

## **BIO-DATA**

1. Name, Designation, and full correspondence address: DR. SANTU KAR  
Assistant Professor, Department of Civil Engineering, Indian Institute of Technology (IIT) Guwahati  
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3. Institution: Indian Institute of Technology Guwahati
4. Date of Birth: 25-05-1987
5. Gender (M/F/T): M

6. Academic Qualification (Undergraduate Onwards)

S.No	Degree	Year	Subject	University/Institution
1.	Bachelor of Civil Engineering	2009	Civil Engineering	Jadavpur University
2.	Master of Technology	2013	Construction Technology and Management	Indian Institute of Technology Delhi
3.	Doctor of Philosophy	2021	Civil Engineering (Construction Technology and Management)	Indian Institute of Technology Delhi

7. Ph.D. thesis title, Guide 's Name, Institute/Organization/University, Year of Award.

Title: Developing a Decision Support System for Effective Material Management in Construction  
Guide: Prof. K. N. Jha  
Institute: Indian Institute of Technology Delhi  
Year of Award: 2021

8. Work experience (in chronological order).

S.No.	Positionsheld	Name of theInstitute	From	To
1.	Assistant Professor	Indian Institute of Technology Guwahati	06-10-2021	Till Date
2.	Assistant Professor	Mahindra University	12-07-2021	05-10-2021
3.	Assistant Professor	Jaypee University of Information Technology	04-04-2015	19-07-2017
4.	Assistant Manager	Larsen & Toubro (L&T) Construction	01-07-2009	31-03-2015

9. Professional Recognition/ Award/ Prize/ Certificate, Fellowship received by the applicant.

S.No	Name of Award	Awarding Agency	Year
1.	Early-Doc. Fellowship	Indian Institute of Technology (IIT) Delhi	2021
2.	Editor's Best Paper	ASCE Journal of Construction Engineering and Management	2021
3.	MoUD Award	Transportation Research and Injury Prevention Programme (TRIPP), IIT Delhi	2018, 2019
4.	Build India Scholarship Award	Larsen & Toubro Construction	2011

10. Journal Publications (*List of papers published in SCI Journals, in the last 5 years*).

- Masih S., Kar, S. 2025 (Accepted for publication, Forthcoming). "Assessing social sustainability for multimodal activities in construction – An FAHP-TOPSIS approach," *ASCE Journal of Construction Engineering and Management*. DOI: 10.1061/JCEMD4/COENG-16426.
- Jaiswal S., Kar, S. 2025 (Accepted for publication, Forthcoming). "Developing an optimum material procurement schedule by integrating construction program and budget using NSGA-II," *ASCE Journal of Construction Engineering and Management*.
- Guha, P., Kar, S., Jha, K. N. 2025 (Accepted for publication, Forthcoming). "Exploring leadership styles and their effect on the safety and quality performance in construction projects," *ASCE Journal of Construction Engineering and Management*. DOI: 10.1061/JCEMD4.COENG-15697.
- Guha, P., Kar, S., Jha, K. N. 2025 (Accepted for publication, Forthcoming). "The impact of construction leaders' emotional quotient on project safety and quality," *ASCE Journal of Construction Engineering and Management*, DOI: 10.1061/JCEMD4.COENG-15828
- Narayan, P., Kar, S., Jha, K. N., 2025. "Enterprises' perspective in managing risks in developing renewable power projects: Case of solar power projects," *ASCE Journal of Legal Affairs and Dispute Resolution in Engineering and Construction*, 17(3), 05025006-1
- Guha, P., Kar, S., Jha, K. N., 2025. "A framework to assess leadership quality of construction leaders," *ASCE Journal of Construction Engineering and Management*, 151(6), 04025047.
- Narayan, P., Kar, S., Jha, K. N., 2025 "Developing risk mitigation model in renewable power projects: A PLS-SEM approach," *ASCE Journal of Legal Affairs and Dispute Resolution in Engineering and Construction*, 17(3), 04525037.
- Narayan, P., Kar, S., Jha, K. N. 2024 "In-depth analysis of risks and their impacts on solar power project development: Public and private contractors' perspective," *ASCE Journal of Legal Affairs and Dispute Resolution in Engineering and Construction*, 16(4), 05024005.
- Kar, S., Jha, K. N. 2023. "Examining the effect of material management practices on material availability and waste reduction in construction projects," *ASCE Journal of Construction Engineering and Management*. 149 (8), 04023065.
- Narayan, P., Kar, S., Jha, K. N. 2023. "Disputes in renewable energy development: international and domestic interventions," *ASCE Journal of Legal Affairs and Dispute Resolution in Engineering and Construction*, 16(2), 05023010.
- Arora J., Kar, S., Jha, K. N. 2023. "Assessment of the significance of identified attributes affecting the rebar fixing productivity using multiple regression," *ASCE Journal of Construction Engineering and Management*. 149 (6), 04023039.
- Kar, S., Jha, K. N. 2021. "Investigation into lead time of construction materials and influencing factors," *ASCE Journal of Construction Engineering and Management*. 147 (3), 04020177. [Selected as Editor's Best Paper]
- Kar, S., Kothari, C., Jha, K. N. 2021. "Developing an optimum material procurement schedule by integrating construction program and budget using NSGA-II," *ASCE Journal of Construction Engineering and Management*. 147 (4), 04021017.
- Kar, S., Jha, K. N. 2021. "Exploring the critical barriers to and enablers of sustainable material management practices in the construction industry," *ASCE Journal of Construction Engineering and Management*. 147 (9), 04021102.
- Kar, S., Deb, S. K., Bhattacharjee, B. 2021. "Roller compacted concrete used in pavement," *The Indian Concrete Journal*. 95 (7), 14-22.
- Kar, S., Jha, K. N. 2020. "Examining the effect of material management issues on the schedule and cost performance of construction projects based on a structural equation model: Survey of Indian experiences," *ASCE Journal of Construction Engineering and Management*, (9), 05020011.
- Kar, S., Jha, K. N. 2020. "Assessing criticality of construction materials for prioritizing their procurement using ANP-TOPSIS," *International Journal of Construction Management*.  
<https://doi.org/10.1080/15623599.2020.1742637>
- Kar, S., Shiv, A., Panwar, A., Jha, K. N., Singh, A. 2020. "River water project disputes and their implications,"

*ASCE Journal of Legal Affairs and Dispute Resolution in Engineering and Construction*, 12 (4). 05020012.

- Viswanathan, S. K., Panwar, A., Kar, S., Lavingiya, R., Jha, K. N. 2020. "Causal modelling of disputes in construction projects," *ASCE Journal of Legal Affairs and Dispute Resolution in Engineering and Construction*, 12 (4). 04520035.

#### 11. Books/Reports/Chapters/General articles etc.

S.No	Title	Authors Name	Publisher	Year of Publication
1.	Optimization for project resource management, Application of mathematics and optimization in construction project management	Jha, K. N., Kar, S.	Springer	2021
2.	Project management in developing countries – A case of Indian construction industry, Building a body of knowledge in project management in developing countries	Jha, K. N., Sinha, A. K., Vishwanathan, S., Kar, S., Johari, S.	World Scientific Ltd.	2022

#### 12. Ph.D. theses guidance (ongoing- 5 nos.)

- Developing a sustainability framework for optimizing multi-modal activities in construction
- Integrating BIM with AR/VR to improve construction project performance
- Development of an enterprise risk management model for renewable power projects in India
- Developing a decision support system (DSS) to optimize resource management in post-disaster reconstruction
- Organizational practices in material management and their influence on project performance

#### 13. Post-doctoral guidance - Nil

#### 14. MTech. Theses Supervised (Completed)

- Enhancing construction safety planning through dynamic 8D BIM simulation and immersive visualization in Meta Quest 3
- Quantitative analysis of quality for major construction activities
- Assessing safety scores of multimodal activities to integrate safety in construction planning
- Building information modelling integrated decision support system for optimizing labor
- acquisition in construction using NSGA II
- Exploring the concepts of smart cities: An empirical study of smart city Indore
- Risk management in highway projects
- Modeling and comparison of energy-efficient green building with conventional building
- for different climatic zones
- Smart solution to design Shimla as smart city
- Risk management in hydro-electric projects
- Delay analysis in construction projects
- Success or failure analysis of hydropower projects

#### 15. Teaching

### PG Courses Taught

- Advanced quantitative techniques in construction management
- Construction methods and equipment management
- Project management in construction
- Construction techniques
- Construction financial management
- Construction planning and control
- Construction contracts and laws
- Construction methods improvement
- Construction cost analysis
- Project management laboratory

### UG Courses Taught

- Construction technology and management
- Advanced quantitative techniques in construction management
- Engineering drawings

#### 16. Sponsored Research Project

- i. Project Title: A Building information modelling integrated decision support system for automated and optimized material management in construction

Funding Agency: IIT Guwahati

Principal Investigator: Dr. Santu Kar

Duration: 2022-24

- ii. Enhancing Construction Safety, Sustainability, and Project Performance Using Cutting-Edge Technologies

Funding Agency: NBCC (India) Limited

Principal Investigator: Dr. Santu Kar

Duration: 2024-27

#### 17. Research Interests:

Material management, ICT and automation in construction, decision support systems, quantitative techniques and optimization in construction management, sustainable construction, risk management, building information modeling, smart city, green and energy efficient building, construction safety, and productivity.

#### 18. Other Information

- I have worked on different consultancy projects of national importance with MePGCL, Ministry of Ayush, BMRCCL, DMRC, WAPCOS, and so forth.
- I have more than 5 years of industry experience in L&T construction, where I worked for three mega

construction projects in India, including Western Dedicated Freight Corridor Project (1483 km) in Rajasthan, Ratle Hydro-electric Project (850 MW) in J&K, and Subansiri Lower Hydro-electric Project (2000 MW) in Assam

- I am a member of the panel for preparing the Draft of IS 15883 (Part 7) on Procurement Management by the Bureau of Indian Standards.
- I have delivered lectures in training programs on project management and conducted hands-on sessions using software like MS Project and Primavera P6 for RVNL, Brahmaputra Board, NIT Patna, CRPF, SPCL, CLW, IIT Jodhpur, and TEQIP III (organized by IIT Delhi).
- I am contributing as a reviewer of reputed international journals, including ASCE Journal of Management in Engineering, ASCE Journal of Construction Engineering and Management, ASCE Journal of Legal Affairs and Dispute Resolution in Engineering and Construction, and International Journal of Construction Management, International Journal of Construction Management.