

Curriculum Vitae

Personal Detail:

Atinderpal Singh, Ph.D.
Post-Doctoral Fellow
Graduate Institute of Environmental Engineering
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Nationality: Indian

Google Scholar: <https://scholar.google.co.in/citations?user=R1aWQfwAAAAJ&hl=en>

Research Gate: https://www.researchgate.net/profile/Atinderpal_Singh

Research Activities:

During doctoral research, I had worked on the chemical characteristics of PM_{2.5} and size-segregated aerosol from the agricultural crop residue burning emissions in northern India. To achieve these research objectives, I was involved in the quantification of carbonaceous aerosol and major ions in the ambient aerosol samples from Patiala using various sophisticated instruments such as EC-OC analyzer, total organic carbon (TOC) analyzer, and ion chromatograph.

My other current research interest is understanding the optical properties of light-absorbing carbonaceous aerosols and, the evolution of organic aerosols during transport. I have gained sufficient experience in handling, maintaining and operating the High Resolution-Time of Flight-Aerosol Mass Spectrometer (HR-ToF-AMS) on PRL campus and also during the field campaigns. I have served as an active member of Indo-US-Sweden-Switzerland collaborative field campaign during the winter of 2018-19 in Delhi, India. I have experienced in handling the large data sets using Igor Pro data analysis software.

Research Interests:

- Physiochemical characteristics of aerosol and their relation with Earth's radiative forcing, air quality, and atmospheric chemistry
- Modeling the optical and radiative properties of aerosol
- Source apportionment of ambient particles using ion tracer approach and receptor model (Positive Matrix Factorization)

Academic Qualification:

- **Ph.D.** on Seasonality and characteristics of ambient aerosol over the northwest Indo-Gangetic Plain from Punjabi University, Patiala, India in September 2016.
Supervisor: Prof. Darshan Singh, Punjabi University, Patiala
Co-supervisor: Dr. Neeraj Rastogi, Physical Research Laboratory (PRL), Ahmedabad
- **M.Sc.:** Astronomy and Space Physics, 2009, Punjabi University, Patiala, India
- **B.Sc.:** Physics, Chemistry, Mathematics, 2007, Panjab University, Chandigarh, India

Working Experience:

- **March, 2019 to present:** **Post-Doctoral Fellow** in National Central University (NCU), Zhongli, Taiwan
- **November, 2017 to March, 2019:** **Post-Doctoral Fellow** in Physical Research Laboratory (PRL), Ahmedabad, Gujarat, India
- **September, 2011 to October, 2017:** **Research Fellow** under the ISRO-GBP project in Punjabi University, Patiala, Punjab, India

Awards and Membership of Professional Bodies:

- Awarded professional Travel Grant by American Association for Aerosol Research (AAAR) to attend the International aerosol conference (IAC-2018), St. Louis, USA
- Awarded international Travel Grant by Department of Science and Technology (DST), Govt. of India to attend the International aerosol conference (IAC-2018), St. Louis, USA
- Life membership- Indian Aerosol Science and Technology Association (IASTA)
- Best paper award in an Indian Aerosol Science and Technology Association Conference during 6–8, December, 2016 at Physical Research Laboratory, Ahmedabad, India
- Poster presentation award in an International Geosphere Biosphere Program Symposium on April 7, 2014 at Bangalore, India

Peer-reviewed Publications:

1. **Singh, A.** and Rastogi, N. **2019**. Quantification of organic carbon from biomass versus non-biomass burning emissions to fine aerosol. *Proceeding of the Indian National Science Academy*. (Accepted)
2. Shaik, D.S., Kant, Y., Mitra, D., **Singh, A.**, Chandola, H.C., Sateesh, M., Babu, S.S., Chauhan, P. **2019**. Impact of biomass burning on regional aerosol optical properties: A case study over northern India. *Journal of Environmental Management*, 244, 328-343.
3. **Singh, A.**, Satish, R.V., Rastogi, N. **2019**. Characteristics and sources of fine organic aerosol over a big semi-arid urban city of western India using HR-ToF-AMS. *Atmospheric Environment*, 208, 103-112.
4. Rastogi, N., **Singh, A.**, Satish, R.V. **2019**. Characteristics of sub-micron particles coming from a big firecracker burning event: Implications to atmospheric pollution. *Atmospheric Pollution Research*, 10, 629-634.
5. Bansal, O., **Singh, A.**, Singh, D. **2019**. Characteristics of Black Carbon aerosols over Patiala Northwestern part of the IGP: Source apportionment using cluster and CWT analysis. *Atmospheric Pollution Research*, 10, 244-256.
6. Bansal, O., **Singh, A.**, Singh, D. **2019**. Aerosol characteristics over the northwestern Indo-Gangetic Plain: Clear-sky radiative forcing of composite and black carbon aerosol. *Aerosol and Air Quality Research*, 19, 5-14.

7. Sharma, D., Srivastava, A.K., Ram, K., **Singh, A.**, Singh, D. **2017**. Temporal variability in aerosol characteristics and its radiative properties over Patiala, northwestern part of India: Impact of agricultural biomass burning emissions. *Environmental Pollution*, 230, 1030–1041.
8. **Singh, A.**, Rastogi, N., Patel, A., Singh, D. **2016**. Seasonality in size-segregated ionic composition of ambient particulate pollutants over the Indo-Gangetic Plain: Source apportionment using PMF. *Environmental Pollution*, 219, 906–915.
9. **Singh, A.**, Tiwari, S., Sharma, D., Singh, D., Tiwari, S., Srivastava, A.K., Rastogi, N., Singh, A.K. **2016**. Characterization and radiative impact of dust aerosols over Northwestern part of India: A case study during a severe dust storm. *Meteorology and Atmospheric Physics*, 128, 779–792.
10. **Singh, A.**, Rastogi, N., Patel, A., Satish, R.V., Singh, D. **2016**. Size-segregated characteristics of carbonaceous aerosols over the northwestern Indo-Gangetic Plain: Year round temporal behavior. *Aerosol and Air Quality Research*, 16, 1615–1624.
11. **Singh, A.**, Srivastava, R., Rastogi, N., Singh, D. **2016**. Absorbing and scattering aerosols over the source region of biomass burning emissions: Implications in the assessment of optical and radiative properties. *Atmospheric Environment*, 127, 61–68.
12. Srinivas B., Rastogi, N., Sarin, M.M., **Singh, A.**, Singh, D. **2016**. Mass absorption efficiency of light absorbing organic aerosols from source region of paddy-residue burning emissions in the Indo-Gangetic Plain. *Atmospheric Environment*, 125, 360–370.
13. Rastogi, N., **Singh, A.**, Sarin, M.M., Singh, D. **2016**. Temporal variability of primary and secondary aerosols over Northern India: Impact of biomass burning emissions. *Atmospheric Environment*, 125, 396–403.
14. Rastogi, N., Patel, A., **Singh, A.**, Singh, D. **2015**. Diurnal variation in secondary aerosol formation over the Indo-Gangetic Plain during winter using online measurement of water-soluble organic carbon. *Aerosol and Air Quality Research*, 15(6), 2225–2231.
15. **Singh, A.**, Rastogi, N., Sharma, D., Singh, D. **2015**. Inter and intra-annual variability in aerosol characteristics over northwestern Indo-Gangetic Plain. *Aerosol and Air Quality Research*, 15(2), 376–386.
16. Kant, Y., **Singh, A.**, Mitra, D., Singh, D., Srikanth, P., Madhusudanacharyulu, A.S., Krishna Murthy, Y.V.N. **2015**. Optical and radiative properties of aerosol over two locations in the North-west part of India during premonsoon season. *Advances in Meteorology*, 2015, 1–11, ID 517434.
17. Kaskaoutis, D.G., Kumar, S., Sharma, D., Singh, R.P., Kharol, S.K., Sharma, M., Singh, A.K., Singh, S., **Singh, A.**, Singh, D. **2014**. Effects of crop residue burning on aerosol

properties, plume characteristics and long-range transport over northern India. *Journal of Geophysical Research-Atmosphere*, 119 (9), 5424–5444.

18. **Singh, A.**, Rajput, P., Sharma, D., Sarin, M.M., Singh, D. **2014**. Black carbon and elemental carbon from post-harvest agricultural-waste burning emissions in Indo-Gangetic Plain. *Advances in Meteorology*, 2014, 1–10, ID 179301.
19. Rastogi, N., **Singh, A.**, Singh, D., Sarin, M.M. **2014**. Chemical characteristics of PM_{2.5} at a source region of biomass burning emissions: Evidence for secondary aerosol formation. *Environmental Pollution*, 184, 563–569.

References:

1. **Prof. Darshan Singh (thesis supervisor)**
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2. **Dr. Neeraj Rastogi (thesis co-supervisor)**
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