

# SHOWEXPRESS

2022

NO.72

The 33rd International Exhibition for Refrigeration, Air-conditioning, Heating and Ventilation,  
Frozen Food Processing, Packaging and Storage

August 1-3, 2022  
Chongqing International  
Expo Centre, China

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CHINA REFRIGERATION EXPO





# CONTENTS

## EXPECTATION

- 03 The 33<sup>rd</sup> China Refrigeration Expo will be Unveiled in Chongqing
- 04 Congratulation Messages

## ORGANIZATION

- 28 Timetable for CRH2022
- 28 CRH2022 Forum
- 30 CRH2022 Symposiums
- 32 Schedule for Technical Seminars
- 34 Ozone2Climate Technology Roadshow and Technology Industry Roundtable 2022
- 35 To Debut in CRH 2022: Demo Area of Demonstration Area of Light Commerical Refrigeration Technology and Solutions
- 36 Heat Pump Green Low Carbon Technology
- 37 Ready for Visit: China Refrigeration and Air-conditioning Equipment Eervicing and Maintenance Pavilion

## EXHIBITION

- 39 First Look at Some Exhibitors of China Refrigeration Expo 2022

### Organizers



### Show Management

### Co-organizer



## The 33<sup>rd</sup> China Refrigeration Expo will be Unveiled in Chongqing

The "33rd International Exhibition on refrigeration, air conditioning, heating, ventilation and food refrigeration processing" (hereinafter referred to as "China Refrigeration Exhibition"), jointly organized by the Beijing Branch of the China Council for the promotion of international trade, the China Refrigeration society and the China Refrigeration and air conditioning industry association, managed by Beijing International Exhibition Center Co., Ltd. and co organized by Chongqing refrigeration society, will be held in Chongqing International Expo Center from August 1 to 3, 2022.

The theme of this year's China Refrigeration Expo is "Focused on Innovation and Quality, Committed to Low Carbon and Health". There are 8 exhibition halls covering an area of nearly 80,000 square meters. There will be more than 600 exhibitors, including well-known brands in the global HVAC&R industry, attending the exhibition. In addition, the organizers of China Refrigeration Expo follow the current industry pulse closely and pay attention to upstream and downstream industries. During the exhibition, there will be theme forums, as well as over 50 special seminars and technical exchange meetings. The organizer will organize the chief engineers of national design institutes group, the refrigeration and cold storage sector group, HVAC industry user group and the national provincial refrigeration society group to strengthen in-depth exchanges with exhibitors and provide in-depth services for exhibitors; At the same time, the organizer will also set up professional exhibition areas in full combination with the development hotspots of the industry: demonstration area of light commercial refrigeration technology and solutions, ozone2climate technology roadshow, heat pump pavilion, and China refrigeration and air -conditioning equipment servicing and maintenance pavilion, so as to provide a platform for more exhibitors and visitors to display and exchange.

For more exhibitor news and organizer activities, please check the official publication of China Refrigeration Expo, namely China Refrigeration Expo Express, official website of China Refrigeration Expo (<http://www.cr-expo.com>), WeChat public account and official Tik Tok platform of China Refrigeration Expo.

China Refrigeration Expo looks forward to meeting you in Chongqing!







## Make the dual cycle smoother to assist transformation and development

Ma Changjun  
Former Deputy Director and First-Level  
Inspector of Beijing Branch of China Council  
for the Promotion of International Trade,  
President of Beijing Academy of International  
Economy and Trade

## Focus on Energy saving and carbon reduction to promote green development



Meng Qingguo  
Invited Vice President of Chinese  
Association of Refrigeration



## Focus on innovation and quality improvement to promote growth, and adhere to green and low-carbon for a better future

Li Jiang  
Chairman of China Refrigeration and Air-  
Conditioning Industry Association

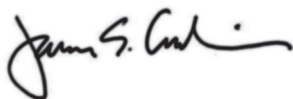


## Congratulatory Message to China Refrigeration Expo 2022

On behalf of United Nations Environment Programme (UNEP)'s OzonAction, we extend our congratulations on the opening of the 33rd International Exhibition for Refrigeration, Air-Conditioning, Heating and Ventilation, Frozen Food, Processing, Packaging and Storage (China Refrigeration Expo 2022)!

China is a leader in the refrigeration and air-conditioning industry and the world looks to China's example and innovations in this sector. One of the foremost issues is the cooling sector's relationship to sustainable development. Staying cool is essential for human health, productivity, and quality of life; and it is therefore linked to the achievement of the Sustainable Development Goals. Refrigerator and air conditioner sales are expected to experience enormous growth as incomes rise, especially in this region. Projections show that for the next 30 years, around the globe, 10 new air conditioners could be sold every second. The challenge is that the more we cool, the more we warm the planet - if we are not more careful about the energy efficiency of appliances and the environmental impact of the refrigerants inside them. The China Expo provides an ideal platform for us to work together to make sure that we sustainably develop the cooling sector; and that's also why we are so enthusiastic about cooperating with the RAC industry to promote greener and more efficient refrigeration and air-conditioning products and technologies.

With the support of the organizer of the China Refrigeration Exhibition, as part of the Expo, UNEP, Foreign Economic Cooperation Office, Ministry of Ecology and Environment, China (FECO/MEE), China Refrigeration and Air-Conditioning Industry Association (CRAA), and United Nations Development Programme (UNDP) continue to jointly organize the Ozone2Climate Technology Roadshow and Industry Roundtable. We look forward to your support by visiting the Roadshow and joining the Industry Roundtable.



James S. Curlin  
Head of OzonAction  
Law Division  
United Nations Environment Programme



**United Nations Development Programme**  
联合国开发计划署



On behalf of United Nations Development Programme (UNDP) in China, I would like to convey our congratulations to the 33rd International Exhibition for Refrigeration, Air-Conditioning, Heating and Ventilation, Frozen Food Processing, Packaging and Storage. (China Refrigeration Expo 2022).

The refrigeration and air conditioning industry affects all aspects of human production and life. In China, the electricity consumption of refrigeration and air conditioning systems accounts for more than 20% of the total electricity consumption of the whole society. It is a significant energy user has great energy-saving. China is also the world's largest consumer of refrigerants and is phasing out HCFCs refrigerants in accordance with the provisions of the Montreal Protocol and gradually phasing down HFCs refrigerants in accordance with the provisions of the Kigali Amendment.

The Chinese government has put forward the "Double Carbon Goal" of 2030 carbon peak and 2060 carbon neutrality. These bold commitments require the refrigeration and air conditioning industry to actively play its role by developing and promoting ozone-climate-friendly technologies and innovative technologies that are energy-saving and efficient.

UNDP in strong collaboration with Foreign Environmental Cooperation Centre, Ministry of Ecology and Environment (FECO/MEE) and China Refrigeration and Air-Conditioning Industry Association (CRAA) have worked closely in the implementation of the phase out of HCFC in the industrial and commercial refrigeration sector. Up to now, we have successfully implemented the sector plan and achieved the phase-out 35% of HCFC consumption in China by the year 2020 through the new refrigerants application especially the natural gases such as CO<sub>2</sub>, ammonia, hydrocarbon, technical innovation, and energy efficiency promotion. UNDP is committed to support China's phase-out of HCFC and goal of reducing 67.5% of HCFC consumption by 2025.

Humanity is facing the existential threat of climate change, as well as the interrelated environmental challenge of ozone layer depletion. UNDP reaffirms its commitment to work with all stakeholders in government, private sector and the international community and calls upon the refrigeration and air conditioning industry to jointly advance a common agenda that makes our planet inclusive, resilient sustainable for future generations.

Mr. James George

Deputy Resident Representative  
UNDP China



## Letter of congratulations

China Refrigeration is one of the world's most important events in the field of refrigeration.

Refrigeration is a strategic priority for the coming decades for each country all over the world. Refrigeration equipment will continue to be developed because of essential human needs, such as health and food security through the cold chain, air conditioning, cryogenic applications... The Covid-19 vaccine issue has just proved the importance of refrigeration for health applications worldwide. Since refrigeration requires more and more energy (it already accounts for 20% of the world's energy consumption) and still too many refrigerants with a high Global Warming Potential, we must continue to develop more environmentally friendly systems.

The International Institute of Refrigeration (IIR) publishes numerous policy notes for decision makers and guides for practitioners; the IIR organises conferences and webinars and participates in national projects thanks to international funding (see the IIR website [www.iifiir.org](http://www.iifiir.org)). The IIR is present in all regions of the world and is at the service of all stakeholders in refrigeration technologies and uses. China is a very active IIR member country and I am pleased to see the involvement of our colleagues from the Chinese Association of Refrigeration in organising events and participating in IIR publications, including in Chinese language.

Refrigeration is at the heart of global sustainable development goals. I congratulate the organisers of China Refrigeration 2022 and I wish them every success.



Didier Coulomb  
Director General





Dear president, dear directors, dear ladies and gentlemen, on behalf of the European Component Manufacturers (ASERCOM), I would like to congratulate to this year's China Refrigeration Exhibition Show.

It is a pity that I cannot join in person this wonderful and excellent show, but I think we will come back next year.

I wish you all success, and we will see each other next year in China.

Meine beste Grüsse auch in Deutsch-mein Heimatsprach zur Exhibition Show. Und ich wünsche den Veranstalten vielen Erfolg. Bis Spät. Dank!



Folker Franz  
Director General  
EPEE

Dear colleagues and friends,

On behalf of EPEE, please let me express my congratulations for the China Refrigeration Expo 2022.

EPEE, the European Partnership for Energy and the Environment, represents the value chain of the refrigeration, air conditioning and heat pump industry in Europe. It is more important than ever in these times, when travel is difficult, to remember that the refrigeration industry is a global community, and that together we make the world a better place. Without refrigeration there is no social progress.

By way of example, refrigeration has enabled the successful vaccine campaigns throughout the world against COVID-19 which we will hopefully combat even further this year.

Like China, the EU has been embarking on an ambitious decarbonisation journey for the coming decades. For this journey we need the most energy-, resource- and climate-efficient refrigeration equipment. This is our common goal and we will continue improving for the benefits of society.

It is EPEE's mission to promote a better understanding of the refrigeration, air conditioning and heat pump (RACHP) sector and contribute to the development of effective policies for long-term sustainability. We know that we have many partners on this mission who will be at China Refrigeration Expo 2022.

See you soon in person!

Best regards,

Folker Franz  
Director General of EPEE  
The Voice of the Refrigeration, Air Conditioning and Heat Pump Industry in Europe





## Letter of congratulations from Eurovent on CR Expo 2022

Dear colleagues from the Chinese Association of Refrigeration (CAR) and the China Refrigeration and Air-Conditioning Industry Association (CRAA).

We are delighted to hear of the 33rd China Refrigeration Expo scheduled to take place at the Chongqing International Exhibition Centre. We would like to take this opportunity on behalf of Eurovent (the European Industry Association for Indoor Climate, Process Cooling, and Food Cold Chain Technologies), Eurovent Middle East (Association of the region's leading HVACR manufacturers), and our entire network, to express our heartfelt congratulations to the China Refrigeration Expo organisers on this years' exhibition.

Organising this exhibition will not only pave way for manufacturers to demonstrate their products, but also elaborate on how our industry contributes to the welfare of all global citizens in many sectors. As the world already knew but was reassured of in the past two years, the HVACR sector is a crucial and vital aspect of our daily lives. The International Exhibition for Refrigeration, Air-conditioning, Heating and Ventilation, Frozen Food Processing, Packaging and Storage, which has been reputed as one of the world's leading exhibitions in the sector for over 20 years, will provide opportunity to showcase the importance of our industry, its safety and sustainable measures even more.

Although travel developments won't allow us to personally attend the event this year again, we are certain that the exhibition will be productive and successful. Eurovent, Eurovent Middle East and all the HVACR manufacturers we represent, would like to express gratitude for our strong cooperation and support, highlighting the importance of global developments between China, Europe and the Middle East.

Yours sincerely,

Raul Corredera Haener  
President  
Eurovent

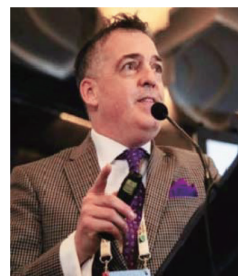


Felix Van Eyken  
Secretary General  
Eurovent



Tariq Al Ghusseini  
President  
Eurovent Middle East





To all of our dear friends in China and the refrigeration industry:

On behalf of the IIAR, we welcome all the participants to China Refrigeration Expo 2022 in beautiful and spicy Chongqing, China!

IIAR is honored to be associated once again with the event and its long-standing relationship with the CAR (Chinese Association of Refrigeration). We are quite impressed with CAR and its organizing committee for creating and executing this important event considering the tumultuous times that we are facing around the world, and we thank you for hosting us.

IIAR is the world's leading advocate for the safe, reliable, and efficient use of **NATURAL** refrigerant that are Ammonia, CO<sup>2</sup> and hydrocarbons. IIAR's members share their collective knowledge and experience to produce consensus documents that address various aspects of the **NATURAL** refrigeration industry.

IIAR has a very broad industry representation, including manufacturers, design engineers, specialized contractors, end users, academics, scientists, trainers, and students. IIAR members come from all over the world, more than 50 countries, with our material being available in English and Spanish. CAR has translated some of the most important standards and training materials to Chinese.

Since 1971 the IIAR sets the standard for providing advocacy, education, and the most up-to-date technical information to the **NATURAL** refrigeration community. We help professionals to develop their skills and further their careers by promoting the common interests of our growing membership.

**Our VISION:** To create a better world through the safe and sustainable use of **NATURAL** refrigerants

**Our MISSION:** To provide advocacy, education, and standards for the benefit of the global community in the safe and sustainable design, installation and operation of ammonia and other natural refrigerant systems.

IIAR wishes all the participants and visitors of China Refrigeration Expo 2022 a very successful conference and exhibition and we are looking forward to continuing the cooperation with CAR and the China refrigeration industry for the growing development and usage of **NATURAL** Refrigerants in China.

With our sincere and warmest regards.

A handwritten signature in black ink that reads 'Gary Schrift'.

Gary Schrift  
President of the IIAR

A handwritten signature in black ink that reads 'Guy Evon Cloutier'.

Guy Evon Cloutier  
Regional Vice-Chair-China and Asian Countries  
IIAR-International Committee



## CHINA REFRIGERATION 2022 EXPO ABRAVA's – CONGRATULATIONS

During the last 15 years, ABRAVA, is maintaining a great relationship with the entities representatives of the HVAC-R Industry of China, and in a very special way with the excellent team responsible for the planning and execution of one of the largest Trade Fairs of the world. We recognize the great value of having the opportunity to talk and to change ideas with friends of a country as important as China. So, for us, be speaking something on this global event is always a pleasure, because CR EXPO, has been along these years a synonym of: Innovative Product, Technical Exchange, Roadshows, Symposium and Theme Forums for discussion on the, direction of industry and technology development.

CR-Expo is the place where the HVAC-R global community have the opportunity to see each other and look for better solutions, for higher quality systems and higher quality environment for today and to the future generations.

On behalf of ABRAVA and our members, I would like to send our congratulations to the Organizing Committee and wish one more successful expo for exhibitors, organizers, and market in general, that the CR-2022 be the best of all.

Very truly of yours  
Samoel Vieira de Souza  
ABRAVA's International Affairs Director





On behalf of the 320 manufacturers of HVACR and water heating equipment that are members of the Air-Conditioning, Heating, and Refrigeration Institute (AHRI), I am pleased to extend best wishes to the organizers, sponsors, and exhibitors of the 2022 China Exhibition for Refrigeration, Air-conditioning, Heating and Ventilation, Frozen Food Processing, Packaging, and Storage. Even though the ongoing pandemic yet again prevents our ability to travel to China for the show, many AHRI member companies will exhibit at an event that beautifully illustrates the importance of the Chinese market. And even though we cannot participate in person, we are proud to have an excellent China-based staff, led by our Vice President of Asia Operations Bridge Xue, who will be at the show, interacting with our member companies and with our Chinese industry friends.

Through personal interactions and through their trade association, AHRI, our member companies with operations in China collaborate not just on individual business issues, but also on issues of common industry concern, including decarbonization initiatives, energy efficiency, refrigerant policy, and environmental stewardship. Some of that collaboration occurs on an individual company basis, while much occurs through our valuable partnerships with the China Refrigeration and Air Conditioning Association (CRAA) and the China Association of Refrigeration (CAR), both of which help AHRI members do business in China. CRAA is a longstanding member of the International Council of Air-Conditioning, Refrigeration, and Heating Manufacturers Associations (ICARHMA), which comprises 11 industry associations from around the world, strengthening our global industry.

Although I will be unable personally to travel to China to participate in the exhibition, I certainly look forward to the day when I can once again interact with old friends and continue our productive relationship, in person. We thank you for your friendship and hospitality and offer our best wishes for an excellent show!

Sincerely,

A handwritten signature in black ink, which appears to read "Stephen R. Yurek".

Stephen R. Yurek  
President and CEO



## Congratulations on China Refrigeration Expo 2022

Greetings!

On behalf of ASHRAE's Board of Directors and its more than 51,000 members around the world, I extend my best wishes to the Chinese Association of Refrigeration (CAR) and the China Refrigeration and Air-conditioning Industry Association (CRAA) on organizing China Refrigeration Expo 2022.

This is the Expo's 33rd year of showcasing the latest technological advances, reflecting some of the most significant developments and achievements in the HVAC&R industry. Our industry is confronting a time of many changes, as the world focuses on improving indoor environment quality and ventilation to mitigate the spread of infectious disease. We have an opportunity to lead through the sharing of knowledge and resources as we all continue to adapt and grow into what has been become our new way of life. China Refrigeration Expo is an important channel for sharing new products and technology.

"Personal Growth. Global Impact. Feed the Roots." ASHRAE's Society theme for 2021-22, explores ASHRAE's expansive root system from the Society's founding through its extraordinary global growth and impact to the built environment. China Refrigeration Expo reminds us that we all have ability to help someone grow – professionally and personally – by feeding their roots.

Through to the efforts of ASHRAE members in China and our valued relationship with CAR over the years, and we are collectively nourishing the roots of the global HVACR&R industry. Together, we will focus on solutions to new global challenges and seek innovative ways to shape our industry for decades to come.

I invite you to learn more about ASHRAE's activities by visiting ASHRAE online at [ashrae.org](http://ashrae.org) and by attending the 2022 ASHRAE Annual Conference in June 2022 in Toronto.

Best wish for a successful expo!

Sincerely,

A handwritten signature in black ink that reads "Mick Schwedler". The signature is fluid and cursive.

Mick Schwedler, P.E., Fellow ASHRAE, LEED AP



## Russian HVAC&R society ABOK

On behalf of Russian specialists in the HVAC&R field it is my pleasure to send warmly greetings to the guests and participants of the China Refrigeration Expo 2022!

At a time when the coronavirus pandemic continues to spread, the organization of this exhibition has a special meaning and shows the courage and high professional interest of its organizers. New technologies, which are presented at the exhibition, can be considered outstanding achievements in the field of smart technologies, energy saving and environmental friendliness.

China Refrigeration Expo 2022 has become one of the most significant and trustworthy events of the year; it makes a considerable contribution to the solution of the most important professional tasks, because it's an ideal base for the all-round contacts and could demonstrate the overall present-day resources of this branch. The show is characterized by a highly-professional visitor audience represented by the major Chinese and worldwide wholesalers and distributors, engineering design and installation, construction and real estate development companies.

Role of indoor climate quality and energy saving is very important, that these items represent the guideline of the exhibition's ideology and run through the scientific and business program of the China Refrigeration Expo 2022.

I would like to note well thought-out and accurate work of the organizers of the China Refrigeration Expo 2022. These companies open for broad cooperation, they can recruit different organizations, first of all, those determining construction' ideology, and mass media. I would like to note aspiration for more intellectual matter of the exhibition, not only reflecting the present-day state of the branch, but in many respects determining its tendency.

Co-operative work of the exhibition and symposium will set up the best conditions not only for mutually beneficial contracting, but also for promotion of the latest technology and developments in different fields of this branch of industry.

I wish all the participants and visitors of China Refrigeration Expo 2022 every success, expansion of business contacts and mutually beneficial partnership.

Russian HVAC society is looking for the close cooperation with Chinese Association of Refrigeration (CAR) and it's members in the indoor climate quality and energy saving engineering

**IURII TABUNSHCHIKOV, President ABOK (Russian HVAC&R society)**

Head of the Engineering Department of Moscow Architectural Institute (State Academy), Professor, Member of the Russian State Academy of Architecture and Construction Science, President of the Russian Heating, Ventilation, Air-Conditioning, Heat Supply and Constructional Thermal Physics Engineers Association (ABOK), ASHRAE Fellow member, VDI correspondent member, In 2007, he became a Nobel Prize Winner as a member of the International Panel on Climate Change (IPCC).



To the exhibitors and guests of China Refrigeration Expo 2022, I send my best regards from afar. Corona has dominated our daily lives for more than two years now, so it is a logical - if very regrettable - consequence that I will unfortunately not be able to visit the 33rd International Exhibition for Refrigeration, Air Conditioning, Heating and Ventilation, Frozen Food Processing, Packaging and Storage in person. I would therefore like to take this opportunity to wish you an innovative and varied exhibition programme, which will show the latest technological developments in the industry and provide an opportunity for good discussions and intensive exchange. I wish the organisers a successful course of the fair and hope to meet you in person on site at a later date.

Robert Hild  
Managing Director  
VDMA



# JARN



Dear Friends,

On behalf of all my colleagues at JARN, I would like to extend my warm congratulations for a very successful 33rd International Exhibition on Refrigeration, Air Conditioning, Heating, Ventilation, and Food Freezing and Processing in Chongqing!

At CR 2022, I would like to extend our greetings to stakeholders in the HVAC&R industry and readers of JARN around the world.

Unfortunately, I cannot attend this excellent exhibition due to the pandemic. As an old friend of CR, JARN has witnessed the vigorous development of China's refrigeration and air-conditioning industry and CR Expo itself.

Refrigeration equipment has been integrated into every aspect of human life and has become indispensable and inseparable. In the era of carbon neutrality, every responsible company is working hard to achieve this goal. I believe that many new energy-saving and environmentally friendly innovative products will emerge at this exhibition, bringing a better experience to consumers worldwide.

JARN will, as always, report the latest market information, technologies, and products for readers around the world. We are willing to work together with colleagues in the industry to grow together and achieve tremendous success!

May CR 2022 be a fruitful expo for everyone!

Sincerely yours,  
Keisho Ka (何继承)  
President  
JARN

Japan Air Conditioning, Heating & Refrigeration News



## CHINA REFRIGERATION 2022

I am Futoshi Nishizaki, chairman of The Japan Refrigeration and Air Conditioning Industry Association.

On behalf of the JRAIA member companies, I would like to express my sincere congratulations on the CHINA REFRIGERATION EXPO 2022 in Chongqing that brings together manufacturers, industry experts, and visitors.

Refrigerants management and energy efficiency are becoming more important for HVACR industry. We would like to further contribute to the industry development in cooperation with industry associations including CRAA.

I believe that this exhibition will provide the best opportunity for both exhibitors and visitors to exchange information on the latest technologies and to establish new businesses.

Congratulations again and wish all the best with success in this exhibition and hope that our close relationship will last for years to come.



## **Congratulation Message to China Refrigeration Expo 2022**

### **JSRAE President Kuniaki Kawamura**

Ladies and gentlemen, I am Kuniaki Kawamura president of JSRAE

JSRAE members all send our best wishes to China Refrigeration Expo 2022, one of the world's greatest events.

In the modern society, refrigeration and air-conditioning are essential items, and in Asia, many emerging technologies and tons of new products are developed and spread to the world.

During China Refrigeration Expo 2022, environmental and energy issues, including refrigerant issues, are expected to be discussed between the national and international attendees and exhibitors, and the results will contribute to humanity's greatest challenges.

Today, we have still serious situation with COVID-19 infection in the world, I hope this EXPO 2022 could contribute against this matter.

I wish the success of China Refrigeration Expo 2022 and the attendees and exhibitors. And also hope for the continued development of CAR, JSRAE, and other related societies, keeping friends with.



## Congratulation message for CR EXPO 2022

On behalf of KRAAC (Korea Refrigeration and Air-conditioning Assessment Center), I would like to congratulate this "China Refrigeration EXPO 2022". Since 2020, the world has been suffering from the COVID-19, and it is difficult for exhibitions to exchange as active as before. However, there are currently treatments available, and in some European countries, more and more countries are withdrawing their quarantine policies and opening them up. So I believe that in 2023, we will be able to celebrate each other face-to-face and the exhibition will be even more active.

Now, around the world, high-efficiency products are basic, and interested in eco-friendly products is increasing. So companies are also developing and applying low GWP refrigerants while ODP 0 is the default for eco-friendly refrigerants. The number of products using renewable energy sources such as geothermal heat, hydrothermal heat, solar heat and solar power is also increasing. In addition, we are encouraging the development of low-carbon products in the future by implementing carbon reduction policies in each country in stages. I think it will be helpful for both of China and Korea, with the cooperation of each other in the new technology and information of HVACR field thru CR EXPO.

KRAAC has been established in 2006 as non-profitable organization for assisting Korean HVAC companies to get oversea certifications. We worked for testing, assessment, technology development and energy policy in HVACR field in Korea and focused on the efficiency and verification tests related to MEPs of Korea.

Finally, I would like to congratulate deeply again and express my sincere appreciation to the members of the China Association of Refrigeration (CAR) and China Refrigeration and Air-conditioning Industry Association (CRAA) for their efforts to hold this exhibition "China Refrigeration EXPO 2022"

Jungtae Woo, President  
Korea Refrigeration and Air-conditioning Assessment Center (KRAAC)





Hello!

I'm Kang Sung-hee, Chairman of Korea Refrigeration and Air-conditioning Industry Association.

Heartfelt congratulations on the hosting of China Refrigeration Exhibition 2022.

Since its first opening in 1987, China Refrigeration Exhibition has grown into the world's largest refrigeration and air conditioning exhibition.

With the global spread of COVID-19, the refrigeration, heating and air conditioning industry is playing an increasingly important part in improving indoor air quality.

In this situation, the industry has been striving to overcome the pandemic and develop new technologies for human sustainable development.

It is hoped that new technology products such as anti-virus products, "heat pump system" combined with artificial intelligence (AI) technology and "high-efficiency refrigerator" with low GWP (global warming index) new refrigerant can create new value and drive the development of the industry.

Finally, I would like to thank all of you and enterprises of China Refrigeration and Air-conditioning Industry Association and China Association of Refrigeration, who are leading the development of the world's refrigeration, heating and air conditioning industry. We expect that China Refrigeration Exhibition 2022 will become a celebration for global refrigeration and air conditioning industry.

Thank you!

Kang Sung-hee, Chairman of Korea Refrigeration and Air-conditioning Industry Association



## Congratulatory Message from President of SAREK

It is my great pleasure to celebrate China Refrigeration Expo 2022 to be held in Chongqing. I appreciate your friendly invitation from the CAR (Chinese Association of Refrigeration). Unfortunately, COVID situation still prevents foreign travel, thus it is not so easy to join the exhibition physically this year. However, I am sure this exhibition provides a great opportunity to see the new trend of refrigeration and air conditioning industry. In addition, this will be of paramount importance to meet experienced people from several countries. In quality and diversity, this CR Expo can be compared with none. In this Expo, creative ideas behind the high-tech products are easily found. From my long history of participation in CR Expo, I have a strong belief that development is carried out in the most brilliant way for integrated systems, products, components, algorithms, and efficient controls. I am sure this Expo will provide fruitful information to our refrigeration and air-conditioning society.

This exhibition has been held more than 30 years, and we should acknowledge that this Expo contributes to our industry and society all over the world. The importance of refrigeration and air-conditioning cannot be exaggerated because these are closely tied with our daily life in view of comfort living and efficient working environment together with clean industrial manufacturing. Also, COVID spread can be weakened by virtue of our air-conditioning system. Ventilation and filtering are the essential processes to minimize the diffusion providing safe and healthy environment. I expect lots of ideas and products in relation with COVID are widely found in this China Refrigeration Expo, and I am sure it will certainly offer valuable information to the participants.

As always, the members of the CAR put lots of valuable efforts in preparing the Expo, and I really appreciate their unselfish contribution. I would like to express my great thanks to the related members for their dedication and sacrifice. I hope every participant will congratulate us on this event, too. Needless to say, SAREK and CAR will keep an intimate relation for everlasting partnership and future collaboration. I would like to send my sincere gratitude on this wonderful China Refrigeration Expo.

With Warmest regards

A handwritten signature in blue ink, which appears to read "Kang". To the right of the signature is a red circular official seal with Chinese characters.

Yong Tae KANG, PhD, Professor, Korea University  
President

The Society of Air-conditioning and Refrigerating Engineers of Korea (SAREK)



台灣區冷凍空調工程工業同業公會  
Taiwan Refrigeration & Air-conditioning Engineering Association of R.O.C.



恭祝二〇二二年第三十三屆中國制冷展

駿業啟興  
展出成功

台灣區冷凍空調工程工業同業公會  
理事長 段春雷 敬賀



香港荃灣灣角街 35-45 號裕豐工業大廈 13 樓 7 室  
電話: 2890 2622 傳真: 2890 2653 網址: www.hkaee.org

Rm 7, 13/F, Yue Fung Ind. Bldg., 35-45 Chai Wan Kok Street, Tsuen Wan, HK  
Tel: (852) 2890 2622 Fax: (852) 2890 2653 Website: www.hkaee.org



香港能源工程師學會會長

刘剑伟工程师

敬贺

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香港註冊專門承建商（通風系統）協會  
HONG KONG REGISTERED SPECIALIST CONTRACTORS (VENTILATION) ASSOCIATION

主席 蕭一鳴

# 匯聚同業 共建繁榮



The Hong Kong Air Conditioning and Refrigeration Association Limited  
香港空調及冷凍商會有限公司

A Founding Association of HKFEMC



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## Timetable for CRH2022

DATE	TIME	PROGRAMME	VENUE
August 1	09:00-11:50	Opening Ceremony CRH2022 Forum	Fiesta Function Room, 1st Floor, Chongqing Yuelai International Convention Center
August 1-2	09:30-17:00	CRH2022 Symposiums	Meeting Rooms,CQEXPO
July 31-August 2	08:30-18:00	Technical Seminars	Xandu Moon Hotel Jinling Grand Banquet(Hall B), 3F, Jinling Grand Hotel
August 1-2	09:00-17:00	Technical Seminars	Meeting Rooms,CQEXPO
August 1	09:00-17:00	Exhibition	ChongQing International Expo Center
August 2	09:00-17:00		
August 3	09:00-16:00		

## CRH2022 Forum

DATE	TIEM	TOPIC	SPEAKER		VENUE
August 1 09:00-11:50	Opening Ceremony and Forum of CRH 2022	1. Refrigeration and Climate Change	JIANG Yi	Academician of Chinese Academy of Engineering, Chairman of Chinese Association of Refrigeration, Director of Building Energy Research Center of Tsinghua University	Fiesta Function Room, 1st Floor, Chongqing Yuelai International Convention Center
		2.Domestic and International Economic Situation and Game Pattern of Great Powers	PU Yongjian	Second-level Professor, School of Economics and Business Administration, Chongqing University	
		3.Briefing on the Trend of Refrigerant Substitution in China under the Background of “Carbon Peak and Neutrality Goals” and “Kigali Amendment”	GUO Xiaolin	Deputy Division Chief of MP, Foreign Environmental Cooperation Center, Ministry of Ecology and Environment (FECO)	
		4.Our Industry and the Environment: A Worthy Partnership	Stephen R. Yurek	President and CEO of Air-Conditioning, Heating, and Refrigeration Institute (AHRI)	

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## CRH2022 Symposiums

DATE	TIME	TOPIC	VENUE
August 1	14:15-17:00	Symposium 1: The 7th Light Commercial Refrigeration Technology Innovation and Development Forum	N-M101, CQEXPO
	14:30-17:00	Symposium 2: Development of Carbon Neutral Refrigeration Technology——Carbon Neutral Technology in Cold Chain Industry Sub-forum	N-M102, CQEXPO
	14:00-16:30	Symposium 3: Technical Seminar on New Standards for Refrigeration and Air-Conditioning Equipment	N-M106, CQEXPO
	14:00-16:30	Symposium 4: Large-space Building and Transportation Station Thematic Forum	N-M206, CQEXPO
	14:00-16:30	Symposium 5: Research, Development and Application of Radiant Air Conditioning"	Meeting Room N6-2, CQEXPO
	14:15-17:00	Symposium 6: Technical Forum for Variable Refrigerant Flow (VRF) Air-conditioning System	Meeting Room N6-1, CQEXPO
	14:30-17:00	Symposium 7: Development of Carbon Neutral Refrigeration Technology——Roadmap of Air Conditioning System to Carbon Neutrality Sub-forum	Meeting Room N5-2, CQEXPO
	14:30-17:00	Symposium 8: Development of Carbon Neutral Refrigeration Technology——Refrigerant and Carbon Neutrality Sub-forum	Meeting Room N5-1, CQEXPO
	13:30-16:30	Symposium 9: 2022 Ozone2Climate Technology Industry Roundtable	Ozone2Climate Technology Roadshow(Booth#N5G63), CQEXPO
	14:00-17:00	Symposium 10: Focus on Carbon Neutrality and High Energy Efficiency——Green and Low Carbon Data Center Cooling Technology Forum	Meeting Room N3-2, CQEXPO
	14:00-16:30	Symposium 11: New Technology of Refrigerating Compressor	Meeting Room N3-1, CQEXPO
	13:30-16:30	Symposium 12: Forum on China Refrigeration and Air-conditioning Equipment Servicing and Maintenance	China Refrigeration and Air-conditioning Equipment Servicing and Maintenance Pavillion(Booth#N3F39), CQEXPO
August 2	09:30-16:30	Symposium 9: 2022 Ozone2Climate Technology Industry Roundtable	Ozone2Climate Technology Roadshow(Booth#N5G63), CQEXPO
	09:30-11:30 13:30-16:30	Symposium 12: Forum on China Refrigeration and Air-conditioning Equipment Servicing and Maintenance	China Refrigeration and Air-conditioning Equipment Servicing and Maintenance Pavillion(Booth#N3F39), CQEXPO

DATE	TIME	TOPIC	VENUE
August 2	09:30-12:00	Symposium 13: Development of Carbon Neutral Refrigeration Technology——Low Carbon Solution for Space Heating and Cooling International Sub-forum (Online, Simultaneous Interpretation)	Online 
	09:30-12:00	Symposium 14: Application of HVAC Technology in Agriculture and Animal Husbandry	N-M101, CQEXPO
	09:30-12:00	Symposium 15: Cold Chain New Technology under Carbon Peaking and Carbon Neutrality Goals	N-M102, CQEXPO
	09:30-12:00	Symposium 16: Green Winter Olympics -- the Effect on and the Prospect of China Refrigeration Industry	N-M104, CQEXPO
	09:30-11:00	Symposium 17: Symposium on quality Improvement of refrigeration and air conditioning components	N-M105, CQEXPO
	11:00-12:30	Symposium 18: Symposium on Quality Improvement of Multi-Connected Air Condition (Heat Pump) units	
	09:30-12:00	Symposium 19: PEDF (photovoltaics, energy storage, direct current, flexibility) Technology Development and Practical Application Forum	N-M206, CQEXPO
	09:30-12:00	Symposium 20: Energy Efficiency and Quality Improvement of Building Composite Cold and Heat Source System	Meeting Room N6-2, CQEXPO
	09:30-12:00	Symposium 21: Development of Carbon Neutral Refrigeration Technology——Roadmap of Data Center Cooling Technologies for Carbon Neutrality Sub-forum	Meeting Room N5-2, CQEXPO
	09:30-12:00	Symposium 22: Development of Carbon Neutral Refrigeration Technology——In Face of Carbon Neutrality, Opportunities and Challenges of the Electric Thermal Management Technology Future Development Sub-forum	Meeting Room N5-1, CQEXPO
	09:30-12:00	Symposium 23: The 4th Indoor Air Purification and Fresh Air Technology Symposium	Meeting Room N3-2, CQEXPO
	09:30-12:00	Symposium 24: Evaporative Cooling Air Conditioning Technology and Its Application under Goals of Carbon Peaking and Carbon Neutrality	Meeting Room N3-1, CQEXPO
	14:00-16:30	Symposium 25: Development of Carbon Neutral Refrigeration Technology——Carbon Neutral Technical Development in Cold Chain Industry International Sub-forum (Online, Simultaneous Interpretation)	Online 
	14:00-16:30	Symposium 26: Agricultural Products Cold Chain and Processing Technology Forum	N-M101, CQEXPO
	14:30-16:30	Symposium 27: Symposium on Refrigeration Technology for Ice and Snow Industry	N-M105, CQEXPO

DATE	TIME	TOPIC	VENUE
August 2	14:00-16:30	Symposium28: Energy Efficiency Operation of HVAC Systems in Airport Terminals	N-M206, CQEXPO
	14:00-16:30	Symposium 29: Discussion on Medical Architecture Design in Epidemic Era	Meeting Room N6-2, CQEXPO
	14:00-16:30	Symposium 30: Development of Carbon Neutral Refrigeration Technology——Heat Pump and Carbon Neutral Sub-forum	Meeting Room N5-2, CQEXPO
	14:00-16:30	Symposium 31: Development of Carbon Neutral Refrigeration Technology——Technology Tendency of the Key Components Based on the Background of Carbon Neutralization Sub-forum	Meeting Room N5-1, CQEXPO
	14:00-16:30	Symposium 32: R&HVAC for Rail Transit	Meeting Room N3-2, CQEXPO
	13:30-16:30	Symposium 33: Seminar on Development Trends of Refrigeration and Air Conditioning Industry under Carbon Peaking and Carbon Neutrality Goals	Meeting Room N3-1, CQEXPO
	14:30-17:00	Symposium 34: Forum on Green and Low-carbon Heat Pump Technology	Heat Pump Pavillion (Booth#N2G63), CQEXPO

Schedule for Technical Seminars

DATE	TIME	COMPANY	TOPIC	VENUE
July 31	09:00-18:00	The Organizing Committee of China Refrigeration Expo	Training: Technical Development of Light Commercial Refrigeration Equipment	Xandu Moon Hotel
August 1	11:00-12:30	China Refrigeration and Air-Conditioning Industry Association (CRAA)	Awarding Ceremony of the 16th Science and Technology Contests for College Students of China R&AC Industry(Dunham-bush Cup)	N-M105, CQEXPO
	13:00-14:00	Chinese Association of Refrigeration	The Launch Event of Roadmap of Refrigeration Technologies Oriented to Carbon Neutrality	Meeting Room N5-1, CQEXPO
	14:00-16:00	Panasonic Electric Equipment (China) Co.,Ltd.	Panasonic Electrical Equipment Business Strategy Conference	N-M103, CQEXPO
	15:00-17:00	GREE ELECTRIC APPLIANCES, INC.OF ZHUHAI	Gree Dunan joint solution	N-M202, CQEXPO

DATE	TIME	COMPANY	TOPIC	VENUE
August 2	08:30-12:00	The Organizing Committee of China Refrigeration Expo Building Environment and Energy Utilization Branch of China Engineering & Consulting Association	Technical Seminar of National Chief Engineer Delegation	Jinling Grand Banquet(Hall B), 3F, Jinling Grand Hotel
	9:15-10:45		The Launch Event of Curiosities of a Craftsman--Collected Works of Desheng WU	N-M103, CQEXPO
	09:30-12:00	Chinese Association of Refrigeration	Outstanding Engineer Forums of Chinese Association of Refrigeration	N-M201, CQEXPO
	11:00-12:00	Chinese Association of Refrigeration National Steering Subcommittee for Higher Education in Building Environment and Energy Engineering	CAR-ASHRAE Student Design Project Competition Award 2021	Meeting Room N6-1, CQEXPO
	14:00-14:30	Shenzhen Syslab Electronics Co.,Ltd.	The energy storage air conditioner market prospect and controller solution	N-M103, CQEXPO
	15:00-15:40		The ICT variable frequency direct expansion products application and analysis	
	16:00-16:30		The variable frequency drive control technology in HVAC application	
	14:00-16:00	Chinese Association of Refrigeration	The Launch Event of Cold Chain Industry and Technology Development Report	Meeting Room N6-1, CQEXPO
	14:00-16:30	Chongqing Institute of Refrigeration China Electronic Energy Saving Technology Association	High Efficiency Computer Room Certification Guidelines and Declaration Exchange Meeting	N-M102, CQEXPO
	14:00-16:30	China National Institute of Standardization Energy Foundation China Southeast University	Seminar on Energy-saving Technology and Standards for Water Chiller (Heat Pump) Units	N-M201, CQEXPO
	14:00-17:00	Honeywell China Company Limited	Honeywell Efficient and Environmental-friendly Refrigerants Introduction and Application	N-M104, CQEXPO

## Ozone2Climate Technology Roadshow and Technology Industry Roundtable 2022

The ozone2climate technology roadshow and technology industry roundtable 2022 will be held at booth N5G63 of the 33<sup>rd</sup> China Refrigeration Expo from August 1<sup>st</sup> to 3<sup>rd</sup>.

Since the ozone2climate technology roadshow and technology industry roundtable event in 2012 settled in China Refrigeration Expo, it has developed into a significant platform for the exchange of ozone and climate friendly information in the global industries of refrigeration and HVAC&R. Experts from government departments, international institutions, industry associations, enterprises, research institutes and other units shared the latest policies and regulations, technology development, standard progress, achievements and experience, making indispensable contributions to the elimination of ODS in the domestic and global refrigeration and air-conditioning industry.

In recent years, China has proposed the "dual carbon goals" of carbon peaking and carbon neutrality. In 2021, China has joined the *Kigali Amendment of "Montreal Protocol"* formally, aiming to promote the refrigeration and air-conditioning industry to choose more environmentally friendly, greener and more energy-efficient products and technologies with the goals of HCFCs elimination, carbon emission reduction and HFCs reduction. On this occasion, the four organizers of the ozone2climate technology roadshow and technology industry roundtable, namely the United Nations Environment Programme (UNEP), the United Nations Development Programme (UNDP), the Foreign Environment Cooperation Center, Ministry of Ecology and Environment (FECO), and China Refrigeration and Air-Conditioning Industry Association (CRAA), will conduct a series of technology demonstrations and exchange events during the roadshow and technology industry roundtable.

Schedule for series events:

Event		Time	Venue
Ozone2climate Technology Roadshow		August 1~3 9:00~16:30	Booth N5G63
Industry Roundtable	Conference Keynote Speech	August 1 13:30~16:30	
	Air Conditioning and Cold Chain Technology	Aug 2 9:30~12:00	
	Good Practice of Maintenance	August 3 13:30~16:30	

## To Debut in CRH 2022: Demo Area of Demonstration Area of Light Commercial Refrigeration Technology and Solutions

To carry out the CPC and governmental policies on accelerating the cold chain logistics, assuring the food safety and advancing the upgraded consumption, and to put in place the *Action Plan for Green & Efficient Refrigeration*, we put up a demonstration area of light commercial refrigeration technology and solutions (LC demo area in short) during CRH 2022.

The demo area is located in the booth N8G63 of pavilion N8 within Chongqing Expo Center. The exhibitors are as follows:

Dalian Bingshan Group Panasonic Coldchain Co., Ltd

Shanghai Highly (Group) Co., Ltd

Wanbao Group Compressor Co., Ltd

SECOP Compressor (Tianjin) Co., Ltd

Changhong Huayi Compressor Co., Ltd

National Center for Testing Commercial Refrigerators (NCTCR)

The demo area further establishes the Demo Zone for Light Commercial Refrigeration New Deliverables, which aims to exhibiting the latest technical achievements and products in the field, included in the Blue Paper for China Light Commercial Refrigeration Industry and Technology Development (2021).

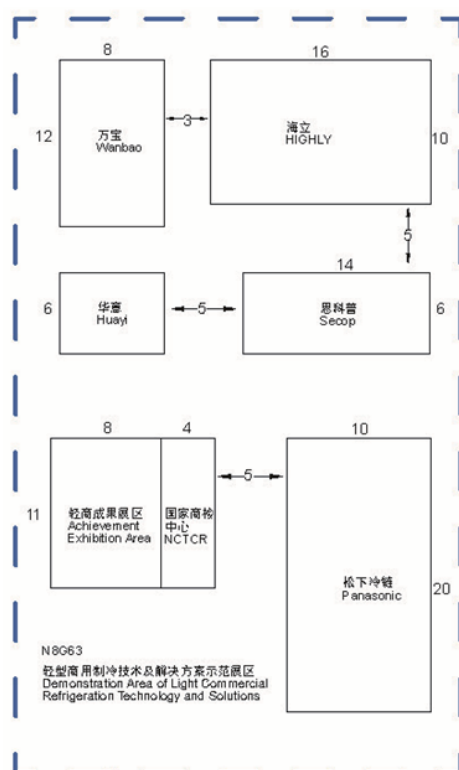
In parallel with the said demo area, we will also launch a training on technology development on light commercial refrigerators on July 31st and seminar named the 7th Innovative Development Forum on Light Commercial Refrigeration Technology on August 1st.

Please attend to the related information for more details.

Contact person: Sun Yukun with Chinese Association of Refrigeration (CAR)

Contact number: 18513665468

Mailbox: yksun@car.org.cn





## Heat Pump Green Low Carbon Technology ——Heat Pump Pavilion during CRH 2022

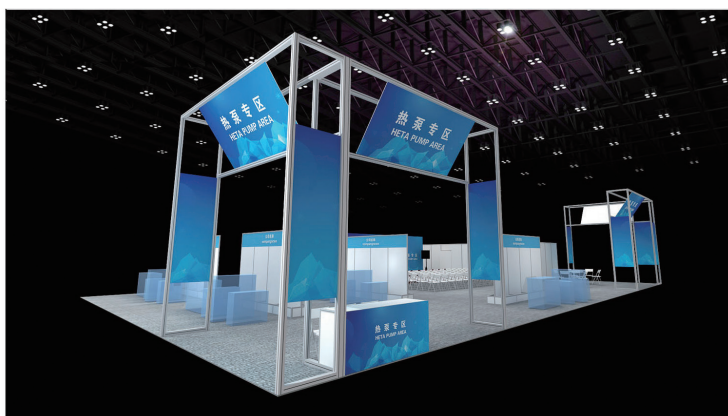
The Heat Pump Pavilion will make its debut on August 1-3<sup>rd</sup> during 33<sup>rd</sup> International Exhibition for Refrigeration, Air-conditioning, Heating and Ventilation, Frozen Food Processing, Packaging and Storage(China Refrigeration Expo).

China is strong in researching, producing and using refrigerators and heat pumps. Thanks to the push from the heating policy relating to replace the coal with clean energy in North China, the heating demand from South China grows stronger and stronger, such that the heat pump turns into one of the best sellers in the industry. To assist in the quality-oriented development for the heat pump, CRH organizing committee determines to set up the heat pump booth and launch the related campaigns same as last year. As entrusted by the CRH organizing committee, the booth is sponsored by CRAA Heat Pump Branch and co-sponsored by GMPI, and makers engaging in the domestic mainstream heat pumps and their key parts offer vigorous supports in this respect.

The Heat Pump Pavilion, covers an area of 800 square meters, follows the theme of heat pump green and low carbon technology, and all-round exhibits the heat pumps technical merits in saving the energy and carbon emission. The major heat pump manufacturers in China, such as TICA, AMA, OUTES, ARCO and GREEM will exhibit their latest technology and products. The mainstream heat pump key parts makers consisted of Bitzer, Emerson, Danfoss, Changrong and TATSUKIN will also showcase their latest technology and commercial applications.

The Pavilion will further hold open-themed technical exchange in relation with the heat pump green and low carbon technology, which may cover the following latest technology in the heat pump industry: the latest research progress for heat pump working with natural working fluid, quasi-stage-two compressed air and fluid injection for enhanced heating technology at low temperature, air source heat pump technology compatible with wide temperature gap, integrated solution for energy island etc.

Lets meet in N2G63 Heat Pump Pavilion.



## Ready for Visit: China Refrigeration and Air-conditioning Equipment Servicing and Maintenance Pavilion

CRH 2022, owing to the disruption of the pandemic, is postponed to launch, a hit to the exhibitors zeal to visit the China refrigeration and air-conditioning equipment servicing and maintenance pavilion. Thanks to unremitting endeavor undertaken by CRH organizing committee, and strong supports from the China Refrigeration and Air-Conditioning Industry Association (CRAA) and exhibitors, we have made ready for the 33rd CRH China refrigeration and air-conditioning equipment servicing and maintenance pavilion, wherein we are willing to disclose some sidelights to satisfy your expectation to visit.

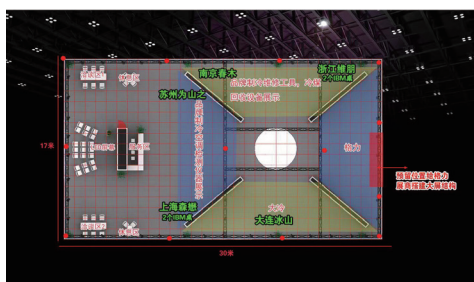
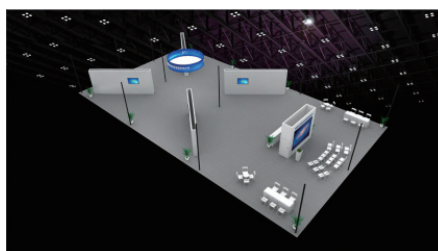
Such dedicated area aims to indicating that the aftermarket standard service is to be offered with platform by the industrial association and expo, led by the brand companies in the field, and followed by the small and micro businesses. By virtue of such synergy, we work harder at leading the industry development in terms of the credibility system, carrying forward the craftsmanship, and standardizing the aftermarket service in this connection.

The exhibition area will focus on the themes consisted of the carbon peak and neutrality (twin carbon in short) and normalized epidemic control, and it is planned to launch three seminars centering on the said themes:

Seminar 1: how to respond to the opportunities and challenges from twin carbon and normalized epidemic control by the companies engaging in the aftermarket standard service.

Seminar 2: how to lead the aftermarket standard service by brand companies.

Seminar 3: how to upgrade their own standard service by the small and micro businesses to act as the fresh role in reinforcing the aftermarket standard service.



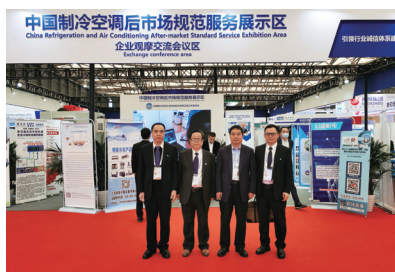
During the seminar 1, we have invited a trans-boundary master in the industry to interact with the audience, which will be lively broadcast globally in the name of a specialized seminar.

Seminar 1: how to respond to the opportunities and challenges from twin carbon and normalized epidemic control by the companies engaging in the aftermarket standard service.

Date: Afternoon, August 1st, 2022 Venue: The China Refrigeration and Air Conditioning After-market Standard Service Exhibition Area (Booth No.N3F39)

SN	Companies and universities	Subjects	Speakers
1	Logistical Engineering University	Reflection on Four-Modernization in context of twin carbon	Professor Wu Xiangsheng
2	Army Medical University	Risk Access and O&M Management for Hospital AC Epidemic Spread	Professor Liao Youbin
4	Suzhou Weishanzhi Environmental Technology Co.,Ltd	Heat Pump Arena in context of Twin Carbon	CTO Yan Huan
5	Nanjing CM Refrigerating Electromechanical Equipment Co., Ltd	Coolant Recycle and Reuse Help Twin Carbon and Environment	GM Li Xingyin
6	Technical Consulting Special Committee of CAR (Xuzhou) CRAA (Xuzhou)	Coldchain Technology Supports twin Carbon and Environment	President Li Su
7	CRAA Engineering Committee	how to respond to the opportunities and challenges from twin carbon and normalized epidemic control by the companies engaging in the aftermarket standard service	Secretary-general Li Guoqun

When looking back to the resounding echo during the first debut in 32nd CRH (Shanghai) of China Refrigeration and Air Conditioning After-market Standard Service Exhibition Area, it is convinced that it will be the very zone on tiptoe expectation during 33rd CRH (Chongqing).



## Focused on Goals of Carbon Neutrality and Emission Peaking towards Innovation Development

### ---The 13th "Chief Engineer Group of National Design Institutes" Meets in Chongqing

Entrusted by the Organizing Committee of China Refrigeration Expo, hosted by the China Refrigeration and Air-Conditioning Industry Association and the Building Environment and Energy Application Branch of China Engineering and Consulting Association, the 13th activity on "National Engineering Group of National Design Institutes"(hereinafter referred to as the Chief Engineer Group), undertaken by Beijing CRAA Quality Certification Center Co., Ltd., will be held at the China Refrigeration Expo 2022.

The "Chief Engineer Group" is composed of designing experts from the national design institutes and architecture institutes. The "Chief Engineer Group" activity has also become a link between the design institutes and enterprises, establishing a platform for exchanges between the companies and designers face-to-face for in-depth exchanges. More opportunities for cooperation may appear by continuous exchanges and discussions.

Since its establishment in 2010, the "Chief Engineer Group" has been successfully held for 12 consecutive sessions. As one of the iconic theme activities of China Refrigeration Expo, it is popular in the majority of users, enterprises and designers. With the continuous growth of the "Chief Engineer Group", it has attracted more and more attention from users and enterprises, and more and more chief engineers and experts in HVAC design has joined the group. The number of members has reached 127 in 2021.

The "Chief Engineer Group" activity this year actively responded to China's call for the refrigeration industry. The theme of this activity, "Focused on Goals of Carbon Neutrality and Emission Peaking towards Innovation Development", advocates to actively promote the "carbon neutrality" action, from the design and development, production and manufacturing, operation and maintenance, as well as personal use of HVAC products.

The "Chief Engineer Group", bringing designers from all over the country gathered in Chongqing, using their

experience, wisdom and innovative ideas to check and diagnose the product of enterprises. They will provide users with the optimal suggestions and solutions in terms of product technology route selection and market application, to promote the value of enterprises participating in the exhibition comprehensively.

The "Chief Engineer Group of National Design Institutes" activities during the Expo include the following contents.

1. From 9:00-12:00 on August 1st, the chief engineers of the group will participate in the opening ceremony and the theme forums of the 33rd China Refrigeration Expo, and listen to the theme reports.
2. From 13:00 to 13:30 on August 1, the *"Proposal for Comprehensively Promoting Carbon Neutrality in the HVACR Industry"* will be released.
3. From 14:00-17:00 on August 1st, the chief workers of the "Chief Engineer Group" will be organized to go to the exhibition booths for technical exchanges.
4. The technical exchange meeting of the "Chief Engineer Group of National Design Institutes" will be held from 8:30-12:00 on August 2nd. There will be a chief engineer speech session, a corporate speech session, and an interactive forum at the meeting. The conference will be conducted by means of offline and online live video to share the high-end event with more experts, scholars, enterprises and users.

In order to jointly promote the healthy development of the HVAC industry, Beijing CRAA Quality Certification Center Co., Ltd. sincerely invites enterprises, experts, and scholars in the industry to participate in the "Chief Engineer Group of National Design Institutes" in 2022. Please contact Beijing CRAA Quality Certification Center Co., Ltd. if there is a will.

Contact: Xiao Xingran  
Telephone: 010-83510099-692  
Email: [craa-cert@chinacraa.org](mailto:craa-cert@chinacraa.org)



## The Award Ceremony of the 16th "Dunham Bush Cup" Science and Technology Competition for College Students in China Refrigeration and Air Conditioning Industry will be Held at the 33rd China Refrigeration Expo on August 1, 2022.


The Science and Technology Competition for College Students in China Refrigeration and Air Conditioning Industry is hosted by the China Refrigeration and Air-conditioning Industry Association and guided by the Teaching Guidance Committee of Energy Power Disciplines in Colleges and Universities of the Ministry of Education. Its purpose is to help promote the innovation and reform of the curriculum system and content in the 21st century in the disciplines of energy power, building environment and energy application engineering in colleges and universities, assist colleges and universities to implement quality education, and promote and guide young students to actively participate in extracurricular science and technology activities. It aims to cultivate students' innovative ability and engineering quality through more scientific and technological practice, and create cultivation conditions for the outstanding reserve talents in the industry. After more than ten years of development, it has become a competition platform for students from colleges and universities in energy power, built environment and other related majors to actively participate and pay attention.

The competition this year is exclusively titled and co-organized by Dunham Bush (China) Industry Co., Ltd. Preliminaries will be set up in six major regions across China, undertaken by Tianjin University of Commerce, Southeast University, East China Jiaotong University, Guangdong University of Technology, Xian Engineering University, and Harbin Institute of Technology. Affected by the epidemic in the first half of the year, only the innovative defense competition for undergraduates was held online this year, but the students were still enthusiastic about the competition. In the preliminaries, the competition organizing committee received a total of 175 innovative design works from 117 colleges and universities across China. After the communication review, a total of 42 teams from 40 schools were shortlisted for the finals. On July 13, these 42 teams passed the online defense and competed for the first and second prizes.

From 11:00 to 12:30 on August 1, 2022, the award ceremony of the 16th "Dunham Bush Cup" Science and Technology Competition for College Students in China Refrigeration and Air Conditioning Industry will be held at Conference Room M105, Hall N, Chongqing International Expo Center. Lucky draw activity will be carried out for participants in the knowledge quiz and video exhibition activities during the competition. Looking forward to know who will get the rewards. Please stay tuned!

### “顿汉布什杯”第十六届中国制冷空调行业 大学生科技竞赛

2022年5-7月



**主办单位:** 中国制冷空调工业协会

**指导单位:** 教育部高等学校能源动力类专业教学指导委员会

**协办单位:** 顿汉布什(中国)工业有限公司

**组织单位:** 中国制冷空调工业协会、北京工业大学

**联合组织:** 清华大学、天津商业大学、浙江大学、东南大学、上海理工大学、华中科技大学、湖南大学、郑州大学、华南理工大学、广东工业大学、西安交通大学、西安工程大学、哈尔滨商业大学、哈尔滨工业大学

**承办单位:** 天津商业大学、东南大学、华东交通大学、广东工业大学、西安工程大学、哈尔滨工业大学

**媒体支持:** 《制冷与空调》、中国制冷与空调网

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# Digital Empowerment and Low-carbon Development, Together for a Shared Future

## ——Bingshan Group launched new energy-saving and carbon-reducing products and solutions

Bingshan Group will bring new technologies, products and solutions for cooling and heating following the philosophy of "digital empowerment and low-carbon development" to the China (Chongqing) Refrigeration Expo 2022, to communicate with manufacturers in the industry.

Achieving "Emission peaking and carbon neutrality" is the main part of Bingshan's cold and heat business. In recent years, Bingshan Group has developed high-efficiency compressors, green refrigerants, air source heat pumps, water source (ground source) heat pumps, waste energy utilization, products on cold and heat storage, CCUS, hydrogen energy, photovoltaic green power and smart energy management and other new products, technologies and solutions, following the principle of "reduced, zero or negative carbon dioxide emission". These popular products have been applied in the fields of industrial refrigeration and heating, air conditioning and environmental and commercial refrigeration. At this exhibition, Bingshan Group will bring CO<sub>2</sub> booster compressors, CO<sub>2</sub> heat pumps, variable frequency semi-hermetic single-unit double-stage screw units, intelligent cooling towers, recovery systems for natural gas pressure energy and cold energy, food-grade CCUS system solutions, ice and snow engineering system utilizing CO<sub>2</sub> transcritical refrigeration technology, comprehensive cold and heat solution for slaughtering and processing using ammonia heat pump technology, corn quick-freezer system, hydrogen refueling station system and other energy-saving and carbon-reducing products and system solutions. The CO<sub>2</sub> transcritical ice and snow solution adopts the same technology used in the Beijing Winter Olympics. It is not only used solution in the commercial ice rink with the largest ice surface of 13,338 square meters in China, but also the first ice-making system successfully built in the hot regions of the world using CO<sub>2</sub> transcritical direct cooling. It has a comprehensive utilization energy efficiency ratio of 7.0. The CCUS system solution launched by Bingshan adopts CO<sub>2</sub> gas pressurization and process cooling technology, which could meet the technical requirements of "food grade".

During this exhibition, Bingshan Group will also exhibit the air disinfection and purification unit, the direct expansion air handler with the disinfection function, and the only fresh pick-up cabinet equipped with the Nanoe sterilization module in the industry. It brings healthy hot and cold services to consumers

while saving energy and reducing emission,

The 25HP scroll compressor will also be featured at Bingshan's booth. F series 25HP scroll compressors, with high efficiency, reliability and energy saving character, can be used in many fields such as central air conditioners, chillers, heat pump compressors, etc. In addition, high-capacity DC variable frequency scroll compressors for refrigeration and a full range of scroll compressors in refrigeration, heat pumps, vehicle air conditioners, electric bus air conditioners, rail transit air conditioners, commercial air conditioners, central air conditioner chillers, commercial multi-connected heat pumps, heat pumps and other different market segments will be the highlight of Bingshan's exhibition.

Industrial interconnection and intelligent control are also the focus of Bingshan's exhibition. The visitors can experience the national production service demonstration platform of Bingshan, BINGO Bingshan Industrial Internet Cloud Service Platform. Through business dataization, data operationalization and data resourcization, it uses data to realize remote monitoring, remote diagnosis, system energy saving, etc. In this exhibition, Bingshan will also display its outstanding biotechnology and other related technologies.

In addition to the on-site exhibition, Bingshan will also conduct technical exchanges at the exhibition on technologies such as emission peaking and carbon neutrality, ice and snow technology, scroll compressors, comprehensive utilization of cold and heat in the slaughtering industry, and CCUS carbon dioxide precooling pressurization and liquefaction.

For more details, please visit Bingshan's exhibition at booth S1D25 of Chongqing International Expo Center, and follow the Bingshan's WeChat public account and the official Tik Tok account: bingshan1930. There will be more surprising wonderful contents waiting for you.





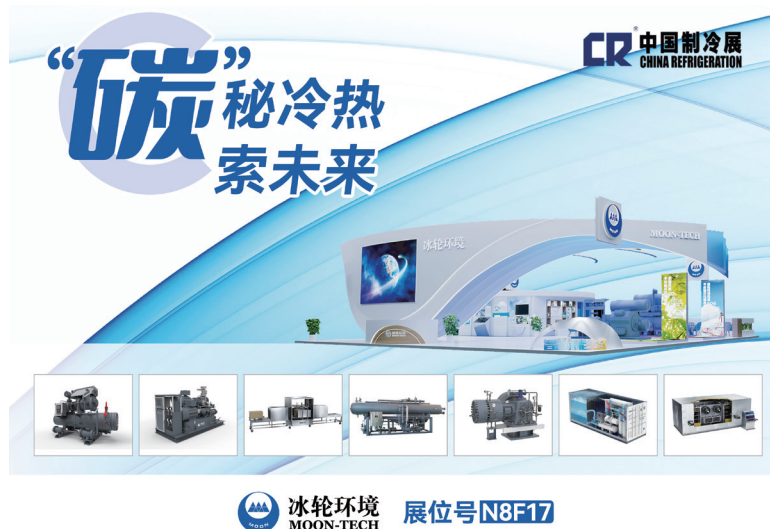
## Moon-Tech (N8F17): Join us to Explore Heating & Refrigeration for Least Carbon Future

Founded in 1956, Moon Environment Technology Co., Ltd (Moon-Tech) is a diversified, international and comprehensive equipment industrial group. Its main business line covers low temperature refrigerator, central air-conditioner, environment protection heating, energy and chemical equipment, precision casting, hydrogen development and smart service and the like industrial clusters. Thanks to our years of commitment to R&D and accumulation in projects-wise experience, by virtue of MICC smart cloud platform's digital energy efficiency control, we are ready to supply reliable products with temperature ranging from -271°C to 800°C and pressure from 0Mpa to 90Mpa as well as considerate supporting service in this connection, such that we are capable of offering integrated solutions for professional energy interconnection and supplement as well as wide energy use with high added value.

During 33<sup>rd</sup> CR 2022, Moon-Tech (booth location N8F17) follows the theme of exploring the secrets of heating and refrigeration for least carbon emission in future, and showcases our pioneering action in vigorously minimizing the carbon emission via the following six steps: low carbon industry, low carbon technology, low carbon manufacture, low carbon chain, low carbon service and culture.

In our booth, we are ready to share our carbon emission reduction technologies, explore the future development direction for such clean energy as hydrogen and photovoltaic energy, exhibit our contribution in winter Olympics Ice&Snow Sports venue, and witness the new vigor generated via integrating the century-old brand Hartford and digital intelligence. You can find our ever-upgrading smart heating and refrigeration system solutions, and our innovative devices catering to the users' pains. We invite you to meet in this top-quality least carbon exploration tour.

China economy grows with high quality thanks to our pursuit of being green and low carbon emission, which is the very impetus to drive Moon-Tech to pursue new model, new technology, new raceway and new ecology, and the very strategy to push us to go for green transformation and stronger global competitiveness. We sincerely invite our peers and CRH audiences to jointly share the innovative deliverables derived from the green development by us, and jointly build picturesque green future with minimum carbon emission.



## TICA Persists in Environment Protection to Lead New Refrigerant Changeover

In 2022, TICA, as always, persists in our route of environment protection and two business sections, a vigorous action on our social responsibility to contribute our part to the earth environment protection. For the China Refrigeration Expo 2022, TICA launches a great number of new products with new refrigerants.

Modular VF cold&hot water unit

Refrigerant: R32



V-Force modular VF air cooling cold&hot water unit is a new full VF modular product under our unremitting R&D in the context of carbon emission neutralization and peak goal. V-Force VF modular unit incorporates our 20-year experience in the R&D in this respect integrating numerous advanced technologies in this field. It embraces three leading technological merits as follows: all-year operation, full VF energy conservation and all scenarios adaption.

In respect of the operation range, V-Force unit successfully integrates the compressor enhanced vapor injection technology with the VF one, further supported by TICA independently researched compressor control and chip cooling technology, such that it takes the lead in making possible the -26~55°C all-year condition operation for refrigeration and heating. In terms of the energy conservation, V-Force unit follows the full VF design philosophy, such that its refrigeration IPLV could reach 4.85, far beyond the state standard of level I energy efficiency of 4.0. In contrast with the regular counterpart, it could save as much as 30% energy. Thanks to its unique balanced operation control, V-Force unit could follow the optimal operation logic to coordinate the overall system to save energy at large when multiple units are in parallel connection or when it is in series connection with constant frequency unit. Moreover, when coming to the product application, V-Force unit could run with ultra silence, years of refrigeration and enhanced vapor injection as well as enhanced heating at low temperature, which are its advanced functions. It could be found ready to work in such scenarios as comfortable, craft, high temperature, freezing conditions, which is all-scenario adaption in its true sense.

Guided by the goal of carbon emission neutralization and peak, TICA further honors the concept of energy conservation and environment protection via firstly launching the new refrigerants upgrade. We have successfully renewed the V-Force VF modular unit with upgraded R32, a down-to-earth action on the philosophy of environment protection goes first led by technology.

TICA H-Class series water source heat pump

Optional refrigerants: *R513A, R1234ze, R515B and R314a*



## H-Class Water-Source Heat Pump

TICA Smardt H-Class series oilless water source heat pump embraces the following merits: simple system, low noise and safe refrigerants, such that it is one of the most effective heating and refrigeration systems. Smardt oilless technology lies at the core of the factory decarbonization program, as it could minimized the energy cost and GHG emission to its maximal extent when integrating with the renewable energy. In addition, Smardt H-Class series water source heat pump could be readily applied in MW system in massive scale. As a part of the micro-grid, Smardt H-Class series could offer dispersed and flexible heating and refrigeration with zero carbon emission, a major energy efficient alternative for the architecture electrical engineering and decarbonized heating with gas.

TICA is one of the companies signing agreements with UN Environment Programme (UNEP), China Ministry of Environment Protection (MEP), and China Commercial and Industrial Refrigeration Air-conditioner Industry First Batch Four-Company HCFC Elimination Programme, and TICA is the first company to fulfill its contract execution, such that it has grown into an exemplar for UNEP and MEP. For more low carbon and environment protection products, welcome to visit our booth (N1F09) for further exchange.

## See You in Chongqing at China Refrigeration Expo 2022 | McQuay Invites You to Visit Booth N1F17

McQuay will continue to bring new products and technologies to the China Refrigeration Expo 2022 for the 14th consecutive year. From April 11th to 13th, McQuay will be at booth number N1F17 (main hall) with an area of 256 square meters at Chongqing International Expo Center.

The theme of the exhibition: A century of science and technology facilitating the "Carbon Peaking and Neutrality Goal"

3 major technical keywords for our exhibition

1. Core and key technologies: The actual machine, the 2000RT centrifugal compressor WLT series, will be exhibited, which uses the new refrigerant R1233zd (E), and direct-drive multi-stage compression technology
2. Energy-saving and purification technology: R32 frequency conversion four-pipe modular machine and three-pipe purification MDX will be displays in actual machine
3. Industrial refrigeration technology: Low temperature industrial refrigeration unit GES

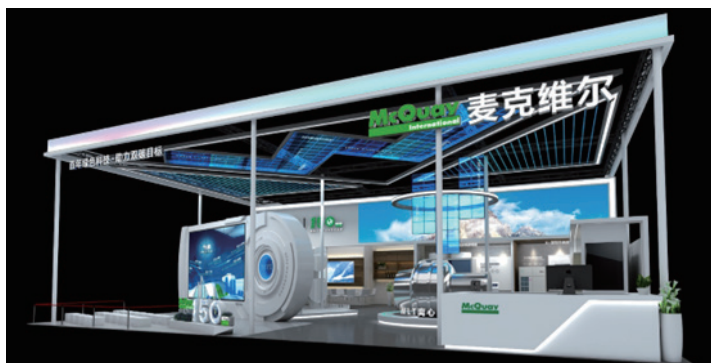
2022 is the 150th anniversary of the McQuay brand, which adds more meaning to McQuay's exhibition. McQuay will use the exhibition platform to review the development history of the company and launch blockbuster new products. Adhering to the theme of "towards low-carbon health with a focus on innovation and quality", McQuay will show its new scientific and technological achievements inspired by user needs to the industry through the new product/brand launch conference.

At the same time, McQuay will also hold a number of special technical exchanges at the exhibition to discuss how to balance social responsibility and technological innovation in the context of emission peaking and neutrality, ways for using technological innovation to empower the green development of the HVAC industry, and users' concerns including industry trends, product R&D and application solutions. Commercial users, design institutes, and distributors are welcome to the booth for negotiation and exchange.

### 3 major technical exchange themes

1. Topics on advanced technology of chillers
2. Discussion on the technical scheme of replacing the boiler with heat pump during emission peaking and neutrality era
3. Future data center cooling topics

Our booth diagram:



## Selected Maglev Unit from CQGI Debuted at China Refrigeration Expo



Chongqing General Industry (Group) Co.,Ltd. (hereinafter referred to as CQGI) is a large state-owned high-end equipment manufacturing enterprise with independent intellectual property right and technology innovation capability in key turbo machinery products, which has a history of 100 years. The technology center of company has been identified as national technology center. CQGI has been listed as National Demonstration Enterprise in Technology Innovation; National Demonstration Enterprise for intellectual property rights, National Demonstration Enterprise in Green Design of Industrial Product, Demonstration Enterprise for National Industrial Brand Development, Enterprise with Refined Quality and Integrity in Machinery Industry, and Chongqing Excellent Innovative Enterprise. CQGI has built highly efficient centrifugal compressor laboratory with informatization and intelligence. CQGI has been identified as Chongqing Turbo Machinery Engineering Technology Center and Postdoctoral Research Workstation. CQGI was awarded of the “National May 1st Labor Certificate”.

CQGI is specialized in design, manufacture and sale of the centrifugal refrigeration machine and system, tube-shell evaporating and cooling air-conditioning units; centrifugal compressors, blowers, centrifugal fans, environmental protection complete-set equipment and engineering, wind turbine blades, Class I and Class II pressure vessels.

CQGI has owned independent design and R&D system over the past years of the successive technological innovation and development, and set up professional R&D teams specialized in aerodynamics, noise, structure, materials, process etc. It has accumulated rich experience in turbo machinery design, R&D and manufacturing. CQGI has the leading research and development capability in the industry. CQGI has an extraordinary turbo engineering inspection and test service center in the southwest of China and certified CNAS wind turbine blades. CQGI also has intelligent inspection and test platform of centrifugal fan and blower, and test platform for large centrifugal compressor model. The company has a strong production capacity of manufacturing high-end equipment with accuracy machining, monitoring and inspection analysis, assembly and inspection etc. It has become a pioneer in technological innovation in the industry in many product fields with more than 400 patented technologies.

The magnetic levitation permanent magnet variable frequency centrifugal chiller exhibited by CQGI in this exhibition is a major breakthrough in the localization research and development of magnetic levitation chiller technology. The unit adopts the electromagnetic suspension method to ensure the stable operation of the rotor. In combination of the core technologies of high-efficiency aerodynamics, noise, structure and heat exchange, the overall technology of the unit

has reached the international advanced level. The product has broad market prospects. It can be widely used in green buildings, big data centers, military industry, hospitals, shopping malls and chemical industries.

CQGI looks forward to your visit sincerely at booth N2F07 in Hall N2.



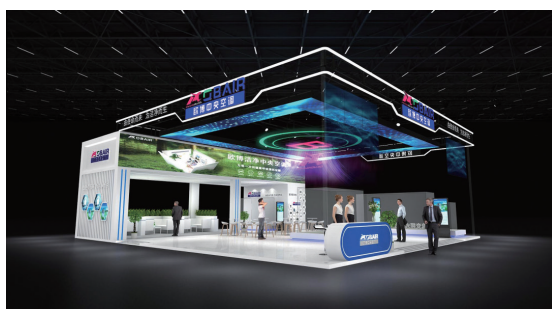
**magnetic levitation permanent magnet variable frequency centrifugal chiller**



## Invitation Letter | Obo Central Air Conditioner Welcome You to the Mountain City Chongqing at the 33rd China Refrigeration Expo

The 33rd International Exhibition for Refrigeration, Air-conditioning, Heating and Ventilation, Frozen Food Processing, Packaging and Storage (hereinafter referred to as the China Refrigeration Expo 2022) will be held at the Chongqing International Expo Center from August 1 to 3, 2022. This year's exhibition "focuses on innovation" and is "committed to low-carbon health".

As a well-known brand in the field of purifying air conditioners, obo central air conditioner has participated in the Expo for many years. This time, we will bring many star products to the N1 hall D45 to show customers high-quality air conditioning system solutions and Obo's Cloud Central control center.



Exhibitor Information

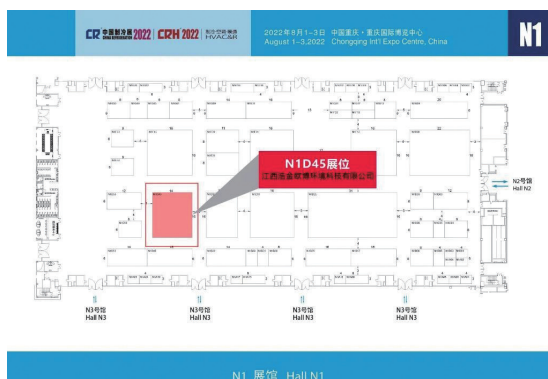
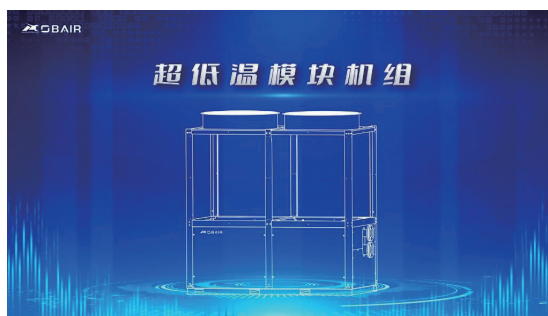


Figure | Booth renderings

Exhibition time: August 1-3, 2022

Exhibition location: Chongqing International Expo Center

obo Booth: N1 Hall D45

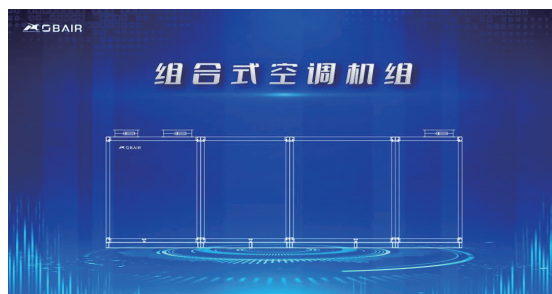


Machine set spoiler

obo strong heat units for low temperature are mainly designed for cold areas, which can meet the heating and domestic hot water demand of home and commercial places. The super heating energy solves the problem that ordinary heat pumps cannot meet the demand in the northern low temperature environment

## # Features #

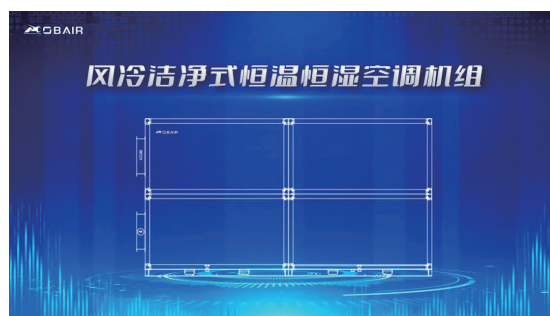
1. The unit adopts R410a fluorine-free environmental friendly refrigerant;
2. The operating range is wider, and the minimum operating ambient temperature is below zero 30°C, and the maximum outlet water temperature can reach 60°C;
3. Intelligent frost suppression and defrosting technology, aiming at the low temperature in the north, adopts the fuzzy PID defrosting control technology, using "time + temperature difference diameter ratio", which makes the water temperature more stable;
4. It has ultra-high energy efficiency, and with the use of jet enthalpy technology compressor, it provides heating efficiency, which is 30% larger than the ordinary type, saving electricity of 20% or more;
5. It adopts patented noise reduction axial fan, which enables low noise, low vibration and quieter operation;
6. It can remotely monitor the operation of the unit and serve customers in a timely manner.



The obo combined air conditioning unit has a variety of functional settings which can be freely combined to meet the personalized needs of different customers. The thickness of the panel is 25 or 50mm, and the maximum air volume can reach 200000m<sup>3</sup>/h. The unit is mainly suitable for air purification system in various clean workshops, such as industrial electronics factory, precision machinery manufacturing factory, textile workshop, car spraying workshop, GMP pharmaceutical factory, cosmetic products, food workshops, lithium battery workshops and other occasions.

## # Features #

1. It has beautiful appearance, anti-cold bridge structure design and superior anti-corrosion performance;
2. The anti-cold bridge performance reaches the European standard (Eurovent) TB1 level;
3. The air leakage rate reaches the European standard (Eurovent) L2 level;
4. The thermal insulation performance of the box body reaches the European standard (Eurovent) T2 level;
5. Electrical integration design means all electrical boxes and all wiring of parts of the unit s completed by Obo Company, and the user only needs to handle the main power supply.to the electrical box;
6. Integral water receiving tray design means from the surface cooling section to the fan section bottom is all designed with a full water tray to ensure that water dripping will never occur;

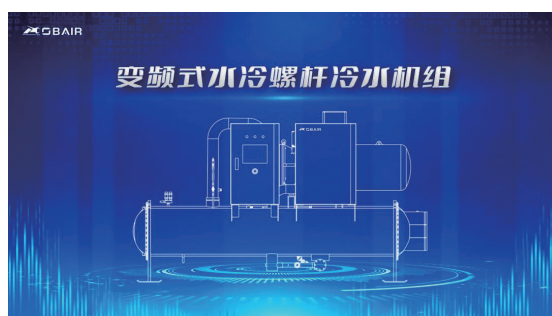


obo air-cooled clean constant temperature and humidity air conditioning unit has two panel options with the thickness of 25 and 50mm respectively, and the maximum cooling capacity of up to 450kW. The unit is mainly used for air purification systems suitable for various clean workshops, such as industrial electronics factory, precision machinery factory, textile workshop, auto spray paint workshop, GMP pharmaceutical factory, cosmetics, food workshop, pure water workshop, lithium battery workshop, PCR laboratory and other occasions.

## # Features #

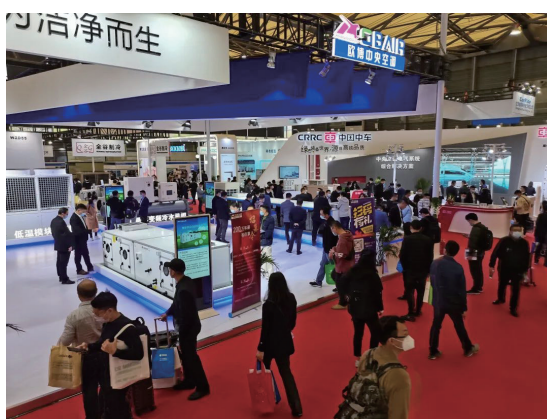
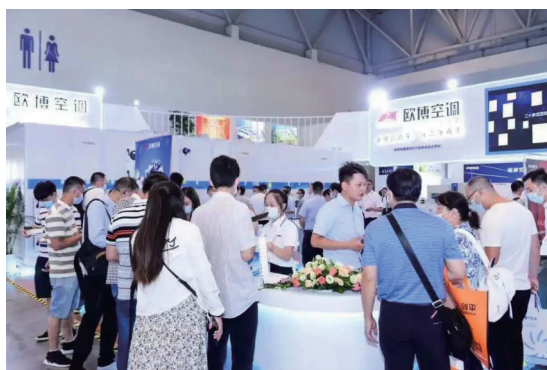
1. The unit adopts R410a fluorine-free environmental friendly refrigerant;

2. It has small fluctuation with precise adjustment: The DC variable frequency unit can achieve 10~100% stepless capacity adjustment with precise control of supply air temperature. The unit can operate with large fluctuations in fresh air conditions, variable air volume and low load. It can run stably under various harsh working conditions and keep stable temperature and humidity control;
3. It is suitable for variable air volume operation, and achieve capacity output automatic adjustment, fast response, to effectively ensure indoor temperature and humidity stable;
4. Integral water receiving tray design means from the surface cooling section to the fan section bottom is all designed with a full water tray to ensure that water dripping will never occur;
5. It has intelligent control, maintenance warning and remote maintenance functions.



Frequency conversion water-cooled screw chiller unit is another great product of obo in the central air-conditioning industry. The unit has efficient and reliable operation in 20Hz~60Hz , capable of a wide range of load changes and energy-efficient solutions. It is especially designed for industrial refrigeration and cooling, and for meeting the market demand for high energy efficiency in the transition season of central air conditioning. After more than ten years of development, the company has developed a whole series of cold water and heat pump units, including full water cold screw chiller, air-cooled screw chiller, evaporation-cold integrated full water unit, water-cooled integrated screw unit, water-cooled scroll module unit, and low temperature refrigeration unit (with outlet water temperature of -5°C/-15°C/-25°C).

### Review of previous Expo



If you want to get a close look at the latest products and technologies of Obo, welcome to join us from August 1-03, 2022 at the N1D45 obo booth.

### Special audience registration

You are cordially invited to visit.

Scan QR code

Apply for obo VIP Audience Badge

We are waiting for you at N1D45!





## Introduction to Zhejiang Xingxing Cold Chain Integration Co., Ltd. At Booth No. N8F25



Zhejiang Xingxing Cold Chain Integration Co., Ltd., headquartered in Taizhou, Zhejiang, was founded with a registered capital of 483.9 million yuan. It has four industrial bases in Taizhou of Zhejiang, Xuzhou of Jiangsu, and Foshan of Guangdong, and Yongchuan of Chongqing. As an industry-leading equipment manufacturing and comprehensive service provider focusing on cold chain, Xingxing's main business is the research and development, production and sales of commercial, commercial kitchen, domestic and medical refrigeration equipment. It also provides customers with services and supporting equipment for cold storage engineering construction. Xingxing's products and solutions are now widely used in supermarkets, convenience stores, farmers markets, hotels, catering companies, homes, cold storages, hospitals, pharmacies and many other places.



Adhering to scientific and technological innovation, Xingxing's annual investment in research and development accounts for over 3% of its total cost, and the research and development staff account for nearly 10% of its personnel. It has established a national enterprise technology center and 3 CNAS laboratories, with 893 patents including 16 invention patents, 603 utility model patents, and 274 appearance patents as well as 76 software copyrights. It has passed a number of management system certifications such as quality, environment, occupational health and safety management system, AAA measurement management system, and "Made in Zhejiang" certification. It has won many honors and titles such as "China Famous



Trademark", "Green Factory", "Green Supply Chain Management Enterprise". Xingxing has been playing the "leading role" of commercial cabinet enterprise standards, participating in the formulation of 9 national standards, 6 industry standards, and 15 group standards.

Xingxing adheres to its core development strategy of the development direction towards industrial ecology, product usage scenario, management digitization, and service platform, and takes "safeguarding fresh life" as its mission. As its products used across farmland and dining tables, Xingxing has realized the multi-scenario layout of the industrial chain, opening the way of transformation and upgrading from "single refrigeration product manufacturing" to "providing deeply customized products and services in specific scenarios" as a leader in the global cold chain industry.



### Introduction to Cold Storage Unit Division

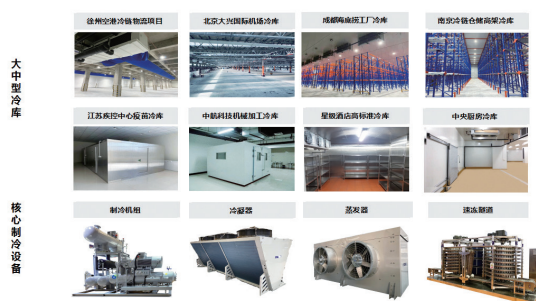
Xingxing Cold Storage Unit Division is mainly engaged in the manufacture of large, medium and small

refrigeration units, air coolers, condensers, instant-freezers and other cold chain equipment, cold storage construction (including slaughterhouses, air-conditioned warehouses, pre-cooling warehouses, agricultural products warehouses, mobile warehouses, logistics transit warehouses, processing cold chain storage, central kitchen, medicine warehouse, pallet warehouse, and fully automatic three-dimensional warehouse, etc.) to provide overall solutions for cold storage to create high-quality, energy-saving, green, environmentally friendly and intelligent cold storage for customers. Based on the its intelligent platform, Xingxing has developed a fully automatic unmanned intelligent control system for cold storage, creating a perfect combination of temperature control traceability and intelligent control.

### Products of Cold Storage Unit

#### 冷库机组产品范围

XINGXING



## Exploring the Future Through Carbon Reduction to Create and Enjoy a Green China

### Breaking Technical Barriers, Innovating Energy Saving Technology to Assist in Green China

Under the trend of global energy pressure and climate warming, "carbon neutrality and emission peaking" has become a common global concern. China has clearly designated "carbon neutrality and emission peaking" as one of the major development strategies in 2022. As one of the main forces of "low-carbon development", central air-conditioning presses the accelerator button for the refrigeration industry and puts forward higher requirements for energy saving and consumption reduction of large chillers.

As an energy-saving air energy expert, Xinlei has continuously made breakthroughs from the inside, breaking through the core technical barriers, and has recently launched a falling-film magnetic levitation centrifugal chiller (heat pump) unit and a falling-film screw chiller (heat pump) unit with complete independent intellectual property rights. Xinlei has become one of the companies integrating independent research and development, manufacturing, sales and service of maglev compressors and complete machines. Through scientific and technological innovation, Xinlei helps China to realize the transformation of green energy, accelerating the process of national goal of carbon neutrality, and writing a strong stroke for "Green China".

#### Green full-scenario solutions



#### Xinlei magnetic levitation chiller

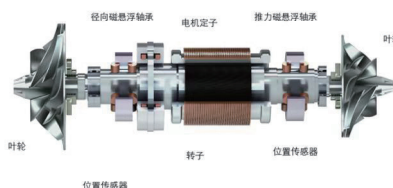
Xinlei's star product, the magnetic levitation chiller, adopts the black technology, the five core technologies of magnetic levitation bearing, motor direct drive impeller, permanent magnet synchronous motor, magnetic levitation bearing (MBC) control, and oil-free lubrication, breaking through the limitations in terms of energy saving and efficiency. It uses air to interpret the beauty of green energy.



#### Magnetic levitation compressor



Achieving environmental protection, zero pollution, and ecology protection, the unit generates 3/4 of its energy from the environment. It means that 75% of the energy is free! The remaining 1/4 of its power is used to output four times the heating and cooling efficiency. Xinlei magnetic suspension bearings operate with zero friction, and the whole system runs without oil, which is environmentally friendly with no risk of oil pollution, and no demand for changing oil or bearings. The worry-free operation and maintenance ensures the environmental sustainability of the product during its life cycle.



### Magnetic levitation bearing design

With high-efficiency operation and low-consumption operation, the unit achieves load self-adaptation, and self-optimization to high-efficiency point under different working conditions, maintaining low-energy consumption operation and avoiding invalid loss. The full load, COP6.4 and IPLV10.8, reaches double-level energy efficiency standards, and saves about 50% energy of regular screw or centrifuge.

The highest performance of the whole machine realizes the freedom of electricity use, achieving using more means saving more. It has installed the "Xin" engine into the "carbon" era and lead the industry to a green and sustainable future.

The smart and low-noise cooler adopts the Internet of Things and cloud service intelligent control management as standard to provide visual solutions such as data diagnosis, fault warning, data statistical analysis, maintenance reminder, etc. Based on the remote adjustment function, warm and cold from now on become free. Touch screen with minimal UI design with reasonable layout is easy to use. Nearly 0 vibration of structure realizes noise lower than 70dB. There is no need to install shock-absorbing accessories or soundproof rooms separately, reducing the installation costs.

Safety and longevity come from low current soft start and minimization of grid impact. The perfect surge intelligent control technology and emergency power-off protection ensure the stable operation of the unit. It can also land smoothly and softly in the event of a power failure. The life cycle of the equipment is as high as semi-permanent, which is twice as long as that of ordinary central air conditioners

It is not just small in size. The one-piece design and reasonable and compact structure make the equipment occupy as little as 4.6 m<sup>2</sup>, saving 50% of space resources. It is equipped with high-efficiency falling-film heat transfer technology to ensure uniform distribution of refrigerants, effectively improving heat exchange efficiency by nearly 30% and reducing the refrigerant charge. In addition, Xinlei's other major energy-saving innovative product, the screw chiller, has the core advantages of compact structure, low maintenance, and wide operating range. It can utilize different heat sources such as groundwater, surface water, industrial

wastewater, seawater, sewage, etc. for constant and stable operation, achieving wider operating range. It can also operate efficiently in harsh working conditions. Stepless speed regulation can be achieved through the slide valve, which greatly reduces the power consumption under the premise of ensuring the outlet water temperature.



### Falling-film screw heat pump unit

Xinlei's screw chiller and magnetic levitation chiller will appear at the booth N2D11 of China

Refrigeration Expo, empowering multiple scenarios and saving energy for the world!

As a national enterprise that has been focusing on low-carbon business, Xinlei has always implemented it with actions, infiltrating green and low-carbon solutions into more sub-sectors such as building heating, rail transit, government co-construction, medical care, industry, etc., to give full play to the courage and responsibility of the national brand. Xinlei regards creating a green society as its own responsibility, and provides the market with better products and higher-end green air solutions. It has been committed to being a smart green air expert to provide green all-scenario air solutions to create greater value for users continuously.

## Ebm-papst | Engineering a Green, Low Carbon Future

As the leading supplier of ventilation and drive technology, ebm-papst is a highly respected engineering partner in many industries. Founded in 1963, we have always worked to the highest industrial standards for the global market. From the development of our IoT-based EC technology fans to improved blades based on aerodynamic optimization, and then to the use of eco-friendly materials, we are fulfilling our commitment to environmental sustainability.

At China Refrigeration Expo 2022, ebm-papst will present forward-looking insights and solutions in many fields such as commercial/residential ventilation, air conditioning, commercial/industrial refrigeration and building energy management. The combination of innovative products and intelligent software enables our customers to gain a decisive advantage in the fierce market competition, which also fully interprets our new brand concept: engineering a better life.

### New Product Release - Axial Fans for In-row Air Conditioning in Data Centers

With the development and application of emerging technologies such as 5G and

cloud computing, user demand has grown explosively, and the number of data centers has also increased which makes it a major energy consumer. Cooling of data centers is essential to ensure that all critical IT equipment can run reliably. Ebm-papst offers multiple efficient cooling solution that is now widely used in fields such as CRAC, In-row air-conditioning, free cooling, indirect evaporative cooling. This time, we will launch a new axial fan designed for in-row air conditioner. The design of innovative impeller shape and integrated airtight air ring eliminates the gap between blade wing tip and fan air ring, thus reducing eddy and turbulent flow to further improve efficiency and reduce noise. It is specially designed for high back pressure applications with an appearance size of 200×70mm and power up to 500W, demonstrating its superior performance. The new type of axial fan offers a temperature range from -20 to +60°C to cope with different environmental conditions. We offer products with a rated speed of 7,000 rpm, 48VDC with all relevant certifications, such as VDE, UL/CSA, CCC, CE and EAC. The axial fan can effectively reduce the PUE of the machine room and help the green and low-carbon development of data centers.



### Intelligent building control platform - ebm-papst neo

The ebm-papst neo intelligent building control platform enables building owners and managers to remotely control multiple buildings at the same time, which helps improve employee productivity and the comfort of the environment, thus reducing energy consumption and operation and management costs. It consists of energy-

efficient fans with RESET® certified sensors, and a gateway that connects directly to the cloud. Data is sent through the gateway connection module to the ebm-papst intelligent building control platform, and then processed and analyzed before is provided to building operators or is used to optimize building control systems. Therefore, the intelligent building control platform is effective in monitoring indoor air quality, energy saving, operation and maintenance. Complex algorithm learns from user behavior, building characteristics and environmental conditions to keep learning, and with the help of energy efficient fans, it works to create an optimized indoor ecosystem, and to cut

carbon emission in architecture.

There are exciting interactive games at the exhibition site, welcome to scan the QR code to follow ebm-papst's official WeChat account to learn about events in advance. Welcome to the N2F01 booth.



The graphic features a collection of various ebm-papst fans and motors arranged on a green surface. On the left, there is a grid of small, square fans. To the right, several larger fans and a motor are displayed. The ebm-papst logo is prominently shown in the upper right corner, with the tagline 'engineering a better life' below it. The exhibition booth number '展位号: N2F01' is also visible. At the bottom, the slogan 'Engineering a better life' is written in a cursive font, followed by a row of icons representing different applications: a snowflake, a building, a server rack, a fan, a house, a factory, a truck, and a gear.

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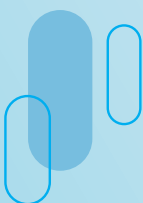
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