

Siham S. Al Shanti, Ph.D.

CURRICULUM VITAE

Adjunct Faculty and Postdoctoral Research Fellow
Gerlad May Department of Civil, Construction and Environmental Engineering
University of New Mexico
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• **EDUCATION**

2025 Ph.D. Civil, Construction and Environmental Engineering, University of New Mexico, Albuquerque, New Mexico, USA.

Honors:

Passed dissertation defense with distinction

Dissertation:

Acoustic Black Hole Structure using 3D-printed Polymer Concrete

Advisor:

Mahmoud Reda Taha, Ph.D., PE.

2021 M.S. Civil, Construction and Environmental Engineering, United Arab Emirates University, Abu Dhabi, UAE.

Thesis:

Reuse of Sewage Sludge Ash in Producing Self Compacting Concrete

Advisor:

Amr Salah El Dieb, Ph.D.

2017 B.S. Civil, Construction and Environmental Engineering

• **AWARDS – PROFESSIONAL RECOGNITION**

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| 2025 | First place in the 1st Annual Student Poster Competition in Civil Engineering, Structure, Mechanics and Materials Research, University of New Mexico, Gerlad May Department of Civil, Construction and Environmental Engineering |
| 2024 | Outstanding Reviewer Award, American Society of Civil Engineers (ASCE), Journal of Materials in Civil Engineering |
| 2020-2021 | American Concrete Institute (ACI) Student Fellowship |
| 2019 | American Society of Testing Materials (ASTM) International Project Grant Award |

• EMPLOYMENT HISTORY

January 2026 – Present	Adjunct Faculty , Gerlad May Department of Civil, Construction and Environmental Engineering, University of New Mexico, Albuquerque, NM, USA
Oct. 2025 - Present	Postdoctoral Research Fellow , Gerlad May Department of Civil, Construction and Environmental Engineering, University of New Mexico, Albuquerque, NM, USA Research Projects: 1. 3D-Printed Polymer Concrete Blocks for Sub-Wavelength Infrasound Monitoring Structures: Plus-Up to Compact Directional Infrasound Sensor Technology (CDIST) LDRD, <u>Funding Agency</u>: Sandia National Laboratories 2. 3D-printed Polymer Concrete by Design, <u>Funding Agency</u>: American Concrete Institute (ACI) NEx
Aug. 2021- Sep. 2025	Graduate Research Assistant , Gerlad May Department of Civil, Construction and Environmental Engineering, University of New Mexico, Albuquerque, NM, USA Research Projects: 1. Acoustic Black Holes Structure using 3D-printed Polymer Concrete, <u>Funding Agency</u>: Sandia National Laboratories. 2. Bio -based Polymer Concrete with Low Carbon Footprint, <u>Funding Agency</u>: Sandia National Laboratories 3. Concrete Surface Friction Testing, <u>Funding Agency</u>: Sandia National Laboratories 4. Neutron Shielding Concrete, <u>Funding Agency</u>: General Electric Hitachi Nuclear Energy (GEH) 5. Ultra-High-Performance Concrete (UHPC) Development and Characterization, Funding Agency: Castillo Prestress
May 2023 – Aug. 2023	Structural Engineer , Ph.D. Student Trainee (CPT Program), AIMT Engineering Services Inc., Albuquerque, NM, USA
Dec. 2017- May 2021	Graduate Research Assistant , Department of Civil, Environmental, and Construction Engineering, United Arab Emirates University, Abu Dhabi, UAE Research Projects 1. Physical and Chemical Characterization of Sewage Sludge Ash 2. Utilization Sewage Sludge Ash in Producing Sustainable and Durable Self-Compacting Concrete 3. Development and Characterization of Geopolymer Concrete

• MEMBERSHIPS IN PROFESSIONAL SOCIETIES:

2025 – Present	ACI Committee 548 - Polymers and Adhesives for Concrete
2025 – Present	American Society of Civil Engineer (ASCE), Full Member
2025 - Present	ASCE -NM - New Mexico Section-Northern Branch, Member
2021 – Present	ACI Student and Young Professional Activities Committee (SYPAC) – S802 Teaching Methods and Educational Materials, Active Member
2021 – Present	Society of Women Engineers (SWE), University of New Mexico

2020 – Present	ACI United Arab Emirates University Student Chapter, Establisher and Member
2020 - Present	ACI United Arab Emirates Chapter (ACI UAE Chapter), Establisher and Member
2020 - Present	American Society for Testing and Materials (ASTM), Active member
2019 - Present	American Concrete Institute (ACI), Active Member

• **CLASSROOM/LABORATORY TEACHING**

Summer 2026	CE202 Statics, Undergraduate Civil Engineering, Primary Instructor
Spring 2026	CE302 Mechanics of Materials, Undergraduate Civil Engineering, Primary Instructor
Fall 2025	CE413/CE513 Masonry and Wood Design, Graduate Civil Engineering, Teaching Assistant
Spring 2025	CE302 Mechanics of Materials, Undergraduate Civil Engineering, Teaching Assistant
Fall 2024	CE302 Mechanics of Materials, Undergraduate Civil Engineering, Teaching Assistant

• **SCHOLARLY ACHIEVEMENTS RELATED TO RESEARCH**

Peer-Reviewed Journal/Conference Articles

1. **Al Shanti, S.**, Murcia, D.H., Eslam S., and Reda Taha, M. (2026). Bond Strength Between Normal and Polymer Concrete Using the Bi-Surface Shear Test, ASCE Materials Journal (In Review)
2. **Al Shanti, S.**, Murcia, D.H., Treweek, B.C, and Reda Taha, M. (2026). 3D-printed Polymer Concrete by-Design: A Sustainable Nonmetallic Building Material, ACI Materials Journal (In Review)
3. **Al Shanti, S.**, Murcia, D.H., Treweek, B.C, Moreu, F and Reda Taha, M. (2026). Acoustic Black Holes using 3D Printed Polymer Concrete, International Symposia on Advances in Structural Engineering (ISASE) Conference, Cape Town, South Africa, September 2026
4. **Al Shanti, S.**, Murcia, D.H., and Reda Taha, M., Kalinina, E. (2026). Experimental Investigation of Static Coefficient of Friction Between Steel and Concrete with Varying Surface Roughness. ACI Materials Journal. **DOI:** 10.14359/51749501
5. Murcia, D.H., **Al Shanti, S.**, Hamidi, F., Rimsza, J., Yoon, H., Gunawan, B., ... & Reda Taha, M. (2023). Development and Characterization of a Sustainable Bio-Polymer Concrete with a Low Carbon Footprint. Polymers, 15(3), 628. <https://doi.org/10.3390/polym15030628>
6. Abdellatef, M.I.M., Gunawan, B., Rimsza, J., Yoon, H., Reda Taha, M., and **Al Shanti, S.** (2022). Development and Characterization of a Sustainable Bio-Based Polymer Concrete with a

Low Carbon Footprint. ACI Fall Convention, Dallas, Texas, United States.

<https://doi.org/10.2172/2005726>

7. **Al Shanti, S.**, El-Dieb, A., and Maraqa, M.A. (2021). Utilization of Sewage Sludge Ash in Self-Compacted Concrete. In 6th International Conference On Civil Structural and Transportation Engineering, ICCSTE 2021 (p. 126). Avestia Publishing.
<https://doi.org/10.11159/icste21.126>
8. **AlShanti, S.**, El-Dieb, A.S., and Maraqa, M.A. (2019). Characterization of Sewage Sludge Ash as Affected by Different Incineration Temperature and Time. In Fifth International Conference on Sustainable Construction Materials and Technologies (pp. 487–498).
9. El-Ariss, B., Allan, L.F., **Al Shanti, S.**, and AlZhami, N.S. (2018). Numerical Analysis of Beams with External Unbonded Tendons using STAAD. Proceedings of the International Conference on Civil and Infrastructure Engineering (ICCIE 2018).

Patents

Reda Taha, M., **Al Shanti, S.**, Murcia, D.H., Treweek, B.C., Rouse, J.W., McCormick, C.A., and White, B.C. (2024). Acoustic Black Holes Load Bearing Structures Using Polymer Concrete and Methods of Making.

Presentations at Professional Meetings/Conferences

1. Next-Generation Sustainable 3D-printed Polymer Concrete, ACI Concrete Convention, NEX Workshop, Illinois, Chicago, USA, April 2026
2. 3D-Printed Polymer Concrete By Design, ACI Concrete Convention, Baltimore, MD, USA, October 2025
3. 3D-Printed Polymer Concrete Mix Design Optimization: Insights from Early-Age Rheological, ACI Concrete Convention, Toronto, Ontario, Canada, April 2025.
4. Development and Characterization of Bio-Polymer Concrete for 3D-printing, ACI Foundation's Concrete Innovation Council (CIC), St. Paul, MN, USA – September 2022.
5. My Journey as a Women in Engineering, ACI Women in Engineering Forum ,Virtual, 2021.
6. ACI Middle East Scholarship Programs, ACI Middle East Students' Forum, Virtual, 2021.
7. How to start your ACI University Chapter, ACI–Sharjah University Student Chapter, Virtual, 2021.
8. My journey as Civil Engineer and ACI Middle East Fellowship Award Recipients, Jordan Concrete Association, National Student Committee Event, ACI International Partner, Virtual, 2021.
9. Characterization of Sewage Sludge Ash as affected by Different Incineration Temperature and Time, Fifth International Conference on Sustainable Construction Materials and Technologies (SCMT5), Kingston University, London, UK – 14–17 July 2019.
10. Numerical Analysis of Beams with External Unbonded Tendons using STAAD International Conference on Civil and Infrastructure Engineering (ICCIE2018), Ras Al Khaimah, UAE – 13–15 March 2018.

Peer Review Service

1. **Guest Editor**, Special Issue titled “Recent Advances in 3D-Printed Concrete: Materials, Processing, Reinforcement, and Digital Optimization”, Buildings Journal
2. **Reviewer**, Journal of Materials in Civil Engineering, American Society of Civil Engineers, 10 journal papers
3. **Reviewer**, Journal of testing and evaluation, American Society of Testing Materials, 1 journal papers

