1. **Name and Academic Rank:** Hassan Ghanem, Associate Professor, (full time), Faculty of Engineering

2. **Education: Degrees, Discipline, Institution and Date:**
   - Ph.D. Civil Engineering – Materials - Texas A&M University, USA, 2009
   - M.S in Civil Engineering – Structure/Materials - Texas Tech University, USA, 2004
   - M.E in Civil Engineering – Structure - Beirut Arab University, Beirut, Lebanon, 2002
   - B.E in Civil Engineering – Beirut Arab University, Beirut, Lebanon, 1999

3. **Academic experience**
   - Beirut Arab University, Associate Professor, October 2023 – present, Full Time
   - Beirut Arab University, Assistant Professor, September 2013 – Oct. 2023, Full Time
   - Rafik Hariri University, Meshref, Lebanon, Assistant Professor, 2010-2013, Full Time
   - Texas A&M University, USA, Teaching Assistant, Part-time, 2006-2009
   - Texas A&M University, USA, Research Assistant, Part-time, 2005-2006
   - Texas A&M University/TTI, College Station, USA, Technician, Part-time, 2004-2005
   - Texas Tech University, Lubbock, USA, Research Assistant, Part-time, 2003-2004

4. **Non academic experience**
   - Structural Eng - Technical Engineering and Contracting Office, June 99 - July 02

5. **Certification or professional Registration**

6. **Current membership in professional organizations**
   - Order of Engineers and Architects, Tripoli, Lebanon, June 2000 – present
   - American Society of Civil Engineers (ASCE), August 2009 – present

7. **Honors and Awards:**
   - Most Active Researcher Award, BAU, 2023-2024
   - Scientific Committee Member, OEA, Tripoli, Lebanon, 2016-2018
   - "Who's Who in America", 64th Edition, Marquis Who'sWho® - 2010
   - Outstanding Graduate Teaching Assistant Award - Texas A&M University - 2009
   - Graduate Program Enhancement Scholarship - Texas A&M University – 2009
   - CEMEX Travel Grant, TX - 2008
   - Graduate Teaching Academy Fellow - Texas A&M University – 2007
   - Chi Epsilon Honor Society - 2006
   - AUF CVEN graduate scholarship - Texas A&M University - 2005
   - Competitive scholarship - Texas Tech University - 2003
   - MSc thesis funded by the Lebanese Research Council (2000 - 2001)

8. **Service activities**

- Member of the scheduling committee, Faculty of Engineering, (2025-present)
- Member of the quality assurance committee, Department of Civil Engineering, (2014-present).
- Member of the engineering day committee, Faculty of Engineering, (2025-2026)
- Member of the graduate studies committee, (2024-2025)
- Member of the scientific committee, (2021-present)
- Member of the quality assurance committee, Department of Civil Eng, (2014-present).
- Undergraduate advisor, Department of Civil Engineering, (2013-present).
- Member of the ABET self-study report, (2018-present).
- Member of the web site committee, Department of Civil Eng., (2015-2016).
- Head of the library committee, Department of Civil Eng., (2015-2016).
- Member of the engineering day committee, Department of Civil Eng, (2014-2016).
- Undergraduate advisor, Department of Civil Eng., (2013-present).
- Member of the ABET self-study report, (2013-present).
- Member of the material lab committee, Department of Civil Eng, (2013-2015).

9. Principal publications and presentations:

9.1 Journal Publications

1. El-Khatib, L., Ghanem, H., Elkordi, A., Khatib, J. and Affan, A. (2026), "Effect of Activator-to-Binder Ratio and Curing Temperature on the Properties of Low-Density Alkali-Activated Mortar Incorporating Phragmites Australis Ash", Infrastructures, 11(10), 346; https://doi.org/10.3390/infrastructures11100346
2. Barraj, F., Chalouhi, G., Arairo, W., Massoud, L., Azab, M. and Ghanem, H. (2026), "Mechanical Performance of Concrete Pavements with Recycled Asphalt Powder and Optimized Aggregate Gradation", Frontiers in Built Environment, Vol 12, https://doi.org/10.3389/fbuil.2026.1900201
3. Affan, A., Fehr. L., Al-Massri, G., Alassaad, F., Yaghi, A. and Ghanem, H. (2026), "Performance of mortars incorporating non-treated Blast furnace slag under early-age and industrial constraints", Recycling, 11(7), 122; https://doi.org/10.3390/recycling11070122
4. Ghanem, H., Al-Massri, G., Khatib, J., Elkordi A., Kırgız, M.S. and Barraj, F. (2026), "Sustainable Paving Block Solutions: Enhancing Cement Paste Properties through Banana Fiber Integration", International Journal of Building Pathology and Adaptation, pp. 1-22. https://doi.org/10.1108/IJBPA-08-2025-0205
5. Affan, A., Fehr. L., Al-Massri, G., Alassaad, F., Yaghi, A. and Ghanem, H. (2026), "Strength, Transport Properties, and Life-Cycle Impacts of mortar containing German natural pozzolan", Infrastructures, 11(2), 67; https://doi.org/10.3390/infrastructures11020067
6. Barraj, F., Ramadan, R., Nasr, D., El Mir, A., Jahami., A and Ghanem, H. (2026) "Sustainable Use of Fine RAP in Concrete Pavements: Performance Analysis under

Moderate and Hot Climate Conditions", Innovative Infrastructure Solutions, 11, 72. https://doi.org/10.1007/s41062-026-02489-1

7. Ramadan, R., Khatib, J., Ghorbel, E., Elkordi A., Barraj, F. and Ghanem, H., (2026), "Dimensional stability and mechanical performance of cement -mortar mix with Phragmites-Australis fibers at elevated temperature", Sustainable Structures, Vol 6, No. 1. DOI:10.54113/j.sust.2026.000097
8. Ghanem, H., Ghazzawi, S., Khatib, J., Elkordi A. and Kırgız, M.S. (2025), "Physical, Mechanical, and Volumetric Stability Properties of Mortar with Olive Waste Ash as Cement Substitute", Engineering Reports, Vol 11, issue 7. https://doi.org/10.1002/eng2.70501
9. Khatib, J., W. ElKhatib, L., Ghanem, H., and Elkordi, A. (2025). Recent Trends in Construction Materials Using Bio-Ash. Steps for Civil, Constructions and Environmental Engineering, 3(2), 9 13. https://doi.org/10.61706/sccee12011170
10. Sabsabi, S., Baalbaki, O., Masri, M. and Ghanem, H. (2025), "Behavior of Arch Composite Beam: Experimental and Numerical Investigation", Results in Engineering, Vol 26, https://doi.org/10.1016/j.rineng.2025.105076
11. Ghazzawi, S., Ghanem, H., Chahal, S., Khatib, J. and Elkordi A. (2025), "Mechanical and physical performance of cement paste containing olive waste ash: implications for paving block applications.", Applied Sciences, 15(7), 3959; https://doi.org/10.3390/app15073959
12. Al-Massri, G., Ghanem, H., Khatib, J. and Elkordi A. (2025), "Influence of adding Banana fibers on the mechanical properties and volume stability of mortar for paving block applications", Journal of Natural Fibers, Vol 22, No. 1, 2464152, https://doi.org/10.1080/15440478.2025.2464152
13. Ramadan, R., Ghanem, H., Khatib, J. and Elkordi A. (2025), "Effect of incorporating plant-based natural fibers on the mechanical and durability properties of pastes and mortars", International Journal of Masonry Research and Innovation, Vol 10, No 3-5 https://doi.org/10.1504/IJMRI.2025.146258
14. Sabsabi, A., Baalbaki, O., Masri, A. and Ghanem, H. (2025), "A parametric study on the behavior of arch composite beams prestressed with external tendons", Buildings, 15 (3), 330 ; https://doi.org/10.3390/buildings15030330
15. Al-Massri, G., Ghanem, H., Khatib, J. and Elkordi A. (2025), Influence of adding Banana fibers on the mechanical properties and volume stability of mortar for paving block applications, Journal of Natural Fibers, (Accepted for publication)
16. Ghazzawi, S., Ghanem, H., El-Zahab, S., Khatib, J. and Elkordi A. (2024), "Effect of Olive Waste Ash as a partial replacement of cement on volume stability of cement paste", Infrastructures, 9(11), 193; https://doi.org/10.3390/infrastructures9110193
17. Al-Massri, G., Ghanem, H., El-Zahab, S., Khatib, J. and Elkordi A. (2024), "Effect of adding Banana fibers on the physical and mechanical properties of mortar for paving block applications", Ceramics, 7(4), 1533-1553; https://doi.org/10.3390/ceramics7040099
18. El-Khatib, L., Khatib, J., Assaad, J., Ramadan, R., Elkordi, A. and Ghanem, H. (2024), "Refractory Concrete Materials - A Review", Infrastructures, 9(8):137; https://doi.org/10.3390/infrastructures 9080137
19. Al-Massri, G., Ghanem, H., Khatib, J. and Elkordi A. (2024), "Chemical shrinkage, autogenous shrinkage, drying shrinkage, and expansion stability of interfacial transition

zone material using alkali-treated banana fiber for concrete", Journal of Structural Integrity and Maintenance, Vol 9, No. 3. https://doi.org/10.1080/24705314.2024.2390650

20. Ghanem, H., El-Bouz, C., Ramadan, R., Trad, A., Khatib, J. and Elkordi. A. (2024), "Effect of incorporating cement and olive waste ash on the mechanical properties of rammed earth block" Infrastructures, 9(8):122. https://doi.org/10.3390/infrastructures9080122
21. Ghanem, H., Ramadan, R., Khatib, J. and Elkordi. A. (2024), "Volume stability and mechanical properties of cement paste containing natural fibers from phragmites-australis plant at elevated temperature" Buildings, 14, 4. https://doi.org/10.3390/buildings14041170
22. Ramadan, R., Ghanem, H., Khatib, J. and Elkordi A. (2024), "Effect of Plant-based natural fibers on the mechanical properties and volume change of cement paste", International Journal of Building Pathology and Adaptation, Vol. xx No. https://doi.org/10.1108/IJBPA-11-2023-0166
23. Khatib, J., Ramadan, R., Ghanem, H. and Elkordi, A. (2024), "Effect of adding Phragmites-Australis Fiber on the mechanical properties and volume stability of mortar", Fibers, 12, 14. https://doi.org/10.3390/fib12020014
24. Ghanem, H., Ramadan, R., Khatib, J. and Elkordi. A. (2024) "A review on chemical and autogenous shrinkage of cementitious systems", Materials, Vol 17, No 2: 283. https://doi.org/10.3390/ma17020283
25. Khatib, J., Amer, I., Ghanem, H. and Elkordi, A. (2023) "The influence of bio-inhibitor on the corrosion resistance of reinforced concrete beams containing MSWI-BA as a partial sand replacement", BAU Journal - Science and Technology: Vol. 4: No. 2, Article 10. DOI: https://doi.org/10.54729/2959-331X.1102
26. Ghanem, H., Chahal, S., Khatib J. and Elkordi, A. (2023), "Experimental and Numerical Investigation of the Flexural Behavior of Mortar Beams Strengthened with Recycled Plastic Mesh", Sustainability, Vol 15, No 7: 5640. https://doi.org/10.3390/su15075640
27. Khatib, J., Ramadan, R., Ghanem, H. and Elkordi, A. (2023), "Effect of using limestone fines on the chemical shrinkage of pastes and mortars", Environmental Science and Pollution Research, 30, 25287-25298. https://doi.org/10.1007/s11356-022-18496-5
28. Ramadan, R., Ghanem, H., Khatib, J. and Elkordi A. (2022), "Effect of hot weather concreting on the mechanical and durability properties of concrete-a review", BAU journal - Science and Technology: Vol. 4, issue 1, article 4. https://doi.org/10.54729/axec5733
29. Ramadan, R., Ghanem, H., Khatib, J. and Elkordi A. (2022), "Correlations between different shrinkage parameters and expansion of paste and mortar containing limestone fines", Turkish Journal of Engineering Research and Education, Vol. 1 No. 2, pp. 71-79.
30. Ghanem, H., Chahal, S., Khatib J. and Elkordi, A. (2022), "Flexural Behavior of Concrete Beams Reinforced with Recycled Plastic Mesh", Buildings, Vol. 12, no. 12: 2085. https://doi.org/10.3390/buildings12122085
31. Khatib, J., Ramadan, R., Ghanem, H., Elkordi, A., Baalbaki, O., and Kirgiz, M. (2022), "Chemical shrinkage of paste and mortar containing limestone fines", Materials Today: Proceedings, Vol 61, Part 2, pp. 530-536. https://doi.org/10.1016/j.matpr.2022.01.288

32. Khatib, J., Ramadan, R., Ghanem, H., Elkordi, A. and Sonebi, M. (2022), "Effect of limestone fines as a partial replacement of cement on the chemical, autogenous, drying shrinkage and expansion of mortars", Materials Today: Proceedings, Vol 58, Part 4, pp. 1199-1204. https://doi.org/10.1016/j.matpr.2022.01.336
33. Khatib J., Ramadan R., Ghanem, H., and Elkordi A. (2021), "Volume Stability of Pastes Containing Limestone Fines" MDPI, Buildings Vol 11, No. 8, 366. https://doi.org/10.3390/ buildings11080366
34. Chahal, S., Baalbaki, O., Temsah, Y., Ghanem, H. and Abou-saleh, Z. (2021), "Performance of Two-Way Hinges in Reinforced Concrete Structures" Magazine of Civil Engineering, Vol. 102, No 2, article No. 10204. DOI: 10.34910/MCE.102.4.
35. Ghanem, H., Khatib, J. and Elkordi, A. (2020) " Effect of partial replacement of sand by MSWI-BA on the properties of mortar", BAU Journal - Science and Technology: Vol. 1, No. 2, Article 4. [ISSN 2706-784X]
36. El-Zahab, S.M., Fares, N., Ghanem, H. and Dandashli, T. (2020), "A study of truss sub-structured materials", Multidiscipline Modeling in Materials and Structures, Vol. 17 No. 1, pp. 237-252. https://doi.org/10.1108/MMMS-12-2019-0219.
37. Ghanem H., Machaka M., Khatib J., Elkordi A., Baalbaki O. (2019), "Effect of partial replacement of cement by MSWIBA on the properties of mortar", Academic Journal of Civil Engineering - Special Issue, Vol 37, No. 2, pp. 82-89. https://doi.org/10.26168/icbbm2019.11
38. Machaka M., Elkordi A., Ghanem H., Khatib J., Baalbaki O. (2019), "Selected properties of concrete containing palm fibers", Academic Journal of Civil Engineering - Special Issue, Vol 37, No. 2, pp. 279-286. https://doi.org/10.26168/icbbm2019.40
39. Baalbaki O., Elkordi A., Ghanem H., Machaka M., & Khatib, J. M. (2019), "Properties of concrete made of fine aggregates partially replaced by incinerated municipal solid waste bottom ash", Academic Journal of Civil Engineering - Special Issue, Vol 37, No. 2, pp. 532-538. https://doi.org/10.26168/icbbm2019.77
40. Trad, A., Ghanem, H., Abbas, N., and Hamdan Z., (2015) "Thin Layer Concrete Blockwork in Compression: An Experimental Analysis" Journal of Engineering Structures and Technologies, Vol. 7, No. 2, p 91–96. doi:10.3846/2029882X.2015.1115377
41. Ghanem, H., Zollinger, D., Lytton, L., and Ghanem, N., (2013) "Determining aggregate reactivity in various alkaline solutions" ICE, Construction Materials Journals, Vol 167, No. 3, p 151-161. https://doi.org/10.1680/coma.12.00005
42. Ghanem, H., Zollinger, D., Lytton, L., and Ghanem, N., (2012) "Determining ASR Characteristics using Dilatometer Method" Journal of Construction and Buildings Materials, Vol. 36, No. 11, p 1008-1015. https://doi.org/10.1016/j.conbuildmat.2012.06.027
43. Ghanem, H., Zollinger, D., Lytton, L., and Ghanem, N., (2012) "Development of a Reaction Signature for Combined Concrete Materials" Journal of Construction and Buildings Materials, Vol. 35, No. 10, p 923-930. https://doi.org/10.1016/j.conbuildmat.2012.04.048

44. Ghanem, H., Zollinger, D and Lytton, L., (2010) "Predicting ASR Aggregate Reactivity in Terms of its Activation Energy" Journal of Construction and Buildings Materials, Vol. 24, No. 7, p 1101-1108. https://doi.org/10.1016/j.conbuildmat.2009.12.033
45. Ghanem, H., Zollinger, D and Lytton, L., (2010) "Determination of the Main Parameters of Alkali Silica Reaction using System Identification Method" ASCE, Journal of Materials in Civil Engineering, Vol. 22, No. 9, p 865-873. https://doi.org/10.1061/(ASCE)MT.1943-5533.0000086
46. Ghanem, H., Phelan, S., Senadheera, S and Pruski, K., (2008) "Chloride Ion Transport in Bridge Deck Concrete under Different Curing Durations", ASCE, Journal of Bridge Engineering, Vol. 13, No.3, p 218-225. https://doi.org/10.1061/(ASCE)1084-0702(2008)13:3(218)
47. Daou Y.A and Ghanem H. (2003) "Study of the Minimum Shear Reinforcement in High Strength Concrete Beams", Alexandria Engineering Journal, Vol. 42, No.5, p 601-611.

9.2 Conference Proceedings

1. Ramadan, R., Khatib, J., Ghanem, H., Barraj, F. Elkordi, A. (2025). Chemical shrinkage of cement-based materials with bio-fibers exposed to elevated temperature. In AIP Conference Proceedings (Vol. 3352, No. 1, p. 050008). AIP Publishing LLC. https://doi.org/10.1063/5.0299977
2. Al-Massri, G., Khatib, J., Elkordi, A., Ghanem, H. (2025). Comparative Analysis of the Physical and Mechanical Properties of Cement Paste and Mortar with Banana Fiber Integration. In: Amziane, S., Toledo Filho, R.D., da Gloria, M.Y.R., Page, J. (eds) Bio-Based Building Materials - Proceedings of ICBBM 2025. ICBBM 2025. RILEM Bookseries, vol 60. Springer, Cham. https://doi.org/10.1007/978-3-031-92777-5_53
3. Ghazzawi, S., Khatib, J., Elkordi, A., Ghanem, H. (2025). Comparative Study of Chemical, Drying, and Autogenous Shrinkage in Cement Paste and Mortar Incorporating Olive Waste Ash. In: Amziane, S., Toledo Filho, R.D., da Gloria, M.Y.R., Page, J. (eds) Bio-Based Building Materials - Proceedings of ICBBM 2025. ICBBM 2025. RILEM Bookseries, vol 61. Springer, Cham. https://doi.org/10.1007/978-3-031-92874-1_63
4. Ramadan, R., Elkordi A., Ghorbel, E., Ghanem, H. and Khatib, J. (2024), "Investigating volume stability Performance of paste with Phragmites Australis (PA) Fibers", SMAR 2024 – 7th International Conference on Smart Monitoring, Assessment and Rehabilitation of Civil Structures, 4-6 September 2024 – Salerno, Italy, https://doi.org/10.1016/j.prostr.2024.09.261
5. Elkhatib, L., Khatib, J., Ghanem, H and Elkordi A. (2023), "Effect of Phragmites Australis Ash (PAA) on the Mass of Mortar Exposed to Dimensional Stability Study", 4th International Turkish World Engineering and Science Congress, Dec 03, 2023.
6. Ramadan, R., Ghanem, H., Khatib, J. and Elkordi A. (2023), "The effect of Bio-fibers on CS of Cement-Based Materials at Elevated Temperature", 4th International Turkish World Engineering and Science Congress, Dec 03, 2023.
7. Ghanem H., Chahal S., Ajam W., Kurdi A. (2020), "Post Buckling Behavior of Steel Plate Girder Panels Under Shear Loading", In: Rodrigues H., Morcous G., Shehata M.

(eds) Recent Research in Sustainable Structures. GeoMEast 2019. Sustainable Civil Infrastructures. Springer, Cham. pp 147-159.

8. Chahal S., Baalbaki O., Timsah Y., Ghanem H., Saleh Z.A. (2020), "Experimental Investigation of Two-Way Hinges in Reinforced Concrete Members", In: Rodrigues H., Morcous G., Shehata M. (eds) Recent Research in Sustainable Structures. GeoMEast 2019. Sustainable Civil Infrastructures. Springer, Cham. pp 128-146.
9. Ghanem H., Machaka M., Khatib J., Elkordi A., Baalbaki O. (2019), "Effect of palm fibers addition on absorption characteristics and mechanical properties of concrete", Paper No. IDSCMT5098, 5th International Conference on Sustainable Construction Materials and Technologies (SCMT5), Kingston University London (in Partnership with Coventry University), UK, 14 – 17 July 2019, Vol. 1, (Editors: E Ganjian, M Limbachiya, N Ghafoori, P Claisse, M Bagheri), pp 287-304, ISBN-10: 1078314438 ISBN-13: 978-1078314435.
10. Machaka, M., Khatib J., Elkordi A., Ghanem H., Baalbaki O., (2019),"Selected properties of concrete containing Municipal Solid Waste Incineration Bottom Ash (MSWI-BA)", Paper No. IDSCMT5099, 5th International Conference on Sustainable Construction Materials and Technologies (SCMT5), Kingston University London (in Partnership with Coventry University), UK, 14 – 17 July 2019, Vol. 1, (Editors: E Ganjian, M Limbachiya, N Ghafoori, P Claisse, M Bagheri), pp 305-317,ISBN-10: 1078314438 ISBN-13: 978-1078314435.
11. Trad A., Sobhieh T., Ghanem H., Temsah Y. (2019), "Seismic assessment and rehabilitation of a historical masonry mosque", International Conference of Engineering Risk (INCER-2019), MATEC Web of Conferences 281, Lebanese University, Beirut, Lebanon.
12. Ghanem H., Obeid Y., Trad A., Dandachy M. (2019), "The Impact of Steel Fibers on the Properties of Self Compacting Concrete", In: Rodrigues H., Elnashai A. (eds) Advances and Challenges in Structural Engineering. GeoMEast 2018. Sustainable Civil Infrastructures. Springer, Cham pp 138-150.
13. Ghanem H., Trad A., Dandachy M., ElKordi A. (2019), "Effect of Wet-Mat Curing Time on Chloride Permeability of Concrete Bridge Decks", In: Rodrigues H., Elnashai A. (eds) Advances and Challenges in Structural Engineering. GeoMEast 2018. Sustainable Civil Infrastructures. Springer, Cham pp 194-208

9.3 Technical Reports

1. Zollinger, D., Mukhopadhyay, A., Ghanem, H., Shon, C., Greiss, D., and Hooton, H., "Mitigation of ASR in Concrete-Combined Materials Test Procedure". IPRF-01-G-002-03-2, Innovative Pavement Research Foundation, IL, December 2009.
2. Ghanem, H., Morjan, F., Shon, S., Zollinger, D., Lytton, L., and Don Saylak, "Utilization of Stockpiled Refuse at FT HOOD for Construction and / or Rehabilitation of On-site Tank Trails", U.S. Army Corps of Engineers, Report No. W45XMA42472681, Texas Engineering Experimental Station, Texas A&M University, May, 2009.
3. Ghanem, H., Afroze, M., Phelan, R.S., Senadheera, S., "Effects of Wet Mat Curing Time and Earlier Loading on Long-Term Durability of Bridge Decks: Rapid Chloride

Permeability Tests and Ponding Tests", FHWA/TX -09-2116-3, Center for Multidisciplinary Research in Transportation, Texas Tech University, Lubbock, TX, January 2009.

4. Senadheera, S., Phelan, R.S., Garcia-Monzon, M., Amarasiri, A., Afroze, M., Aamidala, A., Lee, S., Ghanem, H., "Effects of Wet Mat Curing Time and Earlier Loading on Long-Term Durability of Bridge Decks: Literature Review", FHWA/TX -0-2116-2, Center for Multidisciplinary Research in Transportation, Texas Tech University, Lubbock, TX, March 2008.

10. Professional development activities in the last five years