



**Name:** Vishnu Kumar

**Advisor:** Dr. Sailesh N. Behera

**Joining Semester:** Monsoon 2018- Till date

**E-Mail:** [vk918@snu.edu.in](mailto:vk918@snu.edu.in)

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**Research Gate:** <https://www.researchgate.net/profile/Vishnu-Kumar-25>

**Specialization/Area of Research:** Environmental Engineering

**Topic of Research:** Emission of particulate and gaseous pollutants from stationary diesel engine exhaust and examining their fate in the atmosphere through cause-effect assessment

#### **Publications:**

- Kumar, V., Yadav, M., & Behera, S. N. (2022). Characterization of PM<sub>2.5</sub>-bound trace elements, source apportionment, and assessment of associated human health risks during summer and winter in Greater Noida, the National Capital Region of India. *Frontiers in Environmental Science*, 10, 949913.
- Behera, S. N., Yadav, M., Kumar, V., & Rout, P. R. (2023). Various Perspectives on Occurrence, Sources, Measurement Techniques, Transport, and Insights into Future Scope for Research of Atmospheric Microplastics. *Microconstituents in the Environment: Occurrence, Fate, Removal and Management*, 203-225.
- Biochar Production and Its Characterization to Assess Viable Energy Options and Environmental Co-Benefits from Wood-Based Wastes.



**Name:** Vipin Chauhan

**Advisor:** Dr. Jagabandhu Dixit

**Joining Semester:** Monsoon 2018- Till date

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**Research Gate:** <https://www.researchgate.net/profile/Vipin-Chauhan-4>

**Specialization/Area of Research:** Disaster Management /  
Geomorphic Hazards Assessment

**Publications:**

- Chauhan V & Dixit J (2024). Geomorphic anomalies in Uttarakhand, India: A GIS-based approach for active tectonics. *Journal of Earth System Science*, 133(1), 2. <https://doi.org/10.1007/s12040-023-02208-9>
- Chauhan V & Dixit J (2024). Fractal analysis of major faults and fractal dimension of lineaments in the Indo-Gangetic Plain on a regional scale. *Earthquake Science*, 37(2), 107-121. <https://doi.org/10.1016/j.eqs.2024.01.015>
- Chauhan V & Dixit J (2024). Seismotectonic study of the Indo-Gangetic Plain using distribution and direction analysis. *Geo-information for Disaster Monitoring and Management*, Springer. [https://doi.org/10.1007/978-3-031-51053-3\\_2](https://doi.org/10.1007/978-3-031-51053-3_2)



**Name:** Vikalp Chauhan

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**Specialization/Area of Research:** Hydraulic engineering

**Topic of Research:** Physical and Numerical modeling of river bed dredging using tapered submerged vanes

### **Publications:**

- Chauhan, V., Singhal, G.D. and Chavan, R., 2023. A review of sediment deflection in rivers using submerged vanes. *ISH Journal of Hydraulic Engineering*, 29(4), pp.514-530.
- Chauhan, V., Padhi, E., Chavan, R. and Singhal, G.D., 2023. A review of bridge scour mitigation measures using flow deflecting structures. *ISH Journal of Hydraulic Engineering*, pp.1-14.
- Chauhan, V., Chavan, R., and Singhal, G.D. (2022). "Numerical Modeling for Optimization of the Aspect Ratio of Submerged Vanes for the Purpose of Sediment Deflection in Rivers" in "9th IAHR International Symposium on Hydraulic Structures (9th ISHS)". Proceedings of the 9th IAHR International Symposium on Hydraulic Structures – 9th ISHS, 24-27 October 2022, IIT Roorkee, Roorkee, India. Palermo, Ahmad, Crookston, and Erpicum Editors. Utah State University, Logan, Utah, USA, 10 pages (DOI: 10.26077/b079-8746) (ISBN 978-1-958416-07-5)

### **Achievements:**

Best Poster Award, 28th International Conference on Hydraulics, Water Resources, Rivers, and Coastal Engineering, NIT Warangal on December 21–23, 2023.



**Name:** Vikalp Saxena

**Advisor:** Dr. Susant Kumar Padhi

**Joining Semester:** Monsoon 2019- Till date

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**Specialization/Area of Research:** Wastewater treatment

### **Publications:**

- Saxena, V., Padhi, S. K., & Jhunjhunwala, U. (2021). Treatment of domestic sewage and leachate using a moving bed hybrid bioreactor. *Environmental Technology & Innovation*, 24, 101998. (IF- 7.758, Q1, Published)
- Saxena, V., Padhi, S., Bhatt, R., & Pattanaik, L. (2022). Simultaneous removal of carbon, nitrogen, and phosphorus from landfill leachate using an aerobic granular reactor. *Environmental Technology & Innovation*. (IF- 7.758, Q1, Published)
- Jhunjhunwala, U., Padhi, S. K., Pattanaik, L., Sharma, D., Kumar, A., Chaudhary, P., & Saxena, V. (2023). Anaerobic co-digestion of food waste and waste activated sludge for methane production: Evaluation of optimum ratio, microbial analysis, and kinetic modeling. *Biomass Conversion and Biorefinery*, 1-16. (IF- 4.05, Q1, Published)

### **Achievements:**

- Best Poster Award, International Conference on Biotechnology for Sustainable Agriculture, Environment and Health (BSAEH-2021). NIT Jaipur, April 04-08, 2021



**Name:** Lukesh Parida

**Advisor:** Dr. Sumedha Maharana

**Joining Semester:** Monsoon 2019- Till date

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**Specialization/Area of Research:** Electromechanical Impedance (EMI) Techniques, Multi Sensing Piezoelectric Sensor, Non-Bonded and Reusable PZT Sensor

**Topic of Research:** Monitoring bond behavior of steel-concrete composite structures using multi modal piezoelectric sensor-An experimental and deep learning approach

### **Publications:**

- Parida, L., & Moharana, S. (2023). Comparative Assessment of a Multitudinal Piezo Arrangement for Non-Destructive Evaluation of Construction Steel: An Experimental Study. *Measurement*, 113592. IF:5.6, DOI: <https://doi.org/10.1016/j.measurement.2023.113592>
- Parida, L., Moharana, S., Vicente, R., & Ascensão, G. (2024). A proof of concept study on reliability assessment of different metal foil length based piezoelectric sensor for electromechanical impedance techniques. *Scientific Reports*, 14(1), 699. IF:4.6 DOI: <https://doi.org/10.1038/s41598-023-49762-2>
- Parida, L., Moharana, S., Ferreira, V. M., Giri, S. K., & Ascensão, G. (2022). A Novel CNN-LSTM Hybrid Model for Prediction of Electro-Mechanical Impedance Signal Based Bond Strength Monitoring. *Sensors*, 22(24), 9920. IF: 3.9, DOI: <https://doi.org/10.3390/s22249920>

### **Achievements:**

- Reviewer of two reputed SCI journal  
International Journal of Pavement Engineering, Taylor & Francis  
Materials Research Express, IOP science
- Received the Best Oral Paper Presentation Award on the theme of Condition Assessment, NDT and Health Monitoring at the International Conference on Condition Assessment, Rehabilitation and Retrofitting of Structures (CARRS 2023), organized by IIT Hyderabad.
- Received Best Poster Presentation award under theme of Machine Learning, Artificial Intelligence, Image Processing, Software Tools & Sensors in Road, Bridge, Traffic, and Transport Research division. The event was organized by CSIR-CRRI, New Delhi, as a part of a one-week-long celebration "One Week One Lab" (OWOL) initiative.



**Name:** Smrithy Subash

**Advisor:** Dr. Sumedha Moharana

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**Orchid ID:** 0000-0002-2529-4100

**Specialization/Area of Research:** Corrosion of Reinforced Concrete

**Topic of Research:** An Experimental Approach to Investigate the Corrosion Inhibitive Assessment of Hydraulic Fracturing Additives for Reinforced Concrete Structure

### **Publications:**

- Subash, Smrithy, et al. "Corrosion inhibitors for enhanced strength, durability, and microstructure of coastal concrete structures." *Materials Research Express* 10.7 (2023): 075101.
- Subash, Smrithy, Sumedha Moharana, and Yamini Sudha Sistla. "Inhibition Mechanism of Oxalhydrazide on Reinforcing Steel in Pore Solution Contaminated by 3.5% NaCl- Experimental and Theoretical Study." *MATEC Web of Conferences*. Vol. 378. EDP Sciences, 2023.
- Gargepuram, Sreelekha, Smrithy Subash, and Sumedha Moharana. "Pore Evaluation and Distribution in Cement Mortar Using Digital Image Processing." *Advances in Non-destructive Evaluation: Proceedings of NDE 2019*. Springer Singapore, 2021.

### **Achievements:**

- ECS Travel Grant Recipient for 2023 ECS conference held at Gothenberg, Sweden
- ITS SERB recipient for the ECS Conference held at Gothenberg, Sweden
- Selected as a CORmentor mentee for the CORmentor Program introduced by Western University, Canada under the mentorship of Dr.Ibrahim Ogunsanya, Assistant Professor, University of Toronto, Canada ( April 2023 – April 2024)



**Name:** Siddharth Jain

**Advisor:** Dr. Shalini Rankavat

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<https://scholar.google.com/citations?user=kU43m98AAAAJ&hl=en>

**Specialization/Area of Research:** Environmental engineering

**Publications:**

- Jain, S. and Rankavat, S., 2023. Analysing driving factors of India's transportation sector CO2 emissions: Based on LMDI decomposition method. *Heliyon*, 9(9).
- Jain, S. and Rankavat, S., 2022. Investigation of Transport Pollutant Emissions and Their Associated Health Impacts in North Indian Region. In *Urban Mobility India* (pp. 443-465). Singapore: Springer Nature Singapore.



**Name:** Aditi Yadav

**Advisor:** Dr. Gopal Das Singhal

**Co-Advisor:** Dr. Hitesh Upreti

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**Specialization/Area of Research:** Water Resources /Optimizing irrigation

**Topic of Research:** Assessment of Crop Water Stress Index for efficient irrigation management

### **Publications:**

- Yadav, A., Sharma, N., Upreti, H., Singhal, G.D. (2022). “Techno-economic analysis of irrigation systems for efficient water use in the backdrop of climate change.” *Current Science*, 122 (6), 664-673.
- Yadav, A., Upreti, H., Singhal, G.D. (2023). “Effect of field of view of canopy temperature observations on crop water stress index for irrigation scheduling”. *Water Supply*.
- Yadav, A., Upreti, H., Singhal, G.D. (2023). “Crop Water Stress Index and its Sensitivity to Meteorological Parameters and Canopy Temperature”. *Theoretical and Applied Climatology*.





**Name:** Ghanshyam Giri

**Advisor:** Dr. Hitesh Upreti

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**Specialization/Area of Research:** Water Resources, Irrigation Hydrology, Remote Sensing

**Topic of Research:** Modeling of soil moisture and its variability in cropped area for irrigation scheduling."

**Publications:**

- Singhal, G. D., Giri, G., Upreti, H., Sharma, N., Pandey, R., Singh, P., & Pyla, V. Development of Water Saving Strategy for Wheat Crop by Combining Drip Irrigation System with Regulated Deficit Irrigation. In World Environmental and Water Resources Congress 2023 (pp. 447-455)
- Giri G., Yadav M., Upreti H., & Singhal G. D. Estimation of Crop Water Requirement using Field Water Balance and Soil Moisture Data. International Conference on Hydraulics, Water Resources and River Engineering, ISH (Hydro 2023)



**Name:** Manoj Yadav

**Advisor:** Dr. Hitesh Upreti

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**E-Mail:** [my354@snu.edu.in](mailto:my354@snu.edu.in)

**Specialization/Area of Research:** Water Resources, Remote Sensing

**Topic of Research:** Monitoring crop water use and crop water stress in agriculture

**Publications:**

- Pandey, R., Yadav, M., Upreti, H., Singhal, G., 2022. 'Irrigation application efficiency of wheat and rice crops under flood and drip irrigation regimes', 19th Annual meeting of the Asia Oceania Geosciences Society, Singapore, 1 - 5 August 2022.
- Giri, G., Yadav, M., Upreti, H., Singhal G., (2023). 'Estimation of Crop water requirements using Field water Balance and soil Moisture data', Hydro 2023.
- Yadav M., Theerdh M., Giri G., Upreti, H., Singhal, G., Muni, L., (2023). 'Estimation of leaf area index using Sentinel-2 satellite data for wheat crop' 2024 World Environmental and Water Resources Congress ASCE-EWRI



**Name:** Nishank Agrawal

**Advisor:** Dr. Ellora Padhi

**Joining Semester:** Monsoon 2021- Till date

**E-Mail:** [na886@snu.edu.in](mailto:na886@snu.edu.in)

**Specialization/Area of Research:** Water Resources Engineering

**Topic of Research:** Local scour protection by upgrading stilling basin design.

**Publications:**

- Agrawal N and Padhi E (2023) Impact of Bed Roughness and Orientation on Hydraulic Jump. Water Science and Engineering (Accepted)
- Padhi E and Agrawal N (2022) Investigation on near bed flow features over a water-worked gravel bed (Accepted for publication in the proceedings of ISHS 2022, Roorkee, India)
- Agrawal N and Padhi E (2022) Bank scour protection using spur dyke in a meandering channel under low flow velocity (Accepted for publication in the proceedings of ISHS 2022, Roorkee, India)



**Name:** D. Sai Kiran Varma

**Advisor:** Dr. Shalini Rankavat

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**Specialization/Area of Research:** Transportation Engineering & Planning

**Topic of Research:** Development of Transit-Oriented Development (TOD) Framework for Integrated Public Transit Services in Indian Cities

### **Publications:**

- Varma, D.S.K., Rankavat, S., Bhardwaj, A. (2023). Comprehensive Analysis of Post-COVID-19 Changes in Behavior and Perception of Public Transit Users in the Urban Region of a Medium-Sized City of India- Noida/Greater Noida Region (Delhi NCR). Urban Mobility Research in India. UMI 2022. Lecture Notes in Civil Engineering, vol 361. Springer, Singapore. [https://doi.org/10.1007/978-981-99-3447-8\\_15](https://doi.org/10.1007/978-981-99-3447-8_15) (SCI-Indexed)
- Bhardwaj, A., Rankavat, S., & Varma, D. Treatment of Recycled Coarse Aggregate Using Hybrid Technique for Rigid Pavements Incorporating Fly Ash. Treatment of Recycled Coarse Aggregate Using Hybrid Technique for Rigid Pavements Incorporating Fly Ash.
- Jha, M.K., D.S.K Varma, R. Jaiswal, S. Rankavat and B.A. Kumar. A Machine Learning Approach to Traffic Congestion Hotspot Identification and Prediction. The 16th World Conference on Transport Research, Montr´eal, Qu´ebec, Canada, 17 - 21 July, 2023 (Accepted)



**Name:** Pallavi Chaudhary

**Advisor:** Dr. Susant Kumar Padhi

**Joining Semester:** Monsoon 2021- Till date

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**ResearchGate:**

<https://www.researchgate.net/profile/Pallavi-Chaudhary-6/research>

**Specialization/Area of Research:** Waste-water treatment

**Topic of Research:** Simultaneous treatment of gaseous volatile organic compounds along with wastewater nutrients using an anoxic hybrid bioreactor"

#### **Publications:**

- Jhunjhunwala, U., Padhi, S.K., Pattanaik, L. et al. Anaerobic co-digestion of food waste and waste activated sludge for methane production: Evaluation of optimum ratio, microbial analysis, and kinetic modeling. *Biomass Conv. Bioref.* (2023). <https://doi.org/10.1007/s13399-023-04339-x>

#### **Achievements:**

- Won the Best Oral Presentation for my talk on "Unleashing the Potential of an Anoxic Hybrid Bioreactor for Concurrent Treatment of Gaseous Toluene and Wastewater from Petrochemical Industries" at "The International Conference on Waste Recycling and Environmental Technology (WRET-2024)" organized by the Department of Environmental Science at Babasaheb Bhimrao Ambedkar University, Lucknow, India.



**Name:** Abhishek Dixit

**Advisor:** Dr. Gyan Vikash

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**ResearchGate:** <https://www.researchgate.net/profile/Abhishek-Dixit-9>

**Specialization/Area of Research:** Computational Mechanics, Seismic Soil-Structure Interaction, Earthquake Engineering

**Topic of Research:** Seismic Analysis and Design of Caisson Foundation supporting Bridge Piers with Soil-Structure Interaction Effects

### **Publications:**

- Effect of Pier-Deck Joint Rigidity on the Seismic Response of Bridge founded on Caisson. 12th International Conference on 'Deep Foundation Technologies for Infrastructure Development in India - Sustainability in Deep Foundations' held at Vadodara, Gujarat – Oct 5, 2023.
- Comparative Seismic Analysis Between Elevated Circular Water Tanks Using Equivalent Static Method and Response Spectrum Method. Advances in Geotechnics and Structural Engineering, Lecture Notes in Civil Engineering, Springer Nature · Apr 29, 2021.



**Name:** Ashu Singhal

**Advisor:** Dr. Gyan Vikash

**Joining Semester:** Monsoon 2021- Till date

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**Specialization/Area of Research:** Uncertainties Quantification of Geotechnical Engineering Systems, Application of Machine Learning for Intelligent Geosystems

**Topic of Research:** Probabilistic Characterization of Spatial Variability of Ground using Deep Learning Approach

**Publications:**

- Singhal, A., Vikash, G., and Singhal, S. (2023) “Insights on 2D versus 3D Modelling of Strip Loading on Spatially Varying Random Soil Domain”- ASCE Geo-Congress 2023: Geotechnical Data Analysis and Computation (131-141), <https://doi.org/10.1061/9780784484692.014>
- Singhal, A., Vikash, G. (2023) “Stochastic Analysis of Uncertainties in Modelling Random Spatial Variability of Ground”- Indian Geotechnical Conference (IGC, 2023), IIT Roorkee, Roorkee



**Name:** Mudit Yadav

**Advisor:** Dr. Sailesh N. Behera

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**Specialization/Area of Research:** Environmental Engineering/Air pollution studies

**Topic of Research:** Insights into characterization of indoor and outdoor air along with settled dust in a built-up environment

**Publications:**

- Kumar, V., Yadav, M., and Behera, S.N., 2022. Characterization of PM2.5-bound trace elements, source apportionment, and assessment of associated human health risks during summer and winter in Greater Noida, National Capital Region of India. *Frontiers in Environmental Science*, p.1622.
- Behera, S.N., Yadav, M., Kumar, V., Rout, P.R., 2022. Various perspectives on occurrence, sources, measurement techniques, transport, and insights into future scopes for research of atmospheric Microplastics. John Wiley & Sons.



**Name:** Apoorva Yadav

**Advisor:** Dr. Hitesh Upreti

**Co-Advisor:** Dr. Gopal Das Singhal

**Joining Semester:** Monsoon 2022- Till date

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**Specialization/Area of Research:** Water Resource Engineering

**Topic of Research:** Evaluation of crop response to water and nutrient stress using remote sensing techniques

**Publications:**

- Yadav, A., Sasanapuri, S. K., Upreti, H., & Behera, S. N. (2023). Assessing the variability in emissions from crop residue burning in north India using remote sensing data (No. EGU23-638). Copernicus Meetings.





**Name:** Ajay Patel

**Advisor:** Dr. Sumedha Moharana

**Co-Advisor:** Prof. Suresh Bhalla

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**Specialization/Area of Research:** Structural Health Monitoring,  
Smart Materials

**Topic of Research:** Impedance based SHM

### **Publications:**

- Pal, S., Patel, A., & Garg, R. K. (2018). "Vibration Based Damage Detection and Analysis of a R.C.C. Building". Proceedings of 16th Symposium on Earthquake Engineering.



**Name:** N. PRAVIN DILIBAN

**Advisor:** Dr. Manoj Kumar Singh

**Joining Semester:** Monsoon 2022- Till date

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**Specialization/Area of Research:** Net-Zero Energy Buildings in  
India

**Topic of Research:** Towards Net-Zero Housing for the Present and  
Future Climates of India.

### **Publications:**

- P.D. Nadarajah, M.K. Singh, S. Mahapatra, Improving Sri Lankan Buildings' Energy Efficiency Through Bioclimatic Classification and Potential Assessment, E3S Web of Conferences 396 (2023) 01038. <https://doi.org/10.1051/e3sconf/202339601038>.
- P.D. Nadarajah, M.K. Singh, S. Mahapatra, L. Pajek, M. Košir, Bioclimatic classification for building energy efficiency using hierarchical clustering: A case study for Sri Lanka, Journal of Building Engineering (2023) 108388. <https://doi.org/10.1016/j.jobe.2023.108388>.
- L. Pajek, M. Možina, P.D. Nadarajah, M. Kumar Singh, M. Košir, Future-proofing a naturally ventilated log house: A case study of adaptive thermal comfort under climate change impact, Energy Build (2024) 113951. <https://doi.org/10.1016/j.enbuild.2024.113951>.



**Name:** Adwait

**Advisor:** Dr. Gopal Das Singhal

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**Specialization/Area of Research:** Water Resources

**Topic of Research:** Synergetic use of machine learning and remote sensing for agricultural water management.



**Name:** Sumit Kumar

**Advisor:** Dr. Ellora Padhi

**Joining Semester:** Spring 2022

**E-Mail:** [sk120@snu.edu.in](mailto:sk120@snu.edu.in)

**Specialization/Area of Research:** Water resources engineering

**Topic of Research:** Reducing the erosion of hydraulics structure such as piers of bridge by using submerged vanes.



**Name:** Anuj Bhardwaj

**Advisor:** Dr. Shalini Rankavat

**Joining Semester:** Spring 2023- Till date

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**Specialization/Area of Research:** Transportation Engineering

**Topic of Research:** Travel Behavior Dynamics: Non-Motorized Transport and Infrastructure Assessment.

### **Publications:**

- Varma, D.S.K., Rankavat, S., Bhardwaj, A. (2023). Comprehensive Analysis of Post-COVID-19 Changes in Behavior and Perception of Public Transit Users in the Urban Region of a Medium-Sized City of India- Noida/Greater Noida Region (Delhi NCR). In: Verma, A., Chotani, M.L. (eds) Urban Mobility Research in India. UMI 2022. Lecture Notes in Civil Engineering, vol 361. Springer, Singapore. [https://doi.org/10.1007/978-981-99-3447-8\\_15](https://doi.org/10.1007/978-981-99-3447-8_15)



**Name:** Anshal Kumar

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**Research Gate:** <https://www.researchgate.net/profile/Anshal-Kumar-2>

**Specialization/Area of Research:** Environmental Engineering

**Topic of Research:** Co-Treatment of Food Waste and Dairy Wastewater for Biogas Production “A Sustainable Approach”

**Name:** Monika Saini



**Advisor:** Dr. Sailesh N. Behera

**Joining Semester:** Spring 2023- Till date

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**Specialization/Area of Research:** Environmental Engineering (Air Pollution)



**Name:** Prakash Singh

**Advisor:** Dr. Ghanshyam Pal

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**Specialization/Area of Research:** Structural Engineering/  
Building Energy Modeling

#### **Publications:**

- Parashar, A.K., Kumar, A., Singh, P. et al. Study on the mechanical properties of GGBS-based geopolymer concrete with steel fiber by cluster and regression analysis. Asian J Civ Eng (2023). <https://doi.org/10.1007/s42107-023-00937-2>
- Prakash Singh, Arun Serawat, Bhagat Singh, Prashant Sharma; The impact of sandstone fines on the effectiveness of concrete. AIP Conference Proceedings 27 July 2023; 2721 (1): 070028, <https://doi.org/10.1063/5.0154045>



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**Topic of Research:** Development of a novel Physics-Based Machine learning approach for Landslide prediction



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**Topic of Research:** Cyclic plastic response of 3D printing material