

SAYANTEE ROY

NASA Postdoctoral Program Fellow

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📍 NASA Langley Research Center,

Science Directorate,
Chemistry & Dynamics Branch
Hampton, VA 23666, USA

RESEARCH INTERESTS

- Dynamics and chemistry of atmospheric aerosol
- Aerosol-cloud interactions
- Source apportionment using receptor modeling
- Aerosol mixing state, phase state, and morphology
- Arid climate aerosols
- Aerosol transport and regional climate impacts

PROFESSIONAL EXPERIENCE

NASA Postdoctoral Program Fellow **Feb 2024 – Present**

Assistant Professor, Department of Natural and Applied Sciences, TERI School of Advanced Studies, New Delhi, India **Sep 2023 – Jan 2024**

Principal Project Scientist (Contractual), Indian Institute of Technology Delhi, New Delhi, India **Aug 2023 – Sep 2023**

EDUCATION

Ph.D.: Civil Engineering (Environmental Engineering) **2017 – 2023**

Indian Institute of Technology Delhi, New Delhi

Dissertation: Investigation of climate relevant properties of aerosol and contribution of sources in arid region, Bikaner, India

Integrated M.Sc.: Environmental Sciences **2012 – 2017**

Central University of Jharkhand, Ranchi, Jharkhand

CGPA: 9.8

Dissertation: Monitoring of heavy metal contamination in road dust and comprehensive evaluation of consequent ecological and human health risks in National Capital Territory (NCT) of Delhi, India

AWARDS AND GRANTS

Awarded **Gold Medal** for *Best Academic Performance in Environmental Sciences* by Central University of Jharkhand for the graduation year 2017

Awarded **Chancellor's Medal** for securing *First position in University* by Central University of Jharkhand for the graduation year 2017

Student Travel Grant (\$ 1000) by American Geophysical Union (AGU) to participate in the 2022 AGU Fall Meeting, 12-16 December 2022, in Chicago, Illinois, USA

Received financial grant from Science and Engineering Research Board (SERB), DST for participating in AGU Fall Meeting 2023, 11-15 December, 2023, USA

PUBLICATIONS

1. **Roy, S.**, Habib, G., and Raman, R.S. Identification of source contributions to fine particulate matter at Indian desert-urban mixed region. *Atmos Environ* **320**, (2024). <https://doi.org/10.1016/j.atmosenv.2023.120303>
2. **Roy, S.**, Habib, G., Dev, R. *et al.* Wintertime aerosol properties of urban desert region of western India: Implications in regional climate assessment. *Science of the Total Environment* **868**, (2023). <https://doi.org/10.1016/j.scitotenv.2023.161473>
3. **Roy, S.**, Gupta, S.K., Prakash, J. *et al.* A global perspective of the current state of heavy metal contamination in road dust. *Environ Sci Pollut Res* **29**, 33230–33251 (2022). <https://doi.org/10.1007/s11356-022-18583-7>
4. **Roy, S.**, Gupta, S.K., Prakash, J. *et al.* Ecological and human health risk assessment of heavy metal contamination in road dust in the National Capital Territory (NCT) of Delhi, India. *Environ Sci Pollut Res* **26**, 30413–30425 (2019). <https://doi.org/10.1007/s11356-019-06216-5>
5. Gupta, S.K., **Roy, S.**, Chabukdhara, M., Hussain, J., Kumar, M. Risk of Metal Contamination in Agriculture Crops by Reuse of Wastewater: An Ecological and Human Health Risk Perspective. In: Singh R., Kolok A., Bartelt-Hunt S. (eds) *Water Conservation, Recycling and Reuse: Issues and Challenges*. Springer, Singapore (2019).

CONFERENCE PRESENTATIONS

1. **Syantee Roy**, Gazala Habib, Rishabh Dev, Swati Joshi, Adnan Mateen Qadri, Tarun Gupta, Ramya Sunder Raman. "Investigation of climate relevant properties of wintertime aerosol in desert-urban mixed western India". *American Geophysical Union (AGU Fall Meeting 2022)* December 12 – 16, 2022
2. **Syantee Roy**, Rishabh Dev, Gazala Habib, Ramya Sunder Raman. "Wintertime chemistry of ionic and carbonaceous species of fine aerosol particles at an arid desert in North-western India". *American Association for Aerosol Research (AAAR 39th Annual Conference)* October 18 – 22, 2021
3. **Syantee Roy** and Indumathi Nambi. "Modified Electro-fenton process for the removal of Phenol from contaminated water". *National Conference on Environmental Challenges and Solutions*, November 8 – 9, 2015
4. **Syantee Roy** and Sushil K Shukla. "Socio-economic and ecological importance of wetland". National Seminar on Wetland Conservation, March 6 – 7, 2014

RESEARCH/SCIENTIFIC EXPERIENCES

- Worked as an in-flight scientist for the Langley Aerosol Research Group (LARGE) instruments on NASA DC-8 flight during the Airborne and Satellite Investigation of Asian Air Quality (ASIA-AQ) flight campaign
- Expertise in online and offline air quality monitoring and data analysis
- Research on variability, interactions and associations of chemical properties of PM_{2.5} over arid desert of India
- Research on meteorological and chemical drivers of intense pollution during wintertime in urban influenced desert region of India
- Source apportionment using receptor modelling (USEPA-PMF5.0)

SOFTWARE SKILLS

- MS Office (Word, Excel, PowerPoint)
- R
- Origin
- IgorPro
- Sigma Plot
- QGIS
- Python (Beginner)

COURSES TAUGHT

- Advance Air Pollution Laboratory
- Air Pollution and Control
- Ecology and Ecosystems
- Earth and Earth System Processes
- Basics of Climate Science

HOBBIES AND INTERESTS

- Painting** Awarded "*Ankan Ratna*" for successfully completing 7th year exam in Painting with 1st division from *Bangiya Sangeet Parishad*, West Bengal
- Travelling** Completed "National Himalayan Winter Trekking Expedition-Dalhousie, India" in 2013
Travel, hike and trek in free days