TEWODROS GHEBRAB, PH.D., P.E.

Assistant Professor
Civil, Environmental, and Construction Engineering (CECE)
Texas Tech University (TTU), Lubbock, TX 79409

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Professional Preparation

Ph.D.	Civil Engineering	Michigan State University	2008
M.Sc.	Civil Engineering	University of New South Wales; Australia	1996
B.Sc.	Civil Engineering	Addis Ababa University (Ethiopia)	1992

Professional Chronology

Associate Professor	Texas Tech University	2025 – Present
Assistant Professor	Texas Tech University	2009 – 2025
Project Engineer	Walker Engineering, Inc.,	2008 – 2009
Research Assistant	Michigan State University	2006 – 2007
Senior Lecturer	University of Asmara (Eritrea)	1996 – 2004
Graduate Assistant	Addis Ababa University (Ethiopia)	1992 – 1994

Research Intereste

Structure-property relationships of cementitious materials
Performance of cement-based materials under adverse environment
Effects of mineral/chemical admixtures on the properties of cement-based materials
Modeling of the properties of cement-based materials containing nano-sized admixtures

Licensure

Licensed Professional Engineer in Texas, PE#107332 since 2010.

HONORS, AWARDS AND RECOGNITIONS

Awarded Dr. Charles L. Burford Faculty Teaching Excellence Award	2016
Nominated for Dr. Charles L. Burford Faculty Teaching Excellence Award	2013
Nordberg Fellowship Award for excellence in research achievement, MSU	2008
Nordberg Fellowship Award for excellence in research achievement, MSU	2007
Recognition for academic excellence, Phi Beta Delta, MSU Chapter	2005
Fulbright Scholarship, U.S. Department of State	2004
AIDAB Scholarship, Australian Government	1995

PUBLICATIONS

Peer-Reviewed Journal *Corresponding, mentees (Scopus, google scholar citations)

1. *Roz-Ud-Din Nassar, Kadhim Alamara, Anagi Balachandra, Parviz Soroushian, **Tewodros Ghebrab**, "Performance evaluation of innovative self-healing corrosion protection coatings for prestressing strands," Heliyon, Volume 10, Issue 23, 15 December 2024. https://doi.org/10.1016/j.heliyon.2024.e40681
2. *Roz-Ud-Din Nassar, Parviz Soroushian, **Tewodros Ghebrab**, Muhammad Sufyan-Ud-Din, "Development and evaluation of mixture formulations to enhance concrete resistance to microbial-induced corrosion," Results in Materials, Volume 24, 2024, https://doi.org/10.1016/j.rinma.2024.100644

3. *Feseha Sahile Asrat and **Tewodros T. Ghebrab**, "Using Mill-Rejected Granular Cement as a replacement for Fine Aggregate," Journal of Annals of Civil Engineering and Management, 2024, 1 (1) pp. 1-7. using-millrejected-granular-cement-as-a-replacement-for-fine-aggregate.pdf
4. Samson Gelmessa, Werku Hareru, **Tewodros Ghebrab*,** "Assessment of Scaffolding Systems in Addis Ababa Public Building Projects; Current Practice, Related Problems, and Potential Solutions," Current Trends in Civil & Structural Engineering, June 28, 2024. https://irispublishers.com/ctcse/pdf/CTCSE.MS.ID.000757.pdf
5. *Roz-Ud-Din Nassar, Danish Saeed, **Tewodros Ghebrab**, Shah Room, Ahmed Deifalla, and Kadhim Al Amara, "Heat of hydration, water sorption and microstructural characteristics of paste and mortar mixtures produced with powder waste glass," *Cogent Engineering*, 2024, V. 11, No. 1, https://doi.org/10.1080/23311916.2023.2297466
6. A. Rowell, ***T. Ghebrab**, R. Jeter, "Bacterial Treatment of Recycled Concrete Aggregate," *Recycling*, 2023, 8, 68. https://doi.org/10.3390/recycling8050068 (0,1)
7. A. Legesse, *A. Nejat, **T. Ghebrab**, "The Coupling of Project Delivery Methods and Contract Strategies for Public Building Projects in Ethiopia," *Construction Innovation: Information, Process, Management*, 2023. https://www.emerald.com/insight/1471-4175.htm
8. ***N. Feknssa**, N. Venkataraman, V. Shankar, and **T. Ghebrab,** "Unobserved Heterogeneity in Ramp Crashes Due to Alignment, Interchange Geometry and Truck Volume: Insights from a Random Parameter Model," *Analytic Methods in Accident Research*, 2023, 37, 100254. https://doi.org/10.1016/j.amar.2022.100254 (5,7)
9. Asfaw, F.B., *Hareru, W.K., **Ghebrab, T.**, "Physical and Chemical Characterization of Coffee Husk Ash Effect on Partial Replacement of Cement in Concrete Production," *International Journal of Sustainable Construction Engineering and Technology*, 13 (1), pp. 167-184, 2022. DOI:10.30880/ijscet.2022.13.01.016 (2,3)
10. *Mahdi, T., Senadheera, S., and **Ghebrab, T.**, "Effect of PET Size, Content and Mixing Process on the Rheological Characteristics of Flexible Pavement," *Materials*, MDPI, 15,10, 3565, 2022. (Cited 1) https://doi.org/10.3390/ma15103565 (3,4)
11. *Asres, E., **Ghebrab, T.,** Ekwaro-Osire, S., "Framework for Design of Sustainable Flexible Pavement," *Infrastructures*, 7 (1), 6, 2022. https://doi.org/10.3390/infrastructures7010006 (4,7)
12. Alemayehu, S., *Nejat, A., **Ghebrab, T.,** Ghosh, S., "A multivariate regression approach toward prioritizing BIM adoption barriers in the Ethiopian construction industry," *Engineering, Construction and Architectural Management*, 2021. http://dx.doi.org/10.1108/ECAM-02-2021-0165 (14,20)
13. Fadhel Aoudi, ***Tewodros Ghebrab**, Parviz Soroushian, and Roz-Ud-Din Nassar, "Effect of helical surface area on the performance of a multi-helix anchor," *International Journal of Civil Engineering*, 18 (4), 1-10, April 2020. DOI:10.1007/s40999-019-00490-7 (2,3)
14. *Werku Koshe Hareru and **Tewodros T. Ghebrab**, "Rheological Properties and Application of Molasses Modified Bitumen in Hot Mix Asphalt (HMA)," *Applied Sciences-BASEL*, MDPI, 10, 6, 1931, March 2020. DOI:10.3390/app10061931
    (10,11)
15. *Feseha Sahile Asrat and **Tewodros T. Ghebrab**, "Effect of Mill-Rejected Granular Cement Grains on Healing Concrete Cracks," *Materials, MDPI*, 13, 4, 840, February 2020. DOI: 10.3390/ma13040840 (3,6)
16. *Lucy Feleke Nigussie, Muge Mukaddes Darwish, **Tewodros T. Ghebrab**, "Comparative Investigation of the effect of recycled fine aggregate from new and old construction wastes in C-25 concrete in Ethiopia," *Sustainability, MDPI*, 11, 24, 7116, December 2019. DOI: 10.3390/su11247116 (4,8)

17. *Getachew Kebede Warati, Muge Mukaddes Darwish, Fekadu Fufa Feyessa, and **Tewodros Ghebrab**, "Suitability of Scoria as Fine Aggregate and its Effect on the Properties of Concrete," *Sustainability*, *MDPI*, 11, 17, 4647, September 2019. DOI:10.3390/su11174647. (20,23)
18. Fadhel Aoudi, ***Tewodros Ghebrab**, Parviz Soroushian, "Reliable and Convenient Multi-Helix Soil Anchor for Deployable Structures," *Journal of Geotechnical & Geological Engineering*, Springer, Vol. 36, Issue 4, pp. 2611-2623, 2018. DOI:10.1007/s10706-018-0486-y. (1,2)
19. *Ramoni, M., Zhang, Y., Zhang, H.-C., **Ghebrab, T.,** "Laser ablation of electrodes for Li-ion battery remanufacturing," *The International Journal of Advanced Manufacturing Technology*, Vol. 88, Issue 9, pp 3067–3076 (6/2016). https://doi.org/10.1007/s00170-016-8986-5 (7,11)
20. *Roz-Ud-Din Nassar, Parviz Soroushian, **Tewodros Ghebrab**, "Field Investigation of High-Volume Fly Ash Concrete Pavements," *Journal of Resources, Conservation & Recycling, Elsevier*, Vol. 73, 2013, pp. 78-85. (6/2013). https://doi.org/10.1016/j.resconrec.2013.01.006 (44,61)
21. ***T. Ghebrab** and P. Soroushian, "Development of Structure-Property Relationships for Concrete," *Journal of Advanced Concrete Technology* (ACT), Vol. 9, No. 1, 2011, pp. 5-14. (2/2011). https://www.jstage.jst.go.jp/article/jact/9/1/9_1_5/_pdf (5,8)
22. ***T. Ghebrab** and P. Soroushian, "Mechanical Properties of Cement Mortar: Development of Structure-Property Relationships," *International Journal of Concrete Structures and Materials*, Vol. 5, No. 1, 2011, pp. 3-10. (6/2011). DOI:10.4334/IJCSM.2011.5.1.003. (0,18)
23. ***T. Ghebrab** and P. Soroushian, "Mechanical Properties of Hydrated Cement Paste: Development of Structure-Property Relationships," *International Journal of Concrete Structures and Materials*, Vol. 4, No. 1, 2010, pp. 37-43. (6/2010). DOI:10.4334/IJCSM.2010.4.1.037. (0,20)
24. P. Soroushian, *R.U.D. Nassar, H. Chowdhury, **T. Ghebrab**, "Testing Concrete Durability in Sewer Environment," *Journal Proceedings of the Institution of Civil Engineers - Construction Materials*, Vol. 163, N. 1, 2010, pp. 35-44. (2/2010). DOI: 10.1680/coma.2010.163.1.35 (4,3)
25. P. Soroushian, H. Chowdhury, ***T. Ghebrab**, "Evaluation of Water-Repelling Additives for Use in Concrete-Based Sanitary Sewer Infrastructure," *ASCE Journal of Infrastructure*, Vol. 15, No. 2, pp. 106-110. (6/2009). DOI:10.1061/(ASCE)1076-0342(2009)15:2(106). (9,11)
26. P. Soroushian, O. Simsek, M. Elzafraney, ***T. Ghebrab**, "Compatibility of Cereal Straw with Hydration of Cement," *Journal of Solid Waste Technology & Management*, Vol. 35, No.1, pp. 1-6. (2/2009). DOI:10.5276/JSWTM.2009.1. (2,3)

I. **Conference Papers**

1. Darwish, M.M., Nejat, A., Ghebrab, T., "Globalization and the new challenges for construction engineering education*," ASEE Annual Conference and Exposition*, Conference Proceedings, 2012. (8,8)
2. Nejat, A., Darwish, M.M., Ghebrab, T., *"*BIM teaching strategy for construction engineering students*," ASEE Annual Conference and Exposition*, Conference Proceedings, 2012. (10,17)
3. Aouadi, F., Ghebrab, T., Soroushian, P., Nassar, R.-U.-D., "Effect of Helix Geometry on the Performance of Multi-Helix Anchor for Temporary Shelters," Sustainable Transportation Infrastructure and Enhanced Mobility Conference, Jimma Institute of Technology, Ethiopia, March 11, 2019.

II. **Books**

1. Tewodros Ghebrab & Parviz Soroushian, "Structure-Property Relationships for Cement-Based Materials: Development of Structure-Property Relationships for Hydrated Cement Paste, Mortar and Concrete*,"* VDM Verlag, 2009, ISBN: 978-3-639-11930-5

II. **Technical Reports**

1. Jayawickrama, P., **Ghebrab, T.**, and Lawson, W., "A Comprehensive Field Guide for Reconfiguration of MSE Reinforced around Obstructions," Texas Department of Transportation, August 2015.
2. Saraf, S.; Choi, P.; Ryu, S.; Ha, S.; Won, M., and **Ghebrab, T.**, "Minimize Premature Distress in Continuously Reinforced Concrete Pavement." Texas Department of Transportation, August 2013.