Dr. Priyanka Sharma Senior Engineer TechFab India Industries Ltd. New Delhi

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### **AREAS OF INTEREST**

- Geotechnical Engineering, Building Material and Construction & Surveying
- Soil Dynamics, Dynamic Soil Properties & Geotechnical Earthquake Engineering
- Site Characterization, Seismic Hazard Assessment, Strong ground motion prediction & Local Site Effects
- Soil Liquefaction & Numerical Modeling of liquefaction
- Ground Improvement Techniques, Geosynthetics & Reinforced Slopes

# EDUCATIONAL QUALIFICATIONS

Educational	Year	Board/Institution	CGPA*/ %
Qualifications			
Ph.D.	2021	IIT Roorkee	8.143 (course work)
M. Tech.	2013	IIT Roorkee	8.03
B. Tech.	2011	G.B.P.U.A. & T., Pantnagar	7.398
Twelfth	2006	St. Ann's Senior Secondary School, Roorkee	78
Tenth	2004	St. Ann's Senior Secondary School, Roorkee	87
*on a scale of 10			

## SKILLS AND ACHIEVEMENTS

Computer Languages	Basics of C, C++, Fortran	
Software Packages	AutoCAD, SLIDE, RSData, RocPlane, RocFall, GeoStudio (Geoslope),	
	ArcGIS, PLAXIS, STRATA, CRISIS, Deep Soil, MS Office	
Languages Known	English, Hindi	

# **RESEARCH PROJECTS**

1. Ph.D. in Soil Dynamics

IIT Roorkee

Title of the thesis: Site Characterization and Liquefaction Potential Assessment of an Urban Habitat in Indo-Gangetic Plains

This research deals with the following objectives:

- Characterization of the soil sections in Indo-Gangetic plains and to predict strong ground motion using DSHA and PSHA.
- Numerical Modelling to estimate liquefaction potential with respect to deeper depths.
- Propose mitigation measure for the liquefiable soil to reduce liquefaction hazard.

Sponsored by: Ministry of human resources and development (MHRD), Government of India.

2. Development of SHAISYS (Seismic Hazard Assessment Information System)

Seismic Hazard Analysis Information System (SHAISYS) is a web based interactive application tool being developed in CWC under Dam Safety Organization (DSO) to estimate the seismic hazard at any point in Indian region. The SHAISYS shall be capable of estimating seismic hazard using the deterministic as well as probabilistic approach. This application based tool is being developed in two phases. The first phase shall cover its utility for peninsular India for which the MoU has been signed with IIT, Roorkee as an initiative under Dam Rehabilitation and Improvement Project (DRIP) to further develop their capacity building under institutional strengthening.

### 3. M.Tech. in Soil Dynamics

IIT Roorkee

Achieved: June, 2013

• Title: Estimation of Source Parameters from Intensity Data.

### **Research Project**

- Title: Design of Reinforced Slopes
- Sponsored by: Ministry of Human Resources and Development (MHRD), Government of India.

4. B.Tech. in Civil Engineering

College of Technology, Pantnagar

Achieved: June 2011

• Title: Study of Fly Ash mixed with Sand and Lime.

# **INTERNSHIP INFORMATION**

### National building construction corporation (NBCC), IIT Roorkee (10 June 2010- 10 July 2010)

*Four weeks vocational training on ongoing works at IIT Roorkee* at Construction of Multistoried Girls Hostel, Construction of Multistoried Staff Accommodation -I, Construction of Multistoried Staff Accommodation - II.

# PUBLICATIONS

#### Journal Publications

- Sharma, P., Sawant, V. A. & Sharma, M. L. (2021). Numerical modeling of liquefaction in deep saturated sands. *Innovative Infrastructure Solutions*, 6(86) (https://doi.org/10.1007/s41062-020-00429-1).
- 2. **Sharma P.,** Sharma M. L., & Sawant V. A. (2021). Estimation of Seismic Hazard and Amplification of Strong Ground Motions in Indo Gangetic Plains. *Journal of Seismology and Earthquake Engineering*.
- Sharma P., Sharma M. L., & Sawant V. A. (2021). Ground Response Analysis with Deep Bedrock Depth in Indo- Gangetic Plains. *Local Site Effects and Ground Failures, Lecture Notes in Civil Engineering, Springer* (https://doi.org/10.1007/978-981-15-9984-2\_1).
- Sharma, P., Mouli, B., Jakka, R.S. and Sawant, V. A. (2020). Economical Design of Reinforced Slope Using Geosynthetics. *Geotechnical and Geological Engineering* (https://doi.org/10.1007/s10706-019-01118-2).
- Sharma, P., & Maheshwari, B. K. (2019). Effect of Saturation on Dynamic Properties of Solani Sand. Soil Dynamics and Earthquake Geotechnical Engineering Springer, Singapore, 51-55 (https://doi.org/10.1007/978-981-13-0562-7\_6)
- 6. Sharma P. and Kumar A. (2019). Relationship between existing tectonics and delineated seismogenic sources from the intensity data. *Journal of Indian Geophysical Union*, 23(6), 533-541.

### Curriculum Vitae

#### International & National Conferences

- Sharma P., Sharma M. L., & Sawant V. A. (2021). Ground Response Analysis with Deep Bedrock Depth in Indo- Gangetic Plains. 7th International Conference on Recent Advances in Geotechnical Earthquake Engineering.
- Sharma P. and Sharma M. L. (2020). Site Characterization and Soil Structure Interaction with Deep Bedrock Depth in Indo-Gangetic Plains. 17th World Conference on Earthquake Engineering, 17WCEE, Sendai, Japan.
- Sharma P. and Sharma M. L. (2019). Comparison of Geophysical and Geotechnical Investigations of a Deep Soil Site in Indo-Gangetic Plains. *9th International Conference on Deep Foundation Technologies for Infrastructure Development in India*, Hyderabad.
- Sharma P., Sharma M. L. and Sawant V. A. (2018). "Site Characterization and Ground Response Analysis in Near and Far Fault Regions", *16th Symposium on Earthquake Engineering*, 20-22 Dec, IIT Roorkee, Roorkee.
- Sharma P., Sharma M. L. and Sawant V. A. (2018). "Dynamic Properties Measurement using Geophysical Methods of Roorkee", 16th European Conference on Earthquake Engineering, 18-21 June, Greece.
- Sharma P. and Sawant V. A. (2017). "Seismic Site Characterization of Roorkee for Deep Soil", AOGS 14th Annual Meeting, 6-11 Aug 2017, Singapore.
- 7. Sharma P., Mouli B., Jakka R. S. and Sharma M. L. (2017). "Design of Reinforced Slope using Geosynthetics", *Conference on Numerical Modeling in Geomechanics*, IIT Roorkee, Roorkee.
- 8. Sharma P., Maheshwari B. K. and Verma S. (2016). "Dynamic Properties of Solani Sand: Comparison of Experimental and Theoretical Results", *6th International Conference of Recent Advances in Geotechnical Engineering*, Greater Noida IIT Roorkee Extension.
- Sharma P. and Maheshwari B.K. (2016). "Effect of Saturation on Dynamic Properties of Solani Sand" Indian Geotechnical Conference, 15-17 Dec, IIT Madras, Chennai, India.

## **MEMBERSHIPS**

- Indian Geotechnical Society (IGS).
- Indian Society of Earthquake Technology (ISET).

# EXPERIENCE

• From May 2023 till present

Senior Engineer, TechFab India Industries Ltd., New Delhi

- o Design of RS Walls
- o Rockfall Mitigation Measures
- Landslide Mitigation Measures

Software's: SLIDE, RocFall, RSData, DIPS, RocPlane

From August 2021 to April 2023

Faculty, Department of Civil Engineering, NIT Jalandhar.

- Laboratory: Surveying, Soil Engineering Laboratory, Fluid Mechanics Laboratory, Foundation Engineering Laboratory.
- Subjects Taken: Constitutive Models for Soil, Engineering Behavior of Soils, Soil Dynamics and Earthquake Engineering, Environmental Risk Assessment, Surveying, Ground Improvement and Ground Engineering, and Elements of Civil Engineering.
- Teaching assignments.
- o Administration work.
- Organizing Survey Camp for two weeks.

#### • From March 2021 to May 2021

*Project Fellow* under a research scheme entitled "Earthquake Scenario Development and Awareness Campaign at Bihar, Uttar Pradesh, and Uttarakhand".

Sponsored by: NDMA, New Delhi in Earthquake Engineering Department, IIT Roorkee.

## Curriculum Vitae

#### • From July, 2015 to February, 2021

Research Fellow at the Department of Earthquake Engineering, IIT Roorkee, Roorkee, India.

- Laboratory tests: Carrying out extensive research work on Cyclic Triaxial Test, Resonant Column Test and Shake Table Test
- Field tests: Geophysical tests i.e. Multichannel Analysis of Surface Waves (MASW) and Microtremor.
- Sponsored by: Ministry of Human Resources and Development, Government of India.
- Subjects: Geotechnical Earthquake Engineering, Ground Improvement Techniques, Constitutive Modeling of Soil, Seismic Hazard Assessment.
- August, 2013 to July, 2015: Assistant Professor at Galgotias University, Greater Noida.
  - Laboratory: Surveying, Geotechnical Engineering, Fluid Mechanics.
  - Subjects Taken: Geotechnical Engineering, Soil Dynamics, Water Resources Engineering, Building Material and Construction, Surveying.
  - $\circ$   $\;$  Teaching assignments and administrative work.

## **CONFERENCE PARTICIPATION AND COMPETITION**

- Participated in "Workshop on Research Paper Writing" Mahatma Gandhi Central Library, IIT Roorkee, September 2017.
- Participated in "Author Workshop on Book Publishing" Mahatma Gandhi Central Library, IIT Roorkee, September 2016.
- Member Organizing team, National level Technical Festival, College of Technology, G.B. Pant University of Agriculture & Technology.
- Secured 1<sup>st</sup> Position in Structomania, National Level Technical Festival, College of Technology, Pantnagar, March, 2011.
- Presented in Paper Presentation Event, The Civil Engineering Society, Pantnagar, 2009.
- Secured 7<sup>th</sup> position in Cross-country race competition of 3.5 km, College of Technology, Pantnagar, 2009.

# REFERENCES

1. Prof. M. L. Sharma

Chair Professor and Professor, Department of Earthquake Engineering Indian Institute of Technology, Roorkee India Email id: m.sharma@eq.iitr.ac.in

Prof. V. A. Sawant
Department of Civil Engineering
Indian Institute of Technology, Roorkee
India
Email id: vishwas.sawant@ce.iitr.ac.in