

Mohamed Abdallah



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Associate Professor, Department of Civil & Environmental Engineering, University of Sharjah

Program Coordinator, Environmental Science & Engineering, University of Sharjah, UAE

Adjunct Professor, Department of Civil Engineering, University of Ottawa, Canada

Technical Expert, Federal Greenhouse Gas Offset Credit System, Canada

Chair, UAE Chapter, Global Waste-to-Energy Research & Technology (WtERT) Council



Scholarly Output

81

53 Journal Papers

21 Conference Papers

6 Book Chapters

1 USPTO Patent



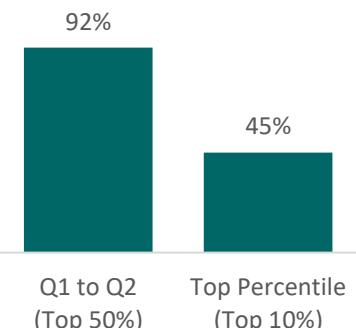
International Collaboration

51%

Q1-Q2 Share

92%

of Journal Papers



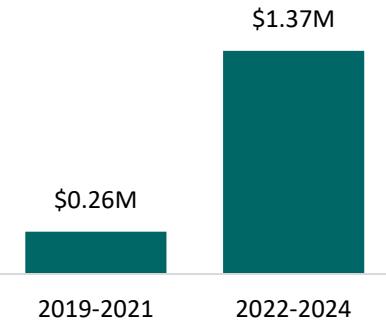
Accomplishments (2019-2024)

\$2.1M

Research Grants

26/13

Graduates/Awards



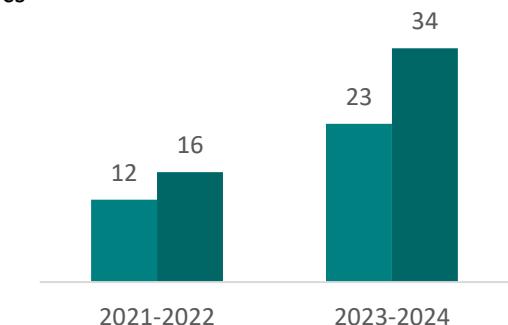
Citation Metrics (2019-2024)

23

h-index

34

i10- index



Mohamed Abdallah, PhD, PEng

Research Interests: Environmental Engineering: Solid Waste Management | Waste-to-Energy | Wastewater Treatment | Sustainability | Climate Change | Life Cycle Assessment | Smart Cities

Professional Affiliations: Professional Engineers Ontario (PEO) | American Society of Civil Engineers (ASCE) | Canadian Society for Civil Engineering (CSCE) | Association of Energy Engineers (AEE)

Academic Credentials

Ph.D. Environmental Engineering	October 2011
Faculty of Engineering, University of Ottawa, Canada	
Research: Solid waste management; waste-to-energy; intelligent control	
M.Sc. Environmental Engineering	March 2007
Faculty of Engineering, Ain Shams University, Cairo, Egypt	
Research: Anaerobic digestion; advanced wastewater treatment; hybrid bioreactors	
B.Sc. Civil Engineering	June 2004
Faculty of Engineering, Ain Shams University, Cairo, Egypt	

Work Experience

Adjunct Professor	Sept 2022 – To Date
Department of Civil Engineering, University of Ottawa, Canada	
Associate Professor	June 2022 – To Date
Department of Civil & Environmental Engineering, University of Sharjah, UAE	
Program Coordinator	May 2020 – To Date
MSc in Environmental Science and Engineering, University of Sharjah, UAE	
Environmental Consultant	Oct 2017 – To Date
Center for Continuing Education and Professional Development, University of Sharjah, UAE	
Assistant Professor	Feb 2016 – May 2022
Department of Civil & Environmental Engineering, University of Sharjah, UAE	
Project Manager / Technical Lead	Jun 2015 – Jan 2016
AECOM Middle East, Abu Dhabi, UAE	
Research & Development Consultant	Oct 2014 – May 2015
Clearford Industries Inc., Ottawa, Canada	
Environmental Engineer	Oct 2013 – Sept 2014
LRL Associates Ltd., Canada	
Environmental Consultant	Mar 2013 – Sept 2013
Design Group Inc., Canada	
Postdoctoral Fellow	Sept 2011 – Mar 2013
University of Ottawa, Canada	
Research & Development Engineer	Jan 2009 – Dec 2009
Laflèche Environmental Inc., Canada	

Publications**6 Chapters | 53 Journal Papers | 21 Conference Papers****Book Chapters**

1. Zannerni, R., Abdallah, M., Inayat, A., Shanableh, A. (2025) Impact of Organic Composition on Anaerobic Digestion: A Mini Review. In: (Eds.) Sustainable Approaches to Environmental Design, Materials Science, and Engineering Technologies, Vol.1., Springer-Nature, USA.
2. Alsmadi, S., Abdallah, M., Shanableh, A., et al. (2025) Experimental Testing of Camel Manure as a Potential Feedstock for Aerobic Composting. In: (Eds.) Sustainable Approaches to Environmental Design, Materials Science, and Engineering Technologies, Vol.1., Springer-Nature, USA.
3. Elfeky, A., 1, Fattah, K., Abdallah, M. (2024) Hybrid Environmental and Economic Assessment of Biogas Plants in Integrated Organic Waste Management Strategies. In: Czekała, W. (Eds.) Biogas Plants: Waste Management, Energy Production, and Carbon Footprint Reduction, John Wiley & Sons Ltd.
4. Abdeljaber, A., Mostafa, O., Abdallah, M. (2023) Applications of Life Cycle Costing in Waste-to-Energy Projects. In: Muthu, S.S. (Eds.) Life Cycle Costing, Springer-Nature, USA.
5. Abdallah, M., Rahmat-Ullah, Z., Metawa, A. (2021) Dynamic Multi-Objective Optimization of Integrated Waste Management using Genetic Algorithms. In: Karri, R., Dehghani, M., Gobinath, R. (Eds.) Soft Computing Techniques in Solid Waste and Wastewater Management, Elsevier, USA.
6. Abdallah, M., Kennedy, K. (2013) Advanced Monitoring and Control of Anaerobic Digestion in Bioreactor Landfills. In: Chamy R. (Eds.) Biodegradation, InTech, New York, USA.

Journal Papers

1. Ibrahim, I., Ashour, A., Zeiada, W., Salem, N., Abdallah, M. (2024) A Systematic Review on the Technical Performance and Sustainability of 3D Printing Filaments Using Recycled Plastic. *Sustainability*. (Q1, 2022 IF = 3.90)
2. Oyounalsoud, M., Yilmaz, A., Abdallah, M., Abdeljaber, A. (2024) Drought Prediction Using Artificial Intelligence Models Based on Climate Data and Soil Moisture, *Scientific Reports*, 14:19700. (Q1, 2023 IF = 4.3)
3. Abdeljaber, A., Abdallah, M., Arab, M., Badawy, A. (2024) Optimization of Ultrasonication and Alkalization as Pretreatment Methods for Leachate Co-Digested with Food Waste Toward Maximum Synergistic Effects, *Chemosphere*, 362, 142634. (Q1, 2022 IF = 8.8)
4. Azizi, S., Haffiez, N., Mostafa, A., Hussain, A., Abdallah, M., Al-Mamun, A., Bhatnagar, A., Dhar, B. (2024) Low- and High-Temperature Thermal Hydrolysis Pretreatment for Anaerobic Digestion of Sludge: Process Evaluation and Fate of Emerging Pollutants. *Renewable and Sustainable Energy Reviews*, 200, 114453. (Q1, 2022 IF = 15.9)
5. Abdalla, H., Tahan, M.D., Abdallah, M., Sartaj, M., Hamza, R. (2024) Optimizing Aerobic Granular Sludge Process Performance: Unveiling the Power of Coupling Experimental Factorial Design Methodology with Artificial Intelligence Modeling. *Journal of Water Process Engineering*, 61, 105268. (Q1, 2022 IF = 7)
6. Abdalla, H., Abdallah, M., Fattah, K., Salem, N. (2024) Struvite Recovery from Microbial Fuel Cells Treating Different Nutrient-Rich Wastewaters. *Journal of Water Process Engineering*, 60, 105179. (Q1, 2022 IF = 7)
7. Abdallah, M., Rahmat-Ullah, Z., Hosny, M., Alsmadi, S. (2024) Minimizing the Environmental Impacts of Waste Valorization Systems Using Multicriteria Life Cycle Optimization. *Journal of Cleaner Production*, 449, 141619. (Q1, 2022 IF = 11.10)
8. Habib, F., Shanableh, A., Bhattacharjee, S., M. Abdallah (2024) Green Synthesis of Date Palm Seed Extract-Derived Iron Sulfide Nanoparticles for Effective Removal of Hexavalent Chromium. *Water, Air, & Soil Pollution*, 235, 63. (Q2, 2022 IF = 2.90)

9. Rocha-Meneses, L., Hari, A., Inayat, A., Yousef, L., Alarab, S., Abdallah, M., Shanableh, A., Ghenai, C., Shanmugam, S., Kikas, T. (2023) Recent Advances on Biodiesel Production from Waste Cooking Oil (WCO): A Review of Reactors, Catalysts, and Optimization Techniques Impacting the Production. *Fuel*, 348, 128514. (Q1, 2022 IF = 7.40)
10. Obaid, L., Alattieh, S., Abdallah, M., Hamad, K. (2023) Environmental Impacts of the Transition to Automated Vehicles: A Life Cycle Perspective. *Sustainable Materials and Technologies*. (Q1, 2022 IF = 9.60)
11. Honsy, M., Abu Waraga, O., Talib, M., Abdallah, M. (2023) Simulation of Electricity Consumption Data using Multiple Artificial Intelligence Models and Cross-Validation Techniques. *Data in Brief*. (Q2, 2022 IF = 1.20)
12. Talib, M., Abdallah, M., Abdeljaber, A., Waraga, O. (2023) Influence of Exogenous Factors on Water Demand Forecasting Models during the COVID-19 Period. *Engineering Applications of Artificial Intelligence*, 117, 105617. (Q1, 2022 IF = 8.00)
13. Aromolaran, A., Sartaj, M., Abdallah, M. (2023) Supplemental Sewage Scum and Organic Municipal Solid Waste Addition to Anaerobic Digestion of Thickened Waste Activated Sludge: Biomethane Potential and Microbiome Analysis. *Fermentation*, 9(3), 237. (Q1, 2022 IF = 3.70)
14. Oyounalsoud, M., Abdallah, M., Yilmaz, A., Siddique, M., Atabey, S. (2023) A New Meteorological Drought Index based on Fuzzy Logic: Development and Comparative Assessment with Conventional Drought Indices. *Journal of Hydrology*. (Q1, 2022 IF = 6.40)
15. Rahmat-Ullah, Z., Abdallah, M., Bhattacharjee, Shanableh, A. (2022) Sustainability Analysis of Anaerobic Digestion Systems for Decentralized Waste Management. *International Journal of Chemical Engineering and Materials*, 1, 18-24.
16. Rocha-Meneses, L., Hari, A., Inayat, A., Shanableh, A., Abdallah, M., Ghenai, C., Shanmugam, S., Kikas, T. (2022) Application of Nanomaterials in Anaerobic Digestion Processes: A New Strategy towards Sustainable Methane Production. *Biochemical Engineering Journal*, 188, 108694. (Q1, 2022 IF = 3.90)
17. Ibrahim, I.; Eltarabishi, F., Abdalla, H., Abdallah, M. (2022) 3D Printing in Sustainable Buildings: Systematic Review and Applications in the United Arab Emirates. *Buildings*, 12, 1703. (Q1, 2022 IF = 3.80)
18. Abdallah, M., Talib, M., Hosny, M., Waraga, O., Nasir, Q., Arshad, M. (2022) Forecasting Highly Fluctuating Electricity Load using Machine Learning Models based on Multimillion Observations. *Advanced Engineering Informatics* 53, 101707. (Q1, 2022 IF = 8.80)
19. Oyounalsoud, M., Najah, A., Yilmaz, A., Abdallah, M., Siddique, M. (2022) Meteorological Drought Assessment in Sharjah, UAE using Drought Indices. *International Journal of Environmental Science and Development*, 13(1): 16-20. Presented in the 11th International Conference on Environmental and Agricultural Engineering (ICEAE 2021), Thailand, June 5-7, 2021.
20. Shabib, A., Abdallah, M., Shanableh, A., Sartaj, M. (2022) Effect of Substrates and Voltages on the Performance of Bio-Electrochemical Anaerobic Digestion. *Renewable Energy*, 198, 16-27. (Q1, 2022 IF = 8.70)
21. Abdeljaber, A., Adghim, M., Abdallah, M., Ghanima, R., ALjassem, F. (2022) Comparative Performance and Cost-Integrated Life Cycle Assessment of Low Impact Development Controls for Sustainable Stormwater Management. *Environmental Impact Assessment Review*, 95, 106805. (Q1, 2022 IF = 7.90)
22. Abdeljaber, A., Zannerni, R., Masoud, W., Abdallah, M., Rocha-Meneses, L. (2022) Eco-Efficiency Analysis of Integrated Waste Management Strategies based on Gasification and Mechanical Biological Treatment. *Sustainability* 14(7), 3899. (Q1, 2022 IF = 3.90)
23. Inayat, A., Rocha-Meneses, L., Ghenai, C., Abdallah, M., Shanableh, Al-Ali, K., Alghfeli, A., Alsuwaidi, R. (2022) Co-pyrolysis for Bio-oil Production via Fixed Bed Reactor using Date Seeds and Plastic Waste as Biomass. *Case Studies in Thermal Engineering*. (Q1, 2022 IF = 6.80)

24. Alotaibi, E., Arab, M., Abdallah, M., Nassif, N., Omar, M. (2022) Life Cycle Assessment of Biocemented Sands using Enzyme Induced Carbonate Precipitation (EICP) for Soil Stabilization Applications. *Scientific Reports*, 12(1). (Q1, 2022 IF = 4.60)

25. Rocha-Meneses, L., Zannerni, R., Inayat, A., Abdallah, M., Shanableh, A., Ghenai, C., Kamil, M., Kikas, T. (2022) Current Progress in Anaerobic Digestion Reactors and Parameters Optimization. *Biomass Conversion and Biorefinery*. (Q1, 2022 IF = 4.00)

26. Al-Ruzouq, R., Abdallah, M., Shanableh, A., Alani, S., Obaid, L., Gibril, M. (2022) Waste to Energy Spatial Suitability Analysis using Hybrid Multi-Criteria Machine Learning Approach. *Journal of Environmental Science and Pollution Research*. (Q1, 2022 IF = 5.80)

27. Abdalla, H., Fattah, K., Abdallah, M., Tamimi, A. (2021) Environmental Footprint and Economics of a Full-scale 3D-Printed House. *Sustainability*, 13(21), 11978. (Q1, 2022 IF = 3.90)

28. Abdallah, M., Shabib, A., Alozi, A., Hussein, M. (2021) A Multisectoral Assessment Framework for the Carbon Footprint of Integrated Sustainable Development Systems. *Environment, Development and Sustainability*. (Q1, 2022 IF = 3.90)

29. Zahmak, A., Abdallah, M., Jarah, B., Arab, M. (2021) Environmental Performance of Alkali-Activated Binders for Ground Improvement. *Transportation Geotechnics*, 31, 100631. (Q1, 2022 IF = 5.30)

30. Abdalla, H., Rahmat-Ullah, Z., Abdallah, M., Alsmadi, S., Elashwah, N. (2021) Eco-efficiency Analysis of Integrated Grey and Black Water Management Systems. *Resources, Conservation and Recycling*, 172, 105681. (Q1, 2022 IF = 13.20)

31. Shanableh, A., Abdallah, M., Tayara, A., Ghenai, C., Kamil, M., Inayat, A., Shabib, A. (2021) Experimental Characterization and Assessment of Bio- and Thermo-Chemical Energy Potential of Dromedary Manure. *Biomass & Bioenergy*, 148, 106058. (Q1, 2022 IF = 6.00)

32. Shanableh, A., Khalil, M., Abdallah, M., et al. (2021) Assessment and Reform of Greywater Reuse Policies and Practice: A Case Study from Sharjah, United Arab Emirates. *Water Policy*, 1-21. (Q2, 2022 IF = 1.60)

33. Shabib, A., Abdallah, M., Shanableh, A., Sartaj, M. (2021) Design Configurations and Operating Parameters of Bio-electrochemically Enhanced Anaerobic Digestion. *International Journal of Environmental Science and Development*, 12(2), 63-68; Proceedings of the 5th International Conference on Water Pollution and Treatment (ICWPT 2020), Frankfurt, Germany, July 14-16, 2020.

34. Abdallah, M., Hamdan, S., Shabib, A. (2021) Development of a Dynamic Optimization Model for Waste Management Systems. *MethodsX*, 8, 101203. (Q2, 2022 IF = 1.90)

35. Abdallah, M., Elfeky, A. (2021) Impact of Waste Processing By-products on the Carbon Footprint of Integrated Waste-to-Energy Strategies. *Journal of Environmental Management*, 280, 111839. (Q1, 2022 IF = 8.70)

36. Shanableh, A., Bhattacharjee, S., Alani, S., Darwish, N., Abdallah, M., Mousa, M., Semreen, M. (2021) Assessment of Sulfamethoxazole Removal by Nanoscale Zerovalent Iron. *Science of the Total Environment*, 761, 143307. (Q1, 2022 IF = 9.80)

37. Abdallah, M., Hamdan, S., Shabib, A. (2021) A Multi-Objective Optimization Model for Strategic Waste Management Master Plans. *Journal of Cleaner Production*, 284, 124714. (Q1, 2022 IF = 11.10)

38. Abdallah, M., Arab, M., Shabib, A., El-Sherbiny, R., El-Sheltawy, S. (2020) Characterization and Sustainable Management Strategies of Municipal Solid Waste in Egypt. *Clean Technologies and Environmental Policy*, 22(6), 1371-1383. (Q1, 2022 IF = 4.30)

39. Abdallah, M., Abu Talib, M., Feroz, S., Nasir, Q., Abdalla, H., Mahfood, B. (2020) Artificial Intelligence Applications in Solid Waste Management: A Systematic Research Review. *Waste Management*, 109, 231-246. (Q1, 2022 IF = 8.10)

40. Abdallah, M., Shanableh, A., Elshazly, D., Feroz, S. (2020) Techno-Economic and Environmental Assessment of Wastewater Management Systems: Life Cycle Approach. *Environmental Impact Assessment Review*, 82, 106378. (Q1, 2022 IF = 7.90)

41. Adghim, M., Abdallah, M., Shanableh, A., Saad, S., Sartaj, M. (2020) Comparative Life Cycle Assessment of Anaerobic Co-Digestion for Dairy Waste Management in Large-Scale Farms. *Journal of Cleaner Production*, 256, 120320. (Q1, 2022 IF = 11.10)

42. Shabib, A., Abdallah, M. (2020) Life Cycle Analysis of Waste Power Plants: Systematic Framework. *International Journal of Environmental Studies*, 77:5, 786-806. (Q1, 2020 IF = 4.40)

43. Shanableh, A., Khalil, M.A, Mustafa, A., Abdallah, M., et al. (2020) Greywater Reuse Experience in Sharjah, United Arab Emirates: Feasibility, Challenges & Opportunities. *Desalination and Water Treatment*, 179, 211-222. (Q2, 2022 IF = 1.27)

44. Adghim, M., Abdallah, M., Shanableh, A., Saad, S., Sartaj, M. (2020) Assessment of Biochemical Methane Potential of Mono- and Co-digested Dairy Farm Wastes. *Waste Management & Research*, 38(1), 88-99. (Q1, 2022 IF = 3.90)

45. Abdallah, M., Feroz, S., Alani, S., Sayed, E.T., Shanableh, A. (2019) Continuous and Scalable Applications of Microbial Fuel Cells: A Critical Review. *Reviews in Environmental Science and Bio/Technology*, 18(3), 543-578. (Q1, 2022 IF = 14.40)

46. Abdallah, M., Adghim, M., Maraqa, M., Aldahab, E. (2019) Simulation and Optimization of Dynamic Waste Collection Routes. *Waste Management & Research*, 37(3): 1-10. (Q1, 2022 IF = 3.90)

47. Abdallah, M., Shanableh, A., Arab, M., Shabib, A., Adghim, M., El-Sherbiny, R. (2019) Waste to Energy Potential in Middle Income Countries of MENA Region based on Multi-Scenario Analysis for Kafr El-Sheikh Governorate, Egypt. *Journal of Environmental Management*, 232: 58-65. (Q1, 2022 IF = 8.70)

48. Shanableh, A., Semreen, M., Semerjian, L., Abdallah, M., Mousa, M., Darwish, N. (2019) Contaminants of Emerging Concern in Sharjah Waste Water Treatment Plant, Sharjah, UAE. *Journal of Environmental Engineering and Science*, 14(4): 225-234. (Q3, 2022 IF = 0.70).

49. Abdallah, M., Shanableh, A., Shabib, A., Adghim, M. (2018) Financial Feasibility of Waste to Energy Ahmadifar, M., Sartaj, M., Abdallah, M. (2016) Investigating the Performance of Aerobic, Semi-aerobic, and Anaerobic Bioreactor Landfills for MSW Management in Developing Countries. *Journal of Material Cycles and Waste Management*, 03: 1-12. (Q2, 2022 IF = 3.10).

50. Abdallah, M., Kennedy, K., Narbaitz, R. Warith, M. (2014) A New Computational Control Strategy for Leachate Management in Bioreactor Landfills. *Environmental Technology*, 35(3): 300-312. (Q2, 2020 IF = 3.25).

51. Abdallah, M., Kennedy, K., Narbaitz, R. Warith, M., Sartaj, M. (2014) Influence of Supplemental Heat Addition on Performance of Pilot-scale Bioreactor Landfills. *Bioprocess and Biosystems Engineering*, 37(2): 301-310. (Q2, 2022 IF = 3.80)

52. Abdallah, M., Kennedy, K., Warith, M., Petriu, E. (2011) Combining Fuzzy Logic and Neural Networks in Modeling Landfill Gas Production. *International Journal of Civil, Environmental, Structural, Construction and Architectural Engineering*, 5(6), 273-279. (Q4, 2019 IF = 0.26)

53. Abdallah, M., Fernandes, L., Warith, M., Rendra S. (2009) A Fuzzy Logic Model for Biogas Generation in Bioreactor Landfills. *Journal of Environmental Engineering and Science*, 36(4): 701-708. (Q3, 2019 IF = 1.03).

Conference Papers

1. Al Hammadi, M, Obaid, L., Abdallah, M., Arab, M., Ghebermeskel, S., Lamghari, F. (2024) Hybrid Feature Optimization-Machine Learning Approach for Predicting Particulate Matter. International Conference on Green Energy, Computing and Intelligent Technology, Malaysia, December 11-13, 2024.

2. Ahli, S., Obaid, L., Hamad, K., Abdallah, M. (2024). Investigating University City Travelers' Perceptions of Transitioning to Soft Mobility. Road Safety & Sustainability Conference, Riyadh, November 3-4, 2024.
3. Darras, S., Semerjian, L., Abdallah, M., Shabib, A. (2024) Waste-to-Energy Strategies for the Management of Hospitality Kitchen Wastes. International Conference of Springer Journal on Environmental Design, Material Science, and Engineering Technologies, Dubai, April 22-24, 2023.
4. Mantha, B., Sati, A., Hosny, F., Abdallah, M., Abu Dabous, S. (2024) A Generic 3D Printing Life Cycle Assessment (LCA) Framework for AEC Applications. 41st International Symposium on Automation and Robotics in Construction (ISARC), Lille, France, June 3-5, 2024.
5. Almour, A., Arab, M., Abdallah, M., Alotaibi, E. (2024) Examining the Applicability of Alkali Activated Binders (AABs) as a Landfill Liner and Cover. 5th European and Mediterranean Structural Engineering and Construction Conference (EURO MED SEC 5), Vilnius, Lithuania, May 13-18, 2024.
6. Fathabadi, A., Abdeljaber, A., Abdallah, M., Talib, M., Maraqa, M. (2023) Waste Generation Forecasting Using Mobility Data During COVID-19 Pandemic. International Conference on Distributed Sensing and Intelligent Systems (ICDSIS2023), Dubai, December 13, 2023.
7. Hosny, M., Abdallah, M., Shanableh, A. (2023) A Comparative Environmental Footprinting of Biogas Plants using Different Life Cycle Analysis Methods. 12th International Conference on Clean and Green Energy, China, May 25-27, 2023.
8. Desmal, H., Abdallah, M., Inayat, A., Shanableh, A. (2022) Optimization of Ethanol Fermentation using a Hybrid Model of Support Vector Machine and Genetic Algorithm. International Conference on Renewable and Sustainable Energy, Advances in Science and Engineering Technology (ASET) International Conferences, Dubai, February 21-24, 2022.
9. Waraga, O., Abdeljaber, A., Talib, M., Abdallah, M. (2021) Investigating Water Consumption Patterns Through Time Series Clustering. 14th International Conference on Developments in eSystems Engineering (DeSE), Sharjah, UAE, December 7-10, 2021.
10. Elfeky, A., Abdallah, M., Fattah, K. (2021) Environmental Assessment of Recyclable Waste Valorization in the United Arab Emirates. 4th International Conference on Renewable Energy and Environment Engineering (REEE 2021), Florence, Italy, August 27-30, 2021.
11. Tayara, A., Shanableh, A., Atieh, M.A., Abdallah, M., et al. (2021) Feasibility and Impact of Greywater Recycling in Four Types of Buildings in Sharjah, United Arab Emirates. 8th International Conference on Sustainable Environment and Agriculture (ICSEA 2020), Lisbon, Portugal, October 22-24, 2020.
12. Strategies in the United Arab Emirates. Waste Management, 82: 207-219. (Q1, 2022 IF = 8.10).
13. Alani, S., Shanableh, A., Bhattacharjee, S., Darwish, N., Mousa, M., Abdallah, M., Harb, M. (2019) Rate of Removal of a Selected Antibiotic from Water using Nanoscale Zero Valent Iron, 12th International Conference on Sustainable Energy and Environmental Protection (SEEP2019), 18-21 November, UAE.
14. Shanableh, A., Khalil, M., Tayara, A., Mustafa, A., Abdallah, M., et al. (2019) Feasibility of Greywater Reuse for Toilet Flushing and Cooling Towers in High-rise Buildings in Sharjah, UAE. 6th International Conference on Water, Energy, and Environment (ICWEE19), Sharjah, UAE.
15. Abdallah, M., Shanableh, A., Adghim, M., Ghenai, C., Saad, S. (2018) Biogas Production from Different Types of Cow Manure. International Conference on Advances in Science and Engineering Technology (ASET) Renewable and Sustainable Energy, Dubai, UAE.
16. Shanableh, A., Abdallah, M., Al-Ruzouq, R., Merabtene, T. (2018) Greywater Reuse Policies and Practice in Sharjah, UAE. 10th International Water Sensitive Urban Design and Hydropolis Conference, Perth, Australia. ISBN: 978-1-925627-03-9.

17. Abdallah, M., Neilson, M., Kennedy, K. (2013) Impact of Leachate Age on the Treatment Efficiency and Power Generation of Microbial Fuel Cells. 28th International Conference on Solid Waste Technology and Management, March 10-13, Philadelphia, USA.
18. Abdallah, M., Petriu, E., Kennedy, K., Narbaitz, R., Warith, M. (2011) Intelligent Control of Bioreactor Landfills. IEEE International Conference on Computational Intelligence for Measurement Systems and Applications, Ottawa.
19. Abdallah, M., Petriu, E., Kennedy, K., Narbaitz, R., Warith, M. (2011) Application of Fuzzy Logic in Modern Landfills. IEEE International Conference on Computational Intelligence for Measurement Systems and Applications, Ottawa.
20. Abdallah, M., Fernandes, L., Warith, M. (2008) Linguistic Modeling of Biogas Generation in Simulated Anaerobic Bioreactor Landfills. 61st Canadian Geotechnical Conference, Edmonton.
21. Abdallah, M., Fernandes, L., Warith, M. (2008) Modeling of Biogas Generation in Bioreactor Landfills using Neuro-fuzzy System. International Conference on Modeling and Simulation, Quebec.

Theses

1. Abdallah, M. (2011) A Novel Computational Approach for the Management of Bioreactor Landfills. Ph.D. Thesis, University of Ottawa, Ottawa.
2. Abdallah, M. (2007) Applications and Modifications of the Upflow Anaerobic Sludge Blanket (UASB) Reactor. M.Sc. Thesis, Ain Shams University, Cairo.

Posters, Symposia, & Workshops

- Abdallah, M. (2024) Life Cycle Assessment: Concept & Applications, University of Ottawa, 7 December 2024, Canada.
- Abdallah, M. (2024) Unveiling the Power of Membranes in Multi-Stage Anaerobic Digestion, University of Sharjah, 24 May 2024, Canada.
- Abdallah, M. (2023) Revolutionizing Waste Management: World's First Autonomous Knowledge-Based Smart Collection System, COP28, 6 December 2023, Dubai.
- Abdallah, M. (2023) Strategic Assessment and Optimization of Waste to Energy Projects. Presentation at the World WtERT Congress, 7 November 2023, Hangzhou, China.
- Abdallah, M. (2023) Waste Management and Recycling Technologies. Presentation to the Arab Youth Technology Fellowship, 18 October 2023, Online.
- Abdallah, M. (2016) Innovation in Environmental Engineering: Waste-to-Energy. Presentation at the UAE Innovation Week, 28 November 2016, Sharjah.
- Abdallah, M. (2012) Green energy generation and waste treatment in microbial fuel cells. Presentation at the Alternative Energy Workshop, NSERC–NRC-IRAP Industry/Researcher Connector Event, 21 November 2012, Ottawa.
- Abdallah, M. (2009) The SMART bioreactor landfill. Poster at the University of Ottawa Fostering Clean-tech Collaborations, 9 June 2009, Ottawa.
- Abdallah, M., Shahriari, H. (2008) Eco-industrial waste management park. Presentation at the Ontario Centres of Excellence Annual Student Symposium. 3-5 February 2008, Guelph.

Patents

- Invention: Autonomous Knowledge-Based Smart Waste Collection System
Agency: United States Patent and Trademark Office
Pub. No.: US 2024/0211898 A1
Pub. Date: Jun. 27, 2024

Research Fund

29 Grants – Total: \$2.1M

1. Dubai Electricity & Water Authority (DEWA) R&D Center – Al Baheth Program - 2024 – \$8k / 1-year.
Project: On-Demand Service Robots for Built Environment Applications: A Case Study in Indoor Environmental Quality Monitoring and Beyond
2. University of Sharjah – Collaborative Research Grant – 2024 – \$115k / 2-year.
Collaborator: University of Alberta
Project: Experimental Optimization of Leachate Pretreatment and Recirculation to Improve the Performance of Bioreactor Landfills
3. Department of Agriculture & Livestock, Government of Sharjah – 2024 – \$125k / 2-year
Project: Development and Application of Nano-Clays for Sustainable Agriculture
4. University of Sharjah – Targeted Research Grant – 2024 – \$55k / 3-year.
Project: Development and Optimization of 3D Printed Composite Bricks from Recycled Plastic for Energy-Efficient Building Construction.
5. The Waste Lab Recycling Consultancy – 2024 – \$5k / 1-year
Project: Food Waste Compost Characterization and Optimization
6. University of Sharjah – Competitive Research Grant – 2024 – \$33k / 2-year.
Project: Assessing the Potential Benefits of Connected and Automated Vehicles on Urban Environmental and Economic Sustainability
7. University of Sharjah – Collaborative Research Grant – 2024 – \$115k / 2-year.
Collaborator: Toronto Metropolitan University
Project: Process Assessment and Optimization of Magnetic Induction in Anaerobic Digestion
8. Ministry of Climate Change and Environment – Applied Research Consultancy – 2023 – \$490k / 2-year
Project: The National Strategy for Organic Waste Management
9. Natural Sciences and Engineering Research Council (NSERC) Canada – Alliance Grants (ALLRP) – 2023 – \$25k / 1-year
Project: Advancing Microbial Electrochemical Technologies for Circular Economy
10. Natural Sciences and Engineering Research Council (NSERC) Canada – Alliance Grants (ALLRP) – 2023 – \$25k / 1-year
Project: Resource Recovery from Municipal Sludges

11. Natural Sciences and Engineering Research Council (NSERC) Canada – Alliance Grants (ALLRP) – 2023 – \$25k / 1-year

Project: Towards a Circular Economy: Exploring Resource Recovery from Waste Streams

12. University of Sharjah – Competitive Research Grant – 2023 – \$25k / 2-year.

Project: Wastewater Surveillance: A Potential Early Detection and Tracking Tool for Presence, Prevalence, and Circulation of SARS-CoV-2 in Communities

13. University of Sharjah – Competitive Research Grant – 2023 – \$25k / 2-year.

Project: Development of an Integrated Waste Management Decision Making and Optimization Tool based on Material and Energy Recovery Systems

14. Emirates Global Aluminum (EGA) via the American University of Sharjah – Collaborative Research Project – 2022 - \$420k / 2.5-year.

Project: Production of Acidic Biochar for Soil Application- Phase II

15. University of Sharjah – Collaborative Research Grant – 2022 – \$110k / 3-year.

Collaborator: Münster University of Applied Sciences

Project: Experimental Assessment and Life Cycle Analysis of the Use of Recycled Plastic in 3D Printing

16. University of Sharjah – Collaborative Research Grant – 2022 – \$110k / 3-year.

Collaborator: University of Ottawa, Canada

Project: An Innovative IoT-based Solution for Smart Waste Collection based on Artificial Intelligence and Big Data Analytics

17. Agriculture & Livestock Department, Sharjah Municipality – 2021 – \$60k / 1-year

Project: Experimental Testing and Optimization for Aerobic Composting of Camel Manure

18. University of Sharjah – Competitive Research Grant – 2021 – \$25k / 2-year.

Project: Data-Driven Forecasting Algorithms for Community-Level Water and Electricity Consumption

19. University of Sharjah – Competitive Research Grant – 2021 – \$25k / 2-year.

Project: Smart Waste Collection through Predictive Modeling and Machine-Learning

20. University of Sharjah – Competitive Research Grant – 2021 – \$25k / 2-year.

Project: Integrated Wastewater Management through Onsite Treatment and Unconventional Collection

21. Dubai Electricity & Water Authority (DEWA) R&D Center – 2019 – \$8k / 1-year.

Project: Prediction of Utility Demand through Artificial Intelligence and Big Data Analytics

22. University of Sharjah – Targeted Research Grant (Co-PI) – 2019 – \$45k / 3-year.

Project: Using Microbial Inspired Techniques to Improve the Geotechnical Properties of Sand Dunes

23. University of Sharjah – Competitive Research Grant (Co-PI) – 2019 – \$25k / 2-year.

Project: Circulation and Water Quality Modeling in and around Al-Hamriyah Lagoon

24. Innogy (UAE) & Uniper (UK) – Collaborative Research Project – 2018 – \$10k / 1-year.

Project: Biogas Production from Anaerobic Digestion of Camel Farm Wastes

25. University of Sharjah – Competitive Research Grant – 2018 – \$25k / 2-year.

Project: Experimental Assessment and Life Cycle Analysis of Manure Management Technologies

26. Al-Rawabi Dairy Company (UAE) – Collaborative Research Project – 2018 – \$20k / 1-year.

Project: Biogas Production from Anaerobic Digestion of Dairy Farm Substrates

27. University of Sharjah – Competitive Research Grant – 2017 – \$25k / 2-year.

Project: Continuous Pilot-scale Operation of Microbial Fuel Cells for Simultaneous Energy Production and Wastewater Treatment under Realistic Operating Conditions

28. University of Sharjah – Seed Research Grant – 2017 – \$10k / 1-year.

Project: Assessment of Waste to Energy Technologies for Municipal Solid Waste Management

29. Ontario Centres of Excellence (OCE) & Ottawa Technology Transfer Network (OTTN) – Research & Development Fund – 2010 – \$18k / 4-month.

Project: Sensor-based Monitoring & Remote-control Technology (SMART) Ecosystems

Thesis Supervision

26 Students

1. Meera Al Hammadi (**2024-202x**) Prediction of Dust Storm Occurrences Based on Spatiotemporal and Environmental Factors.
2. Nisreen Salem (**2023-202x**) Process Optimization of Dark Fermentation Toward Maximum Biohydrogen Yield and Controlled Composition of Organic Acids.
3. Sarah Sabri (**2023-202x**) Substrate Optimization and Metagenomic Analysis of Bacterial Communities in a Methanogenic Anaerobic Digester.
4. Mona Albawab (**2023-202x**) Integrated Two-Stage Anaerobic Digestion and Selective Membrane Filtration for Enhanced Recovery of Bioenergy and Organic Acids.
5. Zakiya Begum (**2023-202x**) Augmentation of Anaerobic Digestion using Integrated Electromagnetic and Bio-Electrochemical Systems with Nanomaterials. (PhD | University of Ottawa)
6. Hadeer Abdalla (**2023-202x**) Optimization of Hydrogen Biomethanation in Two-Stage Anaerobic Digestion. (PhD | University of Ottawa)
7. Waqas Ahmad (**2024-202x**) Potential of Co-feeding Pyrolysis in Arid Regions for Energy Production, Carbon Sequestration, and Soil Amendment. (PhD Advisory Committee | American University of Sharjah)
8. Fatima Mohamad (**2022-202x**) Multi-criteria Assessment and Future Planning of Sustainable Practices in the Road Sector: A Life Cycle Approach. (PhD | University of Sharjah)
9. Shahad Ahli (**2024-2024**) Effect of Soft Mobility on Traffic Operations and Environment in Hot Climates.
10. Anwar Al-Omour (**2023-2024**) Examining the Applicability of Alkali Activated Binders (AABs) as a Landfill Liner and Cover. (MSc | University of Sharjah)
11. Alireza Fathabadi (**2021-2024**) Development of Artificial Intelligence Models for the Prediction of Municipal Solid Waste Generation. (MSc | University of Sharjah)
12. Mariam Hosny (**2022-2023**) Improvement of Biofuel Recovery by Syngas Biomethanation in a Methanogenic Anaerobic Digester. (MSc | University of Sharjah)

13. Abdulrahman Abdeljaber (**2022-2023**) Improving the Performance of the Bioreactor Landfill through the Recirculation of Pretreated Leachate. (MSc | University of Sharjah)
14. Sara Al Darras (**2021-2023**) Food Waste Management in Hospitality Sector: Challenges and Opportunities. (MSc | University of Sharjah)
15. Rawan Zannerni (**2022-2023**) Experimental Modeling of Methane Production from Bio-electrochemical Anaerobic Digestion based on Substrate Organic Composition. (MSc | University of Sharjah)
16. Sara Alsmadi (**2021-2022**) Experimental Evaluation and Optimization for Aerobic Composting of Camel Manure. (MSc | University of Sharjah)
17. Hessa Alhaddad (**2021-2022**) Assessment of Regulatory Reforms to Enhance the Viability of Waste to Energy Systems. (MSc | University of Sharjah)
18. Zakiya Begum (**2021-2022**) Experimental Investigation of Magnetic Induction in Anaerobic Digestion. (MSc | University of Sharjah)
19. Hadeer Abdalla (**2020-2022**) Experimental Assessment of Microbial Fuel Cells for Treatment and Nutrient Recovery from Different Wastewaters. (MSc | American University of Sharjah)
20. Mhamd S. Oyoun Alsoud (**2020-2022**) Machine Learning-based Drought Index for Arid and Semi-Arid Regions. (MSc | University of Sharjah)
21. Amal Elfeky (**2020-2021**) Socio-Eco-Efficiency Analysis of Waste-to-Energy Strategies. (MSc | University of Sharjah)
22. Fatemah H. Farwah (**2019-2021**) A Novel Green Synthesis of Iron Nanoparticles Using Date Seeds Extract and its Potential for Heavy Metals Removal. (MSc | University of Sharjah)
23. Adel Tayara (**2019-2020**) Experimental Evaluation of Greywater Treatment Systems. (MSc | University of Sharjah)
24. Ahmad Shabib (**2018-2020**) Investigating the Effect of the Chemical Composition of Substrates on the Performance of Bio-electrochemical Anaerobic Digestion. (MSc | University of Sharjah)
25. Sama Alani (**2018-2019**) Removal of Selected Pharmaceutical Compounds from Water using Nanomaterials. (MSc | University of Sharjah)
26. Mohamad Adghim (**2017-2018**) Life Cycle Assessment of Anaerobic Digestion in Dairy Waste Management. (MSc | University of Sharjah)

Awards & Achievements

- First Place in Ajman Research Award (Umm Al Moumineen Association) **2024**
- Best Paper Award (GEN-CITY 2024, Malaysia) **2024**
- First Place in SIB Research Award - Supervisor (Sharjah Islamic Bank) **2024**
- First Place in National Research and Innovation Award (Ministry of Energy & Infrastructure) **2023**
- Second Place in Sharjah Sustainability Award - Research & Sustainability - Supervisor (Environment & Protected Areas Authority (EPAA)) **2023**

- Second Place in Sharjah Sustainability Award – Environmental Resources Conservation & Protection - Supervisor (Environment & Protected Areas Authority (EPAA)) **2023**
- Annual Research Award for Distinguished Faculty Members (University of Sharjah) **2022**
- First Place in SIB Research Award (Sharjah Islamic Bank) **2021**
- 2nd Forum for Women in Research Award – Supervisor (University of Sharjah) **2021**
- Most Inspirational Professor Award (Women Engineering Society) **2021**
- First Place in SIB Research Award - Supervisor (Sharjah Islamic Bank) **2020**
- Annual Teaching Award for Distinguished Faculty Members (University of Sharjah) **2018**
- First Place Award in Senior Design Competition - Supervisor (University of Sharjah) **2018**
- First Place Award in Sharjah Sustainability Award - Applied Research - Supervisor (Environment & Protected Areas Authority (EPAA)) **2017**
- First Place in 2nd UAE Innovation Competition - Supervisor (UAE Innovates, Prime Minister Office) **2016**
- Steve Hart Annual Award by the Air & Waste Management Association **2011**
- Ottawa Startup Award by Ontario Centers of Excellence & Ottawa Technology Transfer Network **2010**
- Best Presentation Award by Ottawa Carleton Institute for Environmental Engineering **2010**
- Best Master's Degree Thesis Award by Ain Shams University **2007**

Teaching Courses

Graduate Courses (PhD)

University of Sharjah, UAE

- Life Cycle Assessment (0401703)
- Artificial Intelligence Applications in Civil Engineering (0401704)

Graduate Courses (MSc)

University of Sharjah, UAE

- Waste-to-Energy and Material Recovery (0401568)
- Modeling and Simulation of Environmental Systems (0401566)
- Advanced Topics in Environmental Engineering (0401569)
- Environmental Impact Assessment & Risk Analysis (0401535)
- Seminar in Environmental Science and Engineering (1450522)

Undergraduate Courses (BSc)

University of Sharjah, UAE

- Water & Wastewater Treatment (0401448)
- Solid & Hazardous Waste Management (0401443)
- Introduction to Environmental Engineering (0401345)
- Introduction to Environmental Engineering Laboratory (0401346)
- Environmental Outreach Project (0401493)
- Senior Design Project (0401498-9)

University of Ottawa, Canada

- Fundamentals of Environmental Engineering (CVG 2132)
- Physical / Chemical Unit Operations of Water and Wastewater Treatment (CVG 3132)
- Advanced Environmental Engineering (CVG 4130)

Ain Shams University, Egypt

- Fundamental Sanitary Engineering (CEP 341)
- Advanced Sanitary Engineering (CEP 441)
- Environmental Impact Assessment Studies (CEI 473)

External Training

Center for Continuing Education and Professional Development, University of Sharjah

- Title: Environmental & Building Inspection (September **2024**)
Trainee: Sharjah Municipality
- Title: Environmental Sampling & Inspection (March **2019** & November **2017**)
Trainee: Sharjah Environmental Protection Agency (EPA)
- Title: Eco-Tourism (October & December **2017**)
Trainee: Sharjah Environmental Protection Agency (EPA)

Technical Activities

- Conference Founder and Chair
1st International Symposium for Sustainable Waste Management & Resource Recovery – 2024
- Technical Expert
Environment and Climate Change Canada, Greenhouse Gas Offset Credit System, Protocol Development for Methane Emissions from Anaerobic Digestion Systems – **2023-2025**
- University Service
 - Chair, Waste Management Committee, UI GreenMetric World University Rankings on Sustainability – **2017/2024 - UAE Rank: 1st**
 - Member, COP28 Ad Hoc Committee, University of Sharjah – **2023**
 - Member, University Sustainability Tracking, Assessment & Rating System (STARS) Committee – **2019/2023 - Gold**
 - Lead, Waste Management Circle, Sustainability Office, University of Sharjah – **2018/2024**
 - Member, University Campus Sustainability Committee, University of Sharjah – **2017/2019**
 - Advisor, ASCE Civil Engineering Students Club, University of Sharjah, UAE – **2016/2017**
- Participation in Academic Accreditation
 - MSc Environmental Science & Engineering Program, University of Sharjah, Re-Accreditation of the Ministry of Education – **2024-2025** (Committee Chair)
 - MSc Environmental Science & Engineering Program, University of Sharjah, Accreditation of the Ministry of Education – **2019-2021** (Committee Member)

PhD Civil Engineering Program, University of Sharjah, Accreditation of the Ministry of Education – **2017-2019** (Committee Member)

MSc Civil Engineering Program, University of Sharjah, Re-accreditation of the Ministry of Education – **2017/2021** (Committee Member)

BSc Civil Engineering Program, University of Sharjah, Accreditation Board for Engineering and Technology (ABET) – **2016/2020** (Committee Member)

- Organizing Committee Member
 - 9th International Conference on Global Thermal Emissions – **2022**
 - International Conference on Sustainable Energy and Power Systems – **2023**
- Symposium Chair & Founder
 - Annual Student Symposia on Contemporary Environmental Technologies – **2015-2020 & 2024**
- Panel Discussion Moderator
 - Food Security and Environment Symposium, Chamber of Commerce, Dubai, April **2017**
- Workshop Panelist
 - Panel Discussion “Optimizing Resources for Alternative Energy Solutions”, by the German Emirati Joint Council for Industry & Commerce (AHK), Dubai – **2024**
 - COP28 Session “Global Inter-University Forum on Sustainability” by the University of Sharjah, University of California, and University of Oxford, Dubai – **2023**
- Scientific and Technical Committee – Judge
 - Al-Qasbi Award, Saudi Arabia, **2023/2024**
 - ThinkScience Annual National Competition, UAE, **2016-2019**
 - Gordon McRostie Award, Ottawa, Canada, December **2012**
- Scientific and Technical Committee - Member
 - 6th International Conference on Science and Technology Applications in Climate Change (STACLIM 2024), Terengganu, Malaysia, September **2024**
 - International Conference on Advances in Sustainable Construction Materials & Civil Engineering Systems, Dubai, UAE, April **2017**
 - Geotechnical Hazards and Risks Conference, Ottawa, Canada, December **2012**
- Scientific and Technical Committee – Chair
 - IEEE International Conference on Virtual Environments, Human-Computer Interfaces and Measurement Systems, Ottawa, Canada, 19-21 September **2011**
- Co-Guest Editor
 - Journal: Energies (IF: 3.2 | CiteScore: 5.5)
 - Special Issue: "Environmental Applications of Bioenergy and Biomass" – **2021-2022**
 - Special Issue: "Environmental Applications of Bioenergy and Biomass, 2nd Edition" – **2024-2025**
- Publication Referee Centre – Reviewer
 - Biochemical Engineering Journal – Elsevier – ISSN: 1369-703X – **2023**
 - Sustainable Cities and Society – Elsevier – ISSN: 2210-6707 – **2021**

Transportation Research: Emerging Technologies – Elsevier – ISSN: 0968-090X – **2020**

Waste and Biomass Valorization – Elsevier – ISSN: 1877-265X – **2020**

Journal of Cleaner Production – Elsevier – ISSN: 0959-6526 – **2020**

Resources, Conservation & Recycling – Elsevier – ISSN: 0921-3449 – **2020**

Waste Management & Research – SAGE – ISSN: 0734-242X – **2018**

Waste Management – Elsevier – ISSN: 0956-053X – **2016**

Environmental Technology – Taylor & Francis – ISSN: 0959-3330 – **2013**

Entrepreneurial Projects

- **Project: Atmospheric Water Generation Device (WaterPalm)**

Recognition: Sharjah Sustainability Award 2017 (1st place), University of Sharjah Innovation Award 2017 (1st place) & 10th MIT Pan Arab Competition (Finalist, 20 over the Middle East).

- **Project: Sensor-based Optimization of Waste Collection Routes (SmartCollect)**

Recognition: 10th MIT Pan Arab Competition (Finalist, 20 over the Middle East)

Professional Affiliations

- Global Waste-to-Energy Research & Technology (WtERT) Council, Columbia University, USA **2022**
- American Society of Civil Engineers (ASCE Licensed Engineer Member), USA **2014**
- Association of Energy Engineers (AEE - Member), USA **2014**
- Professional Engineers Ontario (PEO - Professional Engineer Member), Canada **2012**
- Canadian Society for Civil Engineers (CSCE - Member), Canada **2011**
- Egyptian Engineers Syndicate (EES - Licensed Engineer Member) **2004**

Professional Development

- Life Cycle Assessment using Umberto LCA+ Software, Germany **2020**
- Course Design, Institute of Leadership in Higher Education, UoS, UAE **2017**
- Data Acquisition & Measurements Seminar, National Instruments, UAE **2016**
- Advanced Blackboard Training, University of Sharjah, UAE **2016**
- Interactive Learning Management Systems, Coursemodo, Canada **2014**
- Laboratory Safety Training, University of Ottawa, Canada **2012**
- Waste-to-Energy Strategic Network, Carleton University, Canada **2010**
- Workplace Hazardous Materials Information System (WHMIS), Canada **2007**
- Undergraduate Teaching Workshop, University of Ottawa, Canada **2007**