

Academic Curriculum Vitae



Personal Information:

Full Name: Dr. Bestun Jumaa Nareeman Shwan

Academic Title: Assist Professor

Email: bestun.shwan@su.edu.krd

Mobile: 00964770



Education:

- PhD in Geotechnical Engineering, Civil and Structural Eng. Department, the University of Sheffield, United Kingdom.
- MSc in Geotechnical Engineering, the University of Technology, Iraq; first class, distinction.
- BSc in Building and Construction Engineering, the University of Technology, Iraq; distinction.

Employment

- Lecturer-Department of Geotechnical Engineering, Faculty of Engineering, the University of Koya, Iraq. 10/2007- 8/2023
- Assistant Professor- Water Resources Engineering Department, College of Engineering, Salahaddin University, Erbil, Iraq. 8/2023- Current

Teaching Experiences

1. Undergraduate:

- Retaining Wall Structures, 4th Year, Water Resources Engineering Department, College of Engineering, Salahaddin University.
- Foundation Engineering, 3rd Year, Water Resources Engineering Department, College of Engineering, Salahaddin University.
- Soil Mechanics, 2nd Year, Water Resources Engineering Department
- Tunnel Engineering, 4th year, Geotechnical Engineering Department, Faculty of Engineering, Koya University, Koya - Iraq.
- Soil Physics, 2nd year, Geotechnical Engineering Department, Faculty of Engineering, Koya University, Koya - Iraq.
- Soil Mechanics Laboratory, 3rd year, Geotechnical Engineering Department, Faculty of Engineering, Koya University, Koya - Iraq.
- Advanced Soil Mechanics, 4th year, Geotechnical Engineering Department, Faculty of Engineering, Koya University, Koya - Iraq.
- **Academic Computing**, 1st year, Geotechnical Engineering Department, Faculty of Engineering, Koya University, Koya - Iraq.

2. Postgraduate:

- **Advanced Foundation Engineering**, Higher Diploma, Water Resources Engineering Department, College of Engineering, Salahaddin University.
- **Site Investigation and Soil Tests**, Master Degree, Civil Engineering Department, College of Engineering, Salahaddin University.

Research and publications

I. Postgraduate Thesis

The PhD research comprised two primary components: experimental investigations and numerical analyses. The experimental phase focused on two pivotal studies: first, an examination in the laboratory to understand the correlation between shear strength and suction, facilitated by a specially crafted direct shear box. This apparatus was modified to apply predetermined suction levels to sand samples using the hanging column technique (HCT). Second, a laboratory exploration into the load-bearing capacity of a strip footing positioned both on the surface and at various depths. The numerical segment of the study involved enhancing the upper bound discontinuity layout optimization method to accommodate the impact of partial saturation on strength.

II. Research and publications

1. Shwan, B.J., 2024. Drought-induced stability reduction in unsaturated geotechnical applications. *Modeling Earth Systems and Environment*, pp.1-11.
2. Shwan, B.J., 2024. Soil–Water Retention Curve Determination for Sands Using the Filter Paper Method. *Journal of Geotechnical and Geoenvironmental Engineering*, 150(4), p.04024020.
3. Shwan, B. J., (2023). Hydromechanical Hysteresis Effect-Induced Bearing Capacity Variations for Unsaturated Sand. *International Journal of Geomechanics*, 23(7), p.04023106.
4. Shwan, B. J. (2023), "Numerical Analysis of Suction Effect on Required Shotcrete Thickness in Tunnels", *Geomechanics for Energy and the Environment Journal*, 22(9), p.04022158.
5. Shwan, B. J., Fathollahy, M. , Zrar, B. A., Abdollah, A. M. (2022), "Mechanical Characterization of a Gypseous Soil", *Innovative Infrastructure Solutions Journal*, 8(9), p.247.
6. Shwan, B. J. (2023), "Microstructural Interpretation of effective stress Equations for unsaturated sands", *International Journal for geo-engineering*. 14(1), p.4.
7. Shwan, B. J. (2023), "Numerical Analysis of Slopes Treated by Nano-Materials", *Journal of the Mechanical Behavior of Materials*. Vol 32(1) <https://doi.org/10.1515/jmbm-2022-0227>.
8. Shwan, B. J. (2022), "Active Earth pressure for Unsaturated soils", 8th International Conference on Unsaturated Soils, Milos Island, Greece, May 3rd to 5th, In *E3S Web of Conferences* (Vol. 382, p. 02006). EDP Sciences.
9. Shwan, B. J. (2022), "Numerical Study of Strength Reduction Induced Capillary Rise Effect for Unsaturated Soil", *Geomechanics and Engineering Journal*.
10. Shwan, B. J. (2022), "Upper Bound Analysis of Suction Effect on Tunnel Stability", *International Journal of Geomechanics* 22 (9), 04022158.

11. Shwan, B. J. (2022), "Stability of Slopes Under Unsaturated Conditions Using a Modified Upper Bound Theorem", *Geotechnical Engineering and Sustainable Construction*, DOI:10.1007/978- 981.
12. Shwan, B. J. (2019), "The effect of suction on ground surface settlement for a tunnel", *ISGlasgow 2019 92 (E3S Web Conf.)*, 1-5.
13. Shwan, B. J. (2019), "Peak and Critical State Conditions for Unsaturated Sand", *AP-UNSAT2019 7 (2)*, 63-69.
14. Balkis A., Shwan, B. J. Surchy, "Determination of SWRC for Unsaturated Sands, Comparative Study-Filter Paper Method Versus Hanging Column Technique", *European Journal of Science and Technology*, Issue 16, 403-413.
15. Shwan, B. J. (2018), "Physical and numerical modelling of buried footing of unsaturated sand", *7th International Conference on Unsaturated Soils, UNSAT 2018, Hong Kong, China*.
16. Shwan, B. J. (2018), "Physical modelling of a retaining wall of unsaturated sand", *7th International Conference on Unsaturated Soils, UNSAT 2018, Hong Kong, China*.
17. Shwan, B. J. (2017), "Effects of moisture content migration and strength variation on bearing capacity of unsaturated sand", *3rd International Conference on New Advances in Civil engineering "ICNACE "*, Helsinki, Finland-pp:37-43.
18. Shwan, B. J. (2017), "Effect of soil capillarity on total passive earth pressure of unsaturated soils", *3rd International Conference on New Advances in Civil engineering "ICNACE "*, Helsinki, Finland.
19. Shwan, B. J. (2017), "Modification of an existing water retention curve equation for unsaturated soils", *2nd International Conference of the College of Engineering: Recent Innovations in Engineering (ICRIE) 2017, Duhok, Iraq*.
20. Shwan, B. J. (2016), "Moisture migration during loading and shearing of unsaturated sand", *3rd European Conference on Unsaturated Soils (E-UNSAT2016)*, Paris, France.
21. Shwan, B. J. (2016), "Analysis of passive earth thrust in an unsaturated sandy soil using discontinuity layout optimization", *3rd European Conference on Unsaturated Soils (EUNSAT2016)*, Paris, France.
22. Shwan, B. J. and Smith, C. C. (2015) "Investigation of the shear resistance of unsaturated sand using a modified direct shear apparatus", *XVI European Conference on Soil Mechanics and Geotechnical Engineering - Edinburgh - pp 3353-3357*.
23. Shwan, B. J. (2015) "Wetting collapse at high degree of saturation during shearing for unsaturated sand", *Unsaturated Soil Mechanics-from Theory to Practice: Proceedings of the 6th Asia Pacific Conference on Unsaturated Soils (Guilin, China, pp 23-26 October 2015)*. CRC Press.
24. Shwan, B. J. and Smith, C. C. (2014), "Application of limit analysis in unsaturated soils: numerical and experimental study of bearing capacity", *In Unsaturated Soils: Research and Applications - Proceedings of the 6th International Conference on Unsaturated Soils, UNSAT 2014 Sydney, Australia, Vol. 2, pp 1757-1762*.
25. Nareeman, B. J. (2012), "A study on the scale effect on bearing capacity and settlement of shallow foundations", *International Journal of Engineering and Technology* 2.3: 480-488
26. Nareeman, B. J. and Fattah, Mohammed Y. (2012), "Effect of Soil Reinforcement on Shear Strength and Settlement of Cohesive-Frictional Soil", *International journal of GEOMATE: geotechnique, construction materials and environment* 3.1: pp 308-313.

27. Fattah, M. Y., Salman, F. A., Nareeman, B. J. (2011), "Numerical simulation of triaxial test in clayey soil using different constitutive relations", *Advanced Materials Research* 243, 2973-2977.
28. Fattah, M. Y., Salman, F. A., Nareeman, B. J. (2010), "A treatment of expansive soil using different additives", *Acta Montanistica Slovaca* 15 (4), 290.
29. Fattah, M. Y., Nareeman, B. J. (2008), "A Comparative Study of Different Constitutive Relations of Soil in Modelling Shallow Tunnels", *The 12th International Conference of International Association for Computer Methods and Advances in Geomechanics (IACMAG)*.

Postgraduate student supervision

- Joint MSc program with the Cyprus International University.
- Joint MSc program with the University of Kurdistan, Sanandaj, Iran.

Professional memberships

Scientific Reviewer of the following journals:

1. International Journal of Geomechanics
2. Geofluids | Hindawi Journal
3. Geotechnical Engineering Journal
4. Innovative Infrastructure Solutions Journal
5. Journal of the Mechanical Behavior of Materials
6. Arabian Journal of Geosciences

Professional memberships

- **University link:**
<https://academics.su.edu.krd/bestun.shwan>
- **Google scholar:**
<https://scholar.google.com/citations?user=RBdR9nQAAAAJ&hl=en>
- **ORCID**
<https://orcid.org/0000-0002-8137-3428>
- **ResearchGate**
<https://www.researchgate.net/profile/Bestun-Shwan>
- **LinkedIn**
<https://www.linkedin.com/in/bestun-shwan-35122543>