



***The 8th International Conference on Compressors
and Refrigeration, 2017***

Guide

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Xi'an Jiaotong University

Chinese Association of Refrigeration (CAR)

China Refrigeration and Air-Conditioning Industry Association (CRAA)

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XI'AN · CHINA

July 20-22, 2017

<http://www.iccr-xjtu.org>

Program at a Glance

Thursday, 20/ 07/ 2017

8:00am-
8:00pm

Registration
Location: Jianguo Hotel lobby

Friday, 21/ 07/ 2017

8:00am-
5:00pm

Registration
Location: Jianguo Hotel lobby

8:30am-
9:20am

Opening Ceremony
Location: Changan hall of Jianguo Hotel

9:20am-
9:40am

Coffee Break

Plenary Session
Location: Changan hall of Jianguo Hotel

9:40am-
10:20am

Prof. Pega Hrnjak
The future of CO₂ refrigeration and thermal technology
Chair: Prof. Ziwen Xing and Prof. Ahmed Kovacic

10:20am-
11:00am

Prof. Mitsuhiro Fukuta
Transient dissolution and separation phenomena of oil/refrigerant mixture
Chair: Prof. Ziwen Xing and Prof. Ahmed Kovacic

11:00am-
11:40am

Prof. Yunho Hwang
New Solid State Cooling Technologies
Chair: Prof. Ziwen Xing and Prof. Ahmed Kovacic

<p>12:00am- 2:00pm</p>	<p style="text-align: center;">Lunch Location: Jianguo Hotel</p>
<p>2:00pm- 2:40pm</p>	<p style="text-align: center;">Prof. Ahmed Kovacic Recent developments in modelling of Positive Displacement Twin Screw Machines Chair: Dr. Yan Tang and Prof. Pega Hrnjak</p>
<p>2:40pm- 3:20pm</p>	<p style="text-align: center;">Dr. Paul de Larminat A/C in High Ambient Temperatures. Comparisons of Alternative Fluids. Chair: Dr. Yan Tang and Prof. Pega Hrnjak</p>
<p>3:20pm- 3:40pm</p>	<p style="text-align: center;">Coffee Break</p>
<p>3:40pm- 4:20pm</p>	<p style="text-align: center;">Prof. Ruzhu Wang Efficient Heat Pumps and Terminals for Different Climate Zones Chair: Prof. Yanzhong Li and Prof. Yunho Hwang</p>
<p>4:20pm- 5:00pm</p>	<p style="text-align: center;">Prof. Essam E Khalil International Energy Efficiency in Buildings Standards Chair: Prof. Yanzhong Li and Prof. Yunho Hwang</p>
<p>5:00pm- 5:40pm</p>	<p style="text-align: center;">Prof. Eckhard Groll PDSim: A Generalized Modeling Platform to Predict the Performance of Positive Displacement Compressors and Expander Chair: Prof. Yanzhong Li and Prof. Yunho Hwang</p>
<p>6:00pm- 8:00pm</p>	<p style="text-align: center;">Welcome Banquet Location: Jianguo Hotel</p>

Technical Sessions

Saturday, 22/ 07/ 2017

Session 1: Compressors I

Location: Multiple-function hall, Room A

Chair: Bin Peng, Daniel Zeng

8:30am- 8:50am	Research of Refrigerating Compressor Motor Noise based on Computer Simulation Technology. Haijun Wang . <i>Highly Co.Ltd,Shanghai, China.</i> (Keynote)
8:50am- 9:05am	Comparison between Low Side and High Side Compressors for High Compression Ratio Applications. Jun Ouyang . <i>Emerson Climate Technologies (SuZhou) Co. Ltd. China.</i>
9:05am- 9:20am	Technical Development of Gas Injection on Rotary Compressor. Baolong Wang . <i>Tsinghua University, China.</i>
9:20am- 9:35am	A Comprehensive Model for an Oil-Free Carbon Dioxide Compressor Using Sanderson Rocker Arm Motion (S-RAM) Driving Mechanism. Bin Yang . <i>Purdue University. USA</i>
9:35am- 9:50am	Optimization of Low Frequency Noise of Compressor Based on Modal Sensitivity Analysis. Lijuan Tian . <i>Zhuhai Lamda Compressor Co. Ltd. China.</i>
9:50am- 10:05am	Analysis and control of gas pulsation in the multi-unit compressor system. Lanlan Yang . <i>Xi'an Jiaotong University, China.</i>
10:05am- 10:25am	<h2>Coffee Break</h2>
Chair: Baolong Wang, Mitsuhiro Fukuta	
10:25am- 10:45am	A Simulation Model for Scroll Compressors with New Correlations for Leakage and Heat Transfer. Cesar J. Deschamps . <i>Federal University of Santa Catarina.</i> (Keynote)
10:45am- 11:00am	Performance Analysis of New Oil - free Scroll Compressor. Bin Peng . <i>Lanzhou University of Technology. China.</i>
11:00am- 11:15am	Experimental Investigation on Oil Supply System inside a Rotary Compressor. Yihao Zhu . <i>HuaZhong University of Science and Technology, China.</i>
11:15am- 11:30am	Design and optimization of a Constant-speed Variable Capacity Rotary Compressor. Chang Liu . <i>Xi'an Jiaotong University, China.</i>
11:30am- 11:45am	Numerical simulation of the inner flow field and gas pulsation in twin tooth rotary compressor. Linfen Xing . <i>Xi'an Jiaotong University, China.</i>

Technical Sessions

Saturday, 22/ 07/ 2017

Session 2: Compressors II

Location: Multiple-function hall, Room B

Chair: Yi Wang, Peng Xie

8:30am- 8:50am	Speed-Controlled Compact Screw Compressors with Optimized Part-Load Efficiency. Manuel Reichle . <i>BITZER. Germany</i> (Keynote)
8:50am- 9:05am	The application of active magnetic control system for piston centering in labyrinth piston compressor. Wenshan Zhang . <i>Xi'an Jiaotong University, China</i> .
9:05am- 9:20am	A Simplified CFD Approach for the Suction Muffler Analysis of Reciprocating Compressors. Bruno Backes . <i>Embraco, Brasil</i> .
9:20am- 9:35am	A simplified p-V diagram testing method for domestic refrigerator compressors. Zhifang Jian . <i>Xi'an Jiaotong University, China</i> .
9:35am- 9:50am	A Numerical Study on Dynamic Characteristic of Linear Compressor for Electronics Cooling. Xinye Zhang . <i>Purdue University. USA</i> .
9:50am- 10:05am	Experimental investigation of a water-lubricated air twin-screw compressor. Chuang Wang . <i>Xi'an Jiaotong University, China</i> .
10:05am- 10:25am	Coffee Break
Chair: Ahmed Kovacicic, Xinye Zhang	
10:25am- 10:45am	Character Analysis of Refrigerant in AC And Predicted of The Development of Screw Compressor. Peng Xie . <i>Hanbell Co. Ltd.China</i> . (Keynote)
10:45am- 11:00am	Review of Methods and Research Status of Noise Reduction of Refrigerator Compressor. Yidan Cui . <i>Xi'an Jiaotong University, China</i> .
11:00am- 11:15am	Pure refrigerant lubrication technology in oil-free centrifugal compressors. Bo Han . <i>SKF. Konungariket Sverige</i>
11:15am- 11:30am	Effects of Structural Parameters of labyrinth Cavity on Leakage Characteristics in a Labyrinth Reciprocating Compressor. Lingzi Wang . <i>Xi'an Jiaotong University, China</i> .
11:30am- 11:45am	Study of a Piston Force Based F-V diagram monitoring method for reciprocating compressors. Zhao Zhang . <i>Xi'an Jiaotong University, China</i> .

Technical Sessions

Saturday, 22/ 07/ 2017

Session 3: Air-Conditioning and Heat Pump

Location: Multiple-function hall, Room C

Chair: Jianqiang Deng, Jie Zhu

8:30am-8:50am	The application of large scale centrifugal compressors in district heating by heat recovery technologies. Weipeng Deng , <i>York Co. Ltd. USA</i> (Keynote)
8:50am-9:05am	Optimization for CO2 Heat Pump Basing on Temperature Glide Matching. Fuzhen Zhang , <i>Tsinghua University, China</i> .
9:05am-9:20am	Review of Air Flow Regimes and Thermal Comfort in Spectators' Zone of Qatar Stadium. Essam E.Khalil , <i>Cairo University, Egypt</i> .
9:20am-9:35am	Flow Regimes and Thermal Comfort in Air-Conditioned Gymnastic Sport Facility. Essam E.Khalil , <i>Cairo University, Egypt</i> .
9:35am-9:50am	Effect of different injection vapor modes on the heating performance of the heat pump. Bin Liu , <i>Tianjin University of Commerce, China</i> .
9:50am-10:05am	Experimental Study of a Heat Pump Dryer with Dual Models of Single Stage and Cascade Cycles. Jiubin Shen , <i>Xi'an Jiaotong University, China</i> .
10:05am-10:25am	Coffee Break
Chair: Huanxin Chen, Essam Khalil	
10:25am-10:45am	Achieving Zero-Carbon Emission for a New Domestic Building in the UK. Jie Zhu , <i>University of Nottingham, United Kingdom</i> . (Keynote)
10:45am-11:00am	Ventilation System Design of an Underground Car Park. Essam E.Khalil , <i>Cairo University, Egypt</i> .
11:00am-11:15am	Numerical Investigations of Flow Patterns and Thermal Comfort inside Al-Haram Mosque in Makkah. Essam E.Khalil , <i>Cairo University, Egypt</i> .
11:15am-11:30am	Thermodynamic analysis of a hybrid no-frost air-source heat pump combined with membrane-based liquid desiccant dehumidification. Wei Su , <i>Southeast University, China</i> .
11:30am-11:45am	Parameter study of a membrane based liquid desiccant dehumidifier by CFD model. Jie Zhu , <i>University of Nottingham, United Kingdom</i> .
11:45am-12:00am	Theoretical and experimental Investigation on a novel transcritical CO2/R134a combined system in space heating field. Dongzhe Li , <i>Xi'an Jiaotong University, China</i> .

Technical Sessions

Saturday, 22/ 07/ 2017

Session 4: Energy Recovery

Location: Multiple-function hall, Room D

Chair: Yinhai Zhu, Weifeng Wu

8:30am-8:50am	Opportunities and challenges for micro organic rankin cycle with scroll expander technology. Nathan Sun. <i>Emerson, USA.</i> (Keynote)
8:50am-9:05am	Investigation on a Hybrid Auto-cascade Jet Refrigeration System using R23/R236fa. Xinyue Hao. <i>Henan University of Science and Technology, China.</i>
9:05am-9:20am	Theoretical study of an enhanced ejector refrigeration cycle with flash tank economizer. Ye Liu. <i>Xi'an Jiaotong University, China.</i>
9:20am-9:35am	Investigation of different economizers in CO ₂ transcritical supermarket refrigeration system. Hongxia Zhao. <i>Shandong University, China.</i>
9:35am-9:50am	Optimization of Microchannel Evaporator Design in HVAC&R Applications Using Two-phase Ejectors. Stefan Elbel. <i>University of Illinois at Urbana-Champaign, USA.</i>
9:50am-10:05am	Comparison of Various Motive Flow Control Methods to Implement Capacity Modulation in HVAC&R Systems Using Two-phase Ejectors. Stefan Elbel. <i>University of Illinois at Urbana-Champaign, USA.</i>
10:05am-10:25am	<h2>Coffee Break</h2>
Chair: Lin Wang, Stefan Elbel	
10:25am-10:45am	Flow visualization and theoretical modeling of supersonic two-phase transcritical flow of CO ₂ in an ejector of a refrigeration system. Yinhai Zhu. <i>Tsinghua University, China.</i> (Keynote)
10:45am-11:00am	Thermodynamic comparison of organic Rankine cycle using pure working fluid and mixtures. Xiaoting Zhai. <i>Xi'an Jiaotong University, China.</i>
11:00am-11:15am	Experimental investigation of the bi-evaporator compression /ejection refrigeration system. Huadong Liu. <i>Zhengzhou University, China.</i>
11:15am-11:30am	Measurement of Two-phase Flow in a Transcritical CO ₂ Ejector. Yafei Li. <i>Xi'an Jiaotong University, China.</i>
11:30am-11:45am	Theoretical Analysis and Experimental Validation of Working Process of An Oil-free Twin Screw Expander. Anna Diao. <i>China Shipbuilding Industry Corporation, China</i>
11:45am-12:00am	Thermodynamic analysis of a combined organic Rankine cycle and vapor compression refrigeration cycle system using the same refrigerants. Shuxue Xv. <i>Beijing University of Technology, China.</i>

Technical Sessions

Saturday, 22/ 07/ 2017

Session 5: Low-GWP Refrigerants and Refrigeration Systems

Location: Multiple-function hall, Room E

Chair: Shengchun Liu, Paul de Larminat

8:30am-8:50am	Frascold : CO2 compressors product range. Ivan Casali . <i>FRASCOLD SPA, Italia</i> . (Keynote)
8:50am-9:05am	Experimental Study on Heat Pump Space Heating System Using R410A and R32 in North of China. Chun Yang . <i>Emerson Climate Technologies (SuZhou) Co., Ltd, China</i> .
9:05am-9:20am	Development of R1234ze compressor for heat pump applications and performance evaluation of R515A. Guanxing Zou . <i>Honeywell Integrated Technology Co., Ltd, China</i> .
9:20am-9:35am	Design and control method of the multi-functional freezing and refrigerated storage system. Songsong Zhao . <i>Tianjin University, China</i> .
9:35am-9:50am	Thermal physical properties and refrigeration cycle performance of R450A and R134a. Yuce Liu . <i>Xi'an Jiaotong University, China</i> .
9:50am-10:05am	"Doing it with CO ₂ refrigeration anywhere in the world." moving the co2 equator to the geographical equator. Klaas Visser . <i>KAV Consulting Pty Ltd, Australia</i> .
10:05am-10:25am	Coffee Break
Chair: Guangwen Yin, Klaas Visser	
10:25am-10:45am	Performance Evaluation on R410A Alternatives of R32, R452B, R447B. Linzhong Wang . <i>Johnson Controls, China</i> . (Keynote)
10:45am-11:00am	Development and evaluation of a R290 transport refrigeration unit in South Africa. Zhongjie Huan . <i>Tshwane University of Technology, South Africa</i> .
11:00am-11:15am	Study on All-Weather Solar-Absorption/Compression Hybrid Refrigeration System. Wenxuan Fu . <i>Henan University Of Science And Technology, China</i> .
11:15am-11:30am	Evaluation of Global Warming Potential (GWP) for two New Refrigerants. Sheng Qin . <i>Zhejiang Research Institute of Chemical Industry Co., Ltd, China</i> .
11:30am-11:45am	Comparison and analysis of LiBr/H ₂ O absorption chiller in variable working condition based on different modeling. Erjian Chen . <i>South China University Of Technology, China</i> .

Technical Sessions

Saturday, 22/ 07/ 2017

Session 6: Heat/Mass transfer and heat exchangers

Location: Multiple-function hall, Room F

Chair: Guoliang Ding, Jianmei Feng

8:30am-8:50am	New generation of air cooled heat exchangers for CO ₂ applications. Livio Perrotta . <i>LU-VE Group, Italy</i> . (Keynote)
8:50am-9:05am	Experimental investigation on up-flow boiling of R1234yf in aluminum multi-port extruded tubes. Jiyang Li . <i>The University of Tokyo, Japan</i> .
9:05am-9:20am	Numerical analysis of energy and entransy regarding vertical borehole heat exchangers in ground-source heat pump systems. Xia Song . <i>Southeast University, China</i> .
9:20am-9:35am	Research of Flowing Resistance Characteristics of the Perforated Tube Attenuator. Yumei Ren . <i>Xi'an Jiaotong University, China</i> .
9:35am-9:50am	Analytical solution of heat and mass transfer performance in a countercurrentflow rotating packed bed dehumidifier with liquid desiccant. Yangyang Gu . <i>Southeast University, China</i> .
9:50am-10:05am	Design Optimization of Air-Cooled CO ₂ Gas Coolers for Commercial Refrigeration Applications. Shaobo Jia . <i>Heatcraft Worldwide Refrigeration, USA</i> .

10:05am-10:25am

Coffee Break

Chair: Shaobo Jia, Livio Perrotta

10:25am-10:45am	Two-phase flow maldistribution in parallel heat exchangers and its effect on thermal performance. Ling Wang . <i>South China University of Technology, China</i> . (Keynote)
10:45am-11:00am	Numerical investigation into the effect of opening and closing on flow and heat transfer characteristics in a Domestic Refrigerator. Li-hua Shi . <i>Xi'an Jiaotong University, China</i> .
11:00am-11:15am	An Experimental Study on the Heat Transfer Characteristics of Water in a Shell and Plate Heat Exchanger. Junyub Lim . <i>Korea University, Korea</i> .
11:15am-11:30am	The Performance Optimization of an Active Magnetocaloric Regenerator Refrigerator for Near Room Temperature Application. Yuan Lifan . <i>Xi'an Jiaotong University, China</i> .
11:30am-11:45am	Experimental Investigation for Low Concentration Liquid Desiccant Regeneration with Utilization of Condensation Heat. Hongyang Wei . <i>Southeast University, China</i>

Technical Sessions

Saturday, 22/ 07/ 2017

Session 7: Cryogenic and other systems

Location: Multiple-function hall, Room G

Chair: Xueyuan Peng, Yun Li

8:30am-8:50am	Research on influence of swing of crank shaft-rotor shaft system on noise performance of inverter rotary compressor. Xiaoqiang Huang , <i>Zhuhai Lamda Compressor Co. Ltd. China.</i> (Keynote)
8:50am-9:05am	Heat transfer coefficient measurements for hydrocarbon mixtures in a cryogenic plate fin heat exchanger. Rixin Li , <i>South China University of Technology, China.</i>
9:05am-9:20am	Numerical Simulation of Working Process in Twin Screw Vacuum Pump. Jinliang Tuo , <i>Xi'an Jiaotong University, China.</i>
9:20am-9:35am	Experimental research on power generation system with twin-screw expander using residual pressure. Di Wu , <i>Shanghai Jiaotong University, China.</i>
9:35am-9:50am	Improvement of a CO2 automotive air conditioning system performance by applying combined expander-compressor. Hyun Jin Kim , <i>Incheon National University, Korea.</i>
9:50am-10:05am	Research of the injected effect by the narrow-slit injection orifice in single screw compressor. Jia Xie , <i>Xi'an Jiaotong University, China.</i>
10:05am-10:25am	Coffee Break
Chair: Jianlin Yu, Xiaohan Jia	
10:25am-10:45am	Comparison of Refrigeration Cycles Used for Production of Pure Neon and its Isotopic Components. Chyhrin Artem , <i>Cryoin Engineering LTD, Ukraine, Russia.</i> (Keynote)
10:45am-11:00am	Cryogenic Maintenance of Rare Gases Separation Processes in 68...78 K Temperature Ranges. Tyshko Dmytro , <i>Cryoin Engineering LTD, Ukraine, Russia.</i>
11:00am-11:15am	Experimental Study on the Performance of a New Type Multistage Axial Cyclone Separator. Biyuan Liu , <i>Xi'an Jiaotong University, China.</i>
11:15am-11:30am	Experimental Investigation on damping performance of Nozzle Perforated Tube Attenuater. Xiaofei Jia , <i>Xi'an Jiaotong University, China.</i>
11:30am-11:45am	An improved homogeneous relaxation model for CO2 two-phase nozzle choking flow. Li Ma , <i>Xi'an Jiaotong University, China.</i>

Important Information

※Congress Venue

Jianguo Hotel (西安建国饭店)

ADD: No. 2 Huzhu Road, Xi'an, Shaanxi, China (陕西省西安市碑林区互助路2号)



※Transportation

From Xi'an railway station to Jianguo Hotel (5 km):

By Taxi: It is within 15 minutes and the fee is about 20 RMB.

By Bus: You can take bus No. 240, No. 903 or No. 517 and get off at Xingqing Road station (兴庆路站).

From Xi'an North Railway Station---High-speed rail station (18 km):

By Taxi: It is about one hour and the fee is about 50 RMB.

By subway: Take subway line 2 to Xiaozhai station(小寨站), and then transfer to subway line 3 and get off at Changle Park station(长乐公园站).

From Xi'an Xianyang International Airport to Jianguo Hotel (45 km):

By Taxi: It is about 60 minutes and the fee is less than 200 RMB.

By airport bus: You can take airport bus directly to Jianguo hotel from Xi'an xianyang international airport. It is about 80 minutes running time and charges of 25RMB.

※Notice

The ONLY registration desk is at the lobby of Jianguo Hotel.

In technical sessions, a keynote lecture should be finished in 20 minutes, including 5 minutes of Q&A. A normal oral presentation should be finished in 15 minutes, including 3~5 minutes of Q&A.

A presenter is kindly requested to be in the meeting room 15 minutes prior to the beginning of the session. The presenter should check whether the PowerPoint file works before the session begins.

※Practical Information

Weather

The weather in Xi'an at July will be hot. The temperature can be in 23-38 degrees Celsius or 73-100 degrees Fahrenheit.

Water

Tap water from your hotel is not safe for drinking. Please drink only boiled water or bottled water.

Electricity

The electrical power in China is 220V 50Hz, and most hotels provide 110V outlets for Shavers.

First Aid

Police: Call 110

Ambulance: Call 120

Fire: Call 119

Travel

Route 1: Terra-Cotta Warriors Meuseum and the Huaqing Pool (380 RMB per person for Chinese guest, 480 RMB per person for foreign guest)



The Terra-Cotta Warriors Museum is China's largest ancient military museum. In 1961, the state council of the People's Republic of China will be Emperor Qin as the national cultural relic protection unit. For the first Emperor Qin cemetery thorough archeological investigation begins. In 1962, the archeologists were plotted cemetery, the first piece of plane layout diagram via detecting, cemetery ranges 56.25 square kilometers, which is equivalent to nearly 78 palaces, cause the archaeology sensation. In 1987, the Emperor Qin and Terra Cotta Warriors pit "by UNESCO world heritage list approved listed in the", and is known as "eighth wonder of the world" make the whole world make amazing all Chinese proud.

The Huaqing Pool is located in the Lintong District 30 km east to the urban area of Xian. With Mount. Li to its south and the Wei River to its north, it boasts the natural hot springs. The favorable geographical condition and natural environment make it one of the cradles where ancient people settled and . It was also a favorite place for emperors to build their palaces as a resort. Since ancient times, it has ever been a famous bathing and tourist destination.

Route 2: Qianling and Famen Temple (350 RMB per person for Chinese guest, 450 RMB per person for foreign guest).

Qianling, the joint to tomb of Tang Emperor GaoZong (Li Zhi by name) and Empress WuZeTian, lies on Mount Liangshan in the north of Qianxian county, Shaanxi Province. It is 80 km from Xi' an. It' s among the first group of important cultural relics units under state protection.



Famen Temple, renowned for storing the veritable Finger Bone of the Sakyamuni Buddha, is located in Fufeng County of Shaanxi Province, 120km east of Xian and 96km west of Baoji. With a history of 1,700 years, Famen Temple is considered the "Forerunner of the Ziggurat in Central Shaanxi." The Famen Temple Cultural Scenic Area comprises four sectors including the Temple Gate Square, Foguang Avenue, Famen Temple, and the Namaste Dagoba. Upon completion the scenic area will be the "No. 2 Cultural Symbol of Shaanxi", second only to the Terra-Cotta Warriors and Horses. It will stand out as a world-class cultural scenic area featuring the "Time-honored Buddhist Holy Land and Age-old Classic Buddhist Site."

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