



**INSTITUTION'S
INNOVATION
COUNCIL**
(Ministry of Education Initiative)



SARVAJANIK UNIVERSITY

Sarvajanik College of Engineering & Technology, Surat

EXPERT TALK ON

“Opportunities for Energy Conservation in HVAC & R.”

In association with

Institution's Innovation Council (IIC), SCET

Organized by

Department of Mechanical Engineering

Resource person	Dr. Milind V. Rane (Professor in Mechanical Department, Indian Institute of Technology, Bombay)
Facilitator	Dr. Pankaj Gohil
Coordinator	Prof. (Dr.) Piyush Patel & Prof. Amit Mehta
Targeted Audience	Students of 1 st , 2 nd & 3 rd Year
Venue	Chemical Seminar Hall (J-102)
Participants	121 students
Date and Time	27 th February 2026 (Friday); 9:30 AM onwards



SARVAJANIK EDUCATION SOCIETY
SARVAJANIK UNIVERSITY
SARVAJANIK COLLEGE OF ENGINEERING AND TECHNOLOGY
MECHANICAL ENGINEERING DEPARTMENT





Expert Talk on
"OPPORTUNITIES FOR ENERGY CONSERVATION IN HVAC & R."
Under DPS-AICTE





DR. MILIND V. RANE

AICTE- Distinguished Professional,
 Professor-Mechanical Engineering Dept.,
 Indian Institute of Technology, Bombay

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RESOURCE PERSON

- PhD, University of Maryland at College Park, USA
- Professor (HAG), ASHRAE Fellow
- Former Institute Chair Professor (2011-20)

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Sarvajanik College of Engineering and Technology organized expert lecture on "Opportunities for Energy Conservation in HVAC & R" on 27th February 2026 (9:30 AM Onwards) by resource person **Dr. Milind V. Rane** (Professor in Mechanical Department, Indian Institute of Technology, Bombay) Organized by **Department of Mechanical Engineering, Surat.**

OBJECTIVE OF THE EVENT:

The primary objective of this session is to promote Knowledge Integration, Knowledge Dissemination, and Knowledge Generation in the domain of energy conservation in HVAC & Refrigeration systems. The session aimed to provide participants with comprehensive knowledge about various readiness assessment frameworks used in research, innovation, product development, and industrial applications. The expert elaborated on the importance of TRL, MRL, and IRL in evaluating the maturity of technologies, manufacturing capabilities, and innovation potential from concept development to commercialization.

The session is structured to enhance technical understanding through meaningful interaction with faculty members and students, and aims to:

- Strengthen industry-academia collaboration in the domain of energy-efficient HVAC & R systems.
- Promote research, innovation, and consultancy opportunities in sustainable technologies.
- Foster entrepreneurship and startup initiatives in energy conservation and green building solutions.
- Support skill development and improve the employability of students in the HVAC & R sector.
- Integrate principles of the Indian Knowledge System with modern energy-efficient practices for sustainable societal development.

SESSIONS BRIEF DESCRIPTION:

The expert session was delivered by **Dr. Milind V. Rane**, who shared valuable insights drawn from his extensive academic, research, and industrial experience in the field of HVAC & Refrigeration. The session focused on exploring practical and innovative opportunities for energy conservation, while aligning modern engineering practices with the broader goals of sustainability and global environmental responsibility.

The session began with a discussion on the growing need and scope for sustainable development in the energy sector. Participants were made aware of the increasing global demand for energy, environmental challenges, and the necessity of adopting low-carbon and energy-efficient technologies. The importance of integrating sustainability principles into HVAC & R system design was highlighted.

A brief overview of advanced technologies was presented, including electric and heat-driven multi-utility heat pumps, exhaust heat recovery systems, and renewable energy integration. Dr. Milind Rane explained how these technologies can simultaneously provide heating, cooling, and energy recovery, thereby improving overall system efficiency. He elaborated on the advantages of waste heat recovery systems and described their salient features, such as enhanced thermal efficiency, reduced operational costs, and minimized environmental impact.

To strengthen practical understanding, several case studies were presented, demonstrating successful implementation of energy-efficient and sustainable technologies in real-world scenarios. These examples helped students understand current industry trends, design challenges, and innovative solutions adopted globally.

Overall, the session provided a comprehensive and industry-oriented perspective on energy conservation in HVAC & R systems, significantly enriching the technical knowledge of faculty members and students.

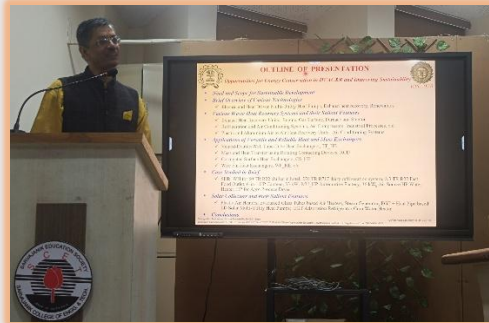
OUTCOMES OF THE EVENT:

The expert session significantly enhanced the technical knowledge and practical understanding of faculty members and students. Participants developed deeper insights into sustainable development, advanced heat pump technologies, waste heat recovery systems, renewable energy integration, and the application of efficient heat and mass exchangers. The discussion on systematic design and experimental validation strengthened their understanding of performance evaluation, energy optimization, and real-world engineering challenges aligned with global industry trends.

The event also fostered research orientation, innovation, and industry awareness among participants. Through practical case studies and expert interaction, attendees were motivated to explore research opportunities, consultancy projects, and entrepreneurial ventures in sustainable HVAC technologies. The session contributed to skill development, improved employability prospects, and encouraged integration of sustainable engineering practices with long-term societal and environmental goals.

GLIMPSES OF THE EXPERT SESSION:





ATTENDANCE DETAILS:

Total 121 Participants have attended for this expert talk session. The session proved to be highly beneficial for all the participants and inspired them to integrate sustainable engineering practices with long-term societal and environmental objectives.

SARVAJANIK UNIVERSITY SARVAJANIK COLLEGE OF ENGINEERING & TECHNOLOGY MECHANICAL ENGINEERING DEPARTMENT Expert Talk on "OPPORTUNITIES FOR ENERGY CONSERVATION IN HVAC & R" Under DPS-AICTE on the 27 FEBRUARY, 2020				
Sr. No.	Enrollment No.	Name	Current Semester	Student Sign
1	ET25BTME046	Sadi Nisar Gundanna	II	
2	ET25BTME016	Joshi Yash Krunay	II	
3	ET25BTME004	Shankh Vijay Thot	II	
4	ET25BTME013	Toray H. Jani	II	
5	ET25BTME066	Shravan Vagholiya	II	
6	ET25BTME003	Bhaskar Harsh	II	
7	ET25BTME045	Chavhan Chhaila	II	
8	ET25BTME020	Chavhan Jyotirm	II	
9	ET25BTME048	Savani Moon	II	
10	ET25BTME032	Joshi Patel	II	
11	ET25BTME040	Sahil Patel	II	
12	ET25BTME001	Kavin Vora	II	
13	ET25BTME070	Jag Ball	II	
14	ET25BTME068	Dhruv Vashi	II	
15	ET25BTME066	Shreyash Patel	II	
16	ET25BTME008	Pranav Durganaya	II	
17	ET25BTME053	Shreya Harsh	II	
18	ET25BTME045	Minaliya Yagnesh	II	
19	ET25BTME019	Kash Salija	II	
20	ET25BTME021	Dhruv Magdhanpara	II	

SARVAJANIK UNIVERSITY SARVAJANIK COLLEGE OF ENGINEERING & TECHNOLOGY MECHANICAL ENGINEERING DEPARTMENT Expert Talk on "OPPORTUNITIES FOR ENERGY CONSERVATION IN HVAC & R" Under DPS-AICTE on the 27 FEBRUARY, 2020				
Sr. No.	Enrollment No.	Name	Current Semester	Student Sign
1.	ET24BTME009	Khandia Manthan.H.	4 th	
2	ET24BTME011	Meha Bhrampranaya	4 th	
3	ET24BTME032	Damon Patel	4 th	
4	ET24BTME004	Tirth Anghun	4 th	
5	ET24BTME003	Kavya Anagya	4 th	
6	ET24BTME015	Vaishali Gadhani	4 th	
7	ET24BTME019	Smit Lokkani	4 th	
8	ET24BTME023	Mouni Ravij	4 th	
9	ET24BTME024	Mepi Patel	4 th	
10	ET24BTME022	Mann Soliya	4 th	
11	ET24BTME010	Oan Dhola	4 th	
12	ET24BTME001	ANUSH SHASHIDASA	4 th	
13	ET24BTME033	DEEP PATEL	4 th	
14	ET24BTME038	Ritel Ranak	4 th	
15	ET24BTME061	Vasudhaya Om R.	4 th	
16	ET24BTME043	Ramuliyas Ashit	4 th	
17	ET24BTME030	Shikha Shastri	4 th	
18	ET24BTME047	Shubham Jena	4 th	
19	ET24BTME013	Patel Shreyas	4 th	
20	ET24BTME028	Nikhil Jha	4 th	

SARVAJANIK UNIVERSITY SARVAJANIK COLLEGE OF ENGINEERING & TECHNOLOGY MECHANICAL ENGINEERING DEPARTMENT Expert Talk on "OPPORTUNITIES FOR ENERGY CONSERVATION IN HVAC & R" Under DPS-AICTE on the 27 FEBRUARY, 2020				
Sr. No.	Enrollment No.	Name	Current Semester	Student Sign
1.	ET23BTME009	HARSH PANDEY	06	
2.	ET23BTME012	DHARITA KHANSAHEB	06	
3.	ET23BTME013	VRUCHABH KHARATE	06	
4.	ET23BTME009	MANANESH CHIN	06	
5.	ET23BTME023	Parth Ranahad	06	
6.	ET23BTME031	Yashraj Thakur	06	
7.	ET23BTME013	Ananya Chauhan	06	
8.	ET23BTME019	Aryan J. Chauhan	06	
9.	ET23BTME012	Gangamoni Chhetri	06	
10.	ET23BTME011	Aashvi Nalumbini	06	
11.	ET23BTME011	Hemanshi Nalumbini	06	
12.	ET23BTME007	Kavita Sharma	06	
13.	ET23BTME014	Dev Patel	06	
14.	ET23BTME019	Krishna Saloo	06	
15.	ET23BTME014	Kish Blakia	06	
16.	ET23BTME005	Snah Thummar	06	
17.	ET23BTME015	Kush Patel	06	
18.	ET23BTME013	Manan Pragasani	06	
19.	ET23BTME017	Anant Patel	06	
20.	ET23BTME014	Vandit Shah	06	

SARVAJANIK UNIVERSITY SARVAJANIK COLLEGE OF ENGINEERING & TECHNOLOGY MECHANICAL ENGINEERING DEPARTMENT Expert Talk on "OPPORTUNITIES FOR ENERGY CONSERVATION IN HVAC & R" Under DPS-AICTE on the 27 FEBRUARY, 2020				
Sr. No.	Enrollment No.	Name	Current Semester	Student Sign
1.	ET25BTME032	Shrey Mangruka	2	
2.	ET25BTME030	Hetay Asmor	2	
3.	ET25BTME031	Kashyap N. Kankhi	2	
4.	ET25BTME008	Vani Vani Pragnanik	2	
5.	ET25BTME009	Shamika Vithal	2	
6.	ET25BTME006	Chavhan Harshad	2	
7.	ET25BTME027	Tanish Panchal . H	2	
8.	ET25BTME013	Patel Ansh P.	2	
9.	ET25BTME009	Devam J. Barchh	2	
10.	ET25BTME010	Maanya Anand	2	
11.	ET25BTME022	Nishi Desai	2	
12.	ET25BTME014	Joni Rani	2	
13.	ET25BTME010	Sh. Anishkumar	2	
14.	ET25BTME032	Shreya Siddharth	2	
15.	ET25BTME032	Vansh V. Patel	2	
16.	ET25BTME015	Tanika Mahila	2	
17.	ET25BTME001	Patel Divyanshu A.	2	
18.	ET25BTME004	Kashish Babar	2	
19.	ET25BTME018	Princy .D. Kancara	2	
20.	ET25BTME026	Maitray N. Nish	2	

SARVAJANIK UNIVERSITY SARVAJANIK COLLEGE OF ENGINEERING & TECHNOLOGY MECHANICAL ENGINEERING DEPARTMENT Expert Talk on "OPPORTUNITIES FOR ENERGY CONSERVATION IN HVAC & R" Under DPS-AICTE on the 27 FEBRUARY, 2020				
Sr. No.	Enrollment No.	Name	Current Semester	Student Sign
21.	ET24BTME009	Nayana Vignesh H.	4 th	
22.	ET24BTME035	Patel Kishan P.	4 th	
23.	ET24BTME005	Anshu Sharma	4 th	
24.	ET24BTME004	Patel Jyotish Kumar	4 th	
25.	ET24BTME005	Shikha M. Shastri	4 th	
26.	ET24BTME004	Ashish T. Desai	4 th	
27.	ET24BTME002	AKSHAT PATEL	4 th	
28.	ET24BTME001	Manish Patel	4 th	
29.	ET24BTME006	Md. Aman Gurav Y.	4 th	
30.	ET24BTME043	Poojanika Eshwar A.	4 th	
31.	ET24BTME021	Anurag Jyoti	4 th	
32.	ET24BTME036	Patel Parth	4 th	
33.	ET24BTME034	Patel Vansh	4 th	
34.	ET24BTME009	Kashish Shubam	4 th	
35.	ET24BTME006	Rajesh Ravi	4 th	
36.	ET24BTME015	Harsh Mishra	4 th	
37.	ET24BTME008	Rishabh Dhanu	4 th	
38.	ET24BTME001	Aary Patel	4 th	
39.	ET24BTME040	Patel Vedant	4 th	
40.	ET24BTME007	Tadharvi Kavya	4 th	
41.	ET24BTME001	Bhargava Kantaprasanna	4 th	

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Sr. No.	Enrollment No.	Name	Current Semester	Student Sign
21.	ET23BTME006	Tanisha Patel	06	
22.	ET23BTME004	Mishra H. Patel	06	
23.	ET23BTME001	Anshu Thakur	06	
24.	MECH - DDU	University - Vijay Chel Bathani	06	

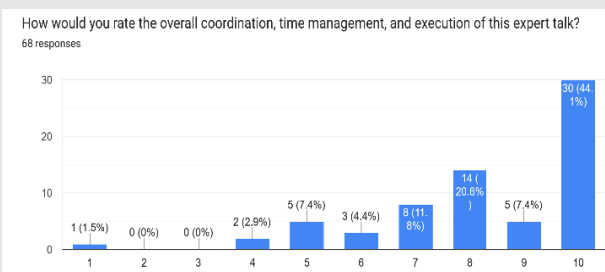
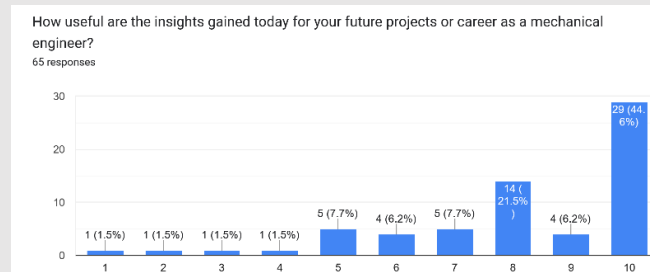
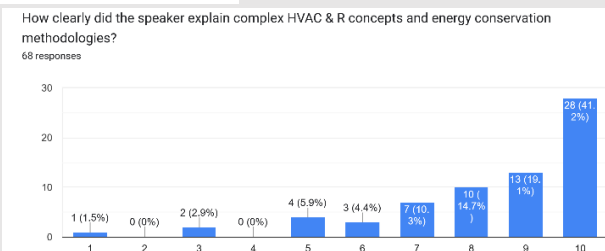
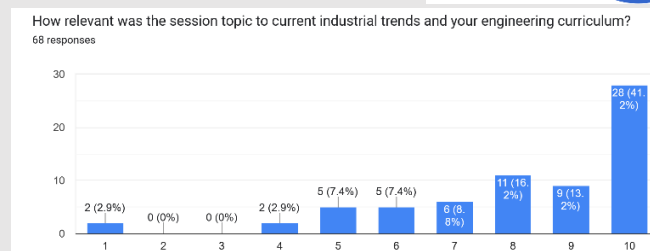
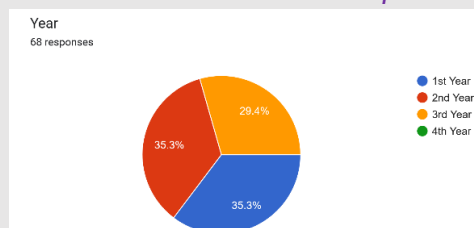
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Sr. No.	Enrollment No.	Name	Current Semester	Student Sign
41.	ET25BTME062	Pranav Jyesh Suba	2	
42.	ET25BTME060	Aravind J. Soni	2	
43.	ET25BTME031	Dhruv Karsad	2	
44.	ET25BTME032	Sourya Patel	2	
45.	ET25BTME039	Pratik Patel	2	
46.	ET25BTME043	Vansh Patel	2	
47.	ET25BTME055	Shreyas Srivastava	2	
48.	ET25BTME051	Sanj Kulkarni	2	
49.	ET25BTME044	Pratik Hitesh	2	
50.	ET25BTME052	Swati Vansh	2	
51.	ET25BTME058	Neel Patel	2	

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Sr. No.	Enrollment No.	Name	Current Semester	Student Sign
42.	ET24BTME042	Bhoomi Pahl	4 th	
43.	ET24BTME046	Mohammed Bharmel	4 th	
44.	ET24BTME044	Ravish Parashit	4 th	
45.	ET24BTME058	Pranav Tejani	4 th	
46.	ET24BTME043	Sahani Sunil	4 th	

FEEDBACK OF THE SESSION:

It was a highly insightful and engaging talk, and we received excellent feedback regarding both the speaker and the subject matter. A few of the participants' comments following the expert talk session are listed below;

- *My primary takeaway from this session was a clear understanding of the key concepts discussed, supported by practical insights and examples. The session was well-structured, informative, and engaging, making complex topics easier to grasp. Overall, it was a valuable learning experience that enhanced my knowledge and provided useful perspectives that can be applied in practice.*
- *I got to know about the possibilities on how the energy can be conserve and sustain for the future use.*
- *A new experience about how we can use heat rejection from condenser of AC and Refrigerator. Benefits of having Multi utility heat exchangers.*
- *This session has increased my interest in energy-efficient system design and motivated me to explore more about sustainable HVAC solutions. It was not just theoretical learning but also practical knowledge that can be applied in real engineering projects.*
- *Sir was very humble despite having expertise in his subject. we had a great opportunity in discovering a new dimension in our stream of how useful can be the discarded and ignored heat loss can turn out to be! I was stunned by sir's knowledge in knowing accurate numeric details of materials and his unwavering approach in imparting knowledge so efficiently.*
- *It was a good session. I need more sessions like this in the future.*



ACKNOWLEDGMENT

The Coordinator extends heartfelt thanks to the Resource Person, **Dr. Milind V. Rane**, for his engaging and thought-provoking interaction with faculty members and students, which fostered a rich intellectual exchange. The insightful discourse delivered by him significantly strengthened industry–academia collaboration and promoted a culture of research, innovation, entrepreneurship, and start-ups.

His vision and guidance inspired students to explore emerging opportunities, enhanced their employability, and emphasized the vital role of engineering in societal development. Furthermore, his emphasis on the Indian Knowledge System added depth and contemporary relevance to the session, making it truly impactful and transformative.

We also thank to **Dr. Pankaj Gohil** (Head of the Mechanical Department) for all kinds of support extended and Honorable Principal **Dr. Hiren Patel** and Dean-R&D: **Dr. Utpal Pandya** for encouraging us to conduct the session.

Through this brief note we would like to acknowledge the support provided by every faculty member of the department to make the event successful.

In addition, we would like to thanks all the participants without whom the talk could not have been planned or executed.

Report Prepared By:

Prof. (Dr.) Piyush T. Patel,
MED, SCET.