

BIO DATA

Dr. Sudesh Yadav

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Broad Area of Specialization: Environmental Chemistry

Sub Areas of research interest: Aerosol Geochemistry, Air quality and Air pollution, Fog and Dew Water Chemistry, Soil pollution and remediation, E-waste, Persistent Organic Pollutants, Metals in Environment, Analytical Chemistry

Educational Qualification:

- Ph. D. 2004 Environmental Sciences, JNU, New Delhi [Topic: Aerosol Geochemistry in Rajasthan and Delhi regions and its environmental Implications. Mentor: Prof. V. Rajamani]
- M. Phil. 1999 Environmental Sciences, (JNU, New Delhi) [Geochemistry of Particulate Matter in Delhi Air. Mentor: Prof. V. Rajamani]
- M. Sc. 1996 Inorganic Chemistry (MDU, Rohtak, Haryana)
- B. Sc. 1994 CBZ (MDU Rohtak, Haryana)
Have all through first Class academic carrier

Awards and Honors:

DST fast Track Young Scientist project (2004-2008)
DST-PAC best young scientist presentation award in 2003 at BHU, Varanasi, Best presentation Young scientist award in International conference on environment at Bhopal
CSIT NET examination in Chemical Sciences

Teaching and Research Experience:

Since 19th Oct 2006—continuing as Assistant professor at SES, JNU, New Delhi
24-08- 2004 to 19-10-2006: Lecture at D. Govt College, Gurugram, Haryana

Administrative Responsibilities:

At School Level

M. Sc Field Trip, Earth Day committee, Environmental awareness, Library Committee, Placement Cell, Time table committee
Has been member of ENVIS committee from 2007-2014
Has been member of DSA, FIST committees

At University Level

Member Campus Development Committee (CDC)
Member University cultural committee
Member, University convocation committee,
Member, National Science Day committee
Member, Faculty club Committee
Member University Sports advisory Committee
School representative in University Placement cell

Faculty In-charge of GC GCMS and WDXRF facility at AIRF
Spl invitee to Hindi Committee
Has been Spl Invitee to CDC, JNU
Served as Member University academic council
Served as Member University Court

Teaching contributions-Courses Teaching/Taught:

Air Pollution ES-477, Air pollution Chemistry ES 215

Environmental Pollution ES-577, Environmental Pollution ES-107,

Field Work ES 234, Lab-Work-I ES-232, Environmental Chemistry ES-462

Water Pollution ES-475, Soil Science ES114

Introduction to Environmental Science (ES 301), Analytical Techniques ES-654

Research Contributions:

Sponsored Research Projects

- Association of Persistent Organic pollutants with incident diabetes among urban Indian adults-Network project under Indo US scheme, ICMR India (2016-2018).
- A study on implications to human health in relation to aerosols and bioaerosols in ambient atmosphere of Delhi, JNU-UPOEII (2015-2019).
- Chemical Characteristics of <math><2.5\ \mu\text{m}</math> size aerosols in N NW parts of India: sources and processes CSIR, India (2011 -2014).
- Metal characterization of E waste and environmental impacts due to its recycling. UGC (2012-2015).
- Aerosols Geochemistry in the Thar desert and its margins DST, India (2004- 2008) Characterization of sulfate and nitrate ions in aerosols around the thermal power plants in India, NTPC (2008-2009).

In addition grants have also been received from UGC-JNU-Capacity Build-Up Scheme, DST-PURSE Scheme and JNU and were utilized in setting up of laboratory and carrying out scientific research at JNU.

Papers in referred and peer reviewed International Journals:

1. Kumar S., Nath, S., Bhatti, M.S. Yadav, S. (2018) Chemical Characteristics of fine and coarse particles during winter time over two urban cities in north India" Aerosol and Air Quality Research (accepted).
2. 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 (6), 6061-6078.
3. Nath, S., Yadav, S. (2018) A comparative study on fog and dew water chemistry at New Delhi, India. Aerosol and Air Quality Research. 18 (1), 26-36.
4. Hira, M., Yadav S., Morthekai P., Linda A., Kumar S. and 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 15 (342), 29-40.
5. Atri, R.K., Yadav, S. (2016) Morphology of Coal Ash: Constraints on Fly Ash Dispersion and Air Pollution. Journal of Applied Geochemistry 18 (4), 490.
6. Kumar, P., Kumar, R., Yadav, S. (2016) Water-soluble ions and carbon content of size-segregated aerosols in New Delhi, India: direct and indirect influences of firework displays. Environmental Science and Pollution Research, 1-12.

7. Kumar, P., Yadav, S. (2016) Seasonal Variations in Water Soluble Inorganic Ions, OC and EC in PM₁₀ and PM_{> 10} Aerosols over Delhi: Influence of Sources and Meteorological Factors. *Aerosol and Air Quality Research* 16 (5), 1165-1178
8. Aggarwal, R., Gathwala, G., Yadav, S., Kumar, P. (2016) Selenium Supplementation for Prevention of Late-Onset Sepsis in Very Low Birth Weight Preterm Neonates. *Journal of tropical pediatrics*, fmv096 0,1-9.
9. Sachdeva, K., Yadav, S. (2016). Characterization of Free-Fall Dust Aerosols at Two Different Heights in Delhi: Understanding the Influence of Carbon Fraction. *J. Hazardous Toxic and Radioactive Waste*, 20(4).
10. Verma, S., Yadav, S., Yadav, S.K., Kadyan, P.S., Singh, I., Singh, D. (2015) Heavy metals in wheat grains of Haryana (India) and their health implications. *Journal of Chemical and Pharmaceutical Research* 7 (10), 374-351.
11. Chaudhary, S., Banerjee, D.K., Kumar, N., Yadav, S. (2016) Assessment of bioavailable metals in the sediments of Yamuna flood plain using two different single extraction procedures. *Sustainable Environmental Research* 26 (1) 28–32.
12. Yadav, S., Tandon, A., Tripathi, J.K., Yadav, S., Attri, A.K. (2016) Statistical assessment of respirable and coarser size ambient aerosol sources and their timeline trend profile determination: A four year study from Delhi. *Atmospheric Pollution Research* 7(1), 190–200.
13. Verma, S., Kadyan, P.S., Singh, D., Singh, I., Yadav, S. (2015) Evaluation of serum metal profile in relation to biri smoking using ICP-MS. *International Journal of Environmental Analytical Chemistry* 95(14) 1385-1394.
14. Pathak, A.K., Kumar, R., Kumar, P., Yadav, S. (2015) Sources apportionment and spatio-temporal changes in metal pollution in surface and sub-surface soils of a mixed type industrial area in India. *Journal of Geochemical Exploration* 159, 169–177.
15. Yadav, S., Kumar, P. (2014) Pollutant scavenging in dew water collected from an urban environment and related implications *Air Quality, Atmosphere and Health* 7(4), 559-566.
16. Kumar, P., Pattanaik, J.K., Khare, N., Chopra, S., Yadav, S., Balakrishnan, S., Kanjilal, D. (2014) Study of ¹⁰Be in the Sediments from the Krossfjorden and Kongfjorden Fjord System, Svalbard. *J. Radioanalytical Nuclear Chemistry*. 302:903–909.
17. Yadav, S., Yadav, S. (2014) Investigations of metal leaching from mobile phone parts using TCLP and WET methods. *Journal of environmental Management*, 144, 101-107.
18. Islamm, A., Zaidi, N., Ahmad, H., Yadav, S. (2014) Synthesis, characterization, and systematic studies of a novel aluminum selective chelating resin. *Environmental Monitoring Assessment*. DOI 10.1007/s10661-014-3823-5
19. Kumar, P., Yadav, S., Kumar A. (2014) Sources and processes governing rainwater chemistry in New Delhi, India. *Natural hazards*. 74(3), 2147-2162.
20. Yadav, S., Yadav, S., Kumar, P. (2014) Metal toxicity assessment of mobile phone parts using Milli Q water. *Waste Management* 34 (2014) 1274–1278
21. Pathak, AK., Yadav, S., Kumar, P., Kumar, R (2013) Source apportionment and spatial–temporal variations in the metal content of surface dust collected from an industrial area adjoining Delhi, India. *Science of the Total Environment* 443, 662-672.
22. Islam, A., Ahmad, H., Zaidi, N., Yadav, S. (2013) Selective Separation of Aluminum from Biological and Environmental Samples Using Glyoxal-bis (2-

- hydroxyanil) Functionalized Amberlite XAD-16 Resin: Kinetics and Equilibrium Studies. *Industrial & Engineering Chemistry Research* 52 (14), 5213-5220.
23. Kumar, P. and Yadav, S. (2013) Factors and sources influencing ionic composition of atmospheric condensate during winter season in lower troposphere over Delhi, India. *Environmental monitoring and assessment* 185 (3), 2795-2805.
 24. Tandon A., Yadav S., and Attri A. K. 2010 Coupling between meteorological factors and ambient load. *Atmosphere Environment*, 42, 1059-1064.
 25. Singh, M.P., Singh, V.K., Patel, D.K., Tandon, P.K., Gaur, J.S., Behari, J.R., Yadav, S. (2010) Face mask application as a tool to diminish the particulate matter mediated heavy metal exposure among citizens of Lucknow, India. *Science of the Total Environment* 408 (23), 5723-5728.
 26. Verma, S., Yadav, S., Singh, I. (2010) Trace metal concentration in different Indian tobacco products and related health implications. *Food and Chemical Toxicology* 48 (8), 2291-2297.
 27. Tandon A., Yadav S., Attri A. K. (2008) City wide sweeping a source for respirable particulate matter in the atmosphere. *Atmosphere Environment*, 42, 1064-1069.
 28. Yadav S., Chauhan M. S. and Sharma A. (2007) Characterisation of Bioaerosols during Dust Storm Period in N-NW India. *Atmosphere environment*, 41, 6063-6073.
 29. Yadav S. and Rajamani V. (2006) Air quality and trace metal chemistry of different size fractions of aerosols in N NW India: implications for source diversity. *Atmosphere Environment*, 40, 698-712.
 30. Pruseth, KL, Yadav, S., Mehta, P., Pandey, D., Tripathi, J.K. (2005) Problems in microwave digestion of high-Si and high-Al rocks. *Current Science* 89 (10), 1668
 31. Yadav, S. and Rajamani, V. (2004) Geochemistry of Aerosols of Northwestern Part of India Adjoining the Thar Desert. *Geochimica et Cosmochimica acta* 68 (9), 1975-1988.
 32. Yadav, S. and Rajamani, V. (2003) Aerosols of NW India-a potential Cu source! *Current Science*. Vol. 84, No.3, 78-80

Chapter in Book: Attri A.K., Yadav S., Yadav, V.P. (2017) Environmental biotechnology in Text book of Biotechnology (5th Edition, Ed. Das, H.K.) Wiley

Analytical Facilities Developed:

1. Inductively Coupled Plasma Optical Emission Spectrometer (ICP-OES) for major and trace elements analysis using the destructive method.
 2. Atomic Absorption Spectrometer
 3. Ion Chromatograph
 4. Ultraclean geochemical lab for sample processing
- Experience of working on X-Ray diffraction (XRD) for mineralogical analysis, Inductively Coupled Plasma - Mass Spectrometer (ICP-MS) for trace elements analysis using the destructive method, GC, GCMS for pesticides and PCB analysis in human serum

Collaborations Developed:

Within India- we have working collaboration with many faculty members at School of Environmental Sciences and at other science schools within JNU, BSIP, Lucknow, MDU, Rohtak, GNDU, Amritsar, CUJ, Jammu, CUHP, Dharmashala, PGIMS, Rohtak, NTPC India, PHFI, Gurgaon, AIIMS, New Delhi

Outside India- with Harvard University, Boston and Emory University, Atlanta, USA, Adelaide university Australia.

Student Guidance:

Ph. D. Awarded

1. Rakesh Kumar September, 2017 “Environmental implications of thermal power plant emissions on the chemistry of aerosols, soil and groundwater in Singrauli power belt”
2. Pawan Kumar (2016) “Environmental Chemistry of fine aerosols and wet precipitation over Delhi ridge area”
3. Pankaj Baghel (2015) “Studies of Cosmogenic Radionuclides using accelerator mass spectrometry”
4. Satyamanyu Yadav (May 2013) “Metal characterization of E-waste and environmental impact of effluents from recycling industry in Delhi region”
5. Aditya Kumar Pathak (July, 2011) Heavy metal pollution of soil in Faridabad industrial area in Haryana”

Ph. D. Ongoing

1. Hina (July 2018) Tentative title: impact of inform e-waste recycling on soil, air water in the NCR region.
2. Amarjeet (July 2016) Tentative title: Fine and coarse particle chemistry at sensitive sites in the NCR region.
3. Anju (July 2016) Tentative title: Spatio-temporal distribution of metals in surface dust and surface soils and their chemical special in Bhiwadi industrial are in the NCR region.
4. Achachelal Yadav (July 2016) Confirmed Title: Impact of elevated carbon dioxide and tropospheric ozone interaction on growth and productivity of maize and wheat.
5. Supriya Nath (July 2013) Confirmed Title: Fog and Dew Water Chemistry in the Environment of Delhi region.
6. Sushil Kumar since (July 2013) Confirmed Title: Environmental Chemistry of size segregated aerosol in N-NW India.
7. Meenakshi Hara (co-supervisor a student of CuHP, Dharamshala) Confirmed Title: Chemical characterization of e-waste to assess the related environmental implications

M. Phil

- Anju (July, 2016) “Metal Toxicity Assessment in surface dust of Bhiwadi Industrial area in Rajasthan”.
- Supriya Nath (July, 2013) “Chemical Characterization of Fog in Delhi”.
- Krishan Kumar, (July, 2011) “Chemistry of roadside dust in Delhi”.
- Rakesh Kumar (July, 2009) “Elemental chemistry of coal fly ash from thermal power plants in India”.

M. Sc. Projects

- Barsha (2017-18) Chemical characterization of dew water over IG plains (two semesters)
- Manisha (2016-2017) Chemical characterization of Fan dust in indoor environment
- Monika (2016) Department of Environmental Sciences, MDU Rohtak (one month training)
- Vandana (2016) Department of Environmental Sciences, MDU Rohtak (one month training)
- Dipita Ghosh (2016) Ecology and Environment Division, FRI, Dehradun (one month training)

- Manjesh Kumar (June, 2010) E-waste characterization and implication on our environment
- Ruchika Sharma (June, 2010) Chemical composition on Bulk fog water over Delhi
- Vinit Kumar (May, 2009) Review of various organic species in the atmosphere with emphasis on biogenic volatile organic compounds
- Krishan Kumar (May, 2009) Study of road side dust and its environmental implication

Scientific articles in ISSN number journals/magazine

- Kritika, V. K. Jain and Sudesh Yadav (2012) Interactions between climate change and UV impacts on terrestrial biogeochemical cycling- A review. ENVIS newsletter Vol 17 (2) ISSN -0974-1364
- Rakesh Kumar and Sudesh Yadav (2011) Biogeochemical cycling of elements through coal. ENVIS newsletter Vol 17 (1) ISSN -0974-1364
- Sudesh Yadav and Prof. V. K. Jain (2007) Aerosols in our Environment with reference to biogeochemistry ENVIS newsletter, JNU Vol 13 (1) ISSN -0974-1364

In News Media

- Jalvayu Privartan ke karan aur bachav ke upaay All India Radio Phone in programme 28-05-2016
- Paryavaran Sanrakshan aur Chunotiya All India Radio Phone in programme 26-08-2016
- Climate change, it's impact, problems and prevention All India Radio Phone in programme 27-05-2016

Recent Invited lectures:

- Air Pollution: Natural or Cultural at HRDC, JNU. 17th August, 2017
- “Fundamental of GC” at AIRF JNU. 28th April, 2017
- “The Current Crisis of Air Pollution in Delhi” at HRDC, JNU. 3rd March, 2017
- “Public Perception and Reality of Air Pollution in Delhi” on Science Day-2016, JNU
- “How to address Delhi’s Air Pollution Issue” 1st Interdisciplinary Course in Environmental Studies at Human Resource Development Centre, JNU 8 September, 2016
- “Air, Pollution: Perception, reality and challenges” Biodiversity Conservation and Pollution Control-Challenges and strategies, University of Jammu, Jammu 9-10 March, 2016
- “Air Pollution: Hype vs Truth: Role of Analytical Chemistry” International Conference on Recent Advances in Chemical Sciences, Aligarh Muslim University, Aligarh. 30th March, 2016
- “Application potential of XRF vis a vis spectroscopic analytical techniques” AIRF, JNU. 11th Feb., 2015
- Cellular Phones: Boon or Bane? In national conference on Environmental issues, concerns and solutions (EICS-2014) held at University of Jammu, Jammu during 24-25th March, 2014
- E-waste - an emerging environmental problem: contaminant to pollutant in refresher course at ASC, JNU, during Feb., 2014
- E-waste - an emerging environmental pollutant: problems, issues and challenges” in national conference on Advances in Chemical Sciences at MDU, Rohtak, March, 2013