One day workshop on
Emerging trends in Aerosol Science and Technology
jointly organised by
National Atmospheric Research Laboratory (NARL),
Vikrama Simhapuri University (VSU) &
Indian Aerosol Science and Technology Association (IASTA)

Venue: Vikrama Simhapuri University, Nellore   **Date: 4 December 2024**

Background : Atmospheric aerosols, also known as short-lived climate forcing agents, are essential constituents of the atmosphere, playing a significant role in global and regional climate change, air quality deterioration, visibility impairment, and human health. The presence of aerosols in the atmosphere can alter the absorption and scattering of solar radiation, which influences temperature patterns, weather, and climate systems. Tracking trends in aerosol optical, physical, and chemical properties enables scientists to identify changes in aerosol composition and sources over time. This knowledge is crucial for understanding the evolution of air quality and developing targeted pollution control measures. Air quality modeling is vital for simulating and forecasting pollutant levels, aiding in the formulation of effective air quality management strategies. Finally, emerging techniques in aerosol science, including advanced instrumentation and measurement methods, are revolutionizing our ability to characterize aerosols at a molecular level. These cutting-edge techniques offer unparalleled insights into aerosol properties, sources, and transformations, fostering advancements in the field and opening new avenues for addressing air pollution challenges.

Aim of the workshop : Aerosol science is a multidisciplinary field encompassing physics, chemistry, mathematics, statistics, and biology, among others. This workshop is centered around these diverse aspects and aims to attract master's degree students from the aforementioned fields, as well as bachelor's degree students in technology, particularly from computer science, artificial intelligence, and machine learning disciplines, to explore this area of study. The event serves as a platform for students, faculty, and scientists to come together to delve into these critical subjects. Participants will engage in insightful discussions, stay updated on the latest research findings, and exchange knowledge and ideas regarding the impact of aerosols on atmospheric composition, air quality, and climate change. Additionally, modeling techniques will be a key focus, enabling participants to enhance their predictive capabilities and simulate the behavior and transport of aerosols and pollutants. A team of senior scientists from NARL will deliver several talks on these themes, explore research opportunities available at NARL, and interact with the participants.

Topics covered: Aerosols in Weather and Climate, Aerosol-cloud interaction, Atmospheric Chemistry, Air Pollution & Air Quality, Atmospheric Radiation, Aerosol Instrumentation, Artificial Intelligence and Machine Learning Techniques in Aerosol Research, Opportunities in Aerosol Science and Technology.

About NARL:
NARL, an autonomous scientific organization under Department of Space, Government of India, is engaged in front-line research in atmospheric sciences, weather and climate research and development of atmospheric sensing technologies. NARL hosts a suite of highly sophisticated radio, optical and in situ techniques. NARL also has a high performance computing (HPC) system for atmospheric modeling and a Data Centre for dissemination of data to User Scientists. NARL has been promoting co-operative research activities. During the past 30 years researchers from academia and national laboratories have utilized the experimental facilities at NARL and made remarkable contribution to the overall growth of atmospheric science.

About VSU:
VSU a premier educational institution engaged in creation and dissemination of knowledge and wisdom to impact the society through quality in teaching, research, extension activities and entrepreneurship to meet societal needs and global challenges. VSU has extending its services through affiliated colleges in SPS Nellore District offering Undergraduate/ Post Graduate programmes. VSU is offering Post Graduate and Research Programmes in Arts, Science, and Commerce & Management. Promote quality, relevance and value based education to face the global challenges and create an environment to exchange ideas where research, creativity, innovation and entrepreneurship can flourish.

About IASTA:
IASTA is a professional organization for scientists and engineers endeavoring to advance aerosol research in the Indian context. The association provides a platform for exchanging knowledge, know-how, resources, and information among researchers, member organizations, industrial counterparts, and related disciplines by organizing conferences, technical meetings, lectures, and publications. IASTA addresses various interests spanning Environmental Sciences, Occupational Safety and Public Health, Industrial and Medical Applications, and Nuclear Safety and includes the disciplines relevant to the Indian context like Pollution, Indoor Air Quality, and Filtration/Separation.