CURRICULUM VITAE

Name	**Dr. PARVATHI G. S.**
Designation	Principal Scientist
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Areas of Interest

Geotechnical engineering, Ground improvement methods, Geosynthetics and Geofoam for road construction, FEM modelling, Digital image correlation, Material and Interface Characterization

Education

PhD (2024), Geotechnical Engineering, Indian Institute of Technology, Delhi

M.Tech. (2011), Geotechnical Engineering, Indian Institute of Technology, Kanpur

B.Tech. (2009), Civil Engineering, College of Engineering, Trivandrum

Professional Experience

- 2022 - till date, Principal Scientist, CSIR-Central Road Research Institute, New Delhi
- 2017 - 2022, Senior Scientist, CSIR-Central Road Research Institute, New Delhi
- 2014 - 2017, Scientist, CSIR-Central Road Research Institute, New Delhi
- 2012 - 2014, Scientist, CSIR-Central Building Research Institute, Roorkee
- 2012 - 2012, Geotechnical Engineer, Geodata India Pvt. Ltd., Delhi
- 2011 - 2012, Design Engineer, Maccaferri Environmental Solutions Pvt. Ltd., Delhi

Membership in Professional Bodies

- Executive Committee member of the Indian Chapter of the Internatio Geosynthetic Society
- Life Member of Indian Roads Congress
- Life Member of the Indian Geotechnical Society
- Life Member of Indian Geotechnical Society Delhi Chapter
- Member of International Geosynthetic Society
- Member of the International Society for Rock Mechanics
- Member of Deep Foundation Institute- India

Achievements

1. Awards

- **Forensic Geotechnical Engineering Award** from Indian Geotechnical Society for the year 2023. This award was received for a project titled "Failure Analysis and Mitigation of Shangumukham Beach Road, Thiruvananthapuram, Kerala."
- Indian Geotechnical Society – Delhi Chapter **Young Geotechnical Engineer Award** for the Year 2019.
- **IRC medal** for the Year 2018. This award was received for the paper titled "Municipal Solid Waste in Road Embankment Construction - A Case Study."
- **IGS-Ferroco Young Geotechnical Engineer Award** for the Year 2018. This is the best paper award in the area of "Dam Engineering and Allied Areas."

2. Patent (filed)

Method for enhancing the bearing capacity of existing structures using steel fiber-reinforced grout column

3. Research Projects

Sl. No.	Title of the Project	Role	Duration		Sponsoring Agency
			Start	End	
1.	Development of sandwiched soil technology for Geosynthetic Reinforced Earth walls	**Project Leader**	2013	2014	CBRI
2.	Engineering of Disaster Mitigation and Health Monitoring for Safe & Smart Built Environment-Task1.6 - "Comprehensive geo-investigation and control measures for a landslide in Chamoli-Joshimath region of Garhwal Himalaya."	Member	2012	2017	CSIR
3.	Engineering of Disaster Mitigation and Health Monitoring for Safe & Smart Built Environment- Task 2.2 - "Seismic behaviour of piles under dynamic lateral loading"	**Project Leader**	2012	2017	CSIR
4.	Ground Improvement of Sub-Soil Below Existing Structures Using Steel Fibre Reinforced Grouting	**Project Leader**	2016	2019	CRRI
5.	Upgradation of R &D and testing facilities in the area of geotechnical Engineering	Member	2016	2018	CRRI
6.	Hill road widening using lightweight fills	**Project Leader**	2020	2023	NHIDCL
7.	Delhi Cluster- "Delhi Research Implementation and Innovation" (DRIIV), Theme Solid Waste	Member	2021	2023	IIT-Delhi

	Management, WP-6 Use of construction & demolition wastes, incinerated residues in road construction.				
8.	Sustainable Geocomposite Drainage-Root Barrier	**Project Leader**	2022	Ongoing	CSIR-FTT
9.	Development of 'Biodegradable Prefabricated Vertical Drain' by Moulding Technique– A Sustainable Solution for Road Construction Over Soft Soil	**Co-Project Leader**	2024	Ongoing	CSIR-FBR
10.	Behaviour of red mud waste material under cyclic loading	Member	2023	Ongoing	CRRI

4. Industry Sponsored Projects

Sl. No.	Title of the Project	Role	Duration		Sponsoring Agency
			Start	End	
1.	Comprehensive study for rehabilitation of people affected by max pond level of 1108m Joshiyara Barrage, Uttarkashi	Member	2012	2013	Central Water Commission
2.	Embankment Protection and Capacity Augmentation Methods for Red Mud Pond-4 at Muri, Ranchi	Member	2012	2013	Hindalco Industries
3.	Ground Improvement Measures Over Soft Organic Soil in the Northern Campus of NIT Manipur, Langol, Imphal.	**Project Leader**	2016	2017	CPWD
4.	Feasibility Study of Chrome Slag for embankment, subgrade and sub base layer of road pavement	Member	2016	2017	Balasore Alloys Ltd.
5.	Vetting of Pavement design of Agartala-Udaipur section from km 6.800-Km-55.00 of NH-44 in Tripura	Member	2016	2016	Kolkata Metro Construction Limited
6.	Utilization of Municipal Solid Wastes at Ghazipur for embankment construction in proposed widening of NH-24	Member	2016	2016	NHAI
7.	Design of single span two-lane bridge on Gurgaon canal at RD 2245m connecting sector-3 and 8 village Sihi in Faridabad	Member	2016	2017	Irrigation Department Haryana
8.	Detailed investigation of existing bridge flyovers regarding the structural stability security Audit in New Town, Kolkata	Member	2016	2017	West Bengal Housing Infrastructure Development Corporation
9.	Feasibility of municipal solid wastes (MSW) from Ramana dump site, Varanasi for Road embankment construction	Member	2016	2017	NHAI

10.	Design of ground Improvement Measures and Pavement Design for Setting up of MMLP Container Terminal at Paradip, Orissa	**Project Leader**	2018	2018	Ircon ISL
11.	Quality Audit of Under Construction Four Laning of Ludhiana-Talwandi Section from 92.000 Km to 170.000 Km of N.H-95	Member	2018	2019	NHAI
12.	Investigation, Analysis and Design of Remedial Measures of Landslides at Pambai Valley, Dharchulla, Uttarakhand	Member	2019	2019	CPWD
13.	Performance study of a mix of jarofix-zinc slag as a retained fill in reinforced retaining wall	Member	2019	2020	Hindustan Zinc Ltd
14.	Investigation and the design of Landslide Remediation measures in Nilambur-Gudalloor Road, Kerala	**Project Leader**	2019	2020	Kerala PWD
15.	Design of Road Remediation and erosion protection works for the reconstruction of flood-damaged Shangumugham Beach Road, Thiruvananthapuram.	**Project Leader**	2019	2020	Kerala PWD
16.	Feasibility study of utilization of dredged material from Banganga River catchment of Ramgarh dam	**Project Leader**	2020	2021	Water Resource Department, Rajasthan
17.	Stability Analysis and Design of Embankment for Red Mud Disposal Pond	Member	2020	2021	Hindalco and NEERI
18.	Ground Granulated Blast Furnace Slag (GGBFS) as a soil stabilizer for Road construction	Member	2020	2021	JSW cements
19.	Recycling of Ghazipur Municipal Solid wastes for Road Embankment and subgrade construction	Member	2021	2022	Invest India
20.	Failure analysis and Design of Remediation works for Silewani Ghati hill road	**Project Leader**	2021	2022	NHAI
21.	Utilization of Red mud for Road and Structural fill applications	Member	2021	2022	Hindalco Industries
22.	Quality Audit of Six Laning Shamlaji to Motachiloda section, NH-8, Ahmadabad, Gujarat	Member	2022	2023	NHAI
23.	Design, Construction, Supervision and Pavement performance evaluation of road constructed by using red mud	Member	2023	Ongoing	Hindalco Industries
24.	Failure Analysis and Design of Remediation Works for Rehabilitation of Retaining Wall, CRPF Campus, Srinagar	**Project Leader**	2024	Ongoing	CPWD

5. Research Publication

a. Journals

1. **Parvathi, G. S.**, Pant, A. & Ramana, G.V. (2024) Parametric evaluation and prediction of design parameters of geofoam using artificial neural network and extreme gradient boosting models. Innov. Infrastruct. Solut. 9, 282. https://doi.org/10.1007/s41062-024-01606-2 (SCI IF: 2.4)
2. SaiMadhu, K., Sasidharan, D., Kadiroli, Bharath G.; **Parvathi G. S.**; Solanki A. J. (2024). Mechanical characterization of Rice Husk Ash incorporated bituminous concrete. Innov. Infrastruct. Solut. 9, 267. https://doi.org/10.1007/s41062-024-01587-2 (SCI IF: 2.4)
3. Bhatt, P., Sinha, A. K., Dayana PJ, M., Hasan, M., & **Parvathi, G. S.** (2024). Performance Evaluation of Zinc Tailing Waste Material for Embankment Construction: Experimental and Numerical Investigation. Journal of Mining and Environment. Article in Press. https://doi.org/10.22044/jme.2024.13368.2459 (SCI IF: 0.3)
4. **Parvathi, G. S.,** Vangla, P., and Ramana, G. V. (2023). Image-aided physical and compression characterisation of EPS geofoam. Geosynthetics International, 31(3), 283-295. https://doi.org/10.1680/jgein.22.00363 (SCI IF: 4.565)
5. **Parvathi, G. S.**, Ramana, G. V., Nohawar, P. S. (2023) Assessing the flexural characteristics of geofoam using digital image correlation technique. Indian Journal of Engineering and Materials Sciences, 30(4), 523-529. https://doi.org/10.56042/ijems.v30i4.642 (SCI IF: 0.615)
6. Dayana, M., **Parvathi, G. S.**, & Sinha, A. K. (2023). Investigation of Hillslope Failure and Mitigation: A Case Study of Sillewani Ghat, Chhindwara, India. Journal of the Geological Society of India, 99(5), 621–634. https://doi.org/10.1007/s12594-023-2363-4 (SCI IF: 1.459)
7. Havanagi, V.G., Sinha, A.K., and **Parvathi, G. S.** (2022). Failure Investigation and Design of Remedial Measures for Reinforced Earth Wall-A Case Study. Indian Highways, 50 (7), 38-48
8. **Parvathi G. S.**, Sinha, A.K., Havanagi, V.G., & Dayana, M. (2022). Failure analysis and mitigation of Shankumugham beach road, Kerala, India—a case study. Arabian Journal of Geosciences, 15(14), 1-14. https://doi.org/10.1007/s12517-022-10536-1.
9. Sinha, A.K., Havanagi, V.G., **Parvathi, G. S.**, & Chandra, S. (2022). Geotechnical characterisation of zinc tailing waste material for road construction. Geomechanics and Geoengineering, 17(6), 1984-2004. https://doi.org/10.1080/17486025.2021.1990420 (SCI IF: 1.3)
10. Sinha A. K., Havanagi V. G., and **Parvathi G. S.** (2019). Utilisation of waste materials in Road Construction. Journal of New Building Materials & Construction World (NBM&CW), New Delhi, Vol. 25(3) pp 78 – 88.
11. **Parvathi G.S.**, Sinha A.K., Havanagi V.G. (2019). Red Mud - Fly Ash Mix as an Embankment Fill Material. Indian Highways 47 (3), pp 20-25. Post Conference International Symposium on Geotechnics for Transportation Infrastructure (ISGTI 2018) In Sundaram R., Shahu J., Havanagi V. (eds) Geotechnics for Transportation Infrastructure. Lecture Notes in Civil Engineering, vol 29. Springer, Singapore. https://doi.org/10.1007/978-981-13-6713-7_20
12. **Parvathi G. S.**, Vasant. G. Havanagi, Vijay Kumar Kanaujia, Anil Kumar Sinha (2018). Ground Improvement for the Construction of Road Over Soft Organic Soil: A Case Study. The Bridge and Structural Engineer, 48 (2), pp: 70-80
13. **Parvathi G. S.**, Basudhar P. K. (2020). Flexural Response of Beams on Visco-Elastic Foundations with Predictions beyond the Loading Area. International Journal of Geotechnical Engineering, Taylor and Francis Group Publications, 14 (4), 442-451. https://doi.org/10.1080/19386362.2018.1450700 (SCI IF: 1.9)

14. V.G. Havanagi, A.K. Sinha, **G.S. Parvathi**, S. Chandra (2017). Paper Discussion on Municipal Solid Waste in Road Embankment Construction - A Case Study. Journal of the Indian Roads Congress, 79(1), pp 64
15. V.G. Havanagi, A.K. Sinha, **G.S. Parvathi**, S. Chandra (2017). Municipal Solid Waste in Road Embankment Construction - A Case Study. Journal of the Indian Roads Congress, 78(2), pp 79-90

b. Conferences and Book Chapters

1. **Parvathi, G. S.** and Ramana, G. V. (2023). Roughness based prediction of geofoam interfaces with concrete. In Geosynthetics: Leading the Way to a Resilient Planet (pp. 580-585). CRC Press. https://doi.org/10.1201/9781003386889-61
2. Kumar, A., **Parvathi, G. S.** (2024). Comparison of Different Ground Improvement Techniques for the Road Construction Over Kuttanadu Clay Strata. In: Jose, B.T., Sahoo, D.K., Puppala, A.J., Reddy, C.N.V.S., Abraham, B.M., Vaidya, R. (eds) Proceedings of the Indian Geotechnical Conference 2022 Volume 4. IGC 2022. Lecture Notes in Civil Engineering, vol 479. Springer, Singapore. https://doi.org/10.1007/978-981-97-1753-8_14
3. **Parvathi G. S.**, Mariya Dayana, A. K. Sinha, and Vasant G. Havanagi (2022), 3-Dimensional Finite Element Analysis of Shankumugham Beach Road Due to Rainfall-Induced Storm Surge. Proceedings of the Indian Geotechnical Conference, Kochi, 13-15th December 2022
4. Sinha A. K., Havanagi V. G., and **Parvathi G. S.** (2019). Phosphogypsum waste material for road construction. National seminar on alternative highway construction material, Ranchi, Jharkhand.
5. Havanagi V. G., Sinha A. K., and **Parvathi G. S.** (2018). Characterization of Phosphogypsum waste for Road construction. Proceedings of the Indian Geotechnical Conference, Bengaluru, 13-15th December 2018
6. **Parvathi G. S.,** Sinha A. K. and Havanagi V. G. (2018). Analysis of Distressed Geosynthetic Reinforced Soil Wall-A Case Study. Proceedings of International Conference on Pavements and Computational Approaches, CSIR-Central Road Research Institute, pp: 25-32
7. Havanagi V. G., Sinha A. K., **Parvathi G. S.**, and Chandra (2017). Characterisation of Municipal Solid Waste for Road Embankment Construction. National Conference on New Technology for Road Construction, Lucknow, India, pp: 64-78
8. **Parvathi G. S.**, Ghosh A. (2016). Reinforced Soil Wall Construction using Red Mud, an Industrial waste. Young Scientists Conclave of India International Science Festival, New Delhi
9. **Parvathi G. S**., Ghosh A. (2016). Capacity Augmentation of Red Mud Pond using Industrial Waste. Proceedings of International Geotechnical Engineering Conference on "Sustainability in Geotechnical Engineering Practices and Related Urban Issues", Mumbai, India
10. **Parvathi G. S.**, Basudhar P. K. (2013). Visco Elastic Foundation Model Parameter Estimation Using Inverse Analysis Technique. Proceedings of the Indian Geotechnical Conference, Roorkee, India