

Curriculum Vitae

Jai Prakash

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Research Interest

- Field and laboratory evaluation of low-cost air quality sensors
- Low-cost PM sensors and health exposure
- Atmospheric aerosol measurement and its chemical characterization
- Source and Receptor-oriented modeling for atmospheric aerosol

Academic Profile

- **Ph.D.** in Environmental Engineering from *Indian Institute of Technology Delhi*, (2010-2017)
- **M.Tech.** in Environmental Science & Engineering from *Indian School of Mines Dhanbad*, (2007-2009)
- **M.Sc.** in Physics from *CCS University, Meerut*, (2003-2005).
- **B.Sc.** in Physics, Chemistry, and Mathematics from *CCS University, Meerut*, (2000-2003).

Work Experience and Appointments

- **Assistant Professor (July 2022-present):** Department of Atmospheric Science, School of Earth Sciences, Central University of Rajasthan, Ajmer, India
- **Program Manager (April 2021-June 2022):** Clean air at Centre for Science and Environmental (CSE), New Delhi
- **Post-doctoral experience (February 2019-March 2021):** Visiting research scientist at Washington University in St. Louis, MO, USA
Research Area: Development of low-cost sensor network system and real-time source apportionment of PM_{2.5} in Delhi city.
- **Post-doctoral experience (October 2017-January 2019):** Resident scientist at University of Gothenburg, Sweden and IIT Delhi
Research Area: Black carbon and Ozone in rural India and its impact on climate and health.
- **Post-doctoral experience (June 2017-September 2017):** Senior project scientist at IIT Delhi.
Research Area: Chemical characterization of gases and aerosol particles from heavy-duty vehicles.
- **Senior Project Associate (July 2009-July 2010):** Senior project associate at IIT Kanpur
Research Area: Development and field evaluation of PM_{2.5} impactor.

Teaching experience

- Teaching PG courses in Atmospheric Science, Central University of Rajasthan such as *Physics of the Atmosphere; Climate and Disaster Management; Atmospheric Chemistry, Air Pollution, and Climate; and Air Quality Modelling and Management*
- Delivered 3 lectures on air quality monitoring and data analytics at Centre for Science and Environmental (CSE), New Delhi
- Teaching assistantship: Indian Institute of Technology, Delhi: (2010-2016)
Teaching assistantship and deliver lecture for post-graduate students- 'Fundamental of aerosol: Health and Climate' (CVL-825): 10-15 students

Teaching assistantship and laboratory classes for post-graduate students- 'Advance Air Pollution Laboratory' (CVP-820): 10-15 students

Teaching assistantship and deliver lecture for undergraduate students- 'Environmental Engineering (CVL-100)' and 'Air and Noise Pollution (CVL-313)' 100-students

- **Lecturer:** NREC College Khurja: (July-2006 -July 2007)
B.Sc. and M.Sc. physics and lab classes”

Research Profile

I. Referred Scientific publications: *a. Published-28;*

II. International conferences proceedings: **20**

III. Technical Reports and Book chapters: *a. Published-2; Submitted-0; In preparation-0*

Citation statistics:

- **Google scholar:** No. of citation-**910**; h-index-**16**; i-10 index-**18**

https://scholar.google.co.in/citations?user=aXCi_O8AAAAJ&hl=en

- **ResearchGate:** RI Score-**970**; No. of citation-**923**; h-index-**16**

<https://www.researchgate.net/profile/Jai-Prakash-11>

I. (a) Published

1. Subhakaran Mahla, Radheshyam Sharma, Himanshu Sharma, Jai Prakash, Gajendra Kumar (2025). Variability of heatwave and meteorological features associated with exceptionally hot summer 2022 over Rajasthan, India. *Theoretical and Applied Climatology*, 156–(Article number 612). <https://link.springer.com/article/10.1007/s00704-025-05862-9>
2. Dilna Anand M, Anurag Sahu, and **Jai Prakash** (2025). Assessment of Fine Aerosol in Two Different Climate Regions of India Using MERRA-2 Products, Ground-based Measurements, and Machine Learning. *Aerosol Science and Engineering*, <https://link.springer.com/article/10.1007/s41810-024-00279-9>
3. Vikas Kumar, Manoranjan Sahu, Basudev Biswal, **Jai Prakash**, Shruti Choudhary, Ramesh Raliya, Tandeep S. Chadha, Jiaxi Fang, Pratim Biswas (2025). Temporal Dynamics and Source Characteristics of Fine Particulate Matter using Positive Matrix Factorization (PMF). *Atmospheric Pollution Research*, 102539. <https://doi.org/10.1016/j.apr.2025.102539>
4. Vikas Kumar, Manoranjan Sahu, Basudev Biswal, **Jai Prakash**, Shruti Choudhary, Ramesh Raliya, Tandeep S. Chadha, Jiaxi Fang, Pratim Biswas (2024). Real-Time Source Apportionment of Particulate Matter from Low-Cost Particle Sensors Using Machine Learning. *Aerosol Science and Engineering*, 9, 446-456. <https://link.springer.com/article/10.1007/s41810-024-00271-3>
5. Vasudev Malyan, Vikas Kumar, Mufaddal Moni, Manoranjan Sahu, **Jai Prakash**, Shruti Choudhary, Ramesh Raliya, Tandeep S. Chadha, Jiaxi Fang, Pratim Biswas (2024). Assessing the Spatial Transferability of Calibration Models across a Low-cost Sensors Network. *Journal of Aerosol Science*, 181, 106437. <https://doi.org/10.1016/j.jaerosci.2024.106437>
6. Vasudev Malyan, Vikas Kumar, Manoranjan Sahu, **Jai Prakash**, Shruti Choudhary, Ramesh Raliya, Tandeep S. Chadha, Jiaxi Fang, Pratim Biswas (2024). Calibrating low-cost sensors using MERRA-2 reconstructed PM_{2.5} mass concentration as a proxy. *Atmospheric Pollution Research*, 15 (3), 102027. <https://doi.org/10.1016/j.apr.2023.102027>
7. Tariq Mehmood, Licheng Peng, Abdus Salam, Jai Prakash and Minza Haider (2023). Neglected atmospheric microplastic pollution in South Asia reflects a wider failure. *Ecological Informatics*, 73, 101949. <https://doi.org/10.1016/j.ecoinf.2022.101949>
8. **Jai Prakash**, Shruti Choudhary, Ramesh Ramliya, Tandeep Chadha, Jiaxi Fang, and Pratim Biswas (2022). PM Sensors as an Indicator of Overall Air Quality: Pre-COVID and COVID

- Periods. *Atmospheric Pollution Research* 13(11):101594.
<https://doi.org/10.1016/j.apr.2022.101594>
9. **Jai Prakash**, Kalyan Mitra, Harsh Raj Mishra, Xiangyu Pei, Evert Ljungström, Ravi Kant Pathak (2022). Characterization of Propane Fueled Flames: A Significant Source of Brown Carbon. *Atmosphere*, 13(8), 1270. <https://doi.org/10.3390/atmos13081270>
 10. Shilpi Samiksha, Ramya Sunder Raman, **Jai Prakash**, Annada Padhi, Gazala Habib, Prasanta Sanyal, Ankur Bhardwaj (2022). Characteristics of PM 2.5 emitted from the combustion of vehicular fuel and solid biomass: thermally fractionated carbon, $\delta^{13}\text{C}$ values, and filter-based light absorption. *Atmospheric Pollution Research- 13(6), 101443*.
<https://doi.org/10.1016/j.apr.2022.101443>
 11. **Jai Prakash**, Harsh Raj Mishra, Kalyan Mitra, Bhilok Chand, Mattias Hallquist, Gazala Habib, Geetam Tiwari, Jan B. C. Pettersson, Johan Boman, Håkan Pleijel, Ravi Kant Pathak (2022). Characterization, sources, and atmospheric transformation of few key short-lived climate pollutants (SLCPs) at a rural super-site in the Indo-Gangetic Plains (IGP) of India. *RSC: Environmental Science-Atmosphere*, 2 517-538 <https://doi.org/10.1039/D1EA00083G>
 12. Sayantee Roy; Sanjay Kumar Gupta; **Jai Prakash**; Gazala Habib; Prashant Kumar (2022). A global perspective of the current state of heavy metal contamination in road dust. *Environmental Science and Pollution Research*, 29, 33230-33251 <https://doi.org/10.1007/s11356-022-18583-7>
 13. **Jai Prakash**, Shruti Choudhury, Ramesh Raliya, Tandeep Chadha, Jiaxi Fang, and Pratim Biswas (2021). Real-time source apportionment of fine particle inorganic and organic constituents at an urban site in Delhi city: An IoT-based approach. *Atmospheric Pollution Research*, 101206 <https://doi.org/10.1016/j.apr.2021.101206>
 14. **Jai Prakash**, Shruti Choudhury, Ramesh Raliya, Tandeep Chadha, Jiaxi Fang, M.P. George, and Pratim Biswas (2021). Deployment of Low-Cost Sensors and Comparison to Real-Time Stationary Monitors in a networked system in New Delhi. *Journal of the Air & Waste Management Association*, 17 (11), 1347-1360. <https://doi.org/10.1080/10962247.2021.1890276>
 15. Rahul Sheoran, Umesh Chandra Dumka, Dimitris G. Kaskaoutis, Georgios Grivas, Kirpa Ram, **Jai Prakash**, Rakesh K. Hooda, Rakesh K. Tiwari, and Nikos Mihalopoulos (2021). Chemical Composition and Source Apportionment of Total Suspended Particulate in the Central Himalayan Region. *Atmosphere*, 12, 1228. <https://doi.org/10.3390/atmos12091228>
 16. Gaurav Singh, **Jai Prakash**, Sanjeev Kumar Ray, Mohammad Yawar , Gazala Habib (2021). Design, Development, and Evaluation of Air Pollution linked Quality of Life (AP-QOL) Questionnaire for Different Cohorts: An Indian Context. *Environmental Science and Pollution Research*, 28, 43459-43475. <https://link.springer.com/article/10.1007/s11356-021-13754-4>
 17. **Jai Prakash**; Vats Pawan; Sharma, A. K.; Ganguly Dilip; Habib Gazala (2020). A new emission inventory of carbonaceous aerosol from on-road transport in India and its implication in direct radiative forcing. *Aerosol and Air Quality Research* 20(4):741–761.
<https://doi.org/10.4209/aagr.2019.08.0393>
 18. Vignesh Prabhu; **Jai Prakash**; Ashish Soni; Sandeep Madhwal; Vijay Shridhar (2019). Study of atmospheric aerosols and inhaled particle number count during the festival of lights at Dehradun, a state capital city located in the foothills of the Himalayas. *City and Environment Interactions* 1(12): 100006 ISSN: 2590-2520 <https://doi.org/10.1016/j.cacint.2019.100006>
 19. Sayantee Roy; Sanjay Kumar Gupta; **Jai Prakash**; Gazala Habib; Kuldeep Baudh; Mahmoud Nasr; (2019). Ecological and human health risk assessment of heavy metal contamination in road dust in National Capital Territory of Delhi India. *Environmental Science and Pollution Research* 26(29):30413-30425. <https://link.springer.com/article/10.1007/s11356-019-06216-5>
 20. **Jai Prakash**; Habib Gazala (2018). On-road assessment of light duty vehicles in Delhi city: Emission factors of CO, CO₂ and NO_x. *Atmospheric Environment* 174: 132-139 ISSN: 1352-2310. <https://doi.org/10.1016/j.atmosenv.2017.11.039>

21. **Jai Prakash**; Habib Gazala (2018). A technology-based mass emission factors of gases and aerosol precursor and spatial distribution of emissions for on-road transport sector in India *Atmospheric Environment* 180:192-205. <https://doi.org/10.1016/j.atmosenv.2018.02.053>
22. **Jai Prakash**, Lohia, Tarachnad., Mandariya, A. K., Habib, Gazala., Gupta, Tarun., Gupta, S.K. (2018). Chemical characterization and quantitative assessment of source-specific health risk of trace metals in PM_{1.0} at a road site in Delhi, India. *Environmental Science and Pollution Research* Vol. 25, 9 (8747-8764). <https://link.springer.com/article/10.1007/s11356-017-1174-9>
23. **Jai Prakash**, Singhai, Amrita, Habib, Gazala, Raman, Ramya Sunder., Gupta, Tarun (2017). “Chemical characterisation of aerosol in Delhi and source identification using Positive Matrix Factorization”. *Environmental Science and Pollution Research*. Vol. 24, 445-462. <https://link.springer.com/article/10.1007/s11356-016-7708-8>
24. **Jaiprakash**; Habib, Gazala (2017) Chemical and Optical Properties of PM_{2.5} from On-road Operation of Light Duty Vehicles in Delhi city. *Science of the Total Environment* 586: 900-916 <https://doi.org/10.1016/j.scitotenv.2017.02.070>
25. **Jaiprakash**; Habib, Gazala; Kumar, Anil; Sharma, Akash; Haider, Minza (2017). On-road Emissions of CO, CO₂ and NO_x from Four Wheeler and Emission Estimates for Delhi. *Journal of Environmental Sciences* Vol. 53, 39-47 ISSN: 1001-0742.
26. **Jaiprakash**; Habib, Gazala; Kumar, Samresh (2016) Evaluation of Portable Dilution System for Aerosol Measurement from Stationary and Mobile Combustion Sources” *Aerosol Science and Technology*, Vol. 50 (7), 717-731. <https://doi.org/10.1080/02786826.2016.1178502>.
27. Gupta, Tarun., **Jaiprakash** and Dubey, Shefali., “Field Performance Evaluation of a newly Developed PM_{2.5} Sampler at IIT Kanpur.”, *Science of the Total Environment*. Vol.409, 2011, 3500-3507. <https://doi.org/10.1016/j.scitotenv.2011.05.020>
28. **Jaiprakash***, Singh, Gurdeep and Pal, A. K. “ The Role of Meteorology on Predicting PM₁₀ Concentrations around Dhanbad”. *Environment & We an international journal of Science & Technology* Vol. 5: 205-222 (2010).

II. Invited Lecture in conferences

- 20th Anniversary of BICON-2025, **September 13-16, 2025**, Biyani Group of Colleges, Jaipur, India. *Invited Lecture on titled “Characterization of Particle-Bound Metals from Vehicular Emissions and their Associated Health Risks: A Case Study of Delhi”*
- International Mini-Conference on SLCPs in the Indo-Gangetic Plain, **8–9 August 2025**, MP Bhawan, Chanakyapuri, New Delhi. *Invited Lecture on titled “Understanding Elemental Emissions from Vehicles: A Scientific Basis for Health Risk and Policy”*
- 1st National Conference on Environment and Energy Materials: **NCEEM-2020**, Sharda University, from **June 27-28, 2020**. *Invited Lecture on titled “Emissions of Particle-bound Elements from On-road Vehicle Emissions”*

III. International conferences proceedings: (*bold font: presenting author)

- Poster Presentation: Pritiranjana Singh, Chinmay Mallik, **Jai Prakash*** and Pratim Biswas. “Assessment of Biomass Burning and Fossil Fuel Contribution to Black Carbon in Semi-arid Region of Rajasthan, India”. Asian Aerosol Conference (AAC-2025), 1-4 December **2025**, Mumbai, India.
- Oral Presentation: **Suraj Kumar**, Pritiranjana Singh, Pratim Biswas, and Jai Prakash. “Temporal Characteristics of Black Carbon, and their Sources Over Semi-arid site of Rajasthan, India”. 2nd National Conference on Time Series, Analytics & Recent Advances in Statistical Modelling (NCTAS – 2025), Central University of Rajasthan, Ajmer, India
- Poster Presentation: **Awashesh Kumar Dwivedi**, and Jai Prakash, Tomoki Nakayama. “Assessment of PM_{2.5} Exposure in Different Microenvironment Using Low-cost Sensor”. India

Clean Air Summit (ICAS) 2024: The Participatory Future of Air Quality Management; partnering with Clean Air Monitoring and Solutions Network (CAMS-Net), 26–30 August **2024**, Bengaluru, India

- Poster Presentation: **Pritiranjana Singh**, and Jai Prakash. “Assessment of Ground and Satellite Based Observation of PM_{2.5} in Semi-arid Regions of India”. India Clean Air Summit (ICAS) 2024: The Participatory Future of Air Quality Management; partnering with Clean Air Monitoring and Solutions Network (CAMS-Net), 26–30 August **2024**, Bengaluru, India
- Poster Presentation: **Anurag Sahu**, Harsh Raj Mishra, Jai Prakash*, Ravi Kant Pathak*, Kalyan Mitra, Bhilok Chand, Mattias Hallquist, Gazala Habib, Jan B. C. Pettersson, Johan Boman, Håkan Pleijel “Assessment of Key-Short-Lived Climate Pollutants (k-SLCPs) at a Rural Site in the Indo-Gangetic Plains (IGP) of India”. India Clean Air Summit (ICAS) 2024: The Participatory Future of Air Quality Management; partnering with Clean Air Monitoring and Solutions Network (CAMS-Net), 26–30 August **2024**, Bengaluru, India
- Oral Presentation: **Jai Prakash**. “Long-term Characteristics of Aerosols in Delhi using Low-Cost PM Sensors”. National workshop on Boundary Layer Exchange Processes and Climate Change (NoBLExClm-2023), 23-24 March, **2023**, SRM IT Chennai, India
- Oral Presentation: **Jai Prakash**, Shruti Choudhary, Ramesh Raliya, Tandeep Chadha, Jiaxi Fang, Pratim Biswas. “Low Cost, High Quality Sensors for Measuring Particle Mass and Size Distribution in a Megacity Delhi”. AAAR-2019, 14-18 October 2019, Portland, USA.
- Poster Presentation: **Ravi Kant Pathak**, Harsh Raj Mishra, Bhilok Chand, Jai Prakash, Mattias Hallquist, Gazala Habib, Johan Boman, and Håkan Pleijel. “Temporal Distribution of Short-Lived Climate Forcers, Atmospheric Processes, and Sources at IGP-CARE in India for Two-year In-situ Measurements”. AAAR-2019, 14-18 October 2019, Portland, USA.
- Oral Presentation: **Jai Prakash**, Prashant Rajput, Tarun Gupta. “Anthropogenic pollutants and ambient air quality in Delhi: Chemical characteristics and source variability”. CIAAS-2019, 22-25 March 2019, IIT Delhi, New Delhi, India.
- Oral Presentation: Jai Prakash, **Harsh Raj Mishra**, Bhilok Chand, Mattias Hallquist, Gazala Habib, Geetam Tiwari, Kalyan Mitra, Veronica Geretti, Jan B. C. Pettersson, Johan Boman, Håkan Pleijel, Ravi Kant Pathak “Complexity of Short-lived Climate Forcers (SLCFs) in Rural India.” Indian Aerosol Science and Technology Association (IASTA-2018), November 27-29, 2019, New Delhi, India.
- Oral Presentation: **Jai Prakash**, Gazala Habib. “Emissions of Particle-bound Elements from On-road Vehicle Emission: An Assessment of Potential Health Risk.” Indian Aerosol Science and Technology Association (IASTA-2018), November 27-29, 2019, New Delhi, India.
- Poster Presentation: **Jai Prakash**, Harsh Raj Mishra, Atul Kumar, Bhilok Chand, Mattias Hallquist, Gazala Habib, Geetam Tiwari, Jan B. C. Pettersson, Johan Boman, Håkan Pleijel, Ravi Kant Pathak “Investigation of Concentration Variability, Sources and Atmospheric Transformations of Short-lived Climate Pollutants (SLCPs) at the Rural-site of Indo-Gangetic Plain (IGP), India. International Aerosol Conference (IAC-2018), September 2-7, 2018, St. Louis, Missouri, USA.
- Poster Presentation: **Jai Prakash**, Ganguly, D, Habib, G. “Real World Emission Factors of Fine Aerosol and Carbonaceous Constituents from On-Road Transport in India. International Aerosol Conference (IAC-2018), September 2-7, 2018, St. Louis, Missouri, USA.
- Oral Presentation: **Gazala Habib**, Jai Prakash, Ganguly, D. “The Role of Carbonaceous Aerosol from On-road Transport and its Impact on Climate. International Conference on Aerosol Climate Change Connection (AC3), 25-27 April, 2017, Bose Institute, Darjeeling, India.
- Poster Presentation: **Habib, Gazala**, Jai Prakash. “Emissions of Carbonaceous Aerosol from On-road Operation of Light Duty Vehicles in India: A Study Using New Portable Dilution System”. AAAR-2016, October 17- October 21, 2016, Portland, Oregon, USA.

- Poster Presentation: **Jai Prakash**, Habib, G., Kumar, A., Sharma, A., Haider, Minza., On Road Emissions Measurement from Diesel, Gasoline and CNG Passengers Cars, Annual conference, Assessing the Impact of Aerosol and Changing Climate on Monsoon and Extreme Events, January 12-15, 2015 Gurgaon India. (*Awarded*).
- Poster Presentation: **Jai Prakash**, Habib, G., Kumar, A., Sharma, A., Evaluation of Dilution System for On-Road Aerosol Emission Measurement from Automobiles, AAAR-2013 September 29- October 4, 2013, Portland, Oregon, USA (*Awarded*).
- Poster Presentation: **Jai Prakash** and Gazala Habib. "Optimization of a New Portable Dilution System for Aerosol Emission Measurement of Automobiles. An international Conference on Changing Chemistry in Changing Climate: Monsoon (C-4), May 1-May 3, 2013, IITM-Pune, India.
- Poster Presentation: Anil Kumar Mandaria, **Jai Prakash** and Tarun Gupta. "Identification of Air pollution sources at Kanpur during winter season". Indian Aerosol Science and Technology Association (**IASTA-2010**), 24th-26th March, 2010, Bose Institute Campus, Darjeeling, India.
- Poster presentation: **Jai Prakash** and Tarun Gupta. "Design, Development and Field Evaluation of a PM_{2.5} Sampler". International Conference on **Environmental Health and Technology (EH & T)** 15th-17th March, 2010, I.I.T Kanpur, India.
- Oral presentation **Jai Prakash**, Gurdeep Singh and A. K. Pal. "Assessment of Air Quality Status in Mining Complex and Model Performance Evaluation ". International Conference on Recent Advances in Environmental Protection (RAEP), 17th-19th Dec, 2009, St. John College, Agra, India.

II. Technical Reports and Book chapters:

1. **Jai Prakash** and Gazala Habib (2019), "Emissions of PM_{2.5}-bound trace metals from on-road vehicles: An assessment of potential health risk. *Advanced Combustion Techniques and Engine Technologies for the Automotive Sector*. **Book Publisher: Springer 978-981-15-0368-9**

Awards and Recognitions

- 2018: International professional travel grant by American Association of Aerosol Research (AAAR) to attend International Aerosol Conference (IAC), St. Louis, USA. (\$ 500)
- 2018: International travel grant by Science and Engineering Research Board (SERB), India to attend IAC-2018, St. Louis, USA. (1.4 lakh INR)
- 2017: National Post-doctoral fellowship (N-PDF) by Science and Engineering Research Board (SERB). (19.20 lakh INR)
- 2015: Best poster award to attending Workshop on Assessing the Impact of Aerosols & changing Climate on Monsoon & Extreme Events at Gurgaon, India. (5000 INR)
- 2013: Best poster award to attending 32nd annual conference on American Association of Aerosol Research (AAAR), Portland, USA. (\$100)
- 2013: International travel grant by Department of Science and Technology, India to attend 32nd annual conference on American Association of Aerosol Research (AAAR), Portland, USA. (1.39 lakh INR)

Professional activities

Membership:

- Annual membership in American Association of Aerosol Research (AAAR)
- Lifetime membership in Indian Aerosol Science and Technology Association (IASTA)
- Annual membership in Journal of Air and Waste Management Association (JAWMA)

Reviewer for scientific journal:

Atmospheric Environment; Environmental Pollution; Energy and Fuel; Science of the Total Environment; Environmental Science and Pollution Research; Journal of Air and Waste Management Association

Jai Prakash

Associate Editor for scientific journal:

- Frontier Journal of Climate Change and Cities

<https://www.frontiersin.org/journals/sustainable-cities/sections/climate-change-and-cities>

Guest Editor for scientific journal:

- MPDI: Atmosphere

https://www.mdpi.com/journal/atmosphere/special_issues/Sensors_air_pollution

Personal Profile

Name: Jai Prakash

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Current Position: Assistant Professor, Department of Atmospheric Science, School of Earth Sciences, Central University of Rajasthan, Distt. -Ajmer (Rajasthan)

Permanent Address: 682 Khawesh Gyan Khurja, (Uttar Pradesh), 203131

Married: Yes, two kids