

# SHRAVAN KUMAR

Post-Doc Fellow, ISC, Banaras Hindu University, Varanasi

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## Academic Details:

Examinations/Degree	College/University/Board	Year of Passing	Marks (%/CGPA)
Ph.D. (Environmental Science and Engineering)	Indian Institute of Technology (Indian School of Mines) Dhanbad	2023	--
M. Tech (Environmental Science and Engineering)	Indian Institute of Technology (Indian School of Mines) Dhanbad	2017	9.21
B. Tech (Mechanical Engineering)	University College of Engineering & Technology, Vinoba Bhave University, Hazaribag	2014	79.60
Intermediate (10+2 <sup>th</sup> )	Rajkamal Saraswati Vidya Mandir, CBSE	2009	83.00
Matriculation (10 <sup>th</sup> )	ST Anthony's High School, JAC Ranchi	2007	77.40

## Research Interests:

- Aerosol and Dust effects on health
- Indoor Air Quality and its chemical characterization
- Source apportionment using the statistical approach
- Personal exposure and Deposition modelling
- Environmental sustainability and climate-resilient air quality management
- Sustainable pollution mitigation strategies for urban and industrial systems

## Technical Skills:

- Analytical knowledge of Air quality, Noise prediction, Dust characterization and its effects on health

- Experience in operating various instruments (Respirable Dust Sampler (RDS), Fine particulate Sampler (FPS), GRIMM 1.109-Aerosol Spectrometer, Sound Level Meter, UV Vis Spectrophotometer, GCMS, ICP-OES, AAS)
- Hands-on Experience in Ambient and Indoor Air Monitoring
- Data Analysis (XRF, XRD, GC-MS, ICP-OES, AAS, FTIR, FE-SEM, EDX, UV-VIS)
- Basic knowledge of Software: Origin Pro, Surfer, PANalytical X'Pert High Score Plus, ImageJ, SPSS 26.0, RStudio, Python, QGIS, PMF, AERMOD, MS-Office

### **Publications:**

- **Kumar, S., & Jain, M. K. (2022).** Interrelationship of Indoor Particulate Matter and Respiratory Dust Depositions of Women in the Residence of Dhanbad City, India. **Environmental Science and Pollution Research**, 29(3), 4668-4689. [IMF: 5.8]
- **Kumar, S., & Jain, M. K. (2022).** Characterization and morphometric study of household settled dust: A case study in Dhanbad, the coal capital of India. **Applied Geochemistry**, 144, 105398. [IMF: 3.4]
- **Kumar, S., & Jain, M.K. (2024).** A comparative study of health risks of selected potentially toxic metals in household dust from different socio-economical houses of Dhanbad city, India. **Air Quality, Atmosphere and Health**, 17, 1547–1564. [IMF: 5.1]
- **Kumar, S., & Jain, M.K. (2026).** Interrelationship Between Indoor Air Quality and Indoor Dust in Four Schools across Dhanbad City, India. **Aerosol Science and Engineering**. [IMF: 2.0]
- **Kumar, S., & Jain, M. K. (2022).** Exposure to Particulate Matter and CO<sub>2</sub> in indoor conditions at IIT (ISM) Dhanbad. **Materials Today: Proceedings**, 49, 3469-3473. [IS: 1.46]
- **Kumar, S., & Jain, M. K. (2026).** “Modeling, Simulation, and Prediction Techniques”. **Harnessing Computational Power to Tackle Air Pollution**, (pp. 1-24), Springer Nature [ISBN 978-3-032-13952-8]

### **Conferences and Seminars:**

- **Kumar S., Jain M.K,** “Exposure to Particulate Matter and CO<sub>2</sub> in indoor conditions at IIT(ISM) Dhanbad” 27-28 June 2020. “National Conference on Environment & Energy Materials: Innovation of Tomorrow” (NCEEM-2020), at School of Basic Sciences and Research, Sharda University (Oral)

- **Kumar S., Jain M.K.**, “Indoor air quality (IAQ) in the different schools in suburban areas of Dhanbad city”. International conference on "Present Scenario of Technology and Sciences" (PSTS-2020), 8-9 August 2020 organized by Payam Scientific Publishing (Oral).

### Research Experience:

- Post Doctoral Fellow, ISC, Banaras Hindu University, Varanasi; March 2025 –ongoing
- **Projects:** *Involved in a national-scale project, the National Clean Air Program (NCAP), State and Urban Local Body (ULB) sponsored projects (NCAP city auditing, Source Apportionment Study, Emission Inventory)*
- **Principal Investigator:** Prof Kirpa Ram, ISC, Banaras Hindu University, Varanasi
  
- **Research Associate**, Dept. of ESE, IIT(ISM), Dhanbad; July, 2024 – January, 2025
- **Project titled:** *Source Apportionment Study of Polluting Units lying in the Buffer Zone of Tasra Coking Coal Washery Plant of M/s STEEL AUTHORITY OF INDIA LIMITED, with respect to Ecosystem Services*
- **Principal Investigator:** Prof Biswajit Paul, ESE, IIT(ISM), Dhanbad
  
- **Research Associate**, Dept. of ESE, IIT(ISM), Dhanbad; September, 2023 – July, 2024
- **Project titled:** *Carrying capacity study of Dhanbad city under National Clean Air Program (NCAP)*
- **Principal Investigator:** Prof Suresh Pandian Elumalai, ESE, IIT(ISM), Dhanbad
  
- **Research Scholar**, Dept. of ESE, IIT(ISM), Dhanbad; August, 2017 – July, 2023
- **Research Topic:** *An investigation into the Indoor air quality (IAQ) of sub-urban areas and associated health impacts*
- **Supervisor:** Prof. Manish Kumar Jain, ESE, IIT(ISM), Dhanbad
- Conducted field study and carried out questionnaire survey for quantitative and qualitative analysis of Household conditions and socioeconomic status in Dhanbad city
- Sample collection and performance monitoring of Indoor air quality and dust
- Exposure assessment and Health risk assessment based on Indoor pollutants
- Indoor dust characterization by semi-qualitative and semi-quantitative analysis (FESEM, EDX, FTIR, XRD, ICEP-OES)

- **MTech Project**, Dept. of ESE, IIT(ISM), Dhanbad; July, 2016 - May, 2017
  - **Project Title:** *Assessment of traffic noise level and mitigation strategies in Dhanbad town*
  - **Supervisor:** Prof. Ashok Kumar Singh (Ex CMD, CMPDIL), ESE, IIT(ISM), Dhanbad
  - Noise monitoring and prediction around major traffic zones with mitigation measures
- **BTech Project**, Dept. of ME, UCET, VBU, Hazaribag; January, 2014 – June, 2014
  - **Project Title:** *Working of Continuous Variable Transmission System*

### Research (Field) Experience:

Ambient Air Quality monitoring in various Mining Areas (Sijua, Govindpur, Putki, Moonidih) of Bharat Coking Coal Ltd (BCCL)	2018 - 2019
Impact of proposed changes in mining on the Air Quality of the Sasti area, Western Coalfield Ltd (WCL)	June 2019
Cumulative Impact Assessment Study, Carrying Capacity Study and Ecosystem Services Study of Nigahi area, Northern Coalfield Ltd (NCL)	2022 - 2023
Carrying Capacity Study of Dhanbad city under National Clean Air Program (NCAP)	2023 - 2024
A scientific study on the assessment of the impact of mine blasting operations on environmental pollution and important structures of Chittorgarh Fort (BCL)	2024
Source Apportionment Study of Polluting Units Lying in the Buffer Zone of Tasra Coking Coal Washery Plant of SAIL, with respect to Ecosystem Services	2024
National Clean Air Program (NCAP) city co-auditor on behalf of Principal investigator (NCAP city auditing for Lucknow, Kanpur, Bareilly, Gorakhpur, Varanasi)	2025

### Academic Activities:

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| <ul style="list-style-type: none"> <li>➤ <b>Role:</b> Teaching Assistant</li> <li>➤ <b>Responsibility:</b> Development of teaching material, assignments, tutorials and supervision in practical work.</li> <li>• <b>Courses:</b> (1) Air pollution control.<br/>(2) Environmental aspects of Industries.<br/>(3) Noise pollution and control.</li> </ul> | <ul style="list-style-type: none"> <li>➤ <b>Monitoring Activities</b></li> <li>On behalf of Supervisor: <b>Masters Students (Completed-7); PhD (3)</b></li> <li>• <b>Laboratory</b></li> <li>(1) Air and noise pollution Laboratory.</li> <li>(2) Instrumentation Laboratory.</li> </ul> |
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### **Vocational Training and Industrial Tour:**

- 3-Day Workshop on "Design & Style of a PhD Thesis and Reference Management using Open-Source Solutions" at Executive Development Center, IIT(ISM) Dhanbad (April 2018).
- 2-day Internal Auditing Training Program of Quality Management System based on ISO 9001:2015 at the Department of Environmental Science and Engineering, IIT(ISM) Dhanbad (Feb 2018).
- 2-Day Workshop on "Energy resources: Future prospects of fuel and chemicals" at the Department of Chemical Engineering IIT(ISM), Dhanbad (Nov 2016).
- 1-month vocational training as a project Environmental trainee in BCCL (Basta-Cola area) Dhanbad (May-June 2016).
- 1-month training program on Catia from Coresofttech Solutions, Pune (Oct 2013).
- 2-week vocational training on I.C Engine and Transmission system at BCCL, Sinidih workshop, Dhanbad (June 2013).
- 1-month vocational training as a trainee at SAIL, Bokaro Steel plant (June-July 2012).

### **Recognitions:**

- All India GATE ranked 610 in Environmental Science and Engineering (ES) 2021
- Cleared GATE 4 times (2015 - 2018) in Mechanical Engineering
- Associate member (AM183621-0) in The Institution of Engineers (India)
- Recipient of MoE Scholarship (Govt. of India) for pursuing Ph.D for 5 years
- Recipient of MHRD scholarship (Govt. of India) for pursuing M.Tech for 2 years

### **Extra-Curricular:**

- Founder General Secretary (Science & Technology), Students Gymkhana, IIT(ISM) Dhanbad (2019–2020)
- PhD Representative, Students Gymkhana, IIT(ISM) Dhanbad (2019–2020)
- Presented departmental research activities during the Industry–Institute Interaction Session, IIT(ISM) Dhanbad
- Led multiple plantation and environmental awareness drives as Secretary, Environment Club Taru-Mitra during B.Tech (2010–2014)
- Volunteer, Gopali Youth Welfare Society (2011–2012)

- Organized and coordinated academic seminars/workshops for postgraduate and doctoral students
- Actively involved in science outreach and student mentoring activities

### References:

#### **Prof. Manish Kumar Jain**

Professor (Thesis supervisor),  
Department of Environmental  
Science and Engineering,  
Indian Institute of  
Technology, (Indian School of  
Mines) Dhanbad, Jharkhand-  
826004, India

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#### **Prof. Anshumali**

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Department of Environmental  
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#### **Prof. Suresh Pandian E**

Associate Professor,  
Department of Environmental  
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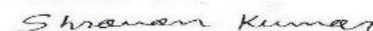
Email: [espondian@iitism.ac.in](mailto:espondian@iitism.ac.in)

### Declaration:

I do hereby declare that the particulars of information and facts stated herein above are true, correct and complete to the best of my knowledge.

Place: Dhanbad

Date: 24/02/2026



**(Shravan Kumar)**