

NARALA GANGADHARA REDDY

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Education:

- **Ph.D.** (Geoenvironmental Engineering), IIT Bhubaneswar, India (2015-2019)
- **Master of Technology** (Geotechnical Engineering), NIT Bhopal, India (2012–2014)
- **Bachelor of Technology** (Civil Engineering), BIET, JNTU Hyderabad, India (2009–2012)
- **Diploma** (Civil Engineering), Loyola Polytechnic, A.P., India (2006–2009)

Professional Appointments:

- Research Associate**, Nanjing University, China (QS Ranking–122) (Sept 2019– tilldate)
Teaching Assistant, IIT Bhubaneswar, India (July 2015–Sept 2019)
Geotechnical Engineer, Noble Geo-Structs, Mumbai, India (July 2014–Dec 2014)

Research Publications: (h-index: 6, i10-index: 3 Source: Google scholar)

Journals (Published/Accepted):

- 1) Garg, A., Reddy, N. G., Huang, H., Buragohain, P., & Kushwaha, V. Modeling of Contaminant Transport in Fly Ash-Bentonite Composite Landfill Liner: Mechanism of Different Types of Ions, *Scientific Reports*, Nature (Accepted for publication).
- 2) Mei, G., Kumar, H., Reddy, N. G., Huang, S., Balaji, C. R., Sadasiv, S. G., & Zhu, H-H. (2020). Evaluating the Suitability of Geomaterial Amended Soils for Landfill Liner: A Comparative Study. *Journal of Hazardous, Toxic, and Radioactive Waste*, ASCE (Accepted for publication).
- 3) Mishra, M. C., Reddy, N. G., & Rao, B. H. (2020). Potential of Citric Acid for Amendment of Extremely Alkaline Bauxite Residue: Effect on Geotechnical and Geoenvironmental Properties. *Journal of Hazardous, Toxic, and Radioactive Waste*, ASCE (Accepted for publication).
- 4) Zhang, Y., Gu, K., Tang, C-S., Shen, Z., Reddy, N. G., & Shi, B. (2020). Effects of Biochar on the Consolidation and Swelling Characteristics of Clayey Soils. *International Journal of Geosynthetics and Ground Engineering*, Springer, 6(2), 22.1–22.8. <https://doi.org/10.1007/s40891-020-00206-1>.
- 5) Reddy, P. S., Reddy, N. G., Serjun, V. Z., Mohanty, B., Das, S. K., Reddy, K. R., & Rao, B. H. (2020). Identification of Beneficial Applications of Red Mud based on Physical, Chemical, Mineralogical, and Geotechnical Characteristics: Critical Review and Engineering Challenges. *Waste and Biomass Valorization*, Springer. <https://doi.org/10.1007/s12649-020-01089-z>.
- 6) Mei, G., Kumar, H., Huang, H., Cai, W., Reddy, N. G., Chen, P., Prakash, S. G., and Garg, A. (2020). Desiccation Cracks Mitigation Using Biomass Derived Carbon Produced from Aquatic Species in South China Sea. *Waste and Biomass Valorization*, Springer. <https://doi.org/10.1007/s12649-020-01057-7>.
- 7) Reddy, N. G., Singh, R. N., Basu D., & Rao, B. H. (2020) Application of Biopolymers for Improving Strength Characteristics of Red Mud Waste. *Environmental Geotechnics*, ICE Publishing. <https://doi.org/10.1680/jenge.19.00018>.

- 8) Mishra, M. C., Babu, K. S., **Reddy, N. G.**, Dey, P. P., & Rao, B. H. (2019). Performance of Lime Stabilization on Extremely Alkaline Red Mud Waste under Acidic Environment. *Journal of Hazardous, Toxic, and Radioactive Waste*, 23(4), 04019012. p.14.
- 9) **Reddy, N. G.**, Rao, B. H., & Reddy, K. R. (2018). Biopolymer Amendment for Mitigating Dispersive Characteristics of Red Mud Waste. *Géotechnique Letters*, ICE Publishing, 8(3), 201–207.
- 10) **Reddy, N. G.**, & Rao, B. H. (2018). Characterization of Settled Particles of the Red Mud Waste Exposed to Different Aqueous Environment Conditions. *Indian Geotechnical Journal*, Springer, 48(3), 405–419.
- 11) **Reddy, N. G.**, & Rao, B. H. (2018). Compaction and Consolidation Behaviour of Untreated and Treated Waste of Indian Red Mud. *Geotechnical Research*, ICE Publishing, 5(2), 106-121.
- 12) **Reddy, N. G.**, & Rao, B. H. (2016). Evaluation of the Compaction Characteristics of Untreated and Treated Red Mud. *Geotechnical Special Publication*, ASCE, 272, 23–32.
- 13) **Reddy, N. G.**, Tahasildar, J., & Rao, B. H. (2015). Evaluating the Influence of Additives on Swelling Characteristics of Expansive Soils. *International Journal of Geosynthetics and Ground Engineering*, 1(1), 7.1-7.13.

Journals (Communicated/Under Review):

- 1) Li, H-J., Zhu, H-H., Zhang, C-X., **Reddy, N. G.**, Garg, A., Wu, H-Y., & Shi, B. Monitoring Flexure Behavior of Compacted Clay Beam using Fiber-Optic Sensing. *International Journal of Geomechanics*, ASCE.
- 2) Wang, J., Zhu, H-H., Wang, J., Cao, D.F., Xu, L., & **Reddy, N. G.** Experimental Study on Capillary Block Infiltration Model Based on Active Heating Fiber. *Chinese Journal of Geotechnical Engineering*.
- 3) Huang, H., **Reddy, N. G.**, Chen, P., Wang, P., Zhang, Y., Huang, Y., Peng, L. & Garg, A. Influence of three novel biochars from waste on sorption and desorption behaviour of soil: Mechanism revealing effects of pyrolysis temperature, feedstock type and density. *Scientific Reports*, Nature.
- 4) Garg, A., Huang, H., Cai, W., **Reddy, N. G.**, Chen, P., Han, Y., Kamchoom, V., Gaurav, S., & Zhu, H-H. Influence of soil density on gas permeability and water retention in soils amended with in-house produced biochar. *Journal of Rock Mechanics and Geotechnical Engineering*, Elsevier.

Book Chapters:

- 1) **Reddy, N. G.**, Rao, B. H., & Reddy, K. R. (2019). Chemical Analysis Procedures for Determining the Dispersion Behaviour of Red Mud. In book: *Recycled Waste Materials, Lecture Notes in Civil Engineering* (Eds: Agnihotri AK, Reddy KR, and Bansal A), Vol. 32, Springer Singapore, pp. 19–26.
- 2) ***Reddy, N. G.** & Rao, B. H., (2019). Effect of Additives on Consistency Limits of Red Mud Waste: A Comparative Stud. In book: *Environmental Science and Engineering*

(Eds: Zhan L, Chen Y, and Bouazza A), Vol. 3, Springer, Singapore, pp. 234–241 (*Corresponding Author).

- 3) Rao, B. H., & Reddy, N. G. (2017). Zeta Potential and Particle Size Characteristics of Red Mud Waste. In book: *Geoenvironmental Practices and Sustainability* (Eds: Babu, G. L. S., Reddy, K.R., De. A., & Datta, M.), Chapter 8, Springer Singapore, pp. 69–89.

Conferences /Workshops:

- 1) Mishra, M. C. Reddy, N. G., Rao, B. H., & Das, S. K. (2019). A Study on Evaluating the Usefulness and Applicability of Additives for Neutralizing Extremely Alkaline Red Mud Waste. 2nd International Conference on Environmental Geotechnology, Recycled Waste Materials and Sustainable Engineering (EGRWSE-2019), 16–20/June/2019, Chicago, Illinois, USA.
- 2) Babu, K. S., Reddy, N. G., Rao, B. H., & Dey, P. P. (2018). Susceptibility to Compaction of Lime and Ground Granulated Blast-furnace Slag Stabilized Red Mud Waste. Bauxite Residue Valorisation and Best Practices Conference (BR–2018), 7–10/May/2018, Athens, Greece.
- 3) Reddy, N. G., & Rao, B. H. (2017). Assessment of Dispersion Characteristics of Red Mud Waste from Physical Tests. Indian Geotechnical Conference-2017 (GeoNEst), 14–16/December/2017, IIT Guwahati, India.
- 4) Reddy, N. G., Chandra, K. S., & Rao, B. H. (2016) Assessment of Industrial Wastes as a Construction Material: A Review. ICRIET–2016, pp. 28–34, 22–23/December/2016, Hyderabad, India.
- 5) Reddy, N. G., Rao, B. H., & Satapathy, B. K. (2016). Variations in the Mineralogical Composition of Red Mud Waste Calcined at Different Temperatures. 5th International Symposium on Aluminium Industry-The Evolving Asia-Pacific Story (IBAAS-2016) Binder: Vol. 5, pp. 151–158, 26–28/September/2016, Goa, India.
- 6) Reddy, N. G., Rao, B. H., & Padmanabhan N. P. H. (2016). Surface Charge and Particle Size Characteristics of Red Mud Waste Measured from Zeta Potential. Indo-US Bilateral Workshop on Geoenvironmental Practices and Sustainability, pp. 60–65, 18/August/2016, Chicago, IL, USA.
- 7) Reddy, N. G., & Kishan, D. (2014). Suitability of Silty Soils as a Subgrade Material Stabilized with Fly Ash. International Conference on Environment and Energy (ICEE–2014), 15–17/December/2014, Hyderabad, India.

Invited talk/lectures:

- Delivered a talk on “Geotechnical and Geoenvironmental Characterization of Red Mud Waste”, at Nanjing University, Nanjing, China, 2nd December 2019.
- Delivered a talk on “Suitability of Red Mud for Geotechnical Applications”, in Youth Workshop held at Shantou University, Shantou, China, 21st October 2019.

Reviewer Assignments:

- Geotechnical and Geological Engineering Journal, Springer
- International Journal of Geosynthetics and Ground Engineering, Springer

Awards/Achievements:

- Got selected for CSC Scholarship (Govt. Of China) for pursuing research in China for the year 2019–2020.
- Travel grant of 10000 RMB (~100000 INR) by Tongji University, Shanghai, China to attend “Shanghai Civil Engineering and Surveying Young Scholars Forum 2019”, March 2019 (Not availed).
- Institute Fellowship for Ph.D. at IIT Bhubaneswar (Jan 2015– Sept 2019).
- MHRD (Govt. of India) Fellowship for M.Tech at MANIT Bhopal (2012–2014).
- Cleared GATE–2012 with 91%.

Technical Field Visits:

1. Conducted geotechnical field investigation for the characterization of Red Mud Pond, Vedanta Alumina, Lanjigarh, Odisha, India. (PI: Dr. B.H. Rao) (July 2017)
2. Visited different captive power plants in the state of Odisha for 3rd party auditing of fly ash sponsored by State Pollution Control Board, Bhubaneswar. (PI: Dr. B.H. Rao) (Feb – Mar 2017 & 2018)
3. Visited NALCO red mud pond located at Damanjodi, Koraput, Odisha for sample collection for research purpose. (Feb 2015)
4. Conducted pile load test for the construction of a railway crossover bridge at Budni near Hoshangabad, M.P, India. (PI: Dr. D. Kishan) (Feb 2013)

Personal Profile:

Name : Narala Gangadhara Reddy
Mother's Name : N. Seetha Lakshmi
Father's Name : N. Venkatarami Reddy
Date of Birth : 29th April 1991
Address : Kadapa, Andhra Pradesh, India
Languages Known : English, Telugu and Hindi