



# ACREX India 2015 – a Ringside View

*Lighting the lamp of knowledge at the inauguration of the exhibition (l to r): ISHRAE President D. Nirmal Ram, V. Madhava Rao (Chairman, ACREX India 2015), Gopal (Executive Director, Projects and Planning, Prestige Estate Projects), A. Vijay Anand (Additional Secretary & Financial Advisor, ISRO-DOS, Government of India), T. M. Thomas (Principal Architect, Thomas Associates), and Shekar Bhargav (Executive Vice President, Royal Orchid Hotels)*

**By Rakesh Kumar**  
Technical Editor,  
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ACREX India is the flagship event of ISHRAE. It has been recognized as the largest exhibition of air conditioning, ventilation, refrigeration and building services in South Asia, and sixth largest in the world. More than that, it is an annual celebration of the spirit of the Indian HVAC&R fraternity, as it brings together on one platform the who's who and what's what of the industry.

Started in Bangalore in 1990, it is now an annual event that rotates between Mumbai, Delhi and Bangalore. In its Silver Jubilee year, the 15th edition of ACREX India was held from February 26 to 28 at Bangalore, with the theme *Less Energy = More Life*. Bangalore International Exhibition Centre is India's only LEED certified Green exhibition centre.

The event saw the participation of all the major companies in the industry, reflecting their optimism in its growth prospects in the short and medium term. Overseas companies also participated in large numbers, underlining the fact that India is one of the few countries today where the HVAC&R market is expected to grow.

NürnbergMesse India was the Event Producer. The exhibition had over 350 exhibitors including more than 100 overseas exhibitors from 25 countries, and the footfall exceeded 20,000. The event was partnered by industry heavyweights like Carrier,

United Technologies, Hitachi, Blue Star, VK Building Services, Voltas, Sobha Projects & Trade, AHRI, AC Humidin, Bry-Air (Asia), Citizen Industries, Desiccant Rotors International, Edgetech Air Systems, Fuji Electric India, Ingersoll Rand, Paharpur Cooling Towers, Spectrum Industries, Tecumseh, Zamil Air Conditioners and UL India. The event was endorsed by ASHRAE.

In view of the rapid growth of the cold chain sector in India, a separate pavilion was dedicated to Refrigeration & Cold Chain Industry. (*Coverage of this pavilion appears in What's New, Cold Chain supplement, March-April 2015.*) Another pavilion was dedicated to Smart Homes, to highlight ISHRAE's emphasis on energy efficiency.

There were several concurrent events like workshops, seminars, ACREX Awards Night, Bry-Air Awards Night, aQuest Student Quiz Competition, National Student Design Competition (covered in *Student Corner* in the current issue), and signing of Memoranda of Understanding with various organizations. The tone was set by a Curtain Raiser on the eve of the exhibition. A four day program of knowledge workshops was conducted by ASHRAE Distinguished Lecturers. A one day seminar on Refrigeration & Cold Chain was also organized (*covered in What's New, Cold Chain supplement, March-April 2015*).

### The Curtain Raiser

On the eve of inauguration of the exhibition, a Curtain Raiser was held at Vivanta by Taj on February 25, in front of a distinguished gathering. Carrier-UTC were the event partners. ISHRAE President D. Nirmal Ram made an impassioned address, followed by Arun Bhatia, Director, Climate Controls & Security, India, UTC. Dhiraj Wadhwa, Assistant Director, Commercial Sales, Carrier India made a corporate presentation.

The high point of the evening was a panel discussion on 'Vision 2025: Building Technology – the Future of Indian Construction Industry'. Ashish Rakheja, MD, India Building Engineering, AECOM was the moderator. The other panelists were G. C. Modgil, Founder, Sterling India Consulting Engineers; M. L. Sinhal, Senior VP, Reliance Industries; Suresh S., VP (Projects), Prestige Group; Gaurang Pandya,

MD, Climate Controls & Security, India, UTC; John Varley, PE, HBDP, LEED AP; Najeeb Khan, Founder & MD, KGD Architects; and Pradeep Kumar, Associate Director, Building Energy Systems, TERI.

Awards were presented for contribution to ISHRAE activities. Late H. M. Jhangiani was admitted to ISHRAE Hall of Fame for his contribution to the Journal over 18 years. The award was received by Malini Krishna, late H. M. Jhangiani's daughter. Two awards were presented for the best articles that appeared in the *Journal* during 2013. Renamed as H. M. Jhangiani Journal Paper Awards, they were presented to Guruprakash Sastry and Sameer Mehta.

Sanjay Gupta was conferred the M. M. Pandey Award for his contribution towards increasing the membership strength of ISHRAE. Regional Service Awards were presented to T. Hari Rao, Dr. R. Saravanan and C. Subramaniam (South), and Kapil Purandare (West).



D. Nirmal Ram



Arun Bhatia



Malini Krishna receives Hall of Fame plaque on behalf of late H. M. Jhangiani



Guruprakash Sastry receives Journal Paper Award



Sameer Mehta receives Journal Paper Award



Panel discussion in progress

### Knowledge Workshops

Workshops conducted by ASHRAE Distinguished Lecturers (DLs) are a regular feature of the ACREX program schedule every year. This year they were spread over 4 days, beginning February 25. Vivanta by Taj was the venue on the first day, and BIEC Conference Room housed them on subsequent days. The diverse topics ranged from Data Centres, Healthcare HVAC, Building Operations Protocols and Acoustic Considerations to Low Charge Ammonia Systems, Smart Homes and Laboratory Design.



A knowledge workshop being conducted by Walter Vernon and Dick Moeller, ASHRAE DLs, on High Performance Healthcare HVAC Systems

### Launch-pad for New Products

Quite a few new products were exhibited during ACREX India 2015. Bry-Air (Asia) launched its Eco Max Adsorption Chiller, to be manufactured in India under license from Power Partners, Inc. of Georgia, USA. Daikin India displayed its new 500 TR single stage centrifugal chiller suitable for star-delta starting as well as for soft start and variable speed drive. Danfoss exhibited its latest energy efficient solutions such as Optyma Slim Pack condensing unit, MLZ and LLZ compressors, electronic controllers, industrial refrigeration valves and line components, micro plate heat exchangers, freon controls and valves. Grundfos India launched its intelligent in-line pump TPE3. Trane, a brand of Ingersoll Rand, introduced new models in its air cooled and water cooled screw chiller and residential AC categories, including interactive and environment-friendly Hi-wall series, concealed and cassette type units with R410, RTHD water cooled screw chillers with AFD, and Sintesis series of air cooled screw chillers. Victaulic showcased an extension to its QuickVic Style 107N line of installation-ready rigid couplings.

### New ISHRAE Logo

President D. Nirmal Ram unveiled the new logo of ISHRAE symbolizing ISHRAE's focus on Green, energy efficient and environment friendly technologies. The idea was initially mooted by ISHRAE Madurai Sub-chapter.



**The Exhibition**



*Dignitaries cut the ribbon together at the inauguration of the expo*



**Carrier Air Conditioning & Refrigeration** had a cluster of stalls displaying its air conditioning, refrigeration, fire security and IBMS systems, as well as Toshiba Carrier products including its digital inverter range. Its AHRI-certified Aquaforce 30XW chiller using 06T semi-hermetic screw compressor with R134a, available in 212 to 363 TR range, was a highlight of its display.



**Emerson Climate Technologies** displayed Copeland scroll variable speed compressor for inverter systems. Emerson's new ECZ series of compact fractional HP refrigeration compressors with dual frequency was also showcased. Also on display were Copeland air cooled and water cooled semi-hermetic condensing units, and Emerson multi-compressor packs. Emerson won 2015 ACREX Awards of Excellence in two categories – winner in the Green and Sustainable category, and runner-up in the Energy Efficiency category.



**Daikin Airconditioning India** displayed a new product at the expo – 500 TR single stage centrifugal chiller suitable for star-delta starting as well as soft start or variable speed drive. Daikin is also planning to launch centrifugal chillers with magnetic levitation bearing technology – with Danfoss compressors up to 400 TR, and McQuay for larger sizes. Daikin's VRV IV with variable refrigerant temperature was also displayed in its prominent stall.



**Voltas Limited** is the largest HVAC&R Company in India and part of the Tata Group. Its stall was designed around the eco-friendly energy-efficient theme. It showcased its latest line of all-weather split ACs with inverter, and commercial refrigeration products including water coolers and chest freezers. The latest water cooled screw chiller with VFD using R134a, air cooled package AC and ductable split using R410A, VRF condensing unit in top and side discharge configurations using R410A with inverter compressor, hi-wall and cassette ACs were also displayed. Also showcased was its smart engineering capability, indoor air quality solutions, water management portfolio and new age technology in after sales service for customer experience. Power transmission for last mile connectivity in rural electrification highlighted its electrical projects capability.



**Blue Star Limited** is a leading Indian company in the air conditioning, electro-mechanical projects and commercial refrigeration sectors. It displayed its 300 TR water cooled chiller using falling film technology with two stage Hanbell screw compressor.



**LG Electronics India** displayed a line-up of residential AC models as well as commercial air conditioning systems including VRFs, light commercial products, chillers and AC control systems. Its corrosion resistant Multi V range on display included Multi V IV, Multi V S and Multi V Water IV models.



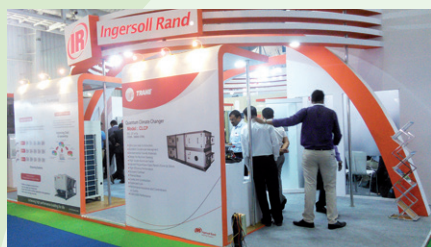
**Kirloskar Chillers** is the only company manufacturing centrifugal chillers in India. It has recently introduced magnetic bearing centrifugal chillers. It showcased its wide range such as inverter driven screw and centrifugal chillers, adiabatic chillers, heat recovery chillers and magnetic bearing compressor chillers.



**Climaveneta Climate Technologies**

manufactures air cooled chillers and precision air conditioning systems up to 500TR at its plant in Bangalore, using screw and scroll compressors. It also sells water cooled chillers and magnetic levitation centrifugal chillers from its factory in China to customers in India. Climaveneta is best known for air-to-water and water-to-water heat pumps using 2, 4 and 6 pipe systems in screw and scroll ranges.

**Carlo Grossi**, CEO of DeLclima S.p.A. – the parent company of Climaveneta – visited Bangalore for the exhibition. He looks at India as a significant market in the medium and long term, and foresees a lot of work preparing the ground for the future. He feels that the decision to start a manufacturing facility at Bangalore was good and timely. Climaveneta plans to launch its Climapro chiller plant manager for high end real time chiller optimization based on embedded performance graphs that help chiller sequencing.



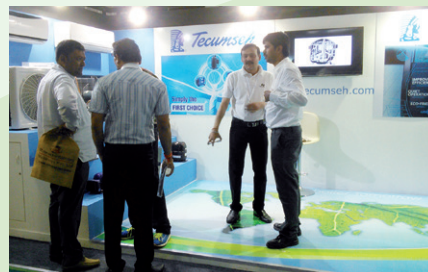
**Ingersoll Rand Climate Solutions**

showcased its air cooled chillers, water cooled chillers, condenser-less units, air-to-water and water-to-water heat pumps, air handling units, terminal units, rooftops, split systems and condensing units, residential ACs, VRFs, and AMS advanced multi-splits.

**Sudarshan Ananth**, Senior Director, Ingersoll Rand highlighted that seven variants across a spectrum of products were launched by IR in the last one year. These include high efficiency water cooled chiller, Dragon screw chiller from China, and RTAF air cooled chiller. On the cold chain front, the Chennai plant of Thermo King has started production. Service offerings are also being expanded. The rental offering has been extended to light commercial systems. Auto tube cleaning is being offered as a part of new chillers, as well as a retrofit – even for non-IR chillers. Retrofit with VFD is also being offered now.



centrifugal and axial fans. The company has recently launched plug fans with aerofoil blades. Caryaire won a special mention in the Innovation category in 2015 ACREX Awards of Excellence.



**Tecumseh Products India** manufactures compressors with three technologies – reciprocating, rotary and screw. It produces 3.5 million compressors annually for domestic and commercial refrigeration applications. Its stall exhibited air conditioning and refrigeration compressors, and split ACs – a business it has entered recently in India. The company is also expanding into condensing units and outdoor units.



**Caryaire** is a joint venture between Nicotra Gebhardt S.p.A. and Caryaire Equipments India. Both Nicotra Gebhardt and Caryaire brands were on display in the large prominently located stall, showcasing light and medium duty

centrifugal and axial fans. The company has recently launched plug fans with aerofoil blades. Caryaire won a special mention in the Innovation category in 2015 ACREX Awards of Excellence.



**Thermax** exhibited its triple effect absorption chiller that won the 2015 ACREX Award of Excellence in the Energy Efficiency category. Its vapour absorption chiller, which generates chilled water at 1°C using special metallurgy and controls to prevent water freeze-up, was the runner up in the 10th Bry-Air Awards in the product design category.



**Mitsubishi Electric India** showcased a wide range of HVAC products like Mr. Slim room air conditioners (fixed speed and inverter), heat pumps, light commercial and packaged air conditioners, and City Multi VRFs with scroll compressor using inverter technology.



**Hitachi Home & Life Solutions (India)** manufactures window and split RACs, commercial ACs including chillers, VRF systems, ductables and telecom ACs at its plant in Kadi, Gujarat. It displayed its inverter models using R410A and fixed speed models using R22.



**Shanghai Hitachi Electrical Appliances Company** is a joint venture between Highly Group of China and Hitachi Ltd. of Japan, for the manufacture of rotary compressors for room ACs. It displayed its range of rotary compressors.



**Desiccant Rotors International** exhibited its range of energy recovery ventilators, treated fresh air units, chilled beams and evaporative cooling pads.



**Bry-Air** (Asia) launched its Eco Max Adsorption Chiller, to be manufactured in India under license from Power Partners, Inc. of Georgia, USA.



**Fuji Electric India** is a subsidiary of Fuji Electric Group, Japan. It showcased its Aqua variable frequency drives and D-Box food distribution system covering three temperature zones.



**International Aircon** is the Indian distributor for Mitsubishi Heavy Industries (MHI), Japan. Its prominent stall had a display of MHI's wide range of HVAC products, including high wall splits, cassettes, ductable ACs and VRF systems.



**Godrej Appliances** is the only Indian company to manufacture split ACs using R290, under the brand name Godrej EON Green Balance. It displayed its range of split ACs.



**Zamil Air Conditioners India** displayed its range of commercial and residential air conditioning products.



**ebm-papst India** exhibited its wide range of fans and motors.



**Edgetech Air System** showcased its range of products like air handling units, fan coil units, fresh air treatment units, ventilation units, air washers, finned tube heat exchangers and coils.



**Bhutoria Refrigeration** displayed its chilled water fan coil units, cassettes, high wall units, DC fan coil units, inverter ACs, multi-split inverters, rooftops and chillers.



**Citizen Industries** showcased its air handling units, ventilation and exhaust units, plug fans, coils, duct dampers, metallic doors for pharmaceutical and cleanroom applications, fan coil units and ductable units.



**Grundfos Pumps India** launched its TPE3 intelligent in-line pumping solution that eliminates throttling valves. It also exhibited its Magna 3 circulator pump and other pumping solutions. Grundfos was the runner-up in the Indoor Quality category in 2015 ACREX Awards of Excellence.

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**SWEP India** displayed brazed plate heat exchangers (BPHEs) for refrigerant applications: evaporators and condensers. B649 air dryer – a single phase model with BHPE – was a new product displayed. Also on display was model DF310 with dual refrigerant circuit, single water circuit and an integrated cleaning-in-place (CIP) circuit.



**Guandong Meizi Compressor Company** showcased DC inverter compressor for refrigerators, R290 RAC compressor, CO<sub>2</sub> and R134a heat pump water heater compressors, high efficiency refrigerator compressors and horizontal compressors for transport refrigeration applications.



**Gree Electrical Appliances** is a leading global manufacturer of air conditioners, refrigerators and home appliances. It showcased its light commercial ACs, ductable splits, R290 AC and solar powered AC.



**K-Flex India** displayed its insulation products for HVAC and industrial

applications – elastomeric closed cell nitrile rubber insulation, elastomeric open cell nitrile rubber acoustic insulation, and insulation accessories.



**Schneider Electric IT Business India** exhibited its critical power and cooling services, and solutions for HVAC, access control, video security management, lighting control, power management, IT infrastructure and energy optimization.



**Spirotech Heat Exchangers** showcased its wide range of fin patterns, fin surfaces, fin thicknesses, fin spacing, number of rows, finned length and height with 5, 7, 9.52 and 12.7mm diameter tubes in copper and aluminum.



**Safe Refrigerations** displayed its Harris range of braze filler materials, and a line of equipment for brazing, cutting, welding, soldering and gas distribution systems.



**Honeywell Fire Safety** had its stall located in the Smart Homes pavilion.



**C.R.I. Pumps** displayed its range of pumps in the Smart Homes pavilion.



**Lloyds Electric** exhibited its room air conditioners, fin tube heat exchangers and air handling unit for pharmaceutical applications.



**Zeco Aircon** exhibited its air handling units, fan coil units, pre-insulated panels and ducts.

### Memoranda of Understanding



*Sridar Narayanaswami, Vice President & Managing Director, Emerson Climate Technologies (India) addresses the audience after signing the MoU, as Deepak Takkar (Emerson), D. Nirmal Ram (National President, ISHRAE), C. Subramaniam (National Secretary, ISHRAE), Ashwini Mehra and Satish Iyengar (ISHRAE) look on*

An MoU was signed between ISHRAE and Emerson Climate Technologies for the use of Emerson Online University by ISHRAE members. Another MoU was signed between ISHRAE and International Facility Managers' Association to work together to further their objectives.

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### ACREX Awards Night

The air in Jacaranda Hall at BIEC was thick with excitement on February 26, when all those who had worked tirelessly to make ACREX India 2015 a roaring success were recognized for their efforts. The networking dinner partner was V. K. Building Services.

L. Vivekananda, MD, VKBS began the evening by addressing the audience. D. Nirmal Ram, National President, ISHRAE also addressed the gathering and read out a message from Thomas Phoenix, ASHRAE President, who had to cancel his visit at the last minute due to indisposition. A beautifully choreographed performance by Quick Angels punctuated various legs of the event.

Leaders of ACREX India 2015 were felicitated. All the partners were recognized: Carrier, United Technologies, Hitachi, Blue Star, VK Building Services, Voltas, Sobha Projects & Trade, AHRI, AC Humidin, Bry-Air (Asia), Citizen Industries, Desiccant Rotors International, Edgetech Air Systems, Fuji Electric India, Ingersoll Rand, Paharpur Cooling Towers, Spectrum Industries, Tecumseh, Zamil Air Conditioners and UL India.



Past ACREX Chairmen on the dais

All past ACREX Chairmen were felicitated: Ashok Virmani, Dr. Prem C. Jain, S. K. Murthy (represented on the dais by K. Ramachandran), N. Vaidyanathan, G. C. Modgil, R. V. Simha (represented on the dais by T. N. Gurumurthy), K. Ramachandran, Akbar Bharmal, D. Nirmal Ram, Ashish Rakheja and V. Madhava Rao.

The Jury for ACREX Awards of Excellence comprised D. Nirmal Ram, Leslie D'Souza, N. Sivasankaran, T. N. Gurumurthy and Yashwant.

The award for Green & Sustainable category was given to Emerson Climate



Emerson Climate receives the award in Green & Sustainable category

Technologies. In the Energy Efficiency category, Thermax was the winner, Emerson



Thermax wins the award in the Energy Efficiency category

Climate was the runner-up and Ventilation Systems received a special mention. In the Innovation category, Schneider Electric IT Business India was the winner, Grundfos Pumps India was the runner-up and Bellimo Actautors received a special mention. In the Indoor Air Quality category, Caryaie India received a special mention.

Shantanoo Laghate of Thane Chapter was admitted as an ISHRAE Fellow – only the third member to be conferred this honour, after R. V. Simha and S. K. Murthy.



Shantanoo Laghate

Lifetime Service Awards were presented to Arvind Surange, Past National President and V. Madhava Rao, Chairman, ACREX India 2015. They received tumultuous applause from an appreciative audience.



Arvind Surange receives Lifetime Service Award, in the presence of his wife from D. Nirmal Ram and Sudhir Sinha, Chair – H&A



V. Madhava Rao receives Lifetime Service Award in the presence of his wife

New and revised publications were released during the course of the evening. These included Refrigeration Handbook, Ventilation Handbook, Technician Handbook, Hindi, Marathi and Kannada translations of Cold Storage Basics, and Guidelines for Testing & Rating of Liquid Chilling Packages.

New committees were announced: Technical Committee, Refrigerant Committee and IEQ Quality.

ACREX India 2016 was formally launched on this occasion. All eyes on Mumbai now, with the countdown beginning for the event scheduled for February 25-27, 2016.

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**aQuest – the Ultimate Engineering Face-off**

The all-India student quiz competition, which engaged a large number of ISHRAE student chapters across India, was a part of the suite that comprised ACREX India 2015. And the trump card in this pack was the inimitable host Shahriyar Atai. Branded aQuest with the tagline 'The ultimate engineering face-off', its preliminary rounds held by various ISHRAE chapters attracted entries from over 100 student chapters. The elimination round in Bangalore on February 27 resulted in six teams qualifying for the final round held the same afternoon. The final round had a compelling format that held the participants as well as the house-full audience spellbound for a full three hours. It alternated between serious quizzing, questions to the audience and pure entertainment. V. Krishnan, Gautham Baliga, Nitin Naik and Prashant Desai from ISHRAE planned and executed the event.



Shahriyar Atai – entertainer par excellence

A Facebook quiz contest was held on the sidelines of the main contest, with 150 questions fired at the rate of two per day. The winner of the Facebook contest, Nitin Patel from Ahmedabad Institute of Technology, was felicitated by Shoji Tsubokuta, MD of Hitachi India – the



Nitin Patel is felicitated by Shoji Tsubokuta, MD of Hitachi



The panel of Wise Guys

event partner. Nitin was also nominated on the panel of 'Wise Guys' – one of the lifelines available to the contestants. The other panel members were Steve Comstock (Director – Publications and Education, ASHRAE), Dr. Roshini Easow (Past President – Mumbai Chapter) and Sangeeta Jhangiani (HVAC Consultant).



Leslie Castellino and Erin Pereira from DBIT, Thane take a shot at a question

The team from Don Bosco Institute of Technology, Thane comprising Leslie Castellino and Erin Pereira walked away with the top honours, followed by the R. V. College of Engineering, Bangalore team of Aniruddha and Ayush. There was a tie for the third spot between K. P. R.



A jam-packed hall testifies to the popularity of aQuest



Who is sweating in the tie-breaker?

Institute of Technology and Engineering, Coimbatore (Akhilesh and Ponchalkish) and Indian Institute of Engineering, Science & Technology, Shibpur, Howrah District (Shubham and Rahul). The tie-breaker saw the former inch ahead as the third prize winner.



Hitachi MD Shoji Tsubokuta hands over the first prize to DBIT team



ISHRAE President D. Nirmal Ram with the Hitachi team and aQuest finalists

All the six teams were felicitated, the remaining two being from VJTI, Mumbai (Karthik Joshi and Ashish Singh) and Institute of Engineering & Technology – Devi Ahilya Vishvavidyalaya, Indore (Amaran and Surbhi Gupte). During the awards ceremony, Hitachi announced its intention to give interview opportunities to all the twelve finalists and to absorb at least six in the company. ❁