

ACREX
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ISHRAE Speaks

The promise of HVAC&R Industry *How ISHRAE strives to continually add value*



*Mr. Vishal Kapur,
National President
ISHRAE*

“ ‘Climate Change’, ‘HCFC Phase out’, ‘Ozone Friendly’, ‘Sustainable Growth’, ‘Adaptive Thermal Comfort’, ‘Clean Energy’, ‘Efficient Energy’, ‘Urbanization’: All these are the buzz words of today’s times and HVAC&R is at the centre of it. The room air-conditioners market in India is approximately 4 million units, with penetration level as low as 4-5%. Compare that to the global market, which stands tall at 100 million units with penetration level of approx. 30%. This clearly demonstrates the phenomenal potential growth our industry is poised to achieve over the next few years. As on date, 30% of the Indian population lives in urban areas with a predicted number rising to touch 50% by 2050. This would result in higher demand for thermal comfort. Thus the need for the industry is to promote super efficient cooling solutions which are not only environment friendly but also affordable. The awareness levels are improving and the government is also doing a lot in this direction with help from technical bodies like ISHRAE, the industry, the academia and professionals. Higher temperature set-points, Inverter AC promotion, star rating etc. are all steps in the right direction.

Our responsibility as the technical body of professionals representing the air-conditioning industry is crucial, in order to ensure a responsible and sustainable growth. ISHRAE has taken up a lot of initiatives in this direction. Research activities, technical projects, educational programs, workshops, conferences, exhibitions – we try and explore all possible opportunities to add value to this initiative. We are working with a lot of domestic and international bodies on projects for technological advancement and innovative solutions to reduce the energy demand as well as the consumption. One key activity of ours is writing standards specific for our country like Rating & performance testing standard for Chillers / VRF / AHU, Indoor Environment Quality (IEQ) standard etc. ISHRAE

also encourages UG and PG engineering students to undertake research projects in the field of HVAC&R by granting financial aid. We are also getting very active in the field of research on generic topics like IEQ, Corrosion, evaporative cooling etc., in association with the top engineering colleges of our country.

We run various kinds of educational programs across the spectrum of personnel. These programs cover project and design engineers, technicians, supervisors as well as fresh graduate engineers. A key objective is to work on improving the level of training, education and exposure provided across engineering colleges on the subject of RAC. ISHRAE, in partnership with AICTE, has been conducting training courses for the faculty engaged in teaching RAC. We have also revised the curriculum of the RAC course that shall soon be taken up by AICTE for implementation.

ACREX is one of our major projects focused to further the cause of our industry. Under this large and established umbrella, the manufacturers are able to display their products including innovative technologies and new products covering air-conditioning, ventilation, refrigeration & cold chain automation. Visitors from categories, be it architects, designers, builders, industry owners, users, government representatives, contractors, service providers, academia or students; everyone gets the first hand experience of products and technologies. The wide range of products and services presented through the event covers residential-to-commercial-to-industrial and infrastructure-requirements. With each passing year the exhibition has witnessed a significant growth in size and stature and ACREX 2018 @ Bengaluru promises to achieve a newer scale of participation. We are very certain and very excited as we prepare for ACREX’18.



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ACREX Hall of Fame Feature

Indian Market Gears up for Sustainability, Efficiency and Innovation

Just as the HVAC-R industry gears up for the fast developing market



Mr. Ravichandran Purushothaman
President, Danfoss India

“ The challenge for Indian policy makers is to manage growth in such a way that it creates the basis for sustainable economic performance. India’s transformation into a global economic force has yet to fully benefit all Indians. There is massive unmet need for basic services, such as water and sanitation, energy, and health care. By 2025, McKinsey & Company estimates that India will have 69 cities with a population of more than one million each. Economic growth will be concentrated around these cities, and the biggest infrastructure building will take place there. To achieve sustainable growth, these cities will have to be more livable places, offering clean air and water, reliable utilities, and green spaces. India’s urban transformation represents a huge opportunity for domestic and international businesses that can provide capital, technology, and planning know-how as well as the goods and services the urban consumer demands.

Mahatma Gandhi said India lives in its villages, but modern India is quickly urbanising. Every year India adds urban population equivalent to three times the population of Los Angeles. In 2011, India was 31 percent urbanised, and as per estimates that figure will be about 41 percent by 2030.

India’s cities are in dire need of better foundations. Maintaining air and water quality is fast becoming the biggest urban problem. For sustainable urban prosperity, India’s cities will have to be more livable places, with clean air and water, reliable utilities, and green spaces. NITI Ayog estimates that energy demand from buildings alone will increase 10 times in the next three decades. Energy consumption for space heating, water heating and space cooling accounts for over half the energy used in the buildings sector. Efficient heating and cooling of buildings is the best opportunity

to improve the energy efficiency of buildings. There are a number of technologies available today that can reduce the energy consumption by more than 25% in buildings. Practice of sustainable building is really about an integrated approach towards planning, designing, construction, operations, and maintenance. Having the right standards and codes for buildings will assist in a green future.

Indian Air Conditioning and Refrigeration market in India is currently estimated at 20,000 crores and expected to grow at a CAGR of 12% in the next decade. It has all the ingredients to catapult India into the global hub for HVAC-R market as this industry plays a vital role in the success of programs such as Make in India, Smart Cities, Food security and Cold chain development.

While it is general practice to look outside India for best use case projects that have displayed energy saving capabilities, we have examples in India that can be benchmarked globally. It is vital to look at these success stories within India that can be emulated by others in the industry.

It is with this idea of identifying projects from which we can all learn and imbibe that Danfoss India associated with ISHRAE to bring you the prestigious ACREX Hall of Fame, which is a journey we started in 2015, and feeling proud that stakeholders in the Commercial Buildings space have embraced the platform. We are privileged that ISHRAE has associated with us on this initiative.

I am confident that this initiative along with the coffee table book will be a useful reference to multiple stakeholders and will go a long way in guaranteeing and ensuring sustainable and environment friendly development of HVAC-R industry in India.

”

Exhibitor Preview



Prihoda: Tailor-Made Air Ducting & Diffusers

Customised solutions for every operation

“ Prihoda a medium sized, fully Czech-owned firm that specializes entirely on the production of fabric ducting and diffusers, designed for transport or distribution of air. The ducting solutions are not produced and sold by the meter, but their customers are provided with tailor-made solutions. Starting from discussion on capacities through necessary calculations to the production and delivery of the proposed product.

Since establishing the company in 1994, Prihoda has constantly been increasing the production capacity and number of customers around the globe. The year 2016 was unequivocally the most successful in their 22-year history. Prihoda achieved an impressive turnover increase of 20% and acquired over 6300 new orders. 867 thousand m² of fabric was used from which a total of 360 km of ducting and diffusers were manufactured. As their number of employees grew to 146, the first half of the year 2017 brought another 15% increase of sale in comparison with the same period in 2016.

Prihoda is undoubtedly one of the largest global niche market providers of this product line, with 43 contractual sales offices operating in 66 countries. Being in line with the company philosophy, i.e. to be close to customers and provide them with a fast and competent service, they have recently established subsidiaries in China and Mexico. A sophisticated quality management system ensures that the quality of products is consistent, regardless of whether they are made in the EU, China or Mexico. Both new factories aim to provide the necessary production capacity and conditions for further expansion into the markets in Asia and North & South America.

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Exhibitor Preview

Thermax's Integrated Cooling & Heating Solutions for F&B Industry

The process of turning a raw product into a finished, processed product that can be sold directly to the customer requires a lot of energy. Thermax's range of sustainable Cooling Solutions have been changing the way Food & Beverage (F&B) industries chill or heat.

These energy efficient solutions work on the principle of waste heat recovery by reducing the energy costs of both heating and cooling as well as reducing the carbon footprints.

Cooling solutions like the Ultra Low Pressure Vapour Absorption Machine (VAM), One Degree vapor absorption chiller, Chiller-heater and Evaporative Condenser are used by F&B industries for applications like food processing, raw milk cooling, pasteurization, air dehumidification, comfort cooling, Ultra-high temperature (UHT) processing plants and aseptic packing among others.

Thermax's **Ultra low pressure VAM** technology uses very low pressure water vapour (approx. atmospheric pressure of 1.013 bar) as the heat source for running the machine. It can also recover the water which is otherwise emitted into the atmosphere as vapour. This technology also use low pressure water vapour along with non-condensable gases (like air, nitrogen etc.)

This technology can be used in food processing industries like Potato chips frying, noodles etc. where lot of water vapour at atmospheric pressure is emitted through the chimney. This can also be used in Chemicals and Petro-chemical industries where the emitted low pressure water vapour along with some non-condensable gases can be recovered through the cooling tower water.

Thermax's high efficiency **Chiller-heater** provides simultaneous chilling and heating. In these products, 40% of heat required for generating hot water is recovered from low temperature chilled water, while the remaining 60 % is recovered from external heat source. Thereby, 40 % reduction in direct external heat source can be achieved for heating the water as compared to conventional hot water generator. Additionally, chilled water is also generated simultaneously. In many industries, particularly in beverage, dairy and pharmaceutical sector, the required process temperatures are below 5°C at various points along the manufacturing course. It may involve cooling a process fluid to lesser than 5°C or maintaining a storage/ packaging area at temperatures below. Thermax's **One Degree Chiller** without glycol meets these cooling demands safely.

The **Evaporative Condenser** helps optimize your processes at manufacturing plant. It utilizes axial fans to deliver maximized thermal performance over a wide range of heat rejection and temperatures. The spray of these condensers is designed to evenly distribute the water over the coil. The compact, modular designed condensers help in space optimization, making it easy to transport and install. Thermax's innovative and reliable solutions have been meeting the most demanding cooling applications in the industry.

To know more on how Thermax can help cool your business better, write to them directly at coolinginfo@thermaxglobal.com

Have you planned your trip to ACREX?

Booking advisory - Time starts now!

Bengaluru will host ACREX'18 and another big event at the same time. The spots would be tighter. We advise you to make your bookings at the earliest, since the tariffs are going to rise higher than the standard expected price range. You can reserve your accommodation, air travel and local transportation directly or hassle-freely through the ACREX appointed Travel Partner:

International Travel House Limited, T-2 Community Centre, Sheikh Sarai Phase-I, New Delhi-110 017
 Tel: +91-11-26017808. Please contact: **Mr. Sudip Sinha**, M.: +91 9711155780, E: sudipsinha@ith.co.in
Mr. Apar Yadav, M.: +91 9711155780, E: conferences@ith.co.in

Exhibitor Preview

Introducing ClarityAIR

Humidin does what is needed to keep the indoor air clean



ClarityAIR air quality controller and monitors, together with Humidin Combi Air Purifier, forms a holistic solution for smart indoor air quality management. It utilizes the latest technology in air purification and controls. It integrates the electrostatic air filtration, CO2 management and air quality monitoring into a ready-made solution, where all components are optimized to work in tandem. This solution consists of three major modules: Humidin combi air purifier as well as ClarityAIR air quality monitors and demand based indoor air quality control.

Indoor air quality is maintained by supplying cleaned, low CO2 concentration outdoor air into the building. This air dilutes the level of any indoor air pollution (like CO2 and VOCs). When the CO2-level is low but air purification is still needed, the Humidin combi air purifier unit changes automatically the operation mode to 100% room air circulation. In certain cases, Humidin combi air purifier mixes both the outdoor and indoor air in the required ratio. All this is managed automatically by ClarityAIR controller module that operates based on the continuous air quality monitoring.

Humidin combi air purifier circulates the air through the set of filters. It has a professional pre-filter to ensure the minimal maintenance and long lifetime of other filters. The core of the purification is the electrostatic precipitator that has high filtration efficiency for all particulate sizes (PM10 – PM2.5 – PM1) as well as microbiological contamination.

Low maintenance electrostatic metal filters need to be washed only once in every 3-4 months and have life cycle more than 15 years. Due to the continuously low pressure drop, they ensure low energy use and low noise of operation. If required, Humidin Combi Air Purifier also comprises of an active carbon or a combined molecular and particulate post-filter to remove gases like NO2 or O3. Different dilution efficiency and air flow rate is required in different operational conditions.

ClarityAIR demand based indoor air quality management ensures that indoor air is maintained cleanly and at the same time the system operates with the highest energy efficiency.

ClarityAIR fan controller (patent pending) is developed to optimise the air flow rate and the share of the indoor and outdoor air based on the current outdoor and indoor air pollution levels. It also takes into consideration the air conditioning energy need, especially during the warmest and the most humid times of the year. Cleaned outdoor air supply also prevents the uncontrolled infiltration of dirty, hot and humid outdoor air by positively pressurizing the spaces.

Air quality management requires reliable air quality monitoring. ClarityAIR indoor and outdoor air quality monitors measure air temperature, relative humidity, particulate matter PM2.5 and CO2 concentrations. Monitoring data can be viewed online on ClarityAIR user interfaces (occupant & facility management).

All communication between modules is implemented using wireless networks. This holistic solution consumes only one-tenth of the energy compared to the units using mechanical filters and constant outdoor air flow rate. It uses the low pressure drop particulate filtration technology and controls the air flow rate based on the demand.

ClarityAIR annual maintenance cost is only one-fifth compared to the similar units using mechanical particulate filters. This is because the particulate filters need only cleaning and other filters need to be changed only once a year.

This is the only holistic solution that has been developed in India so far to solve the Indian air quality challenges and to ensure healthy indoor air quality to people.



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THINK

your indoor air is safe?

Think again



Myth #1 - Providing high ventilation rates is too expensive.

One barrier preventing FMs from investing in better IAQ is that they believe it will cost too much to improve. However, with the increase in productivity that good IAQ provides, it can eventually pay dividends.

“People have the conception that it’s too expensive to provide better IAQ and higher ventilation rates, but when you actually look at the data, higher outside air ventilation rates and better filters are low cost options,” says William Fisk, Senior Scientist of the Indoor Environment Group at the Lawrence Berkeley National Laboratory. “The

estimated benefits when you quantify financial gains from improved health, reduced absence or increased performance are many times higher than the implementation costs.”

An earlier study from Harvard and SUNY-Upstate Medical reveals specific findings about cognition in green buildings vs. conventional ones. The researchers found that crisis response was 97% higher in green conditions and 131% higher in green buildings with enhanced ventilation, strategy skills 183% and 288% higher, and information usage 172% and 299% higher.

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ISHRAE Initiative

SearchO: Taking HVAC&R Industry Online

SearchO
Find it

An Initiative by ISHRAE

Connect with buyers from across India

ISHRAE has recently launched an online business gateway for businesses in HVAC&R and the Building Services Industry: www.searcho.org. SearchO is India's only online marketplace representing professional interest of HVAC&R industry members, in a digital compact fashion.

It creates an instant link between the buyer and the seller. No matter what the buyer is searching for, SearchO will provide quick connect, and therefore, generate real-time buyer leads. More than 10,000 service providers have listed so far.

We invite the readers to register for this exclusive experience, of buyer and seller interaction, which transcends all local boundaries and geographies, to connect millions of buyers and sellers with each other. This single platform has the potential to generate business worth millions, by facilitating easy exchanges of HVAC&R products and services, at a given point of time.

We hope to receive the continued support of the industry, to build deeper awareness about the rapid changes taking place in the industry. A digital platform transcends boundaries, and this is the reason why, we

need frontrunners in the industry to help us reach greater heights.

There are two options available for registering on SearchO. One is to book the ad space and get instant buyer attention, by helping them click the best products and highlighted offers on the website. It paves way for easy navigation and instant communication link.

The other option is to go for the premium listing. This section includes buyers who are seeking information on top quality and advanced solutions in HVAC&R category. Your products are clearly segmented, granted exclusivity, customization, and heightened visibility.

As you are much aware, there are several solutions available in the market, with a corresponding increase in the number of demand and buyers. This is an opportune time for ISHRAE to help the buyers with their exact requirement.

With your visible support, ISHRAE seeks to take SearchO and HVAC&R industry to the next level.

write us at searcho.org@ishraehq.in or call us at - **8860-789-782**.

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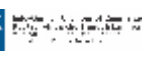
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