

Dr. Sunil B.M., Ph.D, P.E.

Professor

Department of Civil Engineering

National Institute of Technology Karnataka (NITK)

Srinivasnagar, Surathkal, Mangalore - 575025

**ACADEMIC POSITION**

NITK-Surathkal, Department of Civil Engineering

Professor	10/23 – Present (Geotechnical Engineering Section)
Associate Professor	05/18 – 10/23
Assistant Professor	11/09 – 05/18
Lecturer	11/06 – 11/09

EDUCATION

Ph.D.	Civil Engineering	2009	NITK-Surathkal
M.Tech	Civil Engineering	2003	NITK-Surathkal
B.E.	Civil Engineering	2000	Mangalore University

AREAS OF INTEREST

Environmental Geotechnology
Slope stability
Ground Improvement Techniques
Unsaturated Soil Mechanics

HONORS AND ACHIVEMENTS

Career Achievement Recognition, Institution of Engineers (India), Mangalore Chapter – 9/2025.

Career Achievement Recognition, Association of Consulting Civil Engineers (India), Mangalore Centre – 9/2025.

Co-Organizer, 3rd Indian Symposium on Offshore Geotechnics (ISOG 2024) – An International Convention at NITK Surathkal, 8/2024

Chairman, Institution of Engineers India (IEI) Mangalore Chapter 10/2021 – 10/2023

Scroll of Honour- IEI Centenary Year, for Outstanding Contribution to the cause of Engineering and Nation Building, Institution of Engineers (India) - 2020

Technical committee member for assessing damage caused by MSW landfill, Mangalore-2019

Co-Organizer, 10th International Symposium on Low Land Technology (ISLT), Mangalore, India, 09/2016. International Association of Lowland Technology (IALT)-Department of Civil Engineering NITK-S, and Institute of Lowland and Marine Research (ILMR), Japan.

Hon. Secretary of Institution of Engineers (India) - Mangalore local Centre (2016 to 2018)

Lead contributor to Environmental Geotechnology Course at NITK-S

PROFESSIONAL AND INSTITUTIONAL SERVICE

Associate Dean (Testing & Consulting) – 11/2023 – 11/2025

Vice Chairman, Career Development Centre (CDC) - 07/2021 – 11/2023

Chairman, Institution of Engineers India (IEI) - Mangalore Local Chapter – 10/2021–10/2023

Department Coordinator of preparations for program accreditation review by NBA 2023-2025

Faculty Advisor for Post Graduate Program Activities (Geotechnical Engineering)

Consultancy Assignments undertaken by the Department.

Manuscript review for International Journals 2007- present

Soil Research; fundamental and applied aspects of soil science with wider interactions of soils with the environment

Journal of Material Cycles and Waste Management; environmental problems of material cycles and waste management

Indian Geotechnical Journal; site characterization, engineering behaviour of soils and rocks

The Microbe; all aspects of microbiology

Soils and Foundations; soil mechanics and geotechnical engineering and environmental geotechnics.

Journal of Engineering Geology (Elsevier)Cements and Concrete Composites

Geotechnical and Geological Engineering (Springer); soil and rock engineering and also of geology as applied in the civil engineering

Journal of Building Engineering; with the whole life cycle of the built environment

External reviewer for Ph.D examinations.

Resident Engineer - 9/ 2017 to 1/ 2019.

Faculty in-charge Estate and Works: 4/2011 to 4/ 2014.

Warden NITK Hostels: 2010 - 2014

THESES GUIDANCE

Ph.D : 08; Ongoing: 02

M.Tech : 63

B.Tech : 20

HIGHLIGHTS OF RESEARCH WORK

Disaster Resilience Building Construction Practices on Hilly Slopes of Bhutan-A research Compliance and Recommendation for National Adaptation.

Microbially induced carbonate precipitation (MICP) for soil strengthening

Studies on the Usage of granulated slag in Infrastructure and Construction Projects.

Use of Stabilized Mine Tailings in Bulk Fill Construction and Replacement for Fine Aggregates in Concrete.

Usage potential of reactive barriers in engineered landfills.

Blended Soils as an Alternative Liner Material in Municipal Solid Waste Landfills.

Experimental Studies on Slag-Filter, for Drinking Water Treatment.

Investigation of Ground Water Contamination due to Organic Compounds in D.K. and Udupi Districts.

RESEARCH/CONSULTANCY PROJECTS

Disaster Resilience Building Construction Practices on Hilly Slopes of Bhutan-A research Compliance and Recommendation for National Adaptation.

Scientific study of slided dump for re-stabilization as per ICFRE directions related to mining leasehold for ironore in Hospet, Ballari (Bellary), Karnataka.

Parallel taxi track project at Mangaluru International Airport.

Enhancement of water storage capacity around Timmappayya well at NMPA, Mangaluru.

Studies on the Usage of Granulated slag in Infrastructure and Construction Projects, Funded by Kirloskar Ferrous Industries Koppal.

Civil and structural works in connection with Construction of Pourakarmika housing blocks

Groundwater Contamination and Heavy Metal Retention by Soils in the vicinity of Solid Waste Disposal Area.

SELECTED RECENT PUBLICATIONS

Meena, Y.R., Diya & Sunil, B.M. (2026) Experimental Evaluation of Chromium Immobilization in Black Cotton Soil Using Various Stabilizing Agents. J. Inst. Eng. India Ser. A 107, 95–112 (2026). <https://doi.org/10.1007/s40030-026-00948-7>

Lekshmi priya, K.A., Bhansali, K.P., Aswathy, C.M. Meena, Y.R., & Sunil, B.M. (2026) Removal of Ammonia Using Slag-Based Soil Liner in Municipal Solid Waste Landfills. Indian Geotech J (2026). <https://doi.org/10.1007/s40098-026-01524-3>

Meena, Y. R., & Sunil, B. M. (2025) Ammonia Adsorption and Structural Integrity of Lithomargic Clay–GBFS Mixtures for Landfill Liners. In Ground Improvement, Landfills and Sustainability, Volume I: Select Proceedings of GLS 2025 (Lecture Notes in Civil Engineering). Springer. DOI: 10.1007/978-981-95-9410-8

T. Vamsi Nagaraju, **B.M. Sunil**, Babloo Chaudhary, R. Gobinath, G. Sri Bala, (2024) Exploring the impact of aquaculture sludge on the swell-shrink behavior of expansive clays, Case Studies in Chemical and Environmental Engineering, Volume 10, 2024, 100897, ISSN 2666-0164, <https://doi.org/10.1016/j.cscee.2024.100897>. (August, 2024)

Aswathy C. M, **B.M. Sunil**, (2024). Improving landfill liner performance with bentonite-slag blend permeated with ammonia for a Municipal solid waste landfill, Journal of Environmental Management, Volume 367, 2024, 122013, ISSN 0301-4797, <https://doi.org/10.1016/j.jenvman.2024.122013>. (September 2024)

Vamsi Nagaraju T and **Sunil B.M.** (2024) Briefing: Intensive inland aquaculture ponds: challenges and research opportunities. Environmental Geotechnics, <https://doi.org/10.1680/jenge.23.00090> Published Online: March 20, 2024

Nagaraju, T.V., **Sunil B.M.**, Chaudhary, B. *et al.* (2023). Novel assessment tools for inland aquaculture in the western Godavari delta region of Andhra Pradesh. Jr. *Environ Sci Pollut Res* (2023). <https://doi.org/10.1007/s11356-023-30206-3> (Oct.-2023)

T. Vamsi Nagaraju, **Sunil B.M.**, Babloo Chaudhary, Ch Durga Prasad, Gobinath R, (2023) Prediction of ammonia contaminants in the aquaculture ponds using soft computing coupled with wavelet analysis, Environmental Pollution, Volume 331, Part 2, 2023, 121924, ISSN 0269-7491, <https://doi.org/10.1016/j.envpol.2023.121924>.

Nagaraju, T.V., Sireesha, M., **Sunil, B.M.**, Alisha, S.S. (2023). A Review on Application of Soft Computing Techniques in Geotechnical Engineering. ACEER 2023. Lecture Notes in Civil Engineering, vol 336. Springer, Singapore. <https://doi.org/10.1007/978->

C.M. Aswathy, **Sunil B.M.**, (2022). Effect of ammonia on the hydraulic conductivity and adsorption characteristics of lithomargic clay – bentonite barrier in landfills, (2022) Journal of Environmental Chemical

Engineering, (10) 2022, 108750, ISSN 2213-3437, <https://doi.org/10.1016/j.jece.2022.108750>. Available online 13 October 2022.

Ujwala Shenoy, K.S. Babu Narayan and **Sunil B.M.**, (2022). Utilization of Discrete Element method in multi-phase soil modelling for soil slope stability analysis - Arabian Journal for Science and Engineering, <https://doi.org/10.1007/s13369-022-07394-0>

Nagaraju, T.V.; **Sunil B.M.**; Chaudhary, B.; Ravindran, G. (2022). Assessment of Environmental Impact of Aquaculture Ponds in the Western Delta Region of Andhra Pradesh. Sustainability 2022, 14, 13035. <https://doi.org/10.3390/su142013035>.

Nagaraju, T.V., **Sunil, B.M.**, Chaudhary, B. (2021). Swell-Compressibility Behavior of Geopolymer Blended Expansive Clays. In: Hazarika, H., Madabhushi, G.S.P., Yasuhara, K., Bergado, D.T. (eds) Advances in Sustainable Construction and Resource Management. Lecture Notes in Civil Engineering, vol 144. Springer, Singapore. https://doi.org/10.1007/978-981-16-0077-7_42

Anjali M.S., Poorani M., Shrihari S., **Sunil B.M.** (2020). "Assessment of Ferrous Slag with Relevance to Physico-chemical Properties." In: Kalamdhad A. (eds) Recent Developments in Waste Management. Lecture Notes in Civil Engineering, Vol 57. Springer, Singapore https://doi.org/10.1007/978-981-15-0990-2_30

Sunil B.M., Prakrithi V and K.S. Babu Narayan (2020). Use of slag-media filter for treating drinking water, WEENTECH Proceedings in Energy Vol.6 (1), 1-13. <https://doi.org/10.32438/WPE.0420>.

Berhe, K.T., **Sunil B.M.**, & S. Shrihari (2020). Challenges of Eco-friendly Solid Waste Disposal in Ethiopia: The Case of Hawassa Industrial Park. Proceedings of the Geoenvironmet-2020 Conference, February 17–21, 2020 (pp. 228–234). New Delhi, IN: Network of Experts and Resources for Subsurface Investigations and Remediation of Contaminated Sites (NERCS).

Anjali, M. S., Shrihari, S. and **Sunil, B. M.** (2019). "Potential valorization of ferrous slag in the treatment of water and wastewater: A Review." *J. Advances in Environmental Research*, Vol. 8, No. 1, 55-69. DOI: <https://doi.org/10.12989/aer.2019.8.1.055>.

Anjali, M. S., Shrihari, S. and **Sunil, B. M.** (2019). "Experimental studies of slag filter for drinking water treatment." *J. Environmental Technology & Innovation*, Elsevier, Vol. 15 (2019) 100418 (Aug. 2019). <https://doi.org/10.1016/j.eti.2019.100418>.

Anjali M.S., Poorani M., Shrihari S. and **Sunil B.M.**, (2019) "Assessment of Ferrous Slag with Relevance to Physico-chemical Properties", Lecture Notes in Civil Engineering, Vol. 1., pp. 377 - 384; https://doi.org/10.1007/978-981-15-0990-2_30

Sunil B.M., Manjunatha L.S., and Subhash C Yaragal (2017). Durability studies on concrete with partial replacement of cement and fine aggregates by fly ash and tailing material Advances in Concrete Construction, Vol. 5, No. 6 (2017) 671-683 DOI: <https://doi.org/10.12989/acc.2017.5.6.671>

Praveen and Sunil B.M., (2016). Potential Use of Waste Rubber Shreds in Drainage Layer of Landfills – An Experimental Study, *J. Advances in Environmental Research*, Vol. 4, No. 3 (2016) 188-199, DOI: <http://dx.doi.org/10.12989/aer.2015.4.3.197>

Sunil B.M., and A.V. Deepa (2016). "Influence of Drying Temperature on Three Soils Physical Properties" *Geotech Geol Eng* (2016) 34:777–788, DOI 10.1007/s10706-016-0001-2.

Sunil B.M. (2015). Review on performance of geosynthetic liners in municipal solid waste landfills, *Japanese Geotechnical Society Special Publication of The 15th Asian Regional Conference on Soil Mechanics and Geotechnical Engineering*, pp. 2368-2372; 2015. <https://doi.org/10.3208/jgssp.IGS-21>

Sunil B.M., and Saihya Faziludeen (2015). Removal of hexavalent chromium Cr (VI) by adsorption in blended lateritic soil, *J. Advances in Environmental Research*, Vol. 4, No. 3 (2015) 197-210, DOI: <http://dx.doi.org/10.12989/aer.2015.4.3.197>

Manjunatha L.S., **Sunil B.M.** (2014). "Geotechnical properties of mine tailings- A laboratory study, *International Journal of Advanced Structures and Geotechnical Engineering*, Vol.3 (2), 183-187, April 2014.

Sunil B.M., and Krishnappa H (2012). Effect of Drying on the Index Properties of Lateritic Soils, *J. Geotech. and Geol. Eng.* Springer, 30(4): 869-879.

BOOK CHAPTERS

Nagaraju, T. V., **Sunil, B. M.**, Chaudhary, B., & Bala, G. S. (2024). Multivariate Statistical Approach for Assessment of Surface Water Quality in the Intensive Inland Aquaculture Region in India. In *International*

Conference on Interdisciplinary Approaches in Civil Engineering for Sustainable Development (pp. 377-386). Singapore: Springer Nature Singapore.

Nagaraju, T. V., Sri Bala, G., Durga Prasad, C., & **Sunil, B. M.** (2024). Prediction of Inland Aquaculture Ammonia Using Hybrid Intelligent Soft Computing. In *International Conference on Interdisciplinary Approaches in Civil Engineering for Sustainable Development* (pp. 219-226). Singapore: Springer Nature Singapore.

Nagaraju, T. V., Venkata Rao, M., **Sunil, B. M.**, & Chaudhary, B. (2024). Furfural-Extracted Corncob Ash: A New Geomaterial for Sustainable Construction, In: Hazarika, H., Haigh, S.K., Chaudhary, B., Murai, M., Manandhar, S. (eds) *Sustainable Construction Resources in Geotechnical Engineering. IC-CREST 2023. Lecture Notes in Civil Engineering*, vol 448. (pp. 155-162). Singapore: Springer Nature Singapore.

Nagaraju, T. V., Sireesha, M., **Sunil, B. M.**, & Alisha, S. S. (2023, July). A Review on Application of Soft Computing Techniques in Geotechnical Engineering. In *International Conference on Advances in Civil and Ecological Engineering Research* (pp. 313-322). Singapore: Springer Nature Singapore.

Nagaraju, T. V., Venkata Rao, M., **Sunil, B. M.**, & Chaudhary, B. (2022). Stabilization of Expansive Clays: A Micro-mechanistic Study. In *International Conference on Trends and Recent Advances in Civil Engineering* (pp. 159-168). Singapore: Springer Nature Singapore.

Nagaraju, T. V., **Sunil, B. M.**, Chaudhary, B., & Rambabu, T. (2022, August). Assessment of Nitrate Fluxes in Intensive Aquaculture Region in Godavari Delta Using Spatial Interpolation Kriging. In *International Conference on Trends and Recent Advances in Civil Engineering* (pp. 173-181). Singapore: Springer Nature Singapore.

Nagaraju, T. V., Rambabu, T., Mantena, S., & **Sunil, B. M.** (2022, August). Dynamics of the Aquacultural Intensification in the Godavari-Krishna Inter Delta Region in India and Its Impact on Ecological Balance. In *International Conference on Trends and Recent Advances in Civil Engineering* (pp. 155-164). Singapore: Springer Nature Singapore.

Nagaraju, T. V., **Sunil, B. M.**, & Chaudhary, B. (2022, December). Influence of Aquaculture Sludge on Volume Change Behavior of Expansive Clays. In *Ground Improvement Techniques: Proceedings of the Indian Geotechnical Conference 2021 Volume 3* (pp. 43-49). Singapore: Springer Nature Singapore.

Nagaraju, T. V., **Sunil, B. M.**, & Chaudhary, B. (2022). A Study on Aquaculture Waste Leachate Transport Through Soil. In *Recent Trends in Civil Engineering: Select Proceedings of ICRACE 2021* (pp. 485-491). Singapore: Springer Nature Singapore.

Nagaraju, T. V., **Sunil, B. M.**, & Chaudhary, B. (2022). Understanding the Role of Biological Oxygen Demand in Aquaculture Waters in the Western Delta Region of Andhra Pradesh. In *Recent Advances in Sustainable Environment: Select Proceedings of RAiSE 2022* (pp. 13-20). Singapore: Springer Nature Singapore.

Nagaraju, T. V., **Sunil, B. M.**, & Rao, M. V. (2022). Utilization of GGBS-based geopolymers lateritic soils for sustainable pavements. In *Recent Trends in Civil Engineering: Select Proceedings of ICRACE 2021* (pp. 429-439). Singapore: Springer Nature Singapore.

Vamsi Nagaraju T, **B. M. Sunil** and Babloo Chaudhary (2021). Swell compressibility behavior of geopolymer blended expansive clays, *Advances in Sustainable Construction and Resource Management*, ISBN: 978-981-16-0077-7, Springer, Singapore (Scopus)

Nagaraju, T. V., **Sunil, B. M.**, & Chaudhary, B. (2021, December). Impact of Aquaculture Solid Waste on Environment in the Delta Region of Andhra Pradesh: A Case Study. In *Indian Geotechnical Conference* (pp. 369-374). Singapore: Springer Nature Singapore.

Nagaraju, T. V., Prasad, C. D., Chaudhary, B., & **Sunil, B. M.** (2021). Assessment of Seismic Liquefaction of Soils Using Swarm-Assisted Optimization Algorithm. In *Local Site Effects and Ground Failures: Select Proceedings of 7th ICRAGEE 2020* (pp. 295-304). Springer Singapore.