Dr. Naveen James

Associate Professor

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Education

June 2014 **Doctorate of Philosophy (Ph.D)**, *Geotechnical Engineering*, Indian Institute of Science, Bangalore

August 2009 **Master of Technology (M-Tech)**, *Geotechnical Engineering*, National Institute of Technology Karnataka Sutathkal, Sutathkal

April 2006 **Degree of Bachelor of Technology (B-Tech)**, *Civil Engineering*, University of Calicut

March 2002 **Higher Secondary School ('+2' Science)**, Kerala Higher Secondary State Board

March 2000 **High School (SSLC)**, Kerala State Board

Professional Membership

Life Member - Indian Geotechical Society (IGS) New Delhi

Life Member - Indian Society for Earthquake Technology (ISET) Roorkee

Life Member - Indian Society for Engineering Geology (ISET) New Delhi

Associate Member - American Society for Civil Engineers (ASCE)

Member - International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE)

Research Interests

Dynamic behaviour of soils

Liquefaction

Site characterization and Site response studies

Seismic Hazard Assessment & Microzonation

Landslide Hazard Assessment

GIS Applications in Hazard Studies

Sustainable Geosynthetics

Positions Held

Chairman, Institute Safety Committee, IIT Ropar, Punjab

Head of Department, Dept. of Civil Engineering, IIT Ropar, Punjab

Assistant Professor, Dept. of Civil Engineering, BITS Pilani, Hyderabad

Research Associate, Dept. of Civil Engineering, IISc Bangalore

Catastrophe R&D Specialist, American International Group Inc. (AIG), Bangalore, India

International Research Staff, Dept. of Geotechnical Engineering and Geo-Sciences, Universitat Politècnica de Catalunya, Barcelona

Visiting Research Staff, Seismology Divison, Institut Geològic de Catalunya (IGC) Barcelona

Research Scholar, Dept. of Civil Engineering, IISc Bangalore

Recognition & Achievements

1. 2016 Endeavour Fellowship from Government of Australia
2. PhD Fellowship from Ministry of Human Resource Development (MHRD)
3. European Union fellowship for International Research Staff Exchange scheme "Geohazards and Geomechanics"'
4. Indian Institute of Science Post-doctoral fellowship

Publications-Books

1. Sitharam, T. G., **Naveen James**, and Sreevalsa Kolathayar. "Comprehensive Seismic Zonation Schemes for Regions at Different Scales."Springer

2. Sitharam, T. G., and **Naveen James**. (2018). "GIS Based Macrolevel Landslide Hazard Zonation Using, Newmark's Methodology."In Integrating Disaster Science and Management-*Global Case Studies in Mitigation and Recovery* (pp. 329-342).Elsevier

3. Sitharam, T. G., Vipin, K. S., and **Naveen James**. (2018). "Recent Advances in Soil Dynamics Relevant to Geotechnical Earthquake Engineering."In Advances in Indian Earthquake Engineering and Seismology (pp. 203-228). Springer.

Publications-Journals

1. Tyagi, A., Gupta, N., Tiwari, R. K., **Naveen James and Chavan, S.R.**. (2024). "Determining the impact of anthropogenic activities and climate change on landslide susceptibility for the Himalayan region."*Natural Hazards*, 1-27.

2. Kannan, R.M., **Naveen James**., and Haldar, P. (2024). "Seismic Response of Rocking Shallow Foundation in RC Framed Structure: A Parametric Study."*Journal of Vibration Engineering and Technologies*, 3(1).

3. Kannan, R.M., Haldar, P., and **Naveen James**. (2024). "Isolated shallow rocking foundation on different soils with varying embedment depth."*Disaster Prevention and Resilience*, 3(1).

4. Tyagi, A., Tiwari, R. K., and **Naveen James**. (2023). "Prediction of the Future Landslide Susceptibility Scenario Based on LULC and Climate Projections."*Landslides*, 7(1).

5. U., Veena, and **Naveen James**. (2022). "Natural Rubber Latex Treatment of Sand: A Novel Remediation Technique for Soil Liquefaction."*Soil Dynamics and Earthquake Engineering*, 165(6), 1-2.

6. Tyagi, A., Tiwari, R. K., and **Naveen James**. (2023). "Identification of the significant parameters in spatial prediction of landslide hazard."*Bulletin of Engineering Geology and the Environment*, 82(8).

7. Tyagi, A., Tiwari, R. K., and **Naveen James**. (2022). "Mapping the landslide susceptibility considering future land-use land-cover scenario."*Landslides*, 19(10).

8. U., Veena, and **Naveen James**. (2022). "Natural Rubber Latex for Improving Ductility Characteristics of Soil: A Preliminary Experimental Investigation."*Geotechnical and Geological Engineering*, 40(6), 1-2.

9. Tyagi, A., Tiwari, R. K., and **Naveen James**. (2022). "A Review on Spatial, Temporal and Magnitude Prediction of Landslide Hazard."*Journal of Asian Earth Sciences: X*, 7(1).

10. Suluguru, A. K., Jayatheja, M., Kar, A., GuhaRay, A., Surana, S. R., and **Naveen James**. (2017). "Experimental studies on the microstructural, physical and chemical characteristics of building derived materials to assess their suitability in ground improvement." *Construction and Building Materials*, 156, 921-932.

11. **Naveen James**, and T. G. Sitharam (2016). "Seismic Zonations at Micro and Macro-Level for Regions in the Peninsular India." *International Journal of Geotechnical Earthquake Engineering (IJGEE)* 7, no. 2: 35-63.

12. T.G Sitharam, **Naveen James**, and Monalisha Nayak. (2015) "Dynamic Characterization and Site Response Studies for an Offshore Site Based on Detailed Geotechnical tests." *International Journal of Geotechnical Earthquake Engineering (IJGEE)*, 6(1), 50–80,doi: 10.4018/ijgee.2015010104

13. Sitharam T.G., Sreevalsa K. and **Naveen James**. (2015) "Probabilistic Assessment of Surface Level Seismic Hazard in India Using Topographic Gradient as Proxy for Site Condition" *Geoscience Frontiers*, 6(6), 847–859, doi:10.1016/j.gsf.2014.06.002

14. **Naveen James**, Sitharam T.G, Padmanabhan G and Pillai C.S. (2014) "Seismic Microzonation of a Nuclear Power Plant Site with Detailed Geotechnical, Geophysical and Site Effect Studies"Natural Hazards, 71(1), 419-462. doi: 10.1007/s11069-013-0919-0

15. **Naveen James** and Sitharam T.G. (2013) "Assessment of Seismically Induced Landslide Hazard for the State of Karnataka" *Journal of the Indian Society of Remote Sensing*, 1-17. doi:10.1007/s12524-013-0306-z

16. **Naveen James**, Sitharam T.G, Vipin K.S. (2012) "Assessment of Liquefaction Potential Index using Deterministic and Probabilistic Approaches" *International Journal of Geotechnical Earthquake Engineering*, 3(2), 60-76. doi:10.4018/jgee.2012070105

17. Sitharam, T.G., **Naveen James** and Vipin, K.S. (2012) "A Study on Seismicity and Seismic Hazards for the Karnataka State." *Journal of Earth System Sciences*, 121(2), 475-490, doi:10.1007/s12040-012-0171-0

18. Sitaram Nayak., M. R. Dheerendra Babu., R. Shivashankar and **Naveen James** (2012) "Performance of Granular Columns in Dispersive Soils" *Proceedings of the ICE – Geotechnical Engineering*, 167(1), 72-82. doi:10.1680/geng.11.00004

International Conferences

1. Kushwaha S., **Naveen James**., Tiwari R.K., Veena U., Tyagi. A. and Kannan R.M. (2024). "Slope Stability Analysis and Remediation Measures Against Slope Failure at Kullu, India: Case Study." XIV^{th} *International Symposium on Landslides, Chambéry, France* (Accepted).

2. Shylu A., Tiwari, R.K and **Naveen James**. (2024). "Detection and Mapping of Actively Deforming Areas Using PsInsaR for Landslide Monitoring in Himachal Pradesh, India." XIV^{th} *International Symposium on Landslides, Chambéry, France* (Accepted).

3. Suresh k. A., **Naveen James**. and Tiwari, R.K. (2024). "GIS-Based Landslide Hazard Zonation and Risk Studies Using MCDM." XIV^{th} *International Symposium on Landslides, Chambéry, France* (Accepted).

4. Sharma S., and **Naveen James**., (2024). "Cyclic Response of Natural Rubber Latex treated Sutlej Sand Under Stress Controlled Loading." 8^{th} *International Conference on Recent Advances in Geotechnical Earthquake and Soil Dynamics, IIT Guwahati.* (Accepted).

5. Veena U., and **Naveen James**. (2024). "Liquefaction Mitigation Using Natural Rubber Latex Treatment."8^{th} *International Conference on Recent Advances in Geotechnical Earthquake and Soil Dynamics, IIT Guwahati.* (Accepted).

6. Veena U., and **Naveen James**. (2023). "Evaluation of Dynamic Properties of Sand Treated with Natural Rubber Latex for Seismic Isolation."*Geo-Congress 2024, Vancouver.*

7. Veena U., and **Naveen James**. (2023). "Application of Natural Rubber Latex for Improving Dynamic Response of Sand."7^{th} *ASCE Inspire-2023* (Accepted).

8. Veena U., and **Naveen James**. (2022). "Natural Rubber Latex for Reducing Soil Brittleness Induced by Post-Compaction Moisture Reduction."7^{th} *IGC-2022* (Accepted).

9. R.M Kannan., P. Haldar and **Naveen James**., (2020). "Behaviour of Mid-Rise Buildings with Shear Wall Rocking Foundation System on Medium Dense Site."*Proceedings of the Second ASCE India Conference on "Challenges of Resilient and Sustainable Infrastructure Development in Emerging Economies (CRSIDE2020)" 2-4 March 2020, Kolkata* (Accepted).

10. R.M Kannan., **Naveen James and P. Haldar**., (2020). "Influence of Soil Types on Seismic Behaviour of RC Framed Building with Shear Wall on Rocking Foundation."17^{th} *World Conference on Earthquake Engineering Japan* (Accepted).

11. Ankit Tyagi., Tiwari, R.K and **Naveen James**., (2020). "GIS-Based Landslide Hazard Zonation and Risk Studies Using MCDM."7^{th} *ICRAGEE* (Accepted).

12. **Naveen James**., and Sitharam, T. G. (2017). "Multicriteria Based Landslide Hazard Assessment And Vulnerability Studies For The State Of Sikkim, India."16^{th} *World Conference on Earthquake Engineering Santiago-Chile.* (Accepted).

13. Sitharam T.G., and **Naveen James**. (2017). "Liquefaction Susceptibility Analysis for an Offshore Site Based on Index Properties and Geotechnical Field Test Data. 16^{th} *World Conference on Earthquake Engineering Santiago-Chile.* (Accepted).

14. **Naveen James**., and Sitharam, T. G. (2016) "Evaluation Of Dynamic Soil Properties, Local Site Effects And Design Ground Motions For A Nuclear Reactor Site."*6th Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics,* IIT Roorkee.

15. **Naveen James** and Sitharam T.G (2015). "Macro-Level Assessment of Seismically Induced Landslide Hazard for the State of Sikkim, India Based On GIS Technique."*In IOP Conference Series: Earth and Environmental Science (Vol. 26, No. 1, p. 012027*, University of Warwick, U.K

16. Sitharam T.G., **Naveen James** and Vipin K.S. (2013). "Site Amplification and Liquefaction Studies for the State of Karnataka: A Probabilistic Approach."*International Conference of Earthquake Geotechnical Engineering*, Istanbul, Turkey

17. **Naveen James** and Sitharam T.G (2013) "Macro-scale Seismic Site Characterization for the State of Karnataka Based on Topographic Slope Map."*IGS-Incheon 2013 The 5th International Geotechnical Symposium*, Incheon, Korea

18. Sitharam T.G., **Naveen James** and Vipin K.S. (2011). "Study of the Local Site Effects on Seismic Hazard Using Deterministic and Probabilistic approaches: A Case Study of Karnataka State."*2001 Bhuj Earthquake and Advances in Earthquake Science*, Gandhinagar, India.

Details of Research and Consultancy Grants

Total External Research Grant Received = Rs. 183.00 Lakhs

Total External Consultancy Grant Received = Rs. 232.920 Lakhs

Projects Involved- as Principal Investigator

1. **Potential Utilization of Recycled Wool Fabric For Geosynthetics Applications**, collaboration with **Dr. Raheena M** and **Dr. Resmi Sebastian**, IIT Ropar; Funded By PSCST, Govt. of Punjab

2. **Development Of Low-Cost Artificial Intelligence System for Early Detection of Landslide**, collaboration with **Dr. Reet Kamal Tiwari** and **Dr. Narayanan C Krishnan**, IIT Ropar; Funded By DST-NRDMS, Govt. of India

3. **Slope Monitoring and Landslide Hazard Quantification For Hilly Roads**, collaboration with **Dr. Reet Kamal Tiwari** and **Dr. Narayanan C Krishnan**, IIT Ropar; Funded By NHAI, Govt. of India

Projects Involved- as Co-Investigator

1. **Terrain Modelling and Its Application In Landslide Hazard/Risk Assessment**, collaboration with **Dr. Reet Kamal Tiwari**, IIT Ropar; Funded By ISRO, Govt. of India

2. **Performance Evaluation of Backfill Soils Partially Replaced With Building Derived Materials**, collaboration with **Dr. Anasua Guharay** and **Dr. Arkamitra Kar**, BITS Pilani, Hyderabad; Funded By Science and Engineering Research Board (SERB), Govt. of India

Projects Associated In The Past

1. Probabilistic Evaluation of Liquefaction Potential with Local Site Effects: Funded By **Indira Gandhi Center for Atomic Research (IGCAR-Kalpakkam, Chennai)**

2. Probabilistic Seismic Hazard Evaluation of Karnataka State Considering Local Site Effects and Revisit of Source Characterization Based on Remote Sensing Data : funded by **Indian Space Research Organization (ISRO)**

3. Probabilistic Seismic Hazard Assessment of Karnataka State :funded by **CiSTUP, Indian Institute of Science, Bangalore**

4. Geotechnical / Geophysical Investigations for Seismic Microzonation Studies of Urban Centres in India : funded by **National Disaster Management Agency (NDMA)-New Delhi** (partial involvement)

Major Consultancy Projects

1. Slope Stability Analysis of Ash Pond Dyke at Nabha Thermal Power Plant, Rajpura: Client: **Nabha Power Limited** Project cost: **Rs. 2.0 Lakhs.**

2. Analysis of Seismic data (Seismographs and Strong Motion Accelerographs) of NJHPS, Nathpa for the period of two year: Client: **Satluj Jal Vidyut Nigam Ltd.** Project cost: **Rs. 15.55 Lakhs.**

3. Proposing the Remedial Measures for the Retaining Wall Failure In the Deodhar Village (On The Takoli-Kullu Highway): Client: **National highway Authority of India** Project cost: **Rs. 80 Lakhs.**

4. Proposing The Slope Rehabilitation Measures For sites Near RMS Chail Himachal Pradesh: Client: **Garrison Engineer, MES Jutogh Cantt.** Project cost: **Rs. 15 Lakhs.**

5. Evaluation (Prior, During Execution & Post Execution) of Pilot Works of Relining of Sirhind Feeder Canal: Client: **Punjab Water Resources Department** Project cost: **Rs. 5.66 Lakhs.**

6. Geological and Geotechnical Study of Bichhohi Dam.: Client: **Punjab Water Resources Department** Project cost: **Rs. 47.90 Lakhs.**

7. Geological and Geotechnical Study of Chakh Sadhu Dam. Client: **Various Private Agencies** Project cost: **Rs. 47.90 Lakhs.**

8. Soil investigation and survey for repair/renewal of retaining wall, drain road and allied infrastructure along the road from NH-5 to patta ka mor water supply installation at Dagshai under para 35 of DWP 2020. Client: **Garrison Engineer, MES Kasauli** Project cost: **Rs. 6.4 Lakhs.**

9. Soil investigation and survey for Provn of road Veer Yodha Dwar MT park and road PAO (OR) to Tirah line at 14 GTC Subathu. Client: **Garrison Engineer, MES Kasauli** Project cost: **Rs. 16.51 Lakhs.**

Graduated PhD Students

1. **Dr. Veena U:-** Thesis Title - Response of Natural Rubber Latex Treated Soils Under Static and Cyclic Loading. Co-supervisor: **Nil**.

2. **Dr. Ankit Tyagi:-** Thesis Title - Data Driven Spatio-Temporal Prediction of Landslide Susceptibility for the Himalayan Region. Co-supervisor: **Dr. Reet Kamal Tiwari**.

3. **Mr. Manoj Kannan:-** Thesis Title - Enhancing Seismic Resilience of RC Buildings Through Foundation Rocking. Co-supervisor: **Dr. Putul Haldar**.

Current PhD Students

1. **Mr. Sachidanand Kushwaha:-** Area of Research - Landslides and Mudflow. Co-supervisor: **Dr. Sagar Rohidas Chavan**.

2. **Ms. Aarathi Shylu:-** Area of Research - Landslides Monitoring and Early Warning System. Co-supervisor: **Dr. Reet Kamal Tiwari**.

3. **Mr. Aravind K Suresh:-** Area of Research - Terrain Modelling and Landslides. Co-supervisor: **Dr. Reet Kamal Tiwari**.

4. **Mr. Shubham Sharma:-** Area of Research - Liquefaction Mitigation. Co-supervisor: **Nil**.

5. **Mr. Aakriti Sharma:-** Area of Research - Comprehensive Landslide Risk Assessment for Himachal Pradesh. Co-supervisor: **Dr. Reet Kamal Tiwari and Dr. Kala Venkat Uday (IIT Mandi)**.

Masters Students

1. **Mr. Krishna Yashwantrao Bawane:-** Thesis Title - Understanding The Triggering And Transport Of Rainfall Induced Mudflow Type Landslide . Co-supervisor: **Nil**. Status: **Graduated**.

2. **Mr. Nitish Kumar:-** Thesis Title - Potential Utilization Of Recycled Wool Fabric Into Geomembrane . Co-supervisor: **Nil**. Status: **Graduated**.

3. **Mr. Nishant Yadav :-** Thesis Title - Response Of RcC Builidings On Liquified Strata. Co-supervisor: **Dr. Mitesh Surana**. Status: **Graduated**..

4. **Mr. Ashok Kumar:-** Thesis Title - Landslide Hazard Assessment (Tentative). Co-supervisor: **Nil**. Status: **Graduated**.