

**Kavita Tandon****(Assistant Professor, HBTU)**

Ph.D. (IIT Delhi)

M.Tech Earthquake Engineering

(IIT Roorkee, Soil Dynamics)

**Email\_id:** [kavita.tandon2008@gmail.com](mailto:kavita.tandon2008@gmail.com)**Contact No:** +919015536450

**Area(s) of Interest (Research):** Geotechnical Earthquake Engineering, Soil Dynamics, Machine Foundations, Offshore Geotechnical Engineering, Tunnelling, and Rock Engineering, Shallow foundations, Seismic Slope Stability Analysis, Performance analysis of Deep Foundations, Wave Propagation in Multilayered Soil Media, One Dimensional Ground Response Analysis.

**Area(s) of Interest (Teaching):** Geotechnical Engineering, Advanced Foundation Engineering, Geotechnical Earthquake Engineering, Surveying, Transportation Engineering, Engineering Hydrology, Bridge Engineering.

<b>Educational Qualifications</b>	<b>Year</b>	<b>Board/Institution</b>	<b>CGPA */%</b>
Ph.D. (Geotechnical and Geoenvironmental Engineering with specialization in Soil Dynamics)	Awarded 2021	Indian Institute of Technology Delhi	8.00*
M.Tech (Earthquake Engineering)	2012-14	Indian Institute of Technology Roorkee, Roorkee.	7.97*
B. Tech (Civil Engineering)	2008-12	J.S.S. Academy of Technical Education, Noida.	79.84
Twelfth Class	2008	Guru Nanak Modern School Kanpur.	78.20
Tenth Class	2006	K.V. Ajni Nagpur.	85.20

\*On a scale of 10.

**TEACHING EXPERIENCE:**

1. Assistant Professor (Regular), Dept. of Civil Engineering, HBTU, Kanpur – 208002 (3<sup>rd</sup> Jan 2022 – Till Now)

**Courses allotted –**U.G. Course – Geotechnical Engineering – 2 (B.Tech 6<sup>th</sup> Semester)Advanced Foundation Design (B.Tech 8<sup>th</sup> Semester)Engineering Drawing (B.Tech 1<sup>st</sup> Semester)

2. Assistant Professor (Contractual Faculty), Dept. of Civil Engineering, Punjab Engineering College, Chandigarh – 160012 (18<sup>th</sup> Feb 2021 – 30<sup>th</sup> June 2021)

**Courses taught –**

U.G. Course - Advanced Reinforced Concrete Design (B.Tech 8<sup>th</sup> Semester)

P.G. Course - Bridge Engineering (M.Tech 2<sup>nd</sup> Semester)

3. Assistant Professor, Dept. of Civil Engineering, JSS Academy of Technical Education Noida, U.P. – 201301 (25<sup>th</sup> Aug 2014 – 17<sup>th</sup> July 2015)

**Courses taught –**

U.G. Course - Open Channel Flow (B.Tech 7<sup>th</sup> Semester)

Advanced Foundation Engineering (B.Tech 5<sup>th</sup> Semester)

**RESEARCH EXPERIENCE:**

1. Early Doc Fellow, Dept. of Civil Engineering, Indian Institute of Civil Engineering – 110016 (1<sup>st</sup> Nov 2021 – 31<sup>st</sup> Dec 2021)
2. Senior Research Fellow, Dept. of Civil Engineering, Indian Institute of Civil Engineering – 110016 (1<sup>st</sup> Aug 2021 – 31<sup>st</sup> Oct 2021)

**INTERNSHIP (Four Weeks):**

**Chandralekha Constructions Pvt. Ltd:** - Four Weeks Industrial Training in Multi-storeyed Building Construction.

**DISSERTATION [IIT DELHI 2015-Defended on 8<sup>th</sup> Sept 2021]:**

**Dynamic Response of Block Foundations subjected to vibrations from two rotating machines:** A rigid block foundation experiences only rigid body displacements. Therefore, the influence of superimposed forces and moments produced by multiple forces results in a six degree of freedom system, challenging to analyze using the simple theoretical concepts of harmonic vibrations. In the present study, experimental investigations are carried out for the dynamic response of machine foundations subjected to vibration from two rotating machines in the field for block foundation. Several parameters vary, and the frequency amplitude response is obtained for a different combination of the applied dynamic forces on a combined block foundation. The experimental results are compared with the available theories available in a commercial software DYNA 6. The obtained results and the measured results show a good agreement between them.

**DISSERTATION [IIT ROORKEE 2012-14]:**

**Wave Propagation in Multilayered Soil Media due to An Active Source:**

A detailed study on the analysis of surface wave propagation in multilayered soil media due to an active source. Analysis of dispersion curves obtained from soil modeling in PLAXIS 2D and

doing inversion to obtain the original soil profiles and identify soft layers on geometric soil profile.

### **PROJECTS:**

#### **1. Simulation of Wave Propagation in Multilayered Soil Media: [IIT Roorkee]**

A study on the simulation of wave propagation results with Green's Function Solution analyzed the effects of medium properties on dispersion curves.

#### **2. Soil investigation and design of flexible pavements: [JSSATE Noida]**

A detailed study of soil investigation viz. field and laboratory tests involved in the investigation and various design methods for flexible pavements.

### **SKILLS AND ACHIEVEMENTS:**

**Software Packages** : Microsoft Office, PLAXIS 2D, PLAXIS 3D, DYNA 6, GEO-STUDIO.

**Additional Courses Taken** : Geotechnical Earthquake Engineering, Earthquake Resistant Design of Foundations, Ground Improvement Techniques, Machine Foundation, Earthquake Resistant Design of Masonry Structures. Theory of Vibration, Engineering Behavior of Soils, Site Investigation and Foundation Design

**Languages Known** : English(SRW), Hindi(SRW), Sanskrit(SRW), Marathi(SR), German (SR)

### **AWARDS:**

- **Research Scholar Travel Award (MHRD) (2018)**
- **ISSMGE Foundation Award (2019)**
- **Early Doc Fellowship (2021)**

### **MEMBERSHIP OF PROFESSIONAL SOCIETIES:**

- Indian Geotechnical Society (IGS) – Life Member
- Indian Geotechnical Society Delhi Chapter (IGS Delhi) – Life Member
- International Commission on Large Dams, INDIA – Young Annual Member (INCOLD)

### **ACHIEVEMENTS:**

- **COGNIZANCE PROTOTYPE- EQD DEPT IIT ROORKEE (2013)**  
Coordinator
- **ZEALICON ANNUAL TECHNO-CULTURAL EVENT (JSSATE NOIDA) (2009-11)**  
Coordinator in TERRAIN TRACKER  
2nd position in AERONAUTOON in Zealicon'09(JSSATE)

- 1st position in ROBOWARS in Zealicon'09(JSSATE)
- **ASSOCIATION OF CIVIL ENGINEERS (JSSATE NOIDA) (2009-2012)**  
Core Member in Final year (Vice President).  
Organizing member in respective years.
  - **SPORTS ASSOCIATION OF JSS (SPORTS EVENTS) (JSSATE NOIDA) (2008-2012)**  
Co-Ordinator and Organizing Member.
  - **SPORTS EVENTS ORGANISED BY SPORTS ASSOCIATION OF JSS (JSSATE NOIDA) (2008-2012)**  
1st position in High Jump, Tug of War, Arm Wrestling, shot put.  
2nd position in Long Jump, Basketball.
  - **KHO-KHO (K.V. AJNI) (2004)**  
Winners at Regional Level Bhopal region.
  - **BHARAT SCOUTS AND GUIDES (2006) Rajya Puraskar.**

### **PUBLICATIONS:**

#### INTERNATIONAL JOURNAL: 02 (Published)

- Tandon, K., & Minhas, C.M. (2015). Analysis and Behaviour of Surface Wave Dispersion for Soft Layer Trapped Between Stiff Layers. IJETMAS, Volume 3 Special Issue, May 2015 (026 – 038).
- Minhas, C.M., & Tandon, K. (2015). Integrated Solid Waste Management Systems for Environmental Sustainability at Institutional Level – Case Study. International Journal on Occupational Health & Safety, Fire & Environment – Allied Science, Volume 5 Issue 1 July – Sep 2015 (020 – 026).

#### INTERNATIONAL JOURNAL: (Under Review)

- Tandon, K., Kumar, D., Ayothiraman, R., Manna, B., & Ramana, G. V. (Sept 2021) Numerical Evaluation of Tire Chips-Filled Trench Barriers for Effective Vibration Isolation. *Journal of Low-Frequency Noise, Vibration & Active Control*.
- Tandon, K., Ralli, R., Manna, B., Ramana, G. V., & Datta, M. (Oct 2021). Vertical Vibration Tests to Study the Effect of Foundation Geometry and Embedment on the Non-linear Response of Block Foundations. *Acta Geotechnica*.
- Halder, P., Tandon, K., Ralli, R., Manna, B., (Dec 2021). Experimental Assessment of the Performance of Novel Cushioned Disconnected Piled Raft System under Vertical Load. *Soils and Foundations*.

#### INTERNATIONAL JOURNAL: (Submitted)

- Tandon, K., Manna, B., & Ramana, G. V., (Dec 2021). Experimental and Theoretical Investigations to Study the Non-Linear Dynamic Response of Block Foundations subjected to Horizontal Excitations. *Soil Dynamics and Earthquake Engineering*.

NATIONAL JOURNAL: NIL

INTERNATIONAL CONFERENCES: 04 (Published in Proceedings)

- Tandon K., Ralli R., Manna B., Ramana G.V., Datta M. (2019) Effect of Embedment on Dynamic Response of Block Foundation Under Coupled Vibration. In: Choudhury D., El-Zahaby K., Idriss I. (eds) Dynamic Soil-Structure Interaction for Sustainable Infrastructures. GeoMEast 2018. Sustainable Civil Infrastructures. Springer, Cham
- Tandon K., Ralli R., Manna B., Ramana G.V., Datta M. (2019) Dynamic Response of Embedded Block Foundation Under Vertical Vibration: Volume 2., In book: Proceedings of China-Europe Conference on Geotechnical Engineering.
- Yadav A., Tandon K., Manna B., Ramana G.V., Ganguli A. (2019) Determination of the effect of various material present below pile tip: Non-destructive testing and numerical study. 7<sup>th</sup> International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering Methods in Structural Dynamics and Earthquake Engineering.
- Choudhary S.S., Biswas S., Halder P., Tandon K., Manna B. Dynamic characteristics of a 6-pile group under vertical excitations – theory versus experiment. In Proceedings 7<sup>th</sup> International Conference on Earthquake Geotechnical Engineering.

NATIONAL CONFERENCES: NIL

**STUDENT GUIDANCE:**

**Undergraduate (B. Tech): 07 (completed), 04 (On-going)**

Project Title:

Design and Construction of Pavements in Hilly Areas.

Analysis and Design of Machine Foundation Using STAAD Pro.

**Post-graduate (M. Tech): 01 (On-going)**

Title: Land Use Land Cover Change of Noida City

**Ph.D.: 01 (On-going)**

Tentative Project Title: Dynamic Analysis of Municipal Solid Waste Landfills

**CONFERENCES/SEMINARS/WORKSHOPS:**

- Member of Organizing Committee of the Geotechnology 2030: Future Vision Conference, Indian Institute of Technology Delhi, New Delhi, 2015.
- Member of Organizing Committee, NHPC Sponsored CEP Short Term Course on Slope Stability and Stabilization Techniques for HE Projects, Indian Institute of Technology Delhi, New Delhi, Nov 21- 23, 2016.
- Member of Organizing Committee of the International Symposium on Geotechnics of Transportation Infrastructure (ISGTI 2018), Indian Institute of Technology Delhi, New Delhi, Apr 7 – 8, 2018.

**PERSONAL DETAILS:**

**Date Of Birth** : 08/08/1991  
**Gender** : Female  
**Father's Name** : Shri. Ram Naresh Tandon  
**Nationality** : Indian  
**Permanent Address** : Plot No. 88 & 89, Maksudabaad, Behind Eldeco County,  
Near Katiyar Traders, Jawaharpuram Panki Road, Kanpur  
Nagar, Kanpur – 208020.  
**Communication Address** : C/O Prof. Bappaditya Manna, Room No. 219, Block V,  
Department of Civil Engineering, IIT Delhi, Hauz Khas,  
New Delhi - 110016.

**ORCID ID:** <https://orcid.org/0000-0002-5496-5399>

**Google Scholar ID:** [KAVITA TANDON - Google Scholar](#)

**DECLARATION:**

I hereby declare that the information furnished above is accurate, and the responsibility for the objections and discrepancies falls on me. I affirm myself responsible for all the information.

**Kavita Tandon**