

Science and Engineering Research Board (SERB), India



Science and Engineering Research Board (SERB)
Department of Science and Technology (DST)
Govt. of India

Sponsored

Five Days National Workshop

on

***“Recent Advances in Heating, Ventilation, Air
Conditioning and Refrigeration (HVAC & R)
Systems and Their Application”***

from

16th – 20th January, 2023

Organised by



Mechanical Engineering Department

IPS Academy

Institute of Engineering & Science

(A UGC Autonomous Institute, affiliated to RGPV Bhopal M.P)

Indore-452012 (M.P) India

Science and Engineering Research Board (SERB), India

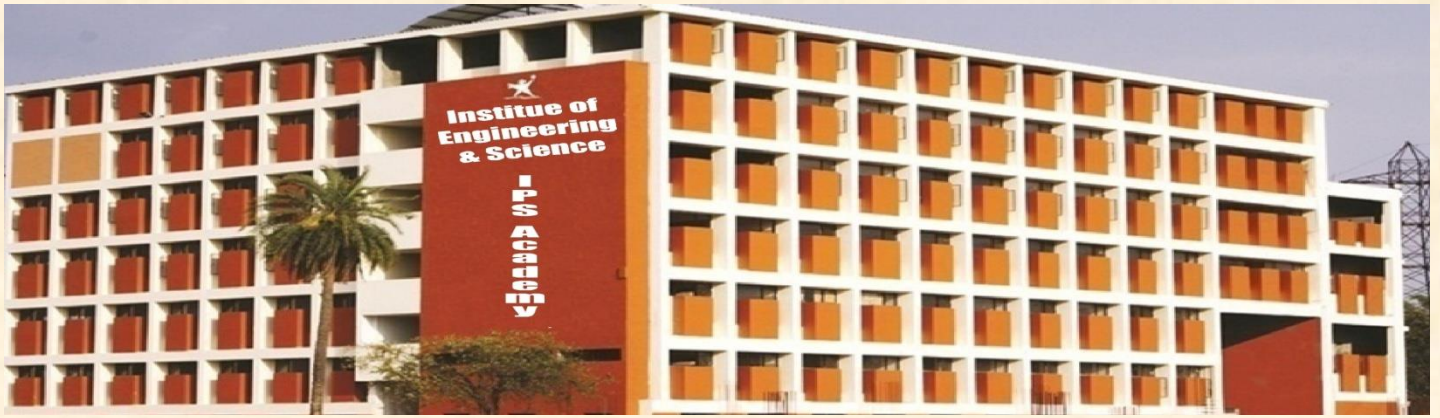


Science and Engineering Research Board (SERB)
Department of Science and Technology (DST)
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The Science and Engineering Research Board (SERB) aims to build up best management systems which would match the best global practices in the area of promotion and funding of basic research.

One of the most notable developments in the S&T sector in the XI Plan has been the setting up of the Science and Engineering Research Board (SERB) through an Act of Parliament, viz. the Science and Engineering Research Board Act, 2008. Promoting basic research in Science and Engineering and to provide financial assistance to persons engaged in such research, academic institutions, research and development laboratories, industrial concerns and other agencies for such research and for matters connected therewith or incidental thereto are the primary and distinctive mandate of the Board.

IPS Academy, Institute of Engineering & Science



IPS Academy, Institute of Engineering & Science, Indore is one of the leading self-financing NAAC accredited institution devoted to imparting quality engineering education with the sole motto of “Knowledge, Skill & Values”. Institute established after securing approval of AICTE, New Delhi and Govt. of MP from academic session 1999-2000. Institute of Engineering & Science is a UGC autonomous institute affiliated to Rajiv Gandhi Pradyogiki Vishwavidyalaya, Bhopal. Institute has ranked four star rating in IIC in CRO zone. Also, ranked 38th among the top 170 engineering college in India as per Times of India survey. It offers UG and PG programs in Chemical Engineering, Civil Engineering, Mechanical Engineering, Electrical & Electronics Engineering, Electronics & Communication Engineering, Fire Technology & Safety Engineering, Agricultural Engineering, Computer Science & Engineering, Computer Science and Information Technology, Data Science, Internet of Things, Artificial Intelligence & Machine Learning, Regional Language, Block Chain Technology. Furthermore, UG programmes have been accredited by National Board of Accreditation, New Delhi. Indore is a commercial capital of M.P. Ministry of Housing and Urban Development has been affirmed cleanest city of India under the aegis of Swachh Bharat Survekshan since last six years consecutively. Indore has been selected as one of the 100 Indian cities to be developed as a smart city under the Smart Cities Mission.

Mechanical Engineering Department

Department of Mechanical Engineering started in year 2013 with total intake of 120 students. Department is having a State of Art Laboratory of Microfluidic” in which research in collaboration with Japan and Sri-Lanka is going on. The department is equipped with the latest laboratory equipment like, CNC machines, 3D Printers and a central workshop so that students can enhance their practical knowledge for the research work.

Vision of the Department

To be a nationally recognized, excellent in education, training, research and innovation that attracts, rewards, and retains outstanding faculty, students, and staff to build a Just and Peaceful Society.

Mission of the Department

M1: Imparting quality education to the students and maintaining vital, state-of-art research facilities for faculty, staff and students.

M2: Create, interpret, apply and disseminate knowledge for learning to be an entrepreneur and to compete successfully in today's competitive market.

M3: To inculcate Ethical, Social values and Environment awareness.

Course Content

- ✓ Review on HVAC & Refrigeration System
- ✓ Advanced Vapour Absorption System
- ✓ Sustainable Air Conditioning
- ✓ Latest Techniques used in HVAC and Refrigeration
- ✓ Alternative Cooling Technologies - Absorption Chiller
- ✓ Ejector Expansion Refrigeration System an alternative to VCRS
- ✓ Hybrid Air-Conditioning
- ✓ “Smart” HVAC Technologies Designed for Automation
- ✓ Solar Passive Architecture for HVAC System
- ✓ Energy Conservation and Heat Recovery Opportunities in HVAC Systems
- ✓ Building Integrated Photovoltaic Thermal Systems
- ✓ Application of Engineering Equation Solver (EES) in HVAC Analysis
- ✓ Hand on Session: Installation Procedures & Troubleshooting of HVAC System
- ✓ Visit to HVAC Plant

Objectives of Workshop

- ✓ This workshop was made to make the transmission of knowledge from the faculty to students highly effective with all the tools associated with HVAC & R.
- ✓ Be able to describe and choose from the signature pedagogies used in the thermal engineering education.
- ✓ Get motivated to use case method of teaching in appropriate learning contexts.
- ✓ Become aware of preparations required for the successful use of case based approach in the field of HVAC.

Eligibility

- ✓ The workshop is open to Industry Persons and Faculty members (regular/ ad-hoc/ temporary)/Research Scholars/Post Graduate Students from any Indian university/ college.
- ✓ All the participants are requested to register online by visiting <https://ies.ipsacademy.org> on or before January 10, 2023 or by browsing the link given in the registration details below.
- ✓ Registration for all the participants is mandatory. For further queries, please mail us at: rahulsharma@ipsacademy.org

Registration link

<https://forms.gle/sUs5VbT7BKwa2VEx7>

Registration Process

- ✓ Participants will fill up the online application form given in the registration link above with all required details and upload the registration form duly signed by the institute authority (refer last page) on or before the final date of submission. Late applications will not be entertained. The final date of submission is January 10, 2023.
- ✓ After successful registration, the participants will receive a final confirmation mail on or before January 12, 2023.
- ✓ Participants have to make their own Boarding and Lodging arrangements.

Program Schedule

Day 1: 16 Jan 2023, Monday

Time	Session	Topic	Expert
09:30am – 10:00am	Registration		
10:00am – 10:30am	Inauguration		
10:30am – 12:30pm	1	A Review of HVAC & Refrigeration	Dr. Udayraj Asstt. Prof., IIT Bhilai
12:30pm – 01:30pm	Lunch Break		
01:30pm to 03:00pm	2	"Solar Heating and Cooling Concepts for Buildings"	Dr. Basant Agrawal Professor, SGSITS, Indore
03:00 pm – 03:30pm	High Tea		
03:30pm – 05:00pm	3	“Smart” HVAC Systems: VRF Based Systems	Mr. Sandeep Belsare National Vice Chair Program, ISHRAE

Day 2: 17 Jan 2023, Tuesday

10:00am – 12:00pm	4	Alternative Cooling Technologies - Absorption Chiller	Ms. Kshama Jain MD, Kehems Pvt. Ltd., Indore
12:00pm – 01:00pm	Lunch		
01:00pm – 03:00pm	5	Latest Techniques used in HVAC and Refrigeration	Dr. Satish Pal Singh Rajput Professor, MANIT Bhopal
03:00 pm – 03:30pm	High Tea		
03:30pm – 05:00pm	6	Sustainable Air Conditioning- Open Absorption Cooling System	Dr. Ritunesh Kumar Asso. Prof., IIT Indore

Day 3: 18 Jan 2023, Wednesday

10:00am – 12:00pm	7	Solar Passive Architecture for HVAC System	Dr. Aseem Tiwari Professor, RGPV, Bhopal
12:00pm – 01:00pm	Lunch Break		
01:00pm – 03:00pm	8	Advanced Vapour Absorption Systems	Dr. Govind Maheshwari Asso. Prof., IET-DAVV
03:00 pm – 03:30pm	High Tea		
03:30pm – 05:00pm	9	Hybrid Air Conditioning	Mr. Nishant Gupta MD, Degree Day Pvt. Ltd, Indore

Day 4: 19 Jan 2023, Thursday

10:00am – 12:00pm	10	Energy Conservation and Heat Recovery Opportunities in HVAC Systems	Dr. Sharad Chaudhary Asstt. Prof., IET-DAVV, Indore
12:00pm – 01:00pm	Lunch Break		
01:00pm – 05:00pm	11	Visit to HVAC Industry	Degree Day Pvt. Ltd., Indore

Day 5: 20 Jan 2023, Friday

10:00am – 12:00pm	13	Hand on Session	Mr. Ashish Patidar Service Engineer, Urban Company
12:00pm – 01:00pm	Lunch Break		
01:00pm – 02:30pm	14	Ejector Expansion Refrigeration System (EERS) an alternative to VCRS	Mr. Rahul Sharma Asstt. Prof., IPS Academy, Indore
02:30pm – 03:30pm	15	Application of Engineering Equation Solver (EES) in HVAC Analysis	Dr. Rajvir Singh Doohan Head Cryo- Engg. RRCAT, Indore
03:30pm – 04:00pm	Valedictory Function & Certificate Distribution		
04:00pm – 04:30pm	High Tea		

Eminent Speaker

Dr. Ritunesh Kumar [PhD, M. Tech, B. Tech]

Associate Professor
IIT, Indore



Dr. Udayraj [PhD, M. Tech, B. Tech]

Assistant Professor
IIT, Bhilai

Dr. Satish Pal Singh Rajput [PhD, M. Tech, B. Tech]

Professor
MANIT, Bhopal



Dr. Aseem Tiwari [PhD, M. Tech, B. Tech]

Professor
RGPV University, Bhopal

Dr. Basant Agrawal [PhD, M.Tech, B.E]

Professor
SGSITS, Indore



Dr. Govind Maheshwari [PhD, M. Tech, B. E]

Associate Professor
IET-DAVV, Indore

Mr. Nishant Gupta [MBA, B. Tech]

Managing Director
Degree Day Pvt. Ltd. Indore



Dr. Sharad Chaudhary [PhD, M. Tech, B. E]

Assistant Professor
IET-DAVV, Indore

Ms. Kshama Jain [MBA, B. Tech]

Managing Director
Kehems Technologies Pvt. Ltd, Indore



Mr. Sandeep Belsare [MBA, B. E]

National Vice Chair Program
ISHRAE, Indore

IPS Academy
Institute of Engineering & Science, Indore (M.P.)

(A UGC Autonomous Institute, affiliated to RGPV Bhopal M.P)

Chief Patron



Ar. Achal K. Choudhary
President

Convenor



Mr. Rahul Sharma
Assistant Professor

Patron



Dr. Archana Keerti Chowdhary
Principal

Co-Convenor



Mr. Piyush Laad
Assistant Professor



Dr. A.G. Kothari
Advisor

Head

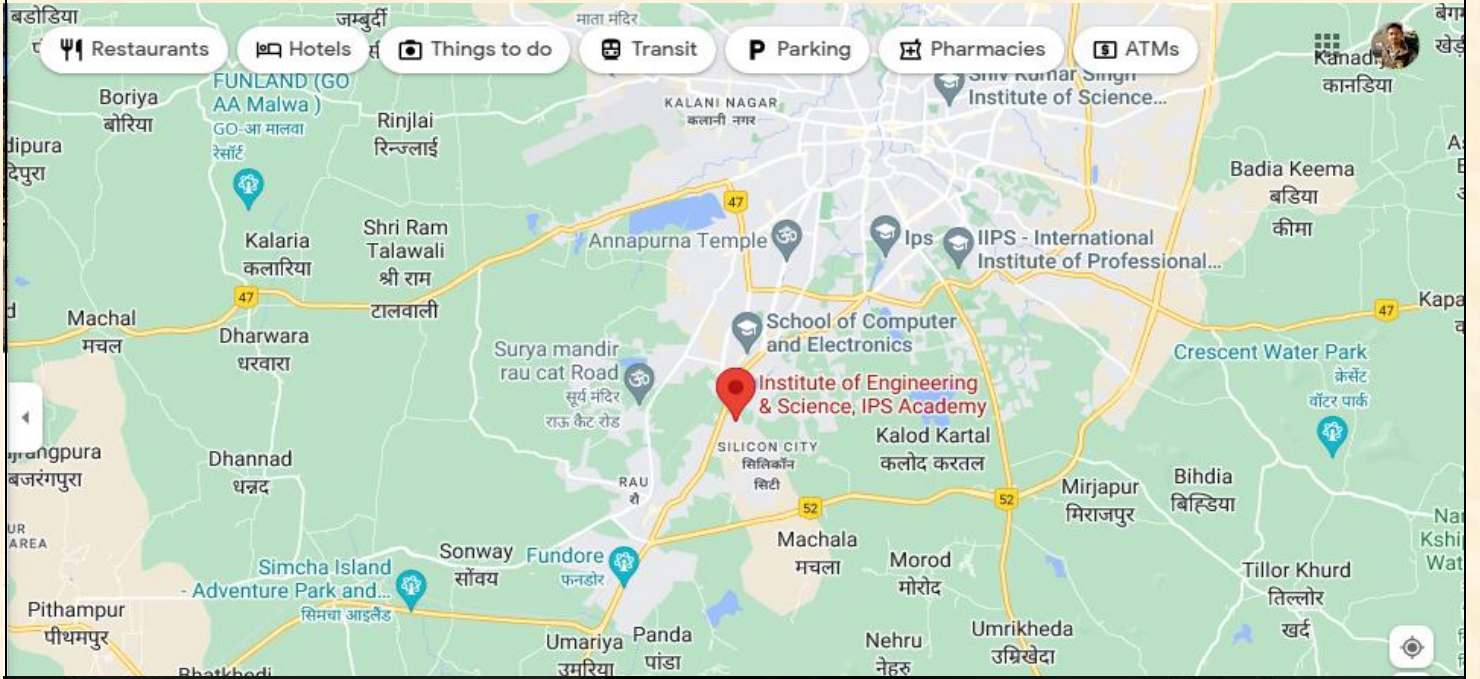


Dr. Amit Chandak
Mechanical Engineering Department

Organizing Committee

- Dr. J. Ponmozhi
- Mr. Vikrant Kulthe
- Mr. Ashwini K Joshi
- Mr. Rizwan Sheikh
- Mr. Sharad Shukla
- Mr. Satish Raghuvanshi
- Mr. Rahul Samre
- Mr. Rahul Chadhokar
- Mr. Mayank Gurjar
- Mr. Anand Thorat
- Mr. Pradeep Hada
- Mr. Rajendra Sharma
- Mr. Jayant Khede
- Mr. Manoj Raut
- Mr. Shubham Kanungo
- Mr. Kapil Patodi

Location



Latitude

22.6587088°

Longitude

75.824161°

Address for Correspondence:

**Mechanical Engineering Department
IPS Academy**

Institute of Engineering & Science, Indore (M.P.)

(A UGC Autonomous Institute, affiliated to RGPV Bhopal M.P.)

Email: rahulsharma@ipsacademy.org

Mobile: +91-9926422399; +91-9713102497

Phone: 0731-4014627

Website: www.ies.ipsacademy.org

Hotels near by IPS Academy

- ✓ **Hotel Bee Town** (Distance 200m from campus)
Address: Agra Bombay Road near IPS College Rajendra Nagar,
Hukma Khedi, Indore, Madhya Pradesh 452014
- ✓ **Punyah Hotel & Resort** (Distance 2.9km from campus)
MR44+6FP, CAT Road opposite Treasure Fantasy,
Rau, Indore, Madhya Pradesh 453331



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and Refrigeration (HVAC & R) Systems and Their Application”*

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Registration Form

Name:.....

Designation:.....

Department:.....

Organization/Institute:.....

Address:.....

.....

Highest Qualification:.....

Specialization:.....

Experience in Year: Teaching....., Industry....., Total.....

Phone:.....

Email:.....

Signature & Seal,
Head of the Institute

Signature of Applicant

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