



November - December 2015

# ISHRAE NEWS

Linking ISHRAE Chapters Across India

Compiled and edited by Rakesh Kumar, Technical Editor, Air Conditioning and Refrigeration Journal

## Guidelines for Reports in eNews

It is heartening to see the number of reports submitted for publication in **eNews** going up exponentially. It reflects the rising competition among chapters to carry out activities in line with the Society's objectives, and shows increasing member engagement.

Here are some simple and useful guidelines for the reports to help **eNews** become a powerful catalyst of chapter activities:

- The deadline for receiving reports is the last day of the relevant period. For example, for publication in the January-February issue, the deadline is February 29.
- Please send or copy reports of events to news@ishraehq.in
- Please send a Word file containing a brief report of the event: **what, when, where, who** and any other relevant information. **Word file is preferable to pdf or ppt.**
- Relevant photos in jpg format should accompany the report. Each photo should have a **caption describing the occasion and giving the full names of persons** in the photo from left to right. Only first names or only last names are not enough. (In case of large group photos, e.g. a batch of 20 participants in a training programme, all names are neither feasible nor necessary. Key names would do in such cases.)
- In addition to the jpg files, photos may also be copy-pasted into the Word file at relevant places, with captions below each photo.
- While "a picture is worth a thousand words", **only pictures** do not constitute a report. A Word file describing the event must accompany the pictures.

## Learning Session on Ventilation Systems in Mumbai



Sushil Choudhury explains a point

Mumbai Chapter held a learning session on Ventilation Systems on November 27 at Hotel Atithi. Sushil Choudhury was the faculty. He covered Basement Car Parking Ventilation, Staircase Pressurization for Smoke Control, and the proposed Mechanical Ventilation Provisions in the Revised National Building Code 2015 (Draft).

## Confluence on Energy Efficient Technologies at Ahmedabad

Ahmedabad Chapter, along with ASHRAE Western India Chapter, organised its 10th *Confluence* – a full day seminar on *Energy Efficient Technologies in HVAC Systems* at Atira Campus on December 26.

The topics covered were: Importance of Energy Efficiency in Latest National Building Code on HVAC Design; Latest Trends in Energy Efficient Chillers; Role of VFD in Energy Conservation in HVAC Systems; Energy Efficient Cooling Tower Designs; Pumping Technology for Maximizing Energy Efficiency; Contribution of IBMS in Improving Energy Efficiency; and Latest Trends in Electric Motors Technology.

## RACON 2015 Held at Kolkata

Kolkata Chapter organised its annual two day national program RACON (Refrigerating & Air Conditioning Conference) 2015 at Hotel Swissotel on December 11 and 12. In addition to the main seminar, there were 9 concurrent workshop programs on new products. The event was partnered by Carrier Toshiba, Blue Star, Danfoss, Johnson Controls-Hitachi, Bry Air, DRI, Paharpur, Sterling & Wilson, Voltas, Advance Valves, Zamil, Climaveneta, Daikin and Greenheck. In all, 320 delegates participated including 70 non-members.

The Curtain Raiser on December 10, on the eve of RACON 2015, was highlighted by a panel discussion on 'Innovation, Energy Efficiency and Sustainability for a Better Tomorrow'. It was moderated by Souvik Bhattacharya from IIT Kharagpur.

In the inaugural session on December 11, Amitabha Sur, Conference Convenor, welcomed the participants. The traditional lamp of knowledge was lit by Amitabha Sur, K. Ramachandran (National President), Vir Advani (Executive Director, Blue Star), M. Gopi Krishna (Executive Vice President, Voltas), Chirag Bajjal (UTC Carrier) and Jayanta Das (President, Kolkata Chapter).



Lighting the lamp at RACON

The first technical presentation was by Troy Goldschmidt from Greenheck on 'Effective Environment Control for Covered Car Park'. He was followed by Dr. S. Rajagopalan, Acoustic Consultant, who spoke on 'Acoustic Design Considerations for HVAC Applications'.



Troy Goldschmidt



Dr. S. Rajagopalan

Ashish Rakheja of Aeon Consultants made a presentation on 'Designing Buildings Smartly in Smart Cities'. Later he spoke about the work that ISHRAE Standards Committee is doing on development of standards for HVAC&R industry. Chiller standard has been launched and adopted by BIS. VRF testing standard is being drafted. There is a plan to develop standards on refrigerants, safety and IAQ. Development papers on refrigerants and IAQ have already been released. India will perhaps be the first country to have a standard and a rating program for IAQ. Committees are being put in place for drafting testing standards for AHUs and FCUs.



Ashish Rakheja



Pankaj Dharkar

Pankaj Dharkar made a presentation on ACREX 2016, and V. Krishnan spoke about aQuest.

In another technical session, Anil Dev of Climaveneta spoke on 'Smart Cities – the Energy Perspective'. Vikram Swarup, MD of Paharpur, made a presentation on 'Resource Conservation and Cooling Tower Selection'.

There was an interesting debate on the topic



Debate on the role of PMCs

'Are PMCs Really Effective in Project Management?', with spirited participation by Rajesh Rishi, Prashant Chitrapur and A. V. Antao who spoke for the PMCs, and Leslie D'Souza, G. C. Modgil and Pankaj Dharkar who spoke against. Dr. Himadri Guha was the moderator.

The evening was celebrated as RACON Night. K. Ramachandran's birthday, which fell on the same day, was celebrated by those present.



K. Ramachandran's birthday being celebrated during RACON Night

The evening was marked by the felicitation of industry stalwarts S. K. Murthy (Consultant), Suneel Advani (Blue Star), Vikram Swarup (Paharpur), Ar. Dulat Mukherjee, Gaurang Pandya (UTC), Sanjay Johri (Voltas) and Ravichandran Purushothaman (Danfoss). The RACON team was recognised for their tireless efforts – Amitabha Sur, Manoj Chakravarti, Jayanta Das, Debajyoti Dey, Gautam Mukherjee, Utpal Biswas, Vishal Kapur, Ranjit Mukharjee, Subrata Biswas, Manoj Khanna, Nilanjana Mukherjee, Pradeep Dutta, Alok Chakravorty, Shyamal Barman, Pallab Kar, Sudip Nath, Subhadeep Dey, Indrajit Saha, Francis Louis, S. Ramesh, Aditya Basu, Sujoy Dutta, Animesh Chakravorty and Subhashish Dasgupta, along with Soumi Raychaudhuri from the event management team of CIM Global.

A book by industry veteran N. C. Gupta, titled 'Comprehensive HVAC System Design', was launched by K. Ramachandran and Manoj Chakravarti during the evening.

Day 2 began with a presentation by Rahul Aeron (DRI) on 'Waste Heat Recovery and Introduction to Desiccant Cooling'. Amrish Chopra (Energy Instruments) made a presentation on 'Control & Automation for Sustainable HVAC'. Prsahant Desai (ELM Enterprises) spoke on 'Infection Control & HVAC in Healthcare'. Anil Thakur (Danfoss) talked about 'AC Market and Compressor Technology Updates'.

The last session was a presentation by Arvind Surange on 'Emerging Trends in Refrigeration'.



Arvind Surange



## National Seminar EEHVAC&R by Ranchi Chapter

A two-day national seminar on Energy Efficiency in HVAC&R Industry (EEHVAC&R) was organized by Ranchi Chapter on November 28 and 29. Neeraj Mathur, Executive Director, SAIL (Centre for Engineering & Technology), who was the Chief Guest, inaugurated the seminar. Dipak Barma, Past National President, ISHRAE was the Guest of Honour.



Neeraj Mathur, Chief Guest, lighting the lamp at the inaugural ceremony with Dipak Barma, Guest of Honour, behind him

Swadhin Mukherjee, Immediate Past President, Ranchi Chapter welcomed the delegates. Anujeet Rituraj, Chapter President, described the activities of ISHRAE. A. P. Roy, ISHRAE stalwart and mentor of Ranchi Chapter, expressed his best wishes for the seminar. Amitabha Sur, Past National Secretary, recalled his long association with EEHVAC&R. He was happy that Ranchi Chapter has been able to organize it continuously for the last six years. Dipak Barma spoke about the relevance of the seminar topic, and the activities and achievements of ISHRAE. Neeraj Mathur stressed that refrigeration and air conditioning have become a part of our way of life and are essential ingredients for maintaining and improving lives. He wished a grand success to the national seminar. The inaugural ceremony was attended by about 80 persons including senior executives of various organizations.

## Urjavarani Organised by Indore Chapter

Urjavarani is organised annually in tier II and III cities across India.

Indore Chapter organised Urjavarani 2015 on December 31 at Radisson Blu on the theme *Buildings for Future*. The Convener was Sapan Shah, President, Indore Chapter.



Lighting the lamp at Urjavarani

The speakers were Ar. Gurpreet Shah, Jagdeep Singh, Ashish Rakheja, Pallavi Chitnis (IGBC Hyderabad) and Ar. Manish Kumar. A panel discussion was held on *Smart Cities – Challenges for Architects, MEP Professionals & Fire Engineers*, moderated by Pankaj Dharkar. The panellists were Ar. Jitendra Mehta, D. K. Shami (Fire Adviser to Government of India), Anil Agarwal (Builder) and Ashish Khare (Smart City Division of Wipro, Bangalore). There were 105 participants.



Panel discussion in progress

The event was supported by Indian Institute of Architects (IIA), IIA MP Chapter, Fire & Security Association of India (FSAI), Indian Green Building Council (IGBC) and ASHRAE Western India Chapter.

K-flex Insulation, Aeroflex and LG were the platinum partners while Rajco Pipes, Tencho and Pride Eco-air were the table partners.

## Product Presentation at Mumbai

Mumbai Chapter, in association with ASHRAE Mumbai Chapter, organised a product presentation on Electric Pressure Independent Control Valve Technology by Belimo Actuators India on November 27 at VITS Hotel. The speaker was Biju Nair, Regional Sales Manager West, Belimo.

## Colloquium 2015 on Cold Storages at Nashik



Nashik President Nishad Satardekar lights the lamp while K. Ramachandran, Diwakar Sawant and S.G. Ghime look on

Nashik Sub-chapter and Mumbai Chapter, along with AHSRAE Mumbai Chapter, RATA and AAR conducted their annual national program *Colloquium 2015* on the theme of Cold Storages on December 4 at Hotel Jupiter. It was attended by 80 delegates from various fields.

In his keynote address, Vilas Shinde (Chief Guest) of Sahyadri Farms mentioned the areas of improvement ranging from grape farming, harvesting, processing and storage to transportation. He suggested that ISHRAE should take the lead in understanding the needs of agricultural producers, and should set standards.



K. Ramachandran addresses the participants

## Nashik Conducts Workshop on Compressors in Hindi and Marathi

Nashik Sub-chapter conducted a technical workshop on November 7 at Vighneshwar Air Conditioning. 26 technicians were present. The program was conducted by Rauf Shaikh. It covered the working of a compressor, reasons for failure, selection of compressor, types of oil and safety precautions during compressor replacement

## Nashik Organises Workshop on Installation and Maintenance

Nashik Sub-chapter conducted a technical workshop on October 31 at Rotary Community Hall on *Air Conditioner Installation and Maintenance* in Hindi and Marathi. Dinanath Naik was the trainer. The topics covered were *Importance of Piping in Split Air Conditioners, Piping Best Practices for Split ACs, Good Installation Practices for ACs, Importance of Piping Insulation, Gas Charging, and Introduction to Inverter AC.*

The delegates were welcomed by Rauf Shaikh. President Nishad Satardekar welcomed Dinanath Naik. It was an interactive session.

President-Elect Rashid Shaikh and Rauf Shaikh briefed the participants on ACREX 2016.

## Nashik Celebrates ISHRAE Day

On the occasion of ISHRAE day on December 9, Nashik Sub-chapter organized a gala get-together. The event was organized at Hotel Emerald Park. President Nishad Satardekar welcomed the guests and briefed them on the activities of the Sub-chapter. Three new members were inducted. Delegates were briefed about ACREX 2016 and urged to attend it.

Following this, there was a product presentation by CRI Pumps Ltd. Thirumurthi – DGM, Mohapatra – Zonal Manager, Sandeep Ingale, Sarang Kulkarni – Area Managers, Gaurav Joshi, Kedar Jadhav and Mithun Kumar – Marketing Executives represented the company. A cake was cut by Founder President Sameer Lodha and President Nishad Satardekar. Past Presidents Sanjay Nikam, Sandeep Pahadi and Quresh Badshah were also present. 52 Members attended the program.

## Workshop by CCSI, ISHRAE and ASHRAE Mumbai

Contamination Control Society of India (CCSI), in association with ISHRAE Mumbai and Thane Chapters and ASHRAE Mumbai Chapter, held a one day theory and hands-on training workshop on Testing, Adjusting & Balancing of HVAC Systems (TAB) and Validation of Cleanrooms on December 19 at Hotel Parle International.



Diwakar Sawant speaks on the occasion



Haresh Rupchandani makes his address

Senior ISHRAE members K. Ramachandran (National President), Shankar Ghime (RD West), Vikram Murthy, Diwakar Sawant and Dr. Roshini Easow (President, ASHRAE Mumbai Chapter) spoke



Dr. Roshini Easow talks on behalf of ASHRAE

on the occasion. Haresh Rupchandani, President, AAR and Jasbir Singh, Director, RATA also addressed the audience.

The topics covered were *Cold Storage Layout and Design* by Sankara Subramaniam; *Refrigeration for Grape Processing* by Anil Gulanikar; *Maintenance of Compressors* by Dhananjay Deshpande; *Mobile Refrigeration* by Rajat Gupta; and *Government Subsidies* by R. S. Kulkarni. A panel discussion on *New Refrigerant Technology* rounded off the program.

The platinum partner Seepra Refrigeration, a cold room enterprise, presented their range of offerings from cold rooms to full management of cold rooms. There were 8 table partners.

A press conference, attended by 20 members of the press, was held. A total of 149 participants attended the *Colloquium*.

## ISHRAE Day Celebration at IGCAR, Kalpakkam

On ISHRAE Day, Kalpakkam Sub-chapter organized a technical lecture at IGCAR on December 9. Two members from the Sub-chapter, who had presented papers in the recently held National Conference on Refrigeration and Air Conditioning (NCRAC-2015) at Chennai, shared their papers. About 50 staff members comprising ISHRAE members, HVAC professionals and other staff members of DAE units at Kalpakkam attended the presentation.



V. Rathnakumar makes his presentation



E. Mohanraj presents his paper

N. Janarthanan, President, welcomed the members and highlighted that ISHRAE has completed 33 years. V. Rathnakumar, Head, ACMS, ACVSD, ESG gave a talk on *Control Circuit Modification in Room Air Conditioners for Safe Operation*, and E. Mohanraj, SO/D, RFS, CFD, CG presented a paper on *Innovative Design for Precise Temperature Control*.

Treasurer N.S. Gopalakrishna delivered the vote of thanks.



### Vadodara Holds Product Presentation By Global Copper

Vadodara Chapter arranged a product presentation by Global Copper Ltd. on December 6 at Solarce Park. Around 30 members attended the program.

### Alfa Laval Product Presentation at Vadodara

Vadodara Chapter joined with Indian Institute of Chemical Engineers (IICChE) Ankleshwar Regional Center on November 27 for a product presentation by Alfa Laval. Nilesh Patel – President, Hasmukh Patel – President-Elect, Manish Dandekar – Treasurer and Kunal Shah – CWC member were present.

### Thane Holds Danfoss Product Presentation

Thane Chapter organised a seminar on *Trends in Scroll Chillers* by Luigi Zamana, Senior Director Marketing, Danfoss Commercial Compressors, on December 10 at Hotel United 21.

### Presentation Skills Program by Thane Chapter

Thane Chapter, along with ASHRAE Mumbai Chapter, organised a program on Presentation Skills on November 28 in the premises of Blue Star. The faculty was Rajan Gaonkar, Senior General Manager – Channel Business, Johnson Controls.

### Workshop at Surat

Surat Chapter conducted a workshop on *Heat Load Calculation in HVAC Systems* on December 19 at Dil-se Banquet Hall. About 40 members and 4 others participated. Chapter President, IPP and CWC members attended the program. Pankaj Suryavanshi was the faculty.

### DL on Clean Rooms & IAQ at Indore

Indore Chapter, in association with ASHRAE Western India Chapter, organized a DL Program on *Clean Rooms & IAQ* on December 17 at Hotel Effotel.

The program started with a welcome note by Nishant Gupta of ASHRAE Central India Chapter and National Program Chair, ISHRAE. Sapan Shah, President, Indore Chapter, introduced the DL Dr. M. Vijaykumar.

Dr. Vijaykumar gave an introduction to Particle Mechanics for Contamination Control, and spoke on Considerations for Clean Air, Filtration and Energy Usage in IAQ. The program was attended by more than 50 persons from leading pharma companies and members of ISHRAE and ASHRAE. The workshop was interactive. A vote of thanks was proposed by Deepak Arzare.

### Kolkata Holds Technical Talk on Fans and Air Washers

Prabir Kumar Sen gave a technical talk on November 28. There were 13 participants. The talk covered design aspects of ventilation systems including the applicability of various systems. It also covered the psychrometry related to dry and wet ventilation systems.



Prabir Kumar Sen delivers his talk

### Technical Seminar in Surat

Surat Chapter conducted a technical seminar on *Basics of Refrigeration & Air Conditioning* on December 30 at Dil-se Banquet Hall. About 30 members and 2 others participated, along with President, IPP and CWC members. Dr. A. D. Parakh was the faculty.



Chapter President with speaker Dr. A. D. Parakh

## STUDENT ACTIVITIES

### Poornima College Students Visit Exhibition on Smart Cities

Department of Mechanical Engineering, Poornima College of Engineering, Jaipur organized a visit to the Smart Cities Exhibition at Jaipur Exhibition & Convention Center in association with ISHRAE and ASHRAE on December 11. The 13th International Conference & Exhibition on Sustainable Habitat & Smart Cities was organized by Jaipur Municipal Corporation.

15 student members participated along with faculty members Shailendra Kaseera, HoD; Sobhag Bhandawat, Assistant Professor; Amit Mandal, Associate Professor; Prashant Mishra, Assistant Professor and Abhay Raj, Assistant Professor.

The students observed the concept of smart city, Green building, water ATM, Steilwallz panels, green waste reprocessor, organic waste converter, biogas generator, public toilets, bus rapid transit system, methane production, smarts bins, etc.



Poornima College students pose during the visit



Keenly observing smart city concepts

### Vadodara Celebrates ISHRAE Day with Students

Vadodara Chapter celebrated ISHRAE Day with Rangoli competition on Save Tress and Save Environment at Shree T. R. Patel Vidhyalya on December 12. More than 22 students participated. President Nilesh Patel spoke about ISHRAE. Hasmukh Patel – President-Elect, Manish Dandekar – Treasurer and Hemant Bedekar were present from ISHRAE.

### Student Quiz by Vadodara Chapter

Vadodara Chapter arranged an inter college quiz competition at SVIT, Vasad on December 29. Dharmsinh Desai University, Parul Institute of Technology, Parul Institute of Technology & Engineering, Charusat University and Sardar Vallabhbhai Patel Institute of Technology student chapters participated in the Quiz. Brian Lobo – Student Chair welcomed the audience. Ramanna – Head of Mechanical Department, S.P. Patel – Faculty Coordinator, Nilesh Patel – President and Hasmukh Patel – President-Elect were present. Dharmsinh Desai University was the winner, and Sardar Vallabhbhai Patel Institute of Technology was the first runner-up.

### Seminar in Bharuch by Surat Chapter

D. D. Koranne held a Technical Seminar on *Diagnosis & Troubleshooting of Refrigeration Systems* at Shree S'ad Vidhyamandal Institute of Technology, Bharuch on December 19. It started with a video presentation on ISHARE and ACREX 2016. Nilesh Patel – Chapter President welcomed the participants. Jigar Bhalavat introduced D. D. Koranne. There were more than 40 participants including students, utility engineers and faculty. Hasmukh Patel – President-Elect, Manish Dandekar – Treasurer and Shirang Puntambekar – Program Chair were present.

### Surat Student Chapter Visits HVAC Site

Surat Chapter organised a site visit to Rahulraj Mall, Piplod by students of SVNIT and C. K. Pithawala College Of Engineering and Technology on October 31. There were 72 participants.



Students commence site visit



Students listening attentively

### Surat Holds Quiz Final for Student Chapter

The final quiz round at Surat was held on November 9 at the premises of Unicool Engineers. The finalists were C. K. Pithawala College of Engineering and Technology and SVNIT. The contest was won by C. K. Pithawala College.



Prithvi and Somil of C.K. Pithawala College focus on the questions

### Promotional Activity for New Student Chapter at Jaipur

Jaipur Chapter organized promotional activity for a new student chapter on November 21 at Arya Institute of Engineering, Technology & Management, Jaipur. Amit Kakkar, National Chair K-12 Activity and Past President, Jaipur Chapter delivered a seminar on *Green Buildings* and discussed the benefits of forming a new student chapter.



Amit Kakkar addresses the students



Students listen with rapt attention

The occasion also witnessed the presence of Anil Gupta, President, Jaipur Chapter along with students and faculty members. He talked about ISHRAE and motivated the students. Ankur Dutt Sharma proposed the vote of thanks. More than 100 students attended.



## ADVOCACY

### Vadodara Chapter Supports International Half Marathon

Vadodara Chapter supported the launch parade of 5th Vadodara International Half Marathon on November 1. Dignitaries of the city from all spheres of life came together to express their support for the city. Nilesh Patel – President, Manan Vora – Regional Advocay Chair, Manish Dandekar – Treasurer, William Jacon – Vice Chair of Student Activity, Shrirang Puntambekar – Vice Program Chair and Durgesh Shah were present.

## FELLOWSHIP AND BONDING

### ISHRAE Day at Bangalore

As a part of ISHRAE Day celebrations, Bangalore Chapter organised a cultural evening for members' families. It was inaugurated by R. V. Simha, founder president of the Chapter; D. Nirmal Ram, Immediate National Past President; G. Ramesh Kumar, RD South 1; Ananth Kumar, Program Chair; and A. Madhukar, President.

The program was attended by past presidents, senior and current members of the Chapter along with their families. It comprised of *Bharatanatyam*, magic show, ventriloquist performance and fusion music.



R. V. Simha lights the lamp to kick off the program



Bharatanatyam performance in progress



Fusion music

### Bijoya Sanmilani Celebrated at Kolkata



Family members celebrate Bijoya Sanmilani at Kolkata

Kolkata Chapter held a social gathering on November 7 to mark the traditional Bengali ritual of greeting each other *Subho Bijoya*. A cultural programme was arranged on the occasion. There were 53 participants including family members.

## ISHRAE CERTIFICATION PROGRAM

### ICP – AC Service Level 1 at Mumbai

Mumbai Chapter conducted modules 1 and 2 of ICP – AC Service Level 1 program on January 22-23 and 29-30 respectively in its office premises.

## K-12 PROGRAMS

### K-12 on Global Warming in Chennai



Students learn about global warming

Chennai Chapter organised a K-12 program on '50 Things that Cause Global Warming', on November 4 at Chettinad Raja Muthiah Higher Secondary School. The speakers were R. Krishnasamy, CWC Member and K-12 Activities Chair and S. Vijayabhaskaran, Secretary. It was attended by 230 students of 7th, 10th, 11th and 12th Classes. A globe was gifted to the school.

### DCI Organises K-12 at Hill Queen School



Hill Queen students participate in drawing competition

Delhi Chapter organized a K-12 activity on Deember 10 at Hill Queen School under the guidance of President Jagdeep Singh. A painting competition was held, in which more than 100 students from Class 3 to 6 participated. DCI Secretary Gaurav Vasudev, Executive Secretary Vikram Maini and Arvind Kumar were present.

### Nashik Sub-chapter Organizes Three K-12 Programs

Nashik Sub-chapter held a K-12 program at Avankhed Zilla Parishad School, Taluka Dindori on December 14 in collaboration with Omtech Vocational Training Centre. The students were explained opportunities in HVAC&R after an ITI or diploma course on completion of 10th Standard. They were made to create useful items from waste by recycling disposed items. The award winning item was a greeting card made from household and recycled items. The students were gifted sanitation facilities like buckets, mugs, antiseptic soaps and napkins.

Another K-12 program was held in collaboration with Omtech at Santaji School, Vani, Taluka Dindori on December 17. Vaibhav Joshi of Omtech explained the opportunities in HVAC&R after ITI or diploma courses on completion of 10th Standard. Students were trained to make useful items out of scrap for earning additional income in spare time.

The third K-12 program was held in collaboration with Omtech at Unnati School, Talegaon, Taluka Dindori on December 17. Principal Nagmoti, IPP Quresh Badshah and Vaibhav Joshi of Omtech explained the opportunities to students in HVAC&R. They were also taught to use household waste and create useful items out of scrap.

### K-12 Activity at Indore



Students get involved in K-12 program

Indore Chapter held a Quiz Competition on December 22 at Jain Kids Convent School. Pricipal Sanjay Jain of the school was the Chief Guest. 80 students from Class 4 to 6 participated. The activity was conducted by Priyanka Yadav, K-12 Activity Chair of the Chapter.

**AIR CONDITIONING AND REFRIGERATION**  
**Journal**  
 The magazine of the Indian Society of Heating, Refrigerating and Air Conditioning Engineers

**Journal articles from 2006 – 2011  
 now available on CD**

**CDs are available for Rs. 600 each/ US\$54**  
 Postage and handling: within India - Rs. 50; outside India - US\$5  
 (For cheques outside Mumbai please add Rs. 50)

CDs covering 1998-2003 and 2004-2005  
 also available for Rs. 500 each/ US\$27 and  
 Rs. 300 each/ US\$45 respectively.

(Handling charges and outstation cheque charges extra as mentioned above)

Contact:  
**ISHRAE Mumbai Chapter**  
 022 2839 0018/19 • journal@ishrae.in



INFINITE OPPORTUNITIES FOR HVAC & R INDUSTRY



at

**ACREX**  
**India 2016**

25-26-27 February, 2016  
 BCEC, Mumbai, India

Organised by



www.acrex.in