

Publications (Civil Engineering)

Year 2022

Journals

1. AbouEl-Hamd, O.R.; Sweedan, A.M.I.; El-Ariss, B. Flexural Performance of Steel Beams Strengthened by Fastened Hybrid FRP Strips Utilizing Staggered Steel Bolts. *Buildings* 2022, 12, 2150. <https://doi.org/10.3390/buildings12122150>
2. Shoaib, S.; El-Maaddawy, T.; El-Hassan, H.; El-Ariss, B.; Alsalami, M. Characteristics of Basalt Macro-Fiber Reinforced Recycled Aggregate Concrete. *Sustainability* 2022, 14, 14267. <https://doi.org/10.3390/su142114267>
3. Shoaib, S.; El-Maaddawy, T.; El-Hassan, H.; El-Ariss, B.; Alsalami, M. Fresh and Hardened Properties of Concrete Reinforced with Basalt Macro-Fibers. *Buildings* 2022, 12, 1136. <https://doi.org/10.3390/buildings12081136>
4. Zuaiteer, M.; El-Hassan, H.; El-Maaddawy, T.; El-Ariss, B. Properties of Slag-Fly Ash Blended Geopolymer Concrete Reinforced with Hybrid Glass Fibers. *Buildings* 2022, 12, 1114. <https://doi.org/10.3390/buildings12081114>
5. Elkholy, S.; Shehada, A.; El-Ariss, B. Effects of Floor System on Progressive Collapse Behavior of RC Frame Sub-Assemblages. *Buildings* 2022, 12, 737. <https://doi.org/10.3390/buildings12060737>
6. Kachouh, N.; El-Maaddawy, T.; El-Hassan, H.; El-Ariss, B. Numerical Modeling of Concrete Deep Beams Made with Recycled Aggregates and Steel Fibers. *Buildings* 2022, 12, 529. <https://doi.org/10.3390/buildings12050529>
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9. Joseph, R., Mwafy, A.M.* and Alam, M.S., 2022, "Seismic performance upgrade of substandard RC buildings with different structural systems using advanced retrofit techniques", *Journal of Building Engineering* (top 1% journal), Volume 59, 1 November 2022, 105155. DOI: 10.1016/j.jobe.2022.105155
10. Ghazal, H. and Mwafy, A.M.*, 2022, "Seismic Fragility Assessment of Existing Multi-span RC Bridge Equipped with Risk Mitigation Systems", *Buildings*, Special Issue "Assessment and Retrofitting of Existing Infrastructure", 12(7), 982. DOI: 10.3390/buildings12070982
11. P. Chokkalingam, H. El-Hassan, A. El-Dieb, A. El-Mir, "Multi-Response Optimization of Ceramic Waste Geopolymer Concrete Using BWM and TOPSIS-Based Taguchi Methods," *Journal of Materials Research and Technology*, 2022, Vol. 21, pp.4824-4845. doi.org/10.1016/j.jmrt.2022.11.089
12. M.A. Maraqa, M. Hamouda, H. El-Hassan, A.S. El-Dieb, A.A. Hassan, "Transitioning to Online Learning amid

COVID-19: Perspectives in a Civil Engineering Program,” Online Learning Journal (OLJ), Sep. 2022, Vol. 26, No. 3. DOI: [dx.doi.org/10.24059/olj.v26i3.2616](https://doi.org/10.24059/olj.v26i3.2616)

13. P. Chokkalingam, H. El-Hassan, A.S. El-Dieb, A. El-Mir, “Development and Characterization of Ceramic Waste Powder-Slag Blended Geopolymer Concrete Designed using Taguchi Method,” *Construction and Building Materials*, Aug. 2022, Vol 349, 128744. DOI.org/10.1016/j.conbuildmat.2022.128744 .
14. A. El-Mir, H. El-Hassan, A. El-Dieb, A. Alsallamin, “Development and Optimization of Geopolymers Made with Desert Dune Sand and Blast Furnace Slag,” *MDPI Sustainability*, 2022, 14, 7845, DOI.org/10.3390/su14137845
15. O. Najm, H. El-Hassan, A. El-Dieb, “Optimization of Alkali-Activated Ladle Slag Composites Mix Design Using Taguchi-Based TOPSIS Method,” *Construction and Building Materials*, April 2022, Vol.327, 126946. DOI.org/10.1016/j.conbuildmat.2022.126946
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29. Hinge, Gilbert, Jay Piplodiya, Ashutosh Sharma, Mohamed A. Hamouda, and Mohamed M. Mohamed. "Evaluation of Hybrid Wavelet Models for Regional Drought Forecasting." *Remote Sensing* 14, no. 24 (January 2022): 6381. <https://doi.org/10.3390/rs14246381>.
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34. Sun, Zhangli, Di Long, Zhongkun Hong, Mohamed A. Hamouda, Mohamed M. Mohamed, and Jianhua Wang. "How China's Fengyun Satellite Precipitation Product Compares with Other Mainstream Satellite Precipitation Products." *Journal of Hydrometeorology* 23, no. 5 (May 1, 2022): 785–806. <https://doi.org/10.1175/JHM-D-21-0179.1>.
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Conferences

1. Amina Yakout, Bilal El-Ariss, and Tamer El-Maaddawy, GFRP Reinforced Inverted T Beams: An Experimental Study. The Fourth European and Mediterranean Structural Engineering and Construction Conference, State-of-the-art Materials and Techniques in Structural Engineering and Construction, Leipzig, Germany, June 20-25, 2022, [www.doi.org/10.14455/ISEC.2022.9\(1\).STR-70](http://www.doi.org/10.14455/ISEC.2022.9(1).STR-70)
2. Amina Yakout Bilal El-Ariss, and Tamer El-Maaddawy, Inverted T-Beams in Structures: A Review. 7th World Congress on Civil, Structural, and Environmental Engineering (CSEE'22). At: Virtual Conference, April 10-12, 2022, DOI: 10.11159/icsect22.133
3. Khir Allah, N., El-Maaddawy, T., and El-Hassan, H. (2022). "Numerical modeling of deep beams strengthened in shear with fabric-reinforced matrix composites." 6th International Conference on Concrete Repair, Rehabilitation and Retrofitting (ICRRR 2022), 03-05 Oct., Cap Town, South Africa.
4. Khattak, N., El-Maaddawy, T., Ismail, N. (2022). "Sagging and hogging strengthening of continuous reinforced concrete girders with PBO-FRCM composites." 11th International Conference on Short and Medium Span Bridges (SMSB), 19 – 22 July, Toronto, Ontario, Canada.
5. Abed, F., Tello, N., Alhoubi, Y., El Refai, A., and El-Maaddawy, T. (2022). "Effect of FRCM strengthening on the compressive strength of short RC columns." 11th International Conference on Short and Medium Span Bridges (SMSB), 19 – 22 July, Toronto, Ontario, Canada.
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7. Alzard, M., El-Hassan, H., El-Maaddawy, T., Hassan, A., Alsalami, M., Abdulrahman, F. (2022). "Self-healing concrete: a bibliometric review." 7th World Congress on Civil, Structural, and Environmental Engineering (CSEE'22), 10 – 12 April, virtual.
8. Shoaib, S., El-Maaddawy, T., El-Hassan, H., El-Ariss, B., and Alsalami, M. (2022). "Effect of basalt fibers on properties of normal and high strength concrete made with dune sand." 7th World Congress on Civil, Structural, and Environmental Engineering (CSEE'22), 10 – 12 April, Virtual.
9. Kachouh, N., El-Maaddawy, T., El-Hassan, H., and El-Ariss, B. (2022). "Shear strength of steel fiber-reinforced recycled aggregates concrete deep beams." 7th World Congress on Civil, Structural, and Environmental Engineering (CSEE'22), 10 – 12 April, Virtual.
10. Zuaiter, M., El-Hassan, H., El-Ariss, B., and El-Maaddawy, T. (2022). "Early-age properties of slag-fly ash blended geopolymer concrete reinforced with glass fibers – a preliminary study." 7th World Congress on Civil, Structural, and Environmental Engineering (CSEE'21), 13 – 15 April, Virtual

11. Joseph, R., Mwafy, A.M.* and Alam, M.S., 2022, "Evaluation of seismic performance enhancement techniques for shear wall buildings using advanced materials and systems", *Proceedings of International Structural Engineering and Construction*, Holschemacher, K., Quapp, U., Singh, A., and Yazdani, S. (eds.), Vol. 9, Issue 1, ISEC Press (Scopus). DOI: /10.14455/ISEC.2022.9(1).STR-44-1. *Best Presentation Award, ISEC Society*
12. Ghazal, H. and Mwafy, A.M.*, 2022, "Probabilistic performance assessment of existing RC bridge in a moderate seismic zone", *Proceedings of International Structural Engineering and Construction*, Holschemacher, K., Quapp, U., Singh, A., and Yazdani, S. (eds.), Vol. 9, Issue 1, ISEC Press (Scopus). DOI: /10.14455/ISEC.2022.9(1).STR-41-1
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14. A. El-Mir, H. El-Hassan, A. El-Dieb, A. Alsallamin, "Optimization of Dune Sand-Slag Blended Geopolymer Mortar Using Taguchi Method," 6th International Conference on Concrete Repair, Rehabilitation, and Retrofitting (ICRRR), October 2022, Cape Town, South Africa.
15. P. Chokkalingam, A. Elmir, Hilal El-Hassan, A. El-Dieb, "Optimization of CWP-Slag Blended Geopolymer Concrete using Taguchi Method," *Proceedings of the 8th World Congress on Mechanical, Chemical, and Material Engineering (MCM'22) Prague, Czech Republic – July 31 - August 02, 2022*
16. P. Chokkalingam, A. Elmir, H. El-Hassan, A. El-Dieb, "Optimization of CWP-Slag Blended Geopolymer Concrete using Taguchi Method," 9th International Conference on Mining, Material, and Metallurgical Engineering (MMME'22), July 2022, Prague, Czech Republic.
17. T Brown, A Elshaer, & A Issa (2022) "Wind-induced pounding of tall structures in proximity" CSCE 2022 Annual Conference, May 25th – 28th, 2022, WHISTLER, BC
18. P Arafin, A Issa, and AHM Muntasir Billah (2022) "Damage Detection and Classification using Segmentation and Convolutional Neural Network" 11th International Conference On Short And Medium Span Bridges, July 19-22 2022 – Toronto, Ontario
19. Alzard, M. H., El-Hassan, H., El-Maaddawy, T., Hassan, A. A., Alsalami, M., & Abdulrahman, F. (2022). Self-Healing Concrete: A Bibliometric Analysis. In *7th World Congress on Civil, Structural, and Environmental Engineering, CSEE 2022* (pp. ICSECT-143). Avestia Publishing.
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24. A. Riaz, S. Qayyum, A. M. Zafar, K. Mehmood, A. Umer and A. A. Hassan, "GIS-based identification of groundwater recharging points of Data Ganj Baksh Town (DGBT) in Lahore-An approach to avoid urban flooding in Monsoon," 2022 Advances in Science and Engineering Technology International Conferences (ASET), Dubai, United Arab Emirates, 2022, pp. 1-7, doi: 10.1109/ASET53988.2022.9734810.
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27. Zanelidin, E., Ahmed, W., Alharbi, N., Alkaabi, R., and Alnuaimi, M. "Potential Construction Applications of Sustainable 3D Printed Elements Made from Plastic Waste." The 6th International Conference on Building Materials and Materials Engineering (ICBMM), September 15-17, 2022, Barcelona, Spain.
28. Anwar, F., Hamouda, M., El-Hassan, H., El-Mir, A. "Evaluation of pervious geopolymer concrete pavements performance for effective stormwater infiltration and water purification using Taguchi method", 2nd International Conference on Water Technologies (ICWT) 2022, December 2022, Mumbai, India.
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30. Chokkalingam, P., Elmir, A., El-Hassan, H., El-Dieb, A. "Optimization of CWP-Slag Blended Geopolymer Concrete using Taguchi Method", 9th International Conference on Mining, Material, and Metallurgical Engineering (MMME'22), July 2022, Prague, Czech Republic.

31. Hijah, E., Najm, O., El-Hassan, H., Syed, Z. “Optimum Design Configuration of Dapped-End Beam Under Dynamic Loading Using TOPSIS Method”, 9th International Conference on Mining, Material, and Metallurgical Engineering (MMME’22), July 2022, Prague, Czech Republic.
32. Shoaib, S., El-Maaddawy, T., El-Hassan, H., El-Ariss, B., Alsalami, M. “Workability and Flexural Strength of Concrete Reinforced with Basalt Macro-Fibers”, The Fourth European and Mediterranean Structural Engineering and Construction Conference (EUROMED SEC 04), June 2022, Leipzig, Germany.
33. Khir Allah, N., El-Maaddawy, T., El-Hassan, H. “Shear Strengthening of Concrete Deep Beams with Geopolymer-Based Fabric-Reinforced Matrix Composites”, 7th International Conference on Civil, Structural and Transportation Engineering (ICCSTE’22), June 2022, Niagara Falls, Canada.
34. Najm, O., El-Hassan, H., El-Dieb, A. “Design of Alkali-Activated Ladle Slag Mortar Using Taguchi Method”, 7th World Congress on Civil, Structural, and Environmental Engineering (CSEE’21), April 2022, Lisbon, Portugal.
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<https://gsa.confex.com/gsa/2022AM/meetingapp.cgi/Session/53707>
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[doi.10.1109/ASET53988.2022.9734897](https://doi.org/10.1109/ASET53988.2022.9734897)
37. Hamouda, Mohamed, Gilbert Hinge, and Mohamed Mohamed. “Performance of Satellite Rainfall Estimates for Flood and Drought Monitoring,” EGU22-294, 2022.
38. Sirsant, S, MA Hamouda, and MF Shaaban. “Chaotic Multi-Objective Self-Adaptive Differential Evolution Algorithm Coupled with CERI for Water Distribution Network Design,” 2022.
39. Sirsant, S., M.A. Hamouda, and M.F. Shaaban. “Including GHG Emissions for Water Distribution Network Expansion and Optimal Pump Scheduling,” 2022.

Book Chapters

1. Elnashai, A.S. and Mwafy, A.M.*, 2022, “Seismic Response and Design” Chapter 6 in “ICE manual of bridge engineering”, Third edition, Parke, G., & Hewson, N. (Eds.), ICE Publishing, Institution of Civil Engineers,

Thomas Telford Ltd., London, UK. eISBN: 978-0-7277-6306-8, ISBN: 978-0-7277-6305-1, DOI: 10.1680/icembe.63051.0161, Available at <https://www.icebookshop.com/product/ice-manual-of-bridge-engineering-third-edition>

2. Mollamohammada, S., Hassan, A. A., & Dahab, M. (2022). Application of Immobilized Algae in Water and Wastewater Treatment. In *Algal Biofuel* (pp. 237-257). CRC Press.
3. Lindita Bande, Khaled Galal Ahmed, Essam Zaneldin, Waleed Ahmed, Raghad Ghazal (2022). “Virtual Reality Technology Trends Current and Future Applications, an Interdisciplinary Overview.” A Book Chapter in: *Virtual and Augmented Reality for Architecture and Design*. CRC Press. <https://doi.org/10.1201/9781003051381>

Patents