

Curriculum Vitae

Keerthana S

Postdoctoral Researcher

Geotechnical Engineering,

Department of Civil Engineering

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Career Objective To leverage my expertise and potential to achieve career excellence, foster growth for future development and broaden my knowledge

Academic Profile

- Ph.D. (upgraded from M.S.), Geotechnical Engineering, Indian Institute of Technology Madras, CGPA: 9.45, 2018 - 2025.
- B.E. (Civil Engineering), PSG College of Technology, Coimbatore, CGPA: 9.01, 2014-2018.
- Class XII, Ramnagar Suburban Matric. Hr. Sec. School, passed out in 2014 with a score of 97.17%.
- Class X, Ramnagar Suburban Matric. Hr. Sec. School, passed out in 2012 with a score of 94.2%.

Research Interest

- Foundation engineering
- Geotechnical and geoenvironmental engineering
- Geosynthetic clay liners and polymerized bentonites
- Microstructure characterization of geomaterials
- Ground improvement & pavement geotechnics

Awards and recognitions

- Recipient of Women leading IITM 2024 grant (April-December 2024).
- Received IGS YMC and IGS Foundation Travel Assistance award for the 12th ICG conference held in Italy, in 2023.
- Recipient of Prime Minister Research Fellowship, 2019 from the Government of India.
- Reviewer for *Bulletin of Engineering Geology and the Environment* Journal
- Won best project award for B. E. final year project, Civil Engineering, PSG Tech, Coimbatore.
- Won first prize in a Design Challenge event in CEA FEST - 2018, IIT Madras.
- Won first prize in the Paper Presentation in Geofest-2016 conducted by Govt. College of Tech, Coimbatore.
- Won First prize in CIVI-Q event conducted by PSG TECH Intra event
- Won third prize in Potential Professor Event in CEA FEST - 2018, IIT Madras.

List of Publications

International Journals

- Keerthana, S., Arnepalli, D.N (2022). Hydraulic performance of polymer-modified bentonites for development of modern geosynthetic clay liners: A review. ***International Journal of Geosynthetics and Ground Engineering***, 8(2), 24. <https://doi.org/10.1007/s40891-022-00368-0>.
- Anjana, R. K., Keerthana, S., Arnepalli, D.N (2023). Coupled effect of UV ageing and temperature on the diffusive transport of aqueous, vapour and gaseous organic contaminants through HDPE geomembrane. ***Geotextiles and Geomembranes***, 51(2), 316-329. <https://doi.org/10.1061/j.geotexmem.2022.11.005>.
- Keerthana, S., Arnepalli, D.N. Optimization of polymer composition for improving hydraulic properties of in-situ polymerized bentonites: Using response surface methodology. ***Acta Geotechnica*** (Under review).
- Keerthana, S., Arnepalli, D.N. New insights into the hydraulic performance of in-situ polymerized bentonites: Unlocking underlying mechanism from microstructural perspective. (Ready to submit).
- Saranya, N., Keerthana, S., Arnepalli, D.N. Assessing the engineering behavior of compacted clays: Use of impedance spectroscopy in understanding the impact of mineralogy and pore fluid chemistry. (Ready to submit).

International Conferences

- Keerthana, S., Arnepalli, D.N. Effect of inorganic solutions on the free swell index of polymerized clays. ***Geotechnical Special Publication, Geo-Congress 2022***, North Carolina, USA, March 20-23. <https://doi.org/10.1061/9780784484050.002>.
- Anjana, R. K., Keerthana, S., Arnepalli, D.N. Effect of UV Radiation Exposure on HDPE Geomembrane Properties. In ***Proceedings of 12th International Conference on Geosynthetics***, Rome, Italy, September 17-21, 2023. <https://doi.org/10.1201/9781003386889-46>.
- Keerthana, S., Yashpal Singh, Arnepalli, D.N. Experimental investigation on index properties of polymerized clays. In ***Proceedings of 9th International Congress on Environmental Geotechnics ICEG 2023***, Chania, Greece, June 25-28, 2023.

National Conferences

- Keerthana, S., Arnepalli, D.N. Physicochemical properties of polymerized bentonites. ***Women Indian Geotechnical Conference***, Chennai, India, March 8-9, 2024.
- Keerthana, S., Arnepalli, D.N. Study on hydraulic properties of in-situ polymerized bentonites to coal combustion product leachates. ***10th Indian Young Geotechnical Engineers Conference 10IYGEC***, Indian Institute of Technology Indore, India, March 11-12, 2025.

Proficiency in Softwares:

AutoCAD, Design Expert, Minitab and Matlab

Competence and Proficiency in the Operation of Sophisticated Analytical Instruments

- Differential scanning calorimeter
- Thermogravimetric analysis
- Fourier transform infrared spectroscopy
- Atomic absorption spectroscopy
- Mercury intrusion porosimetry
- Autosorb iQ
- Helium gas pycnometer
- UV visible spectroscopy
- X-ray diffractometer

Professional Experience

Interned at Yukasri Foundation, Coimbatore, for one month as a part of a summer internship program in B.E. program, during which I was involved in office and field construction works. At IIT Madras, I have actively participated in various departmental activities, including volunteering, organizing events, and coordinating research symposiums. As a PMRF recipient, I served as a teaching assistant for B.Tech courses, geotechnical testing laboratory and NPTEL classes and Vana Vani school students. During my research tenure as a project officer (April-December 2024), I worked closely with my supervisor on numerous consulting projects and writing project grant proposals. I am skilled in performing various laboratory geotechnical tests and proficient in developing and fabricating experimental setups. My research experience at IITM gave me a comprehensive understanding of geotechnical and geoenvironmental engineering, emphasizing innovative solutions for sustainable infrastructure. I am eagerly excited to explore new avenues in pavement geotechnics and geoenvironmental engineering for future research and teaching career. With dedication and commitment to excellence, I aim to leverage my expertise to drive advancements in geotechnical engineering research and development.

Additional Information

- Proficient in performing laboratory geotechnical tests, and developing experimental setups
- Reviewer for **Bulletin of Engineering Geology and the Environment** Journal
- Worked as a **Project Officer** from 01-04-2024 to 31-12-2024
- Working as a **Post doctoral researcher** since 01-02-2025

Personal Details

Father's Name : Sakthivel R
Mother's Name : Padmavathy T
DOB : 27/05/1997
Marital status : Single
Contact Address : BSB 131, Civil Engineering Department, IIT Madras, Chennai-600036
Permanent Address : F2, Flat No. 2, Ganapathy Nagar, Ganapathy, Coimbatore-641006
Linguistics : English & Tamil
Hobby : Reading books, travel and tailoring

I, **Keerthana S**, hereby declare that the above-provided information is true to the best of my knowledge and belief.