

SHOWEXPRESS

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The 32nd International Exhibition for Refrigeration, Air-conditioning, Heating and Ventilation,
Frozen Food Processing, Packaging and Storage

April 7-9, 2021
Shanghai New International
Expo Centre, China

2021
CHINA REFRIGERATION EXPO



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Organizers:



Show Management:



The 32nd China Refrigeration Expo will be Unveiled in Shanghai

Co-sponsored by the China Council for the Promotion of International Trade Beijing Sub-council, Chinese Association of Refrigeration, China Refrigeration and Air-Conditioning Industry Association, Shanghai Society of Refrigeration and Shanghai Air-Conditioning and Refrigeration Institute, organized by the Beijing International Exhibition Center Co., Ltd., the 32nd China International Exhibition for Refrigeration, Air Conditioning, Heating and Ventilation, Frozen Food Processing, Packaging and Storage" (hereinafter referred to as "China Refrigeration Expo") will be held at Shanghai New International Expo Centre from April 7th to 9th, 2021.

With the theme of "Towards a More Solid Foundation for Growth with Quality as the Priority, and a Dual-Circulation Development Pattern with Low Carbon Emission", China Refrigeration Expo this year will set up 10 exhibition halls, covering an exhibition area exceeding 110,000 square meters for the first time. More than 1,200 exhibitors, including the well-known brands in the global refrigeration, heating, ventilation and air conditioning industry, will attend the exhibition. In addition, the organizers of China Refrigeration Expo closely follow the current industry pulse and pay attention to upstream and downstream industries. During the Expo, there will be theme forums, as well as nearly 40 special seminars and technical exchange meetings. The organizers actively carried out the organization of professional audience groups, strengthen thorough exchange activities with exhibitors and provide exhibitors with in-depth services. Besides the Ozone2Climate Techlogy Roadshow, the Demonstration Area of Commercial Refrigeration Technology and Solutions , and the Heat Pump Pavillion, the Pavillion of Household Refrigeration and Air-conditioning Equipment will be set up at the Expo for the first time. The organizers enriched the exhibition areas by fully integrating hotspots of industry development, aiming to attract more companies to participate in the exhibition activities.

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.

Looking forward to meeting you again at China Refrigeration Expo!





Jointly build a cooperation platform to promote high-quality development of the refrigeration industry

Ma Changjun
Deputy Director-General
China Council for the Promotion of International Trade
Beijing Sub-council (CCPIT Beijing)

Adhering to innovation drives, promoting green development



Meng Qingguo
Executive Vice Chairman
Chinese Association of Refrigeration(CAR)



**Insisting on people-oriented measures adapting to local conditions
Collaborating to build a green industrial chain**

Li Jiang
Chairman
China Refrigeration and Air-Conditioning
Industry Association (CRAA)



On behalf of United Nations Development Programme (UNDP), I would like to convey my heartfelt congratulations to the 32nd International Exhibition on Refrigeration, Air Conditioning, Heating, Ventilation and Frozen Food Processing.

Humanity is facing the existential threat of climate change, as well as the interrelated environmental challenge of ozone layer depletion. Exhibitions such as this play an important role in tackling these global issues.

I commend this exhibition for launching a series of activities: to facilitate technical exchanges; undertake discussions on the technological development in the sector; publicize policies and standards; advance technologies and products; and promote the application of new alternative technologies; all of which make a seminal contribution to protecting the ozone layer.

UNDP is proud to be a co-organizer of this important event. We stand ready to work together with all stakeholders gathered at the exhibition to combat climate change and protect the planet for future generations.

Ms. Beate Trankmann
Resident Representative
UNDP China



Congratulation Message from UNEP

Refrigeration and air-conditioning contribute to the well-being of society in many ways, for example ensuring safe and efficient food storage, providing comfort cooling for living and work spaces, protecting health through safe vaccine storage, and creating skilled jobs for the economy. This sector improves the quality of life for all of us and contributes to achieving multiple UN Sustainable Development Goals. Refrigeration and air conditioning also have an important environmental dimension which has the potential to make an even greater contribution to protecting our Planet: in China, refrigeration and air-conditioning systems account for more than 20% of the country's total electricity consumption. It is a large energy consuming sector with huge potential for savings. China is also the world's largest consumer of refrigerants and is phasing out hydrochlorofluorocarbon (HCFC) refrigerants in accordance with the Montreal Protocol. Hydrofluorocarbon (HFC) refrigerants with high global warming potential also need to be phased down as per that treaty's Kigali Amendment. The dynamic refrigeration and air-conditioning industry can help reach those targets by developing and promoting Ozone2Climate technologies based on lower impact refrigerants with higher energy efficient equipment.

With the support of the organizers of the China Refrigeration Expo, the United Nations Environment Programme (UNEP) has jointly organized the Ozone2Climate technology roadshow and roundtable annually since its inception in 2011, in partnership with United Nations Development Programme (UNDP), Foreign Economic Cooperation Office (FECO), and China Refrigeration and Air-Conditioning Industry Association (CRAA), to promote, exhibit, and demonstrate Ozone2Climate technologies in the refrigeration and air-conditioning sector.

The COVID-19 pandemic has impacted all of humanity and posed a great challenge for how we live and work. The refrigeration and air-conditioning industry have a central role to play in helping society recover and return to normal. Refrigeration is at the heart of vaccine storage and distribution, and air conditioning and air circulation is key to ensuring we have proper clean and safe air in our homes, workplaces, and transportation systems. While the industry helps innovate and deploy these solutions to solve the global COVID-19 crisis, it is important keep the environmental dimensions in mind and "Build Back Better" by promoting energy efficient, low global warming potential alternatives.

For our living environment, for our own life and health, and for the future of the Earth, UNEP is enthusiastic to cooperate with the refrigeration and air-conditioning industry to promote greener and more efficient refrigeration and air-conditioning products and technologies.

Finally, on behalf of UNEP OzonAction, I would like to thank CRAA, FECO and UNDP once again for successfully organizing this innovative event at the 32nd International Exhibition for Refrigeration, Air-Conditioning, Heating and Ventilation, Frozen Food, and to extend our sincere congratulations on the opening of the China Refrigeration Expo 2021!

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



INSTITUT INTERNATIONAL DU FROID
INTERNATIONAL INSTITUTE OF REFRIGERATION



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 all over the world. Refrigeration equipment will continue to be developed because of essential human needs, particularly: health and food security, thanks to the cold chain, air conditioning, cryogenic applications... The vaccines issue against the Covid-19 just recently proved the importance of refrigeration for health applications all over the world. Since refrigeration requires more and more energy (it already accounts for 20% of the world's energy consumption) and still too much refrigerants with a high Global Warming Potential, we must continue to develop better environmentally friendly systems.

In coordination particularly with the United Nations, we will therefore continue to publish documents for decision-makers, refrigeration companies, end-users, scientists, and to organise conferences and workshops to disseminate knowledge in all refrigeration technologies and uses (see the new IIR website www.iifir.org). 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.

Refrigeration is at the heart of global sustainable development goals. I congratulate the organisers of China Refrigeration 2021 and I wish them every success.

Didier Coulomb
Director General



Congratulation message from ASERCOM

Dear President,
Dear Director, International Division,
Dear Ladies and Gentlemen,

On behalf of the Association of European Refrigerant Component Manufactures ASERCOM, I would like to congratulate the organisers of this year's China Refrigeration Expo 2021. Despite the tense situation, we wish the fair every success. It is a pity that this year I cannot visit the great and excellent show due to the epidemic situation.

Anyhow we wish our friends and colleagues from CAR, CRAA and the exhibition organizers much success with this year's edition.

It will be my great pleasure to visit the next China International Exhibition for Refrigeration, Air-conditioning, Heating and Ventilation, Frozen Food Processing, Packaging and Storage next year. It is important for us that ASERCOM's relationship with the CAR and CRAA is also symbolic of how cooperation across borders can be mutually beneficial.

Once again, we would like to wish you on behalf of all ASERCOM members, our warmest greetings and best wishes for the upcoming China Refrigeration Expo at Shanghai. Our association looks forward to further strengthening our relationship.

Yours sincerely

A handwritten signature in black ink, which appears to read 'Wolfgang Zaremski'. The signature is written in a cursive style.

Wolfgang Zaremski

President of ASERCOM



Dear friends

On behalf of the European Partnership for Energy and the Environment (EPEE) representing the manufacturers of refrigeration, air-conditioning and heat pump equipment in Europe, and our Chairman Jürgen Fischer, I would like to congratulate you to this year's China Refrigeration Expo 2021.

These are very special times, coming with many challenges but also with many opportunities for our industry. More than ever, we realise that we are a global family, facing the same challenges everywhere in the world: whether it is about the health of the people, the energy transition or climate change. Europe has taken a very important step by enshrining carbon neutrality by 2050 in its climate law and China is moving in the same direction with its announcement of carbon neutrality by 2060. Our industry will be part of the solution with many technologies that are readily available and helping to achieve these important goals while contributing to make peoples' lives better!

Of course, vaccines, that need to be cooled, come to mind immediately, with the current pandemic. But there is also the wider health context with air quality playing an increasingly important role. By supporting the transition to renewable energies with solutions such as the electrification of heating with heat pumps – whether industrial or residential –, demand side flexibility, energy storage, waste heat recovery and energy efficiency in the broadest sense we will contribute to clean outdoor air quality. With our heating and cooling technologies, we will ensure a healthy, comfortable and productive indoor climate.

Whether we are in China, Europe or elsewhere in the world, we are in this together, and that's why global cooperation, joining forces across continents, is so important. Trade shows such as China Refrigeration are absolutely essential as they allow showcasing technologies, meeting new people and companies, building new partnerships and strengthening existing ones.

Wishing you every success for this 2021 edition,

All the best,

Andrea Voigt
EPEE Director General



CR Expo 2021: Congratulations letter from Eurovent and Eurovent Middle East

Dear friends and colleagues from the Chinese Association of Refrigeration (CAR) and the China Refrigeration and Air-conditioning Industry Association (CRAA),

On behalf of Eurovent (Europe’s Industry Association for Indoor Climate, Process Cooling, and Food Cold Chain Technologies), Eurovent Middle East (Association of the region’s leading HVACR manufacturers), and the more than 1.000 HVACR manufacturers our organisations represent throughout Europe and the Middle East, we would like to congratulate our colleagues from CAR, CRAA and the CR Expo organisers on yet another edition of this leading exhibition.

2021 China Refrigeration Expo takes place in a period where the COVID-19 pandemic is keeping the world at large hostage. Everybody is hoping that vaccination will provide the step towards a normal situation.

The importance of equipment that provides millions of people with improved comfort, safety and health does require attention, the more so because this equipment plays an important role to maintain health by providing ventilation and purification. The pandemic is highlighting the need for first class equipment across the globe to keep it at bay.

The exhibition demonstrates how the industry is meeting the challenges of the pandemic while continuing to meet the global demands for higher comfort levels for refrigeration and air conditioning, higher food and industrial safety requirements, and latest environmental, energy efficiency and air quality standards.

The entire Eurovent family wishes our friends and colleagues much success with the 32nd edition of the China Refrigeration Expo in Shanghai. Despite the developments of the pandemic not allowing us to personally attend the event, we still would like to express our highest gratitude for the long-lasting cooperation and support. We are proud of having been part of this fair for many years and regard it as a world leading HVACR related exhibition.

Together with our members, our associations look forward to further strengthening our friendship, guanxi and the Chinese-European relations, and to hopefully personally attending next year’s edition with many Eurovent delegates.

Yours faithfully,

Naci Sahin
President, Eurovent



Felix Van Eyken
Secretary General, Eurovent



Tariq Al Ghussein
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 2021 in SHANGHAI.

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, CO2 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 2021 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.

Gary Schrift
President of the IIAR

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



São Paulo February 5th, 2021

To:
Chinese Association of Refrigeration (CAR)
F10, Yindu Mansion, 67 Fucheng Road, Beijing
100142 China

Att: Ms. ZHAO Na
Deputy Director, International Cooperation & Exhibition Dept.

Dear Friends of Chinese Association of Refrigeration

We at ABRAVA (Brazilian Association for Air conditioning, Heating, Ventilation and Refrigeration) consider extremely important the relationship maintained between our organization and CAR (Chinese Association of Refrigeration) so we are happy in sending our congratulations for every CAR management team for the accomplishment of this so important trade show "China Refrigeration Expo", to be held in Shanghai from 7 to 9 of April 2021

We are happy on the yours realization and much more because we know that this pandemic moment, demands from all of us a very big effort for maintaining our routine activities, we can imagine the effort and the dedication that the accomplishment of an Expo of so high level like CR 2021, is demanding from every one of this excellent team.

It is always a pleasure to greet and to visit this fair, this year that challenge becomes very larger, won't be present, but we want to reinforce our congratulations and wish total success for CR EXPO 2021, that is one of the largest HVAC-R Expo all over the world.

Congratulations, success!

Samoel Vieira de Souza
Director of International Affairs
ABRAVA The Brazilian Association for HVAC-R





January 29, 2021

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 2021 China Exhibition for Refrigeration, Air-conditioning, Heating and Ventilation, Frozen Food Processing, Packaging, and Storage. Even though the ongoing pandemic prevents our ability to travel to Shanghai for the show, the many AHRI member companies that will exhibit speaks once again to the importance of the Chinese market. 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 our Chinese industry friends.

As our member companies take the opportunity to showcase their latest innovations, AHRI is pleased and proud to continue to collaborate with the China Association of Refrigeration (CAR) and the China Refrigeration and Air Conditioning Association (CRAA), both of which help AHRI members do business in China, while also greatly contributing to global efforts to harmonize standards and certification programs. 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 energy efficiency, refrigerant policy, and environmental stewardship. Some of that collaboration is through international partnerships such as the International Council of Air-Conditioning, Refrigeration, and Heating Manufacturers Associations (ICARHMA), which strengthen our global industry. CRAA is a valued member of ICARHMA, which comprises 11 industry associations from around the world.

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,

Stephen R. Yurek
President and CEO



Congratulations on China Refrigeration Expo 2021

On behalf of ASHRAE's Board of Directors and its more than 54,000 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 2021.

In its 32nd year, China Refrigeration Expo has consistently provided innovative technologies and resources to built environment professionals across the world. With the heightened attention that is now being given to controlling the spread of infectious disease, it is imperative that our industry lead the charge toward improving the design, construction and operation of buildings and systems. It is at events such as this that ideas and resources are shared.

"The ASHRAE Digital Lighthouse and Industry 4.0," ASHRAE's Society theme for 2020-21, leads us to explore our path to digital transformation, while integrating industry segments and technology. We see evidence of this concept being accepted during the recent COVID-19 pandemic through intelligent and transparent collaboration, principles of lean thought, digital business and off-site solutions. Never before have our efforts to provide the latest in HVAC&R technology had such an impact on the public nor been so important.

ASHRAE values its relationship with CAR and the China Refrigeration Expo over the years as we further strengthen our ability to influence positive change on a global scale. The responsibility remains on us to determine how we all can benefit from a connected digital world and drive this transformation to advance us forward.

Collectively, we can be a digital light shining brightly, guiding the built environment to a sustainable future.

I invite you to learn more about ASHRAE's activities by visiting ASHRAE online at ashrae.org and by attending the 2021 ASHRAE Virtual Annual Conference in June 2021.

All the best for a successful expo!

Sincerely,

A handwritten signature in black ink that reads "Charles E. Gullledge III, P.E." The signature is written in a cursive style.

Charles E. Gullledge III., P.E., Fellow ASHRAE
2020-21 ASHRAE President



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 2021!

At a time when the insidious coronavirus pandemic is spreading, 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 2021 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.

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 2021.

I would like to note well thought-out and accurate work of the organizers of the China Refrigeration Expo 2021. 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 2021 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).

**ALL INDIA AIR-CONDITIONING & REFRIGERATION ASSOCIATION****DSM-165, DLF Tower, 15 Shivaji Marg, Najafgarh Road,****New Delhi – 110015. INDIA****Ph.: 011- 42657225 Email: aiacraindia@gmail.com**

International Cooperation & Exhibition Dept.
Chinese Association of Refrigeration (CAR)

Sub.: Heartiest Congratulations for the China Refrigeration Expo 2021

Dear Team CAR,

Greetings from AIACRA !

It is a matter of great happiness for all of us that Chinese Association of Refrigeration (CAR) is coming back on the old track after facing such a big disaster. Please accept our heartiest congratulations for the China Refrigeration Expo 2021 scheduled to be held at the Shanghai New International Expo Center from April 7-9, 2021.

It's good news for all of us that China is beginning to organize events this year. All countries including China have worked with great bravery in controlling the epidemic. We are hopeful that COVID-19 pandemic will be under control soon with efforts done by the Healthcare professionals of the entire world.

Kindly do convey our best wishes to the entire team of CAR . We, on behalf of AIACRA, will always be there to support you and your team. Hope to see you at China Refrigeration 2022.

Good Luck and Best Wishes...

Regards
Rajendra Mittal
President AIACRA



JARN 雜誌



2021 年全球进入后疫情时代，各国对抗疫都有了一定的经验和方法，也让 HVAC&R 行业看到了曙光。中国制冷展一如既往地顺利召开，更是为重振全球市场带来了信心。

近几年，新零售、互联网 +、大数据、物联网、人工智能等等关键词占据热点。我相信本次展会亮相的许多新型节能和环保产品与现代信息技术的融合会带来巨大的商机和全新的体验。

我谨代表 JARN 全体同仁向大会的召开表示热烈祝贺！向一直以来支持我们全球的读者，特别要向大中华区的读者表示衷心的感谢！

JARN 作为专业媒体，53 年来，我们一直秉持初心，积极报道全球最新的市场信息，技术和产品，愿与业界同仁共同努力，取得更大的成功！

再次预祝大会取得圆满成功！

In 2021, the world is entering the post-epidemic era, and all countries acquired certain experience and developed methods to combat the pandemic, which also enables the HVAC&R industry see the dawn.

As always, China Refrigeration Exhibition will be seamlessly organized, and will also help to revitalize the global market, bringing new confidence to our sector.

In recent years, new retail, Internet +, big data, Internet of Things, artificial intelligence and other cutting-edge fields have become hot spots.

I believe that the integration of many new energy-saving and environmentally friendly products with modern information technology will bring great business opportunities and brand new experience.

On behalf of all JARN colleagues, I would like to extend warm congratulations on the opening of the exhibition!

We would like to express our heartfelt thanks to our readers all over the world, especially to our readers in Greater China.

As a professional media, JARN has been adhering to its original aspiration and actively reporting the latest global market information, technology and products for 53 years. We are willing to make joint efforts with colleagues in the industry to achieve even greater success!

Once again, I wish the exhibition a complete success!



CHINA REFRIGERATION 2021

March 2021

On behalf of the JRAIA member companies, I would like to express my sincere congratulations on the CHINA REFRIGERATION EXP0 2021 in Shanghai that brings together manufacturers, industry experts, and visitors from over the world.

JRAIA, the Japan Refrigeration and Air Conditioning Industry Association, was established in 1949 with current 164 member companies as of March 2021, I believe that JRAIA has been contributing to the industry as a leading association and expanding the area of activities.

Since the beginning of 2020, Covid-19 has spread around the world and caused severe damage to economic activity, I would like to express my deepest condolences to many people who have lost their lives and suffered due to Covid-19 not only in China but also in other countries around the world.

Many exhibitions, meetings have been cancelled or postponed, including HVAC&R JAPAN 2020 and the International Symposium on the Environment and New Refrigerants 2020. To face these challenges, some events and meeting are held virtually, and we are currently adapting to "new-normal" situation.

"2050 carbon-neutral" has been set by Japanese government, last year. JRAIA will work on technological development and risk assessment toward the high goal of "2050 carbon-neutral". Refrigerants management and energy efficiency are becoming more important for HVAC 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.

Yours truly,

Futoshi Nishizaki
chairman of the board,

the Japan Refrigeration and Air Conditioning Industry Association (JRAIA), Japan



Congratulation Message to China Refrigeration Expo 2021

JSRAE President Kuniaki Kawamura

JSRAE members all send our best wishes to China Refrigeration Expo 2021, 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 the world. During China Refrigeration Expo 2021, 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 serious situation with COVID-19 infection in the world, I hope this EXPO 2021 could contribute against this matter.

I wish the success of China Refrigeration Expo 2021 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 2021

On behalf of KRAAC (Korea Refrigeration and Air-conditioning Assessment Center), I would like to congratulate this “China Refrigeration EXPO 2021” with all my heart even in the difficult situation under COVID-19 since last year. However, I believe we could get over this situation soon.

Now, high efficiency has been going on for a long time and most of the products are introducing high-efficiency products to the market. However, in the case of China and Korea, as interest in IAQ (Indoor Air Quality) caused by external fine dust has increased, many related new products are also being created. The world is suffering from the recent COVID-19 Pandemic and now new products capable of not only IAQ but also antibacterial and antiviral are developed and introduced to the market. 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 2021”

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

[여기에 입력]



CRH 2021 Congratulation message from KRAIA

Sunghee Kang
Korea Refrigeration and Air-conditioning Industry Association

Ni hao! Hello! I'm Sunghee Kang, the Chairman of Korea Refrigeration and Air-conditioning Industry Association.

On behalf of the Korean Refrigeration and Air-conditioning industry, I would like to extend my sincere congratulation on the opening of the 2021 China Refrigeration Expo.

2019 was a year that made us directly feel the tremendous impact the "air" has on mankind due to the spread of COVID-19 around the world. And because of that, it was an opportunity to remind us of how important the role of the HVAC&R industry is.

Under such circumstances, not only the world but also the Korean HVAC&R industry has been developing new technologies and carrying forward various businesses. In particular, rapid technological advancements are being made in the development of virus-response products as well as in the fields of 'heat pump systems' incorporating artificial intelligence (AI) and the 4th industrial revolution technology, and 'high-efficiency chillers using new LOW GWP refrigerants.'

I sincerely wish that the "2021 China Refrigeration Expo," one of the world's largest "exhibitions specialized in HVAC&R," will become a venue for the "cooling and heating air conditioning industry" festival where cutting-edge products and innovative technologies are exchanged.

Also, at this exhibition, I look forward to progressing discussions on the challenges we must overcome, such as climate change and energy conversion from fossil fuels, which are on the backside of the advancements of the HVAC&R industry.

Lastly, I would like to thank "the Chinese Association of Refrigeration" and "the China Refrigeration and Air-conditioning Industry Association" for taking the lead in the advancements of China's HVAC&R industry and for their long-hard works to hold this exhibition even in difficult times amid pandemic. I sincerely hope that the "2021 China Refrigeration Expo" will be a festival for those in the HVAC&R industry in the world. Thank you.



January 18, 2021

Congratulatory Message from President of SAREK

It is my great pleasure to celebrate China Refrigeration Expo 2021 to be held in Shanghai. I appreciate your friendly invitation from the CAR (Chinese Association of Refrigeration). Unfortunately, COVID situation prevents foreign travel, thus it is not so easy to join the exhibition 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. In this year, SAREK will celebrate its 50th anniversary. 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 black ink, appearing to read "Min Soo KIM".

Min Soo KIM

President

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

恭祝二〇二一年第三十二屆中國制冷展

懋績共仰
大業永昌



台灣區冷凍空調工程工業同業公會
理事長 朱賜評 敬賀

2021中國製冷展

活 動 圓 滿 成 功

台灣冷凍空調學會 理事長 施陽正

暨全體理監事 敬賀





Congratulatory Message from President of ASHRAE Hong Kong Chapter for China Refrigeration Expo 2021

On behalf of ASHRAE Hong Kong Chapter, I am glad to extend my warmest congratulations to the International Exhibition for Refrigeration, Air-conditioning, Heating and Ventilation, Frozen Food Processing, Packaging and Storage (also known as China Refrigeration Expo 2021).

This Expo has been running over 30 years, with hundreds and thousands of exhibitors to participate each year. It offers a chance for such industry to learn the latest technology and product development as well. It is one of the biggest events in China that every professional in HVAC industry is long for joining it.

As the COVID-19 crisis is still spreading seriously, I hope all of you can stay healthy and safe.

I wish the China Refrigeration Expo 2021 a great success.

Tenny Tam
President (2020-21)
ASHRAE Hong Kong Chapter



Congratulatory Message

On behalf of the Chartered Institution of Building Services Engineers Hong Kong Region, I am greatly honor to offer my warmest congratulations to the visitors, exhibitors and organizers of China Refrigeration Expo 2021.

Throughout the years, the CR Expo served as an important platform for global networking and the delegates from manufactures, suppliers and professional institutions to exchange ideas and innovations. I would like to take this opportunity to express my appreciation towards the Organizing Committee for their commitment and contribution for organizing this very successful Expo.

The CR Expo has contributed significantly to the sustainable and technological development of the HVAC and Refrigeration industry across the world. We look forward to the continued contributions of China Refrigeration in helping us shape tomorrow's built environment.

Last but not least, I wish everyone great success in the Expo and in all future endeavors.

Vincent MA
Chair, Hong Kong Region
The Chartered Institution of Building Services Engineers (CIBSE)



香港荃灣柴灣角街 35-45 號裕豐工業大廈 13 樓 7 室 . Rm 7, 13/F, Yue Fung Ind. Bldg., 35-45 Chai Wan Kok Street, Tsuen Wan, HK
 電話: 2890 2622 傳真: 2890 2653 網址: www.hkaee.org Tel: (852) 2890 2622 Fax: (852) 2890 2653 Website: www.hkaee.org



同心同德
 兴业利群

中国制冷展二零二一

香港能源工程師學會會長

刘剑伟
 工程師

敬賀



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

移風易濁 惠眾利羣



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



中国制冷展二零二一

後秀云集暖通展
齊力戰疫共冷暖

香港空調及冷凍商會會長

刘自威 敬贺

Timetable for CRH2021

Date	Time	Programme	Venue
April 7	09:00-12:15	Opening Ceremony CRH2021 Forum	Grand Ballroom,3 rd Floor,Jumeirah Himalayas Hotel
April 7	09:00-17:30	Exhibition	Shanghai New Int'l Expo Center
April 8	9:30-17:30		
April 9	09:30-16:00		
April 7-9	09:30-17:00	CRH2021 Symposiums	Shanghai New Int'l Expo Center
April 6	08:00-12:00	Technical Seminars	Third Floor,Banquet Hall C,Leonora Plaza Shanghai
April 6	09:30-17:30	Technical Seminars	Renaissance Shanghai Pudong Hotel
April 8	08:30-11:30	Technical Seminars	Fupeng Hall,Four Points by Sheraton Shanghai
April 8	08:30-12:30	Technical Seminars	Third Floor,Haosheng HallA+B, Leonora Plaza Shanghai
April 6-9	08:00-17:00	Technical Seminars	Meeting Rooms, Shanghai New Int'l Expo Center

CRH 2021 Forum

Time	Venue	Topic
April 7 09:00-12:15	Grand Ballroom, 3 rd Floor of Jumeirah Himalayas Hotel, Shanghai	<ol style="list-style-type: none"> China's Energy Transition and Carbon Neutral Path ——Prof. JIANG Yi, Academician of Chinese Academy of Engineering, Director of Building Energy Research Center of Tsinghua University, Chairman of Chinese Association of Refrigeration The Latest Global HVAC&R Status and Trends ——Keisho Ka, President of JARN LTD. Application Practice and Innovation of Digital Economy and Big Data ——Dr. LI Ting, Senior Engineer, Director of Alibaba Cloud Intelligent Research Center Changes Unseen in a Century and the Dream of Rejuvenation of China ——to be determined

CRH 2021 Symposiums Schedule

Date	Topic	Time	Venue
April 7	Symposium 1: International Forum on Carbon Neutral Technical Development in Cold Chain Industry (Online, Simultaneous Interpretation)	14:00-17:00	Online
	Symposium 1: International Forum on Carbon Neutral Technical Development in Cold Chain Industry (Online, Simultaneous Interpretation)	14:00-16:00	Meeting Room W2-M2
	Symposium 3: Technical Seminar on New Standards for Refrigeration and Air-Conditioning Equipment	14:00-16:30	Meeting Room W2-M3
	Symposium 4: Green and Efficient Refrigeration Technology Helps Low Carbon Development of China's Real Estate Industry	14:00-16:30	Meeting Room E1-M15
	Symposium 5: Efficient Cooling Technologies for Green Data Center	14:00-16:30	Meeting Room E1-M16
	Symposium 6: Development of Heat Exchangers	14:00-16:30	Meeting Room E2-M17

Date	Topic	Time	Venue
April 7	Symposium 7: The Forum for HVAC Technology Suitable for Climate Characteristics in Western China	14:00-16:30	Meeting Room E2-M18
	Symposium 8: Cooling and Refrigeration Systems Installation and Maintenance: Towards Super High Efficiency and Carbon Neutralization	14:00-16:30	Meeting Room E3-M23
	Symposium 9: Forum of Cold Chain Logistics Industry	14:00-16:30	Meeting Room E3-M24
	Symposium 10: Sterilization Technology for Cold Chain	14:00-16:30	Meeting Room E4-M27
	Symposium 11: China Light Commercial Refrigeration Industry and Technology Development Blue Book (2020) Release Ceremony & Light Commercial Refrigeration Technology Innovation and Development Forum	13:30-17:00	Meeting Room E5-M32
	Symposium 12: 2021 Ozone2Climate Industry Roundtable—Air-Conditioning & Heat Pump Sub-Forum	13:30-16:30	Ozone2Climate Technology Roadshow E3-G31
	Symposium 13: Green Development of Heat Pump	13:30-16:30	Heat Pump Pavillion E5-F01
April 8	Symposium 14: International Forum on Low Carbon Solution for Space Heating and Cooling (Online, Simultaneous Interpretation)	09:30-12:00	Online
	Symposium 15: Air Conditioning Technology for Rail Transit	9:30-12:30	Meeting Room W1-M1
	Symposium 16: Symposium on New Evaporative Cooling Technology and Its Application	9:30-12:30	Meeting Room W2-M2
	Symposium 17: Energy Conservation and Carbon Emission Reduction of Building Outdoor Air Handling	09:30-12:00	Meeting Room W2-M9
	Symposium 18: Forum on Improving VRF	9:30-11:00	Meeting Room W3-M10
	Symposium 19: Symposium on Refrigeration Components Technology	11:00-12:30	Meeting Room W3-M10
	Symposium 20: Heat Pump Innovation for 2060 Carbon Neutral in China	09:30-12:00	Meeting Room E2-M17

Date	Topic	Time	Venue
April 8	Symposium 21: Seminar on Refrigeration and Air Conditioning Technology in Western China -- Energy Saving for Industrial Building	09:30-12:00	Meeting Room E2-M18
	Symposium 22: 2021 Ozone2Climate Industry Roundtable (Simultaneous interpreting)	9:30-12:00 13:30-16:30	Meeting Room E2-M19
	Symposium 23: Refrigeration Engineers Forum: Low Carbon Refrigeration And Air Conditioning Products And Technology	09:30-12:00	Meeting Room E3-M23
	Symposium 24: Freezing and Cold Storage Seminar	09:30-12:00	Meeting Room E3-M24
	Symposium 25: Based on Low-carbon Environmental Protection, Create a Green Winter Olympics and The 13th National Ice Machine Industry Seminar	09:30-12:00	Meeting Room E4-M27
	Symposium 26: The 3rd Indoor Air Purification and Fresh Air Technology Symposium	9:30-12:00	Meeting Room E5-M28
	Symposium 27: Vaccine Cold Chain Technology and Equipment	09:30-12:00 14:00-16:30	Meeting Room E5-M32
	Symposium 28: 2021 Ozone2Climate Industry Roundtable—Cold Chain and Compressor Sub-Forum	9:30-12:30	Ozone2Climate Technology Roadshow E3-G31
	Symposium 29: Forum on Intelligent Household Air Conditioning Technology	9:30-12:00 14:00-16:00	Pavillion of Household Refrigeration and Air-Conditioning Equipment E4-D01
	Symposium 30: Advanced Ventilation Air Distribution and Environment Control for Large Space	14:00-16:30	Meeting Room W2-M9
	Symposium 31: Technology of Heating in the Yangtze River Basin in Winter	14:00-16:30	Meeting Room W3-M10
	Symposium 32: Launch Event of China New Energy Vehicle Thermal Management Technology Development & New Energy Vehicle Thermal Management Technology Development Forum	14:00-16:30	Meeting Room E1-M15
	Symposium 33: Efficient and Environment-friendly Compressor and its Application	14:00-16:30	Meeting Room E1-M16
	Symposium 34: Forum of VRF Technology Development Under the Background of Peak Carbon Dioxide Emissions and Carbon Neutrality	14:00-16:30	Meeting Room E2-M17

Date	Topic	Time	Venue
April 8	Symposium 35: Construction and Practice on IDC with Low PUE	14:00-16:30	Meeting Room E2-M18
	Symposium 36: Innovation Achievements and Prospects of Cold Chain Logistics in China	14:00-16:30	Meeting Room E3-M24
	Symposium 37: Refrigerated Transportation Technology and Equipment	13:30-16:30	Meeting Room E4-M27
	Symposium 38: Green Cooling Technology for Data Center	13:30-16:30	Meeting Room E5-M28
	Symposium 39: 2021 Ozone2Climate Industry Roundtable—Good Practice of Refrigeration Maintenance Sub-forum	13:30-16:30	Ozone2Climate Technology Roadshow E3-G31
	Symposium 40: Forum on Heat Pump Technology and Application	13:30-16:30	Heat Pump Pavillion E5-F01
April 9	Symposium 41: National Standard Seminar for Unitary Air Conditioner and Heat Pump Water Heater	9:30-12:00 13:00-16:00	Meeting Room E2-M19

Timetable for Technical Seminars

Date	Time	Company	Topic	Venue
April 6	08:00-12:00	The Organizing Committee of China Refrigeration Expo Chinese Association of Refrigeration FU SHENG INDUSTRIAL (SHANGHAI) CO., LTD.	Application of Green and High-efficiency Compressor Technology in Cold Chain Facilities (Tentative Topic)	Third Floor, Banquet Hall C, Leonora Plaza Shanghai
	9:30-17:30	Chinese Association of Refrigeration	Training: Technical Development and Application Status of Key Components of Light Commercial Refrigeration Equipment	Renaissance Shanghai Pudong Hotel
April 7	9:30-12:00	Chinese Association of Refrigeration	Training: Improve the Green Commercial Refrigeration System, Promote the Healthy and Efficient Development of the Industry	Meeting Room E5-M32
	11:30-13:30	China Refrigeration and Air-Conditioning Industry Association (CRAA)	Press Conference of the 15th Science and Technology Contests for College Students of China R&AC Industry	Meeting Room W1-M1
	13:00-15:00	Panasonic Appliances Refrigeration System(Dalian) Co., Ltd.	1. Comprehensive application of CO ₂ transcritical ejection refrigeration and heating technology 2. Innovation and technology application of cold chain logistic products 3. Comprehensive utilization solutions of cold and heat energy in ice and snow stadiums	Meeting Room E1-M13
	13:00-13:30	Danfoss (Shanghai) Investment Co., Ltd.	1. Danfoss ALLY 2. 2021 Danfoss Green Heating Forum	Meeting Room E2-M20
	13:30-15:30	Johnson Controls	Open Blue - Johnson Controls York innovative low-carbon solutions	Meeting Room E1-M12
	13:30-16:00	SHANGHAI HANBELL PRECISE MACHINERY CO., LTD.	1. Hanbell solution for energy-saving of central air-conditioning system 2. Hanbell solution for energy-saving of cold store and compressor selection 3. Application of hanbell open type compressor---RGII 4. Hanbell solution for low ambient temperature air source heat pump	Meeting Room E2-M14
	13:30-14:30	Danfoss (Shanghai) Investment Co., Ltd.	2021 Danfoss Green Data Center Forum	Meeting Room E2-M20
	13:30-14:30	MAYEKAWA CHINA INDUSTRIES CO., LTD.	Integrated technology for broiler and meat processing plant	Meeting Room E4-M25
	13:30-16:30	Qingdao Haopinhaizhi Information Technology Co.,Ltd. China Refrigeration and Air-Conditioning Industry Association (CRAA)	Seminar on 1+X refrigeration and air-conditioning system installation and maintenance certificate	Meeting Room E5-M28

Date	Time	Company	Topic	Venue
April 7	13:30-16:30	TROX Air Conditioning Components (Suzhou) Co.,Ltd.	Pioneering Design · Precision Engineering · Premium Comfort The Comfortable Indoor Environment — The Art Air Solution From TROX	Meeting Room W4-M7
	4:00-16:00	Johnson Controls-Hitachi Wanbao Compressor (Guangzhou) Co.,Ltd.	A Compressor Solution for DC INV Chiller and Heat Pump	Meeting Room E1-M11
	14:00-16:30	LU-VE Heat Exchanger (Tianmen) Co.,Ltd.	Meeting on Application Technology of air-cooler	Meeting Room E3-M21
	14:00-16:00	Air-Conditioning, Heating and Refrigeration Institute (AHRI)	AHRI Technical Meeting On AHU and RFC Standard and Certification	Meeting Room W4-M6
	14:30-16:30	Chinese Association of Refrigeration	General Assembly of Working Committee of Capability Evaluation for Professional Engineers, Chinese Association of Refrigeration & 2020 Outstanding Engineer Award Ceremony	Meeting Room E2-M19
	14:30-16:00	Danfoss (Shanghai) Investment Co., Ltd.	2021丹佛斯绿色能效论坛-工业制冷主题 1.速冻设备蒸发温度控制方案分享 2.复杂工况及超低温制冷系统的绿色解决方案 3.大型制冷控制系统节能解决方案	Meeting Room E2-M20
	15:00-16:00	珠海格力电器股份有限公司	“新基建”暖通系统解决方案的实践创新	Meeting Room W2-M9
April 8	8:30-11:30	The Organizing Committee of China Refrigeration Expo Chinese Association of Refrigeration Journal of HV&AC	Technical Seminar of HVAC Industry Users Observation Group	Fupeng Hall, Four Points by Sheraton Shanghai
	8:30-12:30	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	3rd Floor, Haosheng Hall A+B, Howard Johnson Leonora Plaza Shanghai
	09:00-11:00	SHUANGLIANG ECO-ENERGY SYSTEMS CO., LTD.	Shuangliang Integrated Energy Services	Meeting Room W4-M6
	09:30-12:00	Chinese Association of Refrigeration	Inaugural Meeting of the Vehicle Thermal Management Working Committee of Chinese Association of Refrigeration	Meeting Room E1-M13
	09:30-12:00	Chinese Association of Refrigeration	Launch Event of 2020 Annual Report on China Data Center Cooling Technology Launch Event of Magnetic Compressor and Chiller for Data Center Cooling White Paper& Data Center Cooling Technology Forum	Meeting Room E1-M16
	9:30-12:00	China Refrigeration and Air-Conditioning Industry Association (CRAA) Confederation of Chinese Metalforming Industry	Forum of China Metalforming Technology in HVAC&R Industry	Meeting Room W2-M3

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投稿邮箱: wfan@car.org.cn

联系电话: 010-68463224



Date	Time	Company	Topic	Venue
April 8	09:30-12:00	HOLLINGSWORTH&VOSE (SUZHOU) CO., LTD.	New Trend of HVAC Air Filtration Post COVID-19	Meeting Room W5-M8
	10:00-11:40	Danfoss (Shanghai) Investment Co., Ltd.	2021 Green Heat Pump Heating and Drying Forum	Meeting Room E2-M20
	10:00-11:30	BITZER Refrigeration Technology (China) Co., Ltd.	Journey of Discovery -- Large Capacity CO2 Compressors Lead the New Industrial Developing Trend	Meeting Room E3-M22
	11:00-12:00	Chinese Association of Refrigeration	CAR-ASHRAE Student Design Project Competition Award 2020	Meeting Room E1-M15
	13:00-15:00	Panasonic Appliances Air-Conditioning and Refrigeration (Dalian) Co.Ltd.	1. Analyze and application of GHP 2. Industrial waste heat recovery with LiBr Absorption chiller	Meeting Room E1-M12
	13:30-14:00	Danfoss (Shanghai) Investment Co., Ltd.	2021 Danfoss Green Heating Forum	Meeting Room E2-M20
	13:30-16:30	China Quality Certification Center Jianke EET Co., Ltd.	Air source heat pump heating and drying Development Forum	Meeting Room W4-M7
	14:00-16:00	YANTAI CITY AOWEI REFRIGERATION EQUIPMENTS CO., LTD	1. CO ₂ secondary Refrigerant Unit Seminar 2. Integrated Carton Quick Freezer Seminar	Meeting Room E1-M11
	14:00-17:00	AirProce Technoligy Co., Ltd.	New Product Launch	Meeting Room E1-M13
	14:00-15:00	Danfoss (Shanghai) Investment Co., Ltd.	2021 Danfoss Innovative Turbocor Oil Free Forum	Meeting Room E2-M20
	14:00-16:30	Shanghai Jiao Tong University Shanghai Society of Refrigeration	Xia Anshi Education Foundation Award of Shanghai Jiao Tong University 2021 and the 40th Anniversary Launch Meeting of Shanghai Society of Refrigeration	Meeting Room E3-M23
	14:00-16:30	Chinese Association of Refrigeration	Launch Event of 2020 China Refrigeration Market Study Report	Meeting Room W4-M6
	09:30-12:00	Danfoss (Shanghai) Investment Co., Ltd.	2021 Danfoss Commercial Refrigeration Forum	Meeting Room E2-M20
April 9	09:00-12:00	China Air Purification Industry Alliance	China Air Purification Industry Alliance Annual Meeting of 2021	Meeting Room W4-M7

A Decade of O2C for Sharing the Same Blue Sky

3 Decades of Challenging for New Splendid Achievement

—Countdown to 2021 Ozone2Climate Technology Roadshow and Industry Roundtable

The 2021 Ozone2Climate Technology Roadshow and Industry Roundtable will be held at Booth E3-G31 and Conference Room E2-M19 of the 32nd China Refrigeration Expo from April 7th to 9th.

In 2021, the tenth consecutive year of the event, the China Refrigeration Expo has developed into an important platform for ozone-friendly information exchange in the global refrigeration, air-conditioning and HVAC&R industries. Experts from government authorities, international agencies, industry associations, enterprises, research institutions and other units have brought the latest policies and regulations, technological development, standard progress, results and experience, playing a fruitful role in the ODS elimination and conversion actions of China and the global refrigeration and air-conditioning industry.

2021 is the 30th anniversary of China's accession to the Montreal Protocol, as well as the 30th anniversary of the refrigeration and air-conditioning industry participating in the compliance action. On this occasion, the four sponsors of the Ozone2Climate Technology Roadshow and Industry Roundtable, namely the United Nations Environment Programme (UNEP), the United Nations Development Programme (UNDP), the Ministry of Ecology and Environment Foreign Cooperation and Exchange Center (FECO), and China Refrigeration and Air-Conditioning Industry Association (CRAA), will carry out a series of commemorative, exhibition and technical exchange activities during the road show and industry roundtable.

Stay tuned!

Schedule for series activity:

Activity		Time	Venue
Ozone2Climate Technology Roadshow		April 7-9 9:00-17:00	Booth G31, Hall E3
Industrial Roundtable	Conference Forum and Commemorative Activities	April 8 9:30-16:30	Meeting room M19 Hall E2
	Side-Session on Technology Updates in Air-Conditioning and Heat Pump Systems	April 7 13:30-16:30	Booth G31, Hall E3
	Side-Session on Cold Chain&Compressor Technologies	April 8 9:30-12:30	Booth G31, Hall E3
	Side-Session on Good Practice in Servicing Sector	April 8 13:30-16:30	Booth G31, Hall E3

2021 Ozone & Climate Industry Roundtable

8 April, 9:30-16:30

E2-M19, Shanghai New International Expo Center, China

Morning Lecture:

1. Progress of Green Substitution in ICR Industry

——Mr. Zhang Zhaohui, Vice Chairman & Secretary General, CRAA

2. Green Refrigeration Promotes Global Sustainable Development-Progress in the Implementation of China's Green and Efficient Refrigeration Action Plan

——Ms. Han Wei, Deputy Program Director, Energy Foundation CHINA

3. New Politics, New Challenges, New Refrigerants: Industry Responds

——Mr. Stephen Yurek, President and CEO, Air-conditioning, Heating, and Refrigeration Institute (AHRI)

4. Green and High-Efficient Cooling Technology and Application in Europe

——Ms. Andrea Voigt, Director General, The European Partnership for Energy and the Environment (EPE)

5. Incorporating Cooling Efficiency in the HPMP Planning – The National Cooling Plan of Lebanon

——Mr. Mazen Hussein, Head, National Ozone Unit, Ministry of Environment

Afternoon Lecture:

1. ICR industry 2021-2026 HPMP and China's approval of the "Kigali Amendment" performance prospects

——Guo Xiaolin, Deputy Division Chief of MP, Foreign Environmental Cooperation Center, Ministry of Ecology and Environment

2. O2C Alternative Technologies and Challenges for Adoption during KA Implementation

——Mr. Hu Shaofeng, Regional Network Coordinator, UN Environment Ozone Action

3. Progress in A5 National HCFCs phase-out excellent project

——Mr. Anderson Moreira do Vale Alves, Regional Coordinator for Asia-Pacific – Montreal Protocol Unit, UNDP

4. Application of Green and High-Efficient Technology in China Winter Olympic Games

——Prof. Ma Yitai, Tianjin University

5. Development and Prospect of CO2 Technology

——Prof. Cao Feng, Xi'an Jiaotong University

6. The Research and Application of New Environmental-Friendly Fluorine-Containing Refrigerants

——Mr. Jiang Shiheng, Director of the R&D Office, Gree Electric Appliances, Inc. of Zhuhai

7. Sharing and reviewing based on the ten-year green development experience of Moon

——Ms. Jiang Shaoming, Undersecretary, Moon Environment Technology co.,Ltd.

2021 Ozone2Climate Industry Roundtable:

Side-Sessions on Technology Updates in Air-Conditioning and Heat Pump Systems

7 April 2021

Shanghai New International Expo Centre

Ozone2Climate Roadshow Booth # E3-G31

Date	Side-Session	Agenda
<p>April 7 13:30~16:30</p>	<p>Technology Updates in Air-Conditioning and Heat Pump Systems</p>	<ol style="list-style-type: none"> 1. Opportunities and Challenges for the Development of Refrigeration and Air-conditioning Industry ——Prof. Shi Lin, Tsinghua University 2. Discussion on Safety Technical Requirements and Inspection Specification of R&AC products Using Flammable Refrigerants ——Mr. Wu Junfeng, Hefei General Machinery Research Institute Co. Ltd 3. Application of CO₂ Heat Pump Water Heater in Commercial Hot Water Field ——Mr. Zhao Jianfeng, CO₂ Heat Pump Technology Manager, Zhejiang DunAn Electro-Mechanical Technology Co., Ltd 4. R32 Inverter Scroll Compressor for Air Conditioning Application ——Mr. Yang Jiaxiang, Senior Manager, Johnson Controls-Hitachi Wanbao Compressor (Guangzhou) Co., Ltd. 5. Application and Promotion of Small R32 Commercial Air Conditioners ——Mr. An Chao, R & D Director, Haier 6. Discussion 7. Application Study of R1233ze(E) into Centrifugal Chiller ——Ms. Xue Fang, Principal Engineer, Johnson Controls Building Efficiency Technology (Wuxi) Co. Ltd 8. Large Heat Pumps and Air Conditioning Systems Using Ultra Low GWP Refrigerant as Substitution of R134a ——Ms. Li Aili, Segment Marketing Director, Danfoss 9. Next Generation Refrigerant Solution for Commercial Refrigeration and Air Conditioning ——Mr. Xu Kang, Market Development Manager, The Chemours Chemical (Shanghai) Co., Ltd 10. Ultra Low GWP Refrigerants Application in Chiller ——Ms. Cao Xia, APAC Marketing Leader, Honeywell 11. Lubricant Research and Evaluation for Low GWP Refrigerants ——Mr. Chen Sheng, Asia Pacific Technology and Application Manager - Refrigeration, Lubrizol 12. Discussion

Date	Side-Session	Agenda
April 8 9:30~12:30	Cold Chain&Compressor Technologies	<ol style="list-style-type: none"> 1. Updates on Green and Efficient Technologies of Cold Chain ——Prof. Shen Jiang, Tianjin University of Commerce 2. Development of Energy Saving Evaluation System and Promoting Policy & Standard for Commercial Refrigerators and Cold Storage ——Prof. Cheng Jianhong, China National Institute of Standardization 3. The Whole Process Solution of Vaccine Safety Cold Chain Under the Pandemic ——Mr. Wang Guangsheng, Deputy General Manager, Qingdao Haier Biomedical Co., Ltd. 4. Development and Application of R290 Compressor in Highly ——Mr. Zhou Yi, CTO, Shanghai Highly Electrical Appliances Co., Ltd. 5. VSD Solution for Light Commercial Cabinets in Supper Market ——Mr. Li He, Application Manager, Secop Compressors (Tianjin) Co., Ltd. 6. Discussion 7. CO₂ Ejector System & Application in Sports Venues and Warehouses ——Ms. Yu Meiling, Senior Engineer, Carrier Air-Conditioning & Refrigeration R&D Management (Shanghai) Co., Ltd. 8. High Efficiency CO₂ Compressor and System ——Mr. Wang Yi, R&D Director, BITZER Refrigeration Technology (China) Co., Ltd. 9. The Application of CO₂ in Refrigeration and Heating Sectors in China ——Mr. Chui Jinghui, Sales Director, Heilongjiang ARCO Technology Co.Ltd. 10. CO₂/NH₃ Refrigeration System and Main Equipment ——Mr. Guo HanYu, Office Director, Bingshan Refrigeration & Heat Transfer Technologies Co., Ltd. 11. Design Based on the Characteristics of CO₂ Working Medium ——Mr. Liu Cong, Chief engineer assistant, Yantai Aowei Refrigeration Equipment Co., Ltd. 12. Discussion

Date	Side-Session	Agenda
April 8 13:30~16:30	Good Practice in Servicing Sector	<ol style="list-style-type: none"> 1. Progress in the Implementation of HPMP for ICR Servicing Sector and Next Step Plan ——Ms. Hua Xue, Senior Project Officer, Foreign Environmental Cooperation Center, Ministry of Ecology and Environment (FECO) 2. Technical Requirements for Management of Refrigerant Recovery and Destruction in Major Industries in China ——Mr. Lin Jun, Director, China Solid Waste and Chemicals Management Technology Center 3. Refrigerant Recovery and Recycling Technology ——Prof. Han Xiaohong, Zhejiang University 4. Discussion on the Development of Refrigerant Reuse, Redesign and Recycle under the Guidance of the Concept of Carbon Neutrality ——Mr. An Qingsong, Associate Professor, Tianjin University 5. Research on Recovery and Regeneration Technology of HFCs Refrigerant under the Framework of Kigali Agreement ——Mr. Wang Haitao, General Manager, Tianjin Aohong Environmental protection material Co.,Ltd. 6. Discussion 7. Research on the Development of Occupational Skill Appraisal Standards for "Refrigeration and Air-conditioning System Installers and Maintenance Workers" Based on Good Practices ——Prof. Gong Weishen, Suzhou University 8. Establish a Training System to Integrate Environmental Awareness ——Mr. Shi Weihua, Director, Shanghai Science and Technology Management School 9. Promotion of Good Servicing Practice in Shanghai ——Mr. Tang Xianyi, Technical Director, Haier 10. Professional Skills Standards and Competitions in Servicing Sector ——Mr. Liu Huicheng, Director Assistant, CRAA 11. Discussion

Low-Carbon, High-Quality, and Green Development

—The 12th "National Design Institutes Chief Engineers Group" Meets in Shanghai

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 12th National Design Institutes Chief Engineers Group Activity (hereinafter referred to as the Chief Engineers Group), undertaken by Beijing CRAA Quality Certification Center Co., Ltd., will be held as scheduled at the China Refrigeration Expo 2021.

The "Chief Engineers Group" is composed of top experts and scholars from the national design institutes and architecture institutes. The "Chief Engineers 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 Engineers Group" has been successfully held for 11 consecutive sessions. As the group continues to grow, it has attracted more and more attention from users and companies, and it has also attracted growing number of refrigeration and air-conditioning experts, scholars and chief architects to join. In 2020, the total number of members in the group has reached 101, making the group a real huge team of one hundred people. In addition, young designers were invited to join this year's "Chief Engineers Group" for the first time, whose fresh thinking and creativity will provide assistance for the all-round and diversified development of enterprises.

As one of the iconic theme activities of China Refrigeration Expo, "Chief Engineers Group" has been favored by users, enterprises and designers. Designers from all over the country gathered at the Expo, using their experience, wisdom and innovative ideas to check and diagnose the product of enterprises. They could provide technical support and market application opinions, and provide users with the best design for architectural engineering HVAC, recommend and show the most suitable products to customers, truly unite HVAC products with usage, and comprehensively promote the improvement of refrigeration and air-conditioning technology and quality.

National Design Institutes Chief Engineers Group activities during the Expo

1. During the China Refrigeration Expo 2021, the National Design Institutes Chief Engineers Group activity, with the theme of "low-carbon, high-quality and green development", invites (deputy) chief engineers and experts from major design institutes across the country.
2. From 9:00-12:00 on April 7th, the chief engineers of the group will participate in the opening ceremony and the theme forums of the 32nd China Refrigeration Expo, and listen to the theme reports of the Expo.
3. From 14:00-17:00 on April 7th, the chief engineers of the group will be organized to go to the booth for technical exchanges.
4. The technical exchange meeting of the "National Design Institutes Chief Engineers Group" will be held from 8:30-12:00 on April 8th. 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 live video to share the high-end event with more experts, scholars, enterprises and users. The theme of the speeches is "low-carbon, high-quality and green development". The leaders of the co-organizers and the chief engineers will have face-to-face exchanges in the interactive forum to discuss hot issues in the industry.

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 "National Design

Institutes Chief Engineers Group" in 2022. Please contact Beijing CRAA Quality Certification Center Co., Ltd. if there is a will.

Contact: Wang Xiaopeng

Telephone: 010-83510099-627

Mailbox: craaqcc@chinacraa.org



A Healthy and Comfortable Life Guided by Smart Home

— The Pavillion of Household Refrigeration and Air-conditioning Equipment at
China Refrigeration Expo 2021

The Pavillion of Household Refrigeration and Air-conditioning Equipment 2021 will make its debut at the 32nd China International Exhibition for Refrigeration, Air Conditioning, Heating and Ventilation, Frozen Food Processing, Packaging and Storage" (hereinafter referred to as "China Refrigeration Expo") from April 7th to 9th.

The period from 2021 to 2030 is a new "ten-year period" in the household air-conditioning industry, and it is also a "ten-year period" that will witness qualitative changes. 2021 is the first year of the decade and a crucial year after 2020. In consultation with China Refrigeration and Air-Conditioning Industry Association (CRAA), Hefei General Mechanical and Electrical Products Inspection Institute (GMPI) and domestic mainstream air-conditioning manufacturers, it was decided to set up a demonstration exhibition area for household air-conditioning to provide assistance to this "first year".

The Pavillion of Household Refrigeration and Air-conditioning Equipment 2021, which is set up for the first time, is located in Booth E4D01, Hall E4, Shanghai New International Expo Centre, covering an area of 464 square meters. With the theme of intelligent green appliances, it fully demonstrates the technical characteristics of intelligent household air-conditioning in terms of digitalization, health and comfort. Major domestic air-conditioning manufacturers, such as Gree, Midea, Oaks, Haier, Hisense, etc., will bring their latest technologies and products, with health functions for sterilization and dust removal, convenient and fast digital functions, comfort functions for improving life quality and so on.

An open thematic technical exchange meeting on intelligent household air-conditioning will be held at this exhibition area, and exhibitors are invited to show their new technologies in household air-conditioning in detail.

Welcome to The Pavillion of Household Refrigeration and Air-conditioning Equipment 2021 at E4D01.

15th Science and Technology Competition for College Students of Chinese Refrigeration and Air-conditioning Industry Kicks off

The 15th Science and Technology Competition for College Students of Chinese Refrigeration and Air-conditioning Industry launch event & press conference will be convened during 32nd CRH on April 7th, 2021.

The 15th Science and Technology Competition for College Students of Chinese Refrigeration and Air-conditioning Industry, sponsored by China Refrigeration and Air-Conditioning Industry Association (CRAA), is a sci-tech campaign with masses and public interest features, aiming to helping the university subjects of energy and power, architectural environment and energy application engineering to innovate the curriculum system catering to the 21st century demand, assisting the university to carry out the quality-oriented education, guiding the intensive students to actively engage in the extracurricular scientific activities. By virtue of more sci-tech practice, train the students innovative capacity and engineering quality, creating better conditions for the excellent back-up talents pool. After more than ten years of growth, it has grown into a contest platform vigorously attended by students majoring in energy and power and architectural environment nationwide.

The contest this year will as always be supported by multiple companies in the industry and attended by more than ten universities nationwide. We designate six regions nationwide as final venues saving the students from having to go afar, and the final is organized by specific universities within the above region. The initial contest at the school level is about to be fully unfolded, which will be attended by 100-plus university delegations. Owing to the impact of covid-19 pandemic in 2020, the contest organizing committee, under the unremitting supports from the universities, enterprises, experts and contestants, kicked off the contest online and achieved great success. The contest in 2021, with reference to the successful experience of the contest in 2020 and the earlier contest holding modeling, will be launched via combing the online with the offline.

For further information on the contest profile and arrangement, welcome to be present at the opening ceremony & press conference of the 15th Science and Technology Competition for College Students of Chinese Refrigeration and Air-conditioning Industry to be held at morning 11:30—12:30 April 7th, 2021 in W1-M1 meeting room.

Job Description Meeting on Vocational Skill Level Certificate of Installation and Maintenance of 1+X Refrigeration and Air-Conditioning System

In order to better implement the spirit of the "Implementation Plan of National Vocational Education Reform" and implement the requirements of "The Pilot Program on Implementing the System of "Education Certificate + Certain Vocational Skill Level Certificates" in Colleges and Universities", Qingdao Haopin Haizhi Information Technology Co., Ltd., as the fourth batch of the approved organizations for 1+X vocational education training evaluation, will cooperate with partners such as China Refrigeration and Air-Conditioning Industry Association, Zhejiang Tianhuang Technology Industrial Co., Ltd. to hold Job Description Meeting on Vocational Skill Level Certificate of Installation and Maintenance of 1+X Refrigeration and Air-Conditioning System at E5-M28, Shanghai New International Expo Center at 13:30 pm on April 7, 2021. The theme report of the meeting focused on topics such as the development, talent demand, training and employment, competition and certificate integration, and standard formulation and interpretation of the refrigeration and air-conditioning industry. There will be an on-site Q&A interactions. At that time, Qingdao Haopin Haizhi and colleagues in the industry will discuss the related work of the vocational skill level certificate on 1+X "Refrigeration and Air-conditioning System Installation and Maintenance" with leaders, experts and scholars from various industries and colleges, so as to smooth the development path for technical talents, promote the in-depth integration of industry and education, and deepen the reform of discipline construction and talent training methods in colleges and universities.

Leader for Heat&Ventilation and Building Smart Ecosystem Integrated Solution

Founded in 1999, Midea's Heat & ventilation and Building Business Unit is one of the business units directly led by Midea Group. After 22 years of growth, it has grown from single heat&ventilation products supplier into service provider for integrated building solution. By virtue of our talents, innovation and fast response, we offer reliable assistance to be in service of each business user, transform all the complicate issues into simple ones with no ending service. We are now granted with the following advantages:

——Wider business boundary

On the basis of the overall building, we focus on the urban building smart ecosystem creation and solution with our businesses relating to such building hardware as heat&ventilation and lift etc. Concurrently, we also grow toward the buildings' control software to make our solution better via integrating all the relevants of the smart buildings, so as to grow together with the fast-changing urban environment.

——Broader product range

Our product has gone beyond the central air-conditioner itself for long. We break through to build more comprehensive smart products system. Our heat&ventilation relates to the followings: air source heat pump, multi-split air-conditioners, large-size water cooling unit and special-purpose air-conditioner for machine room etc. We have always dedicated to offering universal air-conditioning smart solutions. Lifts relate to the below: home lift, passenger lift, handrail lift, escalator, cargo lift and medical service elevator etc. We could offer all-scenario elevator service solution according to specific demand. Building automatic control covers the followings: valve, controller and operation platform. We are capable of offering comprehensive smart ecosystem management system. The energy fields relate to the below: start from EMC, BOT and the like energy models to store, manage and optimize the energy and more extensive products range. We will in future plunge into more smart application scenarios to push the urban space into the new smart age.

——Deeper business root

Our business root extend from the single heat&ventilation to different vertical fields as we work at full value chain to work out our solution to achieve the full life cycle management. On the basis of the expanding vision, we focus on the real estate, infrastructure, railway transport, data center, communication facility, education and training, medical treatment and public health, governmental public buildings, enterprises and commerce, culture, sports and entertainment, industrial and mining workshop, farming, forestry, animal husbandry and fishery and the like deeper fields. Deepen the industrial solution, explore the diversified demand in the market, offer customized service catering to the demand to offer the user with directly simpler assistance, and grow together with the users and industry at large.

Midea's Heat & ventilation and Building Business Unit sincerely invite you to start here to foresee the new future of smart buildings together with us!



Expanding Application of Networking, Haier Central Air-Conditioner Creates Networking Highland

Haier Central Air-Conditioner: Focus on Networking, New Forefront for Air-conditioning Industry

enchmarking: centering on smart networking, MIUI further explores OTT smart marketing blue ocean market

After Haier magnetic levitation air-conditioner occupying the world No.1 share for two straight years, Haier central air-conditioner, via keeping expanding its networking, re-explore its share in the global market.

Founded in 1993, Haier central air-conditioner breaks through the monopoly by foreign capital and fully develops its household and commercial air-conditioners, and leads the industry in the field of healthy air and intelligent control and the more. Haier central air-conditioner initiatively launches the first networking multi-split air-conditioner cloud service platform, pioneers the solution for efficient machine room, and keeps deepening the innovative application of networking. During the CRH held in Shanghai on April 7-9th this year, Haier central air-conditioner will appear at w3d41 pavilion to showcase the leading air solutions.

The emergence of the 4th industrial revolution with digital, internet-base and intelligent features brings the industries with transforming pressure. As a new generation of product deeply integrating the information technology and manufacture, the networking, via the all-round interconnecting the people, machine and things, grows into a path for digital transformation. In the field of the central air-conditioner, Haier launches its journey on networking central conditioner. We build an ecosystem of zero distance parallel connection between the user and resource via the Haier central air-conditioners' inter-connected factory, making our transformation from mass production to mass customization come true.

As a leader in the global networking central air-conditioner, the first global E+cloud service platform built of Haier central air-conditioner re-structures the industrial logic of the central air-conditioner on its full process flow consisted of the user interaction, experience iteration and ecosystem value, and offers personalized solution catering to different demand on healthy air in life, transforming the one-off deal user into lifetime one who will involve in on-going interaction within the full cycle and process, such that 100% of our products require no stockpile, shortening the R&D cycle by 50% and raising the production efficiency twice.

In addition, the smart energy-efficient cloud service platform enables the zero distance interconnection amongst the user, networking factory and service-provider. The new central air-conditioner ecosystem built by its smart, energy-efficient and service-oriented merits occupies the high-end market of the central air-conditioner industrial value chain, in which sense we lead the industry into new moment.

Currently, Haier central air-conditioner has launched such networking air-conditioner solutions as networking multi-split air-conditioner and efficient machine room to ongoing upgrade the user experience. Take the networking multi-split air-conditioner as an example, via our networking cloud service platform, user could directly turn on or off hundreds of air-conditioners via its cellphone or computer and examine their operation and consumed energy, which could be managed just by one person with the saved energy reaching more than 50%. What's more, in terms of the fault pre-alarming function, the fault code and position could be early alarmed to timely shoot all the possible troubles, in which sense the fault rate could be minimized in timely and easy fashion.

With the acceleration of the networking age and deepening of the industrial networking, the networking central air-conditioner in future will move into the stage of high-speed growth, which will further pushes forward the industrial transformation and development, and upgrade the user's smart control experience. The pioneering action by Haier central air-conditioner and its galloping growth will offer the industry with more experience to follow, and showcase the strength of Chinese brand before the globe at large.

Green Energy, Saving Energy and Reducing Emission, Balancing Cooling and Heating

—Bingshan Group will showcase innovative products in cooling and heating industry chain

At the 2021 China Refrigeration Expo, Dalian Bingshan Group will exhibit new products, new technologies and new solutions for different market segments.

Carbon neutrality and carbon peaking are China's solemn commitment to the world. As a representative of cooling and heating business of China, Bingshan Group has fulfilled its corporate social responsibilities in recent years. Focused on the cooling and heating business, Bingshan Group has committed to "Green Energy, Saving Energy and Reducing Emission, Balancing Cooling and Heating", developing a series of green, low-carbon, smart and secure cooling and heating products. At this exhibition, Bingshan's newly developed centrifugal magnetic levitation integrated cooling and heating unit will be unveiled for the first time. The unit can provide process ice water at 0°C and hot water at 45°C, with a comprehensive energy efficiency ratio of up to 10.5. It has the characteristics of small size, low noise, stable and reliable operation, and low maintenance costs. The integrated red water pre-cooling device, used in the market segment of poultry slaughter, can save water and electricity by more than 20%, and accurately control the outlet water temperature at $\pm 0.5^{\circ}\text{C}$.

The screw expander with a displacement of 12000m³/h is the largest compressor used in China. Using low- and medium-grade waste heat resources to generate power, the liquid working substance absorbs heat in the evaporator and becomes a gaseous state, which promotes the ORC screw expander to generate electricity, thereby outputting electric energy to the outside. The air source heat pump displayed at this exhibition uses the green refrigerant R410A, which has the characteristics of stable defrosting, intelligent defrosting, and non-stop heating during defrosting. It realizes intelligent control, centralized control system, and real-time monitoring. The working environment temperature could reach the lowest temperature of -35°C, and the highest temperature of 55°C of hot water outlet.

Bingshan has focused on developing CO₂ green refrigerant product in recent years. At this exhibition, Bingshan will showcase CO₂ screw refrigeration units and CO₂ transcritical parallel units. The CO₂ transcritical parallel unit adopts two-stage compression technology to save energy and reduce consumption (ODP=0, GWP=1). The evaporation temperature range is -45°C ~ -20°C.

The COVID-19 epidemic has had a major impact on cold chain logistics. At this exhibition, Bingshan Group will display new products for the safety of cold chain logistics, medical cold chain logistics and non-contact consumption in the epidemic era. The newly developed air disinfection and purification unit has a killing rate of 97-99.9% in both normal and low temperature environments. Related products can effectively kill bacteria in the cold storage, and the total number of bacteria colonies meets the relevant standards. It can be applied to large, medium and small cold storages, customs supervision warehouses, processing companies in cold chain system, cold chain warehousing



logistics companies and other low-temperature cold storage and cold chain linkages, as well as shopping malls, airports, high-speed rail stations, bus stations, schools, exhibition centers, office buildings and other places with densely populated people at room temperature.

A new medical ultra-low temperature storage box is specially designed for the preservation of biological sample libraries. The storage box, with performance leading the industry level, adopts a brand-new double-cooling self-cascade refrigeration system to realize dual-system operation at low temperature $-90\text{ }^{\circ}\text{C}$ and single system operation at low temperature $-80\text{ }^{\circ}\text{C}$, providing more reliable guarantee for the preservation of precious biological samples. At the same time, it is equipped with a software platform for biological sample management to provide customers with intelligent solutions.

The self-pickup cabinets for fresh food have been successfully introduced to overseas markets. It adopts original refrigeration technology and independent compartment design, and ensured the uniformity of temperature in each compartment through the unique combination of dual-cycle refrigeration and differential pressure refrigeration. The smart retail cabinet that realizes contactless consumption, adopting precision weighing module + video recognition technology, is equipped with an Internet cloud platform model, and is precisely digitally controlled. The temperature in the cabinet can be set according to the food sold.

The Beijing Winter Olympics will be held in less than a year. At this exhibition, Bingshan will showcase innovative solutions for ice and snow engineering of venues that serve the Beijing Winter Olympics games and training.

In addition, large-capacity DC inverter scroll compressors for refrigeration can meet the demands of different market segments such as refrigeration, heat pumps, car air conditioners, electric bus air conditioners, rail transit air conditioners, commercial air conditioners, central air conditioner chillers, commercial multi-line heat pumps, heat pumps, etc., with the full range of scroll compressors. It is also the highlight of this exhibition.

At this exhibition, Bingshan Group will also showcase Bingshan Industrial Internet services relying on 5G.

Welcome to Booth E1D01 and find out more exciting exhibition content at the Bingshan WeChat public account and Tik Tok account.

Work Deeper at Application Focusing on Natural Working Medium Compressor Core Technology

In the past twenty years, Snowman Group, by virtue of the refrigerating technology, strategically transforms from ice-machine to compressor-centered smart manufacture. More than a decade development of CRH witnesses our development history, in particular the year of 2013 marks our initially exhibited compressor of our independent brand. The industry insiders will always expect our new products during each CRH.



Snowman Group has merged Sweden SRM and Italy RefComp in succession, and built in ready shape a smart production plant in China. Although we start late in compressor cause, we are so forward-looking that we have foreseen the development trend for the future coolants. In term of the large scale industrial and commercial refrigerating application, the substitute for Freon (inclusive of fluorinated halohydrocarbon) is the natural working medium, such as ammonia, CO₂, air, water and hydrocarbon etc.

It is a watershed for Freon in 2021, be it Ozone Depleting Substance (ODS) falling into the category of HCFC represented by R22, or HFC alternative coolant exclusive of chlorine, R507 and R404A are within them frequently used in refrigeration, both are explicitly specified to be eliminated or already listed in the agenda of reduction.

As a contracting state to Montreal Protocol on Substances that Deplete the Ozone Layer, China will honor its obligation to fully eliminate such HCFC substance as R22, when the yearly produced capacity nationwide will stay at just 60 million tons only for maintaining the inventory equipment rather than being used in the new equipment. At the start of 2020, HCFC refrigerants represented by R22 will be reduced by 13 thousand tons each year, and the yield in 2025 will be just half of the 2020, less than 70 thousand tons. On such basis, it is recommended that the new equipment made from this moment on should not apply R22 any more.

From January 1st, 2019 on, Kigali Amendment to Montreal Protocol on Substances that Deplete the Ozone Layer has officially come into effect, which aims to reducing the emission of HFC. In the refrigerating industry in China, it is still popular to substitute R22 with R507, whose major ingredients are R143a and R125, already on the list of 18 restricted substances under Kigali Amendment to Montreal Protocol, and their elimination has been on the agenda. From 2020 to 2022, China will specify the HFC baseline value of 18 restricted substances, and reduce its yield according to the agenda.

What is the future refrigerant for industry and commerce in future? There is no 100% perfect artificial synthetic refrigerant come out to date. Therefore, people shift their eye to the natural refrigerant used to be applied decades before. Ammonia is the most natural coolant. Owing to the impact from the accident relating to the ammonia, it was used to be deemed as dreadful disaster for long. However, when we come to reason, we find that the ammonia is still the best refrigerant under most working conditions, much better than the prevalent R507 and R404A. Although CO₂ requires high pressure, in the quick freezing scenario where ammonia is in disadvantageous position, CO₂ is an appropriate alternative. Air and water are coolants found by mankind long ago. In addition, helium, propane, propylene, ethylene and alkene or alkane mixture (MRC mixture refrigerant) are coolants as well.

When selecting and matching the refrigerants, we should fully consider the nature of the refrigerants. Meanwhile,

the compressor and its related cooling parts shall be consistent with the physical property of the correspondent refrigerant. For instance, we should prevent the toxic and combustible coolants from leaking. The coolants requiring high pressure shall be complete with compressor capable of standing high pressure to ensure the safety. Some coolants work via Rankine cycle principle, while others work via Brayton cycle principle. The demand on coolants varies from different specific application fields. Sometimes we should adapt to local condition



via drawing on local resources. For instance, there is synthetic ammonia in the field of coal chemical industry, wherein the ammonia is the best coolant for coal chemical industry. When coming to the case of fluorine chemical industry producing Freon, R22 is still the mainstream. The by-product of the petrochemical engineering is alkene or alkane, which are frequently used in this industry. The temperature required varies from different application fields, for instance, it requires to keeping low temperature of -160 degree to liquidify the natural gas, wherein the low temperature is achieved via Brayton cycle principle with MRC mixture refrigerant. It is possible to liquidify the helium to apply it in the large scale science program. It is possible to liquidify the hydrogen with low temperature close to absolute zero degree to work as the propellant for

Snowman Group will fully display our application of natural coolants in each specific field during the CRH 2021, wherein the core technology is still lies in the unremitting research on the compressor in response to the physical property of the coolants and demands coming from their application fields. Snowman Group, during the expo, will exhibit the heavy duty skid mounted equipment in the fields of food processing, storage, cold chain material and vaccine storage, energy chemical engineering etc. in pavilion E1F15. Snowman Group warmly welcomes your arrival at our pavilion.

New technology on compressor

As a global company, Snowman Group supplies the overseas market with a new generation of screw compressor for the central air-conditioner with ammonia as working medium named SS5-A series. In contrast with the traditional counterpart of medium and high temperature, SS5-A series follows vertical two-stage oil separation design, enabling the outlet oil rate to rise from the parts per hundred to parts per million (PPM).

The food refrigeration and energy chemical engineering grow a lot in size, in which context there are lots of mega-size projects showing a surge in their demand on heavy-duty compressor. In response to such demand, Snowman Group manufactures a high flow rate semihermetic mono-block two-stage compressor, which is usually used in quick-freezing field. We have also launched high flow rate high pressure compressor to accommodate the working conditions for CO2 compression or ammonia heat pump. In addition, we will also exhibit the open-type screw compressor with high flow rate to be in service of the chemical process cooling. The ammonia semihermetic screw compressor is used in the field of refrigeration.

Skid-mounting capacity is great warranty for deepening the application field

The compressor itself is only a core part for end users. Snowman Group is in service of many end users in specific fields by supplying a set of equipment easy for skid-mounting, which is our super advantage. We are not only a compressor maker, we will initially exhibit the maglev centrifugal water-cooled chiller in the field of central air-conditioner application, which is independently developed by Snowman Group from the compressor to chiller at large by investing nearly 100 million Yuan within six years. It is bound to be under the expo spotlight thanks to its outstanding performance.

CHINA REFRIGERATION EXPO 2021| 30-year TICA Unveiled New Era with Ingenuity

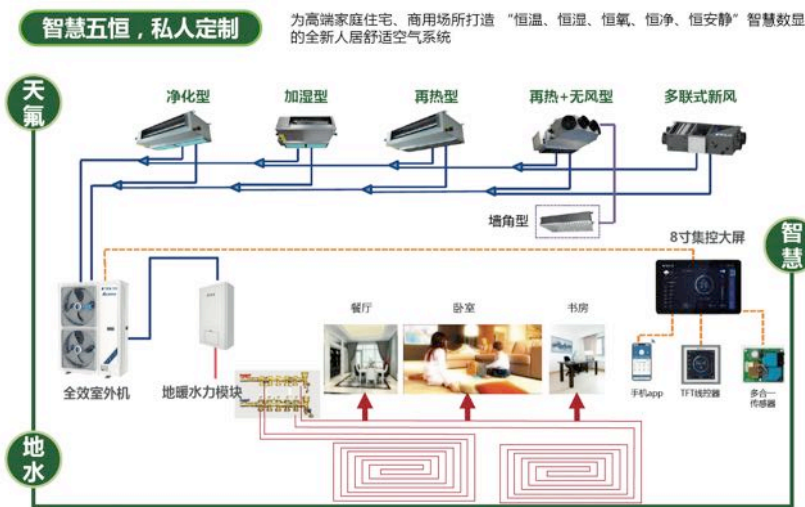
On April 7, 2021, China Refrigeration Expo, one of the world's largest professional exhibitions in the industry, opened grandly at the Shanghai New International Expo Centre.

This year is 30th anniversary of TICA, which is celebrating its 30th anniversary with "A Independent and Upward TICA at Thirty" as the theme, attended the Expo with its four star products.



Booth of TICA: W2-F15

TICA's full-effect air system proposes system solutions for five different dimensions of constant temperature, constant silence, constant humidity, constant purification, and constant oxygen concentration, fully demonstrating the importance of temperature, humidity, and freshness and cleanliness in improving high-quality life at home. TICA's full-effect air system attending the Expo not only shows that TICA attaches great importance to a comfortable and healthy living environment, but also demonstrates TICA's determination to focus on the layout of the home improvement market in the future. TICA aims to better meet the needs of personalized and high-end consumption, providing life enjoyment throughout the industry chain for consumers who pursue a comfortable life.



Full-effect air system

The "cloud frequency conversion" condensing and reheating air handling unit with constant temperature and humidity is capable of cloud data collection, storage, transmission, as well as cloud remote operation, maintenance and processing. The comprehensive energy efficiency of condensation heat recovery is up to 6.0, and the temperature rise can be adjusted up to 15°C . The "black box" technology could be recording for up to 20 years, covering the full life circle of the unit. The cooling operation range is -10°C -46°C , and the heating operation range is -20°C -24°C .



"Cloud frequency conversion" condensing and reheating air handling unit with constant temperature and humidity

"TICA, making energy saving visible" has always been an important part of TICA's core brand strategy in recent years. It has brought many products with energy conservation function as the core also to the Expo. As a representative of energy-saving technology products, SMARTD water-cooled maglev centrifugal chiller is also one of the focuses of the booth of TICA. Its ultra-high IPLV of over 10.5 enables a maximum cooling capacity of 3,200 tons, which is currently second to none in the industry.



SMARTD water-cooled maglev centrifugal chiller

As a leader in compulsive cooling and strong heating, TICA TIMS Hyplus VRV is equipped with quadruple sterilizing filters for cleanliness to safeguard your health by scientific and technological innovation. TICA initiated the enhanced vapor injection and frequency conversion VRV, making its full range products free of electric auxiliary, realizing the true energy saving. It developed the Micro- HEX micro-channel cooling technology, achieving continuous high-frequency output of the unit. TICA also researched and developed variable frequency drive independently, enlarging its operating range to $-27^{\circ}\text{C} \sim 56^{\circ}\text{C}$. It first adopted the design of non-equalized oil pipe and the technology of eight-fold oil returning, forming a more reliable operation. It is the first brand using TCC non-stop defrosting technology, cutting a half of the defrosting time. The intelligent digital display shows the cleanliness of TICA's products clearly.

TICA 天加

TIMS 6年保修的健康多联机
四重滤杀 臻·洁净

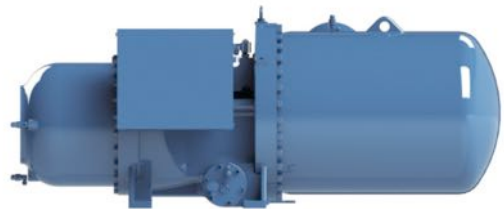
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除尘 除醛 CH_2O 除菌 除异味 除病毒

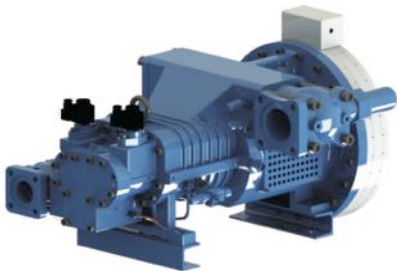
Debut of the new product “TIMS Hyplus”

Hanbell E2F15-Smart Energy-efficient Smart Variable Frequency for Tomorrow

Shanghai Hanbell Precision Machinery Co.,Ltd specially engages in the R&D, manufacture and sales, and maintenance and repair of screw, centrifuge and vortex compressor. Our product line covers refrigerating compressor, air compressor and vacuum pump, wherein the refrigerating compressor further falls into refrigerating products, air-conditioning product and high temperature heat pump according to their applied fields, which are in extensive use in LNG, chemical and pharmaceutical engineering, refrigeration, central air-conditioner, industrial hot water and centralized heating with the covering temperature range from -163°C to 125°C . After years of growth, we have grown into the one of the strongest compressor makers in Mainland China integrating the compressor design, R&D, manufacture, quality assurance and sales and service with the yearly production capacity reaching 100,000 sets.



Ever since 2006, Hanbell screw refrigerating compressor has led the domestic market for years. The Hanbell refrigerating product line covers not only the steady and efficient conventional products, but newly launched products according to the market demands. In terms of R134a and the like low GMP environment friendly coolants development, Hanbell launches the RE-2100 unit with the efficient rotor gear form with optimized structure and latest design bringing lower energy consumption and more saved energy. We support the same with special grade low loss iron core and newly designed highly efficient motor along with multiple reliability optimization, which could ensure the compressor to be in steady operation for long. The air-conditioner mounted with the compressor in actual application could produce 460 tons of refrigeration, capable of satisfying the class I energy efficiency COP requirements defined in GB19577-2015.



LT-S-V series of low temperature two-stage variable frequency compressor: maximum $2000*1.162*300$ for single unit capable of meeting the refrigerating demand from 2.5 tons of screw instant freezer, and its total energy efficiency could be 20% higher than its counterpart of constant frequency two-stage at the working condition of instant freezing. Its total energy efficiency is 30% higher than its counterpart of low temperature constant frequency single-stage at the working condition of low temperature refrigeration, applicable for instant freezer and low temperature refrigerated warehouse with higher requirements on energy conservation. LT-S-IVX series total-configuration two-stage variable frequency compressor could be fully configured with two-stage variable frequency compressor, special purpose frequency converter and special purpose variable frequency controller and the like parts for variable frequency application, which could enable the air-conditioner in use of constant frequency controller to achieve full variable frequency application, bringing down the technical barrier for applying the efficient variable frequency solution.

RGII series of open-type compressor is a multi-functional

compressor compatible with such special gas as ammonia and fluorine. The new product has efficient screw rotor gear form is optimized on the basis of its original interior structure, such that it is granted with better energy efficiency. The compressor and the intermediate bearing bracket follow the integrated design, and they could be configured with iron core-free disc type motor with higher power density, smaller size, light weight, better stability, higher efficiency and better control, simplifying the use and installation to great extent. RGII series of open-type compressor could satisfy different refrigeration application demands from customers.

In catering to the special demand in the market, Hanbell further offers more solutions for exploration protection, fishing boat and high voltage etc. Our products could not only be found in the domestic market, but 50-plus foreign nations such as Southeast Asia, Australia and America etc.

Hanbell focuses on the caring, dedicative, trustworthy, innovative and excellent cultural philosophy. Looking into future, we will base on the broad Chinese market to develop our independent key technology and industry to achieve the goal of world No.1. Hanbell refers to knock the bell of Han nationality industry. Hanbell precision machinery dedicates to be the world leading brand in the hydrodynamic electromechanical industry, creating the social environment with low carbon emission and better environment protection, and resounding through our bell around the world!

Moon Environment Technology Co., Ltd. (Booth No. E1F01)

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. Under the environmental guideline of achieving harmony between human and nature, MOON-TECH vigorously dedicates to innovating artificial environment control technology and energy comprehensive utilization technology, and fully pushes ahead all-around resource saving and recycle. MOON-TECH advocates the social production and operation model featuring the simplicity and moderation, green and low carbon emission. We are committed to building a mutually connected and supplemented system consisted of following multiple energy forms: cold source, hot source, water, gas, electricity, waste and pollutant, achieving the energy ecological link between the industrial park and living space, growing into a solution service provider for smart and green energy system.

MOON-TECH embraces the strategy of synchronous development of refrigeration and heat treatment, and actively expanding energy-saving and environmental protection industry. In response to the objective of the energy conservation and emission reduction named carbon neutrality and peak carbon emission, we dedicate to offering the best temperature, pressure, control and energy efficiency management system for each industrial user engaging in following fields: global food refrigeration and deep processing, chemical process cooling, ice and snow stadium construction, comfortable environment air conditioning, urban pipeline energy conservation and heat supply, industrial residual energy utilization, food and drugs freeze-drying, research temperature control, wind tunnel simulation, process gas compression and liquidification, building aggregate cooling, permafrost drilling, waste treatment, etc.

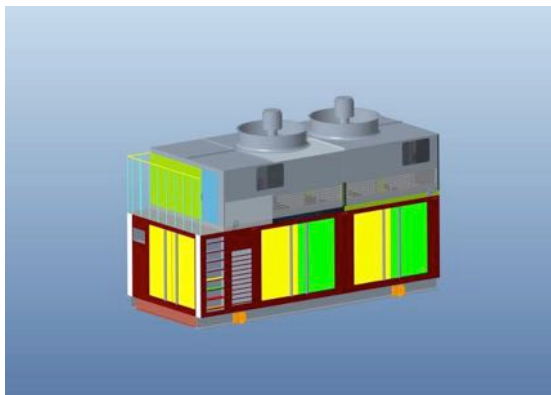
MOON-TECH will showcase multiple A+ products in the expo, they are as follows:

1. GTCH-CO2 transcritical cooling and heating unit

CO2 refrigerating system is in wide spread use thanks to its remarkable features of being safe, environment-friendly and energy-efficient. In the foreseeable future, we will expand its market. The ammonia-CO2 cascade system and fluorine-CO2 cascade system in wide use are confronted with challenges in terms of the safety and environment protection, such that MOON-TECH develops a transcritical recycle cooling and heating compressor complete with double-motor and two-stage screws with pure CO2 as the working medium, which thoroughly avoids the safety and environmental troubles as it applies CO2 as the coolant. The compressor could be configured with single quick-freezer, such that it is in wide use in the slaughter and food processing. Meanwhile, the compressor is equipped with heat recycling device, and it could offer the user with 80°C hot water to satisfy the demand on cold and hot water in the course of the production.

2. IFST-smart 3D blast freeze tunnel

The smart 3D blast freeze tunnel is applicable to large scale tray (box) packed pork and poultry processed into parts, and quick-freezing of the prepared food, such that it is an ideal substitute for the traditional quick-freezing warehouse. It is now in wide use in the slaughter house specializing in slaughtering poultry (chicken, duck and goose) and husbandry (pig, cow and sheep), and it could be further used in more food processing businesses following the quick freezing production mode, especially the larger scale food processing business. The equipment could connect with the user workshop production management system to exchange data via the smart control program, finally achieving the automatic management of the production line,

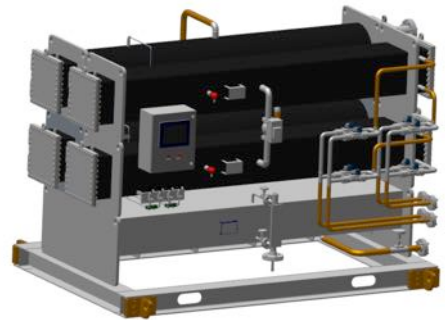
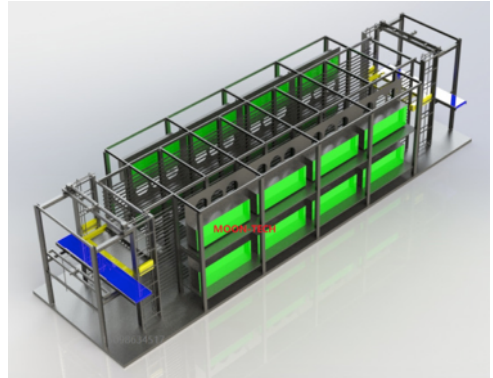


in which sense it will be an indispensable equipment for a future digital and smart food processing plant.

3. RAPC-low temperature residual heat adsorbent water cooling unit

The product makes use of the low temperature residual heat, uses the silica gel-water as the adsorbent working medium pairs, produces the very water for air-conditioner, cooling and purified water for production process via the evaporator, condenser, adsorbent bed, condensed water tank and switching valves etc. It is mainly used in the residual heat recovery and utilization, waste water treatment, seawater desalination and the like scenarios lack of fresh water, such as factory, desert, seashore, island and ocean vessel etc.

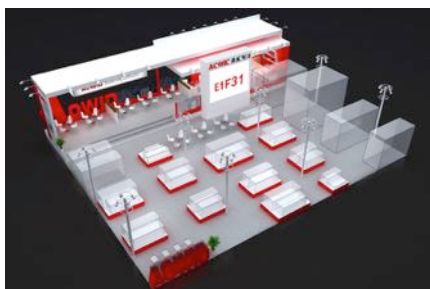
MOON-TECH spreads production bases, scientific research centers and marketing & service organizations in more than 40 countries around the world. By virtue of being safe, environment-friendly, energy-saving house-keeping solutions and intelligent system integration capabilities, MOON-TECH is providing products with full product life cycle to users in more than 120 countries and regions around the world. MOON-TECH dedicates to revitalizing the national industry and achieving the customer value. In adherence to the corporate mission of devoting to improving the living quality of human, we are committed to sharpening our core competitiveness in energy comprehensive usage to grow into an evergreen enterprise trustworthy by all cooperative partners.



Yantai Aowei Refrigeration Equipment CO.,Ltd.



Founded in the 1980s, AOWID has been established and developed for nearly 30 years. Adhering to the faith of unremitting self-improvement and benefiting the society, AOWID is committed to building an enterprise with the core mission of international competitiveness, realizing the fundamental value of AOWID happiness, and pursuing the scientific structure of being people-oriented and innovation-prone. At present, it has not only two production bases in Yantai and Zhanjiang and four branches, but has established one technical research institute focusing on the R&D of compressor and unit system integration, and another institute on the cold chain integration of quick-freezing equipment.



We insist on highlighting the technical innovation and the customer demand, always regard the customer's interest as own supreme one, look more forward to comply with the international standards, enable our R&D and the production to conform to the international standards, and transform ourselves into the refrigeration system integrating service provider. Dedicating to refrigeration technology R&D, product design and manufacture, refrigeration application system integration and engineering supporting services, we offer the food cold chain customers with an overall solution consisted of the tailor-made technology and service.

As a leading domestic refrigeration company, AOWID was the first to join in HCFCs to follow such R&D and design philosophy as "save energy and cost, protect the environment and resources, and create the safe and efficient products". We dedicate to the research of CO₂ refrigeration technology, such that we have successfully developed CO₂ semi-hermetic screw compressor, open-type the screw refrigeration compressor and cooler made of the stainless steel tube, offering innovative solutions for food cold chain enterprise, various thermal insulation and cold storage.

During Shanghai CRH Expo 2021, AOWID will exhibit at pavilion E1F31 within E1 hall. Thanks to the upgrade of our product intelligent R&D and the steady rise of the core competitiveness as well as the on-going perfection on the customized demand satisfaction, we launch the service philosophy of offering integrated service to satisfy the customers' special demand during the Expo. Our full series of compressor and their supporting products consisted of the open-type, semi-hermetic type and fluorine semi-hermetic type independently developed by us will grandly appear in the Expo.

AOWID's pavilion in Shanghai New International Expo Center on April 7~9th, 2021 will be under the very spotlight to wait for your arrival!

McQuay to Debut Shanghai CRH Expo with Four Themes and Eight Concepts)

Overview: Shanghai CRH showcase customized future by centenary technology from McQuay, Meet in Shanghai on April 7th!



Held once a year, Shanghai CRH Expo is a gala in the air-conditioning industry. As a leading brand in China heating and ventilation industry, McQuay has taken part in the gala for twelve consecutive years. Thanks to such platform, we could launch our new products and technologies.

We will focus on the following four themes during the expo: central air-conditioning, retailing business unit, refrigeration business unit and special-purpose air-conditioner. We will exhibit eight popular concepts and technologies relating to the application of new coolants, variable frequency and energy conservation, purification technology, modularized modification, comfort and health, industrial refrigeration, grain storage and high temperature water, showcasing our highly customized products and leading technical solutions.

During the expo, you might have a look at our magnetic levitation product and technology, air-cooled screw, modular, household central air-conditioning A+, water source A+, Mirror of Clean Sky MXE, grain warehouse air-conditioner, refrigeration during the transport, industrial refrigeration and variable frequency refrigeration etc. know about such leading technologies as the applied technology of a new coolant named ammonia refrigerant, purifying technology, evaporative cooling technology and industrial refrigeration technology etc. You are warmly welcomed to visit our pavilion for exchange and discussion, when you will actually find the charm of a customized future by our centenary



CR 中国制冷展 2021 | CRH 2021 制冷空调暖通 | ufi 暖通 | 上海新国际博览中心

第三十二届国际制冷、空调、供暖、通风及食品冷冻加工展览会

THE 32ND INTERNATIONAL EXHIBITION FOR REFRIGERATION, AIR-CONDITIONING, HEATING AND VENTILATION, FROZEN FOOD PROCESSING, PACKAGING AND STORAGE

特约观众

SPECIALLY INVITED VISITOR

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展位号: W2 D 0 1



2021年4月7日至9日
APRIL 7-9, 2021
上海新国际博览中心
SHANGHAI NEW INTERNATIONAL EXPO CENTRE

technology.

Date: April 7~9th, 2021

Venue: Shanghai New International Expo Center

Pavilion No.: W2D01 (main hall)

Pavilion coverage: 256 square meters

Let's make an appointment as we are expecting your arrival!

Whoever is interest in McQuay, please scan the QR code to register as our specially invited visitor, and you could get access to the expo with your ID card. When you visit our pavilion, we will reward you with a surprise!

Zhejiang Xingxing Cold Chain Integration Co., Ltd.



1. Zhejiang Xingxing Cold Chain Integration Co., Ltd., headquartered in Taizhou, Zhejiang, was founded in 1988 with a registered capital of 483.9 million yuan. The main business sectors of the company cover household freezers (refrigerators), commercial refrigerators, commercial kitchen cold chains, supermarket cold chains, cold storage units and new retail smart equipment. There are 28 marketing centers/sales departments, more than 6,000 distribution outlets, more than 7,000 after-sales service branches/maintenance technicians in the country. The company has six wholly-owned subsidiaries including Jiangsu Xingxing Cold Chain Technology Co., Ltd. and Guangdong Xingxing Refrigeration Equipment Co., Ltd., as well as three industrial bases in Taizhou of Zhejiang, Xuzhou of Jiangsu, and



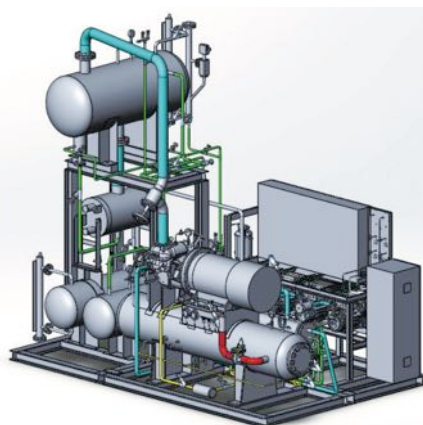
Foshan of Guangdong, with more than 7,000 employees and an annual production capacity of nearly 6 million units.



2. Xingxing Cold Chain has brought 15 sets of refrigeration equipment to the China Refrigeration Expo, including compression condensing unit (frequency conversion), box-type scroll parallel unit, single two-stage screw parallel (frequency conversion), new energy refrigerated truck unit, non-independent refrigerated truck unit, electric defrosting air cooler, double-side air cooler, water defrosting air cooler, hot gas defrosting air cooler, top air H type condenser, top air V type condenser, double spiral quick-freezer, etc. Xingxing has basically realize the full coverage of the cold chain

ecology of "pre-cooling at the place of production, cold chain transportation and end-user storage". The exhibition will be held at Booth E1D25, Hall E1, covering an exhibition area of 208 square meters.

3. In terms of new technology, in response to the theme of this Refrigeration Expo "Low Carbon Development", the company has developed and assembled the NH₃/CO₂ cascade unit in 2020 and brought it to the Expo. The product performance parameters of the unit include evaporating temperature of carbon dioxide side, -40°C, temperature range of quick-freezing machine, -35 ~ -45°C, and refrigeration capacity, 234.6kw. The refrigeration system adopts natural working substance, which is green and environmentally friendly. Ammonia is all limited to the machine room with extremely low filling amount, ensuring safe and stable operation. NH₃ side adopts circulation system for gravity liquid supply, and the CO₂ side adopts circulation system for pump liquid, which is efficient and energy-saving. NH₃ side adopts open screw compressor to avoid invalid overheating and improve energy efficiency. The screw adopts stepless frequency conversion technology, making it easy to deal with systematic load changes, reducing the impact of the power grid. The CO₂ side, with its excellent heat exchange performance and fluidity, combined with the pump circulation device, greatly improves the energy efficiency. The highly integrated skid design of the unit avoids the uncertain factors of on-site installation and makes it more convenient. This equipment is widely used in low temperature quick freezing, low temperature refrigeration and other fields.



4. Xingxing Cold Chain has always adhered to scientific and technological innovation. The annual R&D expenditure accounted for 3.5% and R&D personnel accounting for nearly 7%. It has established a national-level enterprise technology center, a post-doctoral workstation in Zhejiang Province, and 3 CNAS laboratories. It has acquired 357 authorized patents accumulatively, including 9 invention patents, 219 utility model patents, 90 appearance patents, and 39 software copyrights. Xingxing is equipped with the three-in-one management system, intellectual property management system, AAA-level measurement management system, two-in-one integration management system, and AAAA-level standardized good behavior enterprise. It has more than 40 international product certifications and 620 certificates authorized by CCC, GS, UL, CSA, CB, CE, GCC, ETL and other domestic and international platforms, with more than 2,000 models involved. It has won the honorary titles of China Famous Brand, China Export Famous Brand, National Export Exemption of Inspection, National Advanced Quality Unit, China Export Quality and Safety Demonstration



星星愿景

全球冷链生态的创造者



星星使命

为新鲜生活保驾护航



星星核心价值观

融合共创 诚信共享

Enterprise, Green Factory, Green Design Product, Green Pioneer Enterprise, "Manufacturing Individual Champion" and etc. It has participated in the formulation of 13 national/industrial standards, 10 group standards, and 1 organizational standard, Zhejiang manufacturing standard.

5. Looking forward to the future, Xingxing will adhere to the development vision of "the creator of the global cold chain ecology" and the corporate mission of "protecting a fresh life" as its own responsibility.

Currently, the annual revenue of Xingxing's existing industries is increasing by 20% on average. In the future, Xingxing will strive to develop into a leading enterprise in the global cold chain industry with a revenue of over 20 billion, making breakthroughs and innovation, through plant construction overseas (M&A), base construction in western China, and new industries fostering.



星星精神

凝星聚力 匠心智造



星星经营宗旨

为客户创造价值
为冷链生态赋能



星星工作方针

不断努力 创造价值
用心对待 实现目标

Zhejiang Yilida Ventilator Co., Ltd.



Zhejiang Yilida Ventilator Co., Ltd. (stock code 002686), founded in 1994, is an asset holding company of Zhejiang merchants affiliated to the State-owned Assets Supervision and Administration Commission of Zhejiang Province. It is also the largest central air-conditioning ventilator manufacturer in Asia and a well-known manufacturer of building ventilators (engineering fan). Upholding the spirit of innovation, Yilida gradually transforms from a traditional ventilator manufacturer to an integrator of ventilator and intelligent drive motor system through the development of intelligent and efficient motors, striving to realize the brand concept of "Smart Wind". On July 3, 2012, Yilida was successfully listed on the Shenzhen Stock Exchange. With the help of the capital market, it gradually developed into the fields of new energy, new materials, and lightweight automotive components through merging and reorganizations, promoting the sustainable development of the company continuously.

At present, Yilida's products cover four major areas, namely wind turbine systems, new automotive energy, lightweight automotive components, and new marine materials, with brands including "Yilida", "Wolter", "Fulihua", "Maer", "ESSENTEC", "AMMT", "TC charger", "Sanjin", and etc. Among those brands, "Yilida" is the domestic brand leader of central air-conditioning fans; "Wolter" is committed to building a high-end brand in the field of domestic building ventilation, providing the world's top ventilation products and services; "Fulihua" is a domestic high-quality axial fan brand; "Maer" is an industry-leading well-known brand of external rotor axial fans; "ESSENTEC" is a pioneer in butler service for product parts of major global well-known air-conditioning manufacturers; "AMMT" is specialized in protective materials, functional materials, and composite materials of ship and marine; "TC-charger" is a leader in the field of new automotive energy such as on-board chargers in China; "Sanjin" is a core supplier of lightweight automotive components in China. Yilida has established eight production bases in Taizhou, Fogang, Zhangjiagang, Haining, Tianjin, Hangzhou, Qingdao, and Malaysia to ensure high-quality products and its supply capabilities.

At this year's Refrigeration Expo, Yilida will exhibit a variety of high-efficiency EC coil wind motor assemblies, centrifugal fans and axial fans with EC outer rotor, centrifugal fans and axial fans with EC inner rotor, as well as wind wall systems and smart air-conditioning box systems, etc. Yilida is providing multiple collocation methods with solutions in parallel.

Among them, SYT high-efficiency forward multi-blade centrifugal fan with permanent magnet synchronous frequency conversion motor, an innovative product, has an energy efficiency reaching IE5, which can save electricity and achieve energy-saving and carbon-reduction benefits. Pressing just one button to start, operating the machine is quite easy. The easy-to-remove frequency conversion drive module significantly reduce the shutdown time for replacement. The shared cooling system uses a fan to cool the motor and the inverter at the same time. The built-in G sensor realizes real-time monitoring of system abnormalities. No sensor control enables high torque output at zero speed. The integrated design of inverter and motor saves installation space. The product also provides a variety of communication methods to meet different needs. Good scalability ensures that it can be equipped with a reducer and brake at the same time. The configuration of shafts, bearings, belts, pulleys, etc. are removed from the fan ends, reducing maintenance and replacement of wearing parts. The characteristic of the built-in frequency converter reduces the electrical system such as the configuration of the power distribution cabinet.



CAREL will exhibit in China Refrigeration Expo 2021



Carel is a world leader for HVAC and refrigeration control solution as well as the humidification and evaporative cooling system, and its product line aims to saving energy and minimize the impact of the machine and system on the environment. The data driving system coming from our networking platform could offer personalized value.



During the CRH, Carel’s highly efficient and energy-efficient as well environment-friendly solution will make its grand debut at our pavilion with its symbolic red. We are expecting your arrival at Carel pavilion: W2F01.

Air-conditioner room integrated solution by data center cooling water at array and room level

μCRAC refers to Carel’s air-conditioner room integrated solution by latest data center cooling water at array and room level. The solution is real-time applicable with all the integrated basic functions capable of being flexibly configured, such that it could perfectly satisfy the user’s actual demand.



What’s more, it could wirelessly interact with mobile equipment via APPLICA, minimizing the air-conditioning unit commissioning duration and simplifying the maintenance.

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μCRAC offers different structure at user’s option: assemble with optional in-built LED panel, assemble with slide way for optional 7-inch touch screen, which are economical and capable of fully meeting the demands of the system.

pGDx 7” Smart is the latest member of pGDx family, consistent with the earlier version in terms of the good-looking, performance and user-friendly functions, such that it could ensure outstanding user experience while maintaining its economical and adaptable merits.

pGDx 7” Smart follows strong and convenient programming platform named c.Touch, which could assist the users in

designing attractive self-defined user interface in fast and easy fashion. The simple and good-looking frameless design could also ensure smooth and steady operation effect, bringing the users with perfect interactive experience. pGDx 7” Smart is flexible and practical with strong adaptability. It supports 24VAC / VDC power supply requiring no external DC power supply. Meanwhile, you could clearly know about the unit operation state via two LED indicator lamps. In addition, the product is easy to be upgraded and maintained. Thanks to its screw bracket mounting and horizontal wiring design, the mounting space could be saved in effect. There are USB ports beneath the screen for refreshing the screen program and downloading the log, which are easy to use.

Self-contained solution for cooling small-size DC frequency converter

HEOSone is a self-contained refrigerator solution to control and manage small-size DC frequency converter. As it is equipped with complete production line for Orione R290 DC frequency converting rotor compressor, HEOSone could be applied in medium and low temperature fields. Its typical applications cover the followings: supermarket horizontal cabinet freezer and self-contained refrigerator of vertical display cabinet as well as the kitchen-special refrigerator or food display refrigerator in bakery or small shop.

HEOSone, via coordinating each smart refrigerating part, ensures the refrigerators’ excellence and steady temperature of the goods inside. Meanwhile, it is in use of natural working medium refrigerant R290 (dimethylmethane) to make possible the true natural efficiency, minimize the environment impact, which conforms more to the future standard.



Heos is an efficient control solution for administrative self-contained and semi-contained display cabinet



Heos is applicable to self-contained (air cooling) and semi-contained (water cooling) display cabinet rather than the remote air-condition unit via the long distance fluid supply pipe and cooled by compressor. Therefore, they are of higher

performance in terms of energy conservation, installation convenience and maintenance. Meanwhile, they are equipped with electronic expansion valve and variable speed compressor basing on the DC technology.

The advanced self-contained display cabinet solution ensures the following:

Reliability: it cover all the devices passing the factory all-function test;

Low leakage risk and less cost on maintenance and assembly;

Flexible to be mounted according to the shop layout.

The DC technology offers continuous modulation function to raise the efficiency to greatest extent, which means to bring down the operation cost in its true sense;

Steady control for best quality and longer warranty period;

Remote diagnosis function to lessen the maintenance cost.



The DC technology offers continuous modulation function to raise the efficiency to greatest extent, which means to bring down the operation cost in its true sense;

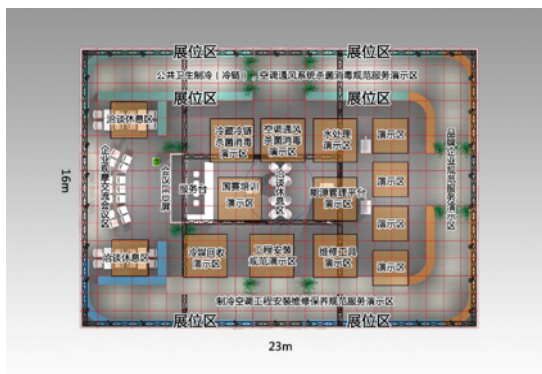
Electric heating humidifier applicable to the pharmacy, hospital and museum etc



Electrode humidifier is applicable to all scenarios (such as shopping mall, office building, electronic workshop, pharmacy, hospital, precise air-conditioner and steam bath etc.)

Apart from the aforesaid commercial and industrial humidifying solution, Carel also brings in the latest residence humidifying solution-HUT electrohumidifier, household direct blowing electrohumidifier with compact steam and HUH electric heating humidifier.

Exhibition Area for Aftermarket Standard Service of China's Refrigeration and Air-Conditioning Industry Debuts at China Refrigeration Expo 2021



The Refrigeration and Air Conditioning Engineering Working Committee of China Refrigeration and Air-Conditioning Industry Association will set up an Exhibition Area for Aftermarket Standard Service of China Refrigeration and Air Conditioning at Hall W1 of the "China Refrigeration Expo 2021". This is the first time in the history of China Refrigeration Expo and one of the highlights of this exhibition.

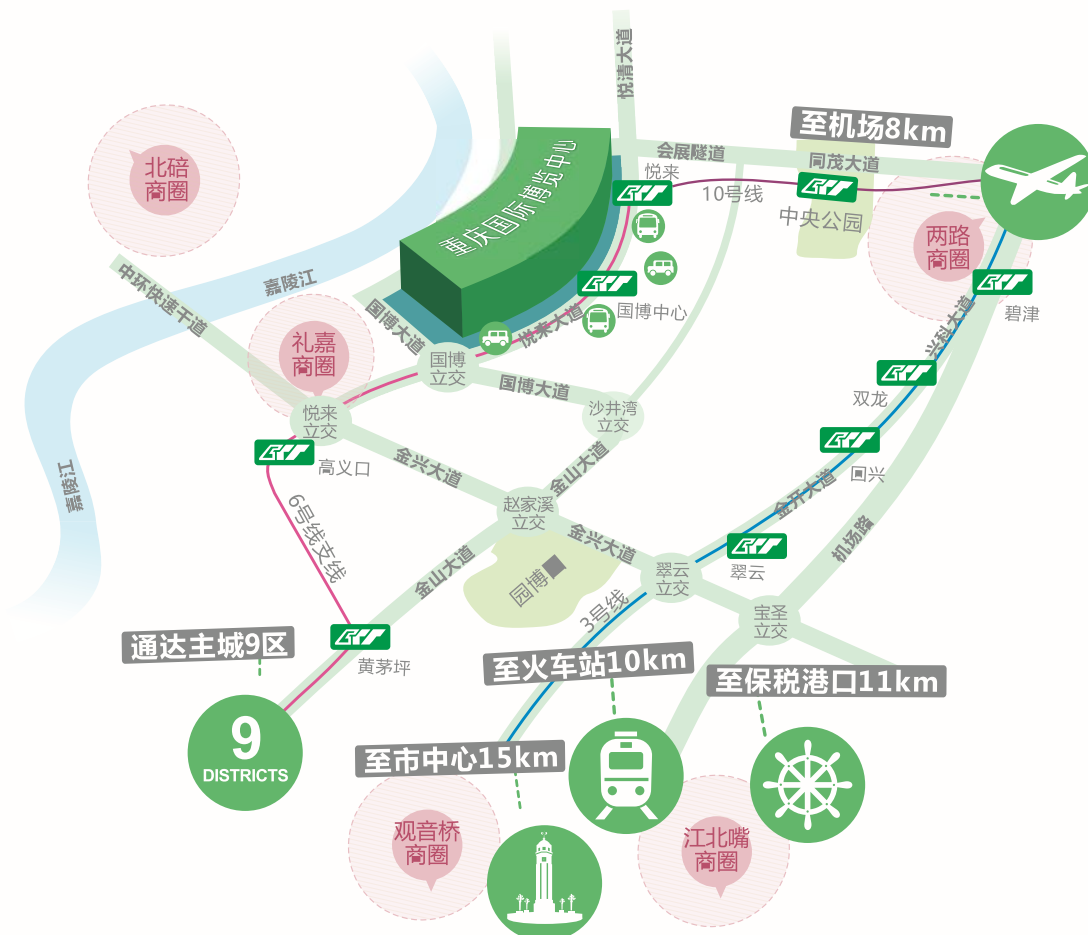
The exhibition area will fully display the results of the aftermarket standardization of refrigeration and air-conditioning services since the establishment of the Engineering Working Committee of CRAA in 2005.

During the exhibition, there will be a signing ceremony for the release of proposal letter for China's refrigeration and air-conditioning aftermarket services for thousands of enterprises with integrated, standardized, and green and low-carbon services.

During the exhibition, an upgraded version of the industry authority certification will be released, and the policies for the qualification record of ability level will be interpreted.

Please stay tuned!

Consultation hotline: 18913157811



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第三十三届国际制冷、空调、供暖、通风 及食品冷冻加工展览会


THE 33RD INTERNATIONAL EXHIBITION FOR REFRIGERATION,
AIR-CONDITIONING, HEATING AND VENTILATION, FROZEN
FOOD PROCESSING, PACKAGING AND STORAGE


2022年4月11日至13日
APR 11-13, 2022

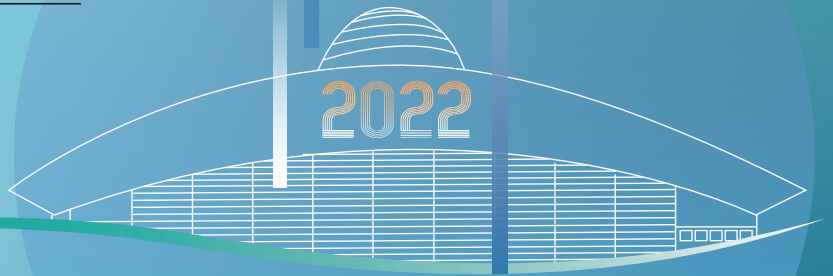
重庆国际博览中心
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 中国制冷空调工业协会

承办:  北京国际展览中心有限公司



电话: 010-64934668-611/610
传真: 010-64938558
网址: www.cr-expo.com
邮箱: xuelongyun@biec.com.cn
kanglu@biec.com.cn



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