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Integrated Building Solutions

ACREX India 2018

22 - 24 FEBRUARY 2018 | BIEC, BENGALURU

Organiser:  Event Producer: 
Endorsed By:  O2C Supported By: 

ACREX India 2018: A Ringside View

ACREX India 2018

By Rakesh Kumar Managing Editor, Air Conditioning and Refrigeration Journal

The 19th edition of ACREX India in 2018 symbolised the upbeat performance and optimism of the HVAC industry, and a watershed in the growth of the Cold Chain industry. Organised by ISHRAE at Bangalore International Exhibition Centre (BIEC) from February 22 to 24, ACREX showcased the state of the art of the industry for the entire world to view and admire. Under the umbrella of Build Fair Alliance (bfa) forged last year at the initiative of ISHRAE, ACREX 2018 was one of the three giant events held simultaneously at the same venue – the other two being ISH India powered by Indian Plumbing Association (IPA), and Fire and Security India Expo (FSIE) organised by Fire and Security Association of India (FSAI).

In recognition of the stellar role being played by ISHRAE in promoting environmentally responsible technologies, Dr. Harsh Vardhan (Union Minister for Science & Technology, Environment, Forest and Climate Change and Earth Sciences) flew down from New Delhi to inaugurate the event and to encourage ISHRAE to continue its good work. Several

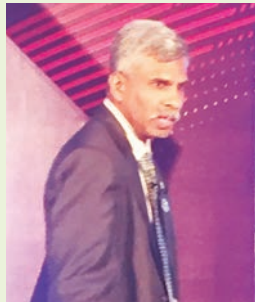
industry leaders from all over the world signalled their support with their presence, including Eric Solheim (Executive Director – UN Environment, and Under-Secretary-General of the UN), Bjarne Olesen (ASHRAE President), Frank Hovorka (REHVA Treasurer and Vice-President), Peter Ottmann (CEO, NuernbergMesse), Vishal Kapur (ISHRAE National President), C. Subramaniam (ISHRAE President-Elect), D. Nirmal Ram (Chair, ACREX 2018), Pankaj Dharkar (President, FSAI and Past National President, ISHRAE), Verghese Joseph (Johnson Controls) and Gurmeet Singh (President – IPA).



Dr. Harsh Vardhan lights the traditional lamp at the opening of the expo as D. Nirmal Ram, Eric Solheim, Verghese Joseph, Vishal Kapur and Bjarne Olesen look on

ACREX is South Asia's largest exhibition in this field, and one of the largest globally. The event was held this year in the backdrop of a TechSci research report, which says that the Indian HVAC&R market size is heading from the current US\$ 4 billion towards US\$ 7.7 billion by 2022. And the government has given the Cold Chain – growing at a breakneck CAGR of 19-20% – the status of an infrastructure sector. The theme of the exhibition – *Rising India: Enterprising & Cool* – supports domestic manufacture of equipment.

The Curtain Raiser



D. Nirmal Ram



Vishal Kapur



Gurmeet Singh



Verghese Joseph



Bjarne Olesen

A Curtain Raiser was held on February 21 – the eve of inauguration of the exhibition – at Sheraton Grand. JCI-Hitachi was the event partner.

D. Nirmal Ram (Chair – ACREX 2018) gave an overview of the industry to the invitees, and a foretaste of what lies in store for them during the next three days. Vishal Kapur outlined the efforts ISHRAE is making to steer the industry towards competency development and environmental responsibility.

Gurmeet Singh, CMD – JCI-Hitachi – made a presentation on global and local trends in the industry. He listed the growth drivers of the industry, and made projections of the market by product category. He also mentioned the efforts being made by his company towards a sustainable future – including eco-friendly refrigerants, a world class R&D Centre, and government-certified APF and VRF laboratories.

Verghese Joseph (JCI) mentioned some of the sustainable projects carried out by his company, including one in Japan and a landmark heritage building in India – Kolkata Police headquarters at Lal Bazaar.

ASHRAE President Bjarne Olesen spoke about the mutually beneficial cooperation with ISHRAE.

A highlight of the evening was a panel discussion on the topic 'Chillers and VRF Applications – Friends or Enemies?' moderated by D. Nirmal Ram. The other participants were Gurmeet Singh, R. S. Kulkarni (HVACR Consultant), Vishal Kapur and Aditya Malpani (GM and Head, Procurement – Mantri Developers). D. Nirmal Ram summed up the discussion by



D. Nirmal Ram, Gurmeet Singh, R. S. Kulkarni, Vishal Kapur and Aditya Malpani during the panel discussion



Unveiling of RefCold India souvenir

saying that every project is unique, and the choice of chiller versus VRF would depend upon the application.

Pankaj Dharkar announced the first edition of RefCold India, planned in Gandhinagar from November 22 to 24 at Mahatma Mandir Convention-cum-Exhibition Centre, which boasts of a convention capacity of 5000 delegates. On this occasion, a souvenir was unveiled by C. Subramaniam, Sonia Prashar (MD, NuernbergMesse India), Pankaj Dharkar (Chair, RefCold India), Bjarne Olesen, Harshal Surange (ACR Consultants) and Vishal Kapur.



Raji Panicker receives the Journal Paper Award

H. M. Jhangiani Journal Paper Awards were presented for two best articles published in the *Journal* and its *Cold Chain* supplement during 2016. These awards were bagged by Rajat Gupta for his article on *A Sustainable Cold Chain Using Eutectics* in the March-April 2016 issue of *Cold Chain*, and Raji Panicker for his article on *Geothermal Earth Heat Exchanger* in the November-December 2016 issue of the *Journal*.

Sonia Prashar proposed the vote of thanks.

Industry-Speak

In the February 2018 issue of the Journal, we brought you the views of some Industry Captains on the state of the industry; here are some more views – Managing Editor

State of the HVAC Industry in India....

Bitzer sees the Indian compressor market as very stable, with sales on a steady growth course. With sustainable and intelligent technologies becoming more and more important in India, Bitzer can offer high-performance solutions in the form of its energy-efficient OS.A95 screw compressors for ammonia applications.

It is predicted that the Indian market will be shaped by climate-friendly and energy-efficient solutions in the future. The costs for refrigerants with high global warming potential (GWP) are rising. As a specialist in refrigeration compressors, we have more than 20 years of experience using low-GWP refrigerants such as ammonia and CO₂.

In 2017, we noticed a significant increase in the sale of our Bitzer CSV compact screw compressors, which are optimised for use in air-conditioning systems, heat pump

The overall market size for HVAC industry in India is pegged at Rs.17,500 Cr, out of which approximately Rs.10,500 Cr is the residential and domestic segment, which consists of room ACs and partially VRFs.

Rise in infrastructure-based developments, rapid urbanization, technological advancements and growth in commercial properties are expected to fuel the growth in the HVAC market in India. The commercial, residential and government sectors are now geared up with the aim to embrace energy efficient HVAC systems. Compliance with SHE as well as awareness of climate change have improved the efficiencies and usage of HVAC systems, and will be the future drivers for growth.

In the face of growing concern over climate change, companies are being driven to seek better technologies by the international climate change agreement and the need for energy efficiency and reduced carbon footprint, as well as regulatory intervention by the government in the form of energy labeling of products. Technology challenges in products could be overcome through introduction of inverter driven compressor technology, VRF systems, tri-generation VAM, geothermal heat pumps, star-rated unitary products, high coefficient of performance (COP) chillers for mid-and large-sized buildings, machines with nil or low Global Warming Potential (GWP) refrigerants – these are just some of the latest technologies that have been introduced in the market. A lot of development work is being undertaken in the use of solar energy in HVAC equipment.

The current industry trends can be summarized as:

1. Shift in Product Preference

i) There is a shift in consumer preference towards VRF products and air-cooled products. Most of the companies in this

applications and industrial and process cooling solutions. Two ACREX Awards of Excellence in 2018 are a testament to Bitzer's overwhelming success: in the Green Product category for the OS.A95 screw compressor and in the Innovation category for the Ecoline reciprocating compressor with IQ module.

We offer a comprehensive range of spare parts in our Green Point network and online, as only original parts can guarantee that the compressor will operate at its best and in line with Bitzer's demanding quality standards.



Harvinder Bhatia
Managing Director
Bitzer India

sector are gearing up to build a strong presence in the VRF market through introduction of the right technologies and manufacturing facilities.

ii) Within the chiller market, there has been a shift towards air-cooled systems as compared to water-cooled systems. This is due to water scarcity in many parts of India, as well as regulations by municipal bodies on using water for HVAC systems.



M. Gopi Krishna
COO, Voltas Ltd.

2. Innovative Energy Solutions

- Hybrid HVAC Systems: Hybrid HVAC systems capture changing temperatures and automatically adjust to the most efficient energy saving method available to heat or cool.
- Indoor Air Quality Management: Generally, poor indoor air quality results in reduced concentration levels, lowers productivity, and causes allergies and disorders of the upper respiratory tract, which increase absenteeism. Hence, with a focus to provide the highest indoor air quality, solution providers are coming up with engineered variable air volume systems to maintain thermal comfort by varying the amount of heated or cooled air delivered to each space, rather than by changing the air temperature.
- Ozone generators are fitted inside AC ducts, which inject controlled quantity of ozone into the air-conditioned space. Toxic gases, odours and smoke are oxidized, while the fungi and microbes inside the AC ducts are almost eliminated.

The government's policies have kick started a lot of opportunities. With the focus on health care, a good number of hospitals are coming up in the government and private sectors; the need for good education has opened up the space for institutes; for the purpose of making India a manufacturing hub, a lot of players are setting up base in the country and the existing ones have expansion plans; the need for rapid transportation system is another area; IT and ITES, hotels and commercial spaces are the other areas where we see growth.

With the government's focus on development, the HVAC industry is poised for strong growth. HVAC needs have become an integral part of many major well performing sectors, implying that in times to come the demand for HVAC requirements will grow. The future of Indian manufacturing sector looks promising. India can emerge as a manufacturing hub for HVAC industry given factors like growth of construction projects, demand for low cost operations and energy efficient solutions that are at their disposal.

India, a shining star, has emerged from an economic malaise in a much better situation. After a shaky 2017, when the effects of demonetization and GST were a drag on economic activity, growth has returned to normal in the previous quarter (GDP: 7.2%).

Further, while India is witnessing a strong Y-o-Y growth in the consumer durables segment, the air conditioner segment remains highly under-penetrated. However, rapid increase in the GDP coupled with changing environmental dynamics, urbanization, rising income levels and increasing awareness of energy efficiency present this segment with a high growth potential. In the financial year 2016-17, approximately 5.2 million air conditioner units were sold in India, representing a solid growth of 18%.

Voltas continues to be the market leader with a commanding 21% market share, followed by Lloyds-Havells (15%), LG (11.5%), Daikin (10.5%) and Johnson Controls Hitachi (JCH) (10%). Almost 70% of the market share is held by these 5 players. Heating appliances continues to be a small category in India as the climate in most parts of the country remains hot for most of the year and consumers in very cold places in the north and north-east do not have high disposable incomes and prefer to use cost-effective traditional methods.

Going forward, political stability will bring rapid inclusive growth enabling the HVAC industry to keep on rising at 12-15% in the foreseeable future.

The following new technologies are emerging:

Inverters – Inverter technology air conditioner has a variable speed compressor motor. In traditional air conditioners the compressor motor runs at a fixed speed and the compressor motor is switched on and off intermittently to regulate the temperature. Inverter air conditioners have variable speed compressor motors that run continuously, thereby enabling large savings in power bills. LG is the market leader in this segment and has shifted 100% in SAC segment to Inverters last year. Following this trend, all major AC manufacturers such as Daikin, JCH, Panasonic, Samsung, etc.

Customers are looking for products/solutions with the latest technology, higher energy efficiency and proven performance. Once they experience these benefits, they endorse the products, which are then considered as benchmarks for their requirements. Most of the customers need products that reduce project complexity and downtime as well as increase connectivity, data transparency and cost efficiency.

Today we are living in an era where technology matters the most, so we expect companies with strong focus on innovation to be leaders in bringing forth new products with the newest of technologies. Customers are willing to buy smart products that can make their systems more efficient and beneficial in all aspects.



Sunit V. Tanavade
MD, Belimo Actuators India

have shifted significant quantities to Inverters this year. The total market for Inverters will grow from 1.0 million in 2017 to 2.5 million in 2018, representing a steep increase of 150%.

Alternate Refrigerants – The Montreal Protocol dictates a gradual phase out of HCFC refrigerants. India, a signatory to the treaty, has planned to phase out consumption and manufacturing of this ozone-depleting refrigerant under an accelerated plan by 2030. Keeping this in mind, most manufacturers have already started exploring possible replacement options 2-3 years ago. Although R410a and R290 have been used in significant quantities, there is a trend that has seen most manufacturers shift to R32 refrigerant. Daikin, Blue Star, JCH and Panasonic have shifted significant quantities to this refrigerant and others will follow this trend in the coming years.

Rapid increase in the GDP, changing environmental dynamics, urbanization, rising income levels and increasing awareness of energy efficiency bode well for a high growth potential in the air conditioner segment. Soon India will be a 6.0 million air conditioners market and it could well happen in 2017-18.

Compressors – Rotary seems to be the clear choice as the compressor technology for air conditioners across the region, given its compactness, low noise and competitive prices. Indian industry was dependent on imports of compressors till the recent past. With Highly Hitachi taking a lead in setting up a local manufacturing in India in 2016, and GMCC announcing its plans to manufacture compressors in India, local compressor manufacture has received a significant boost thus benefitting the Indian AC industry in terms of local delivery, short lead times and India-specific designs.



Prakkash Sekhani
MD, Safe Refrigerations
(P) Limited

The HVAC industry in India has picked up pace after a period of sluggishness. The government's push on infrastructure development should help the industry to grow this year. However, the current squeeze on credit by banks, may lead to a period of uncertainty again, for a brief period of time hopefully.

Customers have become more knowledgeable and are constantly demanding more efficient products and systems that are also environment friendly. Such demand, coupled with rising energy costs, has led to a steady growth of efficient systems like inverter ACs, full inverter VRF systems, inverter ducted splits, chillers with VFD, other products like pumps and AHUs with VFD, etc.

In the next 3 years, the HVAC industry is poised for a steady growth in India due to increasing disposable incomes, infrastructure development, development of underdeveloped regions like the North East and the rise in average ambient temperatures.

As the demand for energy efficient products increases, products like magnetic bearing centrifugal chillers will become more popular and take away a fair share of the

IoT based smart building automation and HVAC solutions that are compatible with all open protocols used in building control (BACnet, LonMark, KNX, DALI, Modbus, etc.) to facilitate comprehensive building control in a wide range of sectors (commercial, education, healthcare and more) is the future outlook. Furthermore, a seamless integration of HVAC+Lighting+Energy Management with a complete offering to boost energy savings in HVAC systems include IoT-enabled industrial automation HVAC devices, the fan/pump vector control drive, as well as the high-performance EC fans, which are capable of achieving energy savings of up to 30 percent compared to traditional AC fans. And products that are designed for high reliability and ease of installation and use, ensuring the lowest cost of ownership. Utilizing IoT architecture, this solution should also be capable of integrating indoor environment sensors, high-efficiency heat exchange equipment and cloud services to create a dynamic indoor environment for building occupants. By facilitating seamless, strategic control, this solution enables facility managers to expertly balance energy efficiency, indoor air quality and zone comfort within commercial buildings. The IoT Cloud enables remote monitoring, access and maintenance.

Delta's global leadership in thermal management and industrial automation converge to deliver enhanced energy conservation, smart control and reliability in HVAC systems across the industrial, commercial and residential segments.



Sunil Khatwani

*Vice President & Business Head
System Airconditioning Division
LG Electronics India Pvt. Limited*

screw chiller and conventional centrifugal chiller market. Inverter split ACs and VRF systems will continue to grow steadily. I believe inverter ducted splits will replace the current fixed speed ducted units.

Also, products with environment friendly refrigerants will gain prominence and refrigerants like R 22 will be gradually phased out in India, much ahead of the Protocol deadlines.

LG has embarked on a journey that we call 'Greenovation', i.e. green innovation, anticipating the change in the market demand. We were the first company to shift

100% to inverter ACs with green refrigerant in January 2017. We then shifted the entire range of cassette, rooftop, floor standing and ducted split units to inverter based systems with a green gas. From the beginning of 2018, we do not produce any product with R22 refrigerant in India and all our systems are inverter based.

We have also introduced oil free magnetic bearing centrifugal chillers in a wide range of 260 TR to 2200 TR, which offer a high full load and part load efficiency. This product is challenging our screw chiller and conventional centrifugal chiller range, but so be it.



Rajat Bhambri

*Building Automation Solutions Business Department (BASBD)
Delta Power Solution India Pvt. Ltd.*

Delta always strives to deliver the best customer solution for energy efficient buildings. Our concept of a Delta Building is one that takes advantage of the latest technologies in energy efficiency and renewable energy combined with an enhanced building occupant experience. Our building automation and HVAC solutions are a vital component of this goal. Delta offers an extensive offering of products such as a complete suite of building automation controls, variable frequency drives and DC fans, to name just a few.

The Expo



AC Humidin Air Systems is a leading ventilation and air treatment equipment manufacturing company, with its product range covering fans, dehumidifiers, dry scrubbers, ESP filters, IDEC and evaporative cooling machines.



Ace Hygiene Products is the manufacturer of UV disinfection systems under the Alfaa UV brand, with its products covering applications like drinking water, process water, waste water and air for residential, commercial, industrial and municipal markets.



Advance Valves is in the field of specialised valves for air conditioning – having pioneered balancing valves in India – and power, oil and gas, refinery and petrochemicals, water, fertilisers and steel industries.

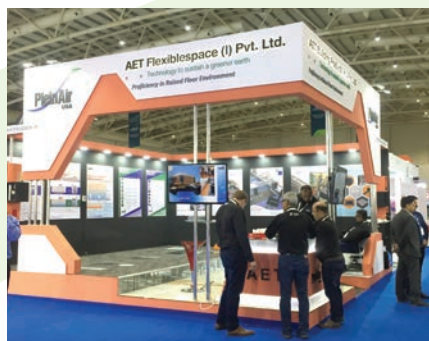


Aeropure UV Systems is focused on delivering air quality solutions based on

ultraviolet germicidal radiation technology in a wide range of applications such as indoor air quality and energy conservation in AC systems.



Aerosol Filters offers customised air filtration products from coarse filters to HEPA and ULPA filters for applications like nuclear power plants, space research, hospitals, pharmaceutical industries and micro-electronics.



AET Flexispace offers raised access floor and underfloor air distribution solutions for improved ventilation, air quality and comfort.



AHRI (The Air-conditioning, Heating and Refrigeration Institute) is an association of manufacturers that develops standards for, and certifies performance of, several air conditioning, heating and refrigeration products, with its certification being internationally recognised.



ALP Aeroflex is a manufacturer of EPDM and nitrile rubber insulation sheets, tubes and accessories for thermal and acoustic insulation.



Armacell India offers flexible foam for equipment insulation and engineered foams for thermal, acoustic and mechanical applications.

Workshops and Seminars

As always, the ACREX schedule was packed with concurrent events. There were seminars on Refrigeration and Cold Chain and other topics. Workshops were organised on HVAC, and Refrigeration and Cold Chain, in which ASHRAE Distinguished Lecturers and other learned speakers shared their knowledge.



Eric Foucherot, Director International – Eurovent, addresses the REHVA Seminar on Designing Healthy Nearly Zero Energy Schools



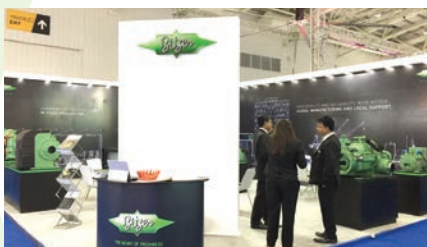
Armstrong Fluid Technology offers fluid flow and control equipment for HVAC, fire and water-based process industries including pumps, HVAC plant room packages, advanced controls, FM UL approved fire pump packages and pressure boosting systems.



Auro Engineering manufactures and exports coils and FCUs in Al-Al, Al-Cu, Cu-Cu, Cu-CuNi, Al-SS and SS-SS materials with anti-corrosive solutions, and double skin AHUs; it also offers Xylem pumps for HVAC, hydro-pneumatic and fire fighting applications.



Belimo Actuators offers damper controls, control valves and sensors to address comfort and energy challenges for the HVAC industry.



Bitzer India is a leading global third party manufacturer of refrigeration compressors, offering screw, scroll and recip-

rocating compressors for all refrigerants as well as condensing units in air cooled and water cooled versions, and multiple compressor racks.



Blue Star is a leading air conditioning, commercial refrigeration and MEP contracting company with an integrated business model of manufacturing, contracting and after-sales service for the residential, commercial and infrastructure segments.



BP Refcool is an integrated solutions provider in the service tools, energy recovery systems and gas leak monitors space.



Carel ACR Systems offers controls for air conditioning, refrigeration and retail equipment; and solutions for humidification applications.



Carrier Airconditioning & Refrigeration is a part of UTC Climate, Controls & Security – a unit of United Technologies Corporation; its products manufactured in India

include cassettes, ducted splits, packaged units, and air cooled and water cooled screw chillers.



Caryaie – Nicotra Gebhardt is a leading supplier of innovative air movement products for the HVAC industry.



Citizen Industries offers air handling units, ventilation and exhaust units, AHRI certified cooling and heating coils, low leakage duct dampers, fan coil units and ductable units.



Climaveneta Climate Technologies is a part of the Mitsubishi Group, and is a leading manufacturer of air cooled chillers and precision AC units at its Bengaluru facility.



Cosmos brand is used by Spectrum Industries for air distribution products manufactured by it, and is now making a foray in overseas markets also.

ACREX Awards Night



Vishal Kapur opens the event



Archana Deshmukh comperes the show



D. Nirmal Ram

The evening of February 22 at BIEC saw a glittering show hosted by Daikin India. The ACREX Awards of Excellence Night was meant to celebrate ACREX and those who toiled to serve the industry and to make this year's ACREX a huge success.

Vishal Kapur opened the event. Archana Deshmukh compered the show with elan. D. Nirmal Ram (Chair – ACREX 2018) made a presentation on the HVAC&R industry. Jayesh Deshpande (Senior Vice President, Daikin India) thanked the audience for attending the event. A video on Daikin's journey in India was played. Vishal Kapur returned to the stage to



Jayesh Deshpande



Incredible India – a mesmerising interlude

brief the audience on the programs and initiatives of ISHRAE.

There were song and dance interludes by Team Oxygen that enthralled the audience with their sheer majesty and elegance.

ACREX Awards of Excellence

ACREX Awards of Excellence were presented to products showcased in the Expo in various categories. The following exhibits received the awards in the categories mentioned:

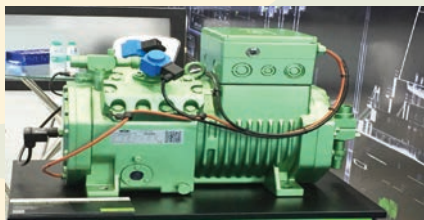
Innovation

Belimo was the Winner for its Zone Ease VAV Controller.



Belimo Zone Ease VAV controller

Bitzer India was the Runner Up for its Ecoline Stepless Capacity Control Reciprocating Screw Compressor with IQ Module.



Bitzer Ecoline compressor with IQ module

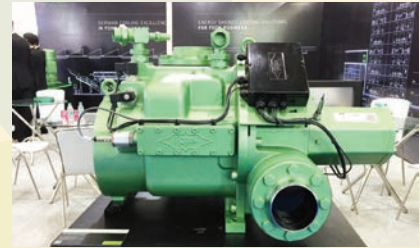
Sanhua received a Special Mention for its Freezing and Defrosting Pad.



Sanhua freezing and defrosting pad

Green Product

Bitzer India won the award for its OS.A95 Ammonia Screw Compressor.



Bitzer OS.A95

Energy Saving

Armstrong was the Runner Up for its Vertical Inline Centrifugal Chilled Water Pump.



Armstrong vertical inline pump

Energy Saving in Refrigeration

Danfoss won the award for its High Efficiency EC+ Solution.



Danfoss EC+ solution

Danfoss received a Special Mention for ICF Defrost Valve.



Danfoss ICF defrost valve

Product Developed in India

Emerson was the Winner for its Air-to-Water Heat Pump.



Emerson ATW heat pump

Indoor Air Quality

Smoke Solutions Denmark won the award for its Tower Series Air Purifier.



Smoke Solutions Tower air purifier

Testo was the Runner Up for its 160 Data Logger.



Testo 160

The eminent jury for the awards consisted of Leslie D'Souza, Ashok Karanth, B. Manjunatha Swamy, T. N. Gurumurthy, Jayesh Deshpande and Kapil Bhatia.

Employer Recognition Awards



Blue Star, Bangalore receives Employer Recognition



ABS Aircon, Bangalore receives Employer Recognition

During the course of the evening, two organisations were presented Employer Recognition Awards: Blue Star, Bangalore and ABS Aircon, Bangalore.

The evening also saw the launch of ACREX 2019, planned at Bombay Convention and Exhibition Centre (BCEC) in Mumbai from February 28 to March 2, 2019.



V. Krishnan, Chair – ACREX 2019, announces its launch



T. Nagaraj proposes the vote of thanks

The vote of thanks was proposed by T. Nagaraj, President – ISHRAE Bangalore Chapter.



The team behind ACREX 2018 poses for a group photo



ACREX 2019 team unveils the event brochure



CRI Pumps is a leading company in the pumping solutions space, offering a wide variety of pumps and motors.



Crystal Air Systems is a leading manufacturer of air handling units, fan coil units, air washers, wet scrubbers, axial flow fans, FRP cooling towers, ADPs and other allied products.



Danfoss Industries offers VLT and VA-CON drives, heating valves, controls and solutions for refrigeration, air conditioning, HVAC, district cooling and underfloor heating applications, focused on environmental responsibility and energy efficiency.



Delta Power Solutions is a leader in power and thermal management solutions; its Indian arm, Delta Electronics, offers telecom power, industrial automation, building management, large display, mission critical infrastructure and renewable energy solutions.



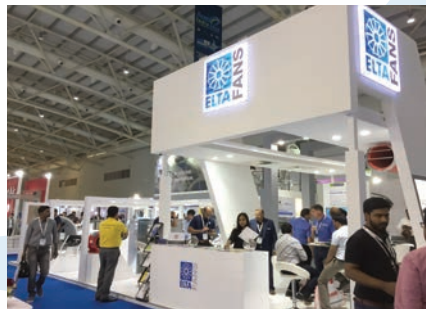
Desiccant Rotors International offers fresh air solutions for Green HVAC and evaporative cooling, with its product range comprising energy recovery ventilators, treated fresh air units, dedicated outdoor air systems, chilled beams and evaporative cooling pads.



ebm-papst is a leading manufacturer of fans and motors for ventilation, air conditioning and refrigeration, household appliances, heating and automobiles, and a player in drive engineering.



Edgetech Air Devices manufactures eco-friendly and energy-efficient customised air handling units, fan coil units, air washers and other air handling products for diverse industries.



Elta Fans India is a new joint venture of Elta Fans (UK) for ventilation products.



Embraco Compressors and Cooling Solutions offers energy-efficient products and solutions for household, commercial and aftermarket segments, including medical applications, food retail and services.



Emerson Climate Technologies is a global leader in solutions for industrial, commercial and residential markets, with its Commercial and Residential Solutions business addressing human comfort and health, food quality and safety, advanced energy efficiency and sustainable infrastructure.



Eneffen Technologies offers energy efficient and Green solutions that make buildings intelligent – bringing about energy optimisation, safety and security during the building's life cycle.



Ensavior Technologies provides solutions in pumping systems, hydronic balancing, ventilation and IAQ systems, thermal energy storage, sensors and transducers.

New Product Launches

ACREX is the perfect launch-pad for introduction of new products due to the eyeballs they attract in the Expo. Some of the new products launched during ACREX India 2018 are described below.

Samsung Launches World's First Wind-Free Air Conditioner in India

Samsung India announced the launch of the world's first Wind-Free Room Air Conditioner and System Air Conditioner in India. These air conditioners incorporate Samsung's Wind-Free™ cooling technology – providing a cooler indoor climate and optimal energy efficiency without the discomfort of direct cold airflow. The Wind-Free RAC contains the world's first 8-Pole series and anti-corrosion Durafin condenser, designed for India's harsh climatic conditions.



Wind-Free Room ACs are available from a starting price of Rs. 50,950 to Rs. 74,260, while the Wind-Free System AC range is customizable with 1 way cassette, 4 way cassette and mini 4 way cassette. The new line-up provides ambient condition by gently dispersing cold air through 9,000 to 21,000 micro air holes. A two-step cooling system first lowers the temperature in fast cooling mode and then automatically switches to Wind-Free™ cooling mode, creating still air once the desired temperature is achieved. This approach also reduces energy consumption by up to 72% compared to the fast cooling mode.

Danfoss India Announces the Launch of 3 Products

Danfoss Industries launched 3 new products: Danfoss EC+ drive solutions, Danfoss Optyma Pack condensing unit and Danfoss DSH scroll compressors with intermediate discharge valves (IDV).

Danfoss Optyma Pack condensing unit, which has globally been launched for the first time, is targeted at the dairy industry and cold rooms for food processing sector. It is equipped to cater to the needs of positive temperature cold rooms, and is customizable. The product has been designed at the Danfoss R&D center in India keeping in mind the varied power conditions in rural India, and can also function using solar energy.

The Danfoss DSH scroll compressors with IDV can improve system load efficiency by up to 10% to meet the standards of the Department of Energy (DOE) and ASHRAE 90.1, with minimal design or retrofit costs. The IDVs avoid over-compression by the motor during part-load operations. Data centers, IT cooling

and allied comfort cooling segments can benefit from the part load efficiency increase.

The Danfoss EC+ solution promises the highest fan efficiency (Fan + Motor + VFD) of up to 85%. The new solution is up to 25% more efficient than the traditional EC fans. It can be used to control Induction Motors (IM), Permanent Magnet Motors (PM) and Multiple PM/IM Motors, and hosts HVAC intelligence that includes fire mode, filter monitoring, temperature optimizer and seamless BMS integration with no requirement of special gateways or external controllers.

SESCO India Launches Solar Thermal Renewable Energy Retrofit

SESCO India Thermal Renewable Energies has launched its ThermX™ system for high energy efficiency. The system can be retrofitted into most existing systems, and claims 6000 installations globally including Intel, Carrier, Toyota, Trane, Midea and Hitachi.

Testo Introduces Air Velocity and IAQ Measuring Instrument testo 440

Testo has launched a new intuitive air velocity and IAQ measuring instrument, testo 440. The innovation combines intuitive operation, precise measurement values and an extensive probe range and wireless convenience. In order to simplify work for the user, structured menus for the following measurements are pre-set in the instrument: volume flow measurement in ducts and at outlets, k-factor, degree of turbulence according to EN ISO 7730/ASHRAE 55, cooling/heating load, mould indication and long-term measurement (recording of measurement values at set intervals).

The testo 440 probes are available for air velocity, temperature, humidity, degree of turbulence, CO₂, CO and light intensity. Customers have a choice between wireless and fixed-cable models. The wireless Bluetooth® probes ensure more freedom of movement in measurement and save space in the measurement case. A probe handle can be universally combined with all corresponding probes and probe attachments, allowing the user to switch between functions fast.

The multi-function measuring instrument is available in two versions. The model testo 440 dP has an additional, integrated differential pressure sensor. This makes measurements at filters as well as Pitot tube and k-factor measurements possible. Pre-configured kits consisting of measuring instruments, probes and accessories are available for the most important areas of application.





Eximious Ventures offers products and solutions for corrosion, scale deposition, microbial contamination and fouling for comfort systems from cooling towers to AHUs.



Fujian Snowman is a China based supplier of compressors, refrigeration systems and ice machines.



FX Multitech is a supplier of Danfoss compressors and condensing units, Rollfin-Karyer evaporators and condensers, Rollfin-Provides shell-and-tube evaporators and condensers, Roller evaporators, Thermofin evaporators, Refco HVAC&R tools, DSI plate freezers and other components.



Gandhi Automation specialises in entrance automation and loading bay equipment for the cold chain and other industries, including high speed industrial doors, dock levelers, dock shelters, rolling shutters and sliding doors.



GMCC & Welling is a China based core components manufacturer in the home appliances industry, specialising in compressors and motors.



Greenheck is a global player in the manufacture of air movement and control equipment for non-residential buildings like hospitals, schools, offices, libraries, restaurants, hotels, shopping malls, warehouses and industrial plants.



Grundfos Pumps India offers energy efficient pumps and smart pumping solutions for various applications like heating and hot water service systems, cooling and air conditioning systems, industrial applications, pressure boosting and liquid transfer, groundwater supply, domestic water supply, sewage and waste water, dosing and disinfection systems.



Haier Appliances India is a subsidiary of the Chinese multinational Haier with its plant at Ranjangaon near Pune, and supplies refrigerators, air conditioners, commercial AC equipment, washing machines, commercial refrigeration equipment, wine cellars and microwave ovens to the Indian market.



Highly Electricals Appliances India is an Ahmedabad based joint venture between Highly of China and Hitachi of Japan, and is a leading manufacturer of rotary compressors for air conditioners.



Honeywell International offers industry-specific solutions for aerospace and automotive products and services; control technologies for buildings, homes and industry; and performance materials.



ISHRAE had a large, prominently located booth to showcase its activities and sell its publications that have been enhancing the competence of the HVAC&R community for several decades; a large number of new members were also enrolled.



Johnson Controls India has a strategic focus on buildings and energy growth platforms for intelligent buildings, efficient energy solutions, integrated infrastructure and next generation transportation systems.



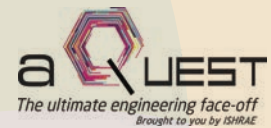
Johnson Controls – Hitachi Air Conditioning India manufactures a wide range of products like room air conditioners as well as commercial air conditioning equipment like chillers, ductable ACs, telecom ACs and VRF systems.



Kelley Material Handling Equipment India offers entrance automation products and warehouse solutions like loading dock equipment and HVLS fans.

aQuest – the Ultimate Engineering Face-off

On the afternoon of February 23, battle lines were drawn between six teams who made it to the Grand Finale of aQuest – an engineering Quiz Contest powered by Hitachi, in which ISHRAE Student Chapters from all over India fight it out every year in the preliminary rounds, culminating in the semi-finals held at Kolkata and Pune, for the privilege of representing their zones during the finals that coincide with ACREX.



Vishal Kapur addresses the aQuest audience



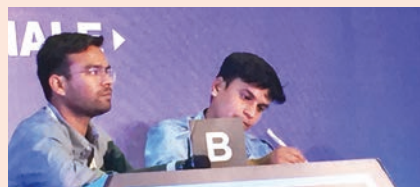
Gurmeet Singh, CMD – JCI-Hitachi



Quizmaster Rehman conducts the Quiz



Team A: Abhinandan Mishra and Karamveer Singh from Devi Ahilya Vishwavidyalaya, Indore



Team B: Md. Samad Ali and Subham Kumar from Anand Engineering College, Agra



Team C: Pramod P. Mali and Pramodkumar G. Jathav from Maratha Mitra Mandal's College of Engineering, Pune



Team D: Aman Sultania and Saurav Sarkar from Institute of Engineering and Management, Kolkata



Team E: Zujar Mustafa and Asad Ahmed Khan from MH Saboo Siddik College of Engineering, Mumbai



Team F: Riaz-ul-Haque and Sagnik Maity from Institute of Engineering and Management, Kolkata

At the end of the gruelling contest, Team A from Devi Ahilya Vishwavidyalaya, Indore walked away with the trophy. Team E from MH Saboo Siddik College of Engineering, Mumbai was the first runner up, and Team F from Institute of Engineering and Management, Kolkata was the second runner up.



Kirloskar Brothers offers fluid management solutions for large infrastructure projects in the areas of water supply, building and construction industries, power plants and irrigation, oil and gas, marine and defence sectors.



Kirloskar Chillers manufactures a wide range of chillers for comfort air conditioning, process cooling and heating, including Turbotek centrifugal chillers, Turbolev centrifugal chillers with magnetic bearing compressors, and Prodigy water cooled and air cooled screw chillers.



Kirloskar Pneumatic is a large compressor manufacturer that offers KCX series air cooled compressors with 1 to 12 cylinders in single and two stage as well as KRX screw packages, for pharmaceutical, food and chemical industries.



Kubic India offers chilled water fan coil units from Midea in a wide range – from

200 to 2200 cfm; brushless DC motors for FCUs; chilled water cassettes; ceiling concealed, high wall, floor mounted, ceiling hung and high static duct FCUs; control valves; programmable digital thermostats and other solutions.



LG Electronics is the Indian arm of the South Korean multinational LG Corporation, and its System Airconditioning Division in India offers light commercial ACs, chillers and BMS products and solutions.



LU-VE India is in the business of air cooled heat exchangers, mainly for the cold chain industry, and offers products like unit coolers, condensers and dry coolers.



Mandev Tubes is an ISO 9001, ISO 14001 and ISO 18001 certified integrated manufacturer of copper tubing, present in the Indian market for over 50 years.



Messung Systems is in the fields of environment and intelligent energy

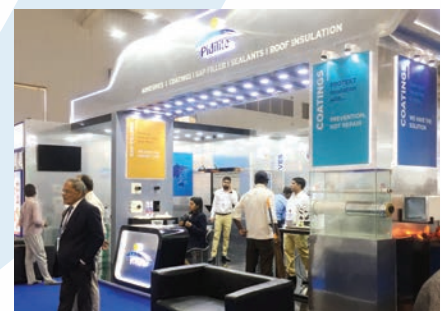
management, with Distech Controls, Canada as its partner, offering solutions such as building management technologies and services that optimise energy efficiency.



Nutech Engineering is a manufacturer and distributor of HVLS fans, air handling units, air washers, heat recovery units and activated chemical treated fresh air units, and has handled projects of national importance like atomic, thermal and nuclear power plants as well as international projects.



Paharpur Cooling Towers is a leading Kolkata based Indian manufacturer of a wide range of cooling towers.



Pidilite Industries is Asia's largest manufacturer of adhesives specialising in consumer and industrial adhesives and sealants, and offers products suitable for the HVAC industry.

ACREX Hall of Fame Night

ACREX Hall of Fame celebrates excellence in the Indian building industry. For those in the building industry all over India, it is a coveted recognition.

The third edition of Hall of Fame – powered by Danfoss – was showcased at Taj by Vivanta on the evening of February 23. Quite appropriately, the event began with safety instructions by the hotel team. A short film introducing the Hall of Fame (HoF) concept was screened. Vishal Kapur, in his introductory remarks, mentioned that HoF was introduced during the Presidential term of K. Ramachandran, supported by Pankaj Dharkar, Ashish Rakeja and others. Every building nominated for HoF is a gem, and it is becoming increasingly difficult to select the winner. D. Nirmal Ram gave a brief overview of the HVAC&R industry in India.

A message from Kim Fausing, Global CEO of Danfoss, was played out. Ravichandran Purushothaman, President – Danfoss India and the host of the evening, thanked ISHRAE leadership for their continued support to HoF. He termed it a mission to transform India. “The greatest threat to our planet”, he quoted Robert Swan, “is the belief that someone else will save it.”

The Jury for HoF was headed by Dr. Ajay Mathur (DG – TERI) and comprised Dr. Prem C. Jain (Chairman, IGBC), Padmashree C. N. Raghavendra (Architect) and V. Suresh (former CMD, HUDCO). They were helped by a Technical Committee of ISHRAE headed by Sushil Choudhury and comprising Nitin Deodhar, Abid Husain, Dr. R. Saravanan, R. S. Kulkarni, Shankar Deshpande, N. S. Chandrasekhar and Dr. Jyotirmay Mathur.

Dr. Ajay Mathur, in his address, asserted that HoF has opened a new chapter of smarter and efficient buildings. He listed the challenges before the Jury, including data-based recognition and the complexity brought in by large buildings exceeding 8,000 sq. m. He stressed that each of the 6 buildings evaluated by the Jury was a benchmark.

Sushil Choudhury explained the methodology followed by the Technical Committee, which involved rigorous data collection for all the 47 nominated buildings on 40 parameters, and thanked the Committee members for performing this onerous task with dedication.

Short films were screened on the six shortlisted buildings:

- Dinanath Mangeshkar Hospital, Pune
- GAIL Jubilee Tower, Noida
- Infosys SDB 11, Pune
- DLF Mall of India, Noida
- Reliance Corporate IT Park Building 22, Navi Mumbai
- TSI Waverock, Hyderabad

The audience waited with bated breath for the name of the third Inductee to the Hall of Fame to be revealed, and a loud burst of applause greeted the announcement that Reliance Corporate IT Park Building 22 has earned the honour for 2018. While those associated with the building were felicitated, an award was given to DSG Consultants – the building consultant to Reliance Industries.

Thus, Reliance Corporate IT Park Building 22 joins two iconic buildings – Chhatrapati Shivaji Maharaj International Airport Terminal 2, Mumbai (2016) and Infosys EC53 Building, Bangalore (2017) – in the coveted ACREX Hall of Fame.



(L to R) Nagahari Krishna L. (Danfoss), Dr. Prem C. Jain, Bjarne Olesen, C. N. Raghavendra, Dr. Ajay Mathur and V. Suresh with jubilant members of the Reliance team Keith Monteiro (with trophy), P. C. Lohia, Keyur Shah, M. L. Sinhal, Hiren Shah and Bhavesh Mehta, along with Sushil Choudhury and D. Nirmal Ram

All the other 5 shortlisted buildings were also felicitated for achieving exceptionally high standards. A coffee table book featuring the six buildings was released on the occasion.



Coffee table book on buildings shortlisted for Hall of Fame 2018

A concept paper on IEQ in Nearly Zero Energy Schools, prepared jointly by ISHRAE and REHVA, was unveiled.



Release of concept paper on IEQ in Nearly Zero Energy Schools

Dr. Ajay Mathur was conferred an Honorary Membership of ISHRAE, by Vishal Kapur and N. Sivasankaran.



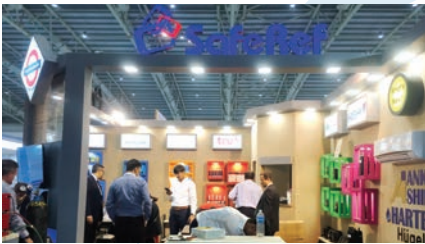
Dr. Ajay Mathur, Director-General – TERI, is conferred Honorary Membership of ISHRAE

Rinac India, the Refrigeration and Cold Chain Partner, was felicitated for its innovative product display – the ChillKart Ecovan.

ISHRAE President-Elect C. Subramaniam proposed the vote of thanks.



Rinac had an innovative display – a ChillKart Ecovan powered by solar photovoltaic that can keep fruits and vegetables fresh for a few days and can be driven from the point of harvesting of farm produce to the point of sale.



Safe Refrigerations is a large distributor of air conditioning and refrigeration products, components and consumables, with principals like The Harris Products Group of the USA and Aspen Pumps of the UK, and has recently entered into a distribution agreement with Huayi Compressor of China.



Samsung India is the Indian arm of the South Korean chaebol, with a large presence in the air conditioners and air conditioning equipment and solutions market as well as consumer electronics and cellphones.



Sevcon India is in the business of system engineering and turnkey execu-

tion of large HVAC, fire and public health engineering projects, and provides products and services in the fields of energy conservation by way of grooved piping, radiant cooling, expansion pressurisation and deaeration, thermal energy storage, etc.



Systemair India is a leading ventilation and air conditioning company with manufacturing units at Greater Noida and Hyderabad, and offers ADPs, Eurovent certified air handling units, UL Listed fire dampers, car park ventilation and tunnel ventilation systems, air curtains, fan heaters and chillers.



Testo India is a subsidiary of the German multinational that is a leader in electronic portable test and measuring instruments, and offers products for temperature, humidity, dew point, pressure, air velocity, RPM, sound, light and compressed air flow measurement, as well as data loggers, wireless data monitoring systems, flue gas analyzers and thermal imagers.



The Supreme Industries is a leading player in the plastics industry, with 28 manufacturing units spread across India; its product range includes thermal

and acoustic insulation products made from cross linked closed cell polyethylene, elastomeric rubber and other engineered foams.



Thermax is a leader in vapour absorption cooling systems, offering specialised applications such as inlet air cooling in power and petrochemical industries, and integrating with cogeneration and combined heating, cooling and power systems.



Voltas is a large air conditioning company in the room air conditioner space as well as engineering, procurement and construction projects in India and the Middle East, South East Asia and Africa.



Wilo Mather and Platt Pumps is a premium pump and pumping systems supplier in the field of building services, water management and other industries.



Xylem is a leading water technology company that offers solutions for water, waste water and energy needs like collection, distribution, reuse and return to nature.



Zamil Air Conditioners is fully owned by Zamil Industrial Investment Company of Saudi Arabia, with a presence in MEP projects, steel, glass, insulation and concrete; it undertakes turnkey projects in factories, hotels, high rise buildings, airports, hospitals, coal mines, power plants, refineries, etc.



Ziehl-Abegg India is a leading company in the field of ventilation and drive technologies along with the related control technology, for diverse application areas such as refrigeration and heating, cleanrooms and agricultural systems.

Fact File

- Organiser : ISHRAE
- Event Producer : NuernbergMesse
- Endorsed by : ASHRAE
- O2C Supported by : UN Environment
- Covered area : 40,000 sq m
- Number of exhibitors : 425
- Number of visitors : Over 25,000

Partners

- Curtain Raiser and aQuest : Johnson Controls-Hitachi
- Partner in Excellence : Daikin
- ACREX Hall of Fame : Danfoss
- Knowledge Partner : Voltas
- Titanium : Blue Star
- Gold : ABS Aircon, Cosmos Air Distribution Products, Gandhi Automations
- Mobile App Partner : Edgetech
- Theme & BMS Partner : Eneffen Technologies
- Hospitality Partner : Samsung
- Social Media Connectivity Partner : LG Electronics
- Environment Protection Partner : UNEP
- Silver Partners : AHRI, Kelley, Paharpur
- Digital Connectivity Partner : Emerson
- Automation Partner : Delta Power
- Building Automation Partner : Messung Systems
- IAQ Pavilion Partner : Aeropure
- Refrigeration Partner : Rinac
- Bronze Partners : Advance Valves, ALP Aeroflex, Armacell, Caryaire Nicotra-Gebhardt, Frascold, AC Humidin, Casilica, Testo, Systemair, Zamil Air Conditioners, VA Valves
- Show Daily Partner : Crystal Air Systems
- Supporting Associations : AIACRA, ASSOCHAM, GRIHA, CAR, CREDAI, FSAI, IBC, IIR, ISKID, IIAR, IPA, NCCD, PHD Chamber, SHASE, REHVA, IAPMO India, IFMA, CCSI, RAMA, RATA, IGBC, GBCI, IGCC, IAEMP, BEE

