

# **Indian Society of Heating, Refrigerating and Air Conditioning Engineers (ISHRAE) Student's Chapter, RCOEM Department of Mechanical Engineering, RCOEM, Nagpur.**

The Indian Society of Heating, Refrigerating and Air Conditioning Engineers (ISHRAE) students' chapter at RCOEM was installed in 2013 to promote and spread the knowledge in the field of HVAC amongst the students. The ISHRAE students' chapter at RCOEM functions under the ISHRAE Nagpur Chapter. Various activities like guest lectures, field visits, short term training courses and workshops are organized to educate the students and to make them employable. A large number of UG and PG students, every year, become members of this professional society and take advantage through various activities organized.



**ISHRAE Mission:** To advance the arts and science of heating, ventilating, air-conditioning and refrigerating to serve humanity and promote a sustainable world.

**ISHRAE Vision:** ISHRAE will be the global leader, the foremost source of technical and educational information, and the primary provider of opportunity for professional growth in the arts and sciences of heating, ventilating, air conditioning and refrigerating.

**One day workshop “GLACIER”- TRENDS IN HEATING, VENTILATION, AIR CONDITIONING AND REFRIGERATION (HVAC&R) held on 28th August 2019.**



The Installation of ISHRAE RCOEM STUDENTS CHAPTER, NAGPUR followed by one day workshop “**GLACIER**”- **TRENDS IN HEATING, VENTILATION, AIR CONDITIONING AND REFRIGERATION (HVAC&R)** was held on 28<sup>th</sup> August 2019 (Wednesday) at Shri Ramdeobaba College of Engineering and Management, Nagpur. The inaugural function was witnessed by a large number of faculty as well as students. The workshop included four technical sessions. Mr. Kedar Patki, Regional Director West 1, ISHRAE was the chief guest for the inaugural function. He delivered the keynote speech on the topic air ventilation and explained the salient features, safety and health aspects of air ventilation to the students. The second session was conducted by Mr. Chirag Bhayani, DAIKIN, who explained the VRV air conditioning system, its working principle and important features. The third session was conducted by Prof. Sujit Patil, RCOEM who explained the basics & various types of Air Conditioning Systems including their selection. The fourth session was hands-on experience on components of HVAC&R systems and tools. Dr. Amol Andhare coordinated the workshop along with Prof. S A Patil, Faculty In charge, ISHRAE RCOEM Students chapter. This workshop aimed to impart knowledge and technical skills in the field of Heating, Ventilation, Air conditioning and Refrigeration (HVAC&R) among the students. Mr. Kedar Patki Regional Director West 1, Mr Sudhir Raje President, ISHRAE Nagpur Chapter, Mr Narendra Pampattiwar Secretary, Mr Ajay Pande President Elect, Mr Moin Naqvi Past President, Mr. Shankar Ghime former RD West 1, Dr M M Gupta HOD, Mechanical Engineering and Dr K N Agrawal graced the occasion and motivated the students. 95 students participated in the workshop.



## RCOEM ISHRAE Students Chapter Installation 2017-18



The Installation programme of Indian Society of Heating, Refrigeration and Air-Conditioning Engineers (ISHRAE) Students Chapter was recently organized by the Department Of Mechanical Engineering, RCOEM, Nagpur. Total 56 students (UG and PG) became the registered members of RCOEM ISHRAE Students Chapter. Dr. Shashank Dongarwar, President of ISHRAE Nagpur Chapter was the guest of honour. He enlightened the students and emphasized on huge potential of job opportunities in the field of HVAC. Prof. S.A.Patil, Faculty Co-ordinator, ISHRAE RCOEM Students Chapter, briefed the motive of installing students chapter and discussed the activities undertaken by the chapter till date. Prof. A.M. Andhare, Ex. Student Activity Chair, ISHRAE Nagpur Chapter administered the oath to the newly installed office bearers, Mr. Nikhil Chandrawanshi (President), Mr. Keshav Das (President Elect.), Mr. Shubham Upadhyay (Secretary), Mr. Shubham Thakur (Joint Secretary), Mr. Rajat Raj Varshney (Treasurer), Ms. Karisma Mishra (Joint Treasurer) and other CWC members. Dr K.N. Agrawal, HOD, Department of Mechanical Engineering congratulated the newly installed office bearers and urged to take maximum benefit of the ISHRAE association. Mr. Sanjay Tatwawadi, Ex. President, ISHRAE Nagpur Chapter, highlighted the benefits of ISHRAE membership for shaping the career in HVAC field. Mr. Pradip Kaleshwarwar, Secretary, ISHRAE Nagpur Chapter was prominently present. The programme was largely attended by the faculty members and students of the Mechanical Engineering Department. Mr. Nikhil Chandrawanshi, President of the RCOEM ISHRAE students chapter proposed the vote of thanks.

Mr. Mohammad Mubashshir Naved, RCOEM PG student, published technical article on Indoor Air Quality in ISHRAE student connect magazine `Youth@ISHRAE in November 2017.



student  
connect  
by Youth@ISHRAE

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Selected Article

# INDOOR AIR QUALITY

- Mohd. Mubashshir Naved  
(Research Scholar,  
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Clean air is the foremost requirement to sustain healthy lives of humankind and those of the supporting ecosystems. A healthy indoor environment is one that promotes the comfort, health, and wellbeing of the occupants. In it the air is free of significant levels of contaminants and odours. Indoor Air Quality (IAQ) refers to the nature of the conditioned (heat/cool) air that circulates throughout space/area, where we work and live i.e. the air we breathe most of the time. It signifies the quality of the air and environment inside buildings, based on pollutant concentrations and conditions that can affect the health, comfort and performance of occupants including temperature, relative humidity, light, sound and other factors. Consequently, IAQ has drawn considerable attention in recent years due to public health issues associated with Indoor Air Pollution (IAP). It is well recognized that poor IAQ affects respiratory system which results from weakening of immune system from the exposure to household air pollutants.

Enclosed spaces inhabited by humans produce effects like reduction in oxygen level of spaces, increase in CO<sub>2</sub>, temperature, humidity, bioaerosols and odour leads to IAP. Indoor air is often two to five times more polluted than outdoor air. IAP consists of a complex mix of various substances in different physical and chemical states and these arise from various sources. WHO focuses on four health-related air pollutants, namely, particulate matter, nitrogen dioxide, sulphur dioxide and ozone. The focus on just these four is for the sake of monitoring the general state of air quality and it does not mean that the other air pollutants do not impact health of humans and that of the environment. The indoor air pollutants have potential health effects. The particulates cause respiratory infections, chronic bronchitis, chronic obstructive pulmonary disease (COPD). Sulphur dioxide and nitrogen dioxide causes wheezing and exacerbation of asthma. In addition to this, nitrogen dioxide causes respiratory infections and deteriorates lung functions. Sulphur dioxide has an additional etiological role in

exacerbation of COPD and cardiovascular disease. Poor IAQ also results in 'sick building syndrome', where the occupants of some buildings repeatedly describe a complex range of vague and often subjective health complaints. The location of kitchen premises in the house is also documented to play a key role in influencing the air quality indoors. This subsequently results in generation of indoor smoke leading to particulate pollution.

There are many studies across the world and also in India to monitor outdoor and indoor air pollution. There must be some basic strategies needed to improve IAQ; the first and the foremost step which can be taken in this regard is educating people and spreading awareness among the masses, promoting usage of cleaner fuels i.e. alternative cleaner source of energy. To remove heat or moisture or to reduce their concentration and indoor pollutants proper ventilation should be provided. A less polluting stove design (smoky to fuel efficient and smokeless stoves) seems to be the ultimate solution to overcome IAP and maintain IAQ well.



**RCOEM ISHRAE Students Chapter certified as outstanding contribution and participation in students activities by ISHRAE NAGPUR CHAPTER for the year 2017-18.**

**One day workshop organized on Hands on Assembly & disassembly of Window AC & Hermetic compressor on 1<sup>st</sup> April 2017 by Er. Vijay Bhambri. Total 67 students participated in the workshop.**



### **ACREX 2017 visit IEML, Greater Noida, Delhi NCR**

Student members of RCOEM ISHRAE chapter attended and explored South Asia's Largest Exhibition on Air Conditioning, Ventilation, Refrigeration and building services on 23-25<sup>th</sup> February 2017. A large range and variety of industrial, domestic products and instruments with latest technologies were showcased by the multinational companies. Students interacted with industry persons in the field of HVAC industries. Total 17 students along with two faculty members visited ACREX 2017.



## ISHRAE Students Chapter Installation 2015-16



## ACREX 2016 visit BCEC, Goregaon East, Mumbai

Total 25 student members of RCOEM ISHRAE chapter attended and explored South Asia's Largest Exhibition on Air Conditioning, Ventilation, Refrigeration and building services on 25-27<sup>th</sup> February 2016. Two faculty members also accompanied the students during the visit. The large number of products and services with latest technologies were presented by the industries. The student came across the latest technologies being practiced in HVAC industries through seminars and interactive workshops. The visit was of great use where students experienced and understood the latest trends followed in HVAC industries.



**Site visit was organized at Naivedyam Estoria for learning the heat load calculations and operation of large size Air Conditioning System on 18/12/2016.**

**Guest lecture was organized on Opportunities for mechanical engineers in the construction industry by Mr. Sayed Abdul Gaffar of KGMECH Pvt. Ltd., Hyderabad on 05/04/2016 from 11 am to 1.30 pm. Total 56 students from UG and PG attended the guest lecture.**

**Mr. Prasad Dharmadhikari and Mr. P. Vaisakh, students of final year 2015-16, selected through ISHRAE job junction drive by Voltas Ltd. and offered a job as a Graduate Engineer Trainee in the domestic project group.**



**RCOEM, ISHRAE Students Chapter, organized One Day Workshop titled as  
“TRENDS IN REFRIGERATION AND AIR CONDITIONING” on 16.10.2015**



The Indian Society of Heating, Refrigeration and Air-Conditioning Engineers (ISHRAE) Students Chapter, Department Of Mechanical Engineering, RCOEM recently organized a one day workshop on Trends in Refrigeration and Air Conditioning. Dr S Rajagopalan an expert in the field of Acoustic in HVAC was the Chief Guest and Key note speaker for the program. Mr. S.G. Ghime, Regional Director, ISHRAE briefed the plans of placement activities to be undertaken by ISHRAE. Mr. Sanjay Tatwawadi, President, ISHRAE Nagpur Chapter, Dr. Shashank Dongarwar, Secretary, ISHRAE Nagpur Chapter motivated and appreciated the students for their participation in workshop. The workshop contained four sessions including a practical demonstration session on the HVAC systems. Mr. Nikhil Malpani, Blue Star Ltd. conducted a session on Variable Refrigerant Flow Systems. Prof. A.M. Andhare, Faculty Incharge, ISHRAE Students Chapter briefed on Alternative Refrigerants and Energy Conservation Opportunities in HVAC Systems. Total 230 students (UG and PG) from various institutes attended the workshop. Dr K.N. Agrawal, HOD, Department of Mechanical Engineering congratulated the students for their participation and urged to take maximum benefit out of the workshop. Mr. Prasad Dharmadhikari, President, ISHRAE student's chapter proposed the vote of thanks. Mr.Sunil Kolhe, President Elect, ISHRAE Nagpur Chapter was prominently present for the program. Mr. Shubham Agrawal, Mr. Anuj Raool, Mr. Pratik Bele and other core working committee members worked hard for the success of the program.

## ISHRAE Students Chapter Installation 2014-15



## ISHRAE Students Chapter Installation 2013-14



The Installation programme of Indian Society of Heating, Refrigeration and Air-Conditioning Engineers (ISHRAE) Students Chapter RCOEM was recently organized by the Department Of Mechanical Engineering. Mr. G.J. Jiwani, Founder President of ISHRAE Nagpur Chapter was the chief guest for the function who administered the oath to the newly installed office bearers, Mr. Akash Agrawal (President), Mr. M. Mukesh (Vice President), Mr. Sharad Kulhari (Secretary), Mr. Himanshu Raut (Treasurer) and other CWC members. Total 78 students (UG and PG) became the registered members of ISHRAE Students Chapter. Mr. Nilesh Kate, President of ISHRAE Nagpur Chapter was the guest of honour. He enlightened the students on the topic High Rise Buildings.

Prof. A.M. Andhare, Faculty In Charge briefed about motive of installing ISHRAE student's chapter and outlined the various activities to be undertaken. Dr K.N. Agrawal, HOD, Department of Mechanical Engineering congratulated the newly installed office bearers and urged to take maximum benefit out of the ISHRAE association. Dr. V.S Deshpande, Principal RCOEM presided over the function and asked the students to bring laurel to the newly installed student's chapter. Mr. Akash Agrawal President of the ISHRAE student's chapter proposed the vote of thanks. The programme was largely attended by the faculty members and students of Mechanical Engineering Department. Mr Moin Naqvi , Prof M.S.Matey, and Mr.Sunil Kolhe were prominently present.