

CURRICULUM VITAE

DR. SUSHIL KUMAR

Designation: Assistant Professor

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Google Scholar: https://scholar.google.co.in/citations?user=Fv_CvT8AAAAJ&hl=en

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Citation, h-index and i10 Index on 14th April 2026

Citations 401

h-index 10

i10-index 12

RESEARCH AREA:

Air Pollution, Aerosol Geochemistry, Environmental Chemistry, Organic Pollutants Chemistry, Microplastic Chemistry

TEACHING AND RESEARCH:

1. Assistant Professor (5th July 2021 to till date) Department of Environmental Studies, Siksha Bhavana (Institute of Science), Visva-Bharati, Santiniketan-731235, Birbhum, West Bengal
2. CSIR-Research Associate (5th April 2019 to 30th April 2021) from School of Environmental Sciences (SES), Jawaharlal Nehru University (JNU), New Delhi.
3. Assistant Professor (Guest Faculty) August-2018 to April-2019, in the Department of Environmental Studies at Delhi College of Arts and Commerce (DCAC), University of Delhi, Netaji Nagar, New Delhi.

EDUCATIONAL QUALIFICATIONS:

Ph.D (2018) from School of Environmental Sciences (SES), Jawaharlal Nehru University (JNU), New Delhi.

M.Sc (2011) in Environmental Sciences from Banaras Hindu University (BHU), Varanasi, Uttar Pradesh.

ONGOING RESEARCH PROJECT:

Title: Achieving Carbon Neutrality and Enhancing Farm Livelihood through Sustainable Agricultural Practices in Selected Agro-climatic Zones of India.

Role: CoPI

Budget Approved: Rs. 12,00,000/- Year 2024-2025

Funding Agency: ICSSR, New Delhi

TEACHING EXPERIENCE:

Teaching at Ph.D Level paper:

Paper-I Research Methodology and Techniques

Paper-II (Recent Advances in Environmental Science) (Optional) Optional-I.

Teaching at PG Level papers:

MEC 11 Fundamentals of Environmental Science

MEC 13 Principles of Soil Science

MEC 14 Techniques in Environmental Science

MEC 15 Water Pollution

MEC 16 Practical-I

MEC 22 Air Pollution

MEC 25 Soil Pollution and Solid Waste Management

MEC 32 Ecology

MEC 43 Environmental Education, Policy and Legislation

MEO 442-Air Pollution and Health

MEO 444- Soil Pollution

Teaching at UG Level papers: Common Value Added Course (CVAC: Environment Studies).

AWARDS RECEIVED:

1. UGC-BSR Fellow.
2. UGC-NET (June, 2012, Dec, 2012, Dec, 2013) in Environmental Science.
3. CSIR-NET-(June-2013, Dec-2013) in Earth, Atmospheric, Ocean and Planetary Sciences.
4. ICAR NET-2013 in Environmental Sciences.
5. Best Poster Presentation in International conference “Challenge of Climate Change and Air Pollution- Impact on Health and Economy” held on 14-15 Dec 2018, Maulana Azad Medical College, New Delhi.
6. CSIR-Research Associate Post-doctoral research fellowship-2019.

FACULTY INDUCTION PROGRAMME / REFRESHER COURSE:

1. Attended refresher course (online mode) for the period of 2 weeks (22nd Nov 2023 to 6th Dec 2023) organized by UGC – Human Resource Development Centre (HRDC), Jawaharlal Nehru University (JNU), New Delhi.
2. Attended Faculty Induction Programme (Online Mode) for the period 31st January to 26th February 2022 organized by UGC-Human Resource Development Centre (HRDC), Jawaharlal Nehru University (JNU), New Delhi.

INVITED TALK:

1. Invited talk on the topic **“Understanding the Intricacies of Air Pollution and Climate Change”** National Conference On Towards a Sustainable Future: Climate Change, Clean Energy and Environmental Sustainability March 19-21, 2025, Raja Narendra Lal Khan Women’s College (Autonomous), Midnapore-721102, West Bengal.
2. Invited talk on the topic **“Sustainable Development”** on February 19, 2024, at Kendriya Vidyalaya (KV), Panagarh, Burdwan, West Bengal
3. Invited talk on the topic **Particulate Matter Emission over Indo-Gangetic Plain (IGP): A Challenge for Air Quality Management** in an international seminar entitled **“Unified Earth now Diversified World”** on August 23- 24, 2023 at Kandra R.K.K. Mahavidyalaya, Kandra, P.S.- Ketugram, Dist.- Burdwan, West Bengal

ORGANIZING SEMINAR / CONFERENCE / WORKSHOP

Organize two Days National Seminar entitled **“ACHIEVING CARBON NEUTRALITY AND ENHANCING FARM LIVELIHOOD THROUGH SUSTAINABLE AGRICULTURAL PRACTICES”** funded by the ICSSR New Delhi, Under Special Call for Vision Viksit Bharat @ 2047 on 07th and 08th February 2025 Organized by Department of Geography, Vidya-Bhavana, Visva-Bharati, Santiniketan, West Bengal in Collaboration with **Department of Environmental Studies, Siksha-Bhavana, Visva-Bharati, Santiniketan** Department of Geography, Manipur University, Imphal, Manipur Department of Environmental Science, Manipur University, Imphal, Manipur Centre for the Study of Regional Development, Jawaharlal Nehru University, New Delhi

HAND-ON INSTRUMENTATION EXPERTISE:

1. Ion Chromatography, Atomic absorption spectrometer, EC/OC analyzer, Spectrophotometer, Induced coupled Plasma- Optical emission spectrometer (ICP-OES), Triple Quadrupole Gas Chromatograph Mass Spectrometer (GCMS-TQ).
2. Field experience in collecting aerosol samples using a High-volume air sampler and multi-stage impactor air sampler, Aerosol mass monitor.
3. Maintenance of ultra-clean high-pressure laboratory.

RESEARCH EXPERIENCES:

1. 4-week industrial training from NTPC Singrauli.
2. M.Sc. Dissertation work “Study of surface water quality of Ganga river water at Varanasi”.
3. 6 months (Sept-2011 to Feb-2012) research experience in Central Institute of Mining and Fuel Research, Dhanbad, on “Development of methodology for estimation of greenhouse gas in mine fire area and their mitigation through terrestrial sequestration”.

PUBLICATIONS:

1. Kumar, Sushil, Apurba Koley, Nitu Gupta, Srinivasan Balachandran, Rakesh Kumar, and Sudesh Yadav. "Emerging Concerns of Atmospheric Microplastics: A Review and Bibliometric Analysis." *Next Research* (2026): 101510.
2. Kumar, Rakesh, Sudesh Yadav, Anju Verma, and Sushil Kumar. "Metal pollution in roadside dust of Singrauli power belt in central India and associated human health risk." *Environmental Monitoring and Assessment* 198, no. 2 (2026): 151.
3. Koley, Apurba, Chandrani Sinha Roy, Niladri Das, Snehasish Pal, Sangram Sarkar, Nitu Gupta, Anindya Hazra, Srinivasan Balachandran, and Sushil Kumar. "Source apportionment and human exposure pathways of potentially toxic elements in road dust from an industrial corridor in eastern India." *Environmental Geochemistry and Health* 48, no. 1 (2026): 3.
4. Karmakar, Surajit, Apurba Koley, Nitu Gupta, Sushil Kumar, Srinivasan Balachandran, Niladri Das, and Deep Chakraborty. "Seasonal dynamics of air pollution and health risks during festive periods in metropolitan and industrial zones of Eastern India." *Discover Public Health* 22, no. 1 (2025): 534.
5. Pal, Mousumi, Manash Gope, Apurba Koley, Aman Basu, **Sushil Kumar**, Reginald Ebhin Masto, Rini Labar, Tapas Kumar Kundu, Raza Rafiqul Hoque, and Srinivasan Balachandran (2025). Bioaccessibility and risk assessment of

- potentially toxic elements in indoor dust of an industrial city in Eastern India. *Environmental Pollution and Management*. 2: 63-76
6. Chakraborty D, Balachandran S, Bagdi T, Koley A, Das N, Das S, Gayen S, Ghosh S, Sarkar A, **Kumar S**, Chaudhury S. Health risk assessment among biogas and conventional cooking fuel users in different socioeconomic conditions of rural West Bengal. *Nature Environment and Pollution Technology*. DOI: <https://doi.org/10.46488/>
 7. Buddhadev Ghosh, Harish Chandra Barman, Sayoni Ghosh, Md Maimun Habib, Jayashree Mahato, Lovely Dayal, Susmita Mahato, Priti Sao, Atul Chandra Murmu, Ayontika Deb Chowdhury, Sourina Pramanik, Rupsa Biswas, **Sushil Kumar** and Pratap Kumar Padhy (2024). Air pollution status and attributable health effects across the state of West Bengal, India, during 2016–2021. *Environmental Monitoring and Assessment*, 196(2), p.165. **IF-3.1**
 8. **Sushil Kumar** (2023) Insights on air pollution during COVID-19: A review. *Aerosol Science and Engineering*. Accepted January 2023. **IF-1.5**
 9. Sudesh Chaudhary, **Sushil Kumar**, Rimpi Antil, Sudesh Yadav(2020). Air Quality Before and After COVID-19 Lockdown Phases Around New Delhi, India. *J Health Pollution* 30: (210602) 2021. Accepted January 22, 2021.**IF-2.8**
 10. **Kumar, S.**, Yadav, S. 2019. Chemistry of size-segregated particles: study of sources and processes in N-NW India. *Atmospheric Pollution Research*. **IF-3.5**
 11. Jaacks, L.M., Yadav, S., Panuwet, P., **Kumar, S.**, Rajacharya, G.H., Johnson, C., Rawal, I., Mohan, D., Mohan,V.,Tandon, N., Barr, D.B., Narayan, K.M.V., Prabhakaran, D. (2019) .Metabolite of the pesticide DDT and incident type 2 diabetes in urban India. *Environmental International*:133:105089: **IF-7.6**
 12. **Kumar, S.**, Nath, S., Bhatti, M.S., Yadav, S. 2018. Chemical Characteristics of Fine and Coarse Particles during Wintertime over Two Urban Cities in North India. *Aerosol and Air Quality Research*, 18:1573-1590. **IF-2.8**
 13. Kumar, P., **Kumar**, S. Yadav, S. (2018) Seasonal variations in size distribution, Water soluble ions and carbon content of size segregated aerosols over New Delhi. *Environmental Science and Pollution Research* 25: 6061-6078 **IF-3.1**
 14. Hira, M., Yadav, S., Morthekai, P., Linda, A., **Kumar, S.**, Sharma, A., (2018). Mobile Phones - an asset or a liability: a study based on characterization and assessment of metals in waste mobile phone components using leaching tests. *Journal of Hazardous Materials* 342: 29-40 **IF-9.04**

15. Javed, H., Islam, A., Chauhan, A., Kumar, S, **Kumar, S.**(2018) Efficacy of engineered GO Amberlite XAD-16 picolylamine sorbent for the trace determination of Pb (II) and Cu (II) in fishes by solid phase extraction column coupled with inductively coupled plasma optical emission spectrometry. Scientific Reports 8:17560.**IF- 4.1**

CONFERENCE PROCEEDINGS:

1. Sushil Kumar (2023) Particulate Matter Emission over Indo-Gangetic Plain (IGP): A Challenge for Air Quality Management in international seminar **“Unified Earth now Diversified World”** on August 23- 24, 2023 at Kandra R.K.K. Mahavidyalaya, Kandra, P.S.- Ketugram, Dist.- Burdwan, West Bengal
2. **Kumar, S.**, Yadav, S. (2016) Water soluble inorganic ions, OC and EC in summer time aerosols along the west east wind corridor in N-NW India” in conference proceedings of Indian Aerosol Science and Technology Association 22:171-174.

BOOK CHAPTERS:

1. Madhupriya, Sushil Kumar, Rakesh Kumar, Chander Parkash, and Srinivasan Balachandran. "Effects and Risk Assessment of Polycyclic Aromatic Hydrocarbons in the Soil Ecosystems." In *Ubiquitous Polycyclic Aromatic Hydrocarbon Contamination: Recent Perspectives*, pp. 65-83. Cham: Springer Nature Switzerland, 2026.
2. Madhupriya, Sushil Kumar, Gavendra Pandey, Rakesh Kumar, and Sudesh Yadav. "Global Water Availability and Its Consumption in a Changing Climate: Management Strategies." *Global Water Scarcity: Causes, Impacts, and Management Strategies* (2025): 291-310.
3. **Kumar, S.**, (2023). Atmospheric CO₂ Consumption Associated With Chemical Weathering in the Riverine Ecosystem. Weathering and Erosion Processes in the Natural Environment, pp.331-341. Wiley.
4. **Kumar, S.**, Maharana, P., (2020.) Air quality and its impact on urban environment. In Urban Ecology: 185-200. Elsevier.
5. **Kumar, S.**, Yadav, S., (2020) Air quality Index and criteria pollutants in ambient atmosphere over selected sites: Impact and lessons to learn from COVID 19. Elsevier.
6. **Kumar, S.**, Gupta, A.K., Maurya, A., Singh, M.K. (2020) Chemical treatment for removal of waterborne pathogens. In Waterborne Pathogens: 205-218. Butterworth-Heinemann.

7. Maurya, A., Singh, M.K., **Kumar, S.** (2020) Biofiltration technique for removal of waterborne pathogens. In Waterborne Pathogens: 123-141. Butterworth-Heinemann.
8. Singh, M.K., Maurya, A., **Kumar, S.** (2020) Bioaugmentation for the treatment of waterborne pathogen contamination water. In Waterborne Pathogens: 189-203. Butterworth-Heinemann.

CONFERENCE AND WORKSHOP:

1. Pooja Mondal, Madhupriya, Pinki Biswas, **Sushil Kumar**. Study of Water Quality and Aquatic Plant Productivity of Wetland over East Kolkata, West Bengal. One Day National Seminar On Sustainable Water Resource Management: Issues, Challenges & Solutions (SWRM-2025) Department of Environmental Science, School of Human and Environmental Sciences, Manipur University, Canchipur, Imphal-795003, Manipur on 22nd March, 2025.
2. Shromana Dey, Madhupriya¹, Pinki Biswas, Apurba Koley, S. Balachandran, **Sushil Kumar**. Assessment of spatial variation of Water Quality of Ganga River in West-Bengal, India. International Conference on “Sustainable Development: Emergent Issues” conducted by Department of Lifelong Learning and Extension (Rural Extension Centre), PSV, Visva-Bharati on 20-21st March 2024
3. Pinki Biswas, Pradipta Haldar, Madhupriya, Apurba Koley, **Sushil Kumar** Study on effect of short-term emission on ambient air quality during Diwali festival over megacities in India, International Seminar on “Green Management of the Environment using Eco-friendly Technology-2024 (Green MEET-2024)” Organized by Department of Ecological Studies, University of Kalyani, and International Centre for Ecological Engineering & Department of Food and Nutrition, West Bengal, India On 20th February, 2024
4. Madhupriya, Susmita Saha, Pinki Biswas, Apurba Koley, **Sushil Kumar** Assessment of the Role of Source and Planetary Boundary Layer Dynamics on Air Pollutant Dispersion in North-Western India, International Seminar on “Green Management of the Environment using Eco-friendly Technology-2024 (Green MEET-2024)” Organized by Department of Ecological Studies University of Kalyani, and International Centre for Ecological Engineering & Department of Food and Nutrition, West Bengal, India On 20th February, 2024
5. Oral Presentation on Atmospheric Dust over India: Source, Transport, and Nutrient Dynamics in International Conference on Air Quality and Human Health 22 - 24 September, 2022 by **Sushil Kumar**
6. 7 Days workshop on analytical chemistry at NML Jamshedpur, Jharkhand with collaboration BARC Mumbai.
7. Pre-Ad Met Workshop on "Ambient Air Quality Measurements", February 23rd 2016.

8. Poster presentation **Kumar Sushil**, Kumar Pawan, Yadav Sudesh on 'Firework induced size segregated aerosols chemistry at Delhi, India' in Recent Advances in Analytical Sciences (RAAS-2016).
9. Platform presentation by **Sushil Kumar** and Sudesh Yadav on "Water soluble inorganic ions, OC and EC in summer time aerosols along the west east wind corridor in N-NW India" in Aerosols and Climate Change: Insights and Challenges (IASTA-2016).
10. Poster presentation in National Science Day-2017 at Jawaharlal Nehru University New Delhi by **Sushil Kumar**, Supriya Nath, Pawan Kumar, Sudesh Yadav on Water Soluble Inorganic Ions, OC And EC In Winter Time Aerosols Along The North Westerly Wind Corridor In N-Nw India
11. Poster presentation in National Science Day-2017 at Jawaharlal Nehru University New Delhi by Anju, **Sushil Kumar** and Sudesh Yadav on Metal Toxicity Assessment in Surface Dust of Bhiwadi Industrial Area In Rajasthan
12. Poster presentation in 14th Annual Meeting of the Asia Oceania Geosciences Society held at the Suntec Convention and Exhibition Centre, Singapore during the period 06 Aug to 11 Aug, 2017 Pawan Kumar, **Sushil Kumar**, Sudesh Yadav, Size Segregated Aerosols Chemistry in Ambient Atmosphere of New Delhi, India
13. Platform presentation in 14th Annual Meeting of the Asia Oceania Geosciences Society held at the Suntec Convention and Exhibition Centre, Singapore during the period 06 Aug to 11 Aug, 2017 by Sudesh Yadav, **Sushil Kumar**, Supriya Nath, Water Soluble Inorganic Ions, OC and EC Characteristics of Winter Time Aerosols in N-NW India
14. Poster presentation in International Society for Environmental Epidemiology (ISEE-2017) held at Sydney Australia during 24-28 Sept 2017 by Lindsay M. Jaacks, Sudesh Yadav, Parinya Panuwet, **Sushil Kumar**, Ishita Rawal, Deepa Mohan, Venkat Narayan, Viswanathan Mohan, Nikhil Tandon, Dana Boyd Barr, Dorairaj Prabhakaran, High levels of organochlorine pesticides among adults in urban India
15. Poster presentation in 17th International Conference of the Pacific Basin Consortium (PBC-2017) held at New Delhi on 14-16 Nov 2017 by **Sushil Kumar**, Lindsay M. Jaacks, Sudesh Yadav, Parinya Panuwet, Ishita Rawal, Deepa Mohan, Viswanathan Mohan, Nikhil Tandon, K.M. Venkat Narayan, Dana Boyd Barr, Dorairaj Prabhakaran. High levels of organochlorine pesticides among adults in urban India
16. Poster Presentation in International Conference on "Challenge of Climate Change and Air Pollution- Impact on Health and Economy by **Sushil Kumar** and Sudesh Yadav "Metal Distribution in Size Segregated Aerosols in Fringe Area of Thar Desert. held on 14-15 Dec 2018, Maulana Azad Medical College, New Delhi.

DISSERTATION (M.Sc) SUPERVISED

1. Comparative Study of Air Pollution Status of Megacities during Winter Season over Indo-Gangetic Plain (IGP), India. 2025: Sneha Dey
2. Study of Soil Organic Carbon in Different Land Use Systems over Nadia District, West Bengal. 2025: Wahida Anjum

3. Study of Phosphorus Fraction of Pond Sediment in Different Residential Settings over West Bengal. 2025: Shinjini Nandi
4. Assessment of Potentially Toxic Elements in Street Dust of Shri Vijaya Puram, Andaman and Nicobar Islands, India. 2025: Srishti Debnath
5. Assessment of Physicochemical Parameters and Environmental Health of Wetland Water over East Kolkata, West Bengal. 2025: Pooja Mondal
6. Assessment of Structural and Primary Nutrient load in Fishing Pond Sediment under different Residential settings over West Bengal, India. 2024: Ananya Das
7. Assessment of Indoor Particulate Matter Emission from Cooking Fuels during the Night in Rural Households over Santiniketan, West Bengal. 2024: Kathakali Das
8. Assessment of Topsoil Health of Vehicle Workshops in Bolpur, West Bengal. 2024: Shipan Kamal
9. Study of Spatio-Temporal Variation in Water Quality of Ganga River in West Bengal, India. 2024: Shromana Dey
10. Assessment of Ambient Air Quality during Short-Term Emission over Megacities in India: 2023: Pradipta Halder
11. Role of Active Desert on Atmosphere Particulate Matter Emissions over N-NW India. 2023: Projita Datta
12. Assessment of Paradoxical Tropospheric Ozone Formation during COVID-19 Lockdown Period over Indo-Gangetic Plain, India. 2023: Aditi Nandi
13. Determination of Heavy Concentrations in Street Dust on Durgapur Expressway-NH 19. 2023 Sangram Sarkar
14. Assessment of Urban Air Quality over Eastern Coast of India. 2023: Shreya Sengupta
15. Role of Source and Planetary Boundary Layer on Air Pollutant Dispersion over North-Western India. 2023: Susmita Saha

REVIEWER OF THE INTERNATIONAL JOURNALS:

Environmental Science and Pollution Research, Geological Journal, Archives of Environmental Contamination and Toxicology, Remote Sensing Applications: Society and Environment (RSASE).

MEMBERS IN SCIENTIFIC SOCIETIES:

1. Lifetime membership in **School of Analytical Chemistry BARC Mumbai (LM256).**
2. Lifetime membership in **Indian Aerosol Science and Technology Association (IASTA-LM-630)**

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