

# **China Heat Pump Conference (2022)**

**October 24-27, 2022**

**Hangzhou, Zhejiang Province, China**

## **Third Announcement**

In order to achieve the goal of "Carbon neutrality 2060", China has considered heat pump could play a key role in this strategy, thus innovations and applications of heat pump in buildings, industries and transportations are very important. International exchanges and collaborations in heat pump technology could help to promote heat pump industries. The newly founded China Heat Pump Conference (CHPC) offers an opportunity for stakeholders in the global heat pump field to exchange cutting-edge technologies, hot issue and policy orientation.

The first CHPC (CHPC2022) will be held on October 24-27, 2022 in Hangzhou, China. The theme of the conference is "Focus on Heat Pump Innovation to Pursuit Low-Carbon Development".

### **Sponsor**

International Institute of Refrigeration

### **Organizer**

Chinese Association of Refrigeration (CAR)

### **Conference Chair**

Prof. Ruzhu Wang, Shanghai Jiao Tong University

### **Organizing Committee**

#### **Chair**

Prof. Yi Jiang, Academician of Chinese Academy of Engineering, Tsinghua University.  
President of CAR

#### **Member**

Mr. Didier Coulomb, Director General of International Institute of Refrigeration  
Prof. Ya-Ling He, Academician of the China Academy of Science, Xi'an Jiaotong University, Vice president of CAR  
Mr. Qingguo Meng, Executive Vice President of Chinese Association of Refrigeration  
Mr. Xiaohu Li, General manager of Huashang International Engineering Co., Ltd.  
Mr. Jianming Tan, Vice president of Gree Electric Appliances, INC.  
Mr. Jie Ding, Vice president of Bingshan Refrigeration & Heat Transfer Technologies Co.,ltd.  
Mr. Qiang Wang, Director of Moon Environment Technology Co., Ltd.

## **Programme Committee**

Prof. K Reinhard Radermacher, University of Maryland, College Park  
Mr. Andy Pearson, Group Managing Director of Start Refrigeration  
Prof. Trygve M. Eikevik, Norwegian University of Science and Technology  
Prof. Kiyoshi Saito, Wasidea University  
Mr. Cordin Arpagaus, Senior Research Engineer of Eastern Switzerland University of Applied Sciences  
Prof. Xianting Li, Tsinghua University  
Prof. Yitai Ma, Tianjin University  
Prof. Wei Wang, Beijing Institute of Petrochemical Technology  
Prof. Wenxing Shi, Tsinghua University  
Prof. Changqing Tian, Technical Institute of Physics and Chemistry, CAS  
Mr. Xudong Tian, Deputy General Manager of Hefei General Machinery Research Institute Co. Ltd.  
Prof. Ziping Feng, Guangzhou Institute of Energy Conversion, Chinese Academy of Sciences  
Mr. Hua Liu, Deputy Chief Engineer of Gree Electric Appliances, INC.  
Prof. Xiaohua Liu, Tsinghua University  
Prof. Baizhan Li, Chongqing University  
Prof. Nianping Li, Hunan University  
Prof. Luwei Yang, Technical Institute of Physics and Chemistry, CAS  
Prof. Yi Yang, Zhejiang University  
Prof. Xiaosong Zhang, Southeast University  
Prof. Xu Zhang, Tongji University  
Prof. Xuejun Zhang, Zhejiang University  
Prof. Zhentao Zhang, Technical Institute of Physics and Chemistry, CAS  
Prof. Jiangping Chen, Shanghai Jiao Tong University  
Prof. Guangming Chen, Zhejiang University University  
Prof. Huanxin Chen, Huazhong University of Science and Technology  
Prof. Shuangquan Shao, Huazhong University of Science and Technology  
Prof. Yang Yao, Harbin Institute of Technology  
Prof. Yiqiang Jiang, Harbin Institute of Technology  
Prof. Long Ni, Harbin Institute of Technology  
Prof. Wei Xu, China Academy of Building Research  
Mr. Xiaojun Yuan, Vice-President of Zhejiang Zhongguang Electrical Co., Ltd.  
Prof. Hong Xu, China Household Electric Appliance Research Institute  
Prof. Dong Huang, Xi'an Jiaotong University  
Prof. Feng Cao, Xi'an Jiaotong University  
Prof. Guomin Cui, Yunnan Academy of Tobacco Agriculture Science  
Prof. Caihua Liang, Southeast University  
Prof. Shengming Liao, Central South University

## Schedule Details

October 25, 2022, Tuesday (UTC/GMT+08:00)			
Plenary Session			
	Title	Speaker	Organization
1	Heat Pump-Technical Support to Achieve Zero Carbon Heat Source System	Yi Jiang	Chinese Academy of Engineering, Tsinghua University, China Association of Refrigeration
2	Thoughts on the Future of Heat Pump Technology	Reinhard Radermacher	University of Maryland
3	High Temperature Heat Pumps for Industrial Heating Processes Using Water as Refrigerant	Ruzhu Wang	Shanghai Jiao Tong University
4	Application in Large-Scale Compound Heat Pump Heating and Cooling System	Wei Xu	China Academy of Building Research
5	Development Trend of Heat Pump Air Conditioning in Extreme Climates	Xiaojun Yuan	Zhejiang Zhongguang Electrical Co., Ltd.
6	A Low Carbon Solution for Air Conditioning System with Low Grade Terminals and Energy-Efficient Heat Pump	Xianting Li	Tsinghua University
7	The Implementation of the Kigali Amendment and the Trend of Green Refrigerant Substitution in the Refrigeration and Heat Pump Industry in China	Xiaolin Guo	Foreign Environmental Cooperation Center of Ministry of Ecology and Environment, China
8	Research on Transcritical CO <sub>2</sub> Air Conditioning and Thermal Management System for Vehicles	Feng Cao	Xi'an Jiaotong University
9	Case Analysis of Heat Pump Drying Technology for Agricultural Products	Yuwei Yang	Technical Institute of Physics and Chemistry, CAS
10	Gree's high-efficiency heat pump technology route helps achieve the dual-carbon goal	Hua Liu	Gree Electric Appliances, INC.
11	High Temperature Heat Pumps in Industrial Applications	Trygve M. Eikevik	Norweigen University of Science and Technology

12	The Difficult Economics of Industrial Heat Pump	Andy Pearson	Start Refrigeration
13	New Developments and Products for Supply Temperatures above 100°C	Cordin Arpagaus	Eastern Switzerland University of Applied Sciences
14	Latest Trend of Heat Pump Technologies in Japan	Kiyoshi Saito	Wasidea University
<b>October 26-27, 2022, (UTC/GMT+08:00)</b>			
<b>Parallel Sessions</b>			
Frontier of Heat Pump Technology			
Ruzhu Wang, Shanghai Jiao Tong University Xiaohua Liu, Tsinghua University			
	<b>Title</b>	<b>Speaker</b>	<b>Organization</b>
1	Construction of New Urban Heating System Based on Heat Pump	Lin Fu	Tsinghua University
2	Energy Consumption guided by "Carbon Peak and Neutrality"	Zhenyuan Xu	Shanghai Jiao Tong University
3	Heat Pump System Analysis: Thinking Beyond the Heat Pumping Machine	Hatef Madani	KTH Royal Institute of Technology, Sweden
4	Research on High Temperature Heat Pump Technology Based on Energy and Quality Allocation	Na Deng	Tianjin University
5	High-efficient HVAC system with Desiccant Coated Heat Exchanger for the Rail Transit Vehicle	Zhenggen Wang	Merak-Jinxin Air-Conditioning System (Wuxi) Co., Ltd.
6	Introduction of Low Ring Temperature Heat Pump Innovative Technology Application of Danfoss	Dong Liu	Danfoss
Development and Prospect of International Heat Pump Market			
Wei Xu, China Academy of Building Research			
	<b>Title</b>	<b>Speaker</b>	<b>Organization</b>
1	World Air-to-water(ATW) Heat Pump Market – 2022 Update	Keisho Ka	JARN LTD.
2	Analysis of IEA HPT International heat pump development trend	Lingyan Yang	China Academy of Building Research
3	Heat pumps-New Development Opportunities in the European Energy Crisis	Wangjie Ma	China Securities Co., Ltd

4	Global Heat Pump Market Introduction and Future Outlook	The Building Services Research and Information Association	
5	Obstacles to the Development of Heat Pumps and International Experience for Reference	The Regulatory Assistance Project	
Heat pump technology for construction			
Xiaosong Zhang, Southeast University Long Ni, Harbin Institute of Technology			
	<b>Title</b>	<b>Speaker</b>	<b>Organization</b>
1	Multi-Energy Complementary Low-Carbon Building Energy System Based on Heat Pump	Xiaosong Zhang	Southeast University
2	Heat Pump Technology Helps to Achieve Carbon Neutrality in Building Heat	Long Ni	Harbin Institute of Technology
3	Applications of Heat Pump Technology for Space Heating of Suburban Residential Buildings, a Case Study	Xiaolin Wang	University of Tasmania
4	Performance Analysis and Application Practice of Environmentally Friendly Working Fluid Heat Pump Units for Buildings	Haibin Fan	Hefei General Machinery Research Institute Co., Ltd.
5	Modeling of a Net Zero Energy Community with Water Source Heat Pumps in Florida, U.S.	Wangda Zuo	Pennsylvania State University
6	Proposal and Analysis of Replacing Centralized Heat Pumps for Heating and Cooling with Distributed Natural Working Fluid Heat Pumps	Yitai Ma	Tianjin University
Heat pump technology for transportation			
Jiangping Chen, Shanghai Jiao Tong University Changqing Tian, Technical Institute of Physics and Chemistry, CAS			
	<b>Title</b>	<b>Speaker</b>	<b>Organization</b>
1	Adaptive and Durable Heat Pump for Automotive NEW Energy Vehicle	Kwangtaek Hong	Aetocar US, SAE
2	Technical Trend of Automobile Heat Pump System	INOUE SEIJI	DENSO
3	Technical Challenges of CO <sub>2</sub> Heat Pump	Jiangping Chen	Shanghai Jiao Tong University
4	Wide Temperature Range Heat Pump Technology for Electric Vehicles	Changqing Tian	Technical Institute of Physics and Chemistry,

			CAS
5	Development Trend of Electric Vehicle Thermal Management System Based on CO <sub>2</sub> Heat Pump	Xifeng Sun	Dongfeng Motor Corporation

Heat pump technology for industry			
-----------------------------------	--	--	--

Guangming Chen, Zhejiang University University Ziping Feng, Guangzhou Institute of Energy Conversion, CAS			
--	--	--	--

	Title	Speaker	Organization
1	Introduction and Application of Electric/Gas Driven High Temperature Heat Pump Technology	Ziping Feng	Guangzhou Institute of Energy Conversion, CAS
2	A New Storage Heat Pump Concept for Applications Requiring Large Temperature Lifts	Stefan Elbel	University of Illinois at Urbana-Champaign
3	Application of open cycle absorption heat pump technology in flue gas pollution reduction ,energy saving and carbon emission reduction	Jingyu Xu	Heimdallr (ShangHai) Hi-Tech Energy Reservation Co., ltd.
4	Application of CO <sub>2</sub> Heat Pump Water Heater in Commercial Hot Water Field	Jianfeng Zhao	Zhejiang DunAn Electro-Mechanical Technology Co., Ltd

Heat pump technology for agriculture			
--------------------------------------	--	--	--

Zhentao Zhang, Technical Institute of Physics and Chemistry, CAS Guomin Cui, Yunnan Academy of Tobacco Agriculture Science			
---	--	--	--

	Title	Speaker	Organization
1	Discussion on Technical Difficulties of Air Source Heat Pump Barn	Changrong Gong	Henan Agricultural University
2	Numerical Simulation of Heat Pump Drying	Bo Yu	Beijing Institute of Petrochemical Technology
3	Drying quality control of food	Pu Jing	Shanghai Jiao Tong University
4	Heat Pump Drying of Vegetable Seed	Fuqing Luo	Yuan Longping High-tech Agriculture Co., Ltd.

Household heat pump technology			
Hong Xu, China Household Electric Appliance Research Institute Dong Huang, Xi'an Jiaotong University			
	Title	Speaker	Organization
1	Interpretation of GB/T 23137-2020 standard for heat pump water heaters for household and similar purposes	Ning Cai	China Household Electric Appliance Research Institute
2	Key technology and application of high-efficiency air source heat pump dual supply	Mengyu Chen	Midea Building Technologies Division
3	Application and synchronous efficiency mechanism of variable split technology in evaporative/condensing dual-purpose heat exchanger	Rijing Zhao	Xi'an Jiaotong University
4	Flow Noise Control in Heat Pump Air Conditioning Systems	Feilong Zhan	Shanghai Jiao Tong University
Refrigerant Substitute Technology for Heat Pump			
Xiaolin Guo, Foreign Environmental Cooperation Center of Ministry of Ecology and Environment, China Zhao Yang, Tianjin University			
	Title	Speaker	Organization
1	Progress and Alternative Technology Options for China's Refrigeration and Heat Pump Industry to Implement the Montreal Protocol	Xiongya Li	Foreign Environmental Cooperation Center of Ministry of Ecology and Environment, China
2	Application of High Temperature Heat Pump Working Fluid HP-1	Zhikai Guo	Zhejiang Chemical Industry Research Institute
3	Screening of Low-GWP Mixed Working Fluid for Medium and High Temperature Heat Pump	Baolong Wang	Tsinghua University
4	Summary and Prospect of Refrigerant Alternative Route for Industrial Heat Pump	Bin Hu	Shanghai Jiao Tong University
5	Comparative Experiment of R134a Working Fluid	Zhao Yang	Tianjin University

	Replacement in Heat Pump Drying System		
--	--	--	--

Sharing of excellent engineering application case			
---	--	--	--

Yiqiang Jiang, Harbin Institute of Technology Yi Yang, Zhejiang University			
---	--	--	--

	Title	Speaker	Organization
1	Solar Heat Pumps for Clean Heating Applications in Denmark	Jianhua Fan	Technical University of Denmark
2	Applications of Middle and Deep Geothermal Heat Pump	Fenghao Wang	Xi'an Jiaotong University
3	Application of Double Cold Source Cascade Air Conditioning System	Xiangning Tian	The Architectural Design and Research Institute of Zhejiang University Co., Ltd
4	The Solution of Open Absorption Heat Pump Technology in Recovering Flue Gas Waste Heat for Urban Heating	Liang Bai	Heimdallr (ShangHai) Hi-Tech Energy Reservation Co., ltd.
5	Application of Multi-Energy Complementary System Based on Heat Pump in Severe Cold Area	Yiqiang Jiang	Harbin Institute of Technology

Capacity improvement of heat pump installation, operation and maintenance			
---	--	--	--

Wenxing Shi, Tsinghua University Shuangquan Shao, Huazhong University of Science and Technology			
--	--	--	--

	Title	Speaker	Organization
1	Data-driven energy efficiency promotion in operation and maintenance management of heat pump air conditioning system	Shuangquan Shao	Huazhong University of Science and Technology
2	Installation, adjustment and management of operation and maintenance of high-efficiency cold and heat source system	Qingpeng Wei	Tsinghua University
3	Installation, Operation and Maintenance Management of Capital Sub-Center Heat Pump Project	Donghui Xie	Beijing Huaqing Geothermal Development Co., Ltd.
4	Smart Electromechanical Operation and Maintenance Practice of Shaanxi Construction Engineering Group Corporation Limited	Ning Li	Shaanxi Construction Engineering Group Corporation Limited
5	Construction, Operation and Maintenance Management of Medium-depth Geothermal Heat Pump Heating System	Jiewen Deng	Tsinghua University



6	Influence of Outdoor Unit Installation Platform on the Performance of Air Source Heat Pump	Wenxing Shi	Tsinghua University
Technology of CO <sub>2</sub> heat pump			
Yitai Ma, Tianjin University Shengming Liao, Central South University			
	<b>Title</b>	<b>Speaker</b>	<b>Organization</b>
1	Research Progress on Thermodynamics and Heat Transfer of CO <sub>2</sub> Heat Pump	Shengming Liao	Central South University
2	Research on Heat Recovery in CO <sub>2</sub> Transcritical Refrigerating Ice rink	Minxia Li	Tianjin University
3	CO <sub>2</sub> Compressors: Design Challenges and Test Methods for Reliable and Efficient Operation	Giacomo Pisano	DORIN
4	Research on supercritical CO <sub>2</sub> Heat Transfer Characteristics of CO <sub>2</sub> heat pump water heater	Chaobin Dang	University of Fukui
5	Research on Quality and Efficiency Improvement Technology of CO <sub>2</sub> Heat Pump based on Mechanical Subcooling	Shengchun Liu	Tianjin University of Commerce
6	Discussion—The Mathematical Basis of Heat Pumps for Carbon Neutrality	Yitai Ma	Tianjin University
Technology of Heat Pump Frosting Suppression and Defrosting			
Wei Wang, Beijing Institute of Petrochemical Technology Caihua Liang, Southeast University			
	<b>Title</b>	<b>Speaker</b>	<b>Organization</b>
1	Exploration and Practice of Frost Suppression and Freezing Technology of Air Source Heat Pump	Caihua Liang	Southeast University
2	Technical Requirements and Practice of Actual Performance Improvement of Air Source Heat Pump in Different Scenarios	Weitao Han	Haier
3	Regional Differences in Actual Application Performance of Air Source Heat Pump Defrosting	Wenzhe Wei	Beijing University Of Technology
4	Frosting Characteristics and Accelerated Defrosting Technology of Low Ambient Temperature Variable Frequency Air Source Heat Pump	Long Ni	Harbin Institute of Technology
5	Preliminary Research and Thinking on Defrosting Performance of New Air Source Heat Pump System Coupled with Liquid Storage and Gas-Liquid Separator	Zhihua Wang	Xi'an Jiaotong University
6	Exploration of Key Issues in Accurate Evaluation of Air Source Heat	Wei Wang	Beijing Institute of

	Pump Defrosting Performance		Petrochemical Technology
--	-----------------------------	--	--------------------------

**Liaison**

Mr. Yunpeng WANG, Mr. Enyuan GAO  
 Chinese Association of Refrigeration (CAR)  
 Tel: +86 10 68715724, +86 10 68711615  
 Fax: +86 10 68434679  
 Email: [chpc2022@car.org.cn](mailto:chpc2022@car.org.cn)

**Sponsors**

Identified and Proposed Sponsors:



.....