transfer characteristics of the urea-water solution with electric heating module** D. K. Lee, M. Y. Kim1*, K. C. Oh The National University of Chonbuk , Korea
15:10-15:12	21262	**A parallel non-dimensional lattice Boltzmann simulation on double diffusion and convection from porous structure walls** Yan Su*, Tiniao Ng University of Macau, Macau, China
15:12-15:14	23501	**Heat transfer modeling of CO_2 in the wellbore and aquifer during geological sequestration** Qian Zhang, Yi Zhang, Shezhan Liu, Yuan Chi, Changzhong Zhao, Shuyang Liu, Yongchen Song* Dalian University of Technology, China
15:14-15:16	22296	**Measurements and modeling of fluid flow and thermal processes in an actual precalciner** Qingxin Ba, Xuefang Li*, Xinyu Wang, Lin Cheng Shandong University, China
15:16-15:18	23925	**Advanced lumped parameter model for switched reluctance motors with high performance cooling** Jasper Nonneman*, Nils Clarie, Ilya T'jollyn, Stephan Schlimpert, Peter Sergeant, Michel De Paepe University of Ghent, Belgium
15:18-15:20	23170	**An experimental study on single-phase wilson heat transfer of three-dimensional enhanced tubes** Shang-Qing Liu, Yan He*, Jing-Xiang Chen, Rui-Heng Guo, Tariq Amin Khan, Wei Li Qingdao University of Science and Technology, China
15:20-15:22	23705	**Thermal-flow characteristics of ferrofluid in the microchannel under external magtetic force** Jaehee Kim*, Youn-Jea Kim Sungkyunkwan University, Korea

15:22-15:24	23324	**Direct numerical simulation of convective heat transfer in a vertical pipe for supercritical pressure CO_2** Junjie Yan, Wei Wang, Peixue Jiang*, Shuisheng He* Tsinghua University, China, University of Sheffield, UK
15:24-15:26	23612	**Some aspects of presumed filtered density functions formulation in the context of large eddy simulation of turbulent reacting flows** Viacheslav Stetsyuk*, Krzysztof Kubiak, Lande Liu, John Chai University of Huddersfield, UK
15:26-15:28	22348	**Further development of 3D/1D patched transient heat transfer model** Hong Wang*, Entian Li, Yanchen Su, Jingjun Zhong Dalian Maritime University, China
15:28-15:30	24443	**Molecular dynamics simulation of the salinity effect on the water/oil interface for enhanced oil recovery** Jin Zhao, Srinivasa Ramissetti, Robert B. Hammond, Dongsheng Wen* University of Leeds, UK
15:30-15:32	22962	**Improvements of velocity-correction formulas for simple algorithm** Hui Xiao, Junbo Wang, Zhichun Liu, Wei Liu* Huazhong University of Science and Technology, China
15:32-15:34	24583	**Integral transforms for transient three-dimensional heat conduction in heterogeneous media with multiple geometries and materials** Anderson P. Almeida, Carolina P. Naveira-Cotta, Renato M. Cotta* Federal University of Rio De Janeiro, Brazil
15:34-15:36	22630	**Numerical study of flat tube bank fin heat exchanger by POD projection method** Ye Wang*, Xintong Xia, Yi Wang, Wenting Hu, Liangbi Wang* Lanzhou Jiaotong University, China
15:36-15:38	22883	**Laminar-turbulent transition in supersonic flow over a flat plate** Ivan Egorov*, A.V. Fedorov, K.H. Ding Russian Academy of Sciences, Russia
15:38-15:40	23231	**Lattice Boltzmann simulation of hydrodynamic entrance region of rectangular microchannel in slip regime** Niya Ma, Zhipeng Duan*, Hao Ma, Liangbin Su, Peng Liang, Xiaoru Ning, Xin Zhang Beijing Jiaotong University, China
15:40-15:42	23782	**Modeling of epitaxial silicon growth in a planetary CVD reactor** Zaher Ramadan, Ik-Tae Im* Chonbuk National University, Korea
15:42-15:44	23919	**Numerical computation of coupled radiation-conduction heat transfer using spectral method** Chen Qi*, Yu Xiaolong, Tang Xinchun, Li Chun Shenzhen Aerospace Dongfanghong Hit Satellite Ltd, Casc, China
15:44-15:46	23896	**Multi-physics fem model of solar hybrid roads for energy harvesting performance evaluation in presence of semi-transparent or opaque pavement surface layer** Nicolas Le Touz*, Jean Dumoulin, Jean-Michel Piau French Institute of Science And Technology For Transport, Development And Networks, France
15:46-15:48	23389	**Numerical analysis of effective damage radius for large tumor microwave hyperthermia** Jing Li*, Huan Yao, Yan Lei, Yanyong Ye South China University of Technology, China
15:48-15:50	24036	**Numerical modeling of vortex shedding in finned tube bundles in cross flow** Karl Lindqvist*, Erling Naess Norwegian University of Science and Technology, Norway
15:50-15:52	23068	**Numerical simulation of double-diffusive natural convection in a square open cavity with Soret and Dufour effects** Zhiyun Wang, Zhaowen Kong*, Yang Mo University of Shanghai for Science and Technology, China
15:52-15:54	23912	**Study of urban air pollution in street canyons using lattice Boltzmann method with atmospheric boundary layer models** Yongliang Feng*, Jérome Jacob, Pierre Sagaut Aix-Marseille University, France

15:54-15:56	24219	**Phase prediction and control method of supercritical carbon dioxide fluid in fracturing oil wellbore** Jiaqiang Zuo, Shichao Chen, Zhang Bai*, Liang Gong, Deyong Zou, Zenglin Wang China University of Petroleum (East China), China
15:56-15:58	21386	**Numerical study on supercritical CO_2 in a printed circuit heat exchanger with asymmetrical fins** Wen-xiao Chu, Katrine Bennett, Yi-Tung Chen*, Qiu-Wang Wang University of Nevada, USA

11 August, Saturday 14:00-18:00 Room 311A

Session subject: Heat Transfer Enhancement-1 (HTE1)

Session chairman:

Time	ID	Title, Author, Affiliation
14:00-14:40 Keynote	KN04	**Heat transfer enhancement, thermodynamic and numerical optimisation of complex solar energy systems - parabolic trough collector systems** Tunde Bello-Ochende University of Cape Town, South Africa
15:00-15:02	23247	**Methods to design optimum heat sink geometries** Reijo Karvinen*, Kaj Lampio Tampere University of Technology, Finland
15:02-15:04	22700	**Adjoint-based shape optimization for turbulent convective heat transfer with a hybrid RANS-DNS approach** Yukinori Kametani*, Yosuke Hasegawa University of Tokyo, Japan
15:04-15:06	23824	**Influence of surface wettability on heat transfer and pressure drop characteristics of wet air in metal foam under dehumidifying conditions** Haitao Hu*, Zhancheng Lai, Guoliang Ding Shanghai Jiao Tong University, China
15:06-15:08	24252	**Comparison of evaporation characteristics in horizonal three dimensional enhanced tubes** Xiang Ma, Weiyu Tang, Yan He, Wei Li*, S.A. Sherif* University of Florida, USA
15:08-15:10	21937	**Conjugate heat and mass transfer in a quasi-counter flow parallel-plate membrane channel (QCPMC)** Wen-Kai Zhang, Si-Min Huang*, Minlin Yang, Xiaoxi Yang Dongguan University of Technology, China
15:10-15:12	22711	**Condensation heat transfer and pressure drop characteristics of low GWP refrigerants in plate heat exchanger** Oh Jin Kwon, Jae Hoon Jung, Yong Tae Kang* Korea University, Korea
15:12-15:14	22642	**Approximation assisted optimization of pillow plate heat exchangers** Radia Eldeeb, Jiazhen Ling, Vikrant Aute*, Reinhard Radermacher University of Maryland, USA
15:14-15:16	22616	**Development and experimental analysis on the performance of composite consolidated silica gel fabricated by freeze-drying method** Lin Liu, Hong-Yu Huang*, Zhao-Hong He*, Shi-Jie Li, Jun Li, Jie-Chao Chen, Li-Sheng Deng, Yugo Osaka, Noriyuki Kobayashi Guangzhou Institute of Energy Conversion, China
15:16-15:18	22151	**Experimental investigation of heat transfer enhancement on the endwall around an obstacle embedded with a vortex generator pair** Safeer Hussain, Jian Liu, Lei Wang, Bengt Sundén* Lund University, Sweden
15:18-15:20	24304	**Interaction of longitudinal vortices with co-rotating or counter-rotating directions and the effects on fluid flow and heat transfer** Kewei Song*, Zhonghao Chen, Chen Gao, Qiang Zhang, Liangbi Wang, Shuai Wu Lanzhou Jiaotong University, China
15:20-15:22	22580	**Experimental investigation of the heat transfer in the separation region behind the back-facing step with placed tabs** Aleksey Dyachenco, Yaroslav Smulsky*, Viktor I. Terekhov, Valery Zhdanov Kutateladze Institute of Thermophysics, Siberian Branch of the Russian Academy of Sciences, Russia
15:22-15:24	23775	**Experimental study on aqueous lithium bromide hozizontal motion on smooth copper and enhanced copper tube bundles in the absorber** Yueting Yang, Xiaoyun Xie*, Yi Jiang Tsinghua University, China

15:24-15:26	24221	**Computational modeling of low Reynolds number air flows in wavy-plate-fin channels: Contribution of pressure drag on performance** Dantong Shi, Milind A. Jog, Raj M. Manglik* University of Cincinnati, USA
15:26-15:28	23355	**Heat transfer in grille-sphere composite packed bed: Rical parametric study** Jingyu Wang, Pei Qian, Jian Yang, Qiuwang Wang* Xi'an Jiaotong University, China
15:28-15:30	24215	**Melting front evolution of paraffin wax inside metal foams at different acceleration levels** Alessandro Viglione, Federico Celi, Mauro Mameli*, Paolo Di Marco, Sauro Filippeschi University of Pisa, Italy
15:30-15:32	23384	**Modeling of jumping-droplet condensation with dynamic droplet growth** Zhenyuan Xu*, Lenan Zhang, Kyle Wilke, Evelyn Wang Shanghai Jiao Tong University, China
15:32-15:34	24556	**Numerical optimization of a high-temperature energy storage unit made of encapsulated metal phase change materials** Nithin Mallya*, Sophia Haussener Federal Polytechnic School of Lausanne, Switzerland
15:34-15:36	23711	**Numerical studies on the coupled heat transfer characteristics of supercritical pressure CO_2 under cooling condition** Haiyan Zhang, Jiangfeng Guo*, Mengru Xiang, Keyong Cheng, Xiulan Huai, Xinying Cui Institute of Engineering Thermophysics, Chinese Academy of Sciences, China
15:36-15:38	23287	**Experimental investigation on reversible characteristics of heat transfer and fluid flow using wavelength-dependent photoresponse of aqueous surfactant solution** Reiko Kuriyama*, Takanori Ishii, Shojiro Isono, Kazuya Tatsumi, Kazuyoshi Nakabe Kyoto University, Japan
15:38-15:40	23479	**Numerical study on heat transfer enhencement and flow structure in a tube with central slant deflector** Jinyi Lv, Peng Liu, Zhichun Liu, Wei Liu* Huazhong University of Science and Technology, China
15:40-15:42	24301	**Optimal design of multistream plate fin heat exchangers used in cooling stage of a cascade LNG plant** Ali Allahyarzadeh-Bidgoli*, Daniel Jonas Dezan, Jurandir Itizo Yanagihara University of Sao Paulo, Brazil
15:42-15:44	22031	**Parametric study and optimization of a circular tube fitted with twisted winglet vortex generator inserts using Taguchi method** Zhimin Lin*, Yong-He Wu, Liang-Bi Wang, Yong-Heng Zhang, Xiang Wu Lanzhou Jiaotong University, China
15:44-15:46	23317	**Rectangular permeable ribs in turbulent boundary layer** V. N. Afanasiev, Dehai Kong* Bauman Moscow State Technical University, Russia
15:46-15:48	23014	**Study on flow and heat transfer mechanism of corrugated plate heat exchanger** Huaizhi Han*, Qian Wang, Bingxi Li Harbin Engineering Univeristy, China
15:48-15:50	22355	**Pore-scale numerical simulation of melting process of PCMs in foam metals** Gaosheng Wei*, Gang Wang, Yanping Yang, Chao Xu, Xiaoze Du North China Electric Power University, China
15:50-15:52	23145	**Experimental investigation of the thermal performance of matrix plate fin heat sink with multiple phase change materials** Amritha Elangovan*, Srikanth Rangarajan, Balaji C* Indian Institute of Technology Madras, India

11 August, Saturday 15:00-18:00 Room 311B

Session subject: Conduction and Inverse Problems (CIP)

Session chairman:

Time	ID	Title, Author, Affiliation
15:00-15:02	21874	**Experimental investigation of the oxidational influence on the thermal contact resistance at the blade-rotor-connection in a steam turbine** Dennis Toebben*, Helen Schulte, Piotr Luczynski, Manfred Wirsum, Wolfgang Mohr, Frank Udo Leidich, Klaus Helbig Rwth Aachen University, Germany
15:02-15:04	22255	**An asymptotic local solution for axisymmetric heat conduction problems with temperature discontinuity in boundary** Liang Zhang*, Liwu Fan, Zitao Yu, Renwei Mei Zhejiang University, China
15:04-15:06	23723	**Crosslinking effect on thermal conductivity of electrospun poly(acrylic acid) nanofibers** Yeongcheol Park, Sumin Ha, Yoong Ahm Kim, Sangwon Kim, Jae Hun Seol* Gwangju Institute of Science and Technology, Korea
15:06-15:08	22691	**Numerical investigation on thermal diffusivity prediction based on analytical solution of transient heat conduction** Ruifeng Dou*, Cheng Zhu, Rongzhang Zhang, Xunliang Liu, Zhi Wen University of Science and Technology Beijing, China
15:08-15:10	25159	**Topologically optimum configurations for anisotropic conductivity** A. F. Emery* University of Washington, USA
15:10-15:12	22989	**Influence of main components on solidification behaviors of blast furnace slag droplet in variable cooling conditions** Bin Ding, Hong Wang*, Xun Zhu*, Xian-Yan He, Yu Tan, Qiang Liao Chongqing University, China
15:12-15:14	22659	**MCMC and approximation error model for the simultaneous estimation of heat flux and heat transfer coefficient using heat transfer experiments** Gnanasekaran N*, Harsha Kumar, Chakravarthy Balaji National Institute of Technology Karnataka, India
15:14-15:16	22994	**Characterizing the irreversibility of heat conduction process by entransy and its dissipation rate as Lyapunov functions** Yu-Chao Hua, Zeng-Yuan Guo* Tsinghua University, China
15:16-15:18	23667	**Optimal design of open cell carbon foam insulation** Oleg Alifanov, Sergey Budnik, Aleksey Nenarokomov, Margarita Salosina* National Research University, Russia
15:18-15:20	24001	**Modelling and experimental investigation of the shape change of a sessile water droplet during freezing** Xin Liu, Xuan Zhang, Jingchun Min* Tsinghua University, China
15:20-15:22	23645	**Numerical investigation on the influence of interstitial fluids on thermal contact conductance** Yona Frekers*, Reinhold Kneer Rwth Aachen University, Germany
15:22-15:24	23124	**Inversion of the inner wall temperature of the two-dimensional pipe based on conjugate gradient method** Ping Xiong, Tao Lu* Beijing University of Chemical Technology, China
15:24-15:26	24117	**Aerothermal analysis of the atmospheric reentry of the intermediate experimental vehicle (IXV)** Lo ̈c Van Ghele*, Philippe Reulet, Jean-Luc Verant, Pierre Millan, Jean-Luc Battaglia National Office of Aerospace Studies and Research, France

15:26-15:28	23543	**Preparation and performance evaluation of natural rubber composites with AlN and aligned carbon nanotubes** Yuanzheng Tang, Yan He*, Jin Xu, Guoqing Liu, Juan Xue Qingdao University of Science and Technology, China
15:28-15:30	23443	**A backup system of a spacecraft orientation based on temperature measurements at the design elements of various orientations** Aleksey Nenarokomov*, Irina V. Krainova, Evgeny Chebakov, Dmitry L. Reviznikov, Leonid A. Dombrovsky Moscow Aviation Institute, Russia
15:30-15:32	23128	**An inverse problem method for thermal cloak design with adaptive heat source** Jun Guo, Zhiguo Qu*, Xiuhai Zhang Xi'an Jiaotong University, China
15:32-15:34	22009	**An analytical extenstion of the reciprocity functional approach to estimate thermal contact conductances between different materials using transient measurements** Inoussa Tougri, Ricardo Padilha, Marcelo Colaco* Federal University of Rio De Janeiro/Coppe, Brazil
15:34-15:36	23681	**Inverse design of thermal meta-device** Shuling Zhou, Liliang Zhou, Yupu Ma, Ruikang Wu, Run Hu*, Xiaobing Luo Huazhong University of Science and Technology, China
15:36-15:38	21812	**An improved space marching method incorporating future temperatures in least square manner for linear and nonlinear IHCP** Ran Li, Zhongwei Huang* China University of Petroleum-Beijing, China
15:38-15:40	23828	**Coupled effects of convection and conduction on heat transfer in solid-liquid two-phase media densely laden with finite-sized particles** Jingchen Gu*, Shintaro Takeuchi, Takeo Kajishima Osaka University, Japan
15:40-15:42	23680	**Thermal transport across a transition metal oxide-insulator interface** Yijun Ge, Man Li, Zhen Zhang, Joon Sang Kang, Yongjie Hu, Shriram Ramanathan, Timothy Fisher* University of California, Los Angeles, USA
15:42-15:44	22121	**Thermal transport simulations at carbon nanotube interface junctions by molecular dynamics** Siyi Xiang, Wen Chen, Yuxin Fang, Yanan Yue* Wuhan University, China
15:44-15:46	23445	**Thermal conductivity improvement of lunar regolith simulant** Chao Wang, Xiaochen Lu, Rong Ma, Wei Yao* China Academy of Space Technology, China
15:46-15:48	23159	**Tuning the thermal conductance of polymer and sapphire interface** Kun Zheng, Jiaxin Lu, Yafang Zhuang, Fangyuan Sun, Jie Zhu*, Yongmei Ma*, Dawei Tang Dalian University of Technology, Institute of Chemistry,Chinese Academy of Science, China
15:48-15:50	22524	**Anisotropic thermal conductivity in two-dimensional materials and van der Waals heterostructures** Kyunghoon Kim, Jixiong He, Banu Ganeshan, Jun Liu* North Carolina State University, USA
15:50-15:52	23044	**Revealing the anisotropic thermal conductivity using time-resolved magneto-optical kerr effect** Jie Zhu, Dustin Lattery, Junyang Chen, Delin Zhang, Xiaokun Gu, Haechan Park, Dawei Tang, Mo Li, Xu Du, Ronggui Yang, Jian-Ping Wang, Xiaojia Wang* University of Minnesota, USA
15:52-15:54	22572	**Measurement of intrinsic thermal conductivity of DLC and thermal boundary resistance by wide frequency 3ω method** Jia Li, Zhaoliang Wang*, Mingman Sun China University of Petroleum(East China), China
15:54-15:56	23345	**Local meshless finite difference method for coupled radiative and conductive heat transfer** Jie Sun, YanHua Cheng, RuiKang Wu, Bin Xie, XingJian Yu, BoFeng Shang, Xiaobing Luo* Huazhong University of Science and Technology, China

15:56-15:58	23810	**Experimental study of the in-plane thermal conductivity enhancement of suspended glass thin films due to long range surface phonon-polaritons** Laurent Tranchant*, Satoki Hamamura, Jose Ordonez-Miranda, Sebastian Volz, Koji Miyazaki Kyushu Institute of Technology, Japan
15:58-16:00	23909	**Development of transport properties database of solids to predict and control thermal conductivity and thermal diffusivity of materials based on informatics** Tetsuya Baba*, Erina Fujita, Yibin Xu National Institute of Materials Science, Japan

12 August, Sunday 8:30-12:20 Room 309A

Session subject: Convection-1 (COV1)

Session chairman:

Time	ID	Title, Author, Affiliation
8:30-9:10 Keynote	KN05	**Aerodynamics and heat transfer in turbulent separated flows** Victor I. Terekhov Siberian Branch of the Russian Academy of Sciences, Russia
9:20-9:22	22953	**Direct numerical simulation of the long-term behaviour of weak fountains in a homogeneous fluid** Liqiang Dong*, Wenxian Lin, Steven Armfield, Michael Kirkpatrick, Nicholas Williamson, Dan Zhao James Cook University, Australia
9:22-9:24	23166	**Laboratory experiments for density-driven convection in porous media by using MRI** Ying Teng, Yu Liu*, Lanlan Jiang, Bohao Wu, Jia-nan Zheng, Dayong Wang, Yongchen Song Dalian University of Technology, China
9:24-9:26	24154	**Numerical optimisation of forced convection of wall thickness of heated plates cooled using alumina-water nanofluid** Timothy Aduralere, Olabode Olakoyejo*, Olayinka Adewumi, Adekunle Adelaja, Sirajudeen Obayopo, Josua Meyer University of Lagos, Nigeria
9:26-9:28	23495	**Experimental study on heat transport in turbulent Rayleigh-Bénard convection with viscoelastic fluids** Tongzhou Wei, Weihua Cai*, Fengchen Li Harbin Institute of Technology, China
9:28-9:30	23562	**Numerical study of heat transfer in viscoelastic flow through a straight duct with a square and rectangular cross-section** Fouad Hagani*, Ronnie Knikker, Mhamed Boutaous, Shihe Xin National Institute of Applied Sciences of Lyon, France
9:30-9:32	22864	**Effects of turbulent wake flow formed behind a square cylinder on mass diffusion process in a turbulent boundary layer** Tomoya Houra*, Takuya Watanabe, Fumiya Suzuki, Masato Tagawa Nagoya Institute of Technology, Japan
9:32-9:34	23017	**Analysis of natural convection of water via heatline approach in various enclosures involving unit area and identical heat input** Leo Lukose*, Tanmay Basak Indian Institute of Technology Madras, India
9:34-9:36	22567	**Experimental investigation of supercritical pressure CO_2 flow and heat transfer instability in vertical tube** Zhenchuan Wang, Ruina Xu, Peixue Jiang* Tsinghua Univeristy, China
9:36-9:38	23635	**Effects of fin-cuts on horizontal heat sinks in nature convection** Liang-Han Chien*, Yu-Hung Wang National Taipei University of Technology, Chinese Taipei
9:38-9:40	24253	**Numerical study on heat transfer of power law fluid in the entrance section of ducts with different cross sections** Hao Zhang*, Yanbei Kang , Xinxin Zhang, Tiantian Xu Shandong Jianzhu University, China
9:40-9:42	23022	**Relationship between pressure drop and heat transfer in smooth horizontal tubes** Marilize Everts, Josua Petrus Meyer* University of Pretoria, South Africa
9:42-9:44	23243	**Numerical study of thermal performance for large-scale wet cooling tower equipped with a fan driven by water dropping potential energy** Zhigang Dang, Chaoqun Ma, Yang Zhou, Ming Gao* Shandong University, China

9:44-9:46	24129	**Analysis of natural convection of water around a small magnetic sphere under induction heating** Yuki Arakawa, Keisuke Nishijima, Van Cuong Han, Katsuya Kondo, Naoto Kakuta* Tokyo Metropolitan University, Japan
9:46-9:48	22295	**Viscous dissipation influence on nanoscale liquid metal flows** Z. H. Wang*, L.Y. Zhang University of Chinese Academy of Sciences, China
9:48-9:50	21349	**A new approach to the formulation and solution of multi-temperature convection problems** Sepehr Foroushani*, David Naylor, John Wright University of Waterloo, Canada
9:50-9:52	24276	**Natural convection in a V-shaped cavity** Sidhartha Bhowmick, Feng Xu*, Suvash C. Saha Beijing Jiaotong University, China
9:52-9:54	21341	**Similarities between heat and mass transfer enhancement in convective flow, using variational optimization technique** Jean-Marc Avellaneda*, Shnegkun Jia, Pierre Neveu, Françoise Bataille, Xigang Yuan, Gilles Flamant French National Centre for Scientific Research, France
9:54-9:56	22834	**On the proper interpretation of nanofluid convective heat transfer** Matthias H. Buschmann*, Reza Azizian, Tobias Kempe, Enrique Julia, Raul Martínez-Cuenca, Bengt Sunden, Zan Wu, Ari Seppälä, Ala-Nissilä Tapio Institute of Air Handling and Refrigeration (ILK), Germany
9:56-9:58	22933	**Lattice Boltzmann simulation of double diffusive natural convection of an eccentric annulus filled with Carreau-Yasuda fluids** Gholamreza Kefayati *, Hui Tang The Hong Kong Polytechnic University, Hong Kong, China
9:58-10:00	24128	**Applicability of the second moment closure models for turbulent heat flux of the turbulent natural convection in a confined cavity** Seokwon Whang, Hyun Sun Park*, Moo Hwan Kim Pohang University of Science and Technology, Korea
10:00-10:02	21556	**Transient convection heat transfer for helium gas under exponentially decreasing flow condition** Qiusheng Liu*, Makoto Shibahara, Katsuya Fukuda Kobe University, Japan
10:02-10:04	23918	**Heat transfer of an ionic wind cooling system with wire-to-wire group electrodes** Lu Liang, Changhong Wang*, Qingming Liu Guangdong University of Technology, China
10:04-10:06	22661	**Effects of numerical disturbances on natural convection heat transfer from an upward-facing horizontal heated plate** Akihiko Mitsuishi*, Takashi Suzuki, Kenzo Kitamura Toyohashi University of Technology, Japan
10:06-10:08	22301	**Turbulent forced convection in porous media: A direct numerical simulation study** Stefan Gasow, Andrey V.Kuznetsov, Michael Schlüter, Yan Jin* University of Bremen, Germany
10:08-10:10	23530	**Thermal hydraulic characteristi of a triangular cross corrugated plate** Asal Sharif*, Michel De Paepe Ghent University, Belgium
10:10-10:12	21359	**Prediction and correction of sidewall conductance for natural convection in horizontal enclosures** Umesh Madanan*, Richard J. Goldstein University of Minnesota Twin Cities, USA
10:12-10:14	22139	**Modelling of convection heat transfer in ducts in 1D systems codes** Charl G. du Toit*, Herman J. van Antwerpen North-West University, South Africa
10:14-10:16	22605	**Experimental investigation on convective heat transfer of supercritical pressure hydrocarbon fuel in a rotating centrifugal channel** Zelong Lu, Yuxuan Guo, Yinhai Zhu, Peixue Jiang* Tsinghua University, China

10:16-10:18	23888	**Laminar free convection between two vertical parallel plates with different rib lengths and positions** Viktor Terekhov, Ali Ekaid, Khalil Yassin* Novosibirsk State Technical University, Russia
10:18-10:20	23407	**Acoustically and thermo-acoustically driven thermal transport in gases: New advances** Bakhtier Farouk* Drexel University, USA

12 August, Sunday 8:30-12:20 Room 309B

Session subject: Condensation-1 (COD1)

Session chairman:

Time	ID	Title, Author, Affiliation
8:30-9:10 Keynote	KN06	**Attempts to realize long-lasting drop-wise condensation of steam on metallic surfaces** Ji Hwan Jeong* Pusan National University, Korea
9:20-9:22	23476	**A computational model for condensation heat transfer analysis at biphilic interface** Yuhe Shang, Youmin Hou, Shuhuai Yao* Hong Kong University of Science and Technology, HongKong, China
9:22-9:24	23985	**Active control of freezing a sessile ferrofluid droplet on a subcooled solid surface** Hui Zhang, Yugang Zhao, Chun Yang* Nanyang Technological University, Singapore
9:24-9:26	21787	**Roughness-variation induced biphilic surfaces for condensation heat transfer enhancement** Xiao Yan*, Feng Chen*, Hang Li, Soumyadip Sett, Longnan Li, Zhiyong Huang, Hanliang Bo, Nenad Miljkovic* Tsinghua University, China
9:26-9:28	22052	**Single droplet growth model for dropwise condensation considering non-condensable gas** Shaofei Zheng*, Ferdinand Eimann, Christian Philipp, Ulrich Gross Technology University Bergakademie Freiberg, Germany
9:28-9:30	22637	**Condensation heat transfer on lubricant-infused surfaces** Soumyadip Sett*, Alex Wu, Bingcheng Zhou, Nenad Miljkovic* University of Illinois, USA
9:30-9:32	23687	**An experimental investigation of steam condensation on outer surface of horizontal tubes with diameters greater than capillary length** Jinjing Li, Xiaojun Quan*, Shenxukai Chen Shanghai Jiaotong University, China
9:32-9:34	24208	**Experiments of dropwise condensation on wettability controlled surfaces** Riccardo Parin, Stefano Bortolin, Alessandro Martucci, Davide Del Col* University of Padova, Italy
9:34-9:36	23742	**Enhanced dropwise condensation via droplet removal into opposing wicked evaporator** Kevin Murphy*, Jonathan Boreyko Virginia Polytechnic Institute and State University, USA
9:36-9:38	22628	**Experimental investigation on mass transfer characteristic of stable steam jet condensation in a rectangular mix chamber** Zong Xiao, Ji-Ping Liu*, Cheng-Shi Yang, Jun-Jie Yan Xi'an Jiaotong University, China
9:38-9:40	23802	**Surface design for dropwise condensation: A theoretical approach** Marieke Ahlers, Hans-Jörg Bart* Technology University Kaiserslautern, Germany
9:40-9:42	23966	**Modification of the diffusion layer model for condensation heat transfer under the presence of noncondensable gases** Junyeob Lee*, Jee-Min Yoo, Byong-Jo Yun, Jae-Jun Jeong Pusan National University, Korea
9:42-9:44	24152	**Numerical study on the detailed droplet size distributions in dropwise condensation with the consideration of droplet "overlapping" and multiple re-nucleation** Wei Xu*, Zhong Lan, Qiancheng Liu, Bingang Du, Xuehu Ma Dalian University of Technology, China
9:44-9:46	23480	**Two-dimensional simulation of steam-air jet condensed into subcooled water** Haibo Li, Maocheng Tian*, Xiaohang Qu, Min Wei Sandong University, China

9:46-9:48	24068	**Submicron particles formation by condenasation at coals burning numerical simulation** Leonid Petrov*, Naum Moiseevich Kortsenshteyn G.M. Krzhizhanovsky Power Engineerimg Institute, Russia
9:48-9:50	22328	**A method for estimation of bundle condensation heat transfer from 3D enhanced surfaces** Tailian Chen* Gonzaga University, USA
9:50-9:52	23787	**Condensation heat transfer outside a vertical tube with temperature variation in the presence of noncondensable gas** Kentaro Kanatani*, Hiroshige Kikura Tokyo Institute of Technology, Japan
9:52-9:54	23153	**Experimental investigation of condensation heat transfer characteristics inside three-dimensional enhanced tubes** Aifeng Zhang, Ruiheng Guo, Yan He, David Kukulka*, Wei Chen, Wei Li University at Buffalo, the State University of New York, USA
9:54-9:56	22566	**Condensation heat transfer enhancement of R245fa in tube with conical mesh inserts** Jian Xie, Qi Liu, Wei Shang, Xiang Li, Jinliang Xu* North China Electric Power University, China
9:56-9:58	23485	**Experimental investigation on the condensation of R134a in multiport flat tubes** Paul Knipper*, Dirk Bertsche, Thomas Wetzel Karlsruhe Institute of Technology, Germany
9:58-10:00	22824	**Condensation and tube-side heat transfer of corrugated tubes for steam condensers** Nae-Hyun Kim*, Min-Geon Go, Ho-Seung Han Incheon National University, Korea
10:00-10:02	22417	**A visualized study of condensation heat transfer over a horizontal circular tube with a microporous hydrophobic surface** Linwei Mou, Yuankai Huang, Wenye Li, Jiaqi Li, Liwu Fan* Zhejiang University, China
10:02-10:04	23382	**Experimental study on CO_2 flow condensation in a smooth horizontal tube at low temperatures** Peihua Li*, John J.J. Chen, Stuart Norris The University of Auckland, New Zealand
10:04-10:06	22228	**New experimental results on dynamics of droplet clusters levitating over the locally heated water surface** Alexander Fedorets, Leonid Dombrovsky*, Dmitry Shcherbakov Joint Institute for High Temperatures, Russia
10:06-10:08	23147	**Condensation heat transfer coefficient and pressure drop of R134a in a microfinned tube: Modeling and optimization** Mehdi Mehrabi*, Seyyed Mohammad Ali Noori Rahim Abadi, Josua Petrus Meyer University of Pretoria, South Africa
10:08-10:10	23163	**Heat transfer and flow characteristics of ultra-micro steam injector and its operating condition** Akihiro Futsuta*, Akiko Kaneko, Yutaka Abe, Yutaka Suzuki University of Tsukuba, Japan
10:10-10:12	23471	**The influence of non-condensable gas on the characteristics of steam injector using CFD simulation** Xian-Bing Chen, Mao-Cheng Tian*, Xiao-Hang Qu Shandong University, China

12 August, Sunday 8:30-12:20 Room 310

Session subject: Thermophysical Properties Measurement-1 (TPM1)

Session chairman:

Time	ID	Title, Author, Affiliation
8:30-9:10 Keynote	KN07	**Thermal properties measurements of phase-change alloys within the configuration of nanostructures and devices** Jean-Luc Battaglia University of Bordeaux, I2M Laboratory, France
9:20-9:22	23004	**Development of metal substrate MEMS sensors for local multipoint heat flux measurement in engines** Kazuhito Dejima*, Osamu Nakabeppu, Yuto Nakamura, Tomohiro Tsuchiya, Keisuke Nagasaka Meiji University, Japan
9:22-9:24	22997	**Temperature sensing in sooting flames using wavelength modulation spectroscopy of H_2O near 2.5 μm** Liuhao Ma, Chenyu Yao, Wei Ren* The Chinese University of HongKong, Hong Kong, China
9:24-9:26	21927	**Effect of plasma formation on laser-induced incandescence measurements of molten metal nanoparticles** Sina Talebi Moghaddam, Kyle Daun* University of Waterloo, Canada
9:26-9:28	21979	**Experimental study on thermal contact resistance of needle-punched C/C-SiC composites at different temperatures and pressures** Xing-Jie Ren, Yan-Jun Dai, Jian-Jun Gou, Wen-Quan Tao* Xi'an Jiaotong University, China
9:28-9:30	22415	**Transient determination on the water vapor diffusion coefficient of autoclave aerated concrete: Effects of sample and sensor sizes** Shuaiqi Tian, Ke Wang, Liwu Fan*, Zitao Yu, Xu Xu, Jian Ge Zhejiang University, China
9:30-9:32	23438	**Thermal effusivity of iron oxide scale formed on iron sheet measured by pulsed light heating thermoreflectance technique** Yuanru Yang*, Takashi Yagi, Mitsutoshi Ueda, Miyuki Hayashi, Masahiro Susa, Rie Endo Tokyo Institute of Technology, Japan
9:32-9:34	23131	**Measurement and analysis of effective thermal contact resistance at variable clamping pressures** Ping Zhang*, Yaoqi Xian, Peng Yuan, Siping Zhai Guilin University of Electronic Technology, China
9:34-9:36	22432	**Laser-assisted tip-substrate configuration for exploring ballistic thermal transport** Yixin Chen, Yanru Xu, Yu Chen, Zehua Xie, Yanan Yue* Wuhan University, China
9:36-9:38	23691	**Visualization of heat and mass transfer near the formation and dissociation interface of CO_2 hydrate with high–speed phase–shifting interferometer** Yuki Kanda*, Eita Shoji, Lin Chen, Junnosuke Okajima, Atsuki Komiya, Shigenao Maruyama Tohoku University, Japan
9:38-9:40	22617	**Comprehensive T-type method for the thermal and electrical transport properties measurement of micro/nano wires and ribbons** Weigang Ma, Shaoyi Shi, Xuguo Shi, Xing Zhang* Tsinghua University, China
9:40-9:42	23669	**Four-probe thermal transport measurements of mesoscale structures** Yuanyuan Zhou, Jaehyun Kim, Li Shi* The University of Texas at Austin, USA
9:42-9:44	21857	**Thermal transport in graphene based nanomaterials** Jie Chen* Tongji University, China

9:44-9:46	22438	**A calibration technique of thermochromic liquid crystal sheets using artificial neural networks- A novel alternative** Karthik Deo, C Balaji* Indian Institute of Technology Madras, India
9:46-9:48	23511	**Review of CO_2 multiphase flow in two-dimension porous micromodels** Changzhong Zhao*, Yi Zhang, Lei Yuan, Xuefeng Zhang, Fengnan Wang, Ying Wang Dalian University of Technology, China
9:48-9:50	22993	**Thermal conductivity measurements of Al_2O_3/water nanofluid using time-domain thermoreflectance method and hot wire method** Xinwei Wang, Meiling Zhou*, Weidong Xu, Zhongyin Zhang, Fangyuan Sun China University of Petroleum (East China), China
9:50-9:52	22100	**Experiment and analysisi of effective thermal conductivity of copper foam/paraffin composite phase change material** Xiao Yang, Xinghua Zheng, Shen Li, Haisheng Chen* Institute of Engineering Thermophysics, China
9:52-9:54	22135	**Thermal resistance of nanoparticle layer deposited solid-liquid interface** Yoshitaka Ueki*, Tomoya Oyabu, Masahiko Shibahara Osaka University, Japan
9:54-9:56	22026	**Development of a new PVT measurement method for H_2-CO_2-H_2O mixture at high temperatures and high pressures** Siyuan Cheng, Weigang Ma, Xing Zhang* Tsinghua University, China
9:56-9:58	22721	**Heat transfer enhancement with insertion of an interfacial layer in a copper/diamond system** Azina Clio, Jean-Fran ̧ois Silvain, YongFeng Lu, Jean-Luc Battaglia* University of Bordeaux, France
9:58-10:00	22127	**Fully adaptable interfacial sensors and reconstruction modeling for in situ heat transfer analysis of energy-saving materials** Lin Qiu*, Dawei Tang, Dongsheng Wen, Yanhui Feng*, Xinxin Zhang University of Science and Technology Beijing, China
10:00-10:02	22782	**Probing anisotropic and nonhomogeneous thermal conduction in CVD diamond by time-domain thermoreflectance** Zhe Cheng, Ramez Cheaito,Tingyu Bai, Luke Yates, Aditya Sood, Brian Foley, Thomas L. Bougher, Firooz Faili, Mehdi Asheghi, Kenneth E. Goodson, Baratunde A. Cola*, Mark Goorsky, Samuel Graham* Georgia Institute of Technology, USA
10:02-10:04	22189	**Effect of additive magnesium nitrate on the thermal property of sodium nitrate** Peng Xu, Xiaoyu Guo, Yaxuan Xiong*, Yuting Wu Beijing University of Civil Engineering and Architecture, China
10:04-10:06	22873	**Numerical and experimental investigation on a new type electrical heat storage unit based on flat micro heat pipe** Zeyu Wang, Yanhua Diao*, Yaohua Zhao, Chuanqi Chen, Li Liang, Tengyue Wang Beijing University of Technology, China
10:06-10:08	22633	**Heat flux measurements in the heat transfer study** Sergey Z. Sapozhnikov. Vladimir Yu. Mityakov, Andrey V. Mityakov, Andrey A. Gusakov, Michail A. Grekov, Artem V. Vincarevich*, Vladimir V. Seroshtanov, Alexander Yu. Babich, Elza R. Zaynullina Peter the Great St.Petersburg Polytechnic University, Russia
10:08-10:10	22421	**Temperature-dependent dynamic viscosity of two sugar alcohols and their binary eutectic mixture as heat storage materials** Xue-Feng Shao, Chen-Lin Chen, Yong-Jian Yang, Biao Feng, Zi-Qin Zhu, Li-Wu Fan* Zhejiang University, China
10:10-10:12	23089	**Advances in measuring thermophysical properties of liquids by the transient plane source technique** Pitt Goetze*, Martin Hefele, Thomas Storch, Rhena Wulf, Alexandra Kaas, Ulrich Gross Technology University Bergakademie Freiberg, Germany
10:12-10:14	22494	**Research on the cross-scale thermal characteristics prediction method of integrated thermal protection materials for hypersonic vehicle** Liu Lei*, Shi Youan, Zhang Litong, Yang Xiaofeng, Wei Dong, Xiao Guangming China Aerodynamics Research and Development Center, China

10:14-10:16	23986	**Simultaneous measurements of the thermal and velocity boundary layer over a heated flat plate using thermographic laser Doppler velocimetry** Anthony Ojo*, Benoit Fond, Christopher Abram, Berend Van-Wachem, Andrew Heyes, Frank Beyrau University of Strathclyde, UK
10:16-10:18	24144	**Experimental analysis on a novel active thermal wall (ATW) integrated thermoelectric heat pump unit** Wenpeng Quan, Jiani Mao*, Qi Fang, Jingwei Zhou China Jiliang University, China

12 August, Sunday 8:30-12:20 Room 311A

Session subject: Refrigeration and Cryogenics (RAC)

Session chairman:

Time	ID	Title, Author, Affiliation
8:30-9:10 Keynote	KN08	**Frost and ice fog formation and heat transfer in supersaturated air in industrial freezers** S. A. Sherif University of Florida, USA
9:20-9:22	21983	**Comparison and analysis on the performance of R404A direct contact condensation refrigeration cycle for low temperature** Ning Jinghong*, Dong Qiang, Liu Shengchun Tianjin University of Commerce, China
9:22-9:24	22346	**Frost meltwater behavioral characteristics during defrosting on surfaces with various wettability** Fuqiang Chu, Xiaomin Wu* Tsinghua University, China
9:24-9:26	22686	**Heat and mass transfer analysis and dynamic modeling of desiccant-coupled thermoelectric dehumidification** Bangjun Li, Lingji Hua, Ruzhu Wang* Shanghai Jiao Tong University, China
9:26-9:28	23853	**A novel multilayer desiccant dehumidifier for hybrid air-conditioning: Adsorption and desorption in macro scale** Jubair Ahmed Shamim*, Wei-Lun Hsu, Soumyadeep Paul, Kenji Kitaoka, Hirofumi Daiguji The University of Tokyo, Japan
9:28-9:30	22726	**Exergy analysis of a pump-driven loop heat pipe for free cooling in data centers** Wanpeng Zhu, Feng Zhou*, Cuicui li, Guoyuan Ma, Fuping Li, Xianghui Yan Beijing University of Technology, China
9:30-9:32	24186	**Numerical study on heat transfer of supercritical CO_2/DME mixture flowing in cooled helically coiled tubes** Xuefang Li*, Qingxin Ba, Teng Huang, Feng Luo, Lin Cheng Shandong University, China
9:32-9:34	23935	**Performance analysis of air conditioner with moisture seletive membrane** Hyunjeong Lim, Yeonjoo Cho, Chanjoong Kim, Sangmi Choi, Minsung Kim* Chung-Ang University, Korea
9:34-9:36	24194	**Modeling of the flow and heat transfer processes of supercritical CO_2 flowing in various serpentine tubes** Teng Huang, Qingxin Ba, Xuefang Li*, Lin Cheng Shandong University, China
9:36-9:38	23839	**Numerical investigation on the influence of operating temperature range of active magnetic regenerator** Hao-ning Shi, Ting Ma, Qiu-wang Wang* Xi'an Jiaotong University, China
9:38-9:40	24561	**Characteristics of the micro-porous hydrophobic hollow fiber membrane-based solution heat exchanger in compact absorption refrigeration system** Chaobin Dang*, Sung Joo Hong, Eiji Hihara The University of Tokyo, Japan
9:40-9:42	22552	**Numerical study on the oscillating flow and heat transfer characteristics in cryogenic regenerators** Qian Huang, Liang Chen*, Shuangtao Chen, Yu Hou Xi'an Jiaotong University, China
9:42-9:44	22716	**Optimization of a multi-layer regenerator for a 45K stirling cryocooler using REGEN 3.3** Xi Chen*, Yuan Miao, Yudong Xia University of Shanghai for Science and Technology, China
9:44-9:46	23226	**Lossless storage and transportation law of 250 m^3 horizontal LNG storage tank** Shouguang Yao*, Xiaogang Cai, Yindong Song Jiangsu University of Science and Technology, China

9:46-9:48	23955	**Investigation of the performance of steam generation heat pump system with internal heat exchanger** Dae Hoon Kang, Jae Ho Lee, Sun-Ik Na, Min Soo Kim* Seoul National University, Korea
9:48-9:50	23968	**A study on crystallization characteristics and visualization of onion cells at different pre-cooling rates** Kai Zhu*, Yanqi Xie, Yabo Wang, Jinshan Wang, Baomin Dai Tianjin University of Commerce, China
9:50-9:52	24350	**The study on the mechanism of the pulse tube cooler by molecular dynamics method** Yanjin Che, Yingxia Qi*, Yuhe Wang, Danping Ma, Shuai Pan University of Shanghai for Science and Technology, China
9:52-9:54	23047	**An experimental study on frost deposition on a vertical cryogenic surface under natural convection** Liyan Li*, Zhongliang Liu, Lingqian Zhao, Yanxia Li Beijing University of Technology, China
9:54-9:56	22308	**Heat transfer characteristics of multi-pulsed cryogen spray cooling for laser lipolysis** Hui Xin, Bin Chen*, Zhifu Zhou Xi'an Jiaotong University, China
9:56-9:58	23850	**Regeneration performance analysis of a multilayer desiccant dehumidification system** Soumyadeep Paul, Jubair Shamim, Kenji Kitaoka, Wei-Lun Hsu*, Hirofumi Daiguji The University of Tokyo, Japan
9:58-10:00	22141	**Enhanced freezing process with finned aluminum plates inside a home refrigerator** H. Zhao*, F. Zhang, D. Wang, J. Han Shandong University, China
10:00-10:02	23197	**SiGe-based planar thermoelectric thin film micro refrigerators** Baoling Huang*,Yu Su The Hong Kong University of Science and Technology, HongKong, China

12 August, Sunday 9:20-12:20 Room 311B

Session subject: Heat Transfer Enhancement-2 (HTE2)

Session chairman:

Time	ID	Title, Author, Affiliation
9:20-9:22	24349	**Convection heat transfer measurements of R-125 at supercritical pressures in a horizontal flow tested under organic rankine cycle conditions** Marija Lazova*, Alihan Kaya, Michel De Paepe Ghent University, Belgium
9:22-9:24	23911	**Numerical study of jet impingement heat transfer inside aero-engine inlet strut with film-heating anti-icing system** Yi Lu, Peng Ke*, Xing Tang, Yun Zhang Beihang University, China
9:24-9:26	23865	**Numerical investigation of natural convection through high porosity metal foam** Banjara Kotresha, Gnanasekaran N* National Institute of Technology Karnataka, India
9:26-9:28	24222	**Computational modeling of single-phase laminar flow heat transfer in complex plate-fin ducts** Kuan-Ting Lin*, Milind A. Jog, Raj M. Manglik University of Cincinnati, USA
9:28-9:30	22492	**Flow and heat transfer characteristics of supercritical hydrocarbon fuel in mini-channel with micro-ribs** Xin Li*, Silong Zhang, Jiang Qin Harbin Institute of Technology, China
9:30-9:32	22702	**A study on comparison of volume averaged and pore scale results of solid/liquid phase change assisted by porous media** Chunyang Wang, Moghtada Mobedi*, Fujio Kuwahara, Akira Nakayama Shizuoka University, Japan
9:32-9:34	23282	**Numerical study on the effect of ultrasonic wave on heat transfer enhancement of heat transfer tube** Zhang Aiping*, Zhang Ying, Zhang Yue, Xu Zhiming Northeast Electric Power University, China
9:34-9:36	23015	**Experimental study of the dissimilarity between heat transfer and drag at dimpled surfaces in the flow, disturbed by the cylinder rod** Nickolay Kiselev*, Andrey Zditovets, Yurii Vinogradov, Mark Strongin Lomonosov Moscow State University, Russia
9:36-9:38	23078	**Numerical simulation and structure optimization research on heat transfer characteristic of calciner cooling water jacket** Zitian Wu, Kunqing Song, Ming Gao* Shandong University, China
9:38-9:40	24037	**Proving surface phonon polaritons contribution to thermal conductivity in sin submicron films** Yunhui Wu*, Roman Anufriev, Sergei Gluchko, Ryoto Yanagisawa, Laurent Tranchant, Atsushi Noguchi, Koji Usami, Masahiro Nomura, Sebastian Volz The National Center for Scientific Research, France
9:40-9:42	22487	**Experimental study of effect of non-uniform electric field on the heat transfer enhancement in vertical rectangular microgrooves** Jinchen Tang, Yingying Yu, Xuegong Hu* Institute of Engineering Thermophysics, Chinese Academy of Sciences, China
9:42-9:44	23030	**Experimental investigation of impinging heat transfer of pulsed jet on concave plate** Lv yuanwei *, Jing-zhou Zhang, Xicheng Liu Nanjing University of Aeronautics and Astronautics, China
9:44-9:46	24433	**Heat transfer enhancement in a rectangular duct: Exploiting von-Karman effect** Gaurav Chapperwal*, Ankur Srivastava, Ram Dayal Manipal University Jaipur, India

9:46-9:48	21397	**A numerical investigation on internal heat transfer in jet impingement/effusion cooling in a narrow channel** Guanjiang Chen, Yuyang Liu, Yu Rao* Shanghai Jiao Tong University, China
9:48-9:50	23376	**Near-infrared measurement of water temperature around gel droplets containing micro-magnetic particles under induction heating** Van Cuong Han, Yuki Arakawa, Keisuke Nishijima, Katsuya Kondo, Naoto Kakuta* Tokyo Metropolitan University, Japan
9:50-9:52	21821	**Effect of various nanofluids on thermal performance of the thermosyphon** Agnieszka Wlazlak*, Bartosz Zajaczkowski, Lisa M. Wilde, Matthias H. Buschmann Wroclaw University of Science and Technology, Poland
9:52-9:54	22757	**Numerical study of flow and heat transfer for pulsating flow in a square duct with ribs** Wang Wei*, Du Bowen, Jia Yuemei Taiyuan University of Technology, China
9:54-9:56	22874	**Vortex heat transfer enhancement by oval-trench dimples in narrow channels** Sergey Isaev*, Alexander I. Leontiev, Jaroslav Chudnovsky, Igor Popov Saint-Petersburg State University of Civil Aviation, Russia
9:56-9:58	22483	**Physical properties change and heat transfer enhancement in compact-chamber spray cooling using high-alcohol surfactant** Li-Jia Jiang, Wen-Long Cheng*, Hua Chen, Yu-Hang Peng University of Science and Technology of China, China
9:58-10:00	23927	**Investigating into heat transfer enhancement of dilute Al_2O_3-MWCNT water based hybrid nanofluid in a square cavity** Solomon Giwa*, Mohsen Sharifpur, Josua Meyer University of Pretoria, South Africa
10:00-10:02	23268	**Convective heat transfer measurements in tubes with equally spaced baffles under steady and oscillatory flow** José Muñoz*, Juan Pedro Solano, Alberto García, José Pérez-García Technical University of Cartagena, Spain
10:02-10:04	23704	**Enhanced interfacial heat transfer of liquid metal alloy on copper plate by introducing Mo buffer layer** Huilong Yan,Yulong Ji*, Zongyu Wang, Bohan Tian, Hongbin Ma Dalian Maritime University, China
10:04-10:06	22643	**Design optimization of a novel air-cooled bifurcated-tube heat exchanger** Zhiwei Huang, Jiazhen Ling, Vikrant Aute, Yunho Hwang* University of Maryland, USA
10:06-10:08	21582	**Heat transfer enhancement due to interaction of the thermocapillary structures with waves on the surface of the heated liquid film** Evgeny Chinnov* Siberian Branch of Russian Academy of Sciences, Russia
10:08-10:10	22404	**Heat transfer enhancement of the eutectic salt PCM in a shell-and-tube latent heat storage** Chaxiu Guo*, Zhe Chen Zhengzhou university, China
10:10-10:12	23673	**Investigation on hot-side heat sink for a portable thermoelectric unit** Xing Lu, Dongliang Zhao, Ting Ma, Ronggui Yang, Qiuwang Wang* Xi'an Jiaotong University, China
10:12-10:14	22180	**Hexagonal boron nitride: A promising substrate for graphene with high heat dissipation** Zhongwei Zhang, Shiqian Hu, Jie Chen*,Baowen Li* Tongji University, China
10:14-10:16	22458	**How Van Der Waals confinement enhances thermal conductivity in crosswise paved polyethylene laminate** Xiaoxiang Yu*, Chengcheng Deng, Xiaoming Huang, Nuo Yang Huazhong University of Science and Technology, China

12 August, Sunday 14:00-18:00 Room 309A

Session subject: Boiling and Evaporation-2 (BAE2)

Session chairman:

Time	ID	Title, Author, Affiliation
14:00-14:40 Keynote	KN09	**Flow boiling in micro-passages: Developments in fundamental aspects and applications** Tassos G. Karayiannis Brunel University London, UK
15:00-15:02	23654	**Experimental study of sessile droplet behavior during evaporation: Comparison of methanol and water** Rafik Lankri, S Chikh*, Lounes Tadrist, Mebrouk Ait-Saada University of Science and Technology Houari Boumediene, France
15:02-15:04	21910	**Characteristics of pool boiling heat transfer on a heterogeneous wetting microchannel surfaces** Wei Zhang*, Yuanzhi Sun, Zhiyu Wu, Junjie Yu, Jinliang Xu North China Electric Power University, China
15:04-15:06	23390	**High heat flux and stable boiling heat transfer through nanoporous membranes** Qingyang Wang, Young Jin Kim, Renkun Chen* University of California, San Diego, USA
15:06-15:08	21918	**Distributions of temperature and heat flux around bubbles of flow boiling in narrow channel** Osamu Kawanami*, Yu Matsuda, Yasuhiro Egami, Itsuro Honda, Hiroki Yamaguchi, Tomohide Niimi University of Hyogo, Japan
15:08-15:10	22371	**Evaporative properties of water on the super-wetting carbon nanotube buckypapers** Guang Zhang*, Yantong Xu China Academy of Space Technology, China
15:10-15:12	24293	**Water immersion cooling of power electronics** Patrick Birbarah*, Thomas Foulkes, Andrew Stillwell, Robert Pilawa-Podgurski*, Nenad Miljkovic* University of Illinois at Urbana-Champaign, USA
15:12-15:14	22740	**Enhancement of cooling performance for a heat pipe-based battery thermal management system with flow boiling** Jialin Liang, Yunhua Gan* South China University of Technology, China
15:14-15:16	24435	**Interfacial thermal fluid phenomena in shear – driven thin liquid films** Oleg Kabov*, Dmitry Zaitsev, Egor Tkachenko Russian Academy of Sciences, Russia
15:16-15:18	23120	**Study on characteristics of formation and evaporation of microlayer using laser interferometry during nucleate pool boiling for water and ethanol** Kang Hu, Zhihao Chen*, Yoshio Utaka Tianjin University, China
15:18-15:20	22945	**A new correlation for predicting the heat transfer coefficients of R407C undergoing flow boiling within horizontal microfin tubes** Sunil Mehendale* Michigan Technological University, USA
15:20-15:22	24122	**Characterization of surface temperature of evaporating sessile water droplets** Dinghua Hu*, Xuemei Chen, Qiang Li Nanjing University of Science and Technology, China
15:22-15:24	24136	**Enhancement of dry-out heat flux in non-uniform variable permeability wicking structures** Kyle Wilke*, Karina Kalinina, Yangying Zhu, Daniel Preston, Dion Antao, Solomon Adera, Evelyn N. Wang Massachusetts Institute of Technology, USA
15:24-15:26	22117	**Comparative study on the pool boiling and falling film evaporation of refrigerant R134a outside the same tubes** Wentao Ji*, Chuangyao Zhao, Ertao Zhao, Zengyao Li, Wenquan Tao Xi'an Jiaotong University, China

15:26-15:28	23121	**Impact of surface characteristics on microlayer, bubble dimensions and departure in nucleate boiling** Wei Ding*, Debasish Sarker, Uwe Hampel Helmholtz Zentrum Dresden Rossendorf, Germany
15:28-15:30	22409	**Experimental investigation on pool boiling mechanism of gradient metal foams** Zhiguo Xu, Ruilian Huang, Changying Zhao* Shanghai Jiao Tong University, China
15:30-15:32	23769	**Comparison of bundle effect during flow boiling of distilled water over plain and plasma coated tube bundles** Abhilas Swain*, Rajiva L Mohanty, Mihir Kumar Das Kalinga Institute of Industrial Technology, Bhubaneswar, India
15:32-15:34	24100	**Subcooled pool boiling with an patterned heating surface** Noriyuki Unno*, Kazuhisa Yuki, Risako Kibushi, Shin-ichi Satake, Koichi Suzuki Tokyo University of Science, Yamaguchi, Japan
15:34-15:36	23319	**A semi-analytical model of bubble growth and detachment during nucleate boiling** Giovanni Giustini*, Keith Ardron, Simon Walker Imperial College London, UK
15:36-15:38	23474	**Influence of non-condensable component in vapor-gas mixture on the intensity of liquid droplets evaporation** Vladimir Levashov*, Alexei Kryukov, Irina Shishkova Moscow State University, Russia
15:38-15:40	22230	**Evaporation and boiling in thin gap** Dike Xu, Keita Ogawa, Mitsuhiro Matsumoto* Kyoto University, Japan
15:40-15:42	24146	**CFD simulations of pool boiling with various heater wall conditions** Yeong Shin Jeong, In Cheol Bang* Ulsan National Institute of Science and Technology, Korea
15:42-15:44	22096	**Vapor absorption phenomenon into sessile liquid desiccant droplets** Zhenying Wang*, Daniel Orejon, Khellil Sefiane, Yasuyuki Takata Kyushu University, Japan
15:44-15:46	23598	**Characteristics of a single vapor bubble under subcooled water boiling** Nikolay V. Vasiliev*, Yury A. Zeigarnik, Konstantin A. Khodakov Joint Institute for High Temperatures, Russian Academy of Sciences, Russia
15:46-15:48	24557	**Local heat flux reconstruction at the impact of a droplet onto a heated surface** William CHAZE, Romain Collignon, Guillaume Castanet*, Ophélie Caballina, Jean-François Pierson, Fabrice Lemoine,Denis Maillet University of Lorraine, LEMTA, France
15:48-15:50	23426	**Spreading and splashing of a droplet train impinging onto a heated nanotube surface** Wei Tong, Lu Qiu, Zhen Qin, Chenlong Wu, Fei Duan* Nanyang Technological University, Singapore
15:50-15:52	24263	**Surface tension effect on thin film evaporation** Bohan Tian, Benwei Fu, Hongbin Ma*, NanNan Zhao, Jiujun Xu University of Missouri, USA
15:52-15:54	23736	**Enhanced water evaporation with floating synthetic leaves** Weiwei Shi, Joshua Vieitez, Austin Berrier, Matthew Roseveare, Jonathan Boreyko* Virginia Tech, USA
15:54-15:56	24321	**Experimental study of subcooled flow boiling heat transfer on micro-pin-finned surfaces in short-term microgravity** Bin Liu, Yonghai Zhang*, Jinjia Wei*, Jianfu Zhao Xi'an Jiaotong University, China
15:56-15:58	22961	**Numerical investigation of vapor bubble growth in rectangular microchannel** Alexander Stroh*, Bettina Frohnapfel, Roland Dittmeyer Karlsruhe Institute of Technology, Germany
15:58-16:00	22743	**Numerical simulation of bubble dynamics and heat transfer during nucleate boiling of FC-72 by using the 3D-VOSET method** Zhizhu Cao, Dongliang Sun*, Jinjia Wei, Bo Yu* Beijing Institute of Petrochemical Technology, China
16:00-16:02	24287	**Bubble dynamics and heat transfer in a wettability patterned flow boiling microchannel** Hongzhao Wang, Huihe Qiu* The Hong Kong University of Science & Technology, Hongkong, China

12 August, Sunday 14:00-18:00 Room 309B

Session subject: Nano and Microscale Transport-2 (NMT2)

Session chairman:

Time	ID	Title, Author, Affiliation
14:00-14:40 Keynote	KN10	**Microscale thermal transport: Some biomedical perspectives and beyond** Suman Chakraborty Indian Institute of Technology Kharagpur, India
15:00-15:02	22315	**Molecular dynamics simulation of bubble nucleation above surface with different cavities** Yujie Chen, Bo Yu*, Yu Zou, Yi Wang , Dongxu Han China University of Petroleum-Beijing, China
15:02-15:04	23856	**Effect of wettability on solid-liquid interfacial resistance in microchannel flow** Kohei Fukushima*, Ryoya Mitoma, Takaharu Tsuruta, Gyoko Nagayama* Kyushu Institute of Technology, Japan
15:04-15:06	23890	**Numerical simulation of miscible displacement in microchannel in slip regime by lattice Boltzmann method** Shuchen Lv, Bo Dong*, Xun Zhou, Weizhong Li Dalian University of Technology, China
15:06-15:08	23469	**Numerical simulation of the magnetic particle deposition on the walls of a microchannel** Jordi Pallares* University of Rovira in Virgili, Spain
15:08-15:10	23901	**Viscosity of nanofluids with nanoparticles of varying aspect ratios** Songping Mo*, Ting Pan, Zhi Yang, Lisi Jia, Ying Chen Guangdong University of Technology, China
15:10-15:12	23920	**Near-infrared imaging of reaction and diffusion phenomena of aqueous solutions in microfluidic channels** Toshiya Ohata, Daisuke Kawashima, Naoto Kakuta* Tokyo Metropolitan University, Japan
15:12-15:14	21742	**Photothermal properties of blended plasmonic nanofluid for direct solar thermal absorption** Huiling Duan*, Rongjie Chen, Liangliang Tang, Yuan Zheng, Chang Xu Hohai University, China
15:14-15:16	23785	**Interlayer thermal boundary resistance of WSe_2 investigated by using time-domain thermoreflectance measurement** Young Gwan Choi, Chan June Zhung, Chang Jae Roh, Hwi In Ju, Tae Yun Kim, Sang-Woo Kim , Jong Seok Lee* Gwangju Institute of Science and Technology, Korea
15:16-15:18	24042	**Thermal resistance optimization of microchannel heat sinks using liquid gallium compared to water by adjusting channel width and fin width** Xiong Xiang, Aiwu Fan*, Wei Liu Huazhong University of Science and Technology, China
15:18-15:20	22118	**Effective thermal rectification in suspended monolayer graphene** Haidong Wang, Xing Zhang*, Hiroshi Takamatsu*, Koji Takahashi Kyushu University, Japan
15:20-15:22	23847	**T-type Raman method for non-contact characterization of thermal transport properties of individual nanowires** Jinhui Liu*, Yudong Hu, Xing Zhang Nanjing University of Science and Technology, China
15:22-15:24	22862	**Numerical study of low-melting point alloy based micro ice valve** Renchang Zhang, Zi Ye, Lin Gui* Institute of Physics and Chemistry Technology, Chinese Academy of Sciences, China
15:24-15:26	21498	**Molecular dynamics study on evaporation/condensation coefficients in multi-components system** Yusuke Yamamoto, Kyohei Fujioka, Takaharu Tsuruta, Gyoko Nagayama* Kyushu Institute of Technology, Japan

15:26-15:28	23096	**A new approach investigating dynamics and hysteresis of triple phase contact line** Qiao Liu, Abbasali Abouei Mehrizi, Hao Wang* Peking University, China
15:28-15:30	21973	**Gold-in-water nanofluids in microchannels: Surfactant effect** Eylul Simsek, Matthew Redmond, Aziz Koyuncuoglu, H. TUba Okutucu Ozyurt*, Haluk Kulah Middle East Technical Universtity, Turkey
15:30-15:32	21297	**Characterization of thermal and electrical contact resistance between metallic nanowires and electrodes** Jianli Wang*, Zhizheng Wu, Chenkun Mao, Yufeng Zhao, Yunfeng Gu, Juekuan Yang, Yunfei Chen Southeast University, China
15:32-15:34	21385	**A multiscale study of film thickness dependent femtosecond laser spallation and ablation** Pengfei Ji, Yuwen Zhang*, Yiming Rong, Yong Tang University of Missouri, USA
15:34-15:36	22420	**Solid-liquid phase change and thermal conductivity of erythritol as a heat storage material: A molecular dynamics study** Biao Feng , Ziqin Zhu , Yi Zeng , Liwu Fan* Zhejiang University, China
15:36-15:38	22699	**Enhanced interfacial thermal conductance between carbon nanotube and gold by molecule junctions: A molecular dynamics study** Yuan Dong*, Chenghao Diao, Yingru Song, Haojia Chi, Jian Lin University of Missouri at Columbia, USA
15:38-15:40	22672	**Interfacial thermal resistance at praphene-water interface** Ji-Hang Zou , Bing-Yang Cao* Tsinghua University, China
15:40-15:42	23869	**Surface enhancement absorption by phonon-plasmon polaritons in graphene/HBN/grating structure** Qinghui Pan, Ruming Pan, Guohua Zhang, Yong Shuai*, Heping Tan Harbin Institute of Technology, China
15:42-15:44	24177	**Determination of the convective heat transfer coefficient of nanofluids** Lande Liu*, Viacheslav Stetsyuk , Krzystof Kubiak, Yit Fatt Yap, Afshin Goharzadeh , John C. Chai University of Huddersfield, UK
15:44-15:46	22175	**Thermal transport in single polymer chains–the effects of curvature and kink** Xiaobo Li*, Xuhui Duan, Zehuan Li Huazhong University of Science and Technology, China
15:46-15:48	23928	**Designing nanostructures for heat transport via materials informatics** Shenghong Ju, Thaer M. Dieb, Koji Tsuda, Junichiro Shiomi* The University of Tokyo, Japan
15:48-15:50	21756	**Heater assisted Raman method to measure interfacial thermal conductance in van der Waals heterostructures** Qinyi Li*, Koji Takahashi, Xing Zhang Kyushu University, Japan
15:50-15:52	24121	**Thermal transport study on $ReAlO_3$ /$SrTiO_3$ heterostructures (Re= rare earth element: La/Nd/Sm/Gd)** Yu-Sheng Wang*, Jiu-Guo Chen*, Yuan-Feng Ding, Lei Li, Xue-Jun Yan, Chen Li, Di Wu, Ming-Hui Lu, Hong Lu Nanjing University, China
15:52-15:54	22565	**The effects of sidewalls on pressure drop and heat transfer in a pin-finned microchannel** Jingzhe Xie, Hongbin Yan, Gongnan Xie* Northwestern Polytechnical University, China
15:54-15:56	23132	**Pressure fluctuations of liquid-liquid slug flow in cross-junction square microchannels** Jin-Yuan Qian*, Min-Rui Chen, Zan Wu, Zhen Cao, Bengt Sunden Zhejiang University, China
15:56-15:58	23717	**Optical absorption of graphene-coated nanoparticles and graphene nanoshells** Zhaolong Wang, Zhuomin Zhang, Ping Cheng* Shanghai Jiao Tong University, China

15:58-16:00	23690	**Molecular dynamics study on evolution of sodium vapor on dust particles surface in cooling process** Yinsheng Yu*, Yubing Tao, Ya-Ling He Xi'an Jiaotong University, China
16:00-16:02	23069	**Coupled study of heat and mass transfer in microfludic devices monitored by thermal-multispectral imaging** S. Kirchner, A. Sommier, J. Leng, J.C. Batsale, J.L. Battaglia, C. Prades* I2M, UMR CNRS 5295, Esplanade of Arts and Crafts, France

12 August, Sunday 14:00-18:00 Room 310

Session subject: New Energy and Efficiency-1 (NEE1)

Session chairman:

Time	ID	Title, Author, Affiliation
14:00-14:40 Keynote	KN11	**Transport behaviors and performance enhancement in biofilm photobioreactors** Xun Zhu Chongqing University, China
15:00-15:02	24111	**Experimental study of PM emissions from wood pellet stoves with an innovative burning pot** Luigi Polonini*, Domenico Petrocelli, Simone Parmigiani, Adriano Lezzi University of Brescia, Italy
15:02-15:04	23237	**Temperature changes for methane hydrate dissociation in different class deposits by depressurization** Mingjun Yang, Yi Gao, Hang Zhou, Bingbing Chen, Yongchen Song* Dalian University of Technology, China
15:04-15:06	23922	**Study on dust particulate removal in exhaust gas using electrostatic spray** Yeonjoo Cho, Soyeon Kim, Hyunjeong Lim, Minsung Kim* Chung-Ang University, Korea
15:06-15:08	23129	**The physical mechanism research of thermalization influence on plasmonic solar cell** Jiajia Zhang, Zhiguo Qu*, Ruipeng Fu Xi'an Jiaotong University, China
15:08-15:10	22265	**Problems and possible solutions associated with global warming due to climate change** Peter Vadasz* Northern Arizona University, USA
15:10-15:12	24049	**Effect of rheological properties on convective heat transfer of microalgae slurries in laminar flow** Hao Chen, Qian Fu, Qiang Liao*, Hong Zhang, Yun Huang, Ao Xia, Xun Zhu Chongqing University, China
15:12-15:14	23351	**Thermal conductivity enhancement of material for calcium chloride/water thermochemical energy storage** Takuma Ohtaki*, Maho Mitsuo, Takayuki Terauchi, Hiroshi Iguchi, Keiko Fujioka, Yukitaka Kato Tokyo Institute of Technology, Japan
15:14-15:16	23225	**Characteristic of argon plasma jet on methane hydrate decomposition for hydrogen production** Shinfuku Nomura, Ismail Rahim*, Shinobu Mukasa, Hozutaka Tanaka, Jumpei Tokuda Universitas Negeri Makassar, Indonesia
15:16-15:18	24262	**Visualized experiment of bubble behaviors in a narrow rectangular channel under natural circulation condition** Meiyue Yan*, Tingting Ren, Changqi Yan, Kuan Yang, Shengzhi Yu, Yongyong Yang Harbin Engineering University, China
15:18-15:20	21371	**Validation of the module aerosol/LM on the basis of the experiments on the size evolution of sodium combustion aerosol with various RH** Polina Kolobaeva*, Andrey Sorokin the Russian Academy of Sciences, Russia
15:20-15:22	23553	**Research on the thermal performance of direct-contact heat transfer flow gas condensate residual heat recovery unit** Qunli Zhang*, Mingshuang Wang, Donghan Sun, Mingkai Cao Beijing University of Civil Engineering and Architecture, China
15:22-15:24	23862	**Heat transfer enhancement of a flat plate by a dual cooling jet airflow: Experimental and numerical approach** Claudia Cadile*, Gerald Debenest, Jean-Pierre Fradin ICAM,Toulouse University, France
15:24-15:26	22956	**Control-oriented modelling and evaluation for the temperature distribution in data-centers** Qiu Fang, Qi Wang, MengXuan Song*, Jun Wang Tongji University, China

15:26-15:28	23307	**Cavity absorber-emitters for high-temperature solar thermophotovoltaics** Colin C. Kelsall, David M. Bierman, Arny Leroy, Bikram Bhatia, Evelyn N. Wang* Massachusetts Institute of Technology, USA
15:28-15:30	21992	**Cost optimization for data center cooling system with thermal resistance-based method** Ronghuan Fu, Xing Zhang* Tsinghua University, China
15:30-15:32	21877	**Monte Carlo simulation of solar radiation through a water-filled prismatic louver** Yaomin Cai, Zhixiong Guo*, Nicholas Madamopoulos The State University of New Jersey, USA
15:32-15:34	22095	**Thermodynamic analysis of a flat plate solar air collector based on micro-heat pipe arrays (MHPA-FPSAC)** Tingting Zhu*, Yaohua Zhao, Yanhua Diao Tianjin University of Commerce, China
15:34-15:36	21989	**Effect of distributed photovoltaic power station on building cooling load in summer** Sheng Liu, Yuying Yan*, Zhen Zhang, Jianbo Bai University of Nottingham, UK
15:36-15:38	23778	**Effects for air gap of glass cover in a tiltable multi-effect solar distiller** Byung-Ju Lim*, Ga-Ram Lee, Chang-Dae Park Korea Institute of Machinery and Materials, Korea
15:38-15:40	23794	**A model of a solar cavity receiver with coiled tubes** Kentaro Kanatani*, Takashi Yamamoto, Yutaka Tamaura, Hiroshige Kikura Tokyo Institute of Technology, Japan
15:40-15:42	21459	**Thermal feature of a modified solar phase change material storage wall system** Chenglong Luo*, Dan Sun, Lijie Xu, Jie Ji, Mengyin Liao Jiangxi Academy of Sciences, China
15:42-15:44	22948	**Thermal modelling of a solar thermochemical reactor for metal oxide reduction** Bo Wang, Vincent M. Wheeler, Johannes Pottas, Peter B. Kreider, Wojciech Lipinski* The Australian National University, Australia
15:44-15:46	21871	**A quantitative study on loss processes in multiple energy gap solar cells** Ao Wang, Yimin Xuan* Nanjing University of Science and Technology, China
15:46-15:48	22793	**Predicting dimensions of a solar pond using inverse method** Abhishek Kumar, Ranjan Das* The Indian Institute of Technology Ropar, India
15:48-15:50	22103	**The performance enhancement of solar photovoltaic combined with thermoelectric generator under forced cooling conditions** Yang Li, Huaqing Xie*, Zihua Wu, Jing Li Shanghai Polytechnic University, China
15:50-15:52	23180	**Neutronic and thermal-hydraulic coupled simulation of the supercritical water cooled solid blanket for the CFETR** Jie Cheng, Wenxiao Chu, Guanghui Su, Yitung Chen* Univeristy of Nevada Las Vegas, USA
15:52-15:54	22207	**Investigation of the heat transfer characteristics of the parallel plate volumetric absorption solar collector using micro-encapsulated phase change slurry** Fei Ma, Peng Zhang* Shanghai Jiao Tong University, China
15:54-15:56	21542	**A numerical comparison of solar evaporators: Thermal, photovoltaic and hybrid PV/T absorber plates** Pierre-Luc Paradis*, Daniel R.Rousse, Louis Lamarache, Hakim Nesreddine University of Quebec, Canada
15:56-15:58	23339	**Prediction and treatment of heatstroke in indoor environment by human thermoregulation modeling** Jinping Zhao, Binkan Zhou, Yufeng Miao, Linjing Deng, Qingmei Wen, Qihong Deng* Central South University, China
15:58-16:00	22448	**Effects of solid optical parameters on heat and light transfer process of multi-layer glazed roof filled with PCM** Changyu Liu, Ji Bian, Guojun Zhang, Dong Li* Northeast Petroleum University, China

12 August, Sunday 14:00-18:00 Room 311A

Session subject: Cooling and Thermal Management-1 (CTM1)

Session chairman:

Time	ID	Title, Author, Affiliation
14:00-14:40 Keynote	KN12	**High-power-density heat-managing redox flow batteries: Fusing cooling and power delivery in 3D-integrated electronics** Dimos Poulikakos Swiss Federal Institute of Technology Zurich, Switzerland
15:00-15:02	22144	**Nozzle array scaling analysis of the thermal performance of liquid jet impingement coolers for high performance electronic applications** Tiwei Wei*, Herman Oprins, Vladimir Cherman, Ingrid De Wolf, Eric Beyne, Martine Baelmans University of Leuven, Belgium
15:02-15:04	22493	**Analysis of the two-layered mini/micro-channel heat sink based on liquid metal and water** Yujie Ding, Sicong Tan, Jing Liu* University of Chinese Academy of Sciences, China
15:04-15:06	22760	**Thermal performance analysis of microchannel heat sink with non-uniform metal foam arrangement** Yongtong Li, Liang Gong*, Minghai Xu China University of Petroleum (East China), China
15:06-15:08	23094	**A numerical analysis of the applicability of self-similar heat sink for cooling electrical equipments with different sizes** Wei Tang, Licheng Sun*, Jingjing Bao*, Guo Xie, Zhengyu Mo, Jiguo Tang Sichuan University, China
15:08-15:10	22853	**Improving fast refill efficiency of compressed natural gas by pre-chilling** Aiqing Lan, Guoyu Zhang, Ri Li*, Joshua Brinkerhoff University of British Columbia, Canada
15:10-15:12	23458	**Parametric study and optimization of flow and heat transfer characteristics in microgap with longitudinal vortex generators array** Long Jia, jingguo Qu, Jianfei Zhang* Xi'an Jiaotong University, China
15:12-15:14	24367	**Multi-physics analysis of the thermal behavior of inductor by using open-source software** Mengyi Zheng*, Hong Duc Doan, Kazuyoshi Fushinobu Tokyo Institute of Technology, Japan
15:14-15:16	22829	**Numerical study of flow and heat transfer characterisitcs in swirl cooling tube with dimples** Yuyang Liu, Tian Xia, Yu Rao* Shanghai Jiao Tong University, China
15:16-15:18	23727	**Numerical study of leading edge impingement heat transfer and film cooling with radial angled holes** Mingjie Zhang*, Nian Wang, Je-Chin Han Texas A&M University, USA
15:18-15:20	22978	**Experimental and numerical study on the cooling characteristics of double-wall turbine blade components with conjugate heat transfer** Chen Yi *, Zu Yingqing Fudan University, China
15:20-15:22	23397	**Measurement of heat transfer on turbine blade endwall with upstream wakes at different relative positions** Sehjin Park, Ho-Seong Sohn, Hyung Hee Cho*, Yang Seok Han, Osamu Ueda Yonsei University, Korea
15:22-15:24	23058	**Pressure loss and thermal optimization for laidback fan-shaped film cooling hole on the suction surface of a turbine vane** Ying Huang* Nanjing University of Aeronautics and Astronautics, China

15:24-15:26	23977	**Experimental investigation on high heat flux spray cooling using water on coated and structured surfaces** Ranjith Kandasamy, Jinlong Xie, Teck Neng Wong*, Fei Duan, Edwin Hang Tong Teo, Tony Siu Hon Tsang Nanyang Technological University, Singapore
15:26-15:28	22966	**Cell spacing optimization of battery pack in parallel air-cooled battery thermal management system with U-type flow** Kai Chen, Shuangfeng Wang* South China University of Technology, China
15:28-15:30	22999	**Experimental investigation of thermal performance of six cavity cylindrical heat sink with multiple PCMs** Girish Kumar Marri, Srikanth Rangarajan, Chakravarthy Balaji* Indian Institute of Technology Madras, India
15:30-15:32	23577	**Numerical investigation on the performance of transpiration cooling combined with film cooling** Ding Rui, He Fei*, Wang Jianhua, Tang Longsheng, Dong Guangqi University of Science and Technology of China, China
15:32-15:34	23957	**Basic research on heat transfer of impinging air jet by intermittent flow control for enhancing thermal management** Taiki Furusawa*, Takashi Fukue, Hidemi Shirakawa, Koichi Hirose Iwate University, Japan
15:34-15:36	22704	**Heat transfer enhancement of solid-liquid phase change using cubic boundary** Yutao Huo, Xuan Zhang, Zhonghao Rao* China University of Mining and Technology, China
15:36-15:38	23466	**Thermal performance of hollow hybrid fin heat sinks with impinging flow** Nico Effendi, Byoung Guk Kim, Kyoung Joon Kim* Pukyong National University, Korea
15:38-15:40	23092	**Experiment and numerical study on the thermal characteristics of aluminium hollow bricks filled with PCMs** Jiajie Zhang*, Zhiguo Qu Taiyuan University of Technology, China
15:40-15:42	23833	**Compact liquid cooling system for high power IGBT modules in EV/HEV applications** Seokkan Ki*, Jooyoung Lee, Seunggeol Ryu, Youngsuk Nam Kyunghee University, Korea
15:42-15:44	22690	**Simulation and experimental study of a hybrid-power gas engine heat pump system** Tao Chen, Liang Cai*, Xiaofan Ma Southeast University, China
15:44-15:46	23451	**Numerical simulation of heat transfer enhancement for copper foam heat sink in electronic devices using water based BN nanofluids** Gan Zhang, Hui Cao, Maria Elena Navarro, J.W. Pomeroy, Chao Yuan, Martin Kuball, Yulong Ding* Birmingham Centre for Energy Storage, UK
15:46-15:48	22335	**The energy efficiency analysis of data center cooling based on separate heat pipe** Tao Wang*, Yuhua Li, Huan Liu, Lei Zhang, Yuyan Jiang, Dawei Tang Institute of Engineering Thermophysics, Chinese Academy of Sciences, China
15:48-15:50	22763	**Hybrid wick vapor chamber thermal performance evaluation for high heat flux application by air cooling** Feng Zhou*, Tianzhu Fan, Yanghe Liu, Ercan Dede Toyota Research Institute North of America Ann Arbor, USA
15:50-15:52	24060	**Investigation of thermal design of heat conduction panel by topology optimization** Shintaro Kajiwara, Takashi Fukue*, Takayuki Yamada, Koichi Hirose, Shinji Nishiwaki, Koichi Ohtomi, Tomoyuki Hatakeyama, Masaru Ishizuka Iwate Universtiy, Japan
15:52-15:54	23103	**Numerical modeling and optimization of an electromagnetic pump towards compact driving metal coolant** Xu-Dong Zhang, Yi-Xin Zhou, Xiao-Hu Yang, Si-Cong Tan, Jing Liu* Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, China

15:54-15:56	23939	**The enthalpy-porosity method with a rectangular specific heat curve** Wim Beyne*, Bernd Ameel, Alvaro De Gracia Cuesta, Gabriel Zsembinszki, Luisa F. Cabeza, Michel De Paepe Ghent University, Belgium
15:56-15:58	23248	**Design procedure for energy efficient latent heat storage tanks with heat transfer fluid channels and finite inlet power** Bart Peremans*, Maarten Blommaert, Jan Diriken, Martine Baelmans Katholieke Universiteit Leuven, The Netherlands
15:58-16:00	22279	**Numerical simulation of pulsating heat pipe with surfactant solutions** Durga Bastakoti, Hongna Zhang*, Weihua Cai, Fengchen Li Harbin Institute of Technology, China
16:00-16:02	23107	**Effect of heat transfer enhancement with jet cooling between outer and slotted inner cylinders in an electrical rotating machine** Tomohisa Yuasa*, Yuto Honma, Mitsuyoshi Ejiri, Akiko Kaneko, Yutaka Abe University of Tsukuba, Japan

12 August, Sunday 14:00-18:00 Room 311B

Session subject: Convection-2 (COV2)

Session chairman:

Time	ID	Title, Author, Affiliation
14:00-14:40 Keynote	KN13	**Boiling of dilute emulsions, mechanisms and applications** Francis A. Kulacki University of Minnesota, USA
15:00-15:02	22919	**Influence of channel inclination on heat transfer of liquid metal flow** I.A. Belyaev*, D.Yu. Chernysh, N.A. Luchinkin, N.G. Razuvanov Joint Institute for High Temperatures of the RAS, Russia
15:02-15:04	22717	**A high-order numerical simulation of 2D Rayleigh-Bénard convection with compressible Navier-Stokes equations** Yaojie Yu *, Ya Liu, Feng Liu Northwestern Polytechnical University, China
15:04-15:06	23424	**The change of bifurcating natural convection in a horizontal annulus by self-induced circular magnetic field** Jinho Oh*, Il Seouk Park Kyungpook National University, Korea
15:06-15:08	23020	**Forced convection thermal entrance length for simultaneously hydrodynamically and thermally developing laminar flow at a constant heat flux** Marilize Everts, Josua Petrus Meyer* University of Pretoria, South Africa
15:08-15:10	23203	**Numerical analysis of curvature effect and buoyancy effect on heat transfer characteristics of supercritical water in cooled helically coiled tubes.** Xingang Qi, Liejin Guo*, Hui Jin, Jiuyun Zhao, Xujun Li Xi'an Jiaotong University, China
15:10-15:12	23383	**Impact of external temperature distribution on the turbulent and thermal fields in a vertical uniformly heated channel** Martin Thebault*, Stéphanie Giroux-Julien, Victoria Timchenko, Christophe Ménézo, John A. Reizes The University of New South Wale, Australia
15:12-15:14	22860	**Influence of substrate temperature on Marangoni convection instability in an evaporating sessile droplet at constant contact line mode** Tianshi Wang*, Wanyuan Shi Chongqing University, China
15:14-15:16	21244	**Experimental research of supersonic aerodynamic cooling effect and its application for higher energy separation efficiency** Alexander Leontiev, Sergey Popovich*, Urii Vinogradov, Mark Strongin Lomonosov Moscow State University, Russia
15:16-15:18	24104	**Local convective heat transfer in a 3×3 rod bundle** Chunping Tian*, ZHhiqiang Zhu, Yiwen Liu, Kuan ang, Jianjun Wang, Changqi Yan* Harbin Engineering University, China
15:18-15:20	22634	**Natural convective heat transfer from two-sided heated horizontal isothermal plates having a complex shape and a finite thickness** Rafiq Manna, Patrick H. Oosthuizen* Queen's University, Canada
15:20-15:22	23354	**Visualization study on flow characteristics of staggered cylinder arrays in transitional flow state** Wenjun Zhang, Jie Zhou, Jiahui Xu, Guannan Xi* Nantong University, China
15:22-15:24	23950	**Rayleigh-Bénard convection in thermos dependent shear-thinning fluids** T. Vare *, C. Nouar* National Centre for Scientific Research, France
15:24-15:26	23575	**Numerical investigation on the flow around circular multiple cylinders of liquid metal** Sen Chen, Xiao-Hu Yang, Jing Liu * Technical Institute of Physics and Chemistry, China

15:26-15:28	24226	**Heat transfer of liquid metal flow in a tube heated on the half of the circumference – concept of a test loop** Benjamin Dietrich*, Tim Laube, Luca Marocco, Thomas Wetzel Institute of Thermal Process Engineering, Germany
15:28-15:30	21477	**Buoyancy driven flow within uniformly heated eccentric annulus** F. M. Mahfouz, R. M. Rizk-allah, H. Imtiaz*, Bin Liu Tsinghua University, China
15:30-15:32	24328	**Numerical study for a thermal convection in a rotating spherical shell with growth of magnetic field** Toshio Tagawa*, Yoshihiko Otsuka, Hiroki Shibata Tokyo Metropolitan University, Japan
15:32-15:34	23097	**The influence of different air supply modes on convection heat transfer in the human body** Zeqin Liu*, Yi Zhang, Hangyu Zhao Tianjin University of Commerce, China
15:34-15:36	22733	**Effect of injection velocity ratio on thermal -fluid diffusion in free jet from annular channel** Shuichi Torii* Kumamoto University, Japan
15:36-15:38	22511	**Pressure drop and heat transfer measurements of the once through steam generator helical tube bundles of high temperature gas-cooled reactors** Xiaowei Li*, Jiaqing Zhao, Xinxin Wu, Xiaowei Luo Tsinghua University, China
15:38-15:40	22478	**Numerical study of natural convection in a thermosyphon containing liquid gallium under the magnetic field** Hamid Teimouri, Amin Behzadmehr* University of Sistan and Baluchestan, Iran
15:40-15:42	23743	**Experimental study of density-driven-convection mixing between miscible fluids in Hele-Shaw geometry** Yinting Fan*, Sijia Wang, Ying Teng, Yu Liu, Lanlan Jiang*, Yongchen Song Dalian University of Technology, China
15:42-15:44	23461	**Experimental investigation of convective heat transfer in the transitional flow regime of an inclined smooth tube** Abubakar Idris Bashir, Josua Petrus Meyer* University of Pretoria, South Africa
15:44-15:46	22836	**Numerical and experimental study of supersonic film cooling with cracking hydrocarbon fuel as coolant** Jingying Zuo, Silong Zhang*, Jiang Qin, Bao Wen, Naigang Cui Harbin Institute of Technology, China
15:46-15:48	22270	**Effects of multiple trapezoidal vortex generators on flow and surface cooling** Jeongmoon Park, Jorge Alvarado*, Leonardo Chamorro, Charles Marsh Texas A&M University, USA
15:48-15:50	23938	**Natural convection from an array of isothermal horizontal cylinders: A combined experimental and numerical investigation** Seamus O'Shaughnessy, Stephen Yates, Arun Mooney, Darina Murray* University of Dublin, Trinity College, Ireland
15:50-15:52	23653	**Characterization and scaling of enhanced heat transfer in heat sink channels using integrated aeroelastically fluttering reed** Sourabh Jha, Ari Glezer* Georgia Institute of Technology, USA
15:52-15:54	23235	**Experimental examination of transitional flow of dilute alumina–water nanofluid** Sohaib Osman*, Mohsen Sharifpur, Josua Meyer University of Pretoria, South Africa
15:54-15:56	23642	**Numerical simulation of natural convection melting in a cavity with a heat-generating source** Nadezhda Bondareva, Mikhail Sheremet* Tomsk State University, Russia
15:56-15:58	24055	**Numerical simulation of fluid flow and heat transfer in a pillow plate channel** Sourabh Kumar, B. Premachandran*, P.M.V. Subbarao Indian Institute of Technology Delhi, India

13 August, Monday 8:30-12:20 Room 309A

Session subject: Electrochemical Systems (ECL)

Session chairman:

Time	ID	Title, Author, Affiliation
8:30-9:10 Keynote	KN14	**Advanced X-ray visualization of fuel cell and lithium ion battery** Shuichiro Hirai Tokyo Institute of Technology, Japan
9:20-9:22	22731	**Electron and ion transport within the heat generation of graphene-based supercapacitors** Jing Kong, Shenghao Wu, Huachao Yang, Zheng Bo* Zhejiang University, China
9:22-9:24	23640	**Experimental study on direct reforming reaction of ammonia-methane mixed fuel on Ni-YSZ anode of SOFCs** Katsuyuki Teramoto*, Hiroshi Iwai, Tomohisa Kawaguchi, Masashi Kishimoto, Motohiro Saito, Hideo Yoshida Kyoto University, Japan
9:24-9:26	23786	**Performance modeling and optimization of a polymer electrolyte membrane fuel cell under dead-ended anode conditions** Yu-Tong Mu*, Zhao-Lin Gu, Wen-Quan Tao Xi'an Jiaotong University, China
9:26-9:28	22385	**Dynamic analysis of self-startup behavior of PEM fuel cell from subfreezing temperature with consideration of super-cooled water** Sen Huo, Jae Wan Park, Kui Jiao* Tianjin University, China
9:28-9:30	23823	**In-situ observation of gas products around the anode and improving the performance of direct carbon fuel cells using solid carbon fuels** Hirotatsu Watanabe*, Minori Nakanouchi, Takashi Shimada, Katsunori Hanamura Tokyo Institute of Technology, Japan
9:30-9:32	23190	**Effects of gradient porosity and gradient particle on performances of planar SOFCs** Pei Fu, Jian Yang*, Qiuwang Wang Xi'an Jiaotong University, China
9:32-9:34	23910	**Numerical investigation of clamping system effects on the cold start polymer electrolyte fuel cell performance** Ahmed Mohmed Dafalla, Lin Wei, Zihao Liao, Fangming Jiang* Guangzhou Institute of Energy Conversion, Chinese Academy of Sciences, China
9:34-9:36	24274	**A numerical study on optimization of fibrous carbon electrodes for vanadium redox flow batteries with interdigitated flow fields** Shohji Tsushima*, Takahiro Suzuki Osaka University, Japan
9:36-9:38	24118	**Temperature self-control of solid oxide fuel cell running on partially pre-reformed methane** Wu Yiyang, Shi Yixiang*, Cai Ningsheng Tsinghua University, China
9:38-9:40	22283	**A GPU-based lattice Boltzmann model for realistic droplet flow in gas channel of fuel cells** Hao Deng, Yuze Hou, Kui Jiao* Tianjin University, China
9:40-9:42	23510	**Trial of applying graphene nano platelet to catalyst layers of a PEMFC** Abhay Kumar*, Takumi Iiri, K. Satake, Yutaka Tabe, Takemi Chikahisa Hokkaido University, Japan

9:42-9:44	24273	**Development of thermal management system of battery module using conjugated PCM and liquid cooling techniques** Yang Sui, Hengyun Zhang*, Qingyu Wu, Shen Xu Shanghai University of Engineering Science, China
9:44-9:46	24145	**Improving electrolyte transport inside the Li-ion porous electrodes using microchannels** Shahabeddin Mohammadian, Yuwen Zhang* University of Missouri, USA
9:46-9:48	23229	**Multi-physics couped-field analysis for zinc-nickel single flow battery cell stack** Shouguang Yao*, Yunhui Zhao, Zhenhao Zhang, Min Xiao, Jie Cheng, Yaju Shen Jiangsu University of Science and Technology, China
9:48-9:50	24376	**Electrospun carbon nanofibers as advanced electrode for vanadium flow battery** Zhihui Zhang, Bofeng Bai* Xi'an Jiaotong University, China
9:50-9:52	22462	**In-situ thermal integration between H_2O/CO_2 co-electrolysis and thermochemistry by heat-flow design for efficient direct power-to-methane** Yu Luo, Yixiang Shi*, Wenying Li, Ningsheng Cai Tsinghua University, China

13 August, Monday 8:30-12:20 Room 309B

Session subject: Multiphase Flow-1 (MPF1)

Session chairman:

Time	ID	Title, Author, Affiliation
8:30-9:10 Keynote	KN15	**How to teach heat transfer more systematically: Involving entropy and some newly defined quantities** Heinz Herwig Hamburg University of Technology, Germany
9:20-9:22	22303	**Heat transfer of drop train impacting flowing film** Xuan Gao, Ri Li* University of British Columbia, Canada
9:22-9:24	22001	**The numerical simulation of hydraulic cavitation in venturi tube** Z. Wang, B. Bian*, C. Liu, Z. Miao, Z. Zhao, C. Liu Qingdao University of Science & Technology, China
9:24-9:26	23967	**Frost density profile measured by using X-ray radiography** Yoshiki Nagasawa*, Ryosuke Matsumoto, Takuma Uechi, Daisuke Ito, Yasushi Saito Kansai University, Japan
9:26-9:28	23952	**Computational study on break-up mechanisms of isolated vapour slugs during saturated flow boiling conditions** Manolia Andredaki, Anastasios Georgoulas*, Daniele Mangini, Lucio Araneo, Luca Pietrasanta, Nicolas Miché, Marco Marengo University of Brighton, UK
9:28-9:30	23583	**Investigation of suspended drop evaporation of different composition of liquids** Elena Bochkareva*, Vladimir Terekhov, Nikolay Miskiv Siberian Branch of the Russian Academy of Sciences, Russia
9:30-9:32	21851	**Numerical simulation of ice crystal melting along straight line** Jiang Feifei, Dong Wei*, Zheng Mei Shanghai Jiao Tong University, China
9:32-9:34	22331	**Lattice Boltzmann mixture model for gas-liquid flow with phase change in porous media** Shurong Lei, Yong Shi*, Yuying Yan University of Nottinghamy, UK
9:34-9:36	21899	**The thermo-solutal capillary-buoyancy convection at positive capillary ratio in a shallow annular pool** Li-sheng Deng, Jie-chao Chen*, Hong-Yu Huang, You-Rong Li, Jia-Jia Yu Dongguan University of Technology, China
9:36-9:38	21949	**CFD simulation of steam condensation inside smooth inclined tube at different saturation temperatures** Seyyed Mohammad Ali Noori Rahim Abadi*, Josua Petrus Meyer University of Pretoria, South Africa
9:38-9:40	23525	**Heat flow and temperature changes in CO_2 hydrate dissociation/reformation process using DSC technique** Yongchen Song, Hang Zhou, Jia-nan Zheng, Mingjun Yang*, Yuanping Li Dalian University of Technology, China
9:40-9:42	22146	**Two-phase flow and heat transport in 3-D printed pulsating heat pipes with different channel sizes** Takahiro Arai1, Masahiro Kawaji* City College of New York
9:42-9:44	25099	**Thermal analysis and optimisation of a latent heat storage system with parallel pipes as heat exchangers** Yuan Tian*, D. Zhou Aston University, UK
9:44-9:46	23184	**Influence of droplet size and surface-tension temperature coefficient on the coalescence of two droplets with different temperatures** Zhibin Wang, Rong Chen*, Xun Zhu, Qiang Liao, Xuefeng He, Long Jiao Chongqing University, China

9:46-9:48	23219	**Microscopic mechanisms of the disturbance frequency effect on heat transfer enhancement in wavy condensate films** Luopeng Yang*, Hongyou Li, Yan Yang, Shengqiang Shen Dalian University of Technology, China
9:48-9:50	23732	**Leidenfrost ice levitating on a composite liquid/vapor film** Daniel Cusumano, Saurabh Nath, Jonathan Boreyko* Virginia Polytechnic Institute and State University, USA
9:50-9:52	23531	**Impact of a supercooled water droplet on different temperature and contact angle cold plates** Xuan Zhang, Xiaomin Wu*, Jingchun Min*, Xin Liu Tsinghua University, China
9:52-9:54	23561	**Calibration and simulation of a capacitive sensor for void fraction measurements** Alihan Kaya*, Marija Lazova, Steven Lecompte, Michel De Paepe Ghent University, Belgium
9:54-9:56	23368	**Numerical study of heat transfer in gravity-driven particle flow nearby the tube** Zhigang Guo, Xing Tian, Yingxue Hu, Jian Yang, Qiuwang Wang* Xi'an Jiaotong University, China
9:56-9:58	23342	**System design and experimental investigation on high-temperature and high-pressure spray flash evaporation** Can Ji, Lin Cheng *, Naihua Wang, Zhigang Liu Energy Research Institute of Shandong Academy of Sciences, China
9:58-10:00	23252	**An improved algorithm for low mach number variable-density flow and numerical study on mixing of cold-water jet with supercritical bulk flow in a pipe** Zhisong Ou, Liejin Guo*, Hui Jin, Shixing Zhu, Changqing Cao, Changsheng Ren Xi'an Jiaotong University, China
10:00-10:02	23947	**Numerical study for forecasting the flooding flow impact on different shape of dam** Alibek Issakhov*, Gulderayim Musakulova Al-Farabi Kazakh National University, Kazakhstan
10:02-10:04	23208	**Lattice Boltzmann simulation of a micro molten droplet's dynamics and solidification on a cold surface** Wei Xiong, Ping Cheng* Shanghai Jiao Tong University, China
10:04-10:06	24142	**Heat transfer phenomena in falling liquid films - a synergistic experimental and computational study** Alexandros Charogiannis, Fabian Denner, Berend G. M. van Wachem, Serafim Kalliadasis, Christos N. Markides* Imperial College London, UK
10:06-10:08	21762	**Droplet freezing on micro-textured surfaces exposed to humid air** Yuan Wang*, Zhen-guo Wang National University of Defense Technology, China
10:08-10:10	22909	**Local characteristics of two-phase gas-liquid flow in T-shaped microchannel** German V. Bartkus*, Vladimir V. Kuznetsov Siberian Branch of the Russian Academy of Sciences, Russia
10:10-10:12	22481	**Numerical study on evaporation and mass transfer inside fogdrop with internal circulation** Zhentao Wang*, Kai Dong, Tianyu Guo, Shuiqing Zhan, JunFeng Wang Jiangsu University, China
10:12-10:14	21240	**Analysis of the growth of spherical air bubbles in water due to the interfacial mass transfer by a 3D front tracking method** Syed Sharif*, Mark Ho, Victoria Timchenko, Guan Yeoh University of New South Wales, Australia
10:14-10:16	22753	**Numerical analysis of the effects of hypergravity on flow boiling characteristics in microchannels** Yu Xu*, Guohua Li, Yuliang Yuan, Xiande Fang Nanjing University of Aeronautics and Astronautics, China
10:16-10:18	23082	**A study of estimation method of flow pattern of gas-liquid two-phase by using flow sound in vertical pipe** Sachiyo Horiki*, Kousuke Kokubo, Hiroyuki Higashi, Tsugue Ito, Masahiro Osakabe Tokyo University, Japan

10:18-10:20	24021	**Experiment and numerical simulation on two-phase flow distribution in flute header** Liping Pang*, Xiaodong Li, Liqiang Duan, Yongping Yang North China Electric Power University, China

13 August, Monday 8:30-12:20 Room 310

Session subject: Computational Methods and Simulation-2 (CMS2)

Session chairman:

Time	ID	Title, Author, Affiliation
8:30-9:10 Keynote	KN16	**Property & field darboux transformations (PROFIDT method): A versatile toolbox for generating exact analytical solutions to diffusion-like and wave-like equations in graded media** Jean-Claude Krapez ONERA-French Aerospace Lab, France
9:20-9:22	23515	**Flow pattern and instabilities in volatile sessile droplets under evaporation** Sergey Semenov, Florian Carle, Marc Medale, David Brutin* Aix-Marseille University, France
9:22-9:24	23866	**Coupling process analysis on the flow and heat transfer of hydrocarbon fuel with pyrolysis and pyrolytic coking under supercritical pressures** Chaofan Zhao, Xizhuo Hu, Jianqin Zhu, Zhi Tao, Hongwei Wu Beihang University, China
9:24-9:26	23262	**CFD simulation of solar receiver jet impingement heat transfer: RANS vs LES** Ken Craig*, Marcel Slootweg, Josua Meyer, Shane Robbins, J.C. Kotzé, N.J.M. Groble, E.Oosthuizen, T.J. Winterbach, Wilhelm Moll University of Pretoria, South Africa
9:26-9:28	23079	**A numerical simulation of steam direct contact condensation** Lu Yuanshu, Lu Tao * Beijing University of Chemical Technology, China
9:28-9:30	22881	**Influence of gas injection on heat transfer in the vicinity of hemispherical model** Ivan Vladimirovich Egorov, Natalia V. Palchekovskaya* Central Aerohydrodynamic Institute, Russia
9:30-9:32	23269	**Numerical analysis of transient conjugate heat transfer in HDR drilling with high-pressure liquid nitrogen jet** Shikun Zhang, Zhongwei Huang*, Gensheng Li, Xianwei Dai, Chengcheng Zhang, Chao Xiong China University of Petroleum - Beijing, China
9:32-9:34	23381	**Parametric study of bypass flows through inlet/inlet walls on PM deposition in hexagonal channel diesel particulate filters** Satoru Sakama*, Masamichi Nakagawa, Katsunori Hanamura Tokyo Institute of Technology, Japan
9:34-9:36	22226	**Investigation of heat transfer coupled large deformation using SPH** Zhongyi Liu, Haisheng Fang*, Qianli Ma Huazhong University of Science and Technology, China
9:36-9:38	23016	**Interaction of collimated beam radiation with natural convection in 2D-geometry** Chandrasekhara Pratap G C, pradeep Kumar* Indian Institute of Technology Mandi, India
9:38-9:40	24170	**Numerical cooling performance evaluation of reversible fan system in a raised-floor data center** Zhihang Song*, Qiang Yue, Ran Wang Northeastern University, China
9:40-9:42	23155	**Analysis of additive alignment in a PDMS and carbon fiber mixture flow** Jun-Yub Park, Dong-Wook Oh* Chosun University, Korea
9:42-9:44	24176	**Determining the effects of the geometry simplifications on flow and heat transfer during CFD simulations for variable Reynolds numbers** Zhihao Sun, Zhiyu Zhang, Kaidi Liu, Xuefang Li* Shandong University, China
9:44-9:46	24074	**An adjoint approach to thermal network topology optimization** Maarten Blommaert*, Robbe Salenbien, Martine Baelmans University of Leuven, Belgium

9:46-9:48	22971	**Effects of electron-phonon interactions on lattice thermal conductivity of doped SnSe** Shouhang Li, Zhen Tong, Hua Bao* Shanghai Jiao Tong University, China
9:48-9:50	23630	**Comparison of approximated momentum equations in dynamic models of vapor compression systems** Hongtao Qiao*, Christopher Laughman Mitsubishi Electric Research Labs, USA
9:50-9:52	23111	**Simulation of heat transfer in the contact line region of pure fluid and binary fluid mixture in a closed micro-cavity.** Xinghui Wu, Zhen Yang*, Bengt Sunden, Yuanyuan Duan Tsinghua University, China
9:52-9:54	24148	**Safety assessment of hybrid heat pipe-integrated spent fuel dry storage cask** Kyung Mo Kim, Yeong Shin Jeong, In Cheol Bang* Ulsan National Institute of Science and Technology, Korea
9:54-9:56	23452	**Numerical investigation on conjugated heat transfer of supercritical water flow past a spherical particle** Zhenqun Wu, Jingli Sun, Huifang Feng, Hui Jin*, Liejin Guo Xi'an Jiaotong University, China
9:56-9:58	23958	**Numerical study of the flow and heat transfer characteristics of the falling film in the absorber** Fangfang zhang*, Feifei Zheng Zhengzhou University of Light Industry, China
9:58-10:00	23314	**Numerical study of heat transfer in a distorted rod bundle** Kenneth Chinembiri, Shuisheng He*, Jiankang Li, Cosimo Trinca University of Sheffield, UK
10:00-10:02	21898	**Numerical simulation of the thermal load characteristics of friction pairs in hydro-viscous drive** Qiliang Wang, Hongwei Cui*, Zisheng Lian, Long Li Taiyuan University of Technology, China
10:02-10:04	23142	**Study on microstructure evolution characteristics of aircraft icing based on phase-field method** Yanxia Du*, Lei Liu, Guangming Xiao, Yewei Gui, Dong Wei, Youan Shi, Xiaofeng Yang China Aerodynamics Research and Development Center, China
10:04-10:06	24115	**Investigation of the local mass transfer in a reverse osmosis desalination process with high-performance computing solutions** Jiu Luo, Qing-Qing Yang, Dong-Chuan Mo, Yuan-Xiang Fu, Shu-Shen Lyu, Yi Heng* Sun Yat-sen University, China
10:06-10:08	23784	**Large-scale simulations of sub-seabed CO_2 storage in the form of gas hydrate** Tao Yu*, Toru Sato, Guoqing Guan, Abuliti Abudula Hirosaki University, Japan
10:08-10:10	22515	**Reduction of an electronic card thermal problem by the modal sub structuring method** Sébastien Grosjean*, Frédéric Joly, Karine Vera, Alain Neveu, Eric Monier-Vinard University Paris Saclay, France
10:10-10:12	23373	**A multiple-relaxation-time lattice Boltzmann model for natural convection in a hydrodynamically and thermally anisotropic porous medium under local thermal non-equilibrium con** Wei Wu, Weixiong Wu, Shuangfeng Wang* South China University of Technology, China
10:12-10:14	21763	**Sedimentation behaviors of two thermal spheres** Sheng Chen*, Bo Yang, Wei Gong, Yuying Yan University of Notttingham, UK
10:14-10:16	22244	**A fractional-step lattice Boltzmann method for solid-liquid phase change** Dong Li, Ming-Jia Li*, Ya-Ling He, Wen-Quan Tao Xi'an Jiaotong University, China

13 August, Monday 8:30-12:20 Room 311A

Session subject: Bio and Medical Applications (BMA)

Session chairman:

Time	ID	Title, Author, Affiliation
8:30-9:10 Keynote	KN17	**Self-assembled stable clusters of droplets over the locally heated water surface: Milestones of the laboratory study** Alexander A. Fedorets, Leonid A. Dombrovsky Institute for High Temperature of the Russian Academy of Sciences, Russia
9:20-9:22	22947	**Internal temperature field estimation in water-filtered infra-red-A (WIRA) hyperthermia of breast cancer from skin surface temperature measurements** Bernard Lamien*, Helcio R. B. Orlande Federal University of Rio de Janeiro, Brazil
9:22-9:24	22209	**Numerical simulation of laser lipolysis based on multi-layer skin model** Yue Zhang, Dong Li, Bin Chen* Xi'an Jiaotong University, China
9:24-9:26	22069	**Magnetic resonance thermometry during the localized heating of biological tissues** César C. Pacheco*, Helcio R. B.Orlande, Marcelo J.Colaço, George S.Dulikravich, Leonardo A. B. Varonl Federal University of Rio de Janeiro, Brazil
9:26-9:28	22959	**Numerical simulation of fluid and heat transfer in biological tissue containing the exact structure of microvascular network based on immersed boundary method** Tang Yuanliang, Ying He* Dalian University of Technology, China
9:28-9:30	23497	**Motion-robust blood perfusion sensing by LDF with focus control** Hashimoto. Masaaki*, Taguchi. Yoshihiro Keio University, Japan
9:30-9:32	22900	**Measurement and computational experiments within newborn's brain cooling process** Dominika Bandoła, Andrzej Nowak*, Ziemowit Ostrowski, Marek Rojczyk, Wojciech Walas Silesian University of Technology, Poland
9:32-9:34	21406	**Application of a short pulse laser to the human skin** João Freire, Pedro Coelho* The University of Lisbon, Portugal
9:34-9:36	24161	**Effect on autoregulation of the atertial blood flow during hyperthermia** Yabo Wang*, Kai Zhu, Jinshan Wang, Yanqi Xie Tianjin University of Commerce, China
9:36-9:38	22276	**Mathematical modeling of thermal processes during ophthalmic laser surgeries by a local non-thermal equilibrium two-temperature model** Yibo Zhao, Dong Li, Bin Chen* Xi'an Jiaotong University, China
9:38-9:40	21923	**The effect of the cluster's size on hyperthermia heating ferrofluids of superparamagnetic nanoparticles clusters** Rong Fu, Y.Y. Yan*, C. Roberts, Z.Y. Lu, Y.Y. Chen University of Nottingham, UK
9:40-9:42	22739	**Developing a mathematical model for tau protein transport in axons: Use of bootstrapping for estimating confidence intervals of model parameters** Ivan A. Kuznetsov, Andrey V. Kuznetsov* North Carolina State University, USA
9:42-9:44	22590	**Study of enhanced radiofrequency heating with pre-freezing in tissue** Kangwei Zhang, Jincheng Zou, Aili Zhang* Shanghai Jiao Tong Universitity, China
9:44-9:46	22842	**Thermal characteristics measurement of fibrin reaction and clot formation in venous thrombus using microchannel flow** Kazuya Tatsumi*, Yusuke Yamamoto, Atsunori Yanamoto, Hideo Hirakata, Naoko Sugita, Kyo Inoue, Reiko Kuriyama, Kazuyoshi Nakabe Kyoto University, Japan

9:46-9:48	22742	**Direct numerical simulation of long-range cell manipulation with AC electrokinetics by immersed-boundary lattice Boltzmann method** Qinlong Ren, Fanlong Meng, Cho Lik Chan* The University of Arizona, USA
9:48-9:50	21811	**Layout optimization of passive micro mixers with cylindrical obstacles** Seetharaman S, madhumitha R, Muniyandi Venkatesan, Arcot Balakrishnan* SASTRA University, India
9:50-9:52	23277	**Effects of partical size and density on inhaled aerosol deposition in human lungs: Fate, mechanism, and efficiency** Qihong Deng*, Qingmei Wen, Linjing Deng, Cuiyun Ou, Xilong Guo Central South University, China
9:52-9:54	22419	**Thermal conductivity of PAAM hydrogel and its crosslinking effect** Ni Tang, Zhan Peng, Rulei Guo, Meng An*, Xiandong Chen, Xiaobo Li, Nuo Yang, Jianfeng Zang Huazhong University of Science and Technology , China
9:54-9:56	23394	**Heat generation in irradiated solutions containing magnesium nanoparticle aggregates** Xi Gu*, Victoria Timchenko, Zachary Clift, Michael Jackson, Jing Liu, Wei Rao The University of New South Wales, Australia

13 August, Monday 9:20-12:20 Room 311B

Session subject: Condensation-2 (COD2)

Session chairman:

Time	ID	Title, Author, Affiliation
9:20-9:22	23481	**Scalable-manufacturing of biphilic condensation surfaces with randomized hydrophilic nano-bumps** Yuhe Shang, Youmin Hou, Shuhuai Yao* Hong Kong University of Science and Technology, Hongkong, China
9:22-9:24	22451	**Retarded frost spreading on superhydrophobic surfaces with patterned micropillars** Yugang Zhao, Charles Yang* Nanyang Technological University, Singapore
9:24-9:26	23512	**Drop mobility on superhydrophobic surfaces with wettability contrasts** Yutaku Kita*, Coinneach Dover, Alexandros Askounis, Yasuyuki Takata, Khellil Sefiane Kyushu University, Japan
9:26-9:28	22157	**Coalescence-induced droplet jumping on hydrophilic nanoengineered surfaces** Xiao Yan*, Feng Chen, Soumyadip Sett, Lezhou Feng, Junho Oh, Hyeongyun Cha, Longnan Li, Zhiyong Huang, Nenad Miljkovic* Tsinghua University, China
9:28-9:30	21456	**Convective dropwise condensation of humid air** Ferdinand Eimann*, Shaofei Zheng, Christian Philipp, Ulrich Gross Freiberg University of Mining and Technology, Germany
9:30-9:32	23135	**Evaluation of condensation heat transfer correlations for the annular flow regime in microfin tubes** Zhi-chuan Sun, Li Wei*, Wei Chen, Yan He Zhejiang University, China
9:32-9:34	22122	**The role of surface wettability on dropwise condensation** Hyeongyun Cha, Hamed Vahabi, Alex Wu, Shreyas Chavan, Arun Kota*, Nenad Miljkovic* University of Illinois at Urbana-Champaign, Colorado State University, USA
9:34-9:36	23874	**Condensation heat transfer and pressure drop characteristics of R-134a in horizontal smooth tubes and enhanced tubes fabricated by SLM** Xuwen Wang*, Jin Yao Ho, Kai Choong Leong, Teck Neng Wong Nanyang Technological University, Singapore
9:36-9:38	24237	**Anti-icing meter scale superhydrophobic heat exchangers** Kalyan Boyina*, Nithin Vinod Upot, Joseph Mayer, kazi Rabbi, Shreyas Chavan, Thomas Foulkes, Xioafei Wang*, Nenad Miljkovic* University of Illinois-Urbana-Champaign, USA
9:38-9:40	22500	**R410A and its low-GWP substitute R32 condensation inside a 4 mm horizontal smooth tube** Giovanni A. Longo*, Simone Mancin, Giulia Righetti, Claudio Zilio University of Padua, Italy
9:40-9:42	23745	**Effects of surface orientation on jumping-droplet condensation** Ranit Mukherjee, Austin Berrier, Joshua Vieitez, Kevin Murphy, Jonathan Boreyko* Virginia Polytechnic Institute and State University, USA
9:42-9:44	24086	**On the correlation for condensation heat transfer in micro-channels** Jinshi Wang*, Guangyao Liu, Jiping Liu, Junjie Yan Xi'an Jiaotong University, China
9:44-9:46	22878	**Experimental investigation on heat transfer coefficents and frictional pressure drop during R134a condensation inside a plate fin heat exchanger with wavy fins** RamanaMurthy Katabathuni*, Chennu Ranganayakulu, Ashok TP, Luo Xing Aeronautical Development Agency, India
9:46-9:48	22455	**Heat transfer and pressure drop characteristics of high temperature condensation of R245fa and R1233zd in a plate heat exchanger** Ji Zhang*, Brian Elmegaard, Fredrik Haglind Technical University of Denmark, Denmark

9:48-9:50	21557	**Effects of inlet pressure on condensation characteristics of CH_4-CO_2 mixture in laval nozzle** Jiang Bian, Xuewen Cao*, Wenming Jiang, Pengbo Yin, Danyang Hou China University of Petroleum, China
9:50-9:52	23614	**Prescription for use of vapor explosion retardant into salt water** Masahiro Furuya*, Takahiro Arai Central Research Institute of Electric Power Industry, Japan
9:52-9:54	24079	**Condensation heat transfer of R-134a on single horizontal three-dimensional structured tubes** Ruben Steinhoff*, Xing Luo, Stephan Kabelac Leibniz University Hanover, Germany
9:54-9:56	24085	**Growth mechanism of single droplet on the nanocone structured surface** Xuan Xiao, Xueliang Fan*, Yinnan Yuan Soochow University, China
9:56-9:58	23656	**Gravitationally-driven wicking condensation** Daniel J. Preston*, Kyle Wilke, Zhengmao Lu, Yajing Zhao, Laura Becerra, Evelyn N. Wang Massachusetts Institute of Technology, USA
9:58-10:00	23150	**Forced convection condensation of steam in the presence of a noncondensable gas - a numerical model** Valerij Artemov, Konstantin Minko*, Georgij Yan'kov, Oleg Milman Moscow Power Engineering Institute, Russia
10:00-10:02	23176	**Condensation pressure drop characteristic of R410A inside horozontal three-dimensional enhanced tubes** Rui-Heng Guo, Zhi-Chuan Sun, Wei Li*, Yan He, Wei Chen Qingdao University of Science and Technology, China
10:02-10:04	22467	**HFO 1234ze(E) condensation inside a mini microfin tube with 4.0 mm OD** Andrea Diani, Luisa Rossetto* University of Padua, Italy
10:04-10:06	23496	**Optimization of structure on condensation on superhydrophobic surfaces (SHSs) and slippery lubricant-infused porous surfaces (SLIPSs)** Daniel Orejon*, Yota Maeda, Fengyong Lv, Peng Zhang, Yasuyuki Takata Kyushu University, Japan
10:06-10:08	22811	**Flow condensation heat transfer characteristics of methane and ethane** Qinglu Song, Gaofei Chen, Zhiqiang Yang, Hanwen Xue, Maoqiong Gong* Technical Institute of Physics and Chemistry, China
10:08-10:10	22136	**Heat transfer analysis during jet impingement on metal plates** Yuan Fang*, Eckehard Specht Otto Von Guericke University, Germany
10:10-10:12	22837	**Adhesion energy per unit area of various liquid droplets on PMMA, Parylene C, and PPFC coated flat solid surfaces** Shun Jin*, Ji Hwan Jeong Pusan National University, Korea

14 August, Tuesday 8:30-12:20 Room 309A

Session subject: Boiling and Evaporation-3 (BAE3)

Session chairman:

Time	ID	Title, Author, Affiliation
8:30-9:10 Keynote	KN18	**Bubbles and droplets at the initial stage of nucleation: Recent advances in experimental techniques** Koji Takahashi Kyushu University, Japan
9:20-9:22	24595	**Heat transfer investigation on a single artificial nucleate site: influence of the wall orientation on the bubble behavior** Mohammed Zamoum*, Herve Combeau, Lounes Tadrist University M'Hamed Bougara of Boumerdes, Algeria
9:22-9:24	24197	**Liquid bridge confined boiling for hot spots in 3D electronics cooling** Thomas Foulkes*, Junho Oh, Robert Pilawa-Podgurski, Nenad Miljkovic* University of Illinois at Urbana-Champaign, USA
9:24-9:26	23136	**Study on liquid-gas interface at nanoscale using transmission electron microscopy** Yoko Tomo, Alexandros Askounis, Khellil Sefiane, Yasuyuki Takata, Koji Takahashi* Kyushu University, Japan
9:26-9:28	22274	**Fractal heat transfer model for pool boiling on micro-pin-finned surfaces in microgravity** Baojin Qi*, Ting Yu, Jinjia Wei, Yonghai Zhang, Xueli Wang Xi'an Jiaotong University, China
9:28-9:30	23421	**Experimental investigation of two-phase flow boiling inside porous media** Sonja Weise*, Thomas Wetzel, Benjamin Dietrich Karlsruhe Institute of Technology, Germany
9:30-9:32	22863	**Effect of surface temperature and ambient pressure on water droplets behaviors on heated surface** Xingjian Yu, Xiaoyu Zhang, Bin Xie, Bofeng Shang, Ruikang Wu, Run Hu, Xiaobing Luo* Huazhong University of Science and Technology, China
9:32-9:34	25156	**Perturbation analysis of a strongly vaporizing rotating particle in a linear temperature field** Dejuan Kong, Satwindar Sadhal* University of Southern California, USA
9:34-9:36	23286	**Study on heat and mass transfer characteristics of proton exchange membrane (PEM) fuel cell based on water evaporation effect in membrane** Chaoling Han, Zhenqian Chen * Southeast University, China
9:36-9:38	23387	**Effects of size and porosity on evaporation from nanopores** Haowen Chen, Yinxiao Li, Chuanhua Duan* Boston University, USA
9:38-9:40	22298	**An experimental investigation on flow boiling heat transfer performance of refrigerants HFO-1234yf and HFC-134a in microchannels** Hamid Nalbandian, Chien-Yuh Yang*, Kuan-Ting Chen National Central University, Chinese Taipei
9:40-9:42	22898	**Experimental study of the non-stationary heat flux effect on the onset of nucleate boiling and maximum bubble diameters in the subcooled boiling flow** Levin A.A.*, Khan P.V. Melentiev Energy Systems Institute, Russia
9:42-9:44	23974	**The two-layers composite structure of biomimetic copper forest and honeycomb-like porous structure to enhance pool boiling performance-submit** Yaqiao Wang, Jiali Luo, Yi Heng, Xizhe Huang, Dongchuan Mo*, Shushen Lyu Sun Yat-sen University, China
9:44-9:46	23634	**Capillary evaporation and boiling heat transfer on hybrid wicking structures** Rongfu Wen, Shanshan Xu, Yung-Cheng Lee, Ronggui Yang* University of Colorado, USA

9:46-9:48	23463	**Effect of nanoparticle wettability on nano-suspension droplet evaporation on hydrophobic surfaces** Dongdong Li , Zhi Huang, Tiancheng Ji , Yanhui Feng*, Xinxin Zhang University of Science & Technology, Beijing, China
9:48-9:50	21911	**A study of the pseudopotential phase change LB model** Wei Gong, Yuying Yan* University of Nottingham, UK
9:50-9:52	23632	**Numerical study of bubble dynamics on surface with switchable wettability** Lei Zhang, Tao Wang*, SeolHa Kim, Yuyan Jiang* Institute of Engineering Thermophysics, China
9:52-9:54	22906	**High heat flux flow boiling of water and dielectric coolant in parallel microchannels** Vladimir Kuznetsov*, Alisher S. Shamirzaev Siberian Branch of Russian Academy of Sciences, Russia
9:54-9:56	23399	**Bubble dynamics and pool boiling performance on biphilic patterned surfaces** Dong Il Shim, Geehong Choi, Donghwi Lee, Namkyu Lee, Hyung Hee Cho* Yonsei University, Korea
9:56-9:58	22314	**The effect of surface roughness on evaporation of condensate droplets at structured surfaces** Xuemei Chen*, Qiang Li, Shuhuai Yao, Zuankai Wang Nanjing University of Science and Technology, China
9:58-10:00	23586	**Nucleate pool boiling heat transfer on a titania nanotube-coated surface** Simiao Fan, Wei Tong, Jun Luo, Fei Duan* Nanyang Technological University, Singapore
10:00-10:02	22954	**Estimation of local concentrations and visualization of boiling behaviors at high heat fluxes in saturated pool boiling of 2-propanol/water mixtures** Hiroto Sakashita* Hokkaido University, Japan
10:02-10:04	23509	**Revisiting the scriven theory of bubble growth in superheated water** Jyoti Bhati, Hari Desai, Swapan Paruya* Nit Durgapur, India
10:04-10:06	22820	**Nanoparticulate deposition on roughened copper surfaces via nanofluid pool boiling** Simone Mancin*, Luca Doretti, Taylor Allred, Justin A. Weibel, Giulia Righetti, C. Zilio , Giovanni Longo University of Padova, Italy
10:06-10:08	22238	**Experimental study on evaporation characteristics of meniscus** Shu Soma, Tomoaki Kunugi*, Takehiko Yokomine, Zensaku Kawara Kyoto University, Japan
10:08-10:10	23549	**Saturated flow boiling of R410A in various multiport-tubes with rectangular microchannels** Nguyen Ba Chien, Pham Quang Vu, Choi-Kwang Il, Jong-Taek Oh*, Honggi Cho Chonnam National University, Korea
10:10-10:12	22705	**Analysis of temperature uniformity and measurement of boiling curve in transition boiling on a large surface consists of five parts** Yoshihiko Haramura*, Yutaro Ishikawa Kanagawa University, Japan
10:12-10:14	22327	**Nonsteady film boiling of subcooled water-ethanol mixtures** Arslan Zabirov, Pavel Kanin*, Victor Yagov NRU MPEI, Russia
10:14-10:16	22247	**Study of the factors affecting the temperature field distribution during droplet evaporation** Liu Bin*, Chai Lin, Chen Aiqiang, Rachid Bennacer, K. Sefiane Tianjin University of Commerce, China
10:16-10:18	23315	**Investigating the relationship between surface wickability and critical heat flux during pool boiling** Youngsup Song*, Yangying Zhu, Daniel J. Preston, H. Jeremy Cho, Zhengmao Lu, Evelyn N. Wang Massachusetts Institute of Technology, USA

14 August, Tuesday 8:30-12:20 Room 309B

Session subject: Heat Transfer Enhancement-3 (HTE3)

Session chairman:

Time	ID	Title, Author, Affiliation
8:30-9:10 Keynote	KN19	**Enhancing heat transfer in phase-change materials** Gennady Ziskind Ben-Gurion University of the Negev, Israel
9:20-9:22	23349	**Numerical analysis of electro-hydro-dynamic (EHD) natural convection heat transfer in horizontal cylindrical annuli** Tian-Fu Li, Jian Wu, Kang Luo, Hong-Liang Yi* Harbin Institute of Technology, China
9:22-9:24	22297	**Metal foams: Novel materials for air cooling and heating application- performance under dry, wet and frosting conditions** Kashif Nawaz*, Anthony Jacobi Oak Ridge National Laboratory, USA
9:24-9:26	22275	**Effect of ZnO shape on the thermal conductivity and viscosity of ethylene glycol based nanofluids** Wei Yu*, Junshan Yin, Yu Qi, Huaqing Xie Shanghai Polytechnic University, China
9:26-9:28	23884	**Effect of inclined angle of pin arrays on flow and heat transfer characteristics in flow channel** P. Narato, P. Vessakosol, M. Wae-hayee, M. Z. Abdullah, Chayut Nuntadusit* Prince of Songkla University, Thailand
9:28-9:30	23542	**Supercritical-pressure conjugate heat transfer of aviation kerosene with fuel pyrolysis in ribbed tube** Keke Xu, Xing Sun, Hua Meng* Zhejiang University, China
9:30-9:32	24138	**Study of temperature stratification regimes for graduated suction of a gas from a supersonic flow** Alexander Leontiev, Valery Lushchik, Mariia Makarova* Lomonosov Moscow State University, Russia
9:32-9:34	22214	**Numerical analysis and optimization of supersonic mixing with instability excitation** Ying Huai*, Joseph Liu Dalian Institute of Chemical Physics, China
9:34-9:36	22002	**Enhancement of forced convection heat transfer in mini and micro channels by liquid-liquid phase separation of lower critical solution temperature systems** Idan Shem Tov, Wei Xing, Vered Segal, Irina Vishnevetsky, Yingying Wang, Yoav Peles, Neima Brauner, Amos Ullmann* Tel- Aviv University, Israel
9:36-9:38	23607	**Multi-objective optimization of air side structure of shuttle shaped fin gas cooler based on response surface analysis** Zunchao Liu, Ke Wang*, Yongqing Wang, Guofeng Tan, Shupei Zhao, Minshan Liu Zhengzhou University, China
9:38-9:40	24075	**Large-scale experimental investigation of heat transfer augmentation technique in gas-heated channels** Dmitri Neshumayev*, Tõnu Pihu, Alar Konist, Andres Siirde Tallinn University of Technology, Estonia
9:40-9:42	23713	**Modeling and numerical analysis of an S pattern small diameter tube bundle ammonia water falling film absorber** Shuai Du*, Ruzhu Wang Shanghai Jiao Tong University, China
9:42-9:44	22891	**Influence of pulsating flow on thermal characteristics in a triangular sharp edged wavy channel** Dipak Sen*, Rakesh Kumar, Kapil Dev NIT Arunachal Pradesh, India

9:44-9:46	22631	**The mechanism of convective heat transfer produced by transverse vortices** Yongheng zhang*, Liang-Bi Wang Lanzhou Jiaotong University, China
9:46-9:48	23228	**Effects of rotation angle of teardrop-shaped dimples on heat transfer enhancement of airfoil internal cooling investigated by transient technique** A.K.M. Nazrul Islam*, Akira Murata, Katsumi Oho, Shohei Yamamoto, Kaoru Iwamoto Tokyo University of Agriculture and Technology, Japan
9:48-9:50	23904	**Investigation of the heat transfer enhancement from jet film heating on aero-engine nose cone** Xing Tang, Peng Ke*, Yi Lu, Huiyun Yang Beihang University, China
9:50-9:52	23670	**Optimal control of heat and fluid flow in a channel flow at low Reynolds numbers** Arjun J*, Yukinori Kametani, Kimio Kohara, Tatsuya Yoshida, Yosuke Hasegawa The University of Tokyo, Japan
9:52-9:54	22916	**Numerical study of 3D turbulent flow and local heat transfer near a cylinder introduced into the free-convection boundary layer on a vertical plate** Alexander Levchenya, Evgueni M. Smirnov, Varvara Zhukovskaya* Peter the Great St.Petersburg Polytechnic University, Russia
9:54-9:56	23207	**Three dimensional flow around a square cylinder confined in a plane channel with transverse magnetic field** Long Chen, Mingjiu Ni* University of Chinese Academy of Sciences, China
9:56-9:58	23615	**Multi-objective optimization of a heat exchanger using the discrete adjoint method** Mahening Citra Vidya*, M. J. M. Hannink, N.A. Beishuizen, David de Kleine, Theo H. Van der Meer University of Twente, The Netherlands
9:58-10:00	23165	**The enhanced thermal properties of ternary carbonates nanofluids with optimal concentration of SiO_2 nanoparticles** Lixia Sang*, Wenming Ai Beijing University of Technology, China
10:00-10:02	23329	**Phase separation enhanced heat transfer via the ouzo drop** Todd Otanicar*, Gary Rosengarten, Xuehua Zhang The University of Tulsa, USA
10:02-10:04	23149	**Local and global heat transfer characteristics inside a rectangular channel of 1:10 aspect-ratio with ribbed surfaces** Alfonso Niro*, Pasqualino Gramazio, Luigi Vitali, Damiano Fustinoni Polytechnic University of Milan, Italy
10:04-10:06	22479	**A comparison study on heat transfer enhancement of phase change materials by adding carbon materials with different microstructures** Nan Zhang, Yanxia Du*, Guangming Xiao, Yewei Gui, Yanping Yuan China Aerodynamics Research and Development Center, China
10:06-10:08	22833	**Heat transfer enhancement using ferrofluidic plug flow in microchannels** Nicolette Gan Jia Gui*, Cameron Stanley, Gary Rosengarten RMIT University, Australia
10:08-10:10	23611	**Experimental investigation of graphene nanofluid heat transfer in circular pipe** Yuguo Gao*, Yangyang Xi, Haochang Wang, Chaoju Qin North China University of Water Resources and Electric Power, China
10:10-10:12	23057	**Heat transfer of impinging jet at low Reynolds number** Vadim V. Lemanov*, Victor I. Terekhov, Vladimir V. Terekhov Kutateladze Institute of Thermophysics SB RAS, Russia

14 August, Tuesday 8:30-12:20 Room 310

Session subject: New Energy and Efficiency-2 (NEE2)

Session chairman:

Time	ID	Title, Author, Affiliation
8:30-9:10 Keynote	KN20	**CO_2 absorption/regeneration performance enhancement by nanoabsorbents** **YongTae Kang** Korea University, Korea
9:20-9:22	22266	**A model of the ocean energy balance including the heat transfer due to the geothermal gradient** Natalya Kirsanova, Peter Vadasz* Northern Arizona University, USA
9:22-9:24	23870	**Performance analysis of a lunar based solar thermal power system with static converters** Xiaochen Lu*, Chao Wang, Rong Ma, Qinggong Wang, Wei Yao China Academy of Space Technology, China
9:24-9:26	23148	**Temporal variation of the thermal stratification in the cold leg during emergency core cooling injection** Ulrich Bieder*, Maria Giovanna Rodio Commissariat a l'Energie Atomique, France
9:26-9:28	24190	**Can buildings be more intelligent than users? - The role of intelligent supervision concept integrated into green building predictive control** Yahya Sheikhnejad*, Diogo goncalves, Monica Oliveira, Nelson Martins University of Aveiro, Portugal
9:28-9:30	22112	**Experimental study of heat transfer and pressure drop in a multistring based direct contact heat exchanger** Zezhi Zeng*, Abolfazl Sadeghpour, Sungtaek Ju University of California, USA
9:30-9:32	23415	**Study on underground heat exchanger for ground source heat pump that use direct expansion method** Shuhei Ishiguro*, Tetsuaki Takeda University of Yamanashi, Japan
9:32-9:34	22357	**A new procedure of hydrothermal liquefaction of microalgae after different thermochemical pre-treatments** Mikhail Vlaskin, Nadezhda Chernova, Sophia Kiseleva, Leonid Dombrovsky* Joint Institute for High Temperatures, Russia
9:34-9:36	22293	**High surface temperature gas-solid (Fe_3O_4 and H_2O/CO_2) interfacial reaction characteristics** Bachirou Guene Lougou, Yong Shuai*, Dongmei Han, Xing Huang, Heping Tan Harbin Institute of Technology, China
9:36-9:38	22353	**Theoretical and experimental evaluation of radiative heat transfer of nuclear packed pebble beds** Hao Wu*, Nan Gui, Xingtuan Yang, Jiyuan Tu, Shengyao Jiang Tsinghua University, China
9:38-9:40	22480	**Experimental and simulation thermal analysis for staged co-incineration of solid and liquid waste in rotary kiln** Bin Zhang*, Weitong Liu, Shang Li Qingdao University of Science and Technology, China
9:40-9:42	22158	**Experimental and simulation investigation of propane as a refrigerant for heat pump water heaters** Ann Lee*, Ngai Ming Kwok Macquarie University, Australia
9:42-9:44	23177	**Numerical investigation on the heat extraction performance of coaxial borehole heat exchanger geothermal system** Xianzhi Song*, Gaosheng Wang, Yu Shi, Rui Zheng, Jiacheng Li China University of Petroleum-Beijing, China

9:44-9:46	24442	**Solar evaporation via nanofluids and porous media: A comparative study** Aimen Zeiny*, Dongsheng Wen* University of Leeds, UK
9:46-9:48	22236	**Intermediate temperature solar thermal collector enabled by non-evacuated transparent aerogel and non-tracking compound parabolic concentrator** Lin Zhao, Bikram Bhatia, Thomas Cooper, Elise Strobach, Sungwoo Yang, Lee A. Weinstein, Gang Chen, Evelyn N. Wang* Massachusetts Institute of Technology, USA
9:48-9:50	22549	**Thermodynamic analysis of a heat pump-integrated PEMFC-based micro-CHP system** Fei Yang, Nianzhi Huang, Qie Sun*, Lin Cheng, Ronald Wennersten Shandong University, China
9:50-9:52	23330	**Hybrid solar energy/desalination using spectrally selective membrane distillation** Todd Otanicar*, Bryan Kinzer, Kirk Smith, The University of Tulsa, USA
9:52-9:54	23338	**Optimal gas-liquid ratio for maximum heat transfer through heat-source-tower** Hao Li*, Jun Zhao, Minxia Li, Shuai Deng, Yingling Li Tianjin University, China
9:54-9:56	24010	**Heat loss analysis for a cavity solar receiver** Tamryn Wolff*, Willem Gabriel le Roux, Josua Petrus Meyer University of Pretoria, South Africa
9:56-9:58	23834	**Ultrathin, planar and colored solar cell for building application** Lin Wang, Dong Liu* Nanjing University of Science and Technology, China
9:58-10:00	23877	**Fabrication of surface microstructures based on spinodal decomposition for high-temperature solar selective absorbers** Makoto Shimizu*, Toshiro Abe, Fumitada Iguchi, Hiroo Yugami Tohoku University, Japan
10:00-10:02	22828	**Experimental and numerical study of the oxide/water-nanofluids as optical filter and coolant in a PV/T panel** Huafeng Li, Jianbo Bai*, Xu Xia, Ziqiang Huang Hohai University, China
10:02-10:04	24016	**Thermal and fluid dynamic analysis of a solar chimney integrated in a building façade** Bernardo Buonomo, Furio Cascetta, Luca Cirillo, Oronzio Manca*, Sergio Nardini University Studies of Campania "Luigi Vanvitelli", Italy
10:04-10:06	23192	**High-performance plasmonic selective absorbers for high-efficient and large-scale solar-thermal conversion** Yang Li, Dezhao Li, Cheng Chi, Baoling Huang* The Hong Kong University of Science and Technology, HongKong, China
10:06-10:08	23677	**Optical property of nanoparticles with a dielectric core and a metallic shell** Caiyan Qin, Bong Jae Lee* KAIST, Korea
10:08-10:10	24098	**Theoretical and experimental investigation on dusty PV modules performance with different surface temperatures** Hongwei Qu *, Jingwen Wang, Dehui Chen, Jiewen Deng Northeast Electric Power University, China
10:10-10:12	24137	**Heat and mass transfer performance research on multi-effect vertical tubular solar stills with gravity feed for single family use** Zehui Chang*, Yang Liu, Jianye Li, Wenlong Li, Hongfei Zheng Inner Mongolia University of Technology, China
10:12-10:14	24311	**Numerical research on the LNG bubble growth under flash boiling** Min Xiao*, Yu Fu, Shouguang Yao, Xingxing Zhou Jiangsu University of Science and Technology, China
10:14-10:16	24168	**Numerical simulation on flow and heat transfer characteristics of methane carbon mixture flow under concentrated solar radiation** Qunzhi Zhu*, Bowei Yao, Quan Sun Shanghai University of Electric Power, China

10:16-10:18	23674	**Effect of temperature in water treatment pohotoreactors with TiO2-coated fluoropolymer beads** Arata Myoga, Kazuki Daigo, Noriyuki Unno, Shin-Ichi Satake*, Kazuhisa Yuki, Yohji Seki, Jun Taniguchi Tokyo Univeristy of Science, Japan
10:18-10:20	22952	**Numerical analysis of packed bed reaction of calcium hydroxide pellets for thermochemical energy storage** Shigehiko Funayama*, Massimiliano Zamengo, Jun Kariya, Keiko Fujioka, Yukitaka Kato Tokyo Institute of Technology, Japan

14 August, Tuesday 8:30-12:20 Room 311A

Session subject: Manufacturing/MHD and Plasma (MMP)

Session chairman:

Time	ID	Title, Author, Affiliation
8:30-9:10 Keynote	KN21	**Heat transfer in PCB manufacturing** José Carlos Teixeira University of Minho, Portugal
9:20-9:22	22647	**Thermal analysis and optimization of graphene deposition in a roll-to-roll plasma CVD process** Majed Alrefae, Timothy Fisher* Purdue University, USA
9:22-9:24	23238	**Comparison of two magnetic field approaches on the heat transfer and fluid flow in plasma arc welding** Yan Li, Yanhui Feng*, Xinxin Zhang, Chuansong Wu China University of Petroleum-Beijing, China
9:24-9:26	22738	**Laser beam welding of maraging steel 250 joints experimental and analytical thermal research** Anton Zak*, Amiram Leitner, Amnon Shirizly, Reuven Katz Rafael, POB, Israel
9:26-9:28	22737	**Tridimensional numerical simulations of helicoidal MHD pumps** Gabriel L.Verissimo*, César C.Pacheco, Marcelo Jose Colaco, Albino J. K.Leiroz, Manuel Ernani C.Cruz, Hugo F. L.Santos, Marcelo Defilippo Federal University of Rio de Janeiro, Brazil
9:28-9:30	23119	**Kinetic simulation of thermo-field emission at atmospheric micro discharges** Li Sun, Wen Zhou, Wei Jiang, He-Ping Li, Zeng-Yao Li* Xi'an Jiaotong University, China
9:30-9:32	21987	**Numerical study and process optimization of glass fiber draw furnace in optical fiber manufacturing system** Gia Carandang, Ho Sang Kwak, Kyoungjin Kim* Kumoh National Institute of Technology, Korea
9:32-9:34	23116	**Simulation of heat transfer characteristics between airflow and electrodes in hypersonic magnetohydrodynamic generator** Zhi-Hong Wang, Di Li, Zeng-Yao Li* Xi'an Jiaotong University, China
9:34-9:36	20918	**Study of interaction of pulsed jets generated by atmospheric discharge** Victor V. Kuzenov, Liya R. Khabirova, Eugeni S. Studennikov* Bauman Moscow State Technical University, Russia
9:36-9:38	22871	**Effect of external magnetic field on natural convection in a cubical cavity filled with nano particle suspension.** Desh Deepak Dixit, Arvind Pattamatta* Indian Institute of Technology, Madras, India
9:38-9:40	22416	**Measurement of ice adhesion force on nano scale by scanning probe microscope (Influences of surface temperature and surfactant on ice adhesion force to copper)** Junnki Sakamoto, Koji Matsumoto*, Kohei Ehara, Jun Ueda Chuo University, Japan
9:40-9:42	22319	**Microfluidic fabrication of heptadecane microcapsules via a O\O\W three-phase emulsion route** Jun Li*, Ying Chen, Longjian Li, Lisi Jia, Yiang Li, Wei Cui, Jiacheng Wang Chongqing University, China
9:42-9:44	23697	**Numerical simulation of thermo-mechanical coupled behavior of clad tube under simulated intermediate break LOCA** Ashwini Kumar Yadav *, Chan Lee, Sung-Uk Lee, Chang-Hwan Shin, Hyo-Chan Kim Korea Atomic Energy Research Institute, Korea
9:44-9:46	23963	**Increase in concentration ratio of a rooftop parabolic trough using a secondary flat reflector** David Rodriguez-Sanchez*, Gary Rosengarten Royal Melbourne Institute of Technology, Australia

9:46-9:48	22977	**Modulating the thermal conductivity of graphene aerogels by including bulk MoS_2** Feng Gong*, Wenbin Yang, Dawei Xia, Hai Duong, Dimitrios Papavassiliou University of Electronic Science and Techonology of China, China

14 August, Tuesday 9:20-12:20 Room 311B

Session subject: Thermophysical Properties Measurement-2 (TPM2)

Session chairman:

Time	ID	Title, Author, Affiliation
9:20-9:22	23906	**A novel experimental method for temperature measurement of high power diode laser** Zeng Deng, Jun Shen*, Wei Dai, Ke Li, Wenchi Gong, Zhiqiang Yang, Maoqiong Gong University of Chinese Academy of Sciences, China
9:22-9:24	22081	**3ω independent detector based on sapphire substrate** Zheng Xinghua, Yue Peng, Li Shen, Yang Xiao, Chen Haisheng* Insitute of Engineering Thermophysics, Chinese Academy of Sciences, China
9:24-9:26	23814	**Molecular dynamics simulation of nanoscale friction for natural rubber and probe** Yuanzheng Tang, Guoqing Liu, Lianxiang Ma, Yan He*, Li Liu Qingdao University of Science and Technology, China
9:26-9:28	22996	**On the measurement of vapor concentration distribution of sessile droplet evaporation** Junjun Wu, Qiang Wang, Zhen Wang, Wei Ren* The Chinese University of HongKong, Hongkong, China
9:28-9:30	22104	**The convective heat transfer coefficient in flighted rotary drums** Jakob Seidenbecher*, Claudia Meitzner, Fabian Herz, Siegmar Wirtz, Alexander Berndt, Viktor Scherer Otto von Guericke University Magdeburg, Germany
9:30-9:32	25307	**A non-contact method for sensing internal temperature distributions in heat materials** Dong Wei, Shi You-An, Hu Bin*, Shou Bi-Nan, Gui Ye-Wei, Du Yan-Xia China Aerodynamics Research and Development Center, China
9:32-9:34	24286	**A device for measuring thermal conductivity with a drop of liquid** Takanobu Fukunaga, Yousuke Okuno, Keisuke Kitamura, Haidong Wang, Kosaku Kurata, Hiroshi Takamatsu* Kyushu University, Japan
9:34-9:36	23571	**Experimental investigation on measurement of thermal radiation of hydrocarbon diffusion flames in air and oxy-combustion atmosphere** Chun Lou*, Zhongnong Zhang, Dengmei Yu, Yanni Shi Huazhong University of Science and Technology, China
9:36-9:38	21745	**Heat transfer enhancement through jet impingement on target surface featuring novel micro-rougheness shapes** Prashant Singh*, Mingyang Zhang, Srinath V. Ekkad, Yun Bai, Christopher B Williams North Carolina State University, USA
9:38-9:40	23416	**Magnetic resonance imaging for observation of methane hydrate reformation near wellbore using depressurization** Zheyuan Liu, Mingjun Yang*, Yongchen Song Dalian University of Technology, China
9:40-9:42	24087	**Temperature distribution measurement using ratio of scattered light intensities from thermo-chromic liquid crystal : Uncertainty evaluation** Daisuke Kokui*, Koji Toriyama, Shigeru Tada, Koichi Ichimiya, Shumpei Funatani University of Yamansashi, Japan
9:42-9:44	22645	**Experimental investigation of boundary layer flow in a smooth rotating channel with walls heated** Shengjun Zhou, Haiwang Li, Ruquan You*, Zhi Tao, Hongwei Wu Beihang University, China
9:44-9:46	24061	**Vortex induced transport phenomena in flows past micropins** Shigang Zhang, Neil Cagney, Stavroula Balabani, Manish Tiwari* University College London, UK
9:46-9:48	23797	**A computing method to estimate pore size in porous materials based on capillary penetration observation** Hongru Li, Xu Cheng, Yan Chen, Wenjing Du, Baokui Yi, Gongming Xin* Shandong University, China

9:48-9:50	23567	**Drop-solid retention forces** Semih Gulec, Sakshi B. Yadav, Sirui Tang, Aisha Leh, Lan Dang, Hartmann E. N'guessan, Priyanka Wasnik, Ratul Das, Preeti Yadav, Prashant Bahadur, Yagna Bhimavarapu, Appu Vinod, Akash Jena, Rafael Tadmor* Ben-Gurion University of the Negev, Israel
9:50-9:52	23584	**The influence of related parameters to thermal conductivity determination via time-domain thermoreflectance method under high pressure** Xinwei Wang, Zhongyin Zhang, Fangyuan Sun*, Xue Xiong, Zhe Chen, Hang Zhang, Yongfu Liang, Yuyan Jiang, Dawei Tang* Institute of Engineering Thermophysics, China
9:52-9:54	23430	**Thermal conductivity enhancement of phase change nanocomposite in solid and liquid state with nano carbon inclusions** Sivasankaran Harish, Daniel Orejon, Yasuyuki Takata, Masamichi Kohno* Kyushu University, Japan
9:54-9:56	22345	**Size-dependent thermal conductivity of suspended monolayer graphene** Ruixia Su, Weigang Ma, Xing Zhang* Tsinghua University, China
9:56-9:58	24018	**Size effect on the thermal conductivity of Octadecanoic Acid: A molecular dynamics study** Hanying Zou, Lin Qiu*, Yanhui Feng*, Xinxin Zhang University of Science and Technology Beijing, China
9:58-10:00	23763	**A new fin model on in-plane thermal diffusivity measurement of thin films by the flash method** Jozef Gembarovic, Heng Wang*, Piero Scotto TA Instruments-Waters LLC, USA
10:00-10:02	22798	**Thermal conductance measurement of Al-SiC interface at 4-300K using time-domain thermoreflectance technique** Zhongyin Zhang, Xinwei Wang, Kunpeng Yuan, Fangyuan Sun, Dawei Tang* Dalian University of Technology, China
10:02-10:04	24202	**Accuracy analysis of direct infrared temperature measurements of two-phase confined flows** Andrea Catarsi*, Davide Fioriti, Mauro Mameli, Sauro Filippeschi, Paolo Di Marco University of Pisa, Italy
10:04-10:06	22840	**Investigation on the supercooling of microencapsulated n-alkanes with controlled particle size using a microfluidic device** Wei Cui, Lisi Jia*, Ying Chen, Yi'ang Li, SongPing Mo Guangdong University of Technology, China
10:06-10:08	20583	**Numerical study of heat transfer in a flat plat thermal solar collector with partitions attached to its glazing** Adel Laarab* University of Batna, Algeria
10:08-10:10	22812	**Simultaneous identification of thermal conductivity and optical thickness of a homogeneous medium** Yang Liu*, Yann Billaud, Didier Saury, Denis Lemonnier PPRIME/CSC (Beijing), China
10:10-10:12	23077	**Turbulent properties in IC engine derived from wall heat flux measured with a three point thin film sensor** Osamu Nakabeppu*, Kazuhito Dejima Meiji University, Japan
10:12-10:14	22613	**Thermophysical properties of shape-stabilized $MgCl_2$ $6H_2O/C_3N_4$ composite phase change material** Ziye Ling*, Wenbo Zhang, Lei Shi, Zhengguo Zhang, Xiaoming Fang, Xuenong Gao South China University of Technology, China

14 August, Tuesday 14:00-18:00 Room 309A

Session subject: Convection-3 (COV3)

Session chairman:

Time	ID	Title, Author, Affiliation
14:00-14:40 Keynote	KN22	**Transition of thermal boundary layer and its implication for heat transfer** Chengwang Lei University of Sydney, Australia
15:00-15:02	23921	**DNS study for characteristics and structures of combined-convection turbulent boundary layer along vertical flat plate** Hirofumi Hattori*, Kazuki Oura, Tomoya Houra, Masato Tagawa Nagoya Institute of Technology, Japan
15:02-15:04	22901	**Discussion about peak frequency levels of spectra for Nusselt number in the 2D Rayleigh- Bénard cell with air** Junlong Zhao, Weihua Cai*, Yiqiang Jiang* Harbin Institute of Technology, China
15:04-15:06	23541	**Influence of wall radiation in 2D cavities heated from below** Eric Albin, Ronnie Knikker, Shihe Xin* National Institute Of Applied Sciences of Lyon, France
15:06-15:08	22920	**Experimental investigation of a liquid metal mixed convection affected by transverse magnetic field** Ivan Melnikov, Natalia Pyatnickaya, Ivan Belyaev*, Evgeniy Sviridov, Valentin Sviridov Joint Institute for High Temperatures of the Russian Academy of Sciences, Russia
15:08-15:10	23534	**Cross flow and heat transfer characteristics over helical tube bundles** Weikai Gao, Xiaowei Li*, Xinxin Wu Tsinghua University, China
15:10-15:12	23021	**Transitional flow regime nomenclature for smooth horizontal tubes heated at a constant heat flux** Marilize Everts, Josua Petrus Meyer* University of Pretoria, South Africa
15:12-15:14	22674	**Study on heat transfer characteristics of low-temperature supercritical nitrogen in mini-tubes** Weibin Wang, Rong Xue, Liang Chen*, Yu Hou Xi'an Jiaotong Univerisity, China
15:14-15:16	23413	**Direct numerical simulation of a temporally developing natural convection boundary layer on a doubly-infinite isothermal wall** Junhao Ke*, Nicholas Williamson, Steven Armfield, Stuart Norris, Michael Kirkpatrick The University of Sydney, Australia
15:16-15:18	24183	**Numerical simulation of heat transfer characterisitc of double-layer Y-shaped microchannel heat sink** Zhijian Duan*, Gongnan Xie, Guohua Zhang, Xin Jin Northwestern Polytechnical University, China
15:18-15:20	23930	**Experimental study on enhancement and recovery of turbulent heat transfer relating to the functionality of surfactant solution induced by inserted mesh** Yosuke kawabata*, Shumpei Hara, Takahiro Tsukahara, Yasuo Kawaguchi Tokyo University of Science, Japan
15:20-15:22	22654	**Acoustic heating and buoyancy-driven instability induced by mass transport in a near-critical binary fluid mixture** Zhan-Chao Hu, Xin-Rong Zhang* Peking University, China
15:22-15:24	23859	**Early-stage natural convection in a vertical channel** Yiqin Li, Hervé PABIOU*, Christophe Menezo National Institute Of Applied Sciences of Lyon, France
15:24-15:26	21277	**On the modeling of heat transfer to sodium in a pipe under mixed-convection and developing-flow condition with empirical models** Wadim Jaeger*, Wolfgang Hering Karlsruhe Institute of Technology, Germany

15:26-15:28	23234	**Two-dimensional flow instability induced by natural convection in a square enclosure with vertical array of one circular cylinder and one elliptic cylinder** Hyun Woo Cho,Yong Gap Park, Man Yeong Ha* Pusan National University, Korea
15:28-15:30	23899	**A study on numerical simulation of rollover phenomenon in density stratified fluid** Katsunori Inaba*, Ryoji Imai Muroran Institte of Technology, Japan
15:30-15:32	20761	**Scaling investigation of free convection flow of hot fluid over a cooler vertical isothermal wall** Olayinka Omowunmi Adewumi*, Andrew Adebusoye, Adetunji Adeniyan, Nkem Ogbonna, Ayowole Oyediran University of Lagos, South Africa
15:32-15:34	22949	**Time-response of turbulent heat transfer in a pipe flow at sudden acceleration and deceleration** Hajime Nakamura*, Shunsuke Yamada National Defense Academy, Japan
15:34-15:36	24199	**Hydrodynamics of the electro vortex flow in hemispherical container with the presence of the external magnetic field** Igor Teplyakov*, Yury Ivochkin, Dmitriy Vinogradov Joint Institute for High Temperatures of the Russian Academy of Sciences , Russia
15:36-15:38	22153	**Investigation of heat transfer and fluid flow in fractal truncated ribbed channels for the internal cooling of turbing blades** Jian Liu, Safeer Hussain, Lei Wang, Gongnan Xie, Bengt Sunden* Lund University, Sweden
15:38-15:40	22401	**Second moment modelling of conjugate turbulent heat transfer in porous media** Yusuke Kuwata*, Kazuhiko Suga Osaka Prefecture University, Japan
15:40-15:42	23299	**Elastic stress acts on elastic turbulence of viscoelastic fluid flow in curvy microchannel** Dong-Yang Li*, Hong-Na Zhang, Feng-Chen Li, Si-Chao Tan Harbin Engineering University, China
15:42-15:44	23942	**Experimental investigation of thermal mixing of liquid-metal coolant flow in T-junction** Kashinsky Oleg, Kurdyumov Aleksandr, Lobanov Pavel*, Pribaturin Nikolay Siberian Branch of Russian Academy of Sciences, Russia
15:44-15:46	23328	**A study of the effects of the pore size on turbulence intensity and turbulence length scale in forced convection flow in porous media** Ching-Wei Huang, Timothy S. Su, Vishal Srikanth, Andrey V. Kuznetsov* North Carolina State University, USA
15:46-15:48	21429	**Reynolds analogy in turbulent flows over rough walls – a DNS investigation** Pourya Forooghi*, Franco Magagnato, Bettina Frohnapfel Karlsruhe Institute of Technology, Germany
15:48-15:50	22234	**Pore-scale numerical study on the heat transfer process in porous media under different thermal conditions** Shen Du, Ming-Jia Li, Zhan-Bin Liu, Ya-Ling He*, Wen-Quan Tao Xi'an Jiaotong University, China
15:50-15:52	21817	**Turbulent transport over anisotropic porous media** Yuki Okazaki, Yusuke Kuwata, Masayuki Kaneda, Kazuhiko Suga* Osaka Prefecture University, Japan
15:52-15:54	21819	**Multiplicity of nanofluid forced convection heat transfer in curved ducts** Fang Liu*, Dongxiang Zhang, Yang Cai, Qunzhi Zhu, Jun Zhao, Liqiu Wang Shanghai University of Electric Power, China
15:54-15:56	22411	**3D tracing of particle transport in natural convection using a stereoscopic shadowgraph system** Yu Wu, Qian Wang*, Changying Zhao, C.W. Lei Shanghai Jiaotong University, China

14 August, Tuesday 14:00-18:00 Room 309B

Session subject: Multiphase Flow-2 (MPF2)

Session chairman: Ri Li

Time	ID	Title, Author, Affiliation
14:00-14:40 Keynote	KN23	**Void fraction measurements in gas-liquid flow and how to use them for probabilistic flow maps for evaporating refrigerants.** Michel de Paepe Gent University, The Netherlands
15:00-15:02	24081	**Falling liquid film flow over the wavy surface of vertical pillow plates – A numerical investigation** Alexander Zibart*, Eugeny Kenig Paderborn University, Germany
15:02-15:04	23790	**Study on characteristics of melt jet breakup in a water with numerical and experimental method** Hui Cheng, Jiyun Zhao* City University of Hong Kong, Hongkong, China
15:04-15:06	22138	**Modelling of fuel droplet heating and evaporation: Recent results** Sergei Sazhin* University of Brighton, UK
15:06-15:08	23271	**Thermal-electrical coupling modeling and irreversible transfer process analysis of a multi-element thermoelectric generation system** Heng Xiao, Xiaobing Liu, Peng Hu Xihua University, China
15:08-15:10	22131	**Numerical study of droplet-laden mist film cooling effectiveness of cylindrical holes embedded in a transverse trenche** Maksim Pakhomov*, Viktor Terekhov Siberian Branch of Russian Academy of Sciences, Russia
15:10-15:12	22648	**Study on temperature-dependent desorption characteristics of metallic tin on corundum filter ball surface** Lige Tong*, Pei Zhang, Shaowu Yin, Chuanping Liu, Li Wang University of Science and Technology Beijing, China
15:12-15:14	22471	**Numerical analysis of heat transfer for jet impingement on a hot steel plate during secondary cooling** Haibo Ma, Justina Lee, Rui Liu, Michael Lowry, Armin Silaen, Chenn Zhou* Purdue University Northwest, USA
15:14-15:16	23528	**Investigation on the effect of the magnetic force on the melt pool evolution and surface shrink using a developed model** Bian Qingfei, Tang Xiaoli, Dai Renkun, Yang Dong, Zeng Min*, Wang Qiuwang Xi'an Jiaotong Uniersity, China
15:16-15:18	23460	**Numerical study of the effect of over/underburden permeability on methane hydrate dissociation by depressurization** Yongchang Feng*, Lin Chen, Hikaru Yamada, Junnosuke Okajima, Atsuki Komiya, Shigenao Maruyama Institute of Fluid Science, Tohoku University, Japan
15:18-15:20	23729	**Thermodynamic of the elliptic orbit motion** Liangsuo Shu, Xiaokang Liu,Zhichun Liu,Wei Liu* Huazhong University of Science & Technology, China
15:20-15:22	23937	**Surface wettability instigated transition from film boiling to nucleate boiling regime** Vinod Pandey, Gautam Biswas*, Amaresh Dalal Indian Institute of Technology, India
15:22-15:24	23468	**Theoretical optimization study on coupling characteristics of thermoelectric refrigeration membrane distillation** Xiaohong Yang*, Da Li, Junhu Hu, Rui Tian Inner Mongolia University of Technology, China
15:24-15:26	23838	**CFD modeling of slug flow heat transfer in non-planar microchannels** Thilaksiri Bandara*, Gary Rosengarten Royal Melbourne Institute of Technology University, Australia

15:26-15:28	23971	**Interfacial area transport system for bubbly flow in vertical rod bundles** Hang Liu, Liang-Ming Pan, Wen-Xiong Zhou, Quan-Yao Ren, Haojie Huang, Bin Yu Chongqing University, China
15:28-15:30	22466	**Numerical modeling of thermal stresses using the finite-volume method** He Guoxi, Y.F. Yap, K. Kubiak, L. Liu, V. Stetsyuk, Y.T. Liang, J.C. Chai* University of Huddersfield, UK
15:30-15:32	24033	**Critical heat flux enhancement through increased rewetting on nanopillar array surfaces** Tuan Tran, Dongdong Liu*, Binh Thien Nguyen Nanyang Technological University, Singapore
15:32-15:34	23707	**Study on effect of counter-current air flow on flow behavior of liquid falling film outside horizontal tubes** Qinggang Qiu* , Xiaocui Zhang, Xiaojing Zhu, Shengqiang Shen Dalian University of Technology, China
15:34-15:36	24466	**Non-equilibrium phenomena on the liquid-vapor interface** Alexey Polikarpov*, Irina Graur, Tadrist Lounes, Elizaveta Gatapova, Oleg Kabov Aix Marseille University, France
15:36-15:38	22222	**Experimental study of natural convection and phase transition coupling heat sink with temperature uniformity** Hao Chen, Qiang Li* Nanjing University of Science and Technology, China
15:38-15:40	24247	**Experimental investigation of flow boiling in a 4.0 mm tube at different gravity conditions: 0g, 1g, and 2g** Daiane Mieko Iceri, Gherhardt Ribatski, Gianfranco Caruso, Fabio Massimo Forino, Luca Saraceno, Giuseppe Zummo* Brescia University, Italy
15:40-15:42	23594	**Influence of initial state of droplet group on self-propelled jumping** Zhiping Yuan, Fuqiang Chu, Xiaomin Wu* Tsinghua University, China
15:42-15:44	24352	**Critical heat flux of R134a boiling flow in the circumferentially non-uniformly heated helically coiled tubes** Xiaojuan Niu, Huaijie Yuan, Chen Quan, Liang Zhao* Xi'an Jiaotong University, China
15:44-15:46	23665	**Gas-solid flow and heat transfer characteristics of a fluidized bed reactor for solar thermal applications** Selvan Bellan, Koji Matsubara*, Hyun Seok Cho, Nobuyuki Gokon, Tatsuya Kodama Niigata University, Japan
15:46-15:48	23486	**Experimental investigation of heat transfer characteristics of liquid nitrogen flow boiling in a mini-channel** Tong An, Yuan Wang, Wei-qiang Liu National University of Defense Technology, China
15:48-15:50	21985	**Numerical and experimental study on melting thermal performance of paraffin** Liang Xia, Luying Wang, Yuying Yan* University of Nottingham, UK
15:50-15:52	24113	**Numerical study on the effect of inclination on heat and mass transfer of zeotropic mixture** Yawei Shao, Shuai Deng, Li Zhao*, Pei Lu, Dongpeng Zhao Tianjin University, China
15:52-15:54	24631	**Investigation on the noise characteristics of direct contact steam condensation in low sub-cooled water** Yong Li, Shaodan Li, Mo Tao, Qi Xiao*, Zhiguo Wei Wuhan Second Ship Des. & Res. Ins., China
15:54-15:56	23596	**Enhanced VOF-based direct numerical simulations of slug flow boiling within micro-channels with smooth and finned heated walls** Emanuele Teodori*, Manolia Andredaki, Anastasios Georgoulas, Ana Moita, Antonio Moreira, Marco Marengo Instituto Superior Tecnico, Portugal
15:56-15:58	23803	**Numerical simulation of spray characteristics in a pressure-swirl nozzle** Rui Jiang, Bo Dong, Tao Zhang, Weizhong Li* Dalian University of Technology, China

15:58-16:00	24707	**Heat flux density measurments in the contact line of the heated sessile droplet/falling down liquid rivulet** Cheverda Vyacheslav*, Ponomarenko Tatyana, Karchevsky Andrey, Kabov Oleg Institute of Thermophysics Siberian Branch of the Russian Academy of Sciences, Russia
16:00-16:02	23622	**Subcooled flow boiling in narrow microchannel under different orientations and surface wettability characteristics** Zengchao Chen, Junye Li, Zhaozan Feng, Kan Zhou, Jie Zhu, Wei Li*, Yunting Ge* Zhejiang University, China, Brunel University London, UK

14 August, Tuesday 14:00-18:00 Room 310

Session subject: Heat Exchanger-1 (HER1)

Session chairman:

Time	ID	Title, Author, Affiliation
14:00-14:40 Keynote	KN24	**The rate problem in solid-liquid phase change heat transfer: Efforts and questions toward heat exchanger design rules** Dominic Groulx Dalhousie University, Canada
15:00-15:02	23638	**Effect of the number of vertical rows on heat transfer from a staggered tube bank of subsea cooler** Nikolay Ivanov*, Vladimir Ris, Nikolay Tschur, Marina Zasimova Peter the Great St. Petersburg Polytechnic University, Russia
15:02-15:04	22968	**Thermal analysis of heat exchanger with supercritical pressure CO2** Jiangfeng Guo*, Xiulan Huai, Keyong Cheng, Xinying Cui, Haiyan Zhang Institute of Engineering Thermophysics, China
15:04-15:06	24353	**Oscillating behavior of loop heat pipe when operating under overcharged condition** Phuoc Hien Huynh*, Htoo Kyaw Zin, Keishi Kariya, Akio Miyara Saga University, Japan
15:06-15:08	22503	**Critical impact factors on the optimal design of natural draft dry cooling tower under constant load** Wenjing Ge, Wendong Li, Guanan Chen, Yuanbin Zhao* Shandong University, China
15:08-15:10	23213	**Heat transfer in the transitional flow regime in a circular tube with twisted tape insert and re-entrant inlet** Sogo Mayokun Abolarin, Josua Petrus Meyer* University of Pretoria, South Africa
15:10-15:12	22600	**Heat and mass transfer of desiccant coated heat exchanger with microchannel and fin-and-tube types** Xiangyu Sun, Yanjun Dai*, Tianshu Ge, Yao Zhao, Ruzhu Wang Shanghai Jiao Tong University, China
15:12-15:14	22766	**Development and validation of a process model for a superheater heat exchanger in a coal-fired power plant boiler** Excellent Gwebu*, Pieter Rousseau University of Cape Town, South Africa
15:14-15:16	21255	**Optimization design of waste heat power generation systems in cement production** Qian Yin, Wenjing Du, Lin Cheng* Shandong Universiy, China
15:16-15:18	22037	**A solution of aluminum flat heat pipe for dry cooling the ladar array** Su Hyeon Hong, Seok-Hwan Moon*, Kwang Seong Choi, Jin Ho Lee, Hyun Tak Kim Electronics and Telecommunications Research Institute, Korea
15:18-15:20	23388	**A general thermal resistance with correction factor for heat exchanger design and analysis based on energy flow method** Junhong Hao, Qun Chen* Tsinghua University, China
15:20-15:22	23300	**Transport processes and separation in zero-gravity distillation** Niklas Preußer*, Sebastian Rieks, Eugeny Y. Kenig, Peter Stephan, Tatiana Gambaryan-Roisman Technical University Darmstadt, Germany
15:22-15:24	23845	**Gravity effect on natural convection melting investigated with 2D and 3D lattice Boltzmann methods** X. Y. Li, H. Zhang, J. Liu, Q. W. Wang, T. Ma Xi'an Jiaotong University, China
15:24-15:26	21381	**Transient characterization of a heat exchanger through identification of its transfer functions** Waseem Al Hadad*, Yves Jannot, Vincent Schick, Benjamin Remy, Denis Maillet University of Lorraine, France

15:26-15:28	23616	**Study on performances of shellside of blade baffle heat exchanger with different arrangement of baffle** Ke Wang, Guofeng Tan*, Shupei Zhao, Yongqing Wang, Zunchao Liu Zhengzhou University, China
15:28-15:30	21657	**Numerical studies of the bending heat pipe towards ICT applications** Shenghui Lei*,Akshat Agarwal, Nick Jeffers Bell Labs, Ireland
15:30-15:32	23110	**Characteristics of particulate fouling of rectangular-wing vortex generators with a hole** Zhiming Xu, Zhimin Han*, Xiaoya Geng, Jingtao Wang Northeast Electric Power University, China
15:32-15:34	23088	**Numerical simulation of heat pipe with verification of X-ray CT** Suguru Uemura*, Shozo Yoshimura, Takashi Imai, Shuichiro Hirai Tokyo Institute of Technology, Japan
15:34-15:36	23552	**The effect of zigzag angle on the thermal-hydraulic performances of printed circuit heat exchangers** Sheng-hui Liu, Yan-ping Huang*, Jun-feng Wang, Jinguang Zang, Guangxu Liu, Yuanfeng Zan Nuclear Power Institute of China, China
15:36-15:38	21165	**An experimental study of plastic heat exchangers applicable for dehumidification** Mohammed Amer, Miao-Ru Chen, Ming-Chang Lu, Chi-Chuan Wang* National Chiao Tung University, Chinese Taipei
15:38-15:40	23310	**Transient response of cross-flow three-fluid plate-fin heat exchanger under the influence of ambient heat-in-leak** Harpreet Aasi*, Manish Mishra Indian Institute of Technology, Roorkee, India
15:40-15:42	24116	**Heat and flow characteristics of water with air-injection on polyethylene tube for various tube widths placed over metal rods set.** Fuminori Amemiya*, Koji Toriyama, Takuya Kobayashi University of Yamanashi, Japan
15:42-15:44	23852	**Effects of sea-water fouling on a plate-flame heat exchanger for utilization of waste heat from power plant** Wonkeun Baik, Jaehyok Heo, Rin Yun* Hanbat National University, Korea
15:44-15:46	23393	**Experiments of active polymer thermosyphons for water harvesting applications** Wei Zhong, Tao He, Sean Hardick, Rebecca Trojanowski, Tom Butcher, Timothy Wagner, Yaroslav Chudnovsky, William Worek, Jon P. Longtin* Stony Brook Universtiy, USA
15:46-15:48	23199	**Effect of the non-condensable gas contents on heat transfer characteristics of two-phase closed thermosyphon** Yeong Hwan Kim, Dong Hwan Shin, Jin Sub Kim, Jungho Lee* Inje University, Korea
15:48-15:50	23685	**An additive manufacturing-enabled air-to-air heat exchanger for high temperature applications** Xiang Zhang*, Farah Singer, Amir Shooshtari, Michael M. Ohadi University of Maryland, USA
15:50-15:52	22116	**Visualization experiment and numerical simulation of a flat-plate closed loop two-phase thermosyphon of small dimensions** Weinan Hu, Chunpeng Zhou, Guanzheng Huang, Fangjun Hong* Shanghai Jiao Tong University, China
15:52-15:54	23835	**Numerical investigation on flow and thermal characteristics of pulsating heat pipes** Hyung Yun Noh*, Sung Jin Kim Korea Advanced Institute of Science and Technology, Korea
15:54-15:56	22167	**Flow and heat transfer characteristics of a thermosyphon loop with high filling ratio** Yun Liu, ZhiGang Li*, Yuhua Li, Tie Li, Yuyan Jiang, Dawei Tang Institute of Engineering Thermophysics, Chinese Academy of Sciences, China
15:56-15:58	23529	**Experimental and numerical analysis of a closed-loop flat-plate pulsating heat pipe: Effects of orientation with respect to gravity on the thermohydraulic behavior** Filippo Pagnoni*, Vincent Ayel, Edoardo Scoletta, Yves Bertin Institut Pprime, CNRS-ENSMA-University of Poitiers, France

15:58-16:00	23885	**An investigation on maximum hydraulic diameter of an oscillating heat pipe** Yulong Ji*, Lilin Chu, Chunrong Yu, Hailang Kuang, Hongbin Ma Dalian Maritime University, China

14 August, Tuesday 14:00-18:00 Room 311A

Session subject: Energy Conversion and Storage (ECS)

Session chairman:

Time	ID	Title, Author, Affiliation
14:00-14:40 Keynote	KN25	**Thermochemical energy storage: From in-silico characterization to full-scale experimentation** Camillo Rindt Eindhoven University, The Netherlands
15:00-15:02	23118	**Hybrid analytical and finite element formulation of a latent heat storage exchanger simulation: Comparison of heat transfer models for enhanced thermal conductivity change material** Mariam Jadal*, Didier Delaunay, Lingai Luo, Jerome Soto, Nicolas Boyard Thermal and Energy Laboratory of Nantes, France
15:02-15:04	21771	**The entransy based analysis of the operation principle of the absorption heat pump** Tian Zhao, Yu-Chao Hua, Zeng-Yuan Guo* Tsinghua University, China
15:04-15:06	23991	**Parallel triangular channel system for latent heat thermal energy storages** Assunta Andreozzi, Bernardo Buonomo, Davide Ercole, Oronzio Manca* University of Campania "Luigi Vanvitelli", Italy
15:06-15:08	22091	**Numerical investigation on the thermal performance of lightweight building with integrated PCM layer** Yang Yang*, Li Zhu Tianjin University, China
15:08-15:10	22400	**Numerical simulation on BTES system performances of single and multiple borehole under different factors** Li Zhu, Sarula Chen* Tianjin University, China
15:10-15:12	22340	**A new PCM composite with microencapsulated phase change material slurry saturated in metal foam for passive thermal management** Wenqiang Li*, Duo Zhang, Shangsheng Feng, Biao Yuan, Hao Wan, Fei Qin, Guoqiang He Nothwestern Polytechnique University, China
15:12-15:14	24007	**Control of heat release energy during heating from solid-solid phase change material** Ryohei Gotoh*, Tsuyoshi Totani, Masashi Wakita, Harunori Nagata Hokkaido University, Japan
15:14-15:16	22260	**Thermal energy storage with tunable melting point phase change materials** Fangyu Cao*, Ying Zheng, Chien-Hua Chen, Richard Bonner Advanced Cooling Technologies, Inc., USA
15:16-15:18	22545	**Phase change behavior of ammonia alum hydrate slurries passing through a heat exchanger** Kohei Nakamura*, Takashi Ina, Ruri Hidema, Hiroshi Suzuki, Yoshiyuki Komoda Toho Gas Limited Liability Company, Japan
15:18-15:20	23771	**Surface modification driven phase change properties of organics confined in nanopores matrix for shape stabled phase change materials** Daili Feng, Yanhui Feng*, Mengya Xiong, Chen Wang, Ge Wang, Xinxin Zhang University of Science and Technology Beijing, China
15:20-15:22	21964	**Comprehensive performance analysis of concentric cylindrical thermoelectric generator for light-duty vehicles** Kuo Huang, Yuying Yan*, Bo Li, University of Nottingham, UK
15:22-15:24	23502	**Modeling of melting process of phase change material filled capsule for thermal energy storage** Yukiko Saito, Selvan Bellan, Nobuyuki Gokon, Koji Matsubara*, Cho Hyun Cheok, Tatsuya Kodama Niigata University, Japan

15:24-15:26	23597	**Non-invasive measurement of internal temperature in Li-ion cells for nominal and thermal runaway conditions** Ankur Jain* The University of Texas at Arlington, USA
15:26-15:28	23724	**Experimental investigation of phase change wallboards: Comparative study of test cells** Yuhao Qiao, Yan Liu, Liu Yang*, Liqiang Hou, Xiangrong Zhang, Jiaping Liu Xi'an University of Architecture and Technology, China
15:28-15:30	24495	**Heat transfer study of nitrate salt and nano-salt as energy storage media** Afrah Turki Awad*, Dongsheng Wen University of Leeds, UK
15:30-15:32	22485	**Investigation on the application of phase change composite with CNTs in water heater** Jifen Wang*, Huaqing Xie, Zhixiong Guo Shanghai Polytechnic University, China
15:32-15:34	24438	**Cascaded latent heat thermal energy storage with molten salt-nanoparticles composite** Xin Xiao*, Dongsheng Wen University of Leeds, UK
15:34-15:36	23580	**Experimental study of close-contact melting in a cylindrical enclosure** Tomer Shockner, Amit Nir, Dmitry Portnikov, Yoram Kozak, Gennady Ziskind* Ben-Gurion University, Israel
15:36-15:38	22442	**Experimental study on the cooling charging performance of microencapsulated phase change material slurry** Hongtao Xu, Yubo Miao, Zhuqing Luo, Jianlei Niu* The Hong Kong Polytechnic University, Hongkong,China
15:38-15:40	22477	**Unsteady characteristics of water thermocline storage tank with encapsulated paraffin wax packed bed** Xiaoze Du*, Zhaoyu He, Xiaohui Wang, Chao Xu, Lijun Yang North China Electric Power University, China
15:40-15:42	23335	**Numerical simulation of heat transfer in a magnesium hydroxide packed bed reactor** Keisuke Nishida, Massimiliano Zamengo, Yukitaka Kato, Yasunori Okano* Osaka University, Japan
15:42-15:44	22413	**Axsisymmetric lattice Boltzmann method for gas-solid thermochemical reaction in particle scale** Zhihao Pan, Jun Yan, Changying Zhao* Shanghai Jiao Tong University, China
15:44-15:46	22861	**Numerical study on thermal conductivity optimization of composite phase change material** Bofeng Shang, Ruikang Wu, Bin Xie, Xingjian Yu, Xiaobing Luo* Huazhong University of Science and Technology, China
15:46-15:48	22579	**A novel technique for latent heat transport using super-hydrophobic flexible gel** Takumu Otsubo, Tomohiro Senda, Ruri Hidema, Hiroshi Suzuki*, Yoshiyuki Komoda, Kosuke Suzuki, Masao Iwaya, Masaru Endo, Naotaka Nishio Kobe University, Japan
15:48-15:50	23602	**Morphological evolution of mushy zone and effect of mushy zone constant during melting process** Bei Yang*, Zhifeng Wang, Tiejun Zhang, Fengwu Bai, Yan Wang Institute of Electrical Engineering, Chinese Academy of Sciences, China
15:50-15:52	23186	**Solidification heat transfer characteristics of phase change emulsion in turbulent flow region** Takashi Morimoto*, Kai Suzaki, Hiroyuki Kumano Aoyama Gakuin University, Japan
15:52-15:54	23992	**Feasibility of using thermal inertia to shift the peak energy demand of buildings** Xiaoqing Chen, Hailong Li*, Xueqiang Li, Yabo Wang, Kai Zhu Tianjin University of Commerce, China
15:54-15:56	22594	**Effects of fabrication conditions on silica hard-shell microcapsules containing phase change materials** Ippei Watanabe*, Nami Furukawa, Naoki Kuroda, Ruri Hidema, Hiroshi Suzuki, Yoshiyuki Komoda, Takashi Horie, Hitoshi Asano,Naoto Ohmura Kobe University, Japan

15:56-15:58	24178	**Numerical method and its application to investigate the thermal performance of an earth to fluid pipe system** Zaiguo Fu*, Lingtong Li, Li Zhang, Bo Yu Shanghai University of Electric Power, China

14 August, Tuesday 15:00-18:00 Room 311B

Session subject: Porous Media (PMA)

Session chairman:

Time	ID	Title, Author, Affiliation
15:00-15:02	22800	**Numerical investigation of heat and mass transfer in a structured packed bed with porous spherical particles** Morteza Hangi, Vincent M. Wheeler, Wojciech Lipinski* The Australian National University, Australia
15:02-15:04	22163	**Free evaporation cooling characteristics of horizontal wet porous media plate installed on car roof** Li Ouyang* Wuhan University of Technology, China
15:04-15:06	23662	**Combined conductive-convective-radiative heat transfer in complex geometry using the Monte Carlo method: Application to solar receivers** Loris Ibarrart*, Cyril Caliot, Mouna El Hafi, Richard Fournier, Stephane Blanco, Sébastien Dutour, Jérémi Dauchet, Jean-Marc Tregan, Vincent Eymet, Vincent Forest Mines Albi, Paul Sabatier University, France
15:06-15:08	22414	**Evaporation from thin porous media with mixed wettability** Rui Wu, Changying Zhao* Shanghai Jiao Tong University, China
15:08-15:10	24160	**Impact of geometrical characteristics on the condensate retention and frost formation on metal foams** Kashif Nawaz*, Anthony Jacobi Oak Ridge National Laboratory, USA
15:10-15:12	22694	**Effect of fiber orientation on the effective mass diffusivity of fibrous porous media** Ao Xu, T.S. Zhao* Hong Kong University of Science and Technology, Hongkong, China
15:12-15:14	23894	**The study of hydrodynamics and heat transfer in pebble beds with volumetric heating in case of axial and radial flow** Yuliya V. Smorchkova*, Alexander N. Varava, Aleksey V. Dedov, Alexander V. Zakharenkov, Alexander T. Komov, Sergey V. Mirnov, Alexander V. Borozdin National Research University, Russia
15:14-15:16	22925	**Heat and mass transfer on porous medium surface with vapor-liquid phase change** Shixue Wang*, Minghui Ge, Yulong Zhao, Fei Wang Tianjin University, China
15:16-15:18	21758	**Three-dimensional numerical simulation of ionic mechanical dispersion in an electrodialyzer with net-like spacers** Xiaohui Bai, Yoshihiko Sano, Fujio Kuwahara, Akira Nakayama* Shizuoka University, Japan
15:18-15:20	23174	**Pore scale simulation for thermo-hydro-mechanical processes in geophysical system** Zhiqiang Chen, Moran Wang* Tsinghua University, China
15:20-15:22	24216	**Combining micro- meso- and macro-scopic numerical methods for multiscale radiative transfer modeling of SiC-based foams up to very high temperatures** Mohd afeef Badri, Arnaud Biallais, Gilberto Domingues, Yann Favennec, Giorgia Fugallo, Aubin Mekeze-Monthe, Benoit Rousseau* University of Nantes, France
15:22-15:24	23916	**Numerical investigation on the cooling performance and configuration optimization of transpiration cooling with phase change** Hao Su, Fei He*, Jianhua Wang, Liang Chen, Bangcheng Ai University of Science and Technology of China, China
15:24-15:26	23683	**Two-phase flow boiling and evaporative heat transfer promoted with uni-directional porous copper** Kio Takai*, Kazuhisa Yuki, Shuai Yang, Risako Kibushi, Noriyuki Unno Tokyo University of Science, Yamaguchi, Japan

15:26-15:28	24102	**Analytical study on the performance of a multi-layer porous volumetric solar receiver** Kun Yang*, Kai Wang, Yueming Huang, Jiabing Wang* Huazhong University of Science and Technology, China
15:28-15:30	23001	**Two-phase thermal conductivity of ceramic sponges with and without flow up to high temperatures** Thomas Fischedick, Konrad Dubil, Benjamin Dietrich* Institute of Thermal Process Engineering, Germany
15:30-15:32	24135	**Thermal radiation effect on the effective thermal conductivity of porous material by pore level numerical simulation** M. G. Luo, J. M. Zhao*, L. H. Liu** Harbin Institute of Technology, China
15:32-15:34	24163	**Numerical and experimental investigations of heat and mass transfer properties of open-cell ceramic foams** P. Lea*, J.F. Henry, C. Lorreyte, D. Caron, H. Pron, J. Randrianalisoa* University of Reims, France
15:34-15:36	23592	**Numerical investigation of gas diffusion properties in nanoporous organic matter** Ying Yin, Zhiguo Qu*, Jianfei Zhang Xi'an Jiaotong University, China
15:36-15:38	22819	**Aluminum foams for water pool boiling enhancement** Luca Doretti, Hosein Sadfi, G. Righetti, Kamel Hooman, Giovanni Longo, Simone Mancin* University of Padova, Italy
15:38-15:40	22513	**Heat transfer model analysis of a hybrid porous compact heat exchanger** Victor Ryazhskikh, Alexandr Nikolenko, Igor Drozdov, Dmitriy Konovalov* Voronezh State Technical University, Russia
15:40-15:42	23538	**Effects of micro-morphology on BRDF of metal foam's skeleton** Bo Liu, Xin-Lin Xia*, Chuang Sun, Nanshi Chen Harbin Institute of Technology, China
15:42-15:44	21435	**Periodic freezing of water and melting of ice in asphalt as a porous medium subject to diurnal temperature oscillations** Cristina Martin Linares, Chun-Hsing (Jun) Ho, Peter Vadasz* Northern Arizona University, USA
15:44-15:46	22309	**Experimental study on capillary performance of micro/nano scale sintered wicks** Xianbing Ji,Chao Dai, Jinliang Xu* North China Electric Power University, China
15:46-15:48	24267	**Design of evaporating surfaces using highly-ordered microstructures** Kimia Montazeri, Quang Pham, Yoonjin Won* University of California, USA
15:48-15:50	22563	**Microstructural effects on the permeability of nitrocellulose membranes for paper diagnostics** Shanyouming Sun, Shangsheng Feng*, Feng Xu, Changchun Ji, Meng Shi, Tianjian Lu* Xi'an Jiaotong University, China
15:50-15:52	22558	**Lattice Boltzmann simulation of heat and mass transfer during soil freezing with the considering of pre-melted film** Fei Xu, Bingxi Li*, Yaning Zhang, Zhonglin Du Harbin Institute of Technology, China
15:52-15:54	23158	**Study on local seepage characteristics of porous media containing methane hydrate** Jiafei Zhao*, Li Ai, Yulong Liu, Jiaqi Wang, Lei Yang, Yongchen Song* Dalian University of Technology, China
15:54-15:56	24153	**Heat transfer characteristics of a gas flow in uni-directional porous copper pipes** Yoshiaki Sato, Kazuhisa Yuki*, Yuki Abe, Risako Kibushi, Noriyuki Unno, Kazuyuki Hokamoto, Shigeru Tanaka, Toshio Tomimura Tokyo University of Science, Yamaguchi, Japan
15:56-15:58	22312	**Heat transfer and interface evolution of the PCM melting in a rectangular enclosure with or without porous media** Huijin Xu*, Changying Zhao, Yan Wang China University of Petroleum (East China), China
15:58-16:00	23409	**Pore-scale numerical analysis of hydrodynamics and conjugate heat transfer in solid sponges** Sebastian Meinicke, Benjamin Dietrich*, Thomas Wetzel Karlsruhe Institute of Technology, Germany

15 August, Wednesday 8:30-12:20 Room 309A

Session subject: Boiling and Evaporation-4 (BAE4)

Session chairman:

Time	ID	Title, Author, Affiliation
8:30-9:10 Keynote	KN26	**Influences of dynamic wetting and dewetting processes on evaporative heat transfer** Peter Stephan Technische Universität Darmstadt, Germany
9:20-9:22	22657	**Phase change simulation of two-phase R134a flow in a horizontal T-junction** Pei Lu, Li Zhao*, Shuai Deng, Yawei Shao Tianjin University, China
9:22-9:24	23482	**Enhanced boiling heat transfer on surfaces patterned with mixed wettability** Biao Shen*, Masayuki Yamada, Tomosuke Mine, Sumitomo Hidaka, Junichiro,Shiomi, Gustav Amberg, Masamichi Kohno, Koji Takahashi, Yasuyuki Takata Kyushu University, Japan
9:24-9:26	20898	**In-situ TEM study of nanoscale liquid wetting** Guanglei Chen, Haim H. Bau, Calvin Li* Villanova University, USA
9:26-9:28	24169	**Vaporization of binary and ternary non-azeotropic mixtures inside channels** Marco Azzolin, Arianna Berto, Stefano Bortolin, Davide Del Col* University of Padova, Italy
9:28-9:30	22748	**Thermal waves at the interface of an evaporating liquid pool** Lu Qiu, Fei Duan* Beihang University, China
9:30-9:32	22844	**R245fa flow boiling heat transfer on an electrically heated carbon/carbon surface** Giulia Righetti*, Luca Doretti, Simone Mancin, Claudio Zilio, Giovanni Antonio Longo University of Padova, Italy
9:32-9:34	22678	**Experimental study on thermal performance of a new novel loop heat pipe** Yueping Deng, Jinjia Wei*, Xueli Wang Xi'an Jiaotong University, China
9:34-9:36	23816	**Two-phase flow analysis of a double layer counter flow mini-channel heatsink with 1D countercurrent flow model** Kihoon Lim, Junbeom Lee, Jaeseon Lee* Ulasn National Institute of Science and Technology (UNIST), Korea
9:36-9:38	22936	**Heat transfer enhancement and crisis phenomena at pool boiling on the surfaces with structured capillary-porous coatings** Aleksandr Pavlenko*, Anton Surtaev, Denis Kuznetsov, Vladimir Serdyukov, Vasily Kalita, Dmitry Komlev Siberian Branch of Russian Academy of Sciences, Russia
9:38-9:40	21916	**Advances in modelling of boiling heat transfer using mesoscale method** Wei Gong, Yuying Yan* University of Nottingham, UK
9:40-9:42	24310	**Temperature discontinuity and resistance at the liquid–gas interface of thin liquid film and droplet under heating** Elizaveta Gatapova*, Oleg A. Kabov Institute of Thermophysics, Siberian Branch of the Russian Academy of Sciences, Russia
9:42-9:44	22294	**Heat transfer and bubble dynamical behavior during single bubble pool boiling in microgravity** Ke Wu, Peng Liu, Wang-Fang Du, Jian-Fu Zhao*, Hui-Xiong Li, Kai Li Institute of Mechanics, Chinese Academy of Sciences, China
9:44-9:46	23071	**Enhancement of HFE-7200 pool boiling heat transfer on a copper surface with nanostructure coatings** Zhen Cao, Zan Wu, Anh Duc Pham, Calle Preger, Tautgirdas Ruzgas, Cathrine Albæ, Sahar A. Abbood, Bengt Sunden* Lund University, Sweden
9:46-9:48	22264	**Droplet evaporation on functional surfaces** A.Alperen Gunay, Marisa Gnadt, Soumyadip Sett, Junho Oh, Nenad Miljkovic* University of Illinois, USA

9:48-9:50	23676	**Investigation on bubble dynamic behaviors under pulse heating** Suchen Wu,Chengbin Zhang ,Xiangdong Liu ,Yongping Chen* Southeast University,China
9:50-9:52	23658	**Film boiling collapse temperature and boiling heat transfer correlations through two-dimensional temperature field measurement and observation of liquid-solid contact** Hiroyasu Ohtake* Kogakuin University, Japan
9:52-9:54	24181	**An experimental study of flow boiling in constructal tree-shaped networks fabricated by selective laser melting** Yao Song See, Kai Choong Leong* Nanyang Technological University, Australia
9:54-9:56	23396	**Numerical study of flow characteristics and temperature distribution of falling films over horizontal tubes for superhydrophilic surface** Yi Zheng, Zhong Lan, Yun Li, Rui Jiang, Kai Wang, Xuehu Ma* Dalian University of Technology, China
9:56-9:58	24209	**Steady-state and transient heat transfer phenomena of water: An experimental and theoretical investigation at near-critical pressures** Tobias Gschnaidtner*, Andreas Kohlhepp, Gerrit A.Schatte, Christoph Wieland, Hartmut Spliethoff Technical University of Munich, Germany
9:58-10:00	23998	**Enhancement of desalination process involving two phase heat transfer: An experimental study** Rajiva lochan Mohanty*, Abhilas Swain, Mihir Kumar Dasindian Institute of Technology Bhubaneswar, India
10:00-10:02	23156	**Effect of surface structure on void fraction of subcooled forced boiling in rectangular narrow channel** Hitoshi Asano*, Tomohiko Nakamura Kobe University, Japan
10:02-10:04	23750	**Study on superheated liquid layer in pool boiling** Mao Takeyama*, Tomoaki Kunugi, Takehiko Yokomine, Zensaku Kawara, Kyoto University, Japan
10:04-10:06	24123	**Two-phase pressure drop characteristics of HFE-7100 in mini-channels** Jin Young Park, Eun Jung Choi, Min Soo Kim* Seoul National University, Korea
10:06-10:08	24306	**Levitation of ordered arrays of liquid microdroplets over solid-gas and liquid-gas interfaces** Dmitry Zaitsev*, Dmitry Kirichenko, Vladimir Ajaev, Oleg Kabov Russian Academy of Sciences, Russia
10:08-10:10	23917	**Bubble formation and heat transfer process during saturated film boiling in the electric field** Yanning Wang, Yinshi Li*, Dongliang Sun* Xi'an Jiaotong University, China
10:10-10:12	23305	**Evaporation from ultra-thin nanoporous membranes into liquid-moist air systems** Zhengmao Lu, Kyle Wilke, Daniel J. Preston, Ikuya Kinefuchi, Evelyn N. Wang* Massachusetts Institute of Technology, USA
10:12-10:14	22191	**Numerical simulation of the dryout characteristics in a helical once-through steam generator** Xiang Yu, Baozhi Sun*, Jianxin Shi, Wanze Wu, Zhirui Zhao Harbin Engineering University, China
10:14-10:16	23840	**Micro-PIV analysis of gas-liquid flow and boiling heat transfer characteristics in micro pin-fin heat sinks** Lingjian Kong, Zhigang Liu, Mingming Lv, Can Ji Energy Research Institute of Shandong Academy Sciences, China

15 August, Wednesday 8:30-12:20 Room 309B

Session subject: New Energy and Efficiency-3 (NEE3)

Session chairman:

Time	ID	Title, Author, Affiliation
8:30-9:10 Keynote	KN27	**Improvement of solar thermal plant efficiency by the use of secondary concentrators** T. Sundararajan Indian Institute of Technology Madras, India
9:20-9:22	23649	**Wet, dry and hybrid cooling systems** John Maulbetsch*, Michael DiFilippo Maulbetsch Consulting, USA
9:22-9:24	23595	**Cross-sectional velocity distribution of water in sediment with methane hydrate dissociation** Bingbing Chen, Shenglong Wang, Mingjun Yang*, Dayong Wang, Yongchen Song*, Yuanping Li Dalian University of Technology, China
9:24-9:26	22290	**Gasification mechanism of woody biomass-derived char with supported Fe catalysts** Yukihiko Okumura* Maizuru National College of Technology, Japan
9:26-9:28	23433	**Heat storage analysis of energy piles with spiral-tube heat exchanger based on a practical axisymmetric model** Qiang Zhao, Baoming Chen* Shandong University, China
9:28-9:30	23146	**Modeling of underexpanded hydrogen jets through rectangular slot nozzles** Xuefang Li, Mingjia Chen, David M. Christopher, Lin Cheng* Shandong University, China
9:30-9:32	23590	**Thermal performance of ground source heat pumps that use direct expansion method using foundation pile** Tetsuaki Takeda*, Shuhei Ishiguro, Osamu Yoda, Hiroji Okubo University of Yamanashi, Japan
9:32-9:34	23410	**Process intensification by heat pipe of methane reforming for hydrogen production** Bohong Chen, long wang, Feng Wang*, Bo Qi Chongqing University, China
9:34-9:36	20916	**Computer simulation of thermophysical processes in particle generators** Victor V. Kuzenov, Sergei V. Ryzhkov* Bauman Moscow State Technical University, Russia
9:36-9:38	22377	**Numerical study of the mixing of steam and air in a fuel assembly in cross-flow** Tobias Hanisch*, Erik Frense, Frank Rüdiger, Jochen Fröhlich Dresden University of Technology, Germany
9:38-9:40	22427	**The optical theoretical and experimental investigation on the fixed-focus performance of a fresnel lens solar cooker** Hai Wang, Yanxin Hu, Jin Huang*, Zijian Lu Guangdong University of Technology, China
9:40-9:42	22452	**The use of virtual heaters in assessing the effect of window glazing, window-to-wall ratio and air exchange rate on optimal indoor heat distribution** Jérémie Léger*, Daniel. R Rousse School of high Technology, Canada
9:42-9:44	24773	**In situ non-destructive thermal characterization methods for thick building walls by estimation of pulse response** Yingying Yang*, Alain Sempey, Tingting Vogt Wu, Jean Dumoulin, Jean-christophe Batsale I2M, France
9:44-9:46	23171	**Numerical analysis of the thermal characteristics of a downhole heat exchanger geothermal system** Yu Shi, Xianzhi Song*, Gensheng Li, Gaosheng Wang, Rui Zheng, Jiacheng Li China University of Petroleum-Beijing, China

9:46-9:48	23650	**Multiscale thermal transport in solar thermochemical energy storage systems** Like Li*, Kelvin Randhir, James Klausner, Renwei Mei, Nick AuYeung Mississippi State University, USA
9:48-9:50	21869	**Carbon nanotube based electrodes for perovskite solar cells** Shigeo Maruyama* The University of Tokyo, Japan
9:50-9:52	23700	**Integrated analysis and control of the dynamic characteristics of heat transfer systems based on the entransy-based power flow mode** Kelun He, Qun Chen*, Yifei Wang, Junhong Hao Tsinghua University, China
9:52-9:54	24052	**Improved modeling approach for heat sink topology optimization** Yang Zhou*, Wouter Dekeyser, Martine Baelmans KU Leuven, Department of Mechanical Engineering, The Netherlands
9:54-9:56	22387	**Analysis of thermal storage of polyolefin resin solar collector in Chinese solar greenhouse in winter** Xinni Zhang, Xiaoyan Yuan*, Hongsheng Cheng China Agricultural University, China
9:56-9:58	24296	**Two-dimensional transient heat transfer and optical analysis of a solar receiver** Mostafa Abuseada, Nesrin Ozalp*, Cédric Ophoff University of Minnesota Duluth, USA
9:58-10:00	22440	**A simplified panel for both diurnal photovoltaic conversion and nocturnal radiative cooling** Bin Zhao, Mingke Hu, Xianze Ao, Gang Pei* University of Science and Technology of China, China
10:00-10:02	24171	**Effective solar distillation with thermal concentration and anti-fouling wick** Safa Alzaim, Aikifa Raza, Jin-You Lu, TieJun Zhang* Khalifa University, UK
10:02-10:04	21865	**Design for the turbine of solar chimney power plant system with vertical collector** Yan Zhou, Chen Yang*, Kai Hao*, Liang-Heng Zhang Qingdao University of Science & Technology, China
10:04-10:06	24185	**Feasibility study of a hybrid small-scale dish-mounted solar thermal Brayton cycle with cogeneration** Willem Le Roux* University of Pretoria, South Africa
10:06-10:08	24318	**Optimization of solar cavity receiver for cross linear concentrated solar power system a numerical study** Rendy Silva Renata*, Kentaro Kanatani, Hideharu Takahashi, Yutaka Tamaura, Hiroshige Kikura Tokyo Institute of Technology, Japan
10:08-10:10	22336	**Experimental study on thermodynamic performance of solar air compressor** Lu Wang, Zhong-Xian Yuan* Beijing University of Technology, China
10:10-10:12	24279	**Design and optimization of baffled fluid distributor for realizing target flow distribution in a tubular solar receiver** Lingai Luo*, Min Wei, Yilin Fan University of Nantes, France
10:12-10:14	23302	**Investigation on supercritical fluids heat transfer deterioration and its mitigations** Eze Chika, Hui Cheng, Jiyun Zhao* City University of Hong Kong, Hongkong, China
10:14-10:16	22475	**Spectral characterisation and evaluation of liquid based beam splitters for CPV/T solar systems** Xinyue Han*, Dengshuai Xue, Xiaobin Chen Jiangsu University, China
10:16-10:18	21209	**A multi-layered coating with embedded small particles to improve shielding of space vehicles from intense solar irradiation** Leonid Dombrovsky*, Dmitry Reviznikov Joint Institute for High Temperatures, Russia

10:18-10:20	23436	**Conjugated radiation-convection-conduction heat transfer analysis of volumetric receiver with highly concentrated radiation** Mitsuho Nakakura*, Selvan Bellan, Hyun-Seok Cho, Koji Matsubara, Nobuyuki Gokon, Tatsuya Kodama Niigata University, Japan
10:20-10:22	23961	**Coupled-neutronic-thermalhydraulic stability appraisal of supercritical forced flow channels following lumped parameter approach** Daya Shankar, Manmohan Pandey, Dipankar N. Basu* Indian Institute of Technology Guwahati, India

15 August, Wednesday 8:30-12:20 Room 310

Session subject: Cooling and Thermal Management-2 (CTM2)

Session chairman:

Time	ID	Title, Author, Affiliation
8:30-9:10 Keynote	KN28	**Turbine blade cooling at BUAA** Zhi Tao Beijing University of Aeronautics and Astronatuics, China
9:20-9:22	23749	**Thermal management of lithium ion battery module: Air cooling strategies for the hotspots** Zhao Lu,Xiaoling Yu*, Lichuan Wei, Liyu Zhang, S. Gao, Liwen Jin, Xiangzhao Meng* Xi'an Jiaotong University, China
9:22-9:24	23439	**Thermohydrodynamics of ferrofluidic flow with periodic pulsation under the effect of static and alternating magnetic field-: A numerical study** Sudip Shyam, Balkrishna Mehta*, Pranab Kumar Mondal Indian Institute of Technology, Guwahati, India
9:24-9:26	23446	**An experimental investigation of cooling characteristics at a vane end-wall constructed by laminated structure** Wei Wang, Jian Pu*, Jian-hua Wang, Yong-xian Luan, Bin-peng Kang University of Science and Technology of China, China
9:26-9:28	23633	**Optimal liquid cooling performance of 2.5D-SICs with pin-fin enhanced micro-gaps using design of experiment** Yuanchen Hu, Yogendra Joshi* Georgia Institute of Technology, USA
9:28-9:30	24132	**1D simulations of thermally buffered prismatic batteries through the application of PCMs** Ilya T'Jollyn*, Jasper Nonneman, Wim Beyne, Michel De Paepe Ghent University, The Netherlands
9:30-9:32	21954	**Experimental investigation of gas throttling in microchannels for electronic cooling** Jianhua Weng*, Hang Zhang, Geng Hui, Xiaoyu Cui, Tongyun Zhang, Tenghui Liu Shanghai University of Electric Power, China
9:32-9:34	24140	**Voltage dependence of hot spot temperature on SiC power mosfet with electro-thermal analysis** Risako Kibushi*, Tomoyuki Hatakeyama, Kazuhisa Yuki, Noriyuki Unno, Masaru Ishizuka Tokyo University Science, Yamaguchi, Japan
9:34-9:36	22097	**Low melting point metal enabled PCM heat sink against high heat flux thermal shock** Xiao-Hu Yang, Sen Chen, Xin-Lin Xu, Jing Liu* University of Chinese Academy of Sciences, China
9:36-9:38	23498	**Understanding the location of hot spots in transformer windings** Tor Laneryd*, Andreas Gustafsson, Sead Travancic ABB Corporate Research, Sweden
9:38-9:40	22381	**Vortex propagation in air flows generated by piezoelectric fans and their correlation with fan cooling power efficiency** Navid Dehdari Ebrahimi, Zezhi Zeng, Sungtaek Ju* University of California, Los Angeles, USA
9:40-9:42	24314	**Analysis of the thermal characteristics and life time of IGBTs by varying the thermal interface material thickness** Young Joon Cho*, Andras Vass-Varnai, Attila Szel, Hyuk Il Kwon Mentor Graphics, Korea
9:42-9:44	22859	**Suspension and working performance of the hydro-dynamically levitated micro-pump for liquid cooling system** Ruikang Wu, Wei Lan, Bin Xie, Xingjian Yu, Bofeng Shang, Jie Sun, Run Hu, Xiaobing Luo* Huazhong University of Science and Technology, China
9:44-9:46	21962	**Modeling and experimental analysis of heat transfer for power electronic module integrated with phase change thermal management system** Yiyi Chen, Bo Li, Yuying Yan*, Yangang Wang University of Nottingham, UK

9:46-9:48	23173	**Pressure drop for three-dimensional rectangular microchannels** Liangbin Su, Xiaoru Ning*, Peng Liang, Niya Ma, Hao Ma, Zhipeng Duan, Xin Zhang Beijing Jiaotong University, China
9:48-9:50	23780	**Effects of hole geometry and curved surface on film cooling effectiveness and heat transfer coefficient measured with compensation of three-dimensional heat conduction** Shohei Yamamoto*, Akira Murata, Jingzu Yee, Yushi Maruyama, Kaoru Iwamoto, Yoji Okita Tokyo University of Agriculture and Technology, Japan
9:50-9:52	22502	**Investigation of combined hole on film cooling with and without droplets** Chao Liu, Ke Tian, Jin Wang*, Zhanxiu Chen, Jiansheng Wang, Bengt Sundén, Hebei University of Technology, China
9:52-9:54	24196	**A mixture theory based enthalpy porosity model for performance study of nano enhanced PCM heat sink** Santosh Sahoo*, Prasenjit Rath, Mihir Das Indian Institute of Technology, Bhubaneswar, India
9:54-9:56	23343	**Environmental temperature effect and thermal management of lithium-ion battery with phase change material/heat pipe coupled system** Shuangfeng Wang*, Weixiong Wu, Sihui Hong, Wei Wu, Kai Chen South China University of Technology, China
9:56-9:58	23264	**Experimental investigation on the effect of fin length allocation for the PCM melting enhancement** ChenZhen Ji, Zhen Qin, Zhenghua Low, Swapnil Dubey, Fook Hoong Choo, Fei Duan* Nanyang Technological University, Singapore
9:58-10:00	23422	**An approximation method for heat transfer prediction in a magnetic suspension machine** Xinlong Li, Hailin Gu, Peng Qian, Feiyang Sun, Minghou Liu* University of Science and Technology of China, China
10:00-10:02	24051	**Numerical modeling and experimental validation of a PCM (phase change material)-based active cooling system for enhanced thermal management** Su-Ho Kim, Seok-Won Kang* Korea Railroad Research Institute, Korea
10:02-10:04	23708	**Bibliometric analysis of research on electronic hotspots thermal management** Yuanchen Hu, Lu Wang* Beijing Institute of Technology, China
10:04-10:06	23965	**Identification of thermal conductivity mixing models for heterogeneous fouling deposits** Emilio Diaz-Bejarano, Elaheh E. Behranvand, Francesco Coletti, Mohammad Reza Mozdianfard, Sandro Macchietto* Brunel University London, UK
10:06-10:08	22857	**Reduced working temperature of quantum dots-light-emitting diodes optimized by QDs@silica-on-chip structure** Bin Xie, Yanhua Cheng, Xingjian Yu, Bofeng Shang, Kai Wang, Xiaobing Luo* Huazhong University of Science and Technology, China
10:08-10:10	23666	**Metallized three-dimensional centrosymmetric microstructures to enhance dry contact thermal conductance across nonflat interfaces** Jin Cui, Liang Pan, Justin Weibel* Purdue University, USA
10:10-10:12	22832	**Heat transfer modelling of a supercapacitor stack** Ran Zhao, Dezheng Darson Li, Ann Lee*, Ngai Ming Kwok, Guan Heng Yeoh Macquarie University, Australia
10:12-10:14	23907	**The effect of thermal and physical parameters of a lithium ion battery electrode on the internal cell resistance** Bereket Tsegai Habte, Fangming Jiang* University of Chinese Academy of Sciences, China
10:14-10:16	21785	**Experimental and computational studies of droplet spreading on hot surfaces** Dong Liu, Bo Zhang, Yongpan Cheng*, Jinliang Xu North China Electric Power University, China

10:16-10:18	22762	**Numeric study of surface roughness in flat microchannel heat sink** Hui Lu, Liang Gong*, Minghai Xu China University of Petroleum (East China), China
10:18-10:20	23115	**Numerical study on multi-scale heat transfer in annulus heated by non-uniform heat flux** Di Li, Zhi-Hong Wang, Zeng-Yao Li* Xi'an Jiaotong University, China

15 August, Wednesday 8:30-12:20 Room 311A

Session subject: Heat Exchanger-2 (HER2)

Session chairman:

Time	ID	Title, Author, Affiliation
8:30-9:10 Keynote	KN29	**The design of mini/micro heat exchangers: A world of opportunities and constraints** Gian Luca Morini University of Bologna, Italy
9:20-9:22	23714	**Numerical investigation on convective heat transfer of supercritical pressure CO_2 in serpentine channel** Xinying Cui, Jiangfeng Guo*, Xiulan Huai, Keyong Cheng, Haiyan Zhang, Mengru Xiang Institute of Engineering Thermophysics, Chinese Academy of Sciences, China
9:22-9:24	23891	**A Single loop pulsating heat pipe in varying gravity conditions: Experimental results and numerical simulations** Luca Pietrasanta*, Daniele Mangini*, Davide Fioriti, Nicolas Miche, M. Andredaki, A. Georgoulas, L. Araneo, M.Marengo University of Brighton, UK
9:24-9:26	22520	**Parametric study on the permeability of micro-pillar wick with dual-height configuration** Hyejin Jang, Sora Jeon, Chan Byon* Ulsan National Institute of Science and Technology, Korea
9:26-9:28	22025	**Numerical simulation study on shell-and-tube heat exchangers with overlapped helical baffles** Tingting Du, Wenjing Du, Xuefang Li, Qi Chen, Lin Cheng* Shandong University, China
9:28-9:30	21878	**Experimental study of the temperature separation of the air flow in a cylindrical channel with permeable walls** Alexander Leontiev, Andrey Zditovets*, N. A. Kiselev, Yurii Vinogradov, Mark Strongin Lomonosov Moscow State University, Russia
9:30-9:32	22363	**Numerical analysis on flow and heat transfer characteristics of a crescent dune fin** Tao Wu, Zhiqiang Guo, Mei Zheng, Shengbao Zhang, Wei Dong* Shanghai Jiao Tong University, China
9:32-9:34	22884	**Modeling of active-controlled thermosyphons for water recovery applications** Tao He, Wei Zhong, Sean Hardick, Rebecca Trojanowski, Tom Butcher, Timothy Wagner, Yaroslav Chudnovsky, William Worek, Jon P. Longtin* Stony Brook University, USA
9:34-9:36	23694	**Simultaneous optimization of heat transfer processes and heat exchanger networks based on the entransy-based power flow method** Di Liu, Qun Chen*, Kelun He, Xi Chen Tsinghua University, China
9:36-9:38	23587	**Experimental testing of a small-scale solar thermal brayton cycle recuperator** Kyle Dellar*, Willem Le Roux, Josua Petrus Meyer University of Pretoria, South Africa
9:38-9:40	23386	**Thermal-hydraulic performance of printed circuit heat exchanger between supercritical CO_2 and molten salt** Jiewei Lao, Jing Ding, Jianfeng Lu* Sun Yat-Sen University, China
9:40-9:42	24013	**Effect of channel layout on the thermal performance of pulsating heat pipe under local heating condition** Jonghyun Lim*, Sung Jin Kim Korea Advanced Institute of Science and Technology, Korea
9:42-9:44	22562	**Investigation of flow and heat transfer characteristics for a shell-and-tube heat exchanger with new baffles** Yonggang Lei*, Yazi Li, Yongkang Lyu Taiyuan University of Technology, China

9:44-9:46	23818	**Numerical analysis and experimental verification of microchannel heat exchanger characteristics using porous media approach** Junbeom Lee, Jaeseon Lee* Ulsan National Institute of Science and Technology (UNIST), Korea
9:46-9:48	24630	**Numemerical investigation on thermal-hydraulic characteristics of PCHE under rolling condition** Qi Xiao*, Hanbing Ke, Zhenxing Zhao, Qifan Zou, Shaodan Li Wuhan Second Ship Des. & Res. Ins. China
9:48-9:50	24078	**Thermal resistance network model for a recuperator modelling in S-CO_2 power cycle** Vivek Pandey, Pramod Kumar* Indian Institute of Science, India
9:50-9:52	23990	**Numerical investigation on thermal and fluid dynamic behaviors of a heat exchanger in aluminum foam** Bernardo Buonomo, Anna Di Pasqua, Davide Ercole, Oronzio Manca, Sergio Nardini* University of Campania "Luigi Vanvitelli", Italy
9:52-9:54	21890	**Investigation on average Nusselt and Sherwood numbers in indirect evaporative cooling with counter-flow configurations** Yangda Wan, Chengqin Ren*, Lei Yu, Yang Yang, Zhao Wang Hunan University, China
9:54-9:56	22935	**Experimental study on refrigerant gas-liquid flow distributions in multi-pass channels with distributing inner pipe** Akira Ekawa, Yuki Nakao, Masafumi Hirota* Mie University, Japan
9:56-9:58	24002	**Characterization of a triple tube heat exchanger with different inner diameter using Artificial Neural Networks (ANN)** José D. Moya*, Antonio E. Molina, José A. Almendros-Ibáñez, Juan F. Belmonte, Juan I. Córcoles-Tendero, Minerva Díaz-Heras, David Rodríguez-Sánchez Renewable Energy Research Institute, Spain
9:58-10:00	22988	**Experiments on the effects of surface wettability and inclination angle on the condenser performance of loop thermosyphons** Ji-Yu Du, Shwin-Chung Wong* National Tsing Hua University, Chinese Taipei
10:00-10:02	23628	**The experimental investigation of a double pipe heat exchanger installed inside a split-type air-conditioning system** Anchasa Pramuanjaroenkij*, Siriluk Phankhoksoong, Amarin Tongkratoke, Sadic Kakac Kasetsart University, Thailand
10:02-10:04	22573	**Effect of different coatings on thermolysis property of gallium-based liquid metals radiator in wide temperature range** Yuntao Cui*, Yushu Wang, Yujie Ding, Shuo Xu, Jing Liu* Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, China
10:04-10:06	22639	**Experimental and numerical investigation of heat transfer and erosion characteristics of a new waffle primary surface heat exchanger** Wenxiao Chu, Katrine Bennett, Ting Ma, Yi-Tung Chen*, Qiuwang Wang University of Nevada, Las Vegas, USA
10:06-10:08	24072	**Theoretical and experimental investigations on flow and thermal characteristics of micro pulsating heat pipes** Aejung Yoon*, Sung Jin Kim Korea Advanced Institute of Science and Technology, Korea
10:08-10:10	22182	**Study on solid sorption heat pipe using halide-ammonia working pairs** Guoliang An, Liwei Wang*, Yang Yu Shanghai Jiao Tong University, China
10:10-10:12	24446	**Visualized study of the gravity effect in a loop heat pipe with two evaporators and one condenser** Xinyu Chang*, Hosei Nagano, Noriyuki Watanabe Nagoya University, Japan
10:12-10:14	23215	**Review: The development of loop heat pipes with a disk-shaped evaporator** He Song, Liu Zhichun*, Liu Wei Huazhong University of Science and Technology, China

10:14-10:16	23100	**Performance characteristics of pulsating heat pipe with various non-uniform heating conditions** Wonhee Cho, Dong Soo Jang, Junyub Lim, Kyeongsoo Song, Yongchan Kim* Korea University, Korea
10:16-10:18	23807	**Orientation effect of discrepancy measure on quantification of bubble swarm patterns in a direct-contact boiling heat transfer process** Qingtai Xiao, Qin Gao, Jing Zhang, Xiule Zhu, Jianxin Xu*, Junwei Huang*, Hua Wang* Kunming University of Science and Technology, China
10:18-10:20	23693	**Development of numerical simulation method for two-phase flow in shell and tube heat exchangers** Yoshiteru Komuro*, Atsushi Kodama, Ling Cheng, Yoshiyuki Kondo, Azuma Seinosuke, Hideyuki Morita, Hideyuki Morita, Ryoichi Kawakami, Toshifumi Nariai, Toshifumi Nariai Mitsubishi Heavy Industries Co. Ltd., Japan

15 August, Wednesday 9:20-12:20 Room 311B

Session subject: Radiation and Thermal Insulation (RTI)

Session chairman:

Time	ID	Title, Author, Affiliation
9:20-9:22	23321	**A study on the thermal performance of exterior wall structure based on building occupied hours** Tugce Pekdogan*, Tahsin Basaran Izmir Institute of Technology, Turkey
9:22-9:24	23455	**Modeling heat transfer through protective clothing exposed to radiant heat** Udayraj*, Faming Wang* The Hong Kong Polytechnic University, HongKong, China
9:24-9:26	21534	**Mathematical model of light radiation pressure upon a thin film space structure with wrinkles** Nikolay Nerovny*, Irina Lapina, Anton Grigorjev Bauman Moscow State Technical University, Russia
9:26-9:28	23162	**Calculations of directional radiative intensity in one-dimensional gaseous media using LBL and SNB models** Hongxu Li, Kui Peng, Zhifeng Huang* Wuhan University, China
9:28-9:30	20528	**Synchronous scattering and diffraction from gold nanotextured surfaces with slight periodicity** Yu-Bin Chen* National Tsing Hua University, Chinese Taipei
9:30-9:32	22518	**Measurement on infrared properties of alumina foam at high temperatures** Shun-De Zhang, Chuan Sun, Feng-Xian Sun*, Xin-Lin Xia*, Li-Ming Ruan Harbin Institute of Technology, China
9:32-9:34	23551	**The split bregman algorithm for temperature reconstruction based on the light-field imaging technique** Xing Huang, Hong Qi*, Wenwen Zhang, Li-Ming Ruan Harbin Institute of Technology, China
9:34-9:36	23600	**Adaptive net radiative heat transfer and thermal management with origami-structured surfaces** Brian Iverson*, Rydge B.Mulford, Ernest Lee Brigham Young University, USA
9:36-9:38	23295	**Thermal rectifier based on near-field thermal radiation of nanostructures** Jiadong Shen, Xianglei Liu* Nanjing University of Aeronautisc and Astronautics, China
9:38-9:40	23655	**Wavelength selective cover for sub-ambient passive radiative cooling** Hannah Kim*, Andrej Lenert University of Michigan, USA
9:40-9:42	23491	**Experimental studies to determine the time characteristics of radiation of shock-heated gases in different spectral ranges** Natalia G. Bykova, Igor E. Zabelinsky, Pavel V. Kozlov, Vladimir Yu. Levashov*, Oleg P. Shatalov Moscow State University, Russia
9:42-9:44	23868	**A modified approach to the lattice Boltzmann model (LBM) based analysis of radiative heat transport** Shir Hadida, Oleg Weinstein, Simon Brandon* Technion-Israel Institute of Technology, Israel
9:44-9:46	23143	**Near-field radiative thermal conductivity of nanoparticle chains** Eric Tervo, Baratunde A. Cola, Zhuomin M. Zhang* Georgia Institute of Technology, USA
9:46-9:48	24195	**Radiative heat transfer in densely packed spherical particle system by Monte Carlo method** B.K. Liu, J. M. Zhao*, L. H. Liu** Harbin Institute of Technology, China

9:48-9:50	23267	**Three dimensional analysis of non-boussinesq natural convection with radiative heat transfer in a vertical seven rod bundle** Mukul Parmananda, Amaresh Dalal*, Ganesh Natarajan Indian Institute of Technology Guwahati, India
9:50-9:52	24249	**Comparison of two global modes: The relationship and difference between SLW model and FSK model based on the new databases** Huaqiang Chu*, Fei Ren, Mingyan Gu, Fengshan Liu Anhui University of Technology, China
9:52-9:54	22943	**Radiative transfer during a pulsed lightning arc on a metallic plate** R. Sousa Martins, Ph. Rivi`ere, L. Chemartin, C. Zaepffel, A. Soufiani* Universit ́e Paris Saclay, France
9:54-9:56	22501	**Determination of representative elementary volumes for extinction coefficients of metal foams** Yang Li, Xiao-Lei Li, Xin-Lin Xia*, Chuang Sun, Qing Ai, He-Ping Tan Harbin Institute of Technology, China
9:56-9:58	23507	**Tuning absorption in the solar spectrum through a metallic slit array on a flexible substrate** Mingeon Kim, Jongin Choi, Bong Jae Lee* Korea Advanced Institute of Science and Technology, Korea
9:58-10:00	22525	**Radiative cooling by using a slab of hexagonal boron nitride** Xiaohu Wu, Ceji Fu* Peking University, China
10:00-10:02	23770	**Radiative cooling of water to sub-ambient temperature under direct sunlight** Dongliang Zhao, Yao Zhai, Gang Tan, Xiaobo Yin, Ronggui Yang* University of Colorado, USA
10:02-10:04	22658	**Wideband absorption enhancement analysis of doped silicon nanocone arrays based on anisotropic effective medium approximation** Han Wang*, Dong Qi Nanjing Tech University, China
10:04-10:06	23513	**Grazing-angle scattering peak phenomenon in the scattering of rough surface** Jia Lu,Huaichun Zhou* Tsinghua University, China
10:06-10:08	23420	**Influence of metal nanoparticle (MNP) morphology on its radiant absorption and thermal response** Li Jiayu*, Tao Yang Nanjing University of Science & Technology, China
10:08-10:10	23041	**Ecient model for evaluation of spectral and vertical distributions of clear sky atmospheric longwave radiation** Mengying Li, Zhouyi Liao, Carlos Coimbra* University of California, San Diego, USA
10:10-10:12	22393	**Near-field thermal radiation in many-body systems composed of core-shell nanoparticles** Jie Chen,Tiancheng Huang,Changying Zhao* Shanghai Jiao Tong University, China
10:12-10:14	23117	**Daytime radiative cooling with polymer-composite coating** Tawadud AlKatheeri, Aikifa Raza, Jin-You Lu, TieJun Zhang* Khalifa University, The United Arab Emirates
10:14-10:16	23557	**Application of KF-RLSE method for real-time reconstructing the time-varying heat flux in Rosseland approximation model** Shuang Wen, Hong Qi*, Xiangyang An, Li-Ming Ruan Harbin Institute of Technology, China
10:16-10:18	23070	**Calculation of non-gray radiation absorptivity and absorption coefficient of mixture of gases from HITEMP-2010 database at high temperature.** Naman Bartwal, Pradeep Kumar* Indian Institute of Technology Mandi, India

15 August, Wednesday 14:00-17:00 Room 309A

Session subject: Convection-4 (COV4)

Session chairman:

Time	ID	Title, Author, Affiliation
14:00-14:02	23867	**A study on the local flow structure and turbulence quantities inside a heated rectangular riser duct in turbulent natural and mixed convection heat transfer** Sin-Yeob Kim, Dong-Ho Shin, Chan-Soo Kim, Goon-Cherl Park, Hyoung Kyu Cho* Seoul National University, Korea
14:02-14:04	23000	**Convective heat transfer measurements by means of large towing tank facilities** Christian Helcig, Christian Teigler, Robert Wagner, Marek Kapitz, Stefan Aus Der Wiesche*, Uwe Gietz, Moustafa Abdel Maksoud, Samir Kadic, Steffen Strehle Muenster University of Applied Sciences, Germany
14:04-14:06	23002	**Cooling flow behaviour in a wire-woven bulk diamond (WBD) ventilated brake disc** Michael Atkins*, Frank Kienhofer, Tongbeum Kim University of The Witwatersrand, South Africa
14:06-14:08	22376	**Description of a new wind tunnel to study heat transfer phenomena in a gas mixture at low Prandtl number** Philippe Planquart*, Mathieu Delsipee, Lilla Koloszar, Sophia Buckingham Von Karman Institute, Belgium
14:08-14:10	23774	**Direct numerical simulation of turbulent heat transfer in pulsating plane channel flows with different frequency** Tatsuro Yamazaki*, Yutaka Oda, Ryosuke Matsumoto, Masashi Katsuki Kansai University, Japan
14:10-14:12	23024	**Effect of inlet tube spacing on friction factors in multiple circular tubes in the transitional flow regime** Josua Petrus Meyer*, Marilize Everts University of Pretoria, South Africa
14:12-14:14	22555	**Heat transfer and flow characteristics of cryogenic fluids in a miniature channel of double helical finned tube** Jie Cai, Liang Chen*, Shuangtao Chen, Yu Hou Xi'an Jiaotong University, China
14:14-14:16	23003	**Field test on the cooling performance for high level water collecting wet cooling tower under crosswind conditions** Jian Zou, Yang Zhou, Zhigang Dang, Ming Gao* Shandong University, China
14:16-14:18	22825	**Experimental study of natural convection in a cavity: Precise visualization method of temperature field** Menghua Duan*, Lin Chen, Yongchang Feng, Junnosuke Okajima, Atsuki Komiya Tohoku University, Japan
14:18-14:20	24392	**Intensification of turbulent transport of a boundary layer of a surface by a streamlined high-speed dispersed flow** Vladislav Kovalnogov, Ruslan Fedorov* Ulyanovsk State Technical University, Russia
14:20-14:22	22612	**Flow and heat transfer of double droplets successively impinging on heated surface** Feng Wang, Yali Guo*, Qinggang Qiu, Shengqiang Shen Dalian University of Technology, China
14:22-14:24	24165	**Heat transfer and pressure drop characteristics of isopropanol/Al_2O_3 nanofluid during flow in a cylindrical minichannel** Artem Nikulin*, Antonio Moreira University of Lisbon, Portugal
14:24-14:26	22710	**Heat transfer in a flat channel with high aspect ratio at a heat carrier flow with low-Prandtl number** Viktor Naumkin*, Oleg Vitovsky, Maksim Makarov, V. E. Nakoryakov Kutateladze Institute of Thermophysics, Siberian Branch of The Russian Academy of Sciences, Russia

14:26-14:28	21905	**Development of steady-state "hot wire" method for micro/nanoscale rare gas heat convection characterization** Jianshu Gao, Shasha Zhang, Yanan Yue*, Danmei Xie, Yangheng Xiong Wuhan University, China
14:28-14:30	20599	**Lattice Boltzmann modelling of natural convection of power-law fluids under wall vibrations** Jianfei Xie, Bingyang Cao* Tsinghua University, China
14:30-14:32	23050	**Magnetothermal convection of paramagnetic fluid inside open-cell porous media under gravity field** Masayuki Kaneda*, Kazuhiko Suga Osaka Prefecture University, Japan
14:32-14:34	22476	**MHD effects and heat transfer performance for no-wetting insulator walls in DCLL blanket** Hulin Huang*, Shimou Yin, Guiping Zhu Nanjing University of Aeronautics And Astronautics, China
14:34-14:36	24230	**Numerical analysis of impingement jet cooling on the leading edge of a turbine blade** Meet Patel, Syed Abbas Haider, Terry Yan* Southern Illinois University, Usa
14:36-14:38	23273	**Numerical simulation of convection-radiation coupling on thermal plumes in cavities** Ying Wang*, Anne Sergent, Denis Lemonnier, Didier Saury, Patrice Joubert University of La Rochelle, France
14:38-14:40	23265	**Direct numerical simulation study for fluid-to-fluid scaling for fluids at supercritical pressure** Jundi He, Junjie Yan, Wei Wang, Shuisheng He* The University of Sheffield, UK
14:40-14:42	21496	**Study on formation mechanism of the flow drag and heat transfer reduction effect of the organic brine with surfactant** Naoto Haruki*, Akihiko Horibe, Yutaka Yamada, Touru Kawaguchi Okayama Prefectural University, Japan
14:42-14:44	22512	**Transient coupled heat transfer inside cylindrical foam porous block with supersonic flow around** Zhen-Huan Li, Xiao-Lei Li, Xin-Lin Xia*, Hai-Feng Sun, Chuang Sun Harbin Institute of Technology, China
14:44-14:46	24371	**Effects of partition wall on trasient natural convection in a square porous cavity** Chordia Jayesh Subhash, Ram Vinoy Sharma* National Institute of Technology Jamshedpur, India
14:46-14:48	24101	**Characteristic analysis of pressure drop in a microchannel heat sink** Haojie Huang*, Liang-Ming Pan, Rungang Yan Chongqing University, China
14:48-14:50	23648	**Thermal-hydraulic performance of a loop thermosyphon using a silicon multi-microchannel evaporator** Houxue Huang*, John Thome Swiss Federal Institute of Technology in Lausanne, Switzerland
14:50-14:52	23932	**Dynamics of large scale flow and its effect on heat transfer in turbulent convection** Arnab Kumar De*, Pankaj Kumar Mishra Indian Institution Of Technology Guwahati, India

15 August, Wednesday 14:00-17:00 Room 309B

Session subject: Multiphase Flow-3 (MPF3)

Session chairman:

Time	ID	Title, Author, Affiliation
14:00-14:02	20772	**The impact of fuel blends and ambient conditions on the heating and evaporation of diesel and biodiesel fuel droplets** Mansour Qubeissi, Nawar Al-Esawi*, Sergei Sazhin Coventry University, UK
14:02-14:04	22048	**Effect of ice shedding on heat transfer characteristics of electrothermal deicing process** Chunhua Xiao*, Yewei Gui China Aerodynamics and Research Development Center, China
14:04-14:06	22818	**Numerical analysis of dual two-phase discharge from a header** Meghan Guyot, Scott Ormiston, Hassan Soliman* University of Manitoba, Canada
14:06-14:08	23340	**Influence research of heating power distribution on flow characteristics in supercritical water natural circulation** Dongliang Ma*, Tao Zhou, Xiang Feng, Yanping Huang North China Electric Power University, China
14:08-14:10	24562	**Effect of wettability on characteristics of slug flow inside microchannels** Chaobin Dang*, Hanru Yu, Yuki Yoshinaga, Jingren Xu, Eiji Hihara The University of Tokyo, Japan
14:10-14:12	23570	**Numerical investigation of minichannel liquid thermal management for high power lithium ion battery using different coolants including nanofluids** Huaqiang Liu, Jiyun Zhao* City University of Hong Kong, Hongkong,China
14:12-14:14	23933	**High-temperature nonequilibrium thermodynamic properties of N_2 with an improved calculation of energy levels** Zhi Qin, Junming Zhao, Linhua Liu* Harbin Institute of Technology, China
14:14-14:16	22601	**Eulerian-lagrangian approach to modeling heat transfer in gas-particle mixtures: Volume-averaged equations, multiscale modeling and comparison with DNS** Mohamed Belerrajoul*, Yohan Davit, Fabien Duval, Michel Quintard, Olivier Simonin Institute for Radiological Protection and Nuclear Safety-Institute of Fluid Mechanics of Toulouse, France
14:16-14:18	23053	**Comparison of heat transfer performance on homogeneous surface and heterogeneous surface** Lei Zou, Baohai Yang, Hong Wang*, Xun Zhu, Yudong Ding, Rong Chen, Qiang Liao Chongqing University, China
14:18-14:20	23903	**Hydrodynamics and heat and mass transfer during impact irrigation by a system of jets of a vertical surface of a heat exchanger** Pavel Karpov*, Alexandr Nazarov, Anatoly Serov, Viktor I. Terekhov Siberian Branch of Russian Academy of Sciences, Russia
14:20-14:22	22592	**Analysis of system parameters effects on entropy generation of supercritical water flow in a hexagon rod bundle** Xin Du, Qinggang Qiu, Qiang Li, Xiaojing Zhu* Dalian University of Technology, China
14:22-14:24	20879	**Flow boiling in microchannels with HFE-7100: Experimental results and comparision with correlations** Ali Al-Zaidi, Mohamed Mahmoud, Tassos Karayiannis* Brunel University London, UK
14:24-14:26	23672	**CFD analysis of flow pattern and heat transfer of water jet into supercritical water environment** Changsheng Ren, Liejin Guo*, Hui Jin, Guobiao Ou, Zhisong Ou, Zhenhua Ren Xi'an Jiaotong University, China
14:26-14:28	22561	**Two phase flow performance of labyrinth seal in cold/hot state for aero-engine** Guoqing Li*, Qian Zhang Institute of Engineering Thermophysics, Chinese Academy of Sciences, China

14:28-14:30	23113	**Experimental investigation of condensation heat transfer coefficients in an inclined smooth tube at low mass fluxes** Daniel Ewim*, Josua Petrus Meyer* University of Pretoria, South Africa
14:30-14:32	22713	**Numerical simulation of the heat transfer for fully developed stratified wavy oil-water Non-Newtonian two-phase flow in pipeline** Yansong Li, Dingqian Ding, Guoxi He*, M.H. Lin, Jianfei Sun, Baoying Wang, Shengchao Xin, Dong Han, Yongtu Liang* China University of Petroleum-Beijing, China
14:32-14:34	24032	**Nanotextured surfaces for thermally aware anti-icing** Michael Grizen, Tanmoy Maitra, Manish Tiwari* University College London, UK
14:34-14:36	23108	**Numerical simulation for gas hydrate in different spatial distribution on gas production by depressurization** Yangmin Kuang, Yongchen Song*, Jiafei Zhao*, Lei Yang, Yuechao Zhao Dalian University of Technology, China
14:36-14:38	23716	**Measurement of local parameters of two-phase flow in tube bundle** Atsushi Kodama, Yoshiteru Komuro*, Yoshiyuki Kondo, Azuma Seinosuke, Hideyuki Morita, Ryoichi Kawakami, Toshifumi Nariai, Yoshito Nishikawa Mitsubishi Heavy Industries Co. Ltd., Japan
14:38-14:40	23692	**Heat transfer to supercritical H_2O/CO_2 mixtures: Apparatus** Dong Liu, Hanlin Zhang, Sha Li, Qiang Li* Nanjing University of Science and Technology, China
14:40-14:42	22268	**Methods for modeling heat transfer and solidification in continuous casting** Matt Moore, Bangju Chen, Rui Liu, Ken Morales, Armin Silaen, Chenn Zhou* Purdue University Northwest, USA
14:42-14:44	22200	**Lattice Boltzmann method for understanding the mass transfer mechanisms of two-phase organic indoor air pollutants** Yi.Mao, Z Li, Y.L. He, W.Q.Tao* Xi'an Jiaotong University, China
14:44-14:46	23830	**Modification of shock layer structure under the impact of a high inertia particle in a supersonic flow around blunt body** Dmitry Reviznikov*, Andrey Sposobin, Igor Ivanov Moscow Aviation Institute, Russia
14:46-14:48	24048	**Experimental investigation of flow boiling heat transfer boundary of nitrogen in 1.2 mm vertical mini-channel** Zhang Beichen, Li Qinglian*, Wang Yuan, Zhang Jianqiang, Zhang Peng, Jia Hongwei National University of Defense Technology, China
14:48-14:50	24401	**Vertical annular gas/liquid flows with a 1D two-fluid model: Evaluation of interfacial friction models** E.M.G. Fontalvo, Joao N.E. Carneiro, Angela Nieckele* Pontifical Catholic University of Rio De Janeiro, Brazil
14:50-14:52	23701	**Study on mass transfer on gas-liquid interface using lattice Boltzmann method** Zhikai Tan, Hongjie Yan*, Jingwei Qi, Pei Fu, Ping Zhou, Qing Li Central South University, China
14:52-14:54	22179	**Identification of heat transfers for a vapor-droplets flow inside a representative fuel assembly sub-channel** Juan David Peña Carrillo*, Alexandre Labergue, Michel Gradeck, Tony Glantz University of Lorraine, France
14:54-14:56	23064	**Subcooled flow boiling of FC-72 in vertical small diameter tubes** Yantao Li*, Katsuya Fukuda, Qiusheng Liu Dalian Maritime University, China
14:56-14:58	22242	**Modelling crystallization and heat transfer in an evaporating urea water drop** Achim Bender*, Philipp Hänichen, Peter Stephan, Tatiana Gambaryan-Roisman Technical University of Darmstadt, Germany

15 August, Wednesday 14:00-17:00 Room 310

Session subject: Combustion and Thermochemistry (CAT)

Session chairman:

Time	ID	Title, Author, Affiliation
14:00-14:02	22998	**A comprehensive CFD and experimental study on the effect of gas radiation models on laminar flame temperature prediction** Liuhao Ma, Kin Pang Cheong,Junjun Wu, Wei Ren* The Chinese University of Hongkong, Hongkong, China
14:02-14:04	23660	**CFD study of combustion behavior of multiple huge oil tanks each with a diameter of 20m and 40m and fire mitigation method** Koyu Satoh*, Domingos Viegas, Naian Liu, Ji Cong University of Coimbra, Portugal
14:04-14:06	23191	**Simulation of wettability effects on gas-water flow in porous media** Meiheriayi Mutailipu*, Yu Liu, Bohao Wu, Yongchen Song, Dayong Wang Dalian University of Technology, China
14:06-14:08	22457	**Influence of processing conditions on compressive strength and CO_2 adsorption of UIO-66 pellets** Jiajia Yang, Yudong Ding*, Qiang Liao, Xun Zhu, Qiwei Liu Chongqing University, China
14:08-14:10	22437	**Application of quenching to polycrystalline metallurgical slags to reduce comminution energy and increase mineral liberation** Corey Myers*, Takao Nakagaki Waseda University, Japan
14:10-14:12	23056	**Evalution of dynamic transport process during brine injection into CO_2 filled porous media** Lanlan Jiang, Xiangbo Li, Yu Liu, Yongchen Song*, Bohao Wu Dalian Uiversity of Technology, China
14:12-14:14	24155	**DNS of methane/hydrogen-air turbulent swirling premixed flame in a cuboid combustor** Joonhwi Park*, Kozo Aoki, Yuki Minamoto, Masayasu Shimura, Mamoru Tanahashi Tokyo Institute of Technology, Japan
14:14-14:16	24322	**The experimental generation of non-stationary free fire whirls** Pavel Dermer* Bauman Moscow State Technical University, Russia
14:16-14:18	24447	**Effects of polymer sensitivities on flow intensification by elastic turbulence** Guice Yao, Maje Haruna, Ehsan Nourafkan, Haie Yang, Dongsheng Wen* University of Leeds, UK
14:18-14:20	23167	**Numerical studies of coal particle heat transfer and ignition mode of two interacting coal particles** Chen Xue, Gu Mingyan*, He Xianhui, Lin Yuyu, Chu Huaqiang Anhui University of Technology, China
14:20-14:22	23975	**Investigation on flame developments in a Si engine with tumble flow using OH PLIF** Masayasu Shimura*, Kumar Siddhartha, Tatsuya Moronuki, Yuki Minamoto, Takeshi Yokomori, Mamoru Tanahashi Tokyo Institute of Technology, Japan
14:22-14:24	22105	**Nonlinear dynamics of a sustained thermocapillary flow of a thin liquid film in a confined two-layer system under a hydrophobic surface** Valeri Frumkin, Alexander Oron* Technion - Israel Institute of Technology, Israel
14:24-14:26	22496	**DNS and LES of soot formation in oxy-fuel spray flame: Application of a non-adiabatic flamelet/progress-variable approach** Reo Kai, Akihiro Kishimoto, Kenichiro Takenaka, Masaya Muto*, Ryoichi Kurose Kyoto University, Japan
14:26-14:28	23539	**The performance investigation of hydrophilic materials modified $LiOH{\bullet}H_2O$ based composite thermochemical materials for low temperature thermal energy storage** Shijie Li, Hongyu Huang*, Taoli Huhe, Zhaohong He, Yu Bai , Jun Li, Noriyuki Kobayashi Guangzhou Institute of Energy Conversion, Chinese Academy of Sciences, China

14:28-14:30	22368	**Heat explosion in Fischer–Tropsch catalytic granule with localized cobalt microparticles** Igor Derevich*, Vadim Ermolaev, Vladimir Mordkovich, Igor Solomonik, Alexandra Fokina Moscow State Technical University By N.E. Bauman, Russia
14:30-14:32	23453	**DSC studies of methane hydrate formation and dissociation in water-in-mineral oil emulsions** Zaixing Liu, Weiguo Liu, Chen Lang, Yanghui Li*, Mingjun Yang, Jiafei Zhao, Yongchen Song Dalian University of Technology, China
14:32-14:34	20732	**Mitigating combustion instability in a bifurcating thermoacoustic combustor using an electrical heater** Dan Zhao*, Arne Reinecke, He Zhao University of Canterbury, New Zealand
14:34-14:36	22529	**Regulating heat flux bending in metamaterial wedge cells** Guoqiang Xu, Haochun Zhang*, Liang Jin, Yan Jin, Haifeng Xing Harbin Institute of Technology, China
14:36-14:38	24606	**A sequence-coupled mathematical model of magneto-hydrodynamic two-phase flow and heat transfer in a three-phase triplex-electrode electroslag remelting furnace** Fang Wang*, Baokuan Li Northeastern University, China
14:38-14:40	23499	**Simulation of hydrodynamics and mass transfer in membrane bioreactor for photo-biohydrogen production with lattice Boltzmann method** Yanxia Yang*, Jing Li Taiyuan University of Technology, China
14:40-14:42	23931	**Modeling of steam reforming of ethanol in meso- and micro- channel systems** Somasree Roychowdhury*, Sundararajan T, Sarit Kumar Das Indian Institute of Technology Madras, India
14:42-14:44	23352	**The effect of initial temperature distribution on the determination of the laminar burning velocity by using constant-volume bomb** Zunhua Zhang, Peng Cheng, Jian Tan, Junjie Liang, Gesheng Li* Wuhan University of Technology, China
14:44-14:46	22454	**Thermochemical behavior and heat transfer in hypersonic thermal boundary layer with high-enthalpy dissociated carbon-oxygen gas mixture** Xiaofeng Yang*, Yewei Gui, Wei Tang, Yanxia Du, Guangming Xiao, Lei Liu, Dong Wei China Aerodynamics Research and Development Center, China
14:46-14:48	23232	**Combined radiation and gasification reaction of coal upercritical water fluidized bed reactor : Aumerical study** Zhenhua Ren, Liejin Guo*, Hui Jin, Kui Luo Xi'an Jiaotong University, China
14:48-14:50	23303	**Two-step iterative method for radiative transfer calculations in axisymmetric flames containing absorbing and scattering particles** Leonid Dombrovsky*, Siaka Dembele, Jennifer Wen, Ivan Sikic Joint Institute for High Temperatures, Russia
14:50-14:52	23405	**Methanol steam reforming for hydrogen production with waste heat recovery** Long Wang, Feng Wang*, Penglai Li, Bohong Chen Chongqing University, China

15 August, Wednesday 14:00-17:00 Room 311A

Session subject: Mass Transfer (MTR)

Session chairman:

Time	ID	Title, Author, Affiliation
14:00-14:02	23400	**Exploring water drying in one-open-end nanochannels** Siyang Xiao, Quan Xie, Chuanhua Duan* Boston University, USA
14:02-14:04	22701	**Simulation study of desiccant coated heat exchanger based on the dynamic adsorption performance of isothermal desiccant coating** Lingji Hua, Tianshu Ge, Ruzhu Wang* Shanghai Jiao Tong University, China
14:04-14:06	23227	**Entransy of water vapor and its balance equation for heat and mass transfer process in the absorber** Xiaoyue Zhang*, Zhen Li Tsinghua University, China
14:06-14:08	24229	**Attainability of minimum temperature difference of steel pipes inside a furnace by adjusting Reynold number and their arrangement** Thien Tu Ngo, Minh Phu Nguyen, Geun Sik Lee* University of Ulsan, Korea
14:08-14:10	23289	**Effect of preheat on high-temperature steam generation in an adsorption heat transformer by using composite zeolite-water pair** B. Xue*, S. Ye, L. S. Zhang, X. L. Wei Zhengzhou University, China
14:10-14:12	22510	**Thermal energy storage enhancement of nitrates by nanoparticles** Xiong Yaxuan*, Wang Zhenyu, Xu Peng, Wu Yuting, Ding Yulong, Ma Chongfang Beijing University of Civil Engineering and Architecture, China
14:12-14:14	23403	**Study on bioinspired moisture permeable panel and its mass transfer character** Biye Cao*, Ruzhu Wang Shanghai Jiao Tong University, China
14:14-14:16	23441	**Wetting and evaporation of octagonal saline droplets on a micropyramid patterned surface** Xin Zhong, Junheng Ren, Karen Siew Ling Chong, Kian Soo Ong, Fei Duan* Nanyang Technological University, Singapore
14:16-14:18	23748	**Phase change in an adsorbed vapor leading to the wetting transitions** Chunmei Wu*, Xiang Wei, Lin Ding, Yourong Li Chongqing University, China
14:18-14:20	24207	**Critical review of ultrasonic-enhanced desorption processes** Hooman Mobarakeh, Nicolas Campbell, Sumit Tiwari, Weston Bertrand, Ahmad Bamasag, Mark Miner, Liping Wang, Robert Wang, Patrick Phelan* Arizona State University, USA
14:20-14:22	22423	**Molecular simulation of water adsorption in shale kerogen spherical nano-pores** Kecheng Zeng, Ruina Xu, Peixue Jiang* Tsinghua University, China
14:22-14:24	22893	**Diffusion coefficient of CO_2 in brine with consideration of swelling effect** Xingbo Li, Bohao Wu, Yongchen Song, Yu Liu, Lanlan Jiang* Dalian University of Technology, China
14:24-14:26	24043	**Experimental study of mass transfer caused by actuated millimetric-pillar** Dongdong Liu*, Binh Thien Nguyen, Tuan Tran Nanyang Technological University, Singapore
14:26-14:28	23188	**A study on diffusion of carbon dioxide in n-hexadecane using MRI** Min Hao*, Yingchun Tang, Yuechao Zhao, Yongchen Song Dalian University of Technology, China
14:28-14:30	24076	**Particle transfer and structure formation in catalyst ink during drying process** Takahiro Suzuki*, Shohji Tsushima Osaka University, Japan

14:30-14:32	23202	**Assessment of indoor PM2.5 concentration: Infiltration factors and relative error** Zhiwei Sun, Jianping Cao, Yinping Zhang* Tsinghua University, China
14:32-14:34	23253	**Pore-scale observation of mass transfer based on CO_2-brine interfacial area under imbibition conditions** Bohao Wu, Xingbo Li, Yu Liu, Pengfei Lv, Dayong Wang, Lanlan Jiang*, Yongchen Song Dalian University of Technology, China
14:34-14:36	24239	**Effects of suction and spillage on supercritical carbon dioxide-based drying of aerogels** Georgios Karamanis, Hy Dinh, Nicolas Waisbord, Marc Hodes* Tufts University, USA
14:36-14:38	23283	**Characteristic investigation of static liquid desiccant dehumidification process by molecular dynamics** Tingting Chen, Yonggao Yin, Yuwen Zhang, Xiaosong Zhang Southeast University, China
14:38-14:40	21961	**Impact of water drops on a PMMA surface** Ramesh Kumar Singh, Vikas Kumar, Deepak Kumar Mandal* Indian Institute of Technology (ISM), India
14:40-14:42	23846	**Effect of ultrasound pretreatment on microstructure and drying characteristics of fibrous porous media** Panpan Li, Zhenqian Chen*, Juan Shi Southeast University, China
14:42-14:44	24191	**Numerical simulation of heat transfer and oil mixing process in hilly products pipeline under shutdown condition** Guoxi He, Baoying Wang*, Liying Sun, Yansong Li, Yongtu Liang, Qiyu Huang China University of Petroleum-Beijing, China
14:44-14:46	24220	**Application of the wavelength selective emitter with the metamaterial of a metal-insulator-metal to an infrared ray drying furnace** Tsuyoshi Totani*, Atsushi Sakurai, Thang D. Dao, Tadaaki Nagao, Yoshio Kondo Hokkaido University, Japan
14:46-14:48	23524	**Improved C-history method for rapidly and accurately measuring the characteristic parameters of formaldehyde/VOCs emitted from building materials** Xu Zhang, Jingya Wei, Zhang Yinping* Tsinghua University, China
14:48-14:50	23294	**Numerical assessment of interfacial heat transfer coefficients in a Mg squeeze casting with various section thicknesses by polynomial extrapolation** Luyang Ren, Zhizhong Sun, Henry Hu* University of Windsor, Canada
14:50-14:52	23719	**Development and experimental study of quaternary nitrates with low melting point and high decomposition temperature** Yuting Wu*, Lulu Zou, Chongfang Ma Beijing University of Technology, China
14:52-14:54	23500	**Dependence of rubber wear performance on external experimental conditions** Zepeng Wang, Fushun Zhang, Zongxiang Zhao Qingdao University of Science and Technology, China
14:54-14:56	23423	**The effects of susceptor thickness on microwave heating of food materials enclosed in susceptor** Lineesh Punathil*, Tanmay Basak Indian Institute of Technology, Madras, India
14:56-14:58	21906	**Temperature-dependent characteristics of Raman scattering enhancement induced by Au nanopatterns** Yanru Xu, Yixin Chen, Zehua Xie, Yanan Yue*, Jin Jiang* Wuhan University, China

15 August, Wednesday 14:00-17:00 Room 311B

Session subject: Molecular, Photon, Phonon and Electron Transport (MPE)

Session chairman:

Time	ID	Title, Author, Affiliation
14:00-14:02	23296	**Effect of heating and cooling characteristic on thermoelectric generator performance** Feng Wang*, Penglai Li, Long Wang, Bohong Chen, Ling Yao Chongqing University, China
14:02-14:04	23392	**Influence of thomson effect on efficiency of thermoelectric generator** Yuanyuan Wang, Zihua Wu, Jiaojiao Xing, Yihuai Li, Jianhui Mao, Jing Li, Huaqing Xie* Shanghai Second Polytechnic University, China
14:04-14:06	22539	**Four-phonon scattering reduces intrinsic thermal conductivity of graphene and the contributions from flexural phonons** Tianli Feng, Xiulin Ruan* Purdue University, USA
14:06-14:08	22429	**A modified theoretical model to predict the thermal interface conductance considering interface roughness** Dengke Ma*, Yingying Zhang, Yi Zhang, Nuo Yang Huazhong University of Science and Technology, China
14:08-14:10	23049	**Water transport confined in graphene oxide channels through rarefied effect** Bo Chen, Haifeng Jiang*, Xiang Liu, Xuejiao Hu* Wuhan University, China
14:10-14:12	22436	**Ultra-fast vapor generation by a graphene nano-ratchet: A theoretical and simulation study** Guilong Peng*, Hongru Ding, Shenqiu Mo, Nuo Yang Huazhong University of Science and Technology, China
14:12-14:14	24664	**An improved molecular dynamics algorithm to study thermodiffusion in binary hydrocarbon mixtures** S. Antoun*, M. Z. Saghir, S. Srinivasan Ryerson University, Canada
14:14-14:16	24360	**Probing migration of ions at the oil-water interface** Boyao Wen, Bofeng Bai* Xi'an Jiaotong University, China
14:16-14:18	22395	**Manipulation of light absorption based on disordered media with short-range order** M.Q.Liu, C.Y. Zhao*, B.X. Wang, X.W. Chen Shanghai Jiao Tong University, China
14:18-14:20	22461	**Doping effects on thermal transport properties of PEDOT** Xiaoxiang Yu*, Ruiyang Li, Takuma Shiga, Lei Feng, Junichiro Shiomi, Nuo Yang Huazhong University of Science and Technology, China
14:20-14:22	24412	**Photon upconversion based on molecular scale energy and mass transfer: Materials development, microscopic kinetics, and photophysical properties** Yoichi Murakami* Tokyo Institute of Technology, Japan
14:22-14:24	22250	**First principle study on thermoelectrical properties of silicon nanostructures** Yifei Li, Bo Fu, Guihua Tang* Xi’an Jiaotong University, China
14:24-14:26	22285	**Photonic–electric–thermal design of GaAs–based photovoltaic –thermoelectric hybrid systems** Yuanpei Xu*, Yimin Xuan Nanjing University of Aeronautics and Astronautics, China
14:26-14:28	21085	**New and emerging applications of nanoscale thermal science and engineering** Sean Lubner, Sumanjeet Kaur, Ravi Prasher*, Lawrence Berkeley Lab, USA
14:28-14:30	22184	**Negative gaussian curvature induces significant suppression of thermal conductivity in carbon crystals** Zhongwei Zhang, Jie Chen*, Baowen Li* Tongji University, China

14:30-14:32	22392	**Mid-infrared broadband absorber based on HBN/metal heterostructures** Yinhui Kan, Changying Zhao*, Zhuomin M.Zhang Shanghai Jiao Tong University, China
14:32-14:34	22405	**Generalized two-temperature model for coupled phonons in nanosized graphene** Meng An*, Qichen Song, Xiaoxiang Yu, Han Meng, Dengke Ma, Ruiyang Li, Zelin Jin, Baoling Huang, Nuo Yang Huazhong University of Science and Technology, China
14:34-14:36	22399	**High temperature thermal conductivity of silicon from machine-learning-based interatomic potential** Xiaokun Gu, Changying Zhao* Shanghai Jiao Tong University, China
14:36-14:38	23752	**Modulation of thermoelectric properties of carbon nanotubes using coherent phonons** Masato Ohnishi, Junichiro Shiomi* The University of Tokyo, Japan
14:38-14:40	22406	**Unexpectedly high cross-plane thermoelectric performance in layered organic semiconductors** Zhidong Ding, Meng An*, Shenqiu Mo, Zelin Jin, Yuxuan Liao, Jingtao Lü, Junichiro Shiomi, Nuo Yang Huazhong University of Science and Technology, China
14:40-14:42	23753	**Chemical intuition for high thermoelectric performance in monolayer black phosphorus, α-arsenene and aW-antimonene** Bo Peng*, Hao Zhang, Hezhu Shao, Heyuan Zhu Fudan University, China
14:42-14:44	23886	**The thermal effect in nano osmosis** Xiaokang Liu*, Liangsuo Shu, Anna Wald, Shiping Jin Huazhong University of Science & Technology, China
14:44-14:46	23757	**Enhancing the interfacial thermal conduction of graphene sheets by bond connection** Kai-Xuan Chen, Dong-Chuan Mo, Min-Shan Li, Shu-Shen Lyu* Sun Yat-sen University, China
14:46-14:48	22253	**Enhancement of interfacial thermal conductance of SiC by overlapped carbon nanotubes and intertube atoms** Chengcheng Deng*, Xiaoxiang Yu, Xiaoming Huang, Nuo Yang Huazhong University of Science and Technology, China
14:48-14:50	22484	**Topology dependence of thermal conductivity in semicrystalline polyethylene by molecular dynamics simulation** Tingyu Lu, Kyunghoon Kim, Xiaobo Li, Jun Zhou, Gang Chen, Jun Liu* North Carolina State University, USA
14:50-14:52	22390	**Radiation transport in disordered media composed of dual dipolar nanoparticles** Boxiang Wang, Changying Zhao* Shanghai Jiao Tong University, China
14:52-14:54	22176	**Kinetic model for molecure transport of liquid mixtures in the vicinity of solid-liquid interfaces** Mamoru Hirasawa*, Gota Kikugawa, Takeo Nakano, Taku Ohara Tohoku University, Japan
14:54-14:56	23582	**Negative pressure effect on the thermal conductivity of wurtzite ZnO** Kunpeng Yuan, Zhongyin Zhang, Xiaoliang Zhang, Dawei Tang* Dalian University of Technology, China
14:56-14:58	22560	**Research on echo power detection based on laser radiation transmission characteristics of non-cooperative target surface** Di Wang, Guozhong Wu, Dong Li*, Hanbing Qi, Yan Lv Northeast Petroleum University, China

Abbreviation	Session Subjects
BAE	Boiling and Evaporation
BMA	Bio and medical applications
CAT	Combustion and Thermochemistry
CIP	Conduction and Inverse Problems
CMS	Computational Methods and Simulation
CTM	Cooling and Thermal Management
COD	Condensation
COV	Convection
ECL	Electrochemical Systems
ECS	Energy conversion and storage
HER	Heat Exchanger
HTE	Heat transfer enhancement
MMP	Manufacturing/MHD and plasma
MPE	Molecular, photon, phonon and electron Transport
MPF	Multiphase Flow
MTR	Mass Transfer
NEE	New Energy and Efficiency
NMT	Nano and Microscale Transport
PMA	Porous media
RAC	Refrigeration and Cryogenics
RTI	Radiation and Thermal Insulation
TPM	Thermophysical Properties Measurement