

Program at a Glance

Wednesday, 09/ 07/ 2025	
9:00am-9:00pm	Registration Location: Xi'an International Convention Center, Lobby, Bldg.2
Thursday, 10/ 07/ 2025	
8:30am-9:00pm	Registration Location: Xi'an International Convention Center, Lobby, Bldg.2
8:30am-9:00am	Opening Ceremony Location: Jianzhang Hall, 2st Floor, Bldg.1
Plenary Session	
Location: Jianzhang Hall, 2st Floor, Bldg.1	
9:00am-9:40am	Prof. Guang Xi Some Latest Research Advances in Centrifugal Compressors at Xi'an Jiaotong University Chair: Prof. Ruzhu Wang and Prof. Ahmed Kovacic
9:40am-10:20am	Prof. Ahmed Kovacic Emerging Technologies for Positive Displacement Compressors and Expanders Chair: Prof. Ruzhu Wang and Prof. Ahmed Kovacic
10:20am-10:40am	Coffee Break
10:40am-11:20am	Prof. Stefan Elbel Latest Research Trends in Air Conditioning, Refrigeration, and Heat Pump Technology Chair: Prof. Ruzhu Wang and Prof. Ahmed Kovacic
11:20am-12:00am	Prof. Vikrant C. Aute Rethinking Heat Exchangers for Sustainable Cooling, Heating, and Refrigeration Chair: Prof. Ruzhu Wang and Prof. Ahmed Kovacic

12:00am-1:30pm	<p style="text-align: center;">Lunch</p> <p style="text-align: center;">Location: Multi-function Hall, B1, Bldg.1</p>
1:30pm-2:10pm	<p style="text-align: center;">Prof. Yunting Ge</p> <p style="text-align: center;">Performance Analysis of High-Pressure Hydrogen Compression Using Hydrogen-Metal Technology and Waste Heat Recovery</p> <p style="text-align: center;">Chair: Prof. Hua Zhang and Prof. Vikrant C. Aute</p>
2:10pm-2:50pm	<p style="text-align: center;">Prof. Andrej Kitanovski</p> <p style="text-align: center;">Solid State Refrigeration and Heat Pump Technologies: From Absolute Zero to Industrial Heating</p> <p style="text-align: center;">Chair: Prof. Hua Zhang and Prof. Vikrant C. Aute</p>
2:50pm-3:30pm	<p style="text-align: center;">Prof. Hoseong Lee</p> <p style="text-align: center;">Thermal Management of Lithium-ion Batteries for Electric Vehicles and Energy Storage System</p> <p style="text-align: center;">Chair: Prof. Hua Zhang and Prof. Vikrant C. Aute</p>
3:30pm-3:50pm	<p style="text-align: center;">Coffee Break</p>
3:50pm-4:30pm	<p style="text-align: center;">Prof. Yi Guo</p> <p style="text-align: center;">Application, Development, and Challenges of Compressors in the Hydrogen Energy Field</p> <p style="text-align: center;">Chair: Prof. Yunting Ge and Prof. Stefan Elbel</p>
4:30pm-5:10pm	<p style="text-align: center;">Lingling Yuan</p> <p style="text-align: center;">Energy Efficiency Measurement Standards and Performance Improvement of Heat Pump Systems</p> <p style="text-align: center;">Chair: Prof. Yunting Ge and Prof. Stefan Elbel</p>
5:10pm-5:50pm	<p style="text-align: center;">Jiansheng Liao</p> <p style="text-align: center;">Research on Key Technologies of Wide-Frequency High-Efficiency and Low-Noise Compressors</p> <p style="text-align: center;">Chair: Prof. Yunting Ge and Prof. Stefan Elbel</p>

Technical Sessions Friday, 11/ 07/ 2025

Session 1: Compressors I Location: Jianzhang hall, Room 1

Chair: Xiaolin Wang, Xiaohan Jia

8:30 am- 8:50 am	Rolling rotor compressors: application expansion and technological advances Yi Zhou Shanghai Highly Electrical Appliances Co., Ltd. (Keynote)
8:50 am- 9:10 am	FEA for scroll thrust bearing design Qiang Zhang BITZER Refrigeration Technology (China) Co., Ltd. (Keynote)
9:10 am- 9:25 am	Modeling and unsteady flow analysis of asymmetric scroll compressors with variable wrap thickness Zengyao Li China University of Petroleum (East China) .
9:25 am- 9:40 am	Flow field simulation reseach on CO2 large-scale rotary compressor Li Li Xi'an Qingan Refrigeration Equipment Co., Ltd
9:40 am- 9:55 am	Advances and prospects in scroll compressor technology —efficiency to versatility Bo Gao Sonyo Compressor (Dalian) Co., Ltd.
9:55 am- 10:15 am	Coffee Break
Chair: Zengli Wang, Xiaoling Yu	
10:15 am- 10:30 am	Study on the applicability of semi-empirical models for the discharge temperature of rotary compressors Qingqing Wu Shanghai Highly (Group) Co., Ltd.
10:30 am- 10:45 am	Research on the impact of oil return holes in rotary compressor accumulators on the performance of RAC and the compressor reliability Yuxuan Zhang Hisense Air Conditioning Co., Ltd
10:45 am- 11:00 am	Research on application technology and key technologies of low-duty (LD) compressors for LNG carrier Anna Diao Shanghai Marine Diesel Engine Research Institute.
11:00 am- 11:15 am	The impact of piston offset control methods on the output characteristics of linear compressors under multifactor coupling BinBin Hu Yangzhou University
11:15 am- 11:30 am	Innovation in reducing friction loss of high-speed rotary compressor Yuanpei Hu Gree Electric Appliances, Zhuhai.
11:30 am- 11:45 am	Anomaly detection of natural gas compressor in data increment scenario Menghua Zhang Xi'an Jiaotong University

Technical Sessions Friday, 11/ 07/ 2025

Session 2: Compressors II Location: Jianzhang hall, Room 2

Chair: Ahmed Kovacevic, Yi Guo

8:30 am- 9:50 am	Industrial high-temperature heat pump screw compressor technology and application Xiaokun Wu Gree Electric Appliances, Zhuhai. (Keynote)
8:50 am- 9:10 am	Exploration of oil-free screw compressors and natural refrigerants in industrial heat pump applications Jun Li Moon Environment Technology Co.,Ltd. (Keynote)
9:10 am- 9:25 am	Innovation and practice of new profile and transmission design in screw compressors Nan Wang Dunham-Bush (China) Industrial Co., Ltd
9:25 am- 9:40 am	Root cause analysis and finite element analysis (FEA) of internal deformation in an industrial oil-flooded air screw compressor to mitigate frequent seizures Abhishek Kumar City St George's, University of London.
9:40 am- 9:55 am	Heat analysis of liquid piston compressor under two operating modes based on numerical simulation Bo Wu Shenyang University of Technology
9:55 am- 10:15 am	Coffee Break
Chair: Hongqi Li, Xu Yang	
10:15 am- 10:30 am	Progress in high-performance compressor systems: recent research from SKL-HCST Le Wang National Key Laboratory of High-end Compressor and System Technology
10:30 am- 10:45 am	Compressor development and inverter technology for synergistic control Xizhi Li Qingdao Hisense Hitachi air conditioning system Co., Ltd.
10:45 am- 11:00 am	Development and experimental study of oil-free single screw compressor Xudong Ma Beijing University of Technology
11:00 am- 11:15 am	Analysis of rotor deformation of BOG screw compressor Yuebo Zeng Shanghai Marine Diesel Engine Research Institute
11:15 am- 11:30 am	Non-destructive monitoring of hydraulic oil pressure in diaphragm compressors based on bolt preload Da Chen Xi'an Jiaotong University
11:30 am- 11:45 am	Research on the extreme efficiency and extraordinary life for 150 m ³ /min screw compressor Zhen Zhang Suzhou Stronix Compressor Co.,Ltd.
11:45am- 12:00am	Prediction and suppression of pressure pulsation for the screw compressor pipeline system Huan Wei Xi'an Jiaotong University

Technical Sessions Friday, 11/ 07/ 2025

Session 3: Air-conditioning and Refrigeration Location: Jianzhang hall, Room 3

Chair: Stefan Elbel, Suxin Qian

8:30 am- 8:50 am	Smart design methods for heat exchanger innovation: harnessing algorithms and tools Long Huang Xi'an Jiaotong-Liverpool University (Keynote)
8:50 am- 9:10 am	Adaptive temperature reset control of air-conditioner to improve photovoltaic on-site consumption for an office building Yanxin Li South China University of Technology
9:10 am- 9:25 am	Energy-saving optimization and comparative analysis under different methods for data centers cooling systems based on cold plates Shengli Qu Xi'an Jiaotong University
9:25 am- 9:40 am	Research on online measurement and migration behavior of compositions in auto-cascade refrigeration systems Yinlong Li Xi'an Jiaotong University.
9:40 am- 9:55 am	Theoretical investigation of the optimal tube diameter in tube-fin heat exchangers Yiming Li Xi'an Jiaotong University
9:55 am- 10:15 am	Coffee Break

Chair: Vikrant Aute C., Zhili Sun

10:15 am- 10:30 am	Study of moisture transfer and frost distribution in low-temperature refrigerators Guixiang He Xi'an Jiaotong University.
10:30 am- 10:45 am	Experimental study on the dynamic behaviors of an ejector-enhanced R290 freezer with automatic oil return Zhidong Wen Xi'an Jiaotong University.
10:45 am- 11:00 am	Thermodynamic analysis of a transcritical CO ₂ refrigeration cycle with pressure exchanger Haoyue Zhang Xi'an Jiaotong University.
11:00am- 11:15 am	Two-phase flow instabilities in cryogenic pulsating heat pipes Xuan Tao Hangzhou City University
11:15 am- 11:30 am	Recent progress in CO ₂ refrigerant applications: a short review of refrigeration, heat pump and VRV systems Jianfei Zhang Dalian Xuanke Air Conditioning Compressor Co., Ltd.
11:30 am- 11:45 am	A multi-energy load forecasting method for multi-functional campus buildings based on attention mechanism Xiaojie Lin Zhejiang University.
11:45 am- 12:00 am	Experimental investigation of the effects of different inlet pressures and nozzle numbers on vortex tube performance Wen Li Xi'an Polytechnic University. Chinaperformance

Technical Sessions Friday, 11/ 07/ 2025

Session 4: Heat Pump Location: Jianzhang hall, Room 4

Chair: Andrej Kitanovski, Zhao Yang

8:30 am- 8:50 am	Transient simulation of refrigerant and oil flow distribution in air source heat pump systems Hongtao Qiao Mitsubishi Electric Research Laboratories, USA (Keynote)
8:50 am- 9:10 am	Simulation study of ultra-low temperature district heating system based on double-loop booster heat pump control strategy Yuxuan Gong Beijing university of technology
9:10 am- 9:25 am	Analysis of cascade ice slurry source heat pump system based on multi-objective optimization Yujie Zhou Guangzhou Institute of Energy Conversion, Chinese Academy of Sciences
9:25 am- 9:40 am	Experimental study on defrosting multi outdoor units in turn for air source heat pump using hot gas Xiang Li Beijing university of technology
9:40 am- 9:55 am	Experimental study of a heat pump using two-stage high speed centrifugal compressor Linbo Zhang Xi'an Jiaotong University
9:55 am- 10:15 am	Coffee Break
Chair: Hongxia Zhao, Zhentao Zhang	
10:15 am- 10:30 am	Entropy generation optimization of a zeotropic mixture heat pump system based on the synergistic efficiency enhancement of vapor injection and ejector Zhengyong Li School of Electric Power Engineering, South China University of Technology
10:30 am- 10:45 am	Lubrication mechanism and selection methodology of lubricants for heat pump systems Chenchen Ji Shanghai Jingyi New Material Technology Co., Ltd.
10:45 am- 11:00 am	Fault diagnosis of transcritical carbon dioxide heat pump system based on attention mechanism Congcong Du ZhengZhou University
11:00 am- 11:15 am	A data-driven model for heat pump water heater Yiming Li Xi'an Jiaotong University
11:15 am- 11:30 am	Comparative analysis of air source heat pump systems for multi-family residential buildings in terms of energy and environmental performance Daneun Kim Korea university
11:30 am- 11:45 am	Development of lubricants for moderately-high-temperature heat pumps with low GWP refrigerants Cheng Lu Xi'an Jiaotong University

Technical Sessions Friday, 11/ 07/ 2025

Session 5: Automotive Thermal Management and Other Systems

Location: Multi-function Hall 201

Chair: Hoseong Lee, Bo Gu

8:30 am- 8:50 am	Improve the reliability of electric compressors for new energy vehicles Xiangji Chen Aotecar New Energy Technology Co.,Ltd (Keynote)
8:50 am- 9:10 am	Research progress of high temperature thermal management technology for electric vehicle power battery Zhaokai Li Chang'an University (Keynote)
9:10 am- 9:25 am	Development of thermal management system utilizing heat pump for fuel economy improvement of hybrid electric vehicles in cold climates Hayeon Kim Korea university
9:25 am- 9:40 am	Research on performance optimization of transcritical CO ₂ heat pump air conditioning system for electric vehicles Bowen Zhang School of Nuclear Science, Energy and Power Engineering, Shandong University
9:40 am- 9:55 am	Dynamic characteristics of linear compressors for automotive air conditioning applications Chengzhan Li Tianjin university of commerce
9:55 am- 10:15 am	Coffee Break
Chair: Yasong Sun, Wenyi Wang	
10:15 am- 10:30 am	A power-to-ice framework for offshore wind utilization: multi-objective optimization of ice slurry systems with battery energy storage Fuchao Li Univesity of Science and Technology of China
10:30 am- 10:45 am	Molecular dynamics simulation of the thermal properties of molten salt storage media for CO ₂ ultra-high temperature heat pumps Qingsheng Yu Xi'an Jiaotong University
10:45 am- 11:00 am	Research on a low temperature valved linear compressor for space helium throttling cryocooler Ran Hu Shanghai Institute of Technical Physics, Chinese Academy of Sciences
11:00 am- 11:15 am	Similarity modeling of hydrogen turbo-expander for 5t/d hydrogen liquefier Bingyao Niu Xi'an Jiaotong University
11:15 am- 11:30 am	Research on the performance of compressed air system with the freeze dryer used for suction pretreatment Wenting Zhu Jiangsu University of Science and Technology
11:30 am- 11:45 am	Research on the radial leakage characteristics and tooth top sealing effect in CO ₂ scroll compressor for electric vehicles Zhixiang Liu University of Shanghai for Science and Technology

Technical Sessions Friday, 11/ 07/ 2025

Session 6: Others

Location: Multi-function Hall 202

Chair: Yunting Ge, Liang Chen

8:30 am- 8:50 am	Optimization of the compressor cyclone separator geometry using differential evolution Zhonghua Shen Shanghai Highly Electrical Appliances Co.,Ltd.
8:50 am- 9:10 am	A new advanced compressor valve steel for the refrigeration and freezer industry Anders Hoel Alleima Materials Technology (Shanghai) Co.,Ltd.
9:10 am- 9:25 am	Development and application of low-temperature explosion-proof electrical penetrating components Bin Peng Xi'an Taijin New Energy & Materials Sci-Tech Co.,Ltd.
9:25 am- 9:40 am	Pumping performance, dynamic and experimental research on the startup process of roots vacuum pumps Chongzhou Sun Xi'an Jiaotong University
9:40 am- 9:55 am	Alleima high-performance precision strip steel & application Guofan Zhang Alleima (Shanghai) Materials Technology Co., Ltd
9:55 am- 10:15 am	Coffee Break
Chair: Yikai Wang, Xianyang Meng	
10:15am- 10:30 am	Solubility measurement of R1336mzz(Z) in DiPEC7 and DiPEiC9 from 293.15 K to 343.15 K Xiaopo Wang. Xi'an Jiaotong University.
10:30am- 10:45 am	Lubricant design for refrigeration compressor Jun Liu Shrieve Chemical(Shanghai)Co.,Ltd.
10:45am- 11:00 am	Theoretical comparative compressor evaluation using integral compressor models for R290 and R32 Thomas Meyer Technische Universität Berlin
11:00am- 11:15 am	Research on wide low-frequency high-efficiency sound absorption Mengtao Liang Xi'an Jiaotong University
11:15am- 11:30 am	Experimental study of the dynamic behavior of droplet impact on horizontal cylindrical surfaces Guoqiang Wu Jiangxi University of Science and Technology
11:30am- 11:45 am	An investigation on jet booster for natural gas gathering and transportation pipelines Luyang Dai Xi'an Jiaotong University
11:45am- 12:00 am	Gas Flow Analysis and Optimization for Cryogenic Hydrogen Turbine Expander Operation under Wet Conditions Shenrui Xie Shanghai Marine Diesel Engine Research Institute.