ACREX India 2026
12-14 March
BEC, Mumbai
25th Edition

ORGANISED BY ISHRAE TRADE FAIRS | POWERED BY ISHRAE

Sustainable Cooling and Heating
Natural Refrigerants for India's Future

INDEE3 Seminar at ACREX India 2026

Date : 13.03.2026 | **Time : 10:00 – 13:00**

Welcome Note

Opening Remarks (10:00 – 10:05 h)

Prof R Saravanan

Professor, DME,
Anna University
Chennai

R Saravanan is currently Professor & Head in Department of Mechanical Engineering, Anna University, Chennai and President Elect of Indian Society of Heating, Refrigerating and Air Conditioning Engineers, New Delhi India. He has more than 25 years of Research Experience in the area of Solar Cooling, Energy Conservation in Buildings and Polygeneration Technologies.

Opening Session: Perspectives and Future Directions (10:10 – 10:55 h)

Sustainable Cooling and Heating in INDIA – an Indian-Norwegian Collaboration

Dr. Kristina N. Widell

Senior Research
Scientist,
SINTEF Ocean,
Norway

Kristina N. Widell is a Senior Research Scientist at SINTEF Ocean in Trondheim, Norway, working within the Department of Fisheries & New Biomarine Industry. She holds a PhD in Energy & Process Engineering from the Norwegian University of Science & Technology (NTNU). Her research focuses on advancing processing technologies & systems for the food industry, with an emphasis on refrigeration & the food cold chain. Key areas of her work include improving energy efficiency, reducing greenhouse gas emissions, promoting the use of natural refrigerants, enhancing product quality, & minimising food waste. In addition to her technical expertise, Kristina is committed to fostering knowledge transfer between research & industry on both national & international levels, driving innovation and sustainable development in her field.

IIR's Perspective and Future Directions in Refrigeration: Addressing India's Needs

Dr. Yosr Allouche

General Director,
IIR, France

Dr Eng. Yosr Allouche is the General Director of the International Institute of Refrigeration (IIR), the intergovernmental organization dedicated to advancing refrigeration technologies for sustainable development. With a strong background in engineering and refrigeration sciences, Dr Allouche has extensive experience in energy-efficient and environmentally friendly cooling solutions. Under her leadership, through clean innovative refrigeration solutions, IIR focuses on fostering international collaboration, knowledge dissemination, and active support to low-income countries to address critical challenges in food preservation, healthcare, and climate action. Dr Allouche is a recognized advocate for sustainable refrigeration, contributing to global efforts to reduce greenhouse gas emissions and improve food security.

Dr. Anna Pacak

Research Fellow,
IIR France

Dr Eng. Anna Pacak is a Research Fellow at the International Institute of Refrigeration (IIR), where she is actively involved in international research and innovation projects addressing sustainable refrigeration, energy-efficient cooling technologies, and cold chain performance. Her work focuses on strengthening the interface between scientific research and industry needs, as well as supporting knowledge transfer, dissemination, and collaboration across academia, industry, and public institutions. Anna Pacak specializes in alternative, sustainable cooling technologies and HVAC&R systems, with a strong engineering background. She obtained her PhD (Doctor of Engineering) from the Faculty of Mechanical and Power Engineering at Wrocław University of Science and Technology.

Disposal of Synthetic Refrigerants and Associated Environmental Risks

Ananya Srivastava

Research Project
Associate,
IISc Bangalore

Ananya is a Research Project Associate at the Interdisciplinary Centre for Energy Research (ICER), IISc Bangalore. She completed her M.S. in Chemical Engineering from Carnegie Mellon University, USA. Prior to joining IISc, she worked as a Process Engineer at Amogy and COWI North America, where she contributed to ammonia-to-power and green fuel projects. Her work at IISc focuses on assessing the environmental and health impacts of synthetic working fluids, with particular emphasis on greenhouse gas (GHG) and PFAS emissions. She aims to support sustainable transition pathways in the HVAC industry by evaluating different phase-in scenarios for natural refrigerants.

Vinod Laguri

Post Doctoral Fellow,
IISC Bangalore

Vinod is a Post Doctoral fellow at Thermal System Laboratory, IISc Bangalore. His research work focuses on natural refrigerants like CO_2, hydrocarbons, and refrigerant mixtures.

Demonstration Sites and Applications in India (11:00 – 11:50 h)

R290 for Cold Storages – Mitigating New Challenges with R717 for Indian Ambients

Prof. M. S. Dasgupta

Professor,
BITS Pilani

Prof. M. S. Dasgupta has over three decades of distinguished experience in teaching and research at the Department of Mechanical Engineering, BITS Pilani, India. He has been closely associated with several strategic initiatives that have contributed significantly to the institution's growth and national recognition. His primary research interests lie in environmentally friendly thermal systems, with a strong focus on transcritical CO_2 refrigeration systems and propane-based cooling technologies. Prof. Dasgupta has authored over 100 publications in reputed international peer-reviewed journals and conferences and has delivered numerous keynotes and invited lectures at prestigious conferences in India and abroad.

Challenges for Implementation and Adoption of Natural Refrigerant Based Systems in India

Prof. Pramod Kumar

IISc Bangalore

Dr. Pramod Kumar is the Chair and Professor at the Interdisciplinary Centre for Energy Research, Indian Institute of Science, Bangalore. He obtained his Master's and PhD degrees in Mechanical Engineering from IISc Bangalore in 2008. Prior to joining IISc as a faculty, he worked as a Research Engineer at Georgia Institute of Technology, Atlanta, where he researched on air flow management in high density data centres. After joining IISc, Dr. Kumar initiated new research programmes in the broad area of thermal and energy systems. His group in collaboration with leading industries and research organizations is involved in developing supercritical CO2 cooling and power generation technology.

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High Temperature Heat Pumps with Options for Cooling

Professor M.P.Maiya
IIT Madras

Dr.M.P.Maiya, Professor of Mechanical Engineering (Retired) at IIT Madras, has contributed to academia, industry and research in refrigeration, air-conditioning, and energy systems. His research contributions pan sorption technologies, desiccant and evaporative cooling, ventilation systems, passive cooling for buildings, CO2 refrigeration, metalhydrides, and energy systems. His professional achievements include Fellow of ISHRAE and The Institution of Engineers (India), DAAD fellowship, organizing notable workshops and conferences, and serving one editorial boards and professional committees.

Potential of Natural Refrigerants in District Cooling and Large Centralised Cooling Systems

Dr. Santosh Saini
Principal Research Associate,
AEEE, New Delhi

Dr. Santosh K. Saini is currently a Principal Research Associate at AEEE, New Delhi, working in the vertical of sustainable cooling and cold chains. He holds a PhD in Mechanical Engineering from BITS Pilani, where his research focused on evaluating energy-efficient refrigeration technologies for India's seafood cold chains. His work bridges system design, policy, and field deployment, emphasising scalable, climate-friendly cooling solutions. With a strong academic background, Santosh has contributed to multiple projects, advancing refrigeration and energy access in agri-food value chains. In addition to his technical expertise, Santosh is a principal member of BIS working groups under the Refrigeration and Air Conditioning Sectional Committee.

R744 Based, Cascade Systems for Seafood Industry

Prof. M. Ramgopal
IIT Kharagpur

Professor M. Ramgopal is a faculty member in the Department of Mechanical Engineering at IIT Kharagpur. His research focuses on natural refrigerants, hybrid refrigeration systems, natural circulation loops, and hydrogen storage. He has held key leadership positions, including Dean of Faculty of Engineering & Architecture and Dean of Infrastructure at IIT Kharagpur.

Technical Innovations and Best Practices (11:55 – 12:55)

How to Install R290 AC Chillers According to Standards and Regulations

Prof. Armin Hafner
Professor, NTNU,
Norway

Armin HAFNER is currently Professor in Refrigeration Technology at NTNU, Trondheim, President of The Norwegian Society of Refrigeration, and Presidents of IIR Commission D1. He joined NTNU in 2016 after nearly 20 years as senior research scientist at SINTEF in the field of sustainable heating and cooling technologies with natural working fluids. Global knowledge transfer and communication about the potential of natural working fluids is a key in the necessary green transition. Especially the refrigeration sector can provide sustainable solutions for society neither sacrificing growth nor profit.

Sustainable cooling: Ejector Refrigeration Systems with Natural Working Fluids

Dr. Vinay Kumar Yadav
IIT Madras

Dr. Vinay Kumar Yadav is a post doctoral fellow in INDEE3 at IIT Madras specializing in refrigeration, air-conditioning, solar collectors, and thermal energy storage. He completed his Ph.D. at IIT(BHU) on solar-driven ejector refrigeration and poly-generation systems for sustainable cooling, heating, power, and water. His M.Tech work on CO_2 ejector-assisted cycles demonstrated significant energy savings and performance enhancement. Dr. Yadav has published in Energy, Journal of Energy Storage, Energy and Buildings, and JTAC. He has extensive teaching experience in thermodynamics, heat transfer, solar energy, and RAC labs and courses. At ACREX 2025, he will be presenting innovations in next-generation sustainable refrigeration technologies using ejectors.

Understanding Oil Management Challenges in Compressors for Natural Refrigerant Systems

Dr. Sonam Rajpuriya
Postdoctoral Fellow
BITS Pilani

Dr Sonam Rajpuriya completed her PhD with a focus on Computational Fluid Dynamics (CFD), heat transfer, and thermodynamics. She is currently a postdoctoral researcher under the INDEE3 project, continuing her work at BITS Pilani on both the demonstration unit for fishing vessels and the educational unit for natural refrigerant systems.

Seizing the Opportunity: Why Norway's HP/AC Market is Converting to Natural Refrigerants

Daniel Mark Kristensen
CEO, ABK-Qviller,
Norway. Chairman of
the Norwegian Heat
Pump Association
(NOVAP).

In 1990, Daniel Mark Kristensen established ABK-Qviller AS, which is now recognized as Norway's premier distributor of heat pumps, heating, and air conditioning systems. As CEO and an industry specialist, he quickly recognized the market's demand for sustainable solutions and strategically capitalized on the commercial opportunities associated with being a market pioneer.

Presentations of Upcoming Courses, Trainings, Demo Site Visits on Natural Refrigerants

IIT Kharagpur, BITS Pilani, IIT Madras, IISC Bangalore

Closure (12:55 – 13:00 h) - Prof. Armin Hafner

https://www.sintef.no/en/projects/2025/indee3-sustainable-cooling-and-heating-in-india/