



ConST® 康斯特

Additel
Metrology Made Simple



HTS



PROGRAM BOOK

The 32nd International Symposium on Transport Phenomena

ISTP-32

March 19th-21st, 2022

Tianjin (online), China

Contents

Welcome Address	3
Istp32 Committees	8
Reviewers List	12
Time Table	14
Plenary Lectures	15
Program	18
Authors Index.....	29

Welcome Address

On behalf of the Organizing Committee, I welcome all the participants to The 32nd International Symposium on Transport Phenomena. ISTP32 is organized by Pacific Center of Thermal Fluids Engineering, co-organized with Key Laboratory of Efficient Utilization of Low and Medium Grade Energy (Tianjin University), Ministry of Education, China and Tianjin University, and co-sponsored by The Heat and Mass Transfer Society of China, The Heat Transfer Society of Japan, The Japan Society for Mechanical Engineers, The Visualization Society of Japan.

First of all, I would like to express my sincere gratitude to all plenary and keynote speakers and authors for sharing their in-depth knowledge and insight. Further, I would like to thank the reviewers for all the peer reviewed papers and session chairs for their contribution. The selected papers are recommended to the special issues of Applied Thermal Engineering.

This conference is an international symposium for providing a forum for researchers, scientists, engineers and students from all over the world to exchange information, to present new knowledge and to engage in discussion on the future direction and priorities in the area of transport phenomena. It is a long established conference with a tradition that has passed from conference to conference since 1985 and we are indeed honored to be able to host ISTP that has a unique atmosphere of warmth and tenderness while maintaining first- rate research.

This symposium is no exception with many such high quality presentations as well totaling 184 giving this conference the momentum to be opened successfully. The only unfortunate situation is that I as well as the participants cannot meet each other in person in Tianjin, China. We postponed the conference for 6 months from the initial scheduled date in September so that we can hold a non-remote conference. Although COVID-19 prevented us from doing so, please be rest assured. The academic exchange, which is its original as well as essential purpose, is fully possible due to advances in recent communication technology.

In closing, I hope that this three-day symposium will be academically fruitful with all of your cooperation.



Utaka, Yoshio
ISTP32 Chair,
Tianjin University



天津大学

Tianjin University

Tianjin University is the oldest institution of higher education in the modern history of China. Founded in 1895 as Peiyang University, Tianjin University's 125-year history is the epitome of the progress of modern Chinese higher education, embodying the Chinese people's indomitability through challenging times. During its growth spanning three centuries, the University has been a pioneer in several fields, from the first aero engine in China to the first Hydraulics Laboratory established in China. The following timeline presents all the milestones that Tianjin University has passed on its way through history. See TJU take each step as it comes, and grow throughout the years into the leading research and teaching institute it is today.



To build a strong nation, it is crucial for the education system to be set up and developed for the preservation of talents. The establishment and operation of the University aims to promote education for the ultimate improvement of national strength and prosperity, in accord with the University's motto of "Seeking Truth from Facts". The University exalts preservation of its own traditions, in which the spirit of "precision in learning and strictness in teaching" is encouraged. Patriotism and devotion to the country is also considered worthy goals to hold onto, tied in with multiple avenues to encourage undaunted inquiry into academic truth, to foster competent talent, to pass on the cultural heritages, to buttress the progress of our nation and to create a promising future.



Key Laboratory of Efficient Utilization of Low and Medium Grade Energy (Tianjin University), Ministry of Education

The Ministry of Education Key Laboratory for High-Efficiency Utilization of Medium and Low Temperature Thermal Energy (Tianjin University) was approved for establishment in January 2012. The laboratory combines the country's major needs for the development of energy conservation, environmental protection, new energy and other emerging industries, and aims to focus on geothermal energy, solar energy and industrial waste heat. The scientific frontier of medium and low temperature thermal energy, based on thermal science, cross-integrates disciplines such as system science, material science and environmental science, and gives full play to the scientific research advantages and backbone roles of Tianjin University's Power Engineering and Engineering Thermophysics in the field of medium and low temperature thermal energy. , Starting from all aspects of energy collection, transfer and conversion, and application, study the scientific problems in the process of high-efficiency utilization of medium and low temperature thermal energy, and provide scientific basis and new ideas for solving the problems of efficiency, environment and economic cost in the process of energy transfer and conversion. Technical approach.



Guide for Presenter

Enter the Zoom meeting using the announced meeting ID and password in 10 minutes before the session starts.

Input the paper ID at the beginning of your participant panel name. If your paper ID is 001 and your name is TJU, the participant panel name should be “001 TJU”. The room host assign you to be able to share your screen.

Check your audio status to see whether your microphone and video are available. Please let the microphone be mute and video off except for your presentation.

In your presentation, share the screen of the presentation slide following step.

Open the presentation file before sharing your screen.

Click “Share Screen” in Zoom window.

Choose “Desktop” or “PPT window”.

Start presentation.

Turn on your microphone and video and start your presentation.

After ending your presentation, turn off the screen sharing, microphone and video.

Each presentation time is 15 minutes for talk, 5 minutes for Q&A. Please cooperate to keep the announced presentation time.

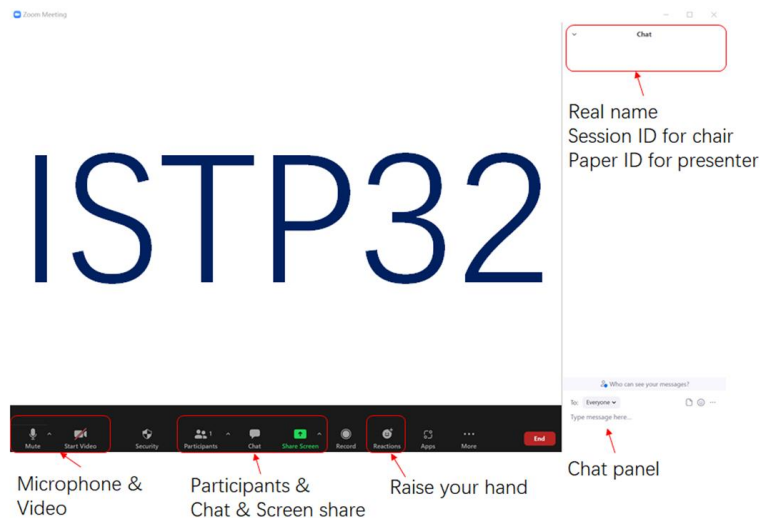
Guide for Up load of your presentation

Live presentation is strongly recommended for author to discuss each other. However, if presenter cannot attend the conference on time, you can up-load your presentation video (in the MP4 format) which will be steamed on your behalf.

Please prepare and upload your presentation No Later Than March. 16, 2022 to a Cloud Disk (e.g. Google Drive, Dropbox, Baidu) and e-mail us (istp32@tju.edu.cn) the link of your upload video.

Guide for Audience

Only registered person can enter the Zoom meeting using the meeting ID and password. Use your “Real name” for the participant. Do Not Use anonymous or nickname. The room host confirm your registration at the entrance of the session. Mute microphone and turn off your video. The hand raising function is recommended for Q&A. If you nominated by the chair, use your microphone and video. You can move from a session room to the other room during the session time.



Zoom is used for all the online meetings at ISTP32.

Zoom meeting ID

- Room A: 895 319 2022
- Room B: 895 032 2022
- Room C: 895 320 2022
- Room D: 895 321 2022

The password for zoom meetings is to be informed by email.

Proceedings

The proceedings can be downloaded from the homepage.

The following link can be used for download (password required).

The password for download is to be informed by email.

<https://istp32.scimeeting.cn/en/web/jump/1703?mid=138223&nid=50730>

Istp32 Committees

Symposium Chair

Utaka, Yoshio

Tianjin University

Symposium Co-Chair

Ishizuka, Masaru

Zhang, Xing

Toyama Prefectural University

Tsinghua University

Secretary General

Chen, Zhihao

Che, Zhizhao

Tianjin University

Tianjin University

Advisor

Mochizuki, Sadanari

Ishizuka, Masaru

Tokyo University of Agriculture and Technology

Toyama Prefectural University (PCTFE President)

Coordinator

Yuki, Kazuhisa

Hatakeyama, Tomoyuki

Tokyo University of Science at Yamaguchi

Toyama Prefectural University

Local Organizing Committee

Cao, Bingyang

Chen, Min

Chen, Zhenqian

Chen, Rong

Chen, Guanyi

Feng, Yanhui

He, Yan

Jiang, Yuyan

Li, Fengchen

Liu, Zhongliang

Liao, Qiang

Liu, Mingyan

Liu, Zhichun

Ma, Xuehu

Tan, Heping

Tang, Dawei

Wang, Shuangfeng

Wang, Ruzhu

Wang, Shixue

Wang, Zuankai

Wei, Jinjia

Xiao, Rui

Xin, Gongming

Xu, Jinliang

Yan, Junjie

Tsinghua University

Tsinghua University

Southeast University

Chongqing University

Tianjin University of Commerce

University of Science and Technology Beijing

Qingdao University of Science and Technology

Institute of Engineering Thermophysics, Chinese Academy of Sciences

Tianjin University

Beijing University of Technology

Chongqing University

Tianjin University

Huazhong University of Science and Technology

Dalian University of Technology

Harbin Institute of Technology

Dalian University of Technology

South China University of Technology

Shanghai Jiao Tong University

Tianjin University

City University of Hong Kong

Xi'an Jiaotong University

Southeast University

Shandong University

North China Electric Power University

Xi'an Jiaotong University

Yu, Zitao	Zhejiang University
Zhang, Xinrong	Peking University
Zhao, T. S.	The Hong Kong University of Science and Technology
Zhao, Jun	Tianjin University
Zhao, Li	Tianjin University
Zhu, Kai	Tianjin University of Commerce

Executive Committee

Utaka, Yoshio (Chair)	Tianjin University
Chen, Zhihao (Secretary General)	Tianjin University
Che, Zhizhao (Secretary General)	Tianjin University
An, Qingsong	Tianjin University
Fan, Liwu	Zhejiang University
He, Wei	Tianjin University of Commerce
Saitoh, Hironori	Sojo University
Wang, Huajun	Hebei University of Technology
Wang, Yulin	Tianjin Commerce University
Yue, Like	Tianjin University
Zhang, Junfeng	Tianjin University
Zhao, Yulong	Hebei University of Technology
Zhu, Qiang	Tianjin University
Zhu, Yu	Tianjin University
Zhou, Yefeng	Xiangtan University
Xu, Yuanxin (Secretary)	Tianjin University

Honorary Committee

Ishizuka, Masaru (Chair)	Toyama Prefectural University
Ay, H.	National Kaohsiung University of Applied Sciences
Brynjolfsson, S.	University of Iceland
Cervantes de Gortari, J.	National Univ. of Mexico
Chan, S. H.	Yuan Ze University
Charoenphonphanich, C.	KMITL
De Vahl Davis, G.	Univ. of New South Wales
Dincer, I.	University of Ontario Institute of Technology
Djilali, N.	University of Victoria
Dost, S.	University of Victoria
Fushinobu, K.	Tokyo Institute of Technology
Hanamura, K.	Tokyo Institute of Technology
Iguchi, M.	Hokkaido University
Jezek, J.	Czech Technical University in Prague
Lee, J. S.	Seoul National University
Lee, S. Y.	KAIST
Mallinson, G.	University of Auckland
Mochizuki, S.	Tokyo University of A&T
Rajapaksha, L.	University of Peradenya
Raupenstrauch, H.	Montanuniversitaet Leoben
Spitas, C.	Delft University of Technology
Suzuki, K.	Tokyo University of Science at Yamaguchi
Takeishi, K.	Osaka Univesity
Tomimura, T.	Kumamoto University
Tuan, Le Anh	Hanoi University of Science and Technology

Utaka, Yoshio
Wang, B. X.
Winoto, S. H.
Yanuar
Yokono, Yasuyuki
Zuna, P.

Tianjin University
Tsinghua University
National University of Singapore
University of Indonesia
University of Tokyo
Czech Technical University in Prague

International Scientific Committee

Carlomagno, Giovanni Maria	University of Naples
Einarsson, Erik	University of Buffalo, State University of New York
Fuchiwaki, Masaki	Kyushu Institute of Technology
Fujimoto, Masanori	Kanazawa Institute of Technology
Fukue, Takashi	Kanazawa Institute of Technology
Fushinobu, Kazuyoshi	Tokyo Institute of Technology
Hatakeyama, Tomoyuki	Toyama Prefectural University
Hong, Che-Wun	National Tsing Hua University
Ichimiya, Koichi	University of Yamanashi
Iida, Akiyoshi	Toyohashi University of Technology
Ito, Shinichiro	Kogakuin University
Iwamoto, Kaoru	Tokyo University of Agriculture and Technology
Joshi, Yogendra	Georgia Tech
Kawaguchi, Tatsuya	Tokyo Institute of Technology
Kedzierski, Mark	NIST
Kibushi, Risako	Tokyo University of Science at Yamaguchi
Kikura, Hiroshige	Tokyo Institute of Technology
Kim, Sung Jin	KAIST
Kim, Min Soo	Seoul National University
Kobayashi, Kenichi	Meiji University
Koizumi, Katsuhiko	DENSO Corporation
Komiya, Atsuki	Tohoku University
Kunugi, Tomoaki	Zhejiang University
Kuzma-Kichta, Yury	Moscow Power Eng. Institute
Maruyama, Shigenao	National Institute of Technology, Hachinohe College
Matsumoto, Koji	Chuo University
Matsumoto, Ryosuke	Kansai University
Miyagawa, Kazuyoshi	Waseda University
Motosuke, Masahiro	Tokyo University of Science
Murata, Akira	Tokyo University of Agriculture and Technology
Nakabeppu, Osamu	Meiji University
Nakamura, Hajime	National Defense Academy
Nakamura, Yuji	Toyohashi University of Technology
Naylor, David	Ryerson University
Ng, Eddie	Nanyang Technical University
Nishi, Koji	Ashikaga University
Nishida, Satomi	Modelon
Nomura, Shinfuku	Ehime University
Oda, Yutaka	Kansai University
Ohara, Taku	Tohoku University
Okajima, Junnosuke	Tohoku University
Saito, Takushi	Tokyo Institute of Technology
Saitoh, Hironori	Sojo University
Sakakibara, Jun	Meiji University
Sang, Pham Van	Hanoi University of Science and Technology

The 32nd International Symposium on Transport Phenomena

Tianjin (online), China, March 19th-21st, 2022

Sawada, Tatsuo
Someya, Satoshi
Strunin, Dmitry
Suzuki, Hiroshi
Suzuki, Koichi
Tada, Yukio
Takata, Yasuyuki
Takeda, Tetsuaki
Tanahashi, Mamoru
Tomimura, T.
Torii, S.
Utaka, Yoshio
Wang, Qiuwang
Yang, Chien-Yuh
Yazawa, Kazuaki
Yeh, Lian-Tuu
Yuki, Kazuhisa

Keio University
AIST
University of Southern Queensland
Kobe University
Tokyo University of Science at Yamaguchi
Kanazawa University
Kyushu University
University of Yamanashi
Tokyo Institute of Technology
Kumamoto University
Kumamoto University
Tianjin University / Tamagawa University
Xi'an Jiaotong University
National Central University
Purdue University
The American Society of Mechanical Engineers
Tokyo University of Science at Yamaguchi

Reviewers List

Haruka Agui	Japan	Takumi Ito	Japan	Yukihiko Okumura	Japan	Xiaodong Wang	China
Fumiaki Ansai	Japan	Kaoru Iwamoto	Japan	Weeliat Ong	China	Xinyu Wang	China
V.E. Badalassi	USA	Shunying Ji	China	Takuto Otsuka	Japan	Xuerong Wang	China
Lizhan Bai	China	Wentao Ji	China	Jiaying Pan	China	Ye Wang	Japan
Hua Bao	China	Li Jia	China	Zhenhai Pan	China	Yulin Wang	China
Borys Basok	Ukraine	Feng Jiang	China	Anatoliy Pavlenko	Poland	Zhe Wang	China
Shengshan Bi	China	Yuyan Jiang	China	Benli Peng	China	Masatoshi Watanabe	Japan
Hanliang Bo	China	Yu-Yong Jiao	China	Baojin Qi	China	Haiqiao Wei	China
Ryu Bomura	Japan	Donghyuk Kang	Japan	Binhui Qian	China	Jinjia Wei	China
Feng Cao	China	Panxing Kang	China	Jinyuan Qian	China	Feng-Bo Wen	China
Yang Cao	China	Osamu Kawanami	Japan	Wang Qian-Long	China	Rongfu Wen	China
Ze Cao	China	Shinichi Kinoshita	Japan	Jiang Qin	China	Li Wen-Jia	China
Zhizhao Che	China	Koki Kobayashi	Japan	Shijie Qin	China	Da-Zhuan Wu	China
Dong Chen	China	Chihiro Kondo	Japan	An Qing-Song	China	Hao Wu	China
Haisheng Chen	China	Toru Koso	Japan	Guanzheng Qu	China	Yanqing Wu	China
Hongxia Chen	China	Borys Kosoy	Ukraine	Jian Qu	China	Yifan Wu	China
Jie Chen	China	Matsukawa Kota	Japan	Ming-Liang Qu	China	Li Xiao-Bin	China
Lin Chen	China	Vladimirm Kravchenko	Ukraine	Yan Qu	China	Jian Xie	China
Rong Chen	China	Hiroyuki Kumano	Japan	Zhonghao Rao	China	Yangsuo Xie	China
Shao-Wen Chen	China	Tomoaki Kunugi	Japan	Congjing Ren	China	Li Xin-Guo	China
Xuemei Chen	China	Tomoaki Kunugi	Japan	Isamu Riku	Japan	Huadan Xu	China
Ying Chen	China	Eru Kurihara	Japan	Zhao Rui-Kai	China	Jinliang Xu	China
Zhihao Chen	China	A. Kushari	India	Arun K. Saha	India	Xin-Yu Xu	China
Zhijia Chen	China	Kazunori Kuwana	Japan	Hironori Saitoh	Japan	Yuanxin Xu	China
Wenlong Cheng	China	Courty Leo	France	Feiyu Sha	Japan	Z.G. Xu	China
Kato Chisachi	Japan	Luka Lešnik	Slovenia	Yun She	Japan	Tomohide Yabuki	Japan
Daotong Chong	China	Biao Li	China	Jianfeng Shi	China	Daiki Yaguchi	Japan
Fengming Chu	China	Bin Li	China	Shuhei Shibata	Japan	Akio Yamada	Japan
Fuqiang Chu	China	Dongyang Li	China	Masayasu Shimura	Japan	Takuya Yamazaki	Japan
Huaqiang Chu	China	Fengchen Li	China	Deng Shuai	China	Junjie Yan	China
Tadafumi Daitoku	Japan	Jiaqi Li	USA	Jiawen Song	China	Xiao Yan	USA
Chaobin Dang	Japan	Qian Li	China	Kewei Song	China	Chun Yang	Singapore
Bin Ding	China	Qinyi Li	Japan	Mengjie Song	China	Guang Yang	China
Zi-Jing Ding	China	Shuai Li	China	Rodion Sorokovoy	Ukraine	Nuo Yang	China
Ali Dolatabadi	Canada	Sining Li	China	Victor Steinberg	Israel	Sheng Yang	China
Morteza Eslamian	China	Wenjing Li	China	Jingyuan Sun	China	Shiliang Yang	China
Kroener Eva	Germany	Yan Li	China	Kai Sun	China	Xiaotao Yang	China
Marwan Fahs	France	Yong Li	China	Licheng Sun	China	Yao Yang	China
Desong Fan	China	Zirui Li	China	Mingying Sun	China	Tsuyoshi Yasunobu	Japan
Lifeng Fan	China	Gangtao Liang	China	Hiroki Suzuki	Japan	Qingqing Ye	China
Liwu Fan	China	Ruobing Liang	China	Yasumasa Suzuki	Japan	Liaofei Yin	China
Yidong Fang	China	Qiang Liao	China	Toshio Tagawa	Japan	Atsumasa Yoshida	Japan
Ma Fei	China	Qing-Yang Lin	China	Mamoru Takahashi	Japan	Yasuhiro Yoshida	Japan
Biao Feng	China	Daoyin Liu	China	Chao Tan	China	Fumiya Yoshioka	Japan
Chi Feng	China	Jia Liu	China	Mamoru Tanahashi	Japan	Xiaohui Yu	China
Delong Feng	China	Jiangwei Liu	China	Junya Tanaka	Japan	Zitao Yu	China
Yongchang Feng	China	Minjie Liu	China	Dawei Tang	China	Shi Yu-Qi	China
Guotao Fu	China	Shuai Liu	China	Ruoyue Tang	China	Haizhuan Yuan	China
Taotao Fu	China	Xiuliang Liu	China	Songjun Tang	China	Yanan Yue	China

The 32nd International Symposium on Transport Phenomena

Tianjin (online), China, March 19th-21st, 2022

Naoya Fukushima	Japan	Yahua Liu	China	Yuma Terao	Japan	Yanwei Zhai	China
Ming Gao	China	Zhichun Liu	China	O. Thual	France	Chunlu Zhang	China
Yuefen Gao	China	Yan-Song Luo	China	Yi-Heng Tong	China	Jian Zhang	China
Niccolo Giannetti	Japan	Chenming Ma	China	Hai-Lung Tsai	USA	Jiayi Zhang	China
Liang Gong	China	Jiaxuan Ma	China	Koichi Tsujimoto	Japan	Jiayi Zhang	China
Shuai Gong	China	Jiliang Ma	China	Naruhisa Tsukase	Japan	Jingzhi Zhang	China
Hao Guo	China	Weigang Ma	China	Jing Tu	China	Junfeng Zhang	China
Liang Guo	China	Xiaojing Ma	China	Noriyuki Unno	Japan	Qiangqiang Zhang	China
Meijin Guo	China	Yongli Ma	China	Yoshio Utaka	Japan	Tianyu Zhang	China
Dongxu Han	China	Ulrich Martin	Germany	Masashi Wakita	Japan	Wei Zhang	China
Tingting Hao	China	Keigo Masayuki	Japan	Anping Wan	China	Wei Zhang	China
Jiang Hao-Ran	China	Bing-Ang Mei	China	Tian Wan	China	Xin-Rong Zhang	China
Yoshihiko Haramura	Japan	Hironobu Minami	Japan	Boxiang Wang	China	Xing Zhang	China
Takashi Hashiguchi	Japan	Yuki Minamoto	Japan	Dechang Wang	China	Yonghai Zhang	China
Hirofumi Hattori	Japan	Akihiko Mitsuishi	Japan	Dongmin Wang	China	Cunlu Zhao	China
Yasuo Hattori	Japan	Mousa Mohammadpourfard	Iran	Faming Wang	China	Jun Zhao	China
Jiajun He	China	Masaharu Mori	Japan	Fang Wang	China	Li Zhao	China
Ying He	China	Shoji Mori	Japan	Guan-Bang Wang	China	Xin Zhao	China
Zhixia He	China	Shoji Mori	Japan	Hai Wang	China	Yulong Zhao	China
Wang He-Yang	China	Takashi Morimoto	Japan	Haidong Wang	China	Menglian Zheng	China
Shuichiro Hirai	Japan	Takakazu Morita	Japan	Hao Wang	China	Shaofei Zheng	China
Fukuoka Hiroshi	Japan	Takayuki Morokuma	Japan	Hao-Nan Wang	China	Zhi-Ying Zheng	China
Toshiki Hirotani	Japan	Kazuya Murakami	Japan	Hong Wang	China	Yingjie Zhong	China
Sihui Hong	China	Toshio Nagashima	Japan	Huajun Wang	China	Hao Zhou	China
Zhang Hong-Na	China	Harunori Nagata	Japan	Liya Wang	Japan	Wenjing Zhou	China
Nan Hu	China	Minoru Nakagawa	Japan	Peng Wang	China	Xuelong Zhou	China
Xiulan Huai	China	Susumu Nii	Japan	Qingyang Wang	China	Yefeng Zhou	China
Mohamed Ichenial Marouan	Morocco	Koichi Nishibe	Japan	Shixue Wang	China	Xiaocheng Zhu	China
Oaki Iida	Japan	Maryna Novitska	Ukraine	Shuai Wang	Australia	Yu Zhu	China
Takahiro Inoue	Japan	Yasunori Okano	Japan	Shuangfeng Wang	China		

Time Table

	Day 1	Day 2	Day 3
	Greenwich Mean Time (UTC+0) Mar.19, 00:30-10:00 Chinese Standard Time (UTC+8) Mar.19, 08:30-18:00	Greenwich Mean Time (UTC+0) Mar.20, 01:00-10:00 Chinese Standard Time (UTC+8) Mar.20, 09:00-18:00	Greenwich Mean Time (UTC+0) Mar.21,01:00-10:00 Chinese Standard Time (UTC+8) Mar.21, 09:00-18:00
Greenwich Mean Time (UTC+0) 00:30-01:00 Chinese Standard Time (UTC+8) 08:30-09:00	Opening (Room A)		
Day 1 Greenwich Mean Time (UTC+0) 01:00-03:15 Chinese Standard Time (UTC+8) 09:00-11:15 Day 2 Greenwich Mean Time (UTC+0) 01:00-03:10 Chinese Standard Time (UTC+8) 09:00-11:10 Day 3 Greenwich Mean Time (UTC+0) 01:00-03:30 Chinese Standard Time (UTC+8) 09:00-11:30	Plenary Lecture 1 (RoomA) Professor Satish G. Kandlikar Plenary Lecture 2 (RoomA) Professor T.S. Zhao Plenary Lecture 3 (RoomA) Professor Ryo Shirakashi	General Session (RoomA, B, C, D) A 3 Boiling & Condensation-2 Keynote Lecture (<i>Hidetoshi Ohkubo</i>), 91, 163, 95, 194, 151 B 3 Fuel Cells and Battery Technology Keynote Lecture (<i>Shohji Tsushima</i>), 48, 88, 184, 211, 116 C 3 Transport in Porous Media-1 Keynote Lecture (<i>Jeffrey Gostick</i>), 35, 188, 69, 165 D 3 Measurement/Imaging-1 Keynote Lecture (<i>Atsuki Komiya</i>), 71, 82, 193, 233	General Session (RoomA, B, C, D) A 6 Boiling & Condensation-5 Keynote Lecture (<i>Isaac Perez-Raya</i>), 85, 128, 86, 146, 89, 79 B 6 Multi-Phase Flow-3 Keynote Lecture (<i>Tomio Okawa</i>), 185, 140, 157, 149 C 6 Electronics Packaging, Thermal Management and heat pipe-3 204, 40, 205, 223 D 6 Micro- and Nano-Scale Transport-1 Keynote Lecture (<i>Gota Kikugawa</i>), 30, 87, 38, 53
Greenwich Mean Time (UTC+0) 05:00-07:10 Chinese Standard Time (UTC+8) 13:00-15:10	General Session (RoomA, B, C, D) A 1 Bioengineering and Bio-thermal Fluid Dynamics Keynote Lecture (<i>Kosaku Kurata</i>), 61, 139, 67, 173, 131 B 1 Experimental/Computational Fluid Dynamics-1 Keynote Lecture (<i>Hiroaki Matsumoto</i>), 29, 36, 70, 39, 235 C 1 Solid-liquid phase change and refrigeration-1 Keynote Lecture (<i>Hiroyuki Kumano</i>), 42, 33, 202, 74, 66 D 1 Combustion and Reacting Flows-1 Keynote Lecture (<i>Kazuhiro Ishii</i>), 20, 25, 75, 59, 214	General Session (RoomA, B, C, D) A 4 Boiling & Condensation-3 Keynote Lecture (<i>Jinjia Wei</i>), 17, 18, 41, 23, 135 B 4 Multi-Phase Flow-1 Keynote Lecture (<i>Zuankai Wang</i>), 44, 110, 153, 172, 166 C 4 Electronics Packaging, Thermal Management and heat pipe-1 Keynote Lecture (<i>Yury F. Maydanik</i>), 106, 113, 160, 101, 218 D 4 Measurement/Imaging-2 Keynote Lecture (<i>Weigang Ma</i>), 46, 24, 57, 60, 134	General Session (RoomA, B, C, D) A 7 Transport in Porous Media-2 104, 192, 108, 189 B 7 Multi-Phase Flow-4 156, 154, 137, 49 C 7 Turbulence and Flow Instabilities 19, 22, 54, 73, 92, 150 D 7 Micro- and Nano-Scale Transport-2 Keynote Lecture (<i>Xiaoliang Zhang</i>), 47, 117, 148, 161, 225
Greenwich Mean Time (UTC+0) 07:30-10:00 Chinese Standard Time (UTC+8) 15:30-18:00	General Session (RoomA, B, C, D) A 2 Boiling & Condensation-1 Keynote Lecture (<i>Yohei Sato</i>), 64, 81, 65, 96, 68, 102 B 2 Experimental/Computational Fluid Dynamics-2 Keynote Lecture (<i>Günter Brenn</i>), 52, 62, 127, 77, 93 C 2 Heat & mass transfer-1 Keynote Lecture (<i>Rong Chen</i>), 56, 63, 120, 164, 138 D 2 Combustion and Reacting Flows-2 Keynote Lecture (<i>Kun Luo</i>), 90, 162, 210, 176, 43	General Session (RoomA, B, C, D) A 5 Boiling & Condensation-4 Keynote Lecture (<i>Xuehu Ma</i>), 207, 132, 26, 94, 197, 201 B 5 Multi-Phase Flow-2 Keynote Lecture (<i>Henryk Anglart</i>), 136, 158, 215, 167 C 5 Electronics Packaging, Thermal Management and heat pipe-2 Keynote Lecture (<i>Masataka Mochizuki</i>), 118, 112, 145, 236, 239 D 5 Sustainable & Renewable Energy-1 Keynote Lecture (<i>Boris Kosoy</i>), 178, 174, 144, 100, 187, 141	General Session (RoomA, B, C, D) A 8 Heat & mass transfer-2 209, 76, 220, 180, 238, 231 B 8 Experimental/Computational Fluid Dynamics-3 123, 219, 234, 51, 241 C 8 Solid-liquid phase change and refrigeration-2 Keynote Lecture (<i>Tetyana Morozzyuk</i>), 222, 45, 232, 203, 34, 133 D 8 Sustainable & Renewable Energy-2 119, 16, 121, 129, 237

ISTP32 will be held online by "Zoom". Four parallel sessions in four virtual rooms are going to be held. Please be careful about the time difference between UTC and your location.

Presentation time: 15 minutes with additional 5 minutes for Q&A.

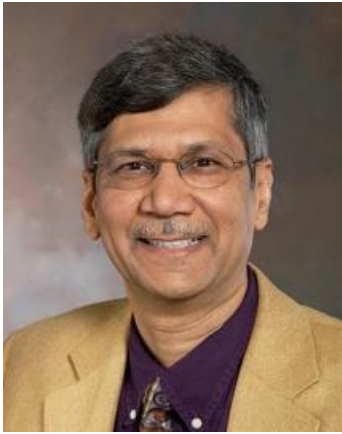
Connection test (not mandatory)

Connection test for participants is available. Presenters can test entering Zoom room and sharing screen for presentation following time. Administrators will be there to help. It is not mandatory for a presenter and audiences.

Date and Time: CST (UTC+8) Mar.12 13:00~16:00 (three hours)

Test room URL will be informed to the registered participants.

Plenary Lectures



Professor Satish G. Kandlikar

Gleason Professor of Mechanical Engineering

Institute Distinguished Professor at Rochester Institute of Technology

Plenary Lecture 1: Boiling – A Bubble Centric Approach towards Understanding and Enhancing Heat Transfer

Boiling has long been recognized as being driven by bubbles. However, it is only recently that the local hydrodynamic and thermal field created by a bubble is recognized as a driver to Critical Heat Flux Phenomenon along with the heat transfer efficiency as measured through the heat transfer coefficient. The talk takes a step back and presents a seamless approach by focusing on a single bubble and its potential to dramatically alter the heat transfer performance.



Professor T.S. Zhao

Academician of The Chinese Academy of Sciences (CAS)

Cheong Ying Chan Professor of Engineering and Environment

Chair Professor of Mechanical & Aerospace Engineering

Director of the HKUST Energy Institute

Senior Fellow of the HKUST Institute for Advanced Study HKUST

**Plenary Lecture 2: Tackling Challenges in Electrochemical
Energy Storage Using Thermo-Fluid Sciences**

The combination of energy shortage and climate change is one of the most complex challenges the world, as a whole, has had to face. The next 50 years is a vital period for human civilization and it is imperative that we revolutionize the way we produce and store energy and incorporate renewables as our primary source of energy. This talk will provide a snapshot of the future of the sustainable energy landscape and identify several game-changing technologies that will facilitate the widespread deployment of renewables. In particular, we will highlight our recent advances in redox flow batteries, fuel cells, and lithium-oxygen battery technologies achieved through an interdisciplinary approach that combines thermal-fluid science and electrochemistry. The scientific issues and practical challenges pertaining to this advanced battery will be discussed, with a particular emphasis on how the challenges can be addressed using thermos-fluid sciences.



Professor Ryo Shirakashi

Department of Mechanical and Biofunctional Systems, Institute of Industrial Science, The University of Tokyo

Fellow of Japanese Society of Mechanical Engineering

Plenary Lecture 3: Preservation technology for biopharmaceuticals and biorepository: molecular kinetics of water and its mass transport

Biomaterials are always required to keep their qualities from the moment of their isolation or purification to the moment of utilization. A high-quality preservation is the crucial technology for the logistics and long-term shelf life of precious biomaterials, e.g., biopharmaceuticals and clinical analytes, because most of the biomaterials rapidly deteriorate depending on their ambient environment. Since last year, attention has been attracted on the robustness of such a biomaterial (vaccine in liquid state) in logistics, which highlights the importance of the preservation technology.

In this lecture, focusing on water in biomaterials, which mediates deterioration of all kinds of biomaterials, two topics are introduced: 1) A new method for estimating deterioration speed of proteins in preservative solutions by evaluating the rotational water molecular speed, 2) Designing the air and vacuum drying processes (dehydration) of bio-preservative solution including a crystallizable protective agent. The former technique enables the prediction of sample shelf life that should be useful for screening protective agents, and the latter technique could be a useful tool to design the "non-freezing" drying process considering the sample size, which might propose more cost-saving high-throughput pharmaceutical process than freeze-drying and freezing process are.

Program

Day 1 Saturday, March 19, 2022		
Greenwich Mean Time (UTC+0) 00:30-01:00 Chinese Standard Time (UTC+8) 08:30-09:00	Room A (Meeting ID: 895 319 2022)	
	Opening	
Greenwich Mean Time (UTC+0) 01:00-03:15 Chinese Standard Time (UTC+8) 09:00-11:15	Plenary Lecture 1 BOILING – A BUBBLE CENTRIC APPROACH TOWARDS UNDERSTANDING AND ENHANCING HEAT TRANSFER <i>Satish G. Kandlikar</i>	
	Plenary Lecture 2 TACKLING CHALLENGES IN ELECTROCHEMICAL ENERGY STORAGE USING THERMO-FLUID SCIENCES <i>T.S. Zhao</i>	
	Plenary Lecture 3 PRESERVATION TECHNOLOGY FOR BIOPHARMACEUTICALS AND BIOREPOSITORY: MOLECULAR KINETICS OF WATER AND ITS MASS TRANSPORT <i>Ryo Shirakashi</i>	
Lunch		
Greenwich Mean Time (UTC+0) 05:00-07:10 Chinese Standard Time (UTC+8) 13:00-15:10	General Session-A1 Bioengineering and Bio-thermal Fluid Dynamics Session Chair: <i>Wei Rao</i>	
	Chinese Standard Time (UTC+8) 13:00-13:30	Keynote Lecture: WATER TRANSPORT THROUGH THE CELL MEMBRANE AFTER ELECTROPORATION <i>Kosaku Kurata</i>
	Chinese Standard Time (UTC+8) 13:30-13:50	61 CONSTRUCTION OF MECHANICAL MODEL FOR SWELLING-DEFORMATION BEHAVIOR OF ELASTOMERIC GEL <i>Isamu Riku and Koji Mimura</i>
	Chinese Standard Time (UTC+8) 13:50-14:10	139 NUMERICAL STUDY ON HYDRODYNAMICS FOR LARGE-SCALE IPS CELL CULTIVATION IN A STIRRED-TANK BIOREACTOR <i>Liya Wang and Yasunori Okano</i>
	Chinese Standard Time (UTC+8) 14:10-14:30	67 MEASUREMENT OF THERMAL CONDUCTIVITY OF SPIDER SILK <i>Shotaro Higuchi, Yoko Tomo, Takanobu Fukunaga, Kosaku Kurata and Hiroshi Takamatsu</i>
	Chinese Standard Time (UTC+8) 14:30-14:50	173 SIMULATION AND EVALUATION OF AQUEOUS HUMOR FLOW IN THE EYE WITH GLAUCOMA <i>Yao-Yu Guo, Xiao-Bin Li, Hong-Na Zhang, Feng-Chen Li and Xiao-Li Xing</i>
	Chinese Standard Time (UTC+8) 14:50-15:10	131 EVALUATION OF CONVECTIVE AND RADIATIVE HEAT TRANSFER FOR THE THERAPEUTIC DEVELOPMENT USING NEAR-INFRARED LASER AND GOLD NANORODS <i>Akiyoshi Obonai, Yuki Kanda, Oluwatobi Oluwafemi., Tetsuya Kodama and Atsuki Komiya</i>
Greenwich Mean Time (UTC+0) 05:00-07:10 Chinese Standard Time (UTC+8) 13:00-15:10	Room B (Meeting ID: 895 032 2022)	
	General Session-B1 Experimental/Computational Fluid Dynamics-1 Session Chair: <i>Hajime Nakamura</i>	
	Chinese Standard Time (UTC+8) 13:00-13:30	Keynote Lecture: MONTE CARLO SIMULATION OF THERMAL CREEP FLOW IN A KNUDSEN PUMP <i>Hiroaki Matsumoto</i>
	Chinese Standard Time (UTC+8) 13:30-13:50	29 INFLUENCE OF ASYMMETRIC PROTRUSION-SHAPED SLOT ON SYNTHETIC JET <i>Takumi Ito, Koichi Nishibe, Kotaro Sato and Donghyuk Kang</i>
	Chinese Standard Time (UTC+8) 13:50-14:10	36 INFLUENCE OF THE MOMENTUM RATIO BETWEEN SYNTHETIC JETS AND CONTINUOUS JETS ON FLOW FIELDS <i>Masaharu Mori, Nanami Ajino, Koichi Nishibe and Kotaro Sato</i>
	Chinese Standard Time (UTC+8) 14:10-14:30	70 EXPERIMENTAL AND NUMERICAL STUDY OF IMPACT OF VENTURI TUBE GEOMETRY ON FINE BUBBLE GENERATION <i>Xin Jiang, Tsuyoshi Yasunobu, Ryuki Kamiyama and Masaki Shimazu</i>
	Chinese Standard Time (UTC+8) 14:30-14:50	39 EFFECTS OF ANTICYCLONIC ROTATION ON PLANE COUETTE FLOW AT MODERATE REYNOLDS NUMBER <i>Oaki Iida</i>
Chinese Standard Time (UTC+8) 14:50-15:10	235 EFFECT OF CIRCULATION OF SHOCK WAVE-INDUCED VORTEX RING DISCHARGED FROM ELLIPTICAL CELL ON UNSTEADY SUPERSONIC JET <i>Ryu Bomura, Hiroshi Fukuoka, Atsushi Suda, Nao Kuniyoshi, Minoru Yaga, Eri Ueno, Toshio Takiya and Naoaki Fukuda</i>	

The 32nd International Symposium on Transport Phenomena

Tianjin (online), China, March 19th-21st, 2022

		Room C (Meeting ID: 895 320 2022)
Greenwich Mean Time (UTC+0) 05:00-07:10 Chinese Standard Time (UTC+8) 13:00-15:10		General Session-C1 Solid-liquid phase change and refrigeration-1 Session Chair: <i>Mengjie Song</i>
	Chinese Standard Time (UTC+8) 13:00-13:30	Keynote Lecture: FLOW AND HEAT TRANSFER CHARACTERISTICS OF PHASE CHANGE SLURRIES <i>Hiroyuki Kumano</i>
	Chinese Standard Time (UTC+8) 13:30-13:50	42 STUDY ON ACTIVE CONTROL OF ICE ADHESION FORCE TO COOLED COPPER SURFACE BY ADDING SURFACTANT WITH DIFFERENT MOLECULAR SIZE <i>Yuta Akiyama, Takumi Sato, Kenta Fukazawa and Koji Matsumoto</i>
	Chinese Standard Time (UTC+8) 13:50-14:10	33 STATE-OF-DISCHARGE ESTIMATION FOR A LATENT HEAT THERMAL ENERGY SYSTEM USING ERYTHRITOL <i>Jiahao Luo, Sheng Yang and Liwu Fan</i>
	Chinese Standard Time (UTC+8) 14:10-14:30	202 INVESTIGATION ON HEAT TRANSFER OF PHASE CHANGE MATERIAL WITH GRADIENT POROSITY POROUS MEDIUM IN ENERGY STORAGE SYSTEM DURING SOLIDIFICATION PROCESS <i>Yin Maobin, Wang Meng, Huo Yutao and Rao Zhonghao</i>
	Chinese Standard Time (UTC+8) 14:30-14:50	74 EFFECT OF THE COOLING SURFACE SHAPES ON FROSTING PHENOMENON <i>Haruka Agui, Hidetoshi Ohkubo, Kiyoshi Saito, Jongsoo Jeong and Niccolo Giannetti</i>
	Chinese Standard Time (UTC+8) 14:50-15:10	66 NUMERICAL INVESTIGATION OF SOLID/LIQUID PHASE CHANGE HEAT TRANSFER IN OPEN CELL AND CLOSED CELL METAL STRUCTURES <i>Chunyang Wang, Takuma Sugiura, Haisheng Chen and Moghtada Mobedi</i>
		Room D (Meeting ID: 895 321 2022)
Greenwich Mean Time (UTC+0) 05:00-07:10 Chinese Standard Time (UTC+8) 13:00-15:10		General Session-D1 Combustion and Reacting Flows-1 Session Chair: <i>Kun Wang</i>
	Chinese Standard Time (UTC+8) 13:00-13:30	Keynote Lecture: AN INTRODUCTION TO ROTATING DETONATION ENGINES <i>Kazuhiro Ishii</i>
	Chinese Standard Time (UTC+8) 13:30-13:50	20 APPLICATION OF GAS-DISSOLVED FUEL FOR A DIESEL ENGINE <i>Takuto Otsuka and Junya Tanaka</i>
	Chinese Standard Time (UTC+8) 13:50-14:10	25 EFFECT OF TURBULENCE INTENSITY ON FLAME-WALL INTERACTIONS OF TURBULENT PREMIXED FLAME IN AN ENCLOSED RECTANGULAR DOMAIN <i>Ye Wang, Yuki Minamoto, Masayasu Shimura and Mamoru Tanahashi</i>
	Chinese Standard Time (UTC+8) 14:10-14:30	75 SPATIAL FREQUENCY ANALYSIS IN FINGERING FLAME SPREAD <i>Koki Kobayashi, Takashi Tsuruda and Tadafumi Daitoku</i>
	Chinese Standard Time (UTC+8) 14:30-14:50	59 NUMERICAL ANALYSIS OF THE DETONATION WAVE PROPAGATION IN A LINEARIZED ROTATING DETONATION ENGINE <i>Faming Wang, Toshiharu Mizukaki and Shingo Matsuyama</i>
	Chinese Standard Time (UTC+8) 14:50-15:10	214 EFFECTS OF INORGANIC SALTS ON SMOLDERING COMBUSTION <i>Takuya Yamazaki, Daiki Yasuda, Xiaoyu Ju, Tsuneyoshi Matsuoka and Yuji Nakamura</i>
		Break
		Room A (Meeting ID: 895 319 2022)
Greenwich Mean Time (UTC+0) 07:30-10:00 Chinese Standard Time (UTC+8) 15:30-18:00		General Session-A2 Boiling & Condensation-1 Session Chair: <i>Hidetoshi Ohkubo</i>
	Chinese Standard Time (UTC+8) 15:30-16:00	Keynote Lecture: DNS OF MICRO-LAYER FORMATION IN NUCLEATE POOL BOILING <i>Yohei Sato</i>
	Chinese Standard Time (UTC+8) 16:00-16:20	64 EFFECT OF SURFACE COATING LAYER WITH LARGE POROSITY ON NATURAL CONVECTION SATURATED BOILING HEAT TRANSFER CHARACTERISTICS <i>Toshiki Hirotani, Hidetoshi Ohkubo, Takayuki Morokuma and Shigehiro Kawamori</i>
	Chinese Standard Time (UTC+8) 16:20-16:40	81 MEASUREMENT OF MICROLAYER STRUCTURE IN HIGH HEAT FLUX CONDITION OF NUCLEATE POOL BOILING FOR WATER BASED ON LASER INTERFEROMETRIC METHOD <i>Xiyang Ren, Yunfei Yin, Xiaocheng Hu, Zhihao Chen and Yoshio Utaka</i>
	Chinese Standard Time (UTC+8) 16:40-17:00	65 EFFECT OF SURFACE POROUS COATING LAYERS ON SATURATED BOILING HEAT TRANSFER <i>Susumu Hori, Hidetoshi Ohkubo and Shigehiro Kawamori</i>
	Chinese Standard Time (UTC+8) 17:00-17:20	96 EFFECT OF CHANNEL HEIGHT ON FLOW BOILING CHARACTERISTICS IN MINIGAP CHANNELS AT HIGH HEAT FLUXES <i>Xue Li, Yu Zhu and Shixue Wang</i>
	Chinese Standard Time (UTC+8) 17:20-17:40	68 EFFECT OF THERMAL CONDUCTIVITY OF COOLING SURFACE MATERIAL ON LIQUID NITROGEN SATURATED BOILING HEAT TRANSFER AROUND THE SPHERE <i>Takayuki Morokuma, Hidetoshi Ohkubo, Kyohei Takahashi, Toshiki Hirotani, Shigehiro Kawamori and Yoshio Utaka</i>
	Chinese Standard Time (UTC+8) 17:40-18:00	102 EXPERIMENTAL STUDY ON HEAT TRANSFER CHARACTERISTICS OF BOILING-CONDENSATION COUPLED PHASE CHANGE IN LIMITED SPACE <i>Yurong Yang, Shixue Wang and Yu Zhu</i>

The 32nd International Symposium on Transport Phenomena

Tianjin (online), China, March 19th-21st, 2022

<p>Greenwich Mean Time (UTC+0) 07:30-09:40 Chinese Standard Time (UTC+8) 15:30-17:40</p>		Room B (Meeting ID: 895 032 2022)
		<p>General Session-B2 Experimental/Computational Fluid Dynamics-2 Session Chair: <i>Xiaobin Li</i></p>
	Chinese Standard Time (UTC+8) 15:30-16:00	<p>Keynote Lecture: SELF-SIMILARITY OF PRESSURE-ATOMIZED SPRAYS WITH HEAT AND MASS TRANSFER <i>Günter Brenn</i></p>
	Chinese Standard Time (UTC+8) 16:00-16:20	<p>52 JET DIRECTION CONTROL USING SECONDARY FLOW GENERATED BY MULTIPLE SLOTS ON A COANDA SURFACE <i>Minoru Nakagawa, Yu Tamanoi, Koichi Nishibe and Kotaro Sato</i></p>
	Chinese Standard Time (UTC+8) 16:20-16:40	<p>62 STUDY OF SHOCK WAVE CONFINEMENT PHENOMENON USING SMALL CHAMBER SHOCK TUBE <i>Matsukawa Kota, Miyaoku Koki, Fukuoka Hiroshi, Nakamura Shigeto and Suda Atsushi</i></p>
	Chinese Standard Time (UTC+8) 16:40-17:00	<p>127 DYNAMIC CHARACTERISTICS OF SOLIDS CIRCULATION ESTABLISHMENT IN CIRCULATING FLUIDIZED BEDS <i>Congjing Ren, Xiaoqiang Fan, Jingyuan Sun, Jingdai Wang and Yongrong Yang</i></p>
	Chinese Standard Time (UTC+8) 17:00-17:20	<p>77 MEASUREMENT OF FLUCTUATING VELOCITIES OF SUBMICROMETERS COLLOIDAL PARTICLES CLOSE TO A SOLID SURFACE <i>Atsuhiko Kawaguchi, Kazuki Hirai, Issei Takeuchi, Shouhei Matsumoto and Katsuki Shirai</i></p>
Chinese Standard Time (UTC+8) 17:20-17:40	<p>93 INVESTIGATION ON INFLUENCE ON COHESIVE FORCE OF STIRRING SPEED <i>Kosuke Nishimura, Kentaro Tsukagoshi, Yuta Kuroiwa and Koji Matsumoto</i></p>	
<p>Greenwich Mean Time (UTC+0) 07:30-09:40 Chinese Standard Time (UTC+8) 15:30-17:40</p>		Room C (Meeting ID: 895 320 2022)
		<p>General Session-C2 Heat & mass transfer-1 Session Chair: <i>Shixue Wang</i></p>
	Chinese Standard Time (UTC+8) 15:30-16:00	<p>Keynote Lecture : DROPLET EVAPORATION AND INTERFACIAL PHENOMENA CAUSED BY LOCALIZED PHOTOTHERMAL EFFECT <i>Rong Chen</i></p>
	Chinese Standard Time (UTC+8) 16:00-16:20	<p>56 UNDERSTANDING HEAT TRANSFER CHARACTERISTICS IN A BUBBLING-SPOUTING GAS-SOLID FLUIDIZED BED FROM MULTIPLE REGION VIEWPOINT A CFD-DEM STUDY <i>Panxing Kang and Yefeng Zhou</i></p>
	Chinese Standard Time (UTC+8) 16:20-16:40	<p>63 3D NUMERICAL ANALYSIS OF FLOW RATE MEASUREMENT SYSTEM BASED ON STEM HEAT BALANCE METHOD FOR POSITIONING OPTIMIZATION OF TEMPERATURE MEASUREMENT <i>Kazuma Sakaki, Kyosuke Suenaga, Hiroshi Fukuoka, Atsushi Suda, Shigeto Nakamura and Kenichi Iida</i></p>
	Chinese Standard Time (UTC+8) 16:40-17:00	<p>120 CFD MODELING OF THE OSCILLATING HEAT TRANSFER INSIDE DIESEL ENGINE PISTONS <i>Peng Wang, Di Liu, Ruobing Liang and Liang Zhao</i></p>
	Chinese Standard Time (UTC+8) 17:00-17:20	<p>164 PREDICTION MODEL OF CABLE TEMPERATURE IN PUBLIC UTILITY TUNNEL BASED ON CART ALGORITHM <i>Jiaxu Wang and Sihui Hong</i></p>
Chinese Standard Time (UTC+8) 17:20-17:40	<p>138 INSTABILITIES AND PATTERN EVOLUTIONS OF THERMAL-SOLUTAL MARANGONI FLOW IN A RECTANGULAR CAVITY UNDER THE EFFECT OF RADIATIVE HEAT TRANSFER <i>Jiangao Zhang and Yasunori Okano</i></p>	
<p>Greenwich Mean Time (UTC+0) 07:30-09:40 Chinese Standard Time (UTC+8) 15:30-17:40</p>		Room D (Meeting ID: 895 321 2022)
		<p>General Session-D2 Combustion and Reacting Flows-2 Session Chair: <i>Qianlong Wang</i></p>
	Chinese Standard Time (UTC+8) 15:30-16:00	<p>Keynote Lecture: DIRECT MOMENT CLOSURE MODEL FOR TURBULENT COMBUSTION <i>Kun Luo</i></p>
	Chinese Standard Time (UTC+8) 16:00-16:20	<p>90 PRODUCTION OF TWO-COLOR INEXPENSIVE INORGANIC FLUORESCENT TRACER TOWARDS SIMULTANEOUS MEASUREMENT OF GASEOUS FLOW AND TEMPERATURE IN ENGINES <i>Chihiro Kondo and Masanobu Yoshioka</i></p>
	Chinese Standard Time (UTC+8) 16:20-16:40	<p>162 STUDY ON OPTIMIZATION CHARACTERISTICS OF METHANOL COMBUSTION COOKER BASED ON POROUS MEDIA <i>Chenming Ma, Qiang Zhu, Heyang Wang, Jing Liu, Da Huo and Jun Zhao</i></p>
	Chinese Standard Time (UTC+8) 16:40-17:00	<p>210 REACTION ANALYSIS OF NITROGEN OXIDE FOR AMMONIA TURBULENT BURNER WITH HYDROGEN FLAME STABILIZER <i>Yukihiko Okumura, Tsukasa Hori, Fumiteru Akamatsu, Naoya Matsuda and Tomohiro Tsubota</i></p>
	Chinese Standard Time (UTC+8) 17:00-17:20	<p>176 FUEL REGRESSION RATE OF HYBRID ROCKET MOTORS OBTAINED BY VARIABLE WALL TEMPERATURE MODEL <i>Yansheng Yang, Takakazu Morita and Jungpyo Lee</i></p>
Chinese Standard Time (UTC+8) 17:20-17:40	<p>43 PREDICTION OF LOCAL KOLMOGOROV LENGTH SCALE USING DEEP NEURAL NETWORK IN THE COMBUSTION LES CONTEXT <i>Hironobu Minami, Yuki Minamoto, Masayasu Shimura and Mamoru Tanahashi</i></p>	

Day 2 Sunday, March 20, 2022		
Greenwich Mean Time (UTC+0) 01:00-03:10 Chinese Standard Time (UTC+8) 09:00-11:10		Room A (Meeting ID: 895 319 2022) General Session-A3 Boiling & Condensation-2 Session Chair: <i>Zhihao Chen</i>
	Chinese Standard Time (UTC+8) 09:00-09:30	Keynote Lecture: ENHANCEMENT OF BOILING HEAT TRANSFER BY SURFACE COATING LAYER <i>Hidetoshi Ohkubo</i>
	Chinese Standard Time (UTC+8) 09:30-09:50	91 ENHANCEMENT OF HEAT TRANSFER INDUCED BY DIFFERENT-MODE-INTERACTING BOILING DURING SUBCOOLED FLOW BOILING IN NARROW GAPS <i>Mayowa I. Omisanya, Zhihao Chen, Yoshio Utaka, Hidetoshi Ohkubo and Shoji Mori</i>
	Chinese Standard Time (UTC+8) 09:50-10:10	163 EFFECT OF MAGNETIC FIELD ON SURFACE TENSION AND BOILING CHARACTERISTICS OF WATER <i>Jianshu Liu and Yang Cao</i>
	Chinese Standard Time (UTC+8) 10:10-10:30	95 EFFECT OF PRESSURE, SUBCOOLING, AND FLOW RATE ON FLOW BOILING HEAT TRANSFER IN MICRO-SLIT CHANNEL <i>Ichiro Kano, Yasuhiro Nakajima, Rikiya Shiono and Ren Hibino</i>
	Chinese Standard Time (UTC+8) 10:30-10:50	194 DETERMINATION OF THE MICROLAYER STRUCTURE IN THE WHOLE HEAT FLUX RANGE OF NUCLEATE BOILING FOR WATER BASED ON LASER INTERFEROMETRY <i>Yunfei Yin, Xiaocheng Hu, Zhihao Chen and Yoshio Utaka</i>
	Chinese Standard Time (UTC+8) 10:50-11:10	151 NUMERICAL INVESTIGATION OF BUBBLE GROWTH DURING FLOW BOILING IN WAVY MICROCHANNELS <i>Odumuyiwa A. Odumosu, Huashi Xu, Tianyou Wang and Zhizhao Che</i>
Greenwich Mean Time (UTC+0) 01:00-03:10 Chinese Standard Time (UTC+8) 09:00-11:10		Room B (Meeting ID: 895 032 2022) General Session-B3 Fuel Cells and Battery Technology Session Chair: <i>Haoran Jiang</i>
	Chinese Standard Time (UTC+8) 09:00-09:30	Keynote Lecture: DESIGN AND CONTROL OF TRANSPORT PHENOMENA IN ELECTROCHEMICAL SYSTEMS FOR POWER SOURCE APPLICATIONS <i>Shohji Tsushima</i>
	Chinese Standard Time (UTC+8) 09:30-09:50	48 THREE-DIMENSIONAL ELECTRIC POTENTIAL SIMULATION WITH VARIOUS ELECTRODE GEOMETRIES IN PEM WATER ELECTROLYSIS <i>Naruhisa Tsukase, Konosuke Watanabe, Takuto Araki, Taiki Ishida, Kensaku Nagasawa, Yoshiyuki Kuroda and Shigenori Mitsushima</i>
	Chinese Standard Time (UTC+8) 09:50-10:10	88 FREEZING CHARACTERISTICS OF SUPERCOOLED WATER IN GAS DIFFUSION LAYER OF PROTON EXCHANGE MEMBRANE FUEL CELLS <i>Yunqing Wang, Jingying Xu, Zhihao Chen and Yoshio Utaka</i>
	Chinese Standard Time (UTC+8) 10:10-10:30	184 THE EFFECTS OF LIQUID WATER DISTRIBUTION ON OXYGEN TRANSPORT THROUGH PEFC GAS DIFFUSION LAYER BY IN-SITU X-RAY CT <i>Takaya Sugahara, Takashi Sasabe, Hiroshi Naito, Manabu Kodama and Shuichiro Hirai</i>
	Chinese Standard Time (UTC+8) 10:30-10:50	211 IMPROVEMENT OF THE COLD START PERFORMANCE OF PROTON EXCHANGE MEMBRANE FUEL CELL USING MICROPOROUS LAYER WITH PLANAR-DISTRIBUTED WETTABILITY <i>Guozhuo Wang, Yoshio Utaka, Shixue Wang and Zhihao Chen</i>
	Chinese Standard Time (UTC+8) 10:50-11:10	116 NUMERICAL INVESTIGATION ON TAPERED FLOW FIELD DESIGNS WITH CONSIDERING ELECTRIC CONTACT RESISTANCE FOR POLYMER ELECTROLYTE MEMBRANE FUEL CELLS <i>Yulin Wang, Xiangling Liao and Shixue Wang</i>
Greenwich Mean Time (UTC+0) 01:00-02:50 Chinese Standard Time (UTC+8) 09:00-10:50		Room C (Meeting ID: 895 320 2022) General Session-C3 Transport in Porous Media-1 Session Chair: <i>Chuanshan Dai</i>
	Chinese Standard Time (UTC+8) 09:00-09:30	Keynote Lecture: PORE NETWORK MODELING OF MULTIPHYSICS TRANSPORT IN POROUS ELECTRODES <i>Jeffrey Gostick</i>
	Chinese Standard Time (UTC+8) 09:30-09:50	35 EXPERIMENT INVESTIGATION ON THE MOISTURE TRANSFER ACROSS THE INTERFACE OF MULTI-LAYERED POROUS MATERIALS <i>ShengYue Lu, MingLiang Qu, ShuaiQi Tian, LiWu Fan and ZiTao Yu</i>
	Chinese Standard Time (UTC+8) 09:50-10:10	188 SHAPE IMPROVEMENT OF THE STAGGERED POROUS STRUCTURE FOR ENHANCING HEAT TRANSFER <i>Yushi Muramatsu, Yoshihiko Sano and Fujio Kuwahara</i>
	Chinese Standard Time (UTC+8) 10:10-10:30	69 NUMERICAL STUDY ON HYDROTHERMAL TRANSFER OF SELF-INSULATED AERATED CONCRETE WALL WITH VARIOUS THICKNESSES OF EXTERIOR /INTERIOR INSULATION IN HOT SUMMER AND COLD WINTER ZONE <i>Yanhao Feng, Zitao Yu and Jiang Lu</i>
	Chinese Standard Time (UTC+8) 10:30-10:50	165 PORE-SCALE THERMAL-HYDRO-MECHANICAL COUPLING SIMULATION FOR THE FRACTURE PROPAGATION IN ROCK WITH DAMAGE VARIABLE <i>Kaituo Jiao, Dongxu Han and Bo Yu</i>

The 32nd International Symposium on Transport Phenomena

Tianjin (online), China, March 19th-21st, 2022

		Room D (Meeting ID: 895 321 2022)
Greenwich Mean Time (UTC+0) 01:00-02:50 Chinese Standard Time (UTC+8) 09:00-10:50		General Session-D3 Measurement/imaging-1 Session Chair: <i>Takuto Araki</i>
	Chinese Standard Time (UTC+8) 09:00-09:30	Keynote Lecture: CONTROL OF PROTEIN MASS TRANSFER USING A MEMBRANE WITH PATTERNED PORES <i>Atsuki Komiya</i>
	Chinese Standard Time (UTC+8) 09:30-09:50	71 MEASUREMENT OF LIQUID FILM THICKNESS BETWEEN BUBBLES AT DIFFERENT WATER TEMPERATURES IN THE BUBBLE COALESCENCE PROCESS <i>Takayuki Morokuma, Yoshihiko Haramura and Yoshio Utaka</i>
	Chinese Standard Time (UTC+8) 09:50-10:10	82 INDEPENDENCE VERIFICATION AND DECOUPLING MEASUREMENT OF RAMAN COEFFICIENTS OF GAN WITH COEXISTING TEMPERATURE CHANGE AND STRESS <i>Yupu Li, Aoran Fan, Yufeng Zhang and Xing Zhang</i>
	Chinese Standard Time (UTC+8) 10:10-10:30	193 VISUALIZATION OF FLOW NEAR THE FLOOR USING THE LIGHT TRANSMITTANCE OF THE LIQUID FILM <i>Ukyo Takata, Mizuki Kobayashi and Masatoshi Watanabe</i>
	Chinese Standard Time (UTC+8) 10:30-10:50	233 POSITIONING IMPROVEMENT OF TEMPERATURE MEASUREMENT FOR FLOW RATE MEASUREMENT SYSTEM BASED ON STEM HEAT BALANCE METHOD <i>Kyosuke Suenaga, Hiroshi Fukuoka, Atsushi Suda, Shigeto Nakamura and Kenichi Iida</i>
Lunch		
		Room A (Meeting ID: 895 319 2022)
Greenwich Mean Time (UTC+0) 05:00-07:10 Chinese Standard Time (UTC+8) 13:00-15:10		General Session-A4 Boiling & Condensation-3 Session Chair: <i>Tomohide Yabuki</i>
	Chinese Standard Time (UTC+8) 13:00-13:30	Keynote Lecture: EFFECTS OF ELECTRIC FIELD ON POOL BOILING HEAT TRANSFER OVER MICROSTRUCTURED SURFACES UNDER DIFFERENT LIQUID SUBCOOLINGS <i>Jinjia Wei</i>
	Chinese Standard Time (UTC+8) 13:30-13:50	17 ENHANCED HEAT TRANSFER OF WATER FLOW BOILING IN NANOSTRUCTURED MICROCHANNELS <i>Yingli Xue, Liaofei Yin, Chao Dang, Yi Lu and Li Jia</i>
	Chinese Standard Time (UTC+8) 13:50-14:10	18 CHF ENHANCEMENT OF SATURATED POOL BOILING USING COPPER POROUS BODY FORMED BY THE ELECTRODEPOSITION METHOD <i>Syun Yatsunami, Shoji Mori, Tianxi Xie, Yoshio Utaka and Zhihao Chen</i>
	Chinese Standard Time (UTC+8) 14:10-14:30	41 BOILING ENHANCEMENT OF A HIGHLY WETTING FLUID USING HYBRID SURFACES <i>Biao Shen, Kohei Kamiya, Sumitomo Hidaka, Koji Takahashi, Yasuyuki Takata, Junji Nunomura, Akihiro Fukatsu and Yoichiro Betsuki</i>
	Chinese Standard Time (UTC+8) 14:30-14:50	23 EFFECT OF WALL MATERIAL ON BOILING HEAT TRANSFER OF NANOFLUID <i>Tomio Okawa, Koki Nakano, Ren Ning, Yutaro Umehara and Yasuo Koizumi</i>
Chinese Standard Time (UTC+8) 14:50-15:10	135 POOL BOILING ENHANCEMENT VIA BUBBLE ELONGATION INDUCED LIQUID-VAPOR SEPARATED FLOW PATHS <i>Sihui Hong, Chaobin Dang, Zhijie Gao and Siyi Mo</i>	
		Room B (Meeting ID: 895 032 2022)
Greenwich Mean Time (UTC+0) 05:00-07:10 Chinese Standard Time (UTC+8) 13:00-15:10		General Session-B4 Multi-Phase Flow-1 Session Chair: <i>Biao Shen</i>
	Chinese Standard Time (UTC+8) 13:00-13:30	Keynote Lecture: COMPLETE SUPPRESSION OF CLASSICAL LEIDENFROST EFFECT <i>Zuankai Wang</i>
	Chinese Standard Time (UTC+8) 13:30-13:50	44 VISUALIZATION RESEARCH ON INFLUENCING FACTORS OF FLAT HEAT PIPES <i>Jie Zhou, Lei Liu, Xiaoping Yang, Yonghai Zhang and Jinjia Wei</i>
	Chinese Standard Time (UTC+8) 13:50-14:10	110 EFFECT OF SURFACE DIFFERENT WETTABILITY OF FALLING FILM EVAPORATION ON HEAT TRANSFER PERFORMANCE WITH R32/R1234ZE (E) NON-AZEOTROPIC REFRIGERANT <i>Liang Yao, Ruitao Song, Chaoguo Chen, Xiaobin Li, Minxia Li, Fengchen Li and Hongna Zhang</i>
	Chinese Standard Time (UTC+8) 14:10-14:30	153 BUBBLE ENTRAPMENT DURING THE IMPACT OF DROPLETS ON A LIQUID POOL <i>Zhigang Xu, Tianyou Wang and Zhizhao Che</i>
	Chinese Standard Time (UTC+8) 14:30-14:50	172 EFFECT OF INJECTION TEMPERATURE AND NOZZLE LENGTH-DIAMETER RATIO ON CAVITATION FLOW CHARACTERISTICS ON METHANOL <i>Qingsong An, Kemu Zhang and Jiajun He</i>
Chinese Standard Time (UTC+8) 14:50-15:10	166 NUMERICAL SIMULATION OF HEAT TRANSFER INVOLVING TWO PHASE CHANGES IN TERNARY FLOW USING DIM <i>Takashi Hashiguchi, Koichi Tsujimoto, Toshihiko Shakouchi, Toshitake Ando and Mamoru Takahashi</i>	

The 32nd International Symposium on Transport Phenomena

Tianjin (online), China, March 19th-21st, 2022

		Room C (Meeting ID: 895 320 2022)
Greenwich Mean Time (UTC+0) 05:00-07:10 Chinese Standard Time (UTC+8) 13:00-15:10		General Session-C4 Electronics Packaging, Thermal Management and heat pipe-1 Session Chair: <i>Shuangfeng Wang</i>
	Chinese Standard Time (UTC+8) 13:00-13:30	Keynote Lecture: LOOP HEAT PIPES – DEVELOPMENT, RESEARCH AND APPLICATION <i>Yury F. Maydanik</i>
	Chinese Standard Time (UTC+8) 13:30-13:50	106 POSTURAL INFLUENCE ON THERMAL PERFORMANCE OF A FLAT LAMINATE VAPOR CHAMBER <i>Daiki Miyamoto, Kei Mizuta, Shinya Toshikawa and Susumu Nii</i>
	Chinese Standard Time (UTC+8) 13:50-14:10	113 EXPERIMENTAL INVESTIGATION OF PULSATING HEAT PIPE FOR ELECTRIC MOTOR COOLING OF NEW ENERGY VEHICLE <i>Liang Zhu, Linli Wu and Shuangfeng Wang</i>
	Chinese Standard Time (UTC+8) 14:10-14:30	160 A PARAMETRIC STUDY ON THE WAVINESS END-FACE MECHANICAL SEAL'S PERFORMANCE CHARACTERISTICS WITHIN A REACTOR COOLANT PUMP, CONSIDERING THE THERMO-HYDRODYNAMIC EFFECTS <i>Wen-Tao Su, Binama Maxime and Xiao-Dong Feng</i>
	Chinese Standard Time (UTC+8) 14:30-14:50	101 THERMAL AND FLOW CHARACTERISTICS OF A SODIUM OSCILLATING HEAT PIPE <i>Daiki Tokuda, Yuji Suzuki and Takayoshi Inoue</i>
	Chinese Standard Time (UTC+8) 14:50-15:10	218 LOOP THERMOSYPHON WITH POROUS COATING ON CYLINDRICAL HORIZONTAL EVAPORATOR <i>Leonard Vasiliev, Alexander Zhuravlyov, Maxim Kuzmich and Vadzim Kulikouski</i>
		Room D (Meeting ID: 895 321 2022)
Greenwich Mean Time (UTC+0) 05:00-07:10 Chinese Standard Time (UTC+8) 13:00-15:10		General Session-D4 Measurement/imaging-2 Session Chair: <i>Lin Chen</i>
	Chinese Standard Time (UTC+8) 13:00-13:30	Keynote Lecture : CHARACTERIZATION AND CONTROL OF MICRO/NANOSCALE THERMAL TRANSPORT AND THERMOELECTRIC PROPERTIES <i>Weigang Ma</i>
	Chinese Standard Time (UTC+8) 13:30-13:50	46 MEASUREMENT OF TRANSIENT STRUCTURAL CHANGES DURING PYROLYSIS OF WOODEN BIOMASS UNDER HIGH HEAT FLUX USING ULTRA-HIGH-SPEED X-RAY CT <i>Tadafumi Daitoku and Takashi Tsuruda</i>
	Chinese Standard Time (UTC+8) 13:50-14:10	24 PORE-SCALE INVESTIGATION OF MICROEMULSION FLOODING STRATEGIES ON ENHANCED OIL RECOVERY IN OIL-WET RESERVOIR BY X-RAY MICROTOMOGRAPHY <i>Yun She, Mohammad Azis Mahardika, Weicen Wang and Tetsuya Suekane</i>
	Chinese Standard Time (UTC+8) 14:10-14:30	57 HIGH SPATIO-TEMPORAL RESOLUTION MEASUREMENT OF BOILING HEAT TRANSFER OF A FALLING DROPLET <i>Masaki Yoshida, Shunsuke Yamada, Yuki Funami and Hajime Nakamura</i>
	Chinese Standard Time (UTC+8) 14:30-14:50	60 EXPERIMENTAL OBSERVATION OF NEAR-WALL MOTIONS OF COLLOIDAL PARTICLES BASED ON PARTICLE TRACKING USING WITH EVANESCENT LIGHT ILLUMINATION <i>Hideaki Kato, Hirai Kazuki, Kanji Maruyama and Katsuaki Shirai</i>
	Chinese Standard Time (UTC+8) 14:50-15:10	134 EXPERIMENTAL EVALUATION OF MEMBRANE PORE PATTERN ON THE PROTEIN DIFFUSION <i>Ruiyao Zhu, Yuki Kanda, Juan F. Torres, Sébastien Livi and Atsuki Komiya</i>
		Break
		Room A (Meeting ID: 895 319 2022)
Greenwich Mean Time (UTC+0) 07:30-10:00 Chinese Standard Time (UTC+8) 15:30-18:00		General Session-A5 Boiling & Condensation-4 Session Chair: <i>Shoji Mori</i>
	Chinese Standard Time (UTC+8) 15:30-16:00	Keynote Lecture: FAST SPREADING AND TRANSPORT OF THIN LIQUID FILM ON V-SHAPED SUPERHYDROPHILIC SURFACES <i>Xuehu Ma</i>
	Chinese Standard Time (UTC+8) 16:00-16:20	207 MEASUREMENT OF BOILING NUCLEATION TEMPERATURE ON SMOOTH MICRO-HEATER <i>Yihang Jiao, Yamato Nishio, Koji Miyazaki and Tomohide Yabuki</i>
	Chinese Standard Time (UTC+8) 16:20-16:40	132 EVALUATION OF THE INTERACTION BETWEEN NEIGHBORING MICROCHANNELS IN BOILING HEAT TRANSFER <i>Kazuya Murakami, Yuki Kanda and Atsuki Komiya</i>
	Chinese Standard Time (UTC+8) 16:40-17:00	26 CONDENSATION HEAT TRANSFER ENHANCEMENT ON A MICRO-FINDED TUBE WITH HIERARCHICALLY-TEXTURED SUPERHYDROPHOBIC SURFACE <i>Yuchen Zhang, Tianyu Zhang and Liwu Fan</i>
	Chinese Standard Time (UTC+8) 17:00-17:20	94 EFFECT OF VAPOR FLOW DIRECTION ON SPONTANEOUS MOVEMENT OF DROPS DURING MARANGONI CONDENSATION <i>Yong Chen, Zhiyu Zhang, Zhihao Chen and Yoshio Utaka</i>

The 32nd International Symposium on Transport Phenomena

Tianjin (online), China, March 19th-21st, 2022

	Chinese Standard Time (UTC+8) 17:20-17:40	197 NUMERICAL SIMULATION OF THREE DIMENSIONAL POOL BOILING INCLUDING NUCLEATION SITES USING DIFFUSE INTERFACE MODEL <i>Takato Kawasaki, Hiroaki Yamashita, Koichi Tsujimoto, Toshihiko Shakouchi, Toshitake Ando and Mamoru Takahashi</i>
	Chinese Standard Time (UTC+8) 17:40-18:00	201 HEAT TRANSFER CHARACTERISTICS IN POOL BOILING OF AQUEOUS NON-IONIC SURFACTANT SOLUTIONS <i>Shuhei Shibata, Toshiya Mukuda, Tomohide Yabuki, Takanori Tanaka, Jun Nakamura and Masamichi Iwasaki</i>
		Room B (Meeting ID: 895 032 2022)
		General Session-B5 Multi-Phase Flow-2 Session Chair: <i>Zhizhao Che</i>
	Chinese Standard Time (UTC+8) 15:30-16:00	Keynote Lecture: CFD MODELLING OF TWO-PHASE ANNULAR FLOW WITH DISTURBANCE WAVES AND DRYOUT <i>Henryk Anglart</i>
Greenwich Mean Time (UTC+0) 07:30-09:20 Chinese Standard Time (UTC+8) 15:30-17:20	Chinese Standard Time (UTC+8) 16:00-16:20	136 A STUDY ON GENERATION MECHANISM OF AERODYNAMIC NOISE RADIATED FROM LONGITUDINAL VORTEX IN A FLOW WITH TURBULENCE <i>Shigeru Ogawa, Kohei Suzuki, Takahiro Nomura and Yuji Yamada</i>
	Chinese Standard Time (UTC+8) 16:20-16:40	158 EXPERIMENTAL STUDY ON THE OVERALL HEAT TRANSFER CAPACITY OF THE EVAPORATING MENISCUS IN A MICROGROOVE <i>Zhanxun Che, Tao Wang, Fangyuan Sun and Yuyan Jiang</i>
	Chinese Standard Time (UTC+8) 16:40-17:00	215 NUMERICAL SIMULATION OF DROPLET IMPACT ONTO IMMISCIBLE LIQUID FILMS <i>Huadan Xu, Marie-Jean Thoraval, Wei Zhou, Zhen Jian, Tianyou Wang and Zhizhao Che</i>
	Chinese Standard Time (UTC+8) 17:00-17:20	167 EXPERIMENTAL STUDY ON THE CHARACTERISTICS OF TEMPERATURE DEPENDENT SURFACE/INTERFACIAL PROPERTIES OF SURFACTANT AQUEOUS SOLUTION AT QUASI-THERMAL EQUILIBRIUM CONDITION <i>Dongsheng Guo, Xiaobin Li, Hongna Zhang and Fengchen Li</i>
		Room C (Meeting ID: 895 320 2022)
		General Session-C5 Electronics Packaging, Thermal Management and heat pipe-2 Session Chair: <i>Tomoyuki Hatakeyama</i>
	Chinese Standard Time (UTC+8) 15:30-16:00	Keynote Lecture: A TECHNICAL REVIEW AND UPDATE TECHNOLOGY OF THINNER HEAT PIPE AND VAPOR CHAMBER FOR COOLING 5G SMARTPHONE <i>Masataka Mochizuki</i>
	Chinese Standard Time (UTC+8) 16:00-16:20	118 VISUALIZATION OF PHASE-CHANGE PHENOMENON IN A UNIDIRECTIONAL POROUS HEAT SINK <i>Yohei Hori, Kazuhisa Yuki, Noriyuki Unno, Risako Kibushi and Yukinori Hamaji</i>
Greenwich Mean Time (UTC+0) 07:30-09:40 Chinese Standard Time (UTC+8) 15:30-17:40	Chinese Standard Time (UTC+8) 16:20-16:40	112 EXPERIMENTAL STUDY OF A HIGH-CAPACITY LOOP HEAT PIPE WITH A FLAT EVAPORATOR FOR COOLING SERVER CHIPS <i>Kangning Xiong, Like Meng, Winston Zhang and Shuangfeng Wang</i>
	Chinese Standard Time (UTC+8) 16:40-17:00	145 EFFECT OF THE ALCOHOL AQUEOUS MIXTURES ON THE FLAT PLATE PULSATING HEAT PIPE OPERATION: GROUND AND REDUCED GRAVITY TESTS <i>Maksym Slobodeniuk, Vincent Ayel, Remi Bertossi, Cyril Romestant and Yves Bertin</i>
	Chinese Standard Time (UTC+8) 17:00-17:20	236 PERFORMANCE EVALUATION OF RADIAL EXPANDING MINICHANNEL HEAT SINKS FOR THERMAL MANAGEMENT OF MULTIPLE INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) EQUIPMENT WITH PARALLEL/SERIES CONNECTION CONFIGURATION <i>Chengzhi Li, Chaobin Dang, Sihui Hong, Mengjie Song, Hitoshi Sakamoto and Mizuki Wada</i>
	Chinese Standard Time (UTC+8) 17:20-17:40	239 OPTIMAL THERMAL MANAGEMENT ON SERVER COOLING SYSTEM TO ACHIEVE MINIMAL ENERGY CONSUMPTION BASED ON AIR-COOLED CHILLER <i>Wei He, Jifang Zhang and Shengchun Liu</i>
		Room D (Meeting ID: 895 321 2022)
		General Session-D5 Sustainable & Renewable Energy-1 Session Chair: <i>Jun Zhao</i>
	Chinese Standard Time (UTC+8) 15:30-16:00	Keynote Lecture: MICROSACLE TRANSPORT PHENOMENA IN RENEWABLE ENERGY SYSTEMS <i>Boris Kosoy</i>
Greenwich Mean Time (UTC+0) 07:30-10:00 Chinese Standard Time (UTC+8) 15:30-18:00	Chinese Standard Time (UTC+8) 16:00-16:20	178 INFLUENCE OF SOLAR RADIATION ON THE TEMPERATURE STATE OF BUILDING FAÇADE STRUCTURES AND MICROCLIMATE OF PREMISES <i>Borys Basok, Borys Davydenko, Boris Kosoy, Hanna Koshlak and Rodion Sorokovoy</i>
	Chinese Standard Time (UTC+8) 16:20-16:40	174 EXPERIMENTAL CHARACTERIZATION OF A TRANSCRITICAL CO ₂ DIRECT EXPANSION GROUND SOURCE HEAT PUMP <i>Mohan Li, Jun Zhao, Yang Li, Wenjie Xu and Qingsong An</i>
	Chinese Standard Time (UTC+8) 16:40-17:00	144 INSULATION PREDICTION BASED ON NEURAL NETWORKS <i>Borys Basok, Borys Kosoy, Anatoliy Pavlenko, Vladimir Kravchenko and Maryna Novitska</i>

The 32nd International Symposium on Transport Phenomena

Tianjin (online), China, March 19th-21st, 2022

	Chinese Standard Time (UTC+8) 17:00-17:20	100 MEASUREMENT OF SEEBECK COEFFICIENT AT CRYOGENIC TEMPERATURE BASED ON THERMOELECTRIC MODULE EXPERIMENT <i>Zhibo Liu, Yu Zhu and Shixue Wang</i>
	Chinese Standard Time (UTC+8) 17:20-17:40	187 EFFECT OF FLUID FLOW ON HEAT TRANSFER IN ELASTOCALORIC COOLING SYSTEMS <i>Sze Xuen Way, Gael Sebald, Yuki Kanda and Atsuki Komiya</i>
	Chinese Standard Time (UTC+8) 17:40-18:00	141 HEAT TRANSFER ANALYSIS OF RADIATIVE COOLING PAINTING IN SUMMER: A CASE STUDY IN CHONGQING <i>Yue Lei, Xianqi Huang, Hanyu Yang, Xing Zheng and Chi Feng</i>
Day 3 Monday, March 21, 2022		
Greenwich Mean Time (UTC+0) 01:00-03:30 Chinese Standard Time (UTC+8) 09:00-11:30		Room A (Meeting ID: 895 319 2022)
		General Session-A6 Boiling & Condensation-5 Session Chair: <i>Liwu Fan</i>
	Chinese Standard Time (UTC+8) 09:00-09:30	Keynote Lecture: A COMPREHENSIVE VIEW OF RELEVANT ADVANCES IN MODELING OF MULTIPHASE FLOWS WITH HEAT AND MASS TRANSFER <i>Isaac Perez-Raya</i>
	Chinese Standard Time (UTC+8) 09:30-09:50	85 SUBCOOLED POOL BOILING IN A LIQUID CHAMBER AT LOW PRESSURE <i>Kodai Murabe, Noriyuki Unno, Kazuhisa Yuki and Koichi Suzuki</i>
	Chinese Standard Time (UTC+8) 09:50-10:10	128 EFFECTS OF SIZE AND NUMBERS OF MICRO-SLOTS IN INTERCONNECTED MICROCHANNEL ON FLOW BOILING HEAT TRANSFER <i>Jiaxuan Ma, Dawei Tang and Chen Li</i>
	Chinese Standard Time (UTC+8) 10:10-10:30	86 MICROBUBBLE EMISSION BOILING WITH A METAL COATED SURFACE <i>Ryotaro Noma, Noriyuki Unno, Kazuhisa Yuki, Shin-ichi Satake and Koichi Suzuki</i>
	Chinese Standard Time (UTC+8) 10:30-10:50	146 NUMERICAL SIMULATION OF CRITICAL HEAT FLUX OF DOWNWARD FACING SURFACE WITH MODIFIED WALL BOILING MODEL <i>Jiannan Wu, Lei Zhang, Shengshan Bi and Jiangtao Wu</i>
	Chinese Standard Time (UTC+8) 10:50-11:10	89 CHARACTERISTICS OF INNER-WALL TEMPERATURE TRANSITION DURING FLOW BOILING IN TRANSPARENT HEATED TUBE SECTION ONBOARD INTERNATIONAL SPACE STATION <i>Tomoka Takahashi, Naoya Ikeda, Osamu Kawanami, Koichi Inoue, Hitoshi Asano, Ryoji Imai, Satoshi Matsumoto, Koichi Suzuki and Haruhiko Ohta</i>
Chinese Standard Time (UTC+8) 11:10-11:30	79 HEAT TRANSFER ENHANCEMENT APPLYING DIFFERENT-MODE-INTERACTING BOILING WITH STRUCTURAL FACTORS DURING POOL BOILING FOR WATER <i>Yue Sun, Tianxi Xie, Zhihao Chen and Yoshio Utaka</i>	
Greenwich Mean Time (UTC+0) 01:00-02:50 Chinese Standard Time (UTC+8) 09:00-10:50		Room B (Meeting ID: 895 032 2022)
		General Session-B6 Multi-Phase Flow-3 Session Chair: <i>Chaobin Dang</i>
	Chinese Standard Time (UTC+8) 09:00-09:30	Keynote Lecture: ON SPLASHING DURING DROP IMPACT ONTO A QUIESCENT LIQUID FILM <i>Tomio Okawa</i>
	Chinese Standard Time (UTC+8) 09:30-09:50	185 TEMPORAL NUMERICAL SIMULATION OF ATOMIZATION OF DIVIDED PLANAR LIQUID JETS <i>Yuma Terao, Koichi Tsujimoto, Toshihiko Shakouchi, Toshitake Ando and Mamoru Takahashi</i>
	Chinese Standard Time (UTC+8) 09:50-10:10	140 STUDY ON ETHANOL EVAPORATION CHARACTERISTICS IN CAPILLARY WITH DIFFERENT DIAMETERS <i>Huiqin Wang, Aiqiang Chen, Bin Liu, Chensi Zhang and Jinze Yu</i>
	Chinese Standard Time (UTC+8) 10:10-10:30	157 DROPLET SPLASHING UPON THE IMPACT ON LIQUID POOLS OF SHEAR-THINNING FLUIDS WITH YIELD STRESS <i>Xiaoyun Peng, Tianyou Wang and Zhizhao Che</i>
Chinese Standard Time (UTC+8) 10:30-10:50	149 EXPERIMENTAL STUDY ON DYNAMICS OF SUB-MILLIMETER CAVITATION BUBBLES NEAR ELASTIC BOUNDARIES IN THE WATER <i>Zhi-Bo He, Qing-Feng Zeng, Tian-Bao Zeng, Yang Liu, Yong-Hao Huang, Lu Wang and Zhi-Ying Zheng</i>	
		Room C (Meeting ID: 895 320 2022)
Greenwich Mean Time (UTC+0) 01:00-02:20 Chinese Standard Time (UTC+8) 09:00-10:20		General Session-C6 Electronics Packaging, Thermal Management and heat pipe-3 Session Chair: <i>Yuyan Jiang</i>
	Chinese Standard Time (UTC+8) 09:00-09:20	204 STUDY ON THERMAL NETWORK METHOD FOR EVALUATION OF COOLING PERFORMANCE OF WATER COOLED PIN FIN TYPE HEAT SINK <i>Kota Saito, Tomoyuki Hatakeyama, Risako Kibushi and Masaru Ishizuka</i>
	Chinese Standard Time (UTC+8) 09:20-09:40	40 HEAT TRANSFER ANALYSIS BETWEEN BOLTED ROUGH SURFACES CONSIDERING NON-UNIFORM CONTACT <i>Hirotohi Aoki, Koichi Hirasawa, Kazuyoshi Fushinobu and Toshio Tomimura</i>
	Chinese Standard Time (UTC+8) 09:40-10:00	205 STUDY OF IN-PLANE EFFECTIVE THERMAL CONDUCTIVITY OF PRINTED CIRCUIT BOARD WITH THERMAL VIAS AND INNER LAYER SOLID COPPER <i>Yuki Taguchi, Tomoyuki Hatakeyama, Risako Kibushi and Masaru Ishizuka</i>

The 32nd International Symposium on Transport Phenomena

Tianjin (online), China, March 19th-21st, 2022

	Chinese Standard Time (UTC+8) 10:00-10:20	223 EVALUATION OF HEAT FLOW IN A TO-220 PACKAGE MADE OF SIC USING CFD SIMULATION <i>Risako Kibushi, Taichi Konishi, Tomoyuki Hatakeyama, Shinji Nakagawa, Noriyuki Unno, Kazuhisa Yuki, Masaru Ishizuka and Masaya Edatsugi</i>
		Room D (Meeting ID: 895 321 2022)
		General Session-D6 Micro- and Nano-Scale Transport-1 Session Chair: <i>Wee-Liat Ong</i>
Greenwich Mean Time (UTC+0) 01:00-02:50 Chinese Standard Time (UTC+8) 09:00-10:50	Chinese Standard Time (UTC+8) 09:00-09:30	Keynote Lecture: MULTISCALE MODELING FOR THERMOMECHANICAL PROPERTIES OF CROSSLINKED POLYMERS: FROM QUANTUM CHEMISTRY TO MESOSCALE SIMULATION <i>Gota Kikugawa</i>
	Chinese Standard Time (UTC+8) 09:30-09:50	30 EXPERIMENT CHARACTERIZATION FOR ANISOTROPIC HEAT CONDUCTION OF WRINKLED GRAPHENE <i>Aoran Fan, Yufeng Zhang, Haidong Wang, Weigang Ma and Xing Zhang</i>
	Chinese Standard Time (UTC+8) 09:50-10:10	87 NUMERICAL ANALYSIS ON REFLECTANCE PERFORMANCE CONTROL OF COATING LAYER USING NON-SPHERICAL PIGMENTS <i>Takahiro Inoue, Shinichi Kinoshita and Atsumasa Yoshida</i>
	Chinese Standard Time (UTC+8) 10:10-10:30	38 NUMERICAL STUDY ON ULTRASHORT PULSE LASER PROCESSING OF TRANSPARENT MATERIAL <i>Feiyu Sha, Shenghui Liu, Munehiro Chijiwa, Johannes A. L'Huillier and Kazuyoshi Fushinobu</i>
	Chinese Standard Time (UTC+8) 10:30-10:50	53 KEY FACTORS FOR MICROBIALLY INDUCED CARBONATE PRECIPITATION(MICP) IN ANAEROBIC GRANULE SLUDGE: BULK PH CONTROL AND DIFFUSION LIMITATION <i>Hua Lian, Shuai Liu and Jian Zhang</i>
Lunch		
		Room A (Meeting ID: 895 319 2022)
		General Session-A7 Transport in Porous Media-2 Session Chair: <i>Haiyan Lei</i>
Greenwich Mean Time (UTC+0) 05:00-06:20 Chinese Standard Time (UTC+8) 13:00-14:20	Chinese Standard Time (UTC+8) 13:00-13:20	104 VISCOPLASTIC EFFECTS OF NEWTONIAN FLUID IN NANOPORE: MOLECULAR DYNAMICS STUDY <i>Yusi Zhou, Zhenyu Song and Min Chen</i>
	Chinese Standard Time (UTC+8) 13:20-13:40	192 NUMERICAL SIMULATION OF VELOCITY PROFILE NEAR THE SURFACE OF THE POROUS MATERIAL <i>Eru Kurihara, Junnya Nakamura and Hiromitsu Hamakawa</i>
	Chinese Standard Time (UTC+8) 13:40-14:00	108 FLUID LEAKAGE FROM THE EDGE OF A THIN LOW-PERMEABILITY LAYER IN A POROUS MEDIUM <i>Qian Li, Xiaojing Tang, Liu Yang and Weihua Cai</i>
	Chinese Standard Time (UTC+8) 14:00-14:20	189 HEAT TRANSFER PERFORMANCE OF A SINGLE INCLINED CYLINDER FOR AN APPLICATION TO HEAT EXCHANGER <i>Fumiya Yoshioka, Yoshihiko Sano and Fujio Kuwahara</i>
		Room B (Meeting ID: 895 032 2022)
		General Session-B7 Multi-Phase Flow-4 Session Chair: <i>Jiaqi Li</i>
Greenwich Mean Time (UTC+0) 05:00-06:20 Chinese Standard Time (UTC+8) 13:00-14:20	Chinese Standard Time (UTC+8) 13:00-13:20	156 DROPLET BREAKUP IN AIRFLOW WITH STRONG SHEAR EFFECT <i>Zhikun Xu, Tianyou Wang and Zhizhao Che</i>
	Chinese Standard Time (UTC+8) 13:20-13:40	154 NUMERICAL SIMULATION OF FLOW IN FUEL NOZZLES UNDER CAVITATION AND FLASH-BOILING CONDITIONS <i>Huashi Xu, Tianyou Wang and Zhizhao Che</i>
	Chinese Standard Time (UTC+8) 13:40-14:00	137 DISTRIBUTION OF LIQUID-LIQUID TWO-PHASE FLOW AND DROPLET DYNAMICS IN ASYMMETRIC PARALLEL MICROCHANNELS <i>Yanpeng Dong, Youguang Ma and Taotao Fu</i>
	Chinese Standard Time (UTC+8) 14:00-14:20	49 NUMERICAL AND EXPERIMENTAL STUDY ON TWO-PHASE COOLING PLATE FOR HIGH POWER DEVICE HEAT DISSIPATION <i>Yifan Zhang, Yongxiang Fan, Zhichun Liu and Wei Liu</i>
		Room C (Meeting ID: 895 320 2022)
		General Session-C7 Turbulence and Flow Instabilities Session Chair: <i>Akihiko Mitsuishi</i>
Greenwich Mean Time (UTC+0) 05:00-07:00 Chinese Standard Time (UTC+8) 13:00-15:00	Chinese Standard Time (UTC+8) 13:00-13:20	19 EXPERIMENTAL STUDY ON TRAVELING WAVE CONTROL FOR DRAG REDUCTION OF ZERO-PRESSURE-GRADIENT TURBULENT BOUNDARY LAYER FLOW <i>Yasuhiro Yoshida, Akihiko Mitsuishi, Takaaki Shimura, Kaoru Iwamoto and Akira Murata</i>
	Chinese Standard Time (UTC+8) 13:20-13:40	22 NUMERICAL-MODEL-BASED EXPERIMENT FOR ESTIMATING EFFECTS OF LOCAL WEAK MEAN ACCELERATION ON THE DECAYING MULTISCALE-GENERATED TURBULENCE <i>Hiroki Suzuki, Hiroto Yamaguchi, Kento Tanaka and Toshinori Kouchi</i>

The 32nd International Symposium on Transport Phenomena

Tianjin (online), China, March 19th-21st, 2022

	Chinese Standard Time (UTC+8) 13:40-14:00	54 INFLUENCE ON PRIMARY JET DIRECTION BY COANDA-SURFACE RADIUS APPROXIMATING THE SECONDARY JET <i>Akio Yamada, Yu Tamanoi, Donghyuk Kang and Kotaro Sato</i>
	Chinese Standard Time (UTC+8) 14:00-14:20	73 EXPERIMENTAL AND SIMULATED INVESTIGATION ON UNDER EXPANDED SUPERSONIC RECTANGULAR IMPINGING JET <i>Tsuyoshi Yasunobu, Xin Jiang, Takahiro Koge and Masaki Shimazu</i>
	Chinese Standard Time (UTC+8) 14:20-14:40	92 NUMERICAL PREDICTION OF WAKE OF AN AIRFOIL BY USING THE LARGE-EDDY SIMULATION <i>Fumiaki Ansai, Yasumasa Suzuki, Yuya Miki and Chisachi Kato</i>
	Chinese Standard Time (UTC+8) 14:40-15:00	150. UNIVERSALITY IN PROPERTIES AND STRUCTURES OF VISCOELASTIC CHANNEL FLOWS WITH WEAK AND STRONG PERTURBATIONS <i>Yuke Li and Victor Steinberg</i>
		Room D (Meeting ID: 895 321 2022)
		General Session-D7 Micro- and Nano-Scale Transport-2 Session Chair: <i>Jie Chen</i>
	Chinese Standard Time (UTC+8) 13:00-13:30	Keynote Lecture: PRESSURE TUNING OF THERMAL/THERMOELECTRIC TRANSPORT PROPERTIES <i>Xiaoliang Zhang</i>
Greenwich Mean Time (UTC+0) 05:00-07:10 Chinese Standard Time (UTC+8) 13:00-15:10	Chinese Standard Time (UTC+8) 13:30-13:50	47 EXPERIMENTAL AND THEORETICAL ANALYSIS OF THE SUBSTRATE AND TEMPERATURE EFFECT ON THERMAL TRANSPORT PROPERTIES OF MONOLAYER WS2 <i>Yufeng Zhang, Qian Lv, Aoran Fan, Haidong Wang, Weigang Ma and Xing Zhang</i>
	Chinese Standard Time (UTC+8) 13:50-14:10	117 HIGH-THROUGHPUT DETECTION DROPLET DIGITAL QUANTITATIVE PCR <i>Wenxi Li, Yicheng Chen, Yuhang Wang, Xinyu Zhang, Biao Li, Shengli Ma and Yong Shuai</i>
	Chinese Standard Time (UTC+8) 14:10-14:30	148 SLIP LENGTH OF WATER FLOW IN RECTANGULAR GRAPHENE NANOCANNELS <i>Kuan-Ting Chen, Qin-Yi Li, Takeshi Omori, Yasutaka Yamaguchi, Tatsuya Ikuta and Koji Takahashi</i>
	Chinese Standard Time (UTC+8) 14:30-14:50	161 HEAT BATH DETERMINES RECTIFICATION BEHAVIOR IN ASYMMETRICAL CARBON NANOTUBES <i>Biao Feng, Liwu Fan, Jin Yang and Wee-Liat Ong</i>
	Chinese Standard Time (UTC+8) 14:50-15:10	225 THERMOOSMOTIC AND THERMOELECTRIC RESPONSES IN NANOCONFINED ELECTROLYTE SOLUTIONS: EFFECTS OF NANOFUIDIC MEMBRANE PROPERTIES <i>Wenyao Zhang, Muhammad Farhan, Fang Qian, Kai Jiao and Cunlu Zhao</i>
		Break
		Room A (Meeting ID: 895 319 2022)
		General Session-A8 Heat & mass transfer-2 Session Chair: <i>Huajun Wang</i>
	Chinese Standard Time (UTC+8) 15:30-15:50	209 MASS TRANSFER CHARACTERISTIC ANALYSIS AND OPTIMIZATION OF FLOW FIELD OF ORGANIC FLOW BATTERY <i>Guozhen Xiao, Guoan Yang and Fengming Chu</i>
Greenwich Mean Time (UTC+0) 07:30-09:30 Chinese Standard Time (UTC+8) 15:30-17:30	Chinese Standard Time (UTC+8) 15:50-16:10	76 CHARACTERISTIC OF THERMAL CONVECTION STRUCTURE IN A SPHERICAL SHELL INVESTIGATED BY A THREE-DIMENSIONAL NUMERICAL SIMULATION AND A LINEAR STABILITY ANALYSIS <i>Hidemoto Satake and Toshio Tagawa</i>
	Chinese Standard Time (UTC+8) 16:10-16:30	220 TWO-DIMENSIONAL ANISOTROPIC PACKED BED REACTOR MODEL: RADIAL HEAT TRANSFER IN WATER GAS SHIFT REACTION <i>Ke-Wei Yu, Hao-Nan Wang, Bo Jiang, Jing Ma, Nan He, Lin Li and Dawei Tang</i>
	Chinese Standard Time (UTC+8) 16:30-16:50	180 SELF-SIMILARITY OF TURBULENCE NATURAL-CONVECTION BOUNDARY LAYER GENERATED BY A HEATED HORIZONTAL SURFACE <i>Yasuo Hattori, Hitoshi Suto, Keisuke Nakao and Mao Takeyama</i>
	Chinese Standard Time (UTC+8) 16:50-17:10	238 EXPERIMENTAL INVESTIGATION OF THE THERMAL INSULATION PERFORMANCE OF A NEW KIND OF PRE-MANUFACTURED OVERHEAD INSULATED PIPELINE FOR INDUSTRIAL STEAM HEATING NETWORK <i>Jun-Guang Lin, Jian-Fa Zhao, Li-Bin Yu, Kai-Lun Chen and Liang Zhang</i>
	Chinese Standard Time (UTC+8) 17:10-17:30	231 EFFECT OF SPRAY HEIGHT ON COOLING HEAT TRANSFER CHARACTERISTICS <i>Yulong Zhao, Siyuan Gong, Liansheng Liu and Minghui Ge</i>
		Room B (Meeting ID: 895 032 2022)
		General Session-B8 Experimental/Computational Fluid Dynamics-3 Session Chair: <i>Hongna Zhang</i>
Greenwich Mean Time (UTC+0) 07:30-09:10 Chinese Standard Time (UTC+8) 15:30-17:10	Chinese Standard Time (UTC+8) 15:30-15:50	123 EFFECTS OF STRONG MAGNETIC FIELD ON PROPERTIES OF WATER FLOW <i>Keigo Noguchi, Shotaro Fujii, Keigo Noguchi, Shuichi Ito and Jun-Ichi Yamasaki</i>
	Chinese Standard Time (UTC+8) 15:50-16:10	219 PREDICTION OF UNSTEADY FLOW USING AUTOENCODER NETWORK WITH CONVOLUTIONAL LSTM <i>Yosuke Shimoda and Naoya Fukushima</i>

The 32nd International Symposium on Transport Phenomena

Tianjin (online), China, March 19th-21st, 2022

	Chinese Standard Time (UTC+8) 16:10-16:30	234 DEVELOPMENT OF VIRTUAL OPTICAL WAVEGUIDE: NUMERICAL ANALYSIS OF FOCUSING UNDERWATER SHOCK WAVES <i>Tetsuro Ikeyama, Fukuoka Hiroshi, Keiichi Nakagawa and Ayumu Ishijima</i>
	Chinese Standard Time (UTC+8) 16:30-16:50	51 FLOW CHARACTERISTICS OF CIRCULAR CYLINDER WITH TANGENTIAL BLOWING UNDER VARIOUS WIDTH CONDITIONS OF MAIN JET FLOW <i>Daiki Yaguchi, Qiang Zhang, Donghyuk Kang and Kotaro Sato</i>
	Chinese Standard Time (UTC+8) 16:50-17:10	241 DETERMINATION OF THE MICROLAYER STRUCTURE DURING ALKALINE WATER ELECTROLYSIS BASED ON LASER INTERFEROMETRY <i>Yuanmeng Wang, Zhihao Chen, Junfeng Zhang and Yoshio Utaka</i>
Greenwich Mean Time (UTC+0) 07:30-10:00 Chinese Standard Time (UTC+8) 15:30-18:00		Room C (Meeting ID: 895 320 2022)
		General Session-C8 Solid-liquid phase change and refrigeration-2 Session Chair: Qingsong An
	Chinese Standard Time (UTC+8) 15:30-16:00	Keynote Lecture: SOLID-LIQUID PHASE CHANGE: ENERGY STORAGE FOR REFRIGERATION APPLICATION <i>Tatiana Morosuk</i>
	Chinese Standard Time (UTC+8) 16:00-16:20	222 NATURAL CONVECTION CHARACTERISTICS OF A PHASE CHANGE MATERIAL EMULSION IN A RECTANGULAR VESSEL WITH VERTICAL HEATING/COOLING WALLS <i>Takashi Morimoto and Hiroyuki Kumano</i>
	Chinese Standard Time (UTC+8) 16:20-16:40	45 INVESTIGATION ON INFLUENCE OF ADDING AMPHOTERIC SURFACTANT AND APPLYING VOLTAGE ON SUPERCOOLING DEGREE <i>Isamu Maruko, Daiki Takeuchi, Kento Moritsuka and Koji Matsumoto</i>
	Chinese Standard Time (UTC+8) 16:40-17:00	232 INFLUENCE OF SOLDER MELTING PROCESS IN SLEEVE SOLDERING ON PRESSURE FLUCTUATION INSIDE SLEEVE <i>Nakamichi Keita, Fukumitsu Yoshinobu, Fukuoka Hiroshi, Suda Atsushi and Uwano Hidetake</i>
	Chinese Standard Time (UTC+8) 17:00-17:20	203 MICROENCAPSULATED N-EICOSANE MODIFIED BY NANO-SIC IN PHENOL-FORMALDEHYDE RESIN SHELL WITH THERMAL ENERGY STORAGE AND ENHANCED THERMAL CONDUCTIVITY <i>Cao Huanxin, Jin Shaocai, Cheng Qingjiang, Liu Chenzhen and Rao Zhonghao</i>
	Chinese Standard Time (UTC+8) 17:20-17:40	34 EFFECTS OF ELECTRODE MATERIAL ON THE ELECTRIC MITIGATION OF SUPERCOOLING IN ERYTHRITOL <i>Hongyi Shi, Sheng Yang and Liwu Fan</i>
Chinese Standard Time (UTC+8) 17:40-18:00	133 OBSERVATION OF CONDENSATE DROPS FREEZING ON MICRO STRUCTURED METAL SURFACES PROCESSED BY WET ETCHING <i>Kota Asaoka, Shoki Inoue, Tatsuya Mizusawa and Takuto Araki</i>	
Greenwich Mean Time (UTC+0) 07:30-09:10 Chinese Standard Time (UTC+8) 15:30-17:10		Room D (Meeting ID: 895 321 2022)
		General Session-D8 Sustainable & Renewable Energy-2 Session Chair: Shuai Deng
	Chinese Standard Time (UTC+8) 15:30-15:50	119 DYNAMIC PERFORMANCE ANALYSIS OF AN ORGANIC RANKINE CYCLE SYSTEM USING DIRECT EVAPORATIVE CONDENSER <i>Bin Yang, Zhi Gao, Xiaohui Yu and Yufeng Zhang</i>
	Chinese Standard Time (UTC+8) 15:50-16:10	16 EFFECT OF A CONE AT THE CENTRAL AXIS OF ROTOR ON THE POWER GENERATION EFFICIENCY OF SELF-POWERED TURBINE FLOWMETER <i>Kotaro Takamura, Tomomi Uchiyama, Kosuke Horie and Hiroshi Nakayama</i>
	Chinese Standard Time (UTC+8) 16:10-16:30	121 THERMAL PERFORMANCE ANALYSIS OF AN INTEGRATED SOLAR SOEC REACTOR FOR HYDROGEN PRODUCTION <i>Qiangqiang Zhang, Xin Li, Zheshao Chang, Mingkai Fu and Ting Ren</i>
	Chinese Standard Time (UTC+8) 16:30-16:50	129 RATE BASED METHOD TO ENHANCE RECOVERY OF SUGARS FROM MOLASSES <i>Taketo Otani, Hiroki Ando, Kei Mizuta and Susumu Nii</i>
Chinese Standard Time (UTC+8) 16:50-17:10	237 EXPERIMENTAL STUDY ON WASTE HEAT RECOVERY OF FLUE GAS DURING NATURAL GAS COMBUSTION USING THERMOELECTRIC GENERATORS <i>Zhiyun Xing, Shenming Li, Yu Zhu and Shixue Wang</i>	

Authors Index

A		D	
Agui, Haruka	074	Daitoku, Tadafumi	046, 075
Ajino, Nanami	036	Dang, Chao	017
Akamatsu, Fumiteru	210	Dang, Chaobin	135, 236
Akiyama, Yuta	042	Davydenko, Borys	178
An, Qingsong	172, 174	Dong, Yanpeng	137
Ando, Hiroki	129		
Ando, Toshitake	166, 185, 197	E	
Ansai, Fumiaki	092	Edatsugi, Masaya	223
Aoki, Hiroto	040		
Araki, Takuto	048, 133	F	
Asano, Hitoshi	089	Fan, Aoran	030, 047, 082
Asaoka, Kota	133	Fan, Liwu	026, 033, 034
Atsushi, Suda	062, 232		035, 161
Ayel, Vincent	145	Fan, Xiaoqiang	127
		Fan, Yongxiang	049
B		Farhan, Muhammad	225
Basok, Borys	144,178	Feng, Biao	161
Bertin, Yves	145	Feng, Chi	141
Bertossi, Remi	145	Feng, Xiao-Dong	160
Betsuki, Yoichiro	041	Feng, Yanhao	069
Bi, Shengshan	146	Fu, Mingkai	121
Bomura, Ryu	235	Fu, Taotao	137
		Fujii, Shotaro	123
C		Fukatsu, Akihiro	041
Cai, Weihua	108	Fukazawa, Kenta	042
Cao, Huanxin	203	Fukuda, Naoaki	235
Cao, Yang	163	Fukunaga, Takanobu	067
Chang, Zheshao	121	Fukuoka, Hiroshi	063, 233, 235
Che, Zhanxun	158	Fukushima, Naoya	219
Che, Zhizhao	151,153,154	Funami, Yuki	057
	156,157,215,241	Fushinobu, Kazuyoshi	038, 040
Chen, Aiqiang	140		
Chen, Chaoguo	110	G	
Chen, Haisheng	066	Gao, Zhi	119
Chen, Kai-Lun	238	Gao, Zhijie	135
Chen, Kuan-Ting	148	Ge, Minghui	231
Chen, Min	104	Giannetti, Niccolo	074
Chen, Yicheng	117	Gong, Siyuan	231
Chen, Yong	094	Guo, Dongsheng	167
Chen, Zhihao	018, 079, 081	Guo, Yao-Yu	173
	088, 091, 094		
	194, 211		
Cheng, Qingjiang	203	H	
Chijiwa, Munehiro	038	Hamaji, Yukinori	118
Chu, Fengming	209	Hamakawa, Hiromitsu	192

Han, Dongxu	165	Jian, Zhen	215
Haramura, Yoshihiko	071	Jiang, Bo	220
Hashiguchi, Takashi	166	Jiang, Xin	070, 073
Hatakeyama, Tomoyuki	204, 205, 223	Jiang, Yuyan	158
Hattori, Yasuo	180	Jiao, Kai	225
He, Jiajun	172	Jiao, Kaituo	165
He, Nan	220	Jiao, Yihang	207
He, Wei	239	Jin, Shaocai	203
He, Zhi-Bo	149	Ju, Xiaoyu	214
Hibino, Ren	095		
Hidaka, Sumitomo	041	K	
Hidetake, Uwano	232	Kamiya, Kohei	041
Higuchi, Shotaro	067	Kamiyama, Ryuki	070
Hirai, Kazuki	077	Kanda, Yuki	131, 132, 134
Hirai, Shuichiro	184	Kanda, Yuki	187
Hirasawa, Koichi	040	Kang, Donghyuk	029, 051, 054
Hiroshi, Fukuoka	062, 232, 234	Kang, Panxing	056
Hirotsugu, Toshiki	064, 068	Kano, Ichiro	095
Hong, Sihui	135, 164, 236	Kato, Chisachi	092
Hori, Tsukasa	210	Kato, Hideaki	060
Hori, Yohei	118	Kawaguchi, Atsuhiko	077
Horie, Kosuke	016	Kawamori, Shigehiro	064, 065, 068
Horii, Susumu	065	Kawanami, Osamu	089
Hu, Xiaocheng	081, 194	Kawasaki, Takato	197
Huang, Xianqi	141	Kazuki, Hirai	060
Huang, Yong-Hao	149	Keita, Nakamichi	232
Huo, Da	162	Kibushi, Risak	223
Huo, Yutao	202	Kibushi, Risako	118, 204, 205
		Kinoshita, Shinichi	087
I		Kobayashi, Koki	075
Iida, Kenichi	063, 233	Kobayashi, Mizuki	193
Iida, Oaki	039	Kodama, Manabu	184
Ikeda, Naoya	089	Kodama, Tetsuya	131
Ikeyama, Tetsuro	234	Koge, Takahiro	073
Ikuta, Tatsuya	148	Koizumi, Yasuo	023
Imai, Ryoji	089	Koki, Miyaoku	062
Inoue, Koichi	089	Komiya, Atsuki	131, 134, 187
Inoue, Shoki	133	Kondo, Chihiro	090
Inoue, Takahiro	087	Konishi, Taichi	223
Inoue, Takayoshi	101	Koshlak, Hanna	178
Ishida, Taiki	048	Kosoy, Boris	178
Ishijima, Ayumu	234	Kosoy, Borys	144
Ishizuka, Masaru	204, 205, 223	Kota, Matsukawa	062
Ito, Shuichi	123	Kouchi, Toshinori	022
Ito, Takumi	029	Kravchenko, Vladimir	144
Iwamoto, Kaoru	019	Kulikowski, Vadzim	218
Iwasaki, Masamichi	201	Kumano, Hiroyuki	222
		Kuniyoshi, Nao	235
J		Kurata, Kosaku	067
Jeong, Jongsoo	074	Kurihara, Eru	192
Jia, Li	017	Kuroda, Yoshiyuki	048

The 32nd International Symposium on Transport Phenomena

Tianjin (online), China, March 19th-21st, 2022

Kuroiwa, Yuta	093	Ma, Chenming	162
Kuwahara, Fujio	188, 189	Ma, Jiaxuan	128
Kuzmich, Maxim	218	Ma, Jing	220
		Ma, Shengli	117
L		Ma, Weigang	030, 047
L'Huillier, Johannes A.	038	Ma, Youguang	137
Lee, Jungpyo	176	Maruko, Isamu	045
Lei, Yue	141	Maruyama, Kanji	060
Li, Biao	117	Matsuda, Naoya	210
Li, Chen	128	Matsumoto, Koji	042, 045, 093
Li, Chengzhi	236	Matsumoto, Satoshi	089
Li, Fengchen	110, 167, 173	Matsumoto, Shouhei	077
Li, Minxia	110	Matsuoka, Tsuneyoshi	214
Li, Mohan	174	Matsuyama, Shingo	059
Li, Qian	108	Maxime, Binama	160
Li, Qin-Yi	148	Meng, Like	112
Li, Shenming	237	Miki, Yuya	092
Li, Wenxi	117	Mimura, Koji	061
Li, Xiaobin	110, 167, 173	Minami, Hironobu	043
Li, Xin	121	Minamoto, Yuki	025, 043
Li, Xue	096	Mitsuishi, Akihiko	019
Li, Yang	174	Mitsushima, Shigenori	048
Li, Yuke	150	Miyamoto, Daiki	106
Li, Yupu	082	Miyazaki, Koji	207
Lian, Hua	053	Mizukaki, Toshiharu	059
Liang, Ruobing	120	Mizusawa, Tatsuya	133
Liao, Xiangling	116	Mizuta, Kei	106, 129
Lin, Jun-Guang	238	Mo, Siyi	135
Lin, Li	220	Mobedi, Moghtada	066
Liu, Bin	140	Mohammad, AziMahardika	024
Liu, Chenzhen	203	Mori, Masaharu	036
Liu, Di	120	Mori, Shoji	018, 091
Liu, Jianshu	163	Morimoto, Takashi	222
Liu, Jing	162	Morita, Takakazu	176
Liu, Lei	044	Moritsuka, Kento	045
Liu, Liansheng	231	Morokuma, Takayuki	064, 068, 071
Liu, Shengchun	239	Mukuda, Toshiya	201
Liu, Shenghui	038	Murabe, Kodai	085
Liu, Shuai	053	Murakami, Kazuya	132
Liu, Wei	049	Muramatsu, Yushi	188
Liu, Yang	149	Murata, Akira	019
Liu, Zhibo	100	N	
Liu, Zhichun	049	Nagasawa, Kensaku	048
Livi, Sébastien	134	Naito, Hiroshi	184
Lu, Jiang	069	Nakagawa, Keiichi	234
Lu, ShengYue	035	Nakagawa, Minoru	052
Lu, Yi	017	Nakagawa, Shinji	223
Luo, Jiahao	033	Nakajima, Yasuhiro	095
Lv, Qian	047	Nakamura, Hajime	057
		Nakamura, Jun	201
M		Nakamura, Junnya	192

Nakamura, Shigeto	063, 233	Sakaki, Kazuma	063
Nakamura, Yuji	214	Sakamoto, Hitoshi	236
Nakano, Koki	023	Sano, Yoshihiko	188, 189
Nakao, Keisuke	180	Sasabe, Takashi	184
Nakayama, Hiroshi	016	Satake, Hidemoto	076
Nii, Susumu	106, 129	Satake, Shin-ichi	086
Ning, Ren	023	Sato, Kotaro	029, 036, 051 052, 054
Nishibe, Koichi	029, 036, 052	Sato, Takumi	042
Nishimura, Kosuke	093	Sebald, Gael	187
Nishio, Yamato	207	Sha, Feiyu	038
Noguchi, Keigo	123	Shakouchi, Toshihiko	166, 185, 197
Noma, Ryotaro	086	She, Yun	024
Nomura, Takahiro	136	Shen, Biao	041
Novitska, Maryna	144	Shi, Hongyi	034
Nunomura, Junji	041	Shibata, Shuhei	201
O		Shigeto, Nakamura	062
Obonai, Akiyoshi	131	Shimazu, Masaki	070, 073
Odumosu, Odumuyiwa A	151	Shimoda, Yosuke	219
Ogawa, Shigeru	136	Shimura, Masayasu	025, 043
Ohkubo, Hidetoshi	064, 065, 068 074, 091	Shimura, Takaaki	019
Ohta, Haruhiko	089	Shiono, Rikiya	095
Okano, Yasunori	138, 139	Shirai, Katsuaki	060, 077
Okawa, Tomio	023	Shuai, Yong	117
Okumura, Yukihiko	210	Slobodeniuk, Maksym	145
Oluwafemi, Oluwatobi	131	Song, Mengjie	236
Omisanya, Mayowa I	091	Song, Ruitao	110
Omori, Takeshi	148	Song, Zhenyu	104
Ong, Wee-Liat	161	Sorokovoy, Rodion	178
Otani, Taketo	129	Steinberg, Victor	150
Otsuka, Takuto	020	Su, Wen-Tao	160
P		Suda, Atsushi	063, 233, 235
Pavlenko, Anatoliy	144	Suekane, Tetsuya	024
Peng, Xiaoyun	157	Suenaga, Kyosuke	063, 233
Q		Sugahara, Takaya	184
Qian, Fang	225	Sugiura, Takuma	066
Qu, MingLiang	035	Sun, Jingyuan	127
R		Sun, Yue	079
Rao, Zhonghao	202, 203	Suto, Hitoshi	180
Ren, Congjing	127	Suzuki, Hiroki	022
Ren, Ting	121	Suzuki, Kohei	136
Ren, Xiyang	081	Suzuki, Koichi	085, 086, 089
Riku, Isamu	061	Suzuki, Yasumasa	092
Romestant, Cyril	145	Suzuki, Yuji	101
S		T	
Saito, Kiyoshi	074	Tagawa, Toshio	076
Saito, Kota	204	Taguchi, Yuki	205
		Takahashi, Koji	041, 148
		Takahashi, Mamoru	166, 185, 197
		Takahashi, Tomoka	089
		Takahasi, Kyohei	068

The 32nd International Symposium on Transport Phenomena

Tianjin (online), China, March 19th-21st, 2022

Takamatsu, Hiroshi	067	Wang, Jiayu	164
Takamure, Kotaro	016	Wang, Jingdai	127
Takata, Ukyo	193	Wang, Liya	139
Takata, Yasuyuki	041	Wang, Lu	149
Takeuchi, Daiki	045	Wang, Meng	202
Takeuchi, Issei	077	Wang, Peng	120
Takeyama, Mao	180	Wang, Shixue	096, 100, 102
Takiya, Toshio	235		116, 211, 237
Tamanoi, Yu	052, 054	Wang, Shuangfeng	112, 113
Tanahashi, Mamoru	025, 043	Wang, Tianyou	151, 153, 154, 156, 157, 215,
Tanaka, Junya	020	Wang, Weicen	024
Tanaka, Kento	022	Wang, Ye	025
Tanaka, Takanori	201	Wang, Yuanmeng	241
Tang, Dawei	128, 220	Wang, Yuhang	117
Tang, Xiaojing	108	Wang, Yulin	116
Terao, Yuma	185	Wang, Yunqing	088
Thoraval, Marie-Jean	215	Watanabe, Konosuke	048
Tian, ShuaiQi	035	Watanabe, Masatoshi	193
Tokuda, Daiki	101	Way, Sze Xuen	187
Tomimura, Toshio	040	Wei, Jinjia	044
Tomo, Yoko	067	Wu, Jiangtao	146
Torres, Juan F.	134	Wu, Jiannan	146
Toshikawa, Shinya	106	Wu, Linli	113
Tsubota, Tomohiro	210		
Tsujimoto, Koichi	166, 185, 197	X	
Tsukagoshi, Kentaro	093	Xiao, Guozhen	209
Tsukase, Naruhisa	048	Xie, Tianxi	018, 079
Tsuruda, Takashi	75, 46	Xing, Xiao-Li	173
		Xing, Zhiyun	237
U		Xiong, Kangning	112
Uchiyama, Tomomi	16	Xu, Huadan	215
Ueno, Eri	235	Xu, Huashi	151, 154
Umehara, Yutaro	23	Xu, Jingying	088
Unno, Noriyuki	085, 086, 118	Xu, Wenjie	174
	223	Xu, Zhigang	153
Utaka, Yoshio	018, 068, 071	Xu, Zhikun	156
	079, 081, 088	Xue, Yingli	017
	091, 094, 194		
	211, 241	Y	
V		Yabuki, Tomohide	201, 207
Vasiliev, Leonard	218	Yaga, Minoru	235
		Yaguchi, Daiki	051
W		Yamada, Akio	054
Wada, Mizuki	236	Yamada, Shunsuke	057
Wang, Chunyang	066	Yamada, Yuji	136
Wang, Faming	059	Yamaguchi, Hiroto	022
Wang, Guozhuo	211	Yamaguchi, Yasutaka	148
Wang, Haidong	030, 047	Yamasaki, Jun-Ichi	123
Wang, Hao-Nan	220	Yamashita, Hiroaki	197
Wang, Heyang	162	Yamazaki, Takuya	214
Wang, Huiqin	140	Yang, Bin	119

Yang, Guoan	209	Zhang, Yifan	049
Yang, Hanyu	141	Zhang, Yonghai	044
Yang, Jin	161	Zhang, Yuchen	026
Yang, Liu	108	Zhang, Yufeng	030, 047, 082
Yang, Sheng	033, 034		119
Yang, Xiaoping	044	Zhang, Zhiyu	094
Yang, Yansheng	176	Zhao, Cunlu	225
Yang, Yongrong	127	Zhao, Jian-Fa	238
Yang, Yurong	102	Zhao, Jun	162, 174
Yao, Liang	110	Zhao, Liang	120
Yasuda, Daiki	214	Zhao, Yulong	231
Yasunobu, Tsuyoshi	070, 073	Zheng, Xing	141
Yatsunami, Syun	018	Zheng, Zhi-Ying	149
Yin, Liaofei	017	Zhou, Jie	044
Yin, Maobin	202	Zhou, Wei	215
Yin, Yunfei	081, 194	Zhou, Yefeng	056
Yoshida, Atsumasa	087	Zhou, Yusi	104
Yoshida, Masaki	057	Zhu, Liang	113
Yoshida, Yasuhiro	019	Zhu, Qiang	162
Yoshinobu, Fukumitsu	232	Zhu, Ruiyao	134
Yoshioka, Fumiya	189	Zhu, Yu	096, 100, 102
Yoshioka, Masanobu	090		237
Yu, Bo	165	Zhuravlyov, Alexander	218
Yu, Jinze	140		
Yu, Ke-Wei	220		
Yu, Li-Bin	238		
Yu, Xiaohui	119		
Yu, ZiTao	035, 069		
Yuki, Kazuhisa	085, 086, 118		
	223		

Z

Zeng, Qing-Feng	149
Zeng, Tian-Bao	149
Zhang, Chensi	140
Zhang, Hongna	167
Zhang, Hong-Na	173
Zhang, Hongna	110
Zhang, Jian	053
Zhang, Jiagao	138
Zhang, Jifang	239
Zhang, Junfeng	241
Zhang, Kemu	172
Zhang, Lei	146
Zhang, Liang	238
Zhang, Qiang	051
Zhang, Qiangqiang	121
Zhang, Tianyu	026
Zhang, Wenyao	225
Zhang, Winston	112
Zhang, Xing	082, 030, 047
Zhang, Xinyu	117



北京康斯特仪表科技股份有限公司，专注于为全球高校用户提供压力、温度及温湿度检测设备。构建了以北京总部、洛杉矶全资子公司、犹他州分部、欧洲分部为中心的全球 24 小时快速服务体系，致力于成为具有国际独特地位的高端检测产业集团。2015 年，公司于深交所创业板上市，股票代码 300445。

Additel Corporation (wholly-owned subsidiaries of ConST) is a premier, worldwide provider of college test equipment. We are dedicated to designing, manufacturing, and delivering the highest quality test tools and sensor calibrators for college professors and students. For many years, Additel has successfully developed pressure and temperature calibrators in industrial engineering, calibration industry, and other industrial fields. After appear on the market in 2015, we devoted ourselves to the school customers with precision scientific instruments in which helping them reach into high level scientific research. Coupled with our accredited calibration laboratory in Brea, CA, our equipment, services, and customer support are second to none. Additel products are currently used in over 100 countries worldwide, with a global sales and support channel in place to assist you.



扫码关注：
康斯特官方微信公众号
网址：
www.constgroup.com



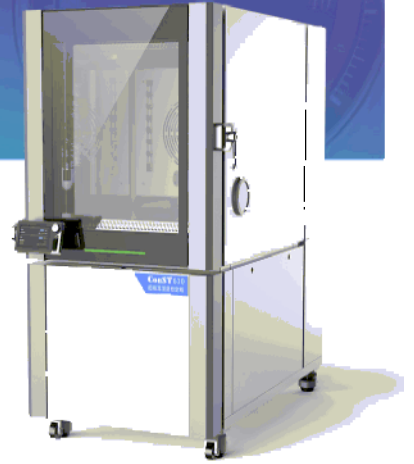
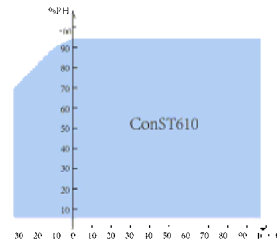
欢迎您咨询、试用！
联系人：何君洲
联系电话：13381470301
(微信同号)

业务范围

温湿度环境试验

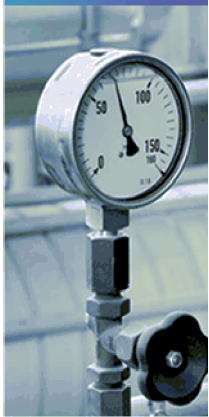
Temperature And Humidity Test

- 露点范围 Dew point Range: $-55^{\circ}\text{C DP} \sim 93^{\circ}\text{C DP}$
- 温度范围 Temperature Range: $-30^{\circ}\text{C} \sim 95^{\circ}\text{C}$
- 湿度发生范围 Humidity Range: $5\% \text{RH} \sim 95\% \text{RH}$ ($0^{\circ}\text{C} \sim 80^{\circ}\text{C}$)
- 温度升降速度 Temperature Controlling Rate: $2^{\circ}\text{C}/\text{min}$
- 湿度升降速度 Humidity Controlling Rate: $5\% \text{RH}/\text{min}$



温度测量

Thermometry Equipment



温湿度计

Reference Thermometer-Hygrometer Readout

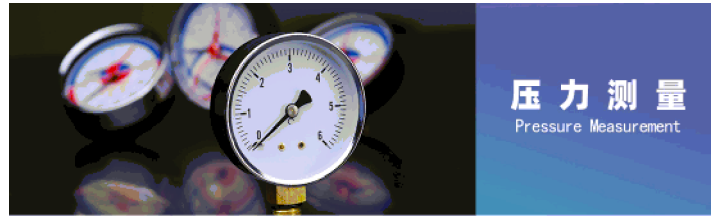
- 支持温度和湿度的双通道测量与记录
Dual Measurement Channels
- 恒温槽温场测试
Thermostatic Bath Calibration
- 干体炉温场测试
Thermocouple Furnaces Calibration
- 温度精密测量
Precision Temperature Measurement



智能超级测温仪

Thermometer Readout

- 8位半温度高精度测量
8 1/2-digit DC multimeter
- 最高测量准确度可达2mk
2PPM resistance ratio accuracy
- 最高82通道多路测量及数据自动存储
Measure up to 82 channels with auto data collection
- 支持热电阻、热电偶、热敏电阻、温度变送器、温度传感器
Measure type: SPRTS, RTDS, thermistors, thermocouples, and NTC



压力测量

Pressure Measurement



智能全自动压力检测仪

Automated Pressure Measurement Equipment

- 内置自动压源,最高可达7MPa
Automated and self-contained pressure generation and control to 1000psi (70bar)
- 准确度等级最高可达到0.01级
Optional precision accuracy models to 0.01FS
- 控制稳定性0.003%FS
Control stability to 0.003%FS



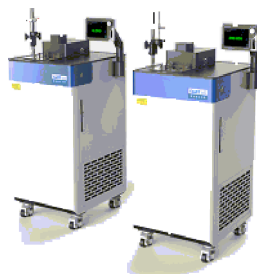
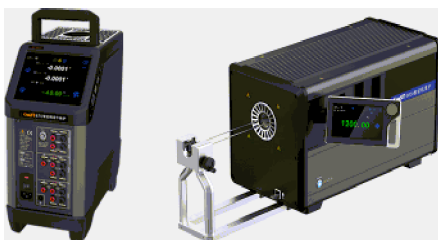
智能压力数字表

Smart Pressure Gauges

- 最大压力可达420MPa
Maximum pressure: 420MPa
- 最高精度等级0.02
0.02FS accuracy
- Wi-Fi BLE等多种通信方式
Wi-Fi and BLE communications

温度传感器标定 & 校准

temperature Sensor Calibration



温度传感器/变送器标定

Temperature Transducer Calibration



压力传感器/变送器标定

Pressure Transducer Calibration

压力传感器标定 & 校准

Pressure Sensor Calibration

业务范围 Business Scope



多通道超级测温仪 Multifunction Thermometer

- (1) Measure and calibrate SPRTs, RTDs, thermistors and thermocouples
- (2) 1 PPM resistance ratio accuracy (channel 1)
- (3) 8 1/2-digit DC multimeter
- (4) Measure up to 82 channels



智能数字压力表 Digital Pressure Gauges

- (1) Pressure ranges to 250MPa(2,500 bar)
- (2) 0.05%,or 0.02%FS accuracy
- (3) Operate like a smartphone



智能数据采集器 Multifunction DAQ

- (1) 7 inch touch screen, easy to use
- (2) 16 temperature channels, 7 humidity/general sensor channels
- (3) Small size, Built-in battery, start measuring anywhere

*ISTP Secretariat : istp32@tju.edu.cn
<http://www.istp32.com/>*