Contents

Resume of S. N. Tripathi

Name: Sachchida Nand Tripathi

Nationality: Indian

Date of Birth: July 24, 1971

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Indian Institute of Technology-Kanpur

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Present Designation: Dean, Kotak School of Sustainability and HAG Professor, Indian Institute of Technology Kanpur, IIT Kanpur

Positions held

July 2024 onwards	Dean, Kotak School of Sustainability, Indian Institute of Technology Kanpur, India
May 2023 onwards	Professor, Department of Sustainable Energy Engineering, Indian Institute of Technology Kanpur, India
August 2018 onwards	Higher Administrative Grade (HAG) Professor, Civil Engineering, Indian Institute of Technology Kanpur, India
June 2018 – July 2021	Head, Department of Civil Engineering, Indian Institute of Technology Kanpur, India
December 2015	Visiting Professor, School of Civil Environmental Engineering, Georgia Institute of Technology, USA.
November 2014 – October 2017	Coordinator, Centre for Environmental Science & Engineering, Indian Institute of Technology Kanpur, India.
November 2014 – October 2016	Adjunct Professor, Department of Earth Sciences, Indian Institute of Technology Kanpur, India.
June - July 2014	Visiting Professor, School of Civil Environmental Engineering, Georgia Institute of Technology, USA.
May - July 2012	Professor, Laboratoire de Physique et Chimie de Environment, University of Orleans, France.

April 2012 - July 2018	Professor, Department of Civil Engineering and Centre for Environmental Science & Engineering, Indian Institute of Technology-Kanpur, India.
August 2009 - July 2010	Senior Fellow, NASA Goddard Space Flight Center, Greenbelt, Maryland, USA.
January 2008 - March 2012	Associate Professor, Department of Civil Engineering and Centre for Environmental Science & Engineering, Indian Institute of Technology Kanpur, India.
May - July 2006	Visiting Associate Professor, Centre for Climate System Research, The University of Tokyo, Japan.
June 2004	Visiting Researcher, NOAA Aeronomy Laboratory, Boulder, USA.
July 2003 - December 2007	Assistant Professor, Department of Civil Engineering, Indian Institute of Technology Kanpur, India.
January 2002 - July 2003	Post-Doctoral Research Assistant, Atmospheric, Oceanic and Planetary Physics, Department of Physics, University of Oxford, UK.
December 2000 -December 2001	Visiting Scientist, Environmental Assessment Division, Bhabha Atomic Research Centre, Mumbai, India.

Academic Background:

Ph.D. (Environmental Engineering), University of Reading, UK (2000)

M.Tech. (Environmental Engineering), NIT-Allahabad (1995)

B.Tech. (Civil Engineering), IIT-BHU (1992)

Citation Analysis

Total Citation: > 14022, H-Index - 65; Google Scholar: Sachchida Tripathi
Total Citation: > 9267, H-Index -55; ISI Web of Knowledge:
http://www.researcherid.com/rid/J-4840-2016
Total Citation: >10570, H-index -58; Scopus: AUID # 21935606200
ORCID ID: https://orcid.org/0000-0002-6402-4680

Field of Specialization: Climate Change, Air Quality, Nuclear Safety, Sustainable Urban Spaces

Extensive research in the past few decades has brought in a sharp focus on Aerosols as the single most important component of the atmosphere that would guide sustainable development in the future via its impact on air quality, weather, global climate and public health. I address the highly topical environmental questions through a comprehensive science-centric approach, rather than deal with them in a peripheral ad hoc manner. At the same time, as a part of conserving resources, I have adapted an interdisciplinary approach imbibing a seamless link between air quality for public health as well as the impact on climate change. The people-centric nature of my research contributed uniquely to both technological solutions and the evolution of policy guidelines for securing clean air in India.

I led a study that provides evidence of aerosol-induced cloud invigoration effect (AIvE) during the Indian summer monsoon. Aerosol indirect effects show the importance of aerosol-cloud

feedback via cloud condensation nuclei during summer monsoon over India. Recently I led a study published in Nature Communication which shows occurrence of aerosol-induced cloud invigoration effect (AIvE) throughout the Indian region that can significantly alter cloud structures, radiation budget and impact monsoon rainfall.

I have set up National Aerosol Facility (NAF) for lateral translation of knowledge and expertise to serve the important cause of the involvement of academia in nuclear safety studies. This facility specifically addresses aerosol safety issues relevant to Pressurized Heavy Water type Indian Nuclear reactors in contrast to most of the world studies which are relevant to Light Water Reactors namely THAI facility in Germany, PHEBUS-FP programme in France, and others. The uniqueness and the comprehensive nature of the NAF has put India on par with developed nations for catering to the visionary need for PHWR safety research alongside the growth of nuclear power to meet India's energy security needs. This facility also provides a single platform for researchers from the Department of Atomic Energy and academic institutions to conduct collaborative studies on aerosol experimentation and validation of various numerical codes employed in nuclear safety research.

I have built innovative approaches to qualify the accuracy, affordability and feasibility of indigenously built sensor-based network technologies for nationwide urban air quality monitoring and Real Time Source Apportionment (RTSA). This has enabled a paradigm shift by making it possible for the decision makers, climate researchers and environmental groups to access affordable and reliable air quality monitoring technologies over a wider and denser scale.

As the expert member, steering committee I have created an alliance of technical institutes (IITs, NITs and National Laboratories), National Knowledge Network (NKN), which will work with cities to meet National Clean Air Programme (NCAP) targets by creating capacity in air quality management at various levels.

My new study discovers the genesis of night-time air pollution. It provides mechanistic understanding of nanoparticles growth preceding severe haze pollution in Delhi, which is due to biomass burning emissions.

Professional Recognitions

- Sir M. Visvesvaraya Chair Professor, 2024-27.
- The Infosys Prize 2023 in Engineering and Computer Science.
- Fellow, Institute of Advanced Sustainability Studies, Potsdam, Germany, 2021-22
- J C Bose National Fellow, awarded by SERB, Department of Science & Technology, 2021-26
- Arjun Dev Joneja Faculty Chair, IIT-Kanpur, 2021-24
- Elected Fellow, Indian National Science Academy, 2020
- U.P. Ratna Award, Government of Uttar Pradesh, 2018
- Distinguished Alumnus Award, Banaras Hindu University, 2015
- Elected Fellow, The National Academy of Sciences, 2015
- Rajeeva and Sangeeta Lahri Chair Professor, 2015-18
- Elected Fellow, Indian National Academy of Engineering, 2015
- Shanti Swarup Bhatnagar Prize in Earth, Atmosphere, Ocean and Planetary Sciences, 2014

- Sir M. Visvesaraya Research Fellowship for excellence in teaching and Research, 2009-12
- NASA Senior Fellowship, 2009-10
- NASI-SCOPUS Young Scientist Award for highest citation in Earth Sciences, 2009
- All India Council of Technical Education, Young Teacher Career Award, 2003

Service to Community

64. Editor, Aerosol Science and Technology journal (AS&T) published by American association for aerosol Research, 2024 onwards.
63. Member, Academic Council, Shri Mata Vaishno Devi University, Jammu and Kashmir
62. Member, Board of Governance, Guru Ghasidas Vishwavidyalaya, Bilaspur
61. Member, Board of Governance, Rajkiya Engineering College, Ambedkar Nagar (U.P.)
60. Member, High - Powered Steering Committee, National Institute of Research and Application of Natural Resources to Transform, Adapt and Build Resilience (NIRANTAR), 2023-2025.
59. President, Indian Aerosol Science and Technology Association (IASTA) for Jan 2023-Dec 2025.
58. External member, Research and Development Board, Coal India Limited, June 2022.
57. Member of Committee on Sustainability of The Association of Academies and Societies in Sciences in Asia (AASSA), 2022.
56. Life Membership, South Asian Meteorological Association, 2022 onwards.
55. Editor, Transactions of INAE, the flagship Journal of Indian National Academy of Engineering, 2022 onwards.
54. Technical Advisor to Government of Telangana on Air Quality Management, 2021 onwards.
53. Member, Building and Works Committee, Indian Institute of Information Technology, Lucknow 2020 onwards.
52. Member, Research and Development subcommittee, Commission on Air Quality Management in National Capital Region and adjacent regions, Government of Uttar Pradesh, 2020 onwards.
51. Member, Indo-Finnish Working Group on Sustainability to explore new avenues for joint STI collaboration, Department of Science and Technology, 2020 onwards.
50. Member, National Committee for India-IIASA Programme, Technology Information, Forecasting and Assessment Council, Department of Science and Technology, 2020 onwards.
49. Coordinator, National Knowledge Network to National Clean Air Mission, Ministry of Environment, Forest & Climate Change (MoEFCC), 2020-24.
48. Member, Programme Advisory Committee (PAC) on Civil, Infrastructure and Transportation Engineering, SERB, Department of Science and Technology, 2020-23.

47. National Nodal Faculty, National Knowledge Network to National Clean Air Program, Ministry of Environment, Forest & Climate Change (MoEFCC), 2019-20.

46. Member, Technology Assessment Panel, India CEO Forum for Clean Air, Confederation of Indian Industries (CII), 2019.

45. Member, Expert Working Group to Review the Import and Export of Hazardous and other Waste, Ministry of Environment, Forest & Climate Change, 2019-20.

44. Member, Expert Committee of Climate Change Programme (CCP) under Strategic Programmes, Large Initiatives and Coordinated Action Enabler (SPLICE) for implementation of two national missions on climate change under Action Plan on Climate Change (NAPCC) viz (a) National Mission for Sustaining the Himalayan Ecosystem (NMSHE) and (b) National Mission on Strategic knowledge for Climate Change (NMSKCC), Department of Science and Technology, 2019.

43. Member, Committee to examine technological and regulatory issues relating to retrofitting of (i) older/petrol/diesel vehicles; (ii) older DG Sets less than 800 kW, Ministry of Environment, Forest and Climate Change, 2019.

42. Member, Scientific Advisory Committee (SAC), National Atmospheric Research Laboratory (NARL), 2019.

41. Member, Steering Committee, National Clean Air Program (NCAP), Ministry of Environment, Forest and Climate Change, 2019.

40. Member, Advisory Committee, International Conference on "Climate Change Impacts, Vulnerabilities and Adaptation: Emphasis on India and Neighbourhood, CCIVA 2019, Indian Institute of Technology, Kharagpur, 2019.

39. Member, Cloud Seeding Committee, Uttar Pradesh Government, 2018.

38. Member, Technical Expert Committee (TEC) for Petcoke and Alternative fuels, Ministry of Environment, Forest and Climate Change, 2018.

37. Member, International Advisory Committee, International Aerosol Conference, 2018.

36. Member, National Advisory and Technical Programme Committee, International Conference on Aerosol Climate Change Connection (AC3), Bose Institute, Darjeeling, April 25-27, 2017.

35. Member, Technical Programme Committee, Indian Aerosol Science and Technology Association (IASTA), conference on Aerosols and Climate Change: Insights and Challenges, PRL, Ahmedabad, December 6-8, 2016.

34. Member, Advisory Council of Mahamana Malaviya Research Centre for Ganga, River, Development & Water Resource Management, Government of India, 2016 onwards.

33. Expert member, Committee on Environment and Climate Change to review Central Sector Scheme and Centrally Sponsored Scheme, Ministry of Environment, Forest and Climate Change, Government of India.

32. Expert Member, Environmental Domain, MHRD's IMPRINT programme 2016 onwards.

31. Expert Member, MoWR's, Indian National Climate Change Committee, 2015 onwards.

30. Member, Institute International Relations Committee, 2015-16.

29. Session Convener, Indo-German Frontiers of Engineering Symposium, Potsdam, Germany, May 2014.

28. Session Chair, "Aerosol Characterization: Chemical" in 8th Asian Aerosol Conference, Australian Technology Part, Sydney, Australia, 2013.

27. Session Convener, Fifth Indo-American Frontiers of Science Symposium, Indo–U.S. Science and Technology Forum-U.S. National Academy of Sciences, Agra, India - April 7-10, 2013.

26. Member, National Advisory Committee, Cloud-Aerosol Interactions and Precipitation Enhancement Experiment (CAIPEEX), Ministry of Earth Sciences, 2008-13.

25. Evaluator, 'Atmospheric Brown Clouds' project administered by United Nation Environment Program, Bangkok, Thailand, 2012-13.

24. Alternate Member, Nanotechnologies Sectional Committee, MTD 33, 2011.

23. Member, High Level Working Group, Aerosol and Cloud Nucleation, India Meteorological Department, Ministry of Earth Sciences.

22. Member, National Fire Facility at Indian Institute of Technology-Kanpur.

21. Member, Geophysical Research Letter Editor Search Committee.

20. Member, National Steering Committee, Cloud, Aerosol and Precipitation Enhancement Experiment, Largest Project Ever Taken by Ministry of Earth Sciences.

19. Expert Member, DST Fast Track Scientist Committee.

18. Member, Publications Committee, American Geophysical Union, 2008-10.

17. Member, Editorial Board, Indian Journal of Aerosol Science and Technology.

16. Member, Executive Committee, Indian Aerosol Science and Technology Association.

15. Member, Science Team, Mars Orbiter Mission, ISRO Planex Programme.

14. Convener, Session on Climate effects of the atmospheric particle system: aerosols and clouds, Asia Oceania GeoScience Meeting, Bangkok, 2007.

13. Participated in Indo-US Frontier of Science and Technology Meeting held in New Delhi, India. October 2006.

12. Reviewer for DST and CSIR project proposals submitted for funding.

11. Participated in campaigns of national importance organized by ISRO; Land Campaign II over North India and Integrated Aerosol, Gases and Radiation Budget (ICARB) that covered land, sea and air segment.

10. Centre for Advanced Studies Fellow, Indian Institute of Technology, Banaras Hindu University, Varanasi.

9. Member, Steering Committee, ISRO Space Borne Lidar Project.

8. Member, Steering Committee (Cloud Studies), CTCZ experiment Department of Science and Technology, Govt. of India.

7. Member, Indian Association for Aerosol, Science and Technology.

6. Member, American Geophysical Union.

5. Reviewer for Journal of Geophysical Research, International Journal of Remote Sensing, Atmospheric Sciences, Atmospheric Environment, Geophysical Research Letters, Atmospheric Research, Atmospheric and Terrestrial Physics. Current Science, Aerosol Science and Technology, Tellus B, Space Science Review, Journal of Applied Meteorology, United Nations Environment Programme, Planetary and Space Science, Advances in Space Research.

4. Executed four projects of Indian Space Research Organisation (ISRO), DST and AICTE; three projects, sponsored by DST and ISRO are ongoing. Total research funding till date: 500 Lakhs.

3. Panelist, Workshop on Nanoparticles: Science and Technology, organized by Indian Institute of Technology-Bombay under the auspices of Indo-US Forum.

2. Member, Technical committee, Asian Aerosol Conference, Mumbai, December, 2005.

1. Convener, Technical (Indian Aerosol Science and Technology Association- IASTA Aerosol, Clouds and Indian Monsoon International Conference), Kanpur, November 2004.

Other Recognitions

- Member, Advisory Board of Journal, Environmental Science: Atmospheres, Royal Society of Chemistry, 2021-2023.
- Member, Editorial Advisory Board, Environmental Science & Technology Letters, 2020 onwards.
- Member, Scientific Advisory Committee (SAC), National Atmospheric Research Laboratory (NARL), 2019 onwards.
- Associate Editor, Journal of Indian Geophysical Union, 2018 onwards.
- Expert member, Committee on "Aerosol, Radiation and Trace Gases", NARL, Gadanki, 2018 onwards.
- National Coordinator, Department of Science and Technology's, National Network Programme on Climate Change and Aerosol, 2018-21.
- Member, Research Council of CSIR-National Environmental Engineering Research Institute, 2017-20.
- Member, Editorial Board, Journal of Aerosol Science, 2016-19.
- Member, Advisory Board of Environmental Science: Processes & Impacts - A Royal Society of Chemistry Publication, 2016-18.
- Academic Editor (member of the Editorial Board) of PLOS ONE (2014)

Administrative Experience (IIT-Kanpur)

18. Dean, Kotak School of Sustainability, IIT Kanpur, 2024-2027

17. Chairman, Udghosh, IIT Kanpur Main Festival, 2022

16. Head, Department of Civil Engineering, 2018-2021

15. Coordinator sustainable habitat theme of Vishwajeet proposal prepared by Institute, 2017

14. Member, Institute Information Cell (IC), 2016-2017

13. Coordinator, Centre for Environmental Science and Engineering, 2014-2017

12. Member, Senate Library Committee, 2013-2014

11. Organizer, Alumni Seminar Series, Department of Civil Engineering, 2012-2013

10. Coordinator, Academic Senate, IIT-Kanpur, October 2012 to October 2013

9. Member, Advisory Committee of Centre for Environmental Science and Engineering, 2011-2012

8. Member, DPGC, Environmental Engineering & Management Programme, 2012-2014.

7. Member, Institute Research Development Committee, 2010-2012

6. Faculty In charge, Computer Laboratory, Department of Civil Engineering, 2008-2009

5. Warden-in Charge, Hall V, March 2008-June 2008.

4. Warden, Hall V, March 2005- February 2008

3. Convenor, DPGC Environmental Engineering & Management Programme, 2004-2005, 2005-2006 and 2011-2012

2. Organiser, Almuni Seminar Series, Department of Civil Engineering, 2003-2004

1. Member, DUGC, 2003-2004, 2012-2014

Thesis Supervision

(a) Ph.D. supervised

19.	Ashutosh Shukla	2024	Source apportionment using UMR and PMF and network analysis ***Current position:*** University of California, Davis, USA
18.	Manish Kumar	2024	Understanding Deposition, Resuspension and Cloud Formation Potential of Aerosols in Context of Severe Nuclear Accident ***Current position:*** *Assistant Professor* TKIET, Shree Warna Vibhag Shikshan Mandals, Warana University, Warananagar, Kolhapur, Maharashtra
17.	Suneeti Mishra	2024	New Particle Formation and Particle growth study in the Delhi NCR(India) with connection to Haze Formation. ***Current position:*** Post doctoral fellow, PSC, Paul Scherrer Institute PSI
16.	Vipul Lalchandani	2023	Chemical characterization of particulate matter, and understanding organic aerosol sources and evolution at downwind location of Delhi during winter season. ***Current position***: Research Fellow, School of Geography, Earth and Environmental Sciences, University of Birmingham

15.	Gaurav Mishra	2021	Growth characteristics of cesium compound aerosols under various saturation conditions. ***Current position***: Research Scientist, IRSN, Institut de radioprotection et de sûreté nucléaire, France
14.	Kunal Ghosh	2021	Role of ion in aerosol microphysical processes (modeling and experimental studies). ***Current position*** Current Position: Research Scientist, University of Leeds
13.	Navaneeth M. Thamban	2021	Evolution of size, composition and mixing state of carbonaceous aerosols in Indo-Gangetic Plain. ***Current position*:** Postdoctoral Fellow, University of Manchester, UK
12.	Anil Kumar Mandariya	2021	Impact of ambient relative humidity on the growth and evolution of organic aerosol. ***Current position*:** Postdoctoral, CESAM Chamber, CNRS - LISA, Créteil, France
11.	Anubhav Dwivedi	2020	Experimental and numerical study on micro-physical properties of aerosols and its behaviour under varying thermal-hydraulic conditions. ***Current position*:** Postdoctoral Fellow, Aarhus University, Denmark
10.	Manish Joshi	2018	Formation and evolution characteristics of nuclei mode particles in dense atmospheric and confined aerosol environments. ***Current position*:** Scientific Officer 'E', BARC, Mumbai
9.	Shamjad P.M.	2017	Impact of carbonaceous aerosol absorption and mixing state on direct radiative forcing in Kanpur-India. ***Current position*:** Postdoctoral Fellow, Clean Combustion Research Center, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia
8.	Chandan Sarangi	2017	Understanding aerosol-surface-cloud-rainfall interactions within Indian summer monsoon region. ***Current position*:** Assistant Professor, Department of Civil Engineering, Indian Institute of Technology-Madras
7.	Abhishek Chakraborty	2016	Fog and organic aerosols interactions: processing, sources, and composition. ***Current position*:** Assistant Professor, Centre for Environmental Science and Engineering, Indian Institute of Technology-Bombay, Mumbai
6.	Deepika Bhattu	2016	Effect of aerosol size, chemical composition, mixing state and volatility on cloud condensation nuclei activity in the ambient atmosphere. ***Current position*:** Assistant Professor, Indian Institute of Technology- Jodhpur
5.	Chiranjib Chaudhari	2015	Characteristics of historical climate change over Indo- Gangetic basic: Observational analysis and numerical modelling. ***Current position*:** Postdoctoral Researcher, Wilfrid Laurier University, Ontario, Canada
4.	Daya Shankar Kaul	2014	Understanding the formation of organic aerosol in urban environment during foggy and non-foggy episodes. ***Current position*:** Assistant Professor, SoT, PDP University, Gujarat
3.	J. Jaidevi	2012	Effects of fine particulate matter on human health and climate. ***Current position***: Assistant Professor, IITRAM, Ahmedabad

2.	Sumit Kumar Mishra	2011	Numerical estimation of optical properties of pure and polluted mineral dust particle. ***Current Position***: Scientist, Radio and Atmospheric Sciences Division, National Physical Laboratory, New Delhi
1.	Sagnik Dey	2008	Aerosol radiative effects in Kanpur in the Indo-Gangetic basin, northern India. ***Current position*:** Associate Professor, Institute Chair, Department of Centre for Atmospheric Sciences, Indian Institute of Technology- Delhi and Faculty, Centre of Excellence for Research on Clean Air (CERCA), IIT Delhi

(b) Ongoing Ph.D students

Sr. No	Name	Title
7.	Suman Kumar Suman	Investigation of air quality impacts using portable sensor network
6.	Rachna Devi	Investigation of air quality impacts using portable sensor network
5.	Neha Sinha (Jointly with Dr. Deepika Swami, Department of Sustainable Energy Engineering)	Effect of climate change on critical infrastructure
4.	Akanksha	Dynamic hyper source attribution of PM2.5 using hybrid method that combines sensors, real time chemical speciation and radiocarbon isotopic measurements
3.	Himadri Sekhar Bhowmik	Source apportionment using high end online instruments
2.	Vaishali Jain	Chemical characterization and source appointment of aerosols using real time instruments
1.	Sidyant Kumar Rao	Shock Induced Secondary Atomization ***Current position:*** Assistant Professor, KLS GIT, Belagavi, Maharashtra

(c) M.Tech thesis supervised

Sr.No.	Name	Year	Title/Current Position
38.	Apoorva	Cont.	Source apportionment study on a mobile platform
37.	Kartikay Singhal	Cont.	On spot source apportionment using sophisticated instruments and portable sensors across different source categories in a city.
36.	Aseem Dubey	Cont.	Analysis of PM 2.5 data of UP and Bihar.
35.	Saurabh Kumar Maurya	2024	Optimization of sensor deployment across road networks
34	Nishant Ajnoti	2023	Hybrid Instruments Network Optimization for Air Quality Monitoring

33.	Ayush Nagal	2021	Robust Statistical Calibration and Characterization of Portable Low-Cost Air Quality Monitoring Sensors
32.	Saurabh Kukreti	2020	Impact of variability in initial and boundary conditions of meteorology on the simulated particulate matter concentrations over Delhi during winters using WRF-Chem
31.	Pratapaditya Ghosh	2020	Understanding the non-local and local contributions during a high $PM_{2.5}$ loading winter episode over the megacity of Delhi using WRF-Chem
30.	Shubham Naresh	2019	Spatial and temporal variability in ionic and metal composition of PM2.5, across five sites of Gangetic plain; seasonality in secondary inorganic aerosol and preliminary source apportionment. *Current position*: Environmental Engineer, THDC India Limited, Rishikesh, Uttarakhand
29.	Himadri Sekhar Bhowmik	2019	Inter and Intra seasonality in carbonaceous species (EC, OC) of PM2.5 aerosol over five sites of Indo-Gangetic plain, preliminary source apportionment and case study on multi-day regional SOA formation during winter at Faridabad. ***Current position***: Pursuing Ph.D under my guidance in Department of Civil Engineering, Indian Institute of Technology-Kanpur
28.	Saad Ahmed	2018	Application of microwave radiometer in now casting of convective activity. ***Current position***: Senior Engineer, Tata Consulting Engineers, Noida
27.	Mithun Krishnan K.V.	2017	Seasonal dynamics of surface energy balance over a semi-natural grass land in central Indo-Gangetic Basin.
26.	Geet George	2017	Characterisation of cloud vertical structure (CVS) and cloud radiative forcing (CRF) over Kanpur. ***Current position*:** Ph.D Student, Max Planck Institute for Meteorology, Hamburg, Germany
25.	Bhuvana Joshi	2016	Real time size resolved analysis of organics in Kanpur city: A comparative study between fog and no-fog periods. ***Current position*:** Assistant Professor - Civil Engineering, Govt. Engineering College, Banswara, Rajasthan
24.	Kuntamukkala Pavan Kumar	2016	Black carbon aerosol microphysical properties variation and electron microscopy study of PM205 in Kanpur. ***Current Position*:** Software Engineer at Tech Mahindra Pune, Maharashtra
23.	Tirthankar Chakraborty	2015	Understanding urban micrometeorology and its impact on the heat island of greater Kanpur. ***Current Position*:** PhD student, Yale University, USA.
22.	Kundan Kumar	2015	Aerosol Direct Radiative forcing over Indo-Gangetic basin during pre-mansoon season using WRF-CHEM. ***Current Position*:** Assistant Executive Engineer, Office of the Panchayat Raj Superintendent Engineer, Panchayat Raj Circle Adilabad, Tilangana

21.	Vipul Lalchandani	2014	The need for site-, season- and instrument-specific calibrations of a photo-reference method for determining aerosol Black Carbon concentrations and examining color signal of Organic carbon particles. ***Current Position*:** Pursuing PhD under my guidance in Department of Civil Engineering, Indian Institute of Technology-Kanpur
20.	Amit Sharma	2014	Assessing health impact of Particulate Matter using Weather Research Forecasting-Chem model over IG Basin. ***Current Position*:** Ahmedabad
19.	Anubhav Dwivedi	2013	Investigation of activation kinetics of laboratory generated and ambient particles ***Current Position*:** Postdoctoral Fellow, Aarhus University, Denmark
18.	Rosalin Dalai	2013	Role of aerosol type and mixing state on CCN activity ***Current Position***: Indian Institute of Technology-Bhubaneswar
17.	Shamjad P.M.	2011	Hygroscopicity, mixing state and enhanced absorption of aerosols. ***Current Position***: Postdoctoral Fellow, Clean Combustion Research Center, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia
16.	Priya Choudhry	2011	Validation of MODIS-retrieved AOD over Indo-Gangetic Plain. ***Current Position***: Group Engineer at SNC-Lavalin Atkins, Bengaluru, Karnataka
15.	Monika Srivastava	2011	Aircraft-based CCN Closure ***Current Position*:** BBD University, Lucknow
14.	Pawan Kumar Bharti	2010	A study of inter and intra variation seasonal of surface Cloud Condensation Nuclei and chemical closure in Kanpur *Current* ***Position*:** SIDBI, Ludhiana
13.	Vishnu Patidar	2009	First surface, spatial and vertical measurements of Cloud Condensation Nuclei (CCN) over Indian CTCZ region. ***Current Position***: Environmental Engineer
12.	Jariwala Chinmay G.	2009	An observational and laboratory study on the effects of Cloud Condensation Nuclei and black carbon aerosol on fog persistence. ***Current Position*:** Environmental Engineer, Dar AL-Handasah, Pune
11.	Vivek Pratap Singh	2008	An experimental investigation of the effects of environmental and fog condensation nuclei parameters on rate of fog dissipation. ***Current Position***: Engineer, Manali
10.	Sanjay Prakash Baxla	2008	A study of ambient ultra-fine aerosols using SMPS. ***Current Position*:** Sr. Process Design Engineer at SS GAS LAB ASIA PVT LTD, New Delhi
9.	Anirban Roy	2008	Measurement and simulation of particulate aerosols. ***Current Position:*** Post-Doctoral Researcher, Department of Mechanical Engineering, Carnegie Mellon University, USA
8.	Anilkumar D. Vanga	2007	A numerical study of new particle formation in cirrus cloud. ***Current Position*:** Engineer, Jones Lang LaSalle, Mumbai

7.	Sudip Chakraborty	2006	Long term changes in surface and columnar water vapor over North India. ***Current Position*:** Research Scholar, NASA Jet Propulsion Laboratory, Defense & Space, Pasadena, CA
6.	Abani Patnaik	2006	Climatology of cloud and aerosol over the Indian subcontinent and adjoining oceans. ***Current Position*:** Offshore Structural Engineer, L&T, Mumbai
5.	Roma Srivastava	2006	Study of trace gas concentration over Kanpur region. ***Current Position*:** Lecturer, Hindustan College of Engineering, Agra
4.	Parul Sharma	2006	Study of aerosol chemical composition over Kanpur region. ***Current Position*:** Sr. Director (HTEM) at Fraud and Identity, Lexis Nexis Risk Solutions, Milpitas, California
3.	Tanveer Ahmed	2005	Charging of radioactive aerosols containment wall of pressurized water reactor. ***Current Position*:** Data Scientist, Enterprise Intelligent Automation Practice, Tata Consultancy Services - North America
2.	Nagesh Chinnam	2005	Analysis of ambient particles by high volume sampler and PM10.
1.	Shyam Kishor	2005	Investigation into seasonal and diurnal formation of atmospheric nitrate.

(d) Dual Degree B. Tech-M. Tech thesis supervised

Sr.No.	Name	Year	Title/Current Position
5.	Bharath Kumar	2015	Source Apportionment of Sub Micron Aerosol Over Kanpur. *Current position*: Business Analyst, ZS Associates, Gurgaon
4.	Karn Vohra	2015	A chamber study to understand aerosol deposition phenomena. *Current position:* PhD Scholar in Environmental Health Sciences at University of Birmingham, UK
3.	Alabhya Mishra	2014	Electrical properties of Titan and Earth Atmospheres. *Current position*: Associate at BlackRock Bengaluru, Karnataka
2.	Arun Yadav	2013	An evaluation of WRF-Chem model over the Indian Domain *Current position*: Flipkart, Bangalore
1.	Akhilesh Rawal	2012	Study of ion-aerosol near-cloud mechanism to explain cosmic raycloud-climate conundrum *Current position:* Consultant at Boston Consulting Group (BCG), India

(e) B. Tech- project supervised

Sr.No.	Name	Year	Title
5.	Praveen/Naveen	2007	A study of effects of black carbon on cloud microphysical properties using a two-dimensional cloud model
4.	Nikhil/Gaurav	2006	Retrieval of aerosol organic carbon obtained due to biomass burning from various locations of the world.
3.	Shiwesh/Sameer	2005	Parameterization of collision efficiency between of electrically charged aerosol particles and cloud of droplets.
2.	Ashwyn/Sandip	2005	Numerical investigation of atmospheric fogs.
1.	Abhishek/Chandel	2004	Comparison of satellite derived aerosol parameters with ground measured data over Gangetic Basin.

Publications

233. Spatio-temporal Forecasting of PM2.5 via Spatial-Diffusion Guided Encoder-Decoder Architecture with Malay Pandey, Piyush Rai, S.N. Tripathi et al., 2024 accepted for publication in ACM

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Teaching Experience and Courses Offered (Indian Institute of Technology-Kanpur)

- Earth and Environment (Two times, Post Graduate Level, Class Size 15)
- Atmospheric Physics and Chemistry (Three times, PG Level, Class Size 25)
- Fate and Transport of Contaminants in Natural Systems (Two times, PG Level, Class Size 10-50)
- Environmental Quality and Pollution (Three times, Under Graduate Level, Class Size 60-80)
- Computational Methods in Engineering (Four times, Under Graduate Level, Class Size 160-400)
- Advanced Mathematics for Civil Engineers (Three times, Numerical Methods Module, Class Size 55-70)
- Modeling of Natural Systems (Two times, PG Level)
- Co-Taught Air Pollution and its Control (Once, Post Graduate Level, Class Size 30)

Courses Tutored

- Computational Methods in Engineering (Five Times)
- Mechanics of Solid (Four times)
- Fluid Mechanics (Twice Times)

Organizational Achievements

2. The Summer School on ‘Sustainable Cities’ was held at Indian Institute of Technology-Kanpur organized by Centre for Environmental Science and Engineering from June 2nd-27th, 2013 in collaboration with Univ. of Minnesota, Georgia Tech, NAE, Yale, NCAR and Univ. Colorado sponsored by USAID and NSF. The school was attended by more than 30 students and Scientists from IITs, collaborators Universities, ROI and ICLEI etc.

1. An invited DST Training School on ‘Aerosol-Cloud Interaction’ was held at Indian Institute of Technology-Kanpur from 7th-15th March, 2009.The school was attended by more than 25 students and scientists from various IITs, Universities and research laboratories such as NPL, SPL, IITM, IMD etc.

Workshops/Symposia Organized

17. Organized workshop on theme of Smart Transportation for Reducing Emissions and Congestion in Indian Cities (STREC), in NCR (IIT Kanpur Outreach Center) NOIDA on July 20, 2024.

16. Organized a 'A Brainstorming Workshop on Sustainable Cities", March 9, 2024, National Aerosol Facility (NAF), IIT Kanpur.

15. Organized Indian Aerosol Science and Technology Association Conference, in Hotel Vivanta, Navi Mumbai during December 12-14, 2023.

14. Organized an online training program on Air Quality Management during February - March 2022, funded by World Bank.

13. Organized North Indian Air Pollution meeting on Zoom, 23-24 August 2020.

12. Organized IITK-UPPCB workshop on “National Knowledge Network (NKN) to support National Clean Air Programme”, Indira Gandhi Pratishthan, Lucknow on October 14-15, 2019.

11. Organized IITK-PSI workshop on “Early Results from Delhi Air Quality Experiment 2017-18 and Future Forward”, India International Centre, New Delhi on October 26-27, 2018.

10. Organized a DST meeting as National Coordinator for “National Network Programme on Aerosol (NNP-A) under Climate Change Programme of DST at Indian Institute of Technology Delhi on October 23, 2018.

9. Organized IITK-MoES workshop on “Real-time Nationwide Low-Cost Sensor Network for Air Quality Monitoring” held at Ganga Auditorium, Indira Paryavaran Bhavan, Ministry of Environment, Forest and Climate Change, New Delhi on August 29, 2018.

8. Organized DST-UKIERI workshop on “An Introduction to Earth Observation Techniques: Applications to the Land and Atmosphere” held at Indian Institute of Technology Kanpur from March 26-28, 2018.

7. Organized DST National Workshop on “Aerosols: Science and Application” as part of proposed ‘National Network Programme on Climate Change and Aerosols’ held at Indian Institute of Technology-Kanpur, May 11-12, 2017.

6. Organized DBT-RCUK Workshop: Biological solution to reducing industrial waste, environmental inefficiency and pollution in India, organized by Centre for Environmental Science & Engineering (CESE), Indian Institute of Technology-Kanpur, March 21-23, 2017.

5. Organized Theme Meeting on Aerosol Behavior Studies in a Nuclear Reactor under Severe Accident Conditions held at Indian Institute of Technology-Kanpur, February 23-25, 2016.

4. Organised Indo-US workshop on ‘Sources of Environmental Pollution in India: The influence of Municipal Solid Waste and Biomass Burning on Air Quality and the Microbiome of the Ganges’ held at Indian Institute of Technology-Kanpur, October 25-26, 2015.

3. Organised IITK-Archaeological Survey of India Joint workshop on ‘Study of Impacts of Atmospheric Haze on Taj Mahal Monument’ under Indo-US Science and technology forum at Indian Institute of Technology-Kanpur, February 17, 2012.

2. Co-Convenor of Tiger-Z (Indo-NASA Joint Field Experiment) workshop held at Indian Institute of Technology-Delhi, January 7-8, 2009.

1. Co-Convenor of biennial conference of Indian Aerosol Science and Technology Association, International Conference on ‘Aerosol, Clouds and Indian Monsoon’ held at Indian Institute of Technology-Kanpur, November 15-17, 2004.

Plenary/invited Speaker

158. Invited talk at “Air Quality Challenges in Indian Cities", Rajasthan Technical University, Kota, March 27, 2024, titled “Clean Air For Breathable and Livable Cities”.

157. Invited talk at, INAE Workshop on “Sustainability in Water and Environment", IIT BHU, February 26-27, 2024, titled “AI and Data Driven Approaches to Secure Clean Air for Sustainable Cities”.

156. Keynote address at National Environmental Conference February 15-17, 2024, IIT Bombay. Talk titled “AI and Data Driven Approaches to Secure Clean Air for Sustainable Cities”.

155. Keynote Speaker at International Conference on Climate Change and Agroecosystem: Threats, Opportunities and Solutions (INAGMET-2024), BHU, February 8-10, 2024. Talk tiled “Clean Air for Sustainable Agriculture: Air Pollution as a Major Threat to Food Security”.

154. Invited speaker at INFOSYS PRIZE 2023 - WINNERS' SYMPOSIUM - EDITION III, 12th January, 2024. Taj West End Hotel Bangalore. Talk titled "Clean Air Technologies for Sustainable Policies & Improved Public Health".

153. Invited speaker at Airshed Modelling for Air Quality Management, 04 December 2023, Delhi

152. Invited talk titled "Opportunities For Researchers To Support Air Quality Action" at National Consultation on Air Pollution and Health in India, AIIMS New Delhi, November 17, 2023,

151. Delivered a talk titled Sustainable and Scalable Technologies for Air Quality Monitoring at Sustainable and Emerging Technologies for Food Safety and Environmental Toxicology (SET-FEST), October 12-13, 2023, Lucknow.

150. Invited talk on "Scientific & Technological Contributions and Capacity Building Under NCAP", Golden Jubilee Celebration of West Bengal Pollution Control Board, September 22, 2023.

149. Invited talk titled "Clean Air and Water For Sustainable Future" at World Environment Day, IISER Kolkata, June 05, 2023

148. Invited talk titled "Clean Air and Water For Sustainable Future", Research Scholars' Day 2023, Department of Sustainable Energy Engineering, IIT Kanpur, 01 June 2023

147. Delivered talk at Aakash Project 2023 Workshop in Delhi, titled "Nationwide Air Quality Monitoring Combining Sensors Plus Satellite Images with AI & ML", March 28-29, 2023, India Habitat Centre, Lodhi Road, Delhi

146. Invited speaker at Regional (East) Meet of Institutes of Repute Associated with NCAP: Convergence of Knowledge, Institutional Capacity and Infrastructure Building, titled "Nationwide Air Quality Monitoring Combining Sensors Plus Satellite Images with AI & ML", March 24 and 25, Hotel Chanakya, Patna.

145. Delivered talk at Maharashtra Prathamik Shikshan Parishad (MPSP), titled "Scalable and Affordable Solutions for Hyperlocal Monitoring, Source Attribution and Source Control", March 18, 2023.

144. Delivered an invited talk at Indian Physics Association (IPA), Prof. P. A. Pandya Endowment Lecture, titled "Nationwide Air Quality Monitoring Combining Sensors Plus Satellite Images With AI & ML", March 14, 2023, IIT Kanpur.

143. Delivered a Keynote talk titled "Nano particles night time growth: Implications to Haze and Climate" in the international symposium, Nano -2023 (March 13-14) in Hyderabad.

142. Delivered a talk, titled, "Combining Sensors plus satellite images with AI&ML for Nationwide Air Quality Monitoring" at One-day symposium on "Demystifying UNFCCC Conference of Parties (CoP) - International Negotiations vs Local Climate Action", 02 March 2023, IIT Kanpur.

141. Delivered a lecture titled “Real-time Source Apportionment Using Advanced Instruments” at Winter School on Hands on Training on Instrumentation and Analytical Techniques, Central University of Jammu, 20 - 25 February 2023.

140. Invited talk titled “Hybrid Technologies for Monitoring Particulate Matter, Source Attribution and Health Impacts at Scale” at Air Quality in Mumbai- A Consultative Stakeholder Workshop, 12 January 2023, Mumbai.

139. Invited speaker at Institute Research Symposium (IRS'23), titled talk “Hybrid Technologies for Monitoring Particulate Matter, Source Attribution and Health Impacts at Scale”, January 07-08, 2023, IIT Kanpur.

138. Delivered a talk titled “Nation Wide Sensor Based Monitoring and Source Attribution” at UKRI India/NERC Low-Cost Environmental Monitoring (LEMS) Workshop , December 14-15, 2022

137. Delivered a talk titled “Changes in Atmospheric Composition: Implication to Global and Regional Climate and Atmospheric Chemistry” at SUMANGALAM PANCHAMAHABHOOT, International conference series on VAYU: THE VITAL LIFE FORCE, December 3-4, 2022, Siksha ‘o’ Anusandhan (SoA) university, Bhubaneswar.

136. Delivered talk titled “Hybrid Technologies for Monitoring Particulate Matter, Source Attribution and Health Impacts at Scale, Environment and Sustainability Event ,Indian National Science Academy, Delhi, November 6-8, 2022

135. Delivered a talk titled “Scientific and Technological Solutions for Clean Air” at a symposium on “India’s Sustainable Future: Challenges and Opportunities vis-à-vis Global Perspectives” organized by Chandrakanta Kesavan Center for Energy Policy and Climate Solutions, IIT Kanpur, October 12, 2022

134. Invited talk titled “Nationwide sensor-based air quality monitoring: From laboratory to field deployments”, at RSC-IITM Desktop Seminar on Environmental Sciences, 11-12 Oct, 2022, organized by Royal society of Chemistry, Environmental Science Journal (RSC) and IIT Madras.

133. Delivered lecture titled “Clean Air for the Sustainable Future” at Recent Advances in Environmental Engineering towards Sustainability (10-14 Oct, 2022), organized by National Institute of Technology, Patna.

132. Delivered a Keynote talk titled “Capacity Building And Technology Development By Universities In India’s Clean Air Program” at “Friday Colloquium Series at CSIR-NPL, New Delhi, Oct 07, 2022.

131. Invited speaker at “Tech for Impact -Bharat” 2022 meeting organized jointly by Principal Scientific Advisor Office Principal Scientific Adviser to GoI and NIAS, Bengaluru, September 12, 2022

130. Invited speaker at Air Sensors International Conference (ASIC), Bangalore, titled “Journey of Sensor Based Air Quality Monitoring in India”. August 26, 2022.

129. Delivered a talk titled “Role of National Clean Air Program (NCAP) in Tackling Air Pollution” Storytelling for Environmental Change: Tackling Air Pollution in the World’s Most Polluted City, Jamia Millia Islamia, New Delhi, 22-23 August 2022.

128. Invited talk titled “Capacity Building and Technology Development by Universities and Research laboratories In India’s Clean Air Program Capacity Building Workshop on Air Action Plan, August 22,2022

127. Invited Speaker at an online conference “Advancing Environmental Innovations In India, Insights from Experimental Research, July 22, 2022, hosted by Energy Policy Institute at the University of Chicago.

126. Invited talk at Max Planck Institute for Chemistry, Mainz, titled “Capacity Building And Technology Development By Universities In India’s Clean Air Program”, July 14, 2022

125. Invited talk in Azadi ka Amrit Mahotsav, 75 lecture series, Indian Council of Agriculture Research, titled “Capacity Building and Technology Development by Technical Institutions in National Clean Air Program”, July 13, 2022.

124. Delivered the scientific talk at TROPOS, Leibniz Institute for Tropospheric Research, Germany, on “Capacity Building and Technology Development by Universities In India’s Clean Air Program”, July 11, 2022.

123. “Hybrid Air Quality Monitoring Network”, National Air Quality Resource Framework (NARFI), June 22, 2022, IIC, New Delhi

122. Invited talk titled “Hyper Local Air Quality Monitoring And Source Attribution In Cities Of Lucknow And Kanpur, Advisors and Influencers round table, June 06, 2022, IIT Kanpur

121. Invited talked titled “Achieving clean air goal in sustainable Indian Cities”, Webinar on Air quality management and sustainability June 03, 2022, Dayal Bagh Educational Institute, Agra

120. Invited talk titled “Capacity Building and Technology Development by Universities in India’s Clean Air Program”, National workshop on “Air Pollution and Health Impacts” (Need of interdisciplinary Research), June 01, 2022, Department of Environmental Sciences, Central University of Jammu.

119. Invited talk in a Consultation Workshop on” Implementing ICCC as a Service model in cities” at India Habitat Centre (New Delhi), December 15, 2021.

118. Keynote talk titled, “Precipitation in Himalayas: Role of Aerosols and Orography” in Workshop on Himalayan Biosphere-Atmosphere-Hydrosphere Interactions: Status, Challenges, and Way Forward Under National Mission on Himalayan Studies (NMHS), MoEFCC, GoI, G. B. Pant National Institute of Himalayan Environment (GBPNIHE), Almora, Uttarakhand, December 14, 2021.

117. Invited Talk on Sensor Based AQ Network in India, US Environment Protection Agency, October 26, 2021.

116. Invited Talk on New Technologies to Measure Air Pollution and its Sources, Air Pollution: Facts to Act, Lucknow, September 29, 2021.

115. Plenary Talk on Sources, processing and impacts of atmospheric haze over Indo Gangetic Plains (IGP), Frontiers in Geoscience Research Conference, PRL, September 28, 2021.

114. Invited Talk on Assessment of Low-Cost Sensor based PM2.5 and PM10 Monitoring Network in Maharashtra, Third India Air Quality Convening, September 27, 2021.

113. Invited talk on “Formation, composition and, the evolution of Secondary Organic Aerosols (SOA) during the winter periods in Indo-Gangetic Plain, Joint Research Centre, European Commission, September 24, 2021.

112. Low-cost sensor-based air quality monitoring networks, Capacity development programme on air quality management and emission reduction of PM 2.5 for Asian countries, Regional Resource Center for Asia and the Pacific (RRC.AP), Asian Institute of Technology, Bangkok, September 13, 2021.

111. Advanced monitoring technologies and Capacity Building to Support India's Clean Air Program, Institute of Advanced Sustainability Studies, Potsdam, September 07, 2021.

110. Advanced Technologies to help Clean Air Program, Tata Steal, September 07, 2021.

109. Invited talk titled, “Capacity Building for Air Pollution Control in India” on National Knowledge Network under NCAP, Air Pollution Webinar, (January 20, 2021).

108. Invited talk titled, “Air Pollution Monitoring and Analysis in India”, Symposium on Air Pollution Measurement and Analysis Systems (APMAS) Global Perspectives and Approach for India, Webinar organized by the Indian Institute of Technology Delhi and the World Bank (January 15-20, 2021).

107. Invited talk titled “Capacity Building for Air Pollution Control in India”, Symposium on Air Pollution Measurement and Analysis Systems (APMAS) Global Perspectives and Approach for India, Webinar organized by the Indian Institute of Technology Delhi and the World Bank (January15-20, 2021).

106. Invited talk titled “Particulate Matter and Gas Sensors Calibrations” in online Technical Exchange on Mainstreaming of New Air Quality Sensor Technologies, Webinar organized by Department of Environmental Health (December 16, 2020).

105. Plenary talk “Scaling of sensor-based monitoring, real time source apportionment and capacity building under the National Clean Air Mission”, webinar on Fifth Indian International Conference On Air Quality Management (IICAQM 2020), jointly organized by Department of Civil Engineering, IIT Madras, University of Bath (UK), Australian National University (Australia), and UFZ Helmholtz Centre for Environmental Research (Germany), (December 11, 2020).

104. Panelist and Speaker, Webinar on Source Apportionment and Emission Inventories studies in nonattainment cities in India, IIT Delhi (November 26, 2020).

103. Invited talk titled “Nation Wide Sensor- based Monitoring, Real time Source Apportionment and Capacity Building under the National Clean Air Mission, Webinar organized by Shakti Sustainable Energy Foundation (November 17, 2020).

102. Invited talk titled “Aerosols and it’s Impacts on Climate and Crop Yield” Webinar on Agriculture and Food Technologies and Mechanisms of adaptation to Climate Change, in collaboration with Department for International Cooperation of the Russian Academy of Sciences organized by CSIR National Botanical Research Institute, Lucknow (November 11, 2020).

101. Invited talk titled “Air Pollution-Land Use-Cloud Interactions: Impact on Climate Change, Agriculture, Hydrological Cycle, Human Health and Monumental Heritages” in Online Sustainability Seminar Series, webinar hosted by KPCSD, IIT Gandhinagar (November 9, 2020).

100. Invited talk titled “Sensor-based Streaming Analytics and Near-Real Time source Apportionment of Air Pollution” in Online International Conference on Aerosol Air Quality, Climate Change and Impact on Water Resources and Livelihoods in the Greater Himalayas, webinar hosted by ARIES Nainital (September 14, 2020).

99. Panel discussion on “Air Pollution Data and Science” in Confederation of Indian Industry (CII) 15th Sustainability Summit (September 10, 2020).

98. Invited talk titled, “Tracking Sources of Air Pollution in Real-Time” CERCA Webinar on the occasion of International Day of Clean Air for Blue Skies (September 7, 2020).

97. Invited talk titled, “Unraveling Tiny Monstrous Organic Aerosols: Key to Achieve Blue Skies and Improved Human Health” in ACS Science Talks: Virtual Lecture Series (August 28, 2020).

96. Invited talk tilted, “Importance and need for reliable and robust data for improving air quality” in India Clean Air Summit hosted by Center for Study of Science, Technology and Policy (CSTEP) (August 25, 2020).

95. Invited talk titled “Air Quality in New Delhi during the COVID-19 induced lockdown” in The Impacts of COVID-19 Lockdowns on India’s Air Quality, webinar hosted by World Bank and NCAP Knowledge Network, (July 28, 2020).

94. Invited talk titled “Published results of Air Quality Experiment in Delhi”, meeting organized by Global Strategic Communications Council (GSCC), (July 23, 2020).

93. Invited lecture titled “Implementation of National Clean Air Programme” in National Clean Air Program, Princeton University's first annual conference on Global India, Princeton University (USA, March 27, 2020).

92. Invited talk titled, “Combination of dynamic real-time source apportionment and low-cost sensors for air pollution reduction” in Earth Science Lecture Series, IIT Gandhinagar (Ahmedabad, January 6, 2020).

91. Invited talk titled, “Development and adoption of low-cost sensor-based nationwide air quality monitoring networks” in Workshop Brainstorming Session on Low-cost Sensor based Real-time Air Quality Monitoring with advances in IoT, Machine Learning and AI, Prithvi Bhavan, India Habitat Centre (Delhi, January 2, 2020).

90. Invited talk titled, “Air Quality Improvement through Dynamic Source Apportionment” in 4th Indian International Conference on Air Quality Management, IIT Bombay (Mumbai, December 19, 2019).

89. Invited talk titled, “Dynamic Source Apportionment for Air Quality Improvement” in India CEO Forum for Clean Air at India Habitat Centre (New Delhi, December 17, 2019).

88. Invited speaker in the panel discussion on “Alignment of CSR with SDGs with sector focus on Air Pollution” in CII National CSR Summit, Hyatt Regency (New Delhi, December 12, 2019).

87. Invited talk titled, “Role of sensor technology in policymaking”, stakeholder consultation workshop on 'Low-Cost Air Quality Monitoring Sensors in India: Applications and Way Forward' organized by Shakti Sustainable Energy Foundation at Casuarina Hall, India Habitat Centre (New Delhi, August 7, 2019).

86. Keynote talk titled, “New initiatives to measure and understand air pollution in Northern India: Hybrid approach based on high end mass spectrometer and low cost sensors” in 6th SEE event on Air Pollution organized by IIT Kanpur and the Alumni Association of IITK (IIT Kanpur, January 10, 2019).

85. Keynote talk titled, “New initiatives to measure and understand air pollution in Northern India: Hybrid approach based on high end mass spectrometer and low cost sensors” in 3-Days International Conference on ‘Advanced Technologies for Industrial Pollution Control, (ATIPC - 2018)’ at Indian Institute of Engineering Science and Technology (IIEST), Shibpur (Kolkata, December 18, 2018).

84. Invited A collaborative project Streaming Analytics over Temporal Variables from Air quality Monitoring (SATVAM)to understand air quality in India and new learning of pollution sources in Gangetic Plains” in Evening Networking Reception with Duke faculty and conference delegates at Desire hotel Le Meridien (Delhi, December 13, 2018).

83. Invited talk titled, “Aerosol-cloud-rainfall interactions over India, in Indian Aerosol Science and Technology Association (IASTA), conference at IIT Delhi (Delhi, November 26, 2018).

82. Invited talk titled, “Urban and aerosol-induced short to long term changes in rainfall in Indian summer monsoon region and associated implications to climate” in 63rd Sir Albert Charles Seward Memorial Lecture, Birbal Sahni Institute of Palaeosciences (Lucknow, November 14, 2018).

81. Invited talk titled, “Current state of play of air pollution-challenges and gaps for cities of Lucknow and Kanpur” in National Workshop Scoping Study on Clean Air at Hotel Claridges (New Delhi, June 15, 2018).

80. Invited talk titled, “Delhi air quality experiment” in Stakeholder Consultation Workshop on NCAP organized by Ministry of Environment, Forest and Climate Change alongwith CPCB, World Bank and TERI at Ganga Auditorium, Vayu Wing, Indira Paryavaran Bhawan, JorBagh in (Delhi, April 18, 2018).

79. Invited talk titled, Aerosol-surface forcing-Rainfall associations over Gangetic Plains, in “National Conference on Recent Advances in Environmental Sciences, (NCRAES-2018)” at School of Environmental Science, Jawaharlal Nehru University in (Delhi, March 22, 2018).

78. Invited talk titled, Problem, measurement and sources- The air quality conundrum in DainikJagran Clean Air Conclave at Hotel Hilton Gargen In (Lucknow, February 17, 2018).

77. Invited talk titled, Sensor based technologies for air pollution monitoring in Technologies for management and abatement of air pollution at Ministry of Environment, Forest and Climate Change (Delhi, February 13, 2018).

76. Popular Lecture titled, The state of air pollution in Indo-Gangetic Plains and possible solutions, Dayalbagh Educational Institute, (Agra, December 22, 2017).

75. Invited talk titled, Cities Infrastructure & Sustainability cities in a training program as part of joint SRU- Clarkson-ICMR initiative to build capacities in the areas of Air Quality, Climate and Health, at the SRU-ICMR Center for Advanced Research, SRU (Chennai, December19-20, 2017).

74. Panelist, Washington University St Louis Forum on Energy, Environment and Agriculture at Leela Palace Hotel (New Delhi, December 15-16, 2017).

73. Invited talk titled, Aerosol-cloud-surface-radiation-rainfall-climate interactions over Indian Monsoon region, in "5th Rajasthan Science Congress" at Amity University, (Jaipur, October 13, 2017).

72. Invited talk titled, Aerosol-surface forcing-Rainfall associations over Gangetic Plains, in National Workshop on "Urban Climate: Science, impacts and Adaptation" at Indian Institute of Technology-Bhubaneswar (Bhubaneswar, September 21-22, 2017).

71. Invited talk titled, Aerosol impact on whether to climate scales over IG Basin: Results from observational and modeling based analysis, in International conference on Understanding, Predicting and projecting the Climate change over Asian Region (UPCAR), at S.V. University (Tirupati, June 26- 28, 2017).

70. Invited talk titled, Chemical properties of geoengineering aerosols, in National Roundtable Discussion on Geoengineering and India: Science and Policy, at Indian Institute of Technology-Delhi (New Delhi, June 23, 2017).

69. Keynote talk titled, 'Hygroscopicity-CCN-clouds and rainfall associations over Ganga Plains' at Wadia Institute of Himalayan Geology (Dehradun, May 18, 2017).

68. Lead talk titled, 'Direct and indirect effects of aerosols on radiative forcing and rainfall over Indo-Gangetic plains in International Conference on Aerosol Climate Change Connection (AC3) at Bose Institute (Darjeeling, April 25, 2017).

67. Invited talk titled, 'Scale and adequacy of monitoring needed in Indian cities', in Global Strategic Communications Council (GSCC) Air Quality Workshop at Juniper Hall, IHC (New Delhi, April 12, 2017).

66. Invited talk titled, 'Aerosol direct and indirect effects in Gangetic plains', in Brainstorming Meeting on Climate change research in India: Progress, challenges, opportunities and way forward, BHU (Varanasi, February 23, 2017).

65. Invited talk titled, 'Aerosol-Cloud-Surface-Radiation-Rainfall interactions over Indo-Gangetic Plains (IGP)' in Indo-Dutch International conference 'Climate and Atmospheric Sciences & Applications' at Indian Institute of Technology-Delhi (New Delhi, February 21, 2017).

64. Invited talk titled 'Aerosol pollution: Implications to health, economy and climate', INSPIRE-2017 Programme at Amity University (Lucknow, February 15, 2017).

63. Lead talk titled 'Air pollution sources in India: Measurement and latest findings' Workshop on Air Quality at Hotel Westinn (Varanasi, December 12, 2016).

62. Invited talk titled 'Coupling of aerosol-land-cloud-rainfall system over Gangetic Plains: Observations and modeling analysis" Indo-UK Water Center (IUKWC) workshop at IITM (Pune, November 30, 2016).

61. Invited talk titled 'Variability in aerosol properties, their direct and indirect effect over Gangetic Plains' Seminar at Centre for Ecology and Hydrology, UK (Wallingford, September 17, 2016).

60. Invited talk titled 'Air pollution sources in India: measurements and latest findings, Air Quality in Indian Cities at Taj Hotel (Lucknow, May 25-26, 2016).

59. Invited talk titled ‘Organic aerosols (OA) in Gangetic Basin: Composition, Chemistry, CCN, Radiative and health effects’, Workshop on biosphere-atmosphere interactions and impacts on climate and air quality and the iLEAPS SSC meeting in IISER, Mohali (Chandigarh, March 21, 2016).

58. Invited talk titled ‘Air pollution implications to health, climate, agriculture and economy’, Surya Roundtable Meeting on Climate Credit Pilot Project at India International Centre (New Delhi, March 15, 2016).

57. Invited talk titled ‘Aerosol's impact on health and climate of Gangetic Plain’, INSPIRE 2016 Programme at Amity University (Gwalior, January 21, 2016).

56. Invited talk titled ‘Smoke, Dust, and Haze: Implications to health, climate, and economy’, INAE Kanpur Chapter Seminar at Indian Institute of Technology (Kanpur, January 20, 2016).

55. Invited talk titled ‘Discoloration of the TajMahal, Adverse Health effects and Climate Forcing due to Municipal Solid Waste and Dung Cake Burni’, Workshop on Developing Smart, Healthy and Sustainable Cities: Learnings from US, China and India at The Lalit Hotel (New Delhi, January 11, 2016).

54. Invited talk titled ‘Hydro climate of gangetic system’ India-UK Workshop on Future Ganga: Science Needs for Water Security at Tal Mahel Hotel (New Delhi, December 3, 2015).

53. Invited talk titled ‘The human-ganga biome interactions: Unravelling the influences of environmental pollutants on humans and a living river’ Workshop on Non Putreying Properties of Ganga Water at All India Institute of Medical Sciences (New Delhi, November 16, 2015).

52. Invited talk titled ‘Dust, other ions can cause health problem’ Birbal Sahni Institute of Palaeobotany (Lucknow, August 24, 2015).

51. Contributed talk ‘Particulate pollution and daily surface rainfall: Observational study over Indian summer monsoon region’ AGU Chapman conference on Evolution of the Asian Monsoon and its Impact on Landscape, Environment and Society: Using the Past as the Key to the Future, (The Chinese University of Hongkong, June 14-18, 2015).

50. Contributed talk ‘Optical properties of brown carbon and its impact on earth's radiative budget’ Workshop for Developing Priority Themes and Activities for IGAC Monsoon Asia and Oceania Networking Group (IGAC-MANGO), Asian Institute of Technology (Bangkok, Thailand, June 1112, 2015).

49. Invited participant ‘Science-Policy Dialogue’, organized by the Scientific Advisory Panel of the Climate and Clean Air Coalition (CCAC) to Reduce Short-Lived Climate Pollutants (SLCP), Headquarters of World Meteorological Organization (Geneva, May 20-21, 2015).

48. Contributed talk titled ‘Size resolved fog water chemistry and its atmospheric implications’ European Geosciences Union (Vienna, Austria, April 12-17, 2015).

47. Invited talk titled 'Aerosol's impacts on climate, health, agriculture and monuments', Chandigarh Science Congress, Punjab University (Chandigarh, February 25, 2015).

46. Invited talk titled ‘Aerosol-cloud-rainfall associations over India’, International Workshop on Climate Change, Ansal University (Gurgaon, January 12, 2015).

45. Invited talk titled ‘Atmospheric observations and laboratory studies of carbonaceous aerosols’, Indian Aerosol Science and Technology Association, Biennial Conference, (Banaras Hindu University, Varanasi, November 12, 2014).

44. Invited talk titled ‘Brown carbon absorption and its Impact on atmospheric radiative forcing’, ABC (Atmospheric Brown Clouds) – SLCP (Short-Lived Climate Pollutants) symposium in Tokyo, (Japan, July 21-23, 2014).

43. Theme Leader and organiser, Clean Air, Indo-German Frontiers of Engineering, Potsdam, (Germany, June 23-25, 2014).

42. Invited talk ‘1st Workshop on Climate Science and Policy, Indian Institute of Technology-Bombay, (Mumbai, March 6-7, 2014).

41. Invited talk ‘Scientific basis for knowledge to action’, Policy Conclave on Reducing Vehicular Emissions to Improve Air Quality at TajHotel, (New Delhi, February 4, 2014).

40. Invited talk titled ‘Observations and monitoring needs’, Policy conclave on reducing vehicular emissions to improve air quality at TajHotel, (New Delhi, February 4, 2014).

39. Invited Interdisciplinary Lecture titled ‘Atmospheric aerosol measurements: India perspective’, National Space Science Symposium, Dibrugarh University, (Assam, February 1, 2014).

38. Plenary lecture on Long-term field observations and laboratory studies of atmospheric aerosols from Kanpur, Indo-Gangetic Basin, in 8th Asian Aerosol Conference, Australian Technology Park, Sydney, (Australia, December 3, 2013).

37. Invited talk on 'Aerosol measurements: India perspective', India-California Air-Pollution Mitigation Program: Initiative for Mitigating Air Pollution from the Transportation Sector, Scripps Institute of Oceanography and The Energy and Resource Institute, Oakland, CA, (USA, October 22, 2013).

36. Invited talk on 'Role of chemical composition on CCN activity and Evaluation of microphysics parameterizations in WRF against CAIPEEX profiles' In CAIPEX Science meeting, Indian Institute of Tropical Meteorology, (Pune, October 17, 2013).

35. Invited talk titled ‘Long-Term field observations and laboratory studies of atmospheric aerosols from Kanpur, Indo-Gangetic Basin’, Center for Climate Change, Indian Institute of Technology-Bombay (Mumbai, October 9, 2013).

34. Invited talk on 'Evaluation of WRF-chem simulations during an extreme rainfall event over Indo-Gangetic Plain', in Monsoon Research and Prediction, Indo French Centre for Promotion of Advance Research in coordination with MoES, (New Delhi, October 5, 2013).

33. Invited talk in a ‘CAIPEEX-Phase III – IGP campaign meeting’ organized by Indian Institute of Tropical Meteorology, (Pune, August 30, 2013).

32. Invited talk in a workshop “Mars Orbiter Mission” organized by Physical Research Laboratory, (Ahmedabad, July 26-27, 2013).

31. Invited talk in a workshop ‘First Annual Regional Atmospheric Science (FARAS)’ organized by International Center for Integrated Mountain Development (ICIMOD), (Kathmandu, June 13-14, 2013).

30. Invited lecture in Naraina Group of Institution, (Kanpur, June 11, 2013).

29. GCR Generated Aerosol Electrification and the Effects on Cloud Microphysics in Earth and Planetary Atmospheres, Laboratoire de Physique etChimie de l'Environnement et de l'Espace, CNRS, Orleans, (France, July 4, 2012).

28. Invited talk titled ‘Climate impacts of aerosol over Ganga Basin’ in a Alpine Summer School on Climate, Aerosols and the Cryosphere jointly organized by CNRS, France, ISAC-CNR, Italy and NSF, USA at Valsavarenche, Valle d'Aosta (Italy, June 27, 2012).

27. Invited talk in a workshop organised by International Center for Integrated Mountain Development (ICIMOD), Kathmandu, (Nepal, April 2-3, 2012).

26. Invited talk titled 'Climate impacts of aerosols' in a conference jointly organized by Department of HSS, IITK and Liberty Institute, Delhi on 'Climate Change: Science and Society', (IITK March 30-31, 2012).

25. Invited lecture in national seminar on Interdisciplinary application of weather and climate- Computational Perspective, C-DAC, (Pune, January 25, 2012).

24. Invited talk in US - India Workshop on Air Quality and Climate in Administrative Staff College of India, (Hyderabad, Sept. 12-14, 2011).

23. Lead Speaker in Indo-German Frontier of Engineering, (Khandala, June 2011).

22. Invited talk at Bhabha Atomic Research Center, (Mumbai, June 09, 2011).

21. Invited talk, QIP Course, Indian Institute of Technology Delhi (Delhi, May 2011).

20. Invited talk in Brain Storming Session on Technology Vision 2035, IT-BHU, (Varanasi, May 2011).

19. Invited lecture in Brain Storming Session on Mars, Physical Research Laboratory, (Ahmedabad, March 2011).

18. Invited Lecture, Colloquium, National Physical Laboratory, (New Delhi, March 2011).

17. Invited talk, National Atmospheric Research Laboratory, Department of Space, (Gadanki, February 2011).

16. Invited lecture in local chapter of Institution of Engineers, Harcourt Butler Technical University (Kanpur, 2010).

15. Invited talk, Geophysical Fluid Dynamical Laboratory, Princeton University, (US, June 2010).

14. Invited lecture, Planetary Exploration Program of ISRO, Physical Research Laboratory, (Ahmedabad, May 2009).

13. Invited Colloquium, Physical Research Laboratory, (Ahmedabad, May 2009).

12. Lead Speaker, Third Indo-US Frontier of Science (Agra, March 1-4, 2009).

11. Invited Lecture at Aryabhatta Research Institute of Observational Sciences (ARIES), (Nainital, October 2008).

10. Lecture at Air Force Administrative College, (Coimbatore, December 2007).

9. Five lectures delivered at the Winter School on Modeling of Planetary Atmospheres organised by Physical Research Laboratory, (Ahmedabad, January 2007).

8. Invited seminar at Center for Climate System Modeling, The University of Tokyo, (Japan, July 2006).

7. Invited talk in Department of Chemical Engineering, Institute of Technology, (Banaras Hindu University, Varanasi, February 2006).

6. Invited talk in workshop on Nanoparticle Aerosol Science and Technology (NAST): Emerging Trends and Priorities (IIT Mumbai, December 2005).

5. Invited lecture at Center for Atmospheric and Oceanic Sciences, IISc, (Bangalore, September 2005).

4. Five invited lectures in the 4th PG course on Space and Atmospheric Science of CSSTEAP (Center for Space and Technology Education in Asia and Pacific), (Physical Research Laboratory, Ahmedabad, July 2005).

3. Invited seminar given at Aeronomy Laboratory National Oceanographic and Atmospheric Administration, (Boulder, US, June 2004).

2. Academic Staff College, Banaras Hindu University (Varanasi, March 2004).

1. Invited lecture in local chapter of Institution of Engineers, Harcourt Butler Technical University (Kanpur, January 2004).

Undergraduate Projects Thesis

5. A study of effects of black carbon on cloud microphysical properties using a two-dimensional cloud model (2007-2008).

4. Retrieval of aerosol organic carbon (2006-2007).

3. Parameterization of collision efficiency between of electrically charged aerosol particles and cloud of droplets (2005-2006).

2. Numerical investigation of Atmospheric Fogs (2004-2005).

1. Comparison of satellite derived aerosol parameters with ground measured data over Gangatic basin (2002-2004).

Running Projects

11. Klenviron Technologies Pvt. Ltd., Testing the Efficacy of Air Purifier Modules Under Outdoor and Room Conditions, 2024-2027.

10. AICPMU IIT JAMMU, Center of Excellence in Artificial Intelligence for Sustainable Cities, 2024.

9. Bhabha Atomic Research Centre (BARC), Aerosol Transport Behaviour Experiments At National Aerosol Facility In Context Of Nuclear Reactor Accidents, 2023-2025.

8. Ministry of Earth Sciences (MoES), Ice Nucleating Particle And Cloud Condensation Nuclei Properties In The North-Western Himalayas (Ice-Crunch), 202-2027.

7. Clean Air Fund (CAF), Supporting Indigenous Development of Low-Cost Sensors, 2024-2025

6. Clean Air Fund (CAF), Atman-Centre of Excellence: Core Support Grant, 2023-2025.

5. Clean Air Fund (CAF), Dynamic Hyper-Local Source Apportionment for Real-Time Policy Action, 2023-2025.
4. Rail India Technical & Economic Services Ltd. (RITES), DHSA at Kanpur, 2023-2025.
3. Open Philanthropy, To Support the Rural Air Quality Monitoring Project, 2022-2025.
2. Central Pollution Control Board, Creation of Secretarial Support at IIT Kanpur, 2022-2025.
1. Swiss Agency for Development and Cooperation, Contribution to Research for Clean Air Project in India, 2020-2024.

Completed Projects

50. Duke University, Building Capacity to Improve Air Quality in South Asia: Reducing PM2.5 through Low- Cost Sensor Network Driven Policy Decisions, 2020-2024.
49. Udupi Power Corporation Limited, Study on Effect of Coal Blending on Ambient Air Quality and Management of Fly Ash, 2022-2023.
48. Ericsson India Pvt. Ltd., Large-Scale Multicity Dense Urban Iot Real-Time Air Quality Monitoring Networks in India,2021-2023.
47. International Sustainable Energy Foundation (ISEF), Easiur India: Development of Air Quality Modeling Decision Support Tools for Policy-Makers, 2023.
46. Devic Earth Pvt. Ltd., Testing the Efficacy of Pure Skies in Real Field Conditions at a City Deployment, 2022-2024.
45. Clean Air Fund, Integrated online air pollution monitoring and decision support system 2021-2022.
44. New Venture Fund, Development of air quality modeling decision support tools for policy-makers, 20213-2022.
43. Maharashtra Pollution Control Board, Ambient Air Quality and Atmospheric Haze Condition in Mahul Area, 2021-2021.
42. National Health Systems Resource Centre Evaluation of Pradhan Mantri Ujjawala Yojana (PMUY) in 6 States of India, 2020-2022.
41. Maharashtra Pollution Control Board Technical assessment of low-cost sensor based PM2.5 and PM10 monitoring network in Maharashtra, 2020-2022.
40. Central Pollution Control Board (CPCB) Delhi Air Quality Experiment: A Paradigm Shift in Source Apportionment, 2019-2021.
39. Indo-US Science & Technology Forum (IUSSTF) Streaming Analytics over Temporal Variables from Air quality Monitoring (SATVAM), 2017-2022.
38. Board of Research in Nuclear Sciences (BRNS), Mumbai, Bhabha Atomic Research Centre (BARC), Mumbai (Department of Atomic Energy), Joint project Studies on aerosol behaviour under severe accident conditions in the context of Indian Nuclear Reactors by setting up of National Aerosol Facility 2015-2018 (extended upto December 2021).
37. Department of Biotechnology Joint Research project on Delhi Air Pollution: Health aNd Effects (DAPHNE) 2017-2021.

36. Bloomberg Philanthropis, Pilot of Low-Cost Sensor Technologies in Mumbai-IIT Kanpur in Collaboration with Maharashtra Pollution Control Board and Bloomberg Philanthropies, 2020-2021.

35. Devic Earth Private Limited, Testing and eficacy of pure skies under different conditions of temperature humidity wind speed and distance, 2020-2021.

34. Centre for Study of Science Technology and Policy (CSTEP) Source Apportionment Studies –Analysis of Samples, 2021-2021.

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Certified that the information given above is correct to my knowledge.

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