

DR. SUMAN KUMAR

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Web link: [Please Click here for DRS's Official Webpage](#)

Academic Credentials

- Doctor of Philosophy in Structural Engineering (2016-2022)
NA/10
Indian Institute of Technology, Guwahati, Assam, India
- Master of Technology in Structural Engineering (2014-2016)
9.31/10
Indian Institute of Technology, Guwahati, Assam, India
- Bachelor of Technology in Civil Engineering (2009-2013)
8.36/10
National Institute of Technology, Hamirpur, Himachal Pradesh, India

Work Experience

- CSIR-CBRI Roorkee (17.01.2022 to Present)
Designation & Department: Scientist, Heritage and Special Structures, CSIR-CBRI Roorkee, Hardwar, Uttarakhand, India, 247667
- NIT Meghalaya (21.07.2014 to 07.01.2022)
Designation & Department: Trainee Teacher & Department of Civil Engineering, NIT Meghalaya, Shillong, Meghalaya, 793003
- Larsen & Toubro Construction (08.07.2013 to 30.05.2014)
Designation: Graduate Engineer Trainee

Courses Taught

Year	Semester	Course Code	Course Name	Course Level./ program	Role
2023	2 nd Semester	ENG-CBRI-1-1102	Design of Building Structures	Ph.D.	Co-Instructor
2023	2 nd Semester	AcSIR-01-ES-AD-004	Corrosion Control in Reinforced Concrete Structures	Ph.D.	Co-Instructor
2021	3 rd Semester	CE 203	Surveying	Level 200/ UG	Instructor
2021	4 th Semester	CE 206	Structural Analysis I	Level 200/ UG	Instructor
2020	1 st Semester	CE 555	Computing I	Level 500/ PG	Instructor

2020	3 rd Semester	CE 203	Surveying	Level 200/ UG	Instructor
2019	4 th Semester	CE 208	Structural Analysis II	Level 200/ UG	Instructor
2017-19	1 st Semester	CE 101	Engineering Drawing	Level 100/ UG	Instructor
2015-17	1 st Semester	CE151	Engineering Drawing (Lab)	Level 100/ UG	Instructor
2016-17	4 th Semester	CE 215	Fluid Mechanics (Lab)	Level 200/ UG	Teaching Assistant

Awards and Honors

- 2010-2013 Merit-Cum-Means Scholarship, MHRD, GOI

Research Interest

Solid mechanics, Computational Mechanics, Experimental mechanics, Blast and impact engineering, Machine learning application

Projects:

Sr. No.	Funding Agency	Project Title	Period	Amount (INR)	Principal Investigator/ Co-Investigator, if any	Status (Completed/ Ongoing)
1.	M/s Chintels Pvt. Ltd	Structural Audit of Residential Towers: D, E, F, G, and H of Phase I of Group Housing Project, Chintels Paradiso, Sector - 109, Gurugram, Haryana	15 Months	7080000	Co-investigator	Ongoing
2.	CSIR-CBRI Roorkee	Development of a framework for controlled building destruction of tall buildings using a numerical technique	12 Months	500000	Principal Investigator	Ongoing
3.	M/s Supertech Ltd	Technical Guidance on Safe Demolition of Supertech Twin Tower, Noida	24 Months	7000000	Co-investigator	Ongoing

Publications

Journals:

- Kumar, S., Saxena, S., Sharma, H., Gangolu, J., & Prabhu, T. A. (2023). Development of Design Guidelines using Probabilistic Framework for The Development of Smart Thickening Fluid Based Ultra Resistant Adaptive Kinematic Soft Human Armor (SURAKSHA). *Reliability Engineering & System Safety*, 109277. <https://doi.org/https://doi.org/10.1016/j.res.2023.109277>
- Kumar, S., Saxena, S., & Sharma, H. (2022). Ballistic Performance Evaluation of High-Performance Fabric Due to Interyarn Friction. *Practice Periodical on Structural Design and Construction*, 27(4), 04022043. [https://doi.org/10.1061/\(ASCE\)SC.1943-5576.0000721](https://doi.org/10.1061/(ASCE)SC.1943-5576.0000721)

Conferences (National & International)

- Umesh, R., Kumar S., and Sharma, H. "Progress and Evolution in Fatigue studies of Advanced Composite Materials" Second ASCE conference on CRSIDE 2020 (Accepted)

- Umesh, R., Kumar S., and Sharma, H. "Blast Induced Brain Traumatic Injury: Current progress and challenges" 6th national symposium on shock waves 2020, IIT Madras, (Accepted)
- Jaswanth G., Kumar S., Kumar A., and Sharma H., "Numerical technique for prestressing post-tensioning members subjected to missile impact load," Proceedings of ICCMS 2019, IIT Mandi, India
- Jaswanth G., Kumar S., and Sharma H., "Impact testing Facility: BHISM for Performance-based Blast Resistant Design of Reinforced Concrete (RC) Structures," *Procedia Engineering, IMPLAST 2016* IIT Delhi.
- Kumar S., and Sharma H., "Development of BHISM for Performance-based Blast Resistant Design of Reinforced Concrete (RC) Structures," Proceedings of ICCMS 2016, IIT Bombay, India.

Patents

- Sharma, Hrishikesh; IN, Kumar, Suman; IN "A blast simulator for testing of specimens of variable dimensions," (Granted)
- Sharma, Hrishikesh; IN, Kumar, Suman; IN, Sharma, A. K.; IN, Gariya, D. S.; IN, "Bamboo for construction of frangible structures for the aviation industry," WO2020003020 (Published)

Soft Skills

- LS DYNA (Intermediate level): Performed simulation of ballistic fabric under impact load, Performed modeling of blast load using Conwep, Coupled Conwep ALE, MMALE, particle blast (SPH) technique in LS DYNA.
- MATLAB: Taught CE 555 (Computing I) M. Tech. lab and written codes to solve computing problems related to my research
- PYTHON (Beginner)
- MS OFFICE (Intermediate to advance level)