

## CURRICULUM VITAE

### **DR. ATUL KUMAR**

#### **Scientist B,**

ICWMR, TERI School of Advanced Studies, Vasant Kunj, New Delhi-70

Email: [atul.kumar2@terisas.ac.in](mailto:atul.kumar2@terisas.ac.in); [atul0096@gmail.com](mailto:atul0096@gmail.com)

Orcid ID: <https://orcid.org/0000-0003-4414-5079>

Web of Science Researcher ID: Q-1301-2019

Scopus Author ID: 57226074453

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

LinkedIn: <https://www.linkedin.com/in/atul-kumar-204763224/>



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#### **CAREER SUMMARY:**

Dr. Atul Kumar is a Scientist B in ICWMR at TERI School of Advanced Studies, New Delhi. He is also an Assistant Professor in the Department of Natural and Applied Sciences, TERI SAS. He worked as a postdoctoral research scientist for sustainability assessment of Agri-food system at Rothamsted Research, United Kingdom. He possesses interdisciplinary research experience in the field of waste management, life cycle assessment, carbon footprint, water footprint, Agri-footprint, socioeconomic impact, sustainability assessment, etc.

#### **EDUCATIONAL QUALIFICATIONS:**

- **Ph. D** in Environmental Science and Engineering **(From July, 2015 to February, 2022)**  
Name of the Institute: Indian Institute of Technology (ISM) Dhanbad, Jharkhand, India.  
Thesis Title: *Assessment of Generation Rate, Energy Recovery Potential and Environmental Impacts of Municipal Solid Waste for Better Management.*
- **M. Tech** in Environmental Science and Engineering **(From July, 2013 to June, 2015)**  
Name of the Institute: Indian Institute of Technology (ISM) Dhanbad, Jharkhand, India.  
Division: First class with Distinction (CGPA: 9.1 Out of 10).  
M. Tech Dissertation Title: *Impact of Socioeconomic Parameters on Generation and Characteristics of Municipal Solid Waste.*
- **B. Tech** in Mechanical and Automation Engineering **(From August, 2008 to May, 2012)**  
Name of the University: Guru Gobind Singh Indraprastha University, Delhi, India.  
Division: First class (Percentage: 75%).
- **B.E.** in Civil Engineering **(From September, 2017 to March, 2021)**  
Name of the University/Institute: Institution of Engineers (India) (AMIE), Kolkata, India.  
Division: First class (CGPA: 7.55 out of 10).  
Mode: Distance
- **PG Diploma** in Environmental Law and Policy **(From July 2021 to July 2022)**  
Name of the University/Institute: Jointly conducted by Centre for Environmental Law, WWF-India and National Law University, Delhi  
Mode: Distance

### **PROFESSIONAL EXPERIENCE:**

- **Scientist B** in ICWMR, TERI School of Advanced Studies, New Delhi.  
(From July, 2023 to till date)
- **Postdoctoral Research Scientist**-Sustainability Assessment at Rothamsted Research, United Kingdom.  
(From July, 2022 to June, 2023)
- **Research Associate** in the Department of Environmental Science and Engineering, Indian Institute of Technology (ISM) Dhanbad. (From February, 2022 to July, 2022)
- **Graduate Engineer Trainee** in Coca Cola, Ghaziabad, India.  
(From June, 2012 to January, 2013)

### **TEACHING AND SUPERVISION SKILLS:**

- Provided training to the professionals and students on the topic “Life Cycle Assessment and Estimation of Footprints: A Foundation Course for Beginners” under SkillS 1.0 and SkillS 2.0 at TERI School of Advanced Studies.
- Delivered an invited guest lecture on “Potential of Waste to Energy Technologies and its Environmental Impacts” in short-term course on Waste Management and Sustainability at Gargi College, University of Delhi.
- Delivered an invited guest lecture on “Evaluation of Waste to Energy Technologies for Sustainable MSWM” on the eve of National Technology Day, 2023 at Sagar Group of Institutions, Bhopal.
- Delivered lecture as a technical expert on “Three Days Training Programme on Air, Water Pollution & Solid Waste Management Practices” at IIT (ISM) Dhanbad.
- Supervised two undergraduate and five post-graduate students for their research related activities.
- Subjects comfortable in Teaching: Solid Waste Management, Hazardous & Biomedical Waste Management, Life Cycle Assessment.

### **TECHNICAL AND SOFTWARE SKILLS:**

- Life Cycle Assessment of any products and processes.
- Carbon foot printing analysis.
- Water footprint analysis.
- Municipal solid waste, Hazardous waste, E-waste, and Plastic waste management.
- Knowledge of statistical and empirical modelling techniques.
- Prediction modelling using Machine Learning technique (Artificial Neural Network).
- Life Cycle Assessment Software: SimaPro
- Statistical Software: SPSS, Origin, R.

### **AWARDS AND ACHIEVEMENTS:**

- Got funding from Dept. of Environment Forest & Rural Affairs (Defra), Government of United Kingdom for pursuing postdoctoral research in the United Kingdom.
- Got awarded DST-SERB fellowship under International Travel scheme to attend international conference in Greece in the year 2019.
- Got featured in top 10 most cited papers for three consecutive years in Waste Management Journal (IF: 8.1).
- Guest Editor of *Sustainability* journal (Impact Factor: 3.9) for a Special Issue on “Treatment and Recycling of Municipal Solid Waste”.
- Graduate Aptitude Test for Engineers (GATE) Qualified.

### PROFESSIONAL AFFILIATION:

- Associate Member of Institution of Engineers India (Ltd.).
- Member of International Solid Waste Association.

### PROJECT:

S. No.	Title of the Project	Nature of the Project	Funding Agency	Amount (INR)	Duration	Status	Role
1	Appointment of an Independent Consultant (IC) to independently monitor the main work of private partnership project for collection, transportation, treatment, and disposal of municipal solid waste in five zones of Municipal Corporation of Delhi.	Consultancy	Municipal Corporation of Delhi (MCD)	81,18,000	18 Months	Ongoing	PI

### PUBLICATIONS:

**International Journals (Google Scholar Citations: 1567 till March 2024)**

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

1. Jebari, A., Pereyra-Goday, F., **Kumar, A.**, Collins, A. L., Rivero, M. J., and McAuliffe, G. A. (2024). Feasibility of mitigation measures for agricultural greenhouse gas emissions in the UK. A systematic review. *Agronomy for Sustainable Development* (Springer), 44(1), 2. (Impact Factor: 7.3) [Quartile: Q1].
2. Aryan, Y., **Kumar, A.**, and Samadder, S.R. (2023). "Environmental and economic assessment of waste collection and transportation using LCA: A case study". *Environmental Research* (Elsevier), 231, 116108. (Impact Factor: 8.3) [Quartile: Q1].
3. **Kumar, A.**, and Samadder, S.R. (2023). "Development of lower heating value prediction models and estimation of energy recovery potential of municipal solid waste and RDF incineration". *Energy* (Elsevier), 274, 127273. (Impact Factor: 9) [Quartile: Q1].
4. **Kumar, A.**, Bharadwaj, S., and Samadder, S.R. (2023). "Evaluation of methane generation rate and energy recovery potential of municipal solid waste using anaerobic digestion and landfilling: a case study of Dhanbad, India". *Waste Management & Research* (SAGE), 41 (2), 407 – 417. (Impact Factor: 3.9) [Quartile: Q2].
5. McAuliffe, G.A., Takahashi, T., Lee, M.R.F., Jebari, A., Cardenas, L., **Kumar, A.**, Pereyra-Goday, F., Scalabrino, H. and Collins, A.L. (2023). "A commentary on key methodological developments related to nutritional life cycle assessment (nLCA) generated throughout

a 6-year strategic scientific programme". *Food and Energy Security* (Wiley), p.e480. **(Impact Factor: 5)** [Quartile: Q2].

6. **Kumar, A.,** and Samadder, S.R. **(2022)**. "Assessment of energy recovery potential and analysis of environmental impacts of waste to energy options using life cycle assessment". *Journal of Cleaner Production* (Elsevier), 365, 132854. **(Impact Factor: 11.1)** [Quartile: Q1].
7. **Kumar, A.,** and Samadder, S.R. **(2020)**. "Performance evaluation of anaerobic digestion technology for energy recovery from organic fraction of municipal solid waste: A review". *Energy* (Elsevier), 197, 117253. **(Impact Factor: 9)**. [Quartile: Q1].
8. **Kumar, A.,** Samadder, S.R., Kumar, N., and Singh, C. **(2018)**. "Estimation of the generation rate of different types of plastic wastes and possible revenue recovery from informal recycling". *Waste Management* (Elsevier), 79, 781-790. **(Impact Factor: 8.1)**. [Quartile: Q1].
9. Khan, D., **Kumar, A.,** and Samadder, S.R. **(2018)**. "Public Acceptance Study of Environmentally Suitable Landfill Sites: A Case Study". *Current Science* (Indian Academy of Sciences), 115 (11), 2122-2129. **(Impact Factor: 1)**. [Quartile: Q4].
10. **Kumar, A.** and Samadder, S.R. **(2017)**. "An empirical model for prediction of household solid waste generation rate- A case study of Dhanbad, India". *Waste Management* (Elsevier), 68, 3-15. **(Impact Factor: 8.1)**. [Quartile: Q1].
11. **Kumar, A.,** and Samadder, S.R. **(2017)**. "A review on technological options of waste to energy for effective management of municipal solid waste". *Waste Management* (Elsevier), 69, 407-422. **(Impact Factor: 8.1)**. [Quartile: Q1].
12. Khan, D., **Kumar, A.** and Samadder, S.R. **(2016)**. "Impact of socioeconomic status on municipal solid waste generation rate". *Waste Management* (Elsevier), 49, 15-25. **(Impact Factor: 8.1)**. [Quartile: Q1].

#### **International Conference:**

1. **Kumar, A.,** and Samadder, S.R. **(2019)**. "Effect of Cow Dung Inoculum on Biogas Generation from Anaerobic Digestion of Organic Fraction of Municipal Solid Waste – A Case Study of India" June 26-29, 2019. International Conference on Sustainable Solid Waste Management, Heraklion, Crete Island, **Greece**.
2. **Kumar, A.,** and Samadder, S.R. **(2016)**. "Do socioeconomic parameters govern the generation rate and characteristics of municipal solid waste?" April 1 – 2, 2016. International Conference on Waste Management (RECYCLE 16), Indian Institute of Technology, Guwahati, **India**.

**National Conference:**

1. **Kumar, A.,** Kumar, N., & Samadder, S.R. **(2016)**. “Assessment of status of municipal solid waste management in Dhanbad city” December 17 – 18, 2016. National Seminar on Environment and Development in Eastern India (Status, Issues and Challenges). Ranchi University, Ranchi, Jharkhand, India.
2. **Kumar, A.,** & Samadder, S.R. **(2018)**. “Municipal solid waste generation and composition based on family socioeconomic profile: a case study of Dhanbad” August 11-12, 2018. National Conference on Biogeochemical Cycles and Climate Change. Indian Institute of Technology (Indian School of Mines), Dhanbad, Jharkhand, India.

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