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RESEARCH

Interests	Geo-environmental · Geotechnical and Geophysical Engineering
Areas	Geophysics · Environmental Engineering · Ocean Engineering · Building and Construction · Civil and Structural Engineering · Geochemistry and Petrology

RESEARCH SUMMARY

43	859	13	16	2.04	21%
Publications	Citations	h-index	i10-index	Field-weighted impact	World top 10%

Counted from the 43 publications listed below, 2008–2025. Field-weighted impact is the mean over the 28 works scored for it; 1.00 is the world average for works of the same field, type and year. 6 of the 28 papers scored for it are among the world's most cited tenth for their field, type and year.

EDUCATION AND QUALIFICATIONS

PhD 2006–2011
Civil and Environmental Engineering, Duke University, Durham, United States

PUBLICATIONS

Journal articles 35

1. SIK Ampadu, FJF Ayeh, **F Owusu Nimo**, F Charkley (2025). A laboratory study of climate change and subgrade strength of a lateritic soil in a tropical environment. *E3S Web of Conferences*. https://www.e3s-conferences.org/articles/e3sconf/abs/2025/42/e3sconf_eunsat2025_03018/e3sconf_eunsat2025_03018.html
2. SIK Ampadu, **FO Nimo**, FJ Ayeh, F Charkley (2025). Climate change trends as measured by the Thornthwaite Moisture Index maps for Ghana. *E3S Web of Conferences*. https://search.proquest.com/openview/e0241d8fb1fe7712ad51c4436a3a28f3/1?pq-origsite=gscholar&cbl=2040555
3. Irene Appeaning Addo, Ibrahim Yakubu, Alexandre S. Gagnon, Christopher T. S. Beckett, Yuner Huang, **Frederick Owusu-Nimo**, Ana Margarida Armada Brás (2025). Examining change and permanence in traditional earthen construction in Ghana: a case study of Tamale and Wa. *Built Heritage*. https://doi.org/10.1186/s43238-024-00165-w
4. Collins Okrah, Emmanuel K. Appiah-Adjei, **Frederick Owusu-Nimo**, William A. Agyekum (2024). Application of electrical and electromagnetic data to delineate shallow aquifer zones: a case study of Vea catchment, Ghana. *Arabian Journal of Geosciences*. https://doi.org/10.1007/s12517-024-11987-4
5. Ana Bras, Ibrahim Yakubu, Hazha Mohammed, Ibijoke Idowu, Rosalind Jones, Alexandre S. Gagnon, **Fred Owusu-Nimo**, Yuner Huang, Christopher T.S. Beckett, Irene Appeaning Addo (2024). Bio-stabilising earthen houses with tannins from locally available resources. *Case Studies in Construction Materials*. https://doi.org/10.1016/j.cscm.2024.e03182
6. **F Owusu-Nimo** (2024). Check for updates. *Second RILEM International Conference on Earthen Construction: ICEC 2024*. https://books.google.com/books?hl=en&lr=&id=ha4QEQAAQBAJ&oi=fnd&pg=PA132&dq=info:-

y_fk3fwtzsJ:scholar.google.com&ots=W9SHLL8kry&sig=agJp5FiElv_OTxT9nzAgaMIGpog

7. Albert Asare, **Frederick Owusu-Nimo**, Bukari Ali, Bernard Audinada Ampofo (2024). Estimating the Depth of Investigation in Electrical Resistivity Survey: Laboratory Measurements. *Journal of Science and Technology (Ghana)*. https://doi.org/10.4314/just.v42i1.2
8. Albert Acheampong, Geophrey K. Anornu, **Frederick Owusu-Nimo**, Charles Gyamfi, Gibrilla Abass (2024). Site-specific condition evaluation for managed aquifer recharge (MAR) site selection in granitic aquifers, Ghana. *Water Science & Technology Water Supply*. https://doi.org/10.2166/ws.2024.087
9. **Frederick Owusu-Nimo**, Daniel Peprah-Manu, Felix J. Ayeh, Frederick Charkley, Samuel I. K. Ampadu (2023). Compaction Verification of Lateritic Soil Using Electrical Resistivity: A Laboratory Study. *Geotechnical and Geological Engineering*. https://doi.org/10.1007/s10706-023-02598-z
10. Ayuba B. Adam, Emmanuel K. Appiah-Adjei, Kwaku A. Adjei, Maxwell Anim-Gyampo, Albert Asare, **Frederick Owusu-Nimo**, Bernard Audinada Ampofo (2023). Managed aquifer recharge assessment in the Nabogo Basin of Ghana using a combined electrical resistivity tomography infiltration method. *Modeling Earth Systems and Environment*. https://doi.org/10.1007/s40808-023-01736-z
11. Nafisatu Zakaria, Abass Gibrilla, **Frederick Owusu-Nimo**, Dickson Adomako, Geophrey K. Anornu, Joseph R. Fianko, Charles Gyamfi (2023). Quantification of nitrate contamination sources in groundwater from the Anayari catchment using major ions, stable isotopes, and Bayesian mixing model, Ghana. *Environmental Earth Sciences*. https://doi.org/10.1007/s12665-023-11068-x
12. **Frederick Owusu-Nimo**, Bernadette Agbefu, Sampson Oduro-Kwarteng (2023). Resource recovery potential of Kumasi landfill waste. *Journal of the Ghana Institution of Engineering (JGhIE)*. https://doi.org/10.56049/jghie.v23i3.65
13. **F Owusu-Nimo** (2023). Resource recovery potential of the Kumasi landfill waste. *Journal of the Ghana Institution of Engineering*. https://www.ajol.info/index.php/jgie/article/view/257280
14. Albert Asare, Emmanuel K. Appiah-Adjei, **Frederick Owusu-Nimo**, Bukari Ali (2022). Lateral and vertical mapping of salinity along the coast of Ghana using Electrical Resistivity Tomography: The case of Central Region. *Results in Geophysical Sciences*. https://doi.org/10.1016/j.ringps.2022.100048
15. Nafisatu Zakaria, Abass Gibrilla, **Frederick Owusu-Nimo**, Dickson Adomako, Geophrey Anornu (2022). Occurrence, spatial distribution, and health risk assessment of heavy metals in groundwater from parts of the Kassena Nankana area, Ghana. *Sustainable Water Resources Management*. https://doi.org/10.1007/s40899-022-00658-5
16. S. S. R. Gidigasu, S. K. Y. Gawu, **F. Owusu-Nimo** (2022). The Extent of Deterioration of a Mechanically Stabilised Lateritic Base Course After Design Life and Its Implications for Rehabilitation: A Case Study of Kumasi City Roads, Ghana. *Geotechnical and Geological Engineering*. https://doi.org/10.1007/s10706-022-02156-z
17. Albert Asare, Emmanuel K. Appiah-Adjei, Bukari Ali, **Frederick Owusu-Nimo** (2021). Assessment of seawater intrusion using ionic ratios: the case of coastal communities along the Central Region of Ghana. *Environmental Earth Sciences*. https://doi.org/10.1007/s12665-021-09601-x
18. Albert Asare, Emmanuel K. Appiah-Adjei, Bukari Ali, **Frederick Owusu-Nimo** (2021). Physico-chemical evaluation of groundwater along the coast of the Central Region, Ghana. *Groundwater for Sustainable Development*. https://doi.org/10.1016/j.gsd.2021.100571
19. A. K. Lawer, S. I. K. Ampadu, **F. Owusu-Nimo** (2021). The effect of randomly distributed natural fibers on some geotechnical characteristics of a lateritic soil. *SN Applied Sciences*. https://doi.org/10.1007/s42452-021-04634-0
20. **Frederick Owusu-Nimo**, Fred Kofi Boadu (2020). Evaluating effective stress conditions in soils using non-invasive electrical measurements – Laboratory studies. *Journal of Applied Geophysics*. https://doi.org/10.1016/j.jappgeo.2020.103961
21. Nafisatu Zakaria, Geophrey Anornu, Dickson Adomako, **Frederick Owusu-Nimo**, Abass Gibrilla (2020). Evolution of groundwater hydrogeochemistry and assessment of groundwater quality in the Anayari catchment. *Groundwater for Sustainable Development*. https://doi.org/10.1016/j.gsd.2020.100489

22. J. Mantey, K.B. Nyarko, **F. Owusu-Nimo**, K.A. Awua, C.K. Bempah, R.K. Amankwah, W.E. Akatu, E. Appiah-Effah (2020). Influence of illegal artisanal small-scale gold mining operations (galamsey) on oil and grease (O/G) concentrations in three hotspot assemblies of Western Region, Ghana. *Environmental Pollution*. https://doi.org/10.1016/j.envpol.2020.114251
23. J. Mantey, K.B. Nyarko, **F. Owusu-Nimo**, K.A. Awua, C.K. Bempah, R.K. Amankwah, W.E. Akatu, E. Appiah-Effah (2020). Mercury contamination of soil and water media from different illegal artisanal small-scale gold mining operations (galamsey). *Heliyon*. https://doi.org/10.1016/j.heliyon.2020.e04312
24. **Frederick Owusu-Nimo**, Sampson Oduro-Kwarteng, Hellen Essandoh, Farida Wayo, Mohammed Shamudeen (2019). Characteristics and management of landfill solid waste in Kumasi, Ghana. *Scientific African*. https://doi.org/10.1016/j.sciaf.2019.e00052
25. **F. Owusu-Nimo**, J. Mantey, K.B. Nyarko, Eugene Appiah-Effah, A. Aubynn (2018). Spatial distribution patterns of illegal artisanal small scale gold mining (Galamsey) operations in Ghana: A focus on the Western Region. *Heliyon*. https://doi.org/10.1016/j.heliyon.2018.e00534
26. **F Owusu-Nimo**, KB Nyarko (2017). Operational dynamics of "Galamsey" within eleven selected districts of western region of Ghana. *Journal of Mining and Environment*. https://jme.shahroodut.ac.ir/article_627.html
27. **Frederick Owusu-Nimo**, Nelius Boshoff (2017). Research collaboration in Ghana: patterns, motives and roles. *Scientometrics*. https://doi.org/10.1007/s11192-016-2221-x
28. Samuel Innocent Kofi Ampadu, Priscilla Ackah, **Fred Owusu Nimo**, Fred Boadu (2016). A laboratory study of horizontal confinement effect on the dynamic cone penetration index of a lateritic soil. *Transportation Geotechnics*. https://doi.org/10.1016/j.trgeo.2016.12.002
29. K Nyarko, **F Owusu-Nimo** (2016). Costed reclamation and decommissioning strategy for galamsey operations in 11 selected MDAs of. *International Growth Centre*. https://www.theigc.org/sites/default/files/2017/01/Mantey-et-al-2016-Final-report.pdf
30. S Ampadu, **F Owusu-Nimo**, F Ayeh (2014). The Effect of Pretreatment on Compaction Characteristics of a Lateritic Gravel. *XVII Congresso Braseileiro de Mecânica dos Solos e Engenharia Geotécnica., Goiania, Brazil*. https://www.academia.edu/download/50010209/SP_8.pdf
31. Fred Kofi Boadu, **Frederick Owusu-Nimo**, Francis Achampong, Samuel I.K. Ampadu (2013). Artificial neural network and statistical models for predicting the basic geotechnical properties of soils from electrical measurements. *Near Surface Geophysics*. https://doi.org/10.3997/1873-0604.2013011
32. **F Owusu-Nimo** (2011). Exploring the linkages between geotechnical properties and electrical responses of sand-clay mixtures under varying effective stress levels. *Journal of Environmental and Engineering Geophysics*. https://pubs.geoscienceworld.org/eegs/jeeg/article-abstract/16/2/73/139385
33. **F Owusu-Nimo** (2011). Investigating linkages between engineering and petrophysical properties of unconsolidated geomaterials and their geoelectrical parameters. *Ph. D. Thesis*. https://ui.adsabs.harvard.edu/abs/2011PhDT.....7O/abstract
34. **F Owusu-Nimo** (2010). Influence of petrophysical and geotechnical engineering properties on the electrical response of unconsolidated earth materials. *Geophysics*. https://pubs.geoscienceworld.org/seg/geophysics/article-abstract/75/3/G21/261594
35. Fred Kofi Boadu, **Frederick Owusu-Nimo**, Aboagye Menyeh (2008). Nitrate Contamination in Groundwater at Farmlands in Nsawam, Ghana: The Role of Fractures from Azimuthal Resistivity Surveys. *Journal of Environmental and Engineering Geophysics*. https://doi.org/10.2113/jeeg13.1.27

Conference papers 7

1. Christopher T. S. Beckett, Irene Appeaning Addo, **Frederick Owusu-Nimo**, Ibrahim Yakubu, Yalin Gulen, Oscar Ukwizagira, Yuner Huang, Alexandre S. Gagnon, Ana Margarida Armada Brás (2024). Strength and Durability of Biostabilised Ghanaian Mud Bricks. *Rilem bookseries*. https://doi.org/10.1007/978-3-031-62690-6_14
2. IA Addo, **F Owusu-Nimo** (2021). Biological methods to increase housing resilience to flooding. *World Resources Forum 2021*. https://www.research.ed.ac.uk/en/publications/biological-methods-to-increase-

housing-resilience-to-flooding/

3. **Frederick Owusu-Nimo** (2019). Compaction verification of lateritic soils using electrical resistivity and thermal conductivity. *Proceedings of the 17th African Regional Conference on Soil Mechanics and Geotechnical Engineering. 7, 8 & 9 October 2019 – Cape Town.*
4. **F Owusu-Nimo** (2011). Investigating the Deformational and Microstructural Changes in Unconsolidated Earth Materials Using Complex Resistivity Measurements. *24rd EEGS Symposium on the Application of Geophysics to Engineering and Environmental Problems*. https://doi.org/10.3997/2214-4609-pdb.247.195
5. **F Owusu-Nimo** (2011). Nitrate Contamination in Drinking Water from Farming Activities in Rural Communities in the Nsawam District, Ghana: Environmental Geoscience, Education and Civic Engagement. *24rd EEGS Symposium on the Application of Geophysics to Engineering and Environmental Problems*. https://doi.org/10.3997/2214-4609-pdb.247.185
6. Fred Kofi Boadu, **Frederick Owusu-Nimo**, Aboagye Menyeh (2008). Exploring The Linkages Between Geotechnical Properties And Geophysical Responses Of Unconsolidated Materials - Laboratory Measurements. *21st EEGS Symposium on the Application of Geophysics to Engineering and Environmental Problems*. https://doi.org/10.3997/2214-4609-pdb.177.9
7. **Frederick Owusu-Nimo**, Fred Kofi Boadu, Aboagye Menyeh (2008). Geotechnical Parameters From Integrated Geophysical Methods: Laboratory Measurements And Regression Models. *21st EEGS Symposium on the Application of Geophysics to Engineering and Environmental Problems*. https://doi.org/10.3997/2214-4609-pdb.177.31

Theses 1

1. **F Owusu-Nimo** (2011). INVESTIGATING LINKAGES BETWEEN ENGINEERING AND PETROPHYSICAL. *Duke University*. https://dukespace.lib.duke.edu/bitstreams/92615d3a-9513-4595-a491-fb141b8ba65c/download