

Peer-reviewed journal articles

- F. Mahroos, S. Habiba, I. K. Lazreg, S. Kanan, and F. Samara, "Characterization and health risk assessment of chemical and microbial pollutants in particulate matter from dust-prone regions," *Scientific Reports*, vol. 15, art. no. 23601, 2025. <https://doi.org/10.1038/s41598-024-60566-4>
- K. Mazen, G. Venkatesh, F. Samara, and S. Kanan, "ZnO/BiOI heterojunction catalyst: Efficient photocatalytic decomposition of perfluorooctanoic acid (PFOA) and mixed dye pollutants in wastewater," *Separation and Purification Technology*, vol. 376, part P2, art. no. 133953, 2025. <https://doi.org/10.1016/j.seppur.2025.133953>
- P. Selvam, M. Mohan, A. Dutta Roy, T. Ali, M. S. Watt, and F. Samara, "Advancing oyster habitat mapping: Integrating satellite remote sensing to assess coastal development impacts in northern United Arab Emirates," *Marine Pollution Bulletin*, art. no. 117861, 2025. <https://doi.org/10.1016/j.marpolbul.2025.117861>
- N. Ahmed, A. Mohammad, S. L. Knuteson, and F. Samara, "Evaluating temporal changes in water quality due to urbanization: a multi-year observational study in Khalid Khor, Sharjah, UAE," *Frontiers in Marine Science*, vol. 12, art. no. 1538897, May 2025. <https://doi.org/10.3389/fmars.2025.1538897>
- S. M. Kanan, F. Samara, L. Dronjak, A. Mahasneh, M. Moyet, K. Obeideen, and V. Gopal, "Recent advances on dioxin and furan (dibenzofuran) based pollutants from analytical, environmental, and health perspectives," *Chemosphere*, vol. 312, art. no. 144120, January 2025. <https://doi.org/10.1016/j.chemosphere.2025.144120>
- F. Samara, A. A. Al Abdel Hamid, V. Gopal, L. Dronjak, F. Feghaly, and S. Kanan, "Modified zeolites for the removal of emerging bio-resistive pollutants in water resources," *Catalysts*, vol. 15, art. no. 138, February 2025. <https://doi.org/10.3390/catal15020138>
- W. Bahutair, R. Darra, A. Al-Othman, M. Tawalbeh, K. McPhedran, and M. M. A. Shirazi, "Purifying the future: Membrane technologies for ultrapure water supply in hydrogen production," *Desalination*, art. no. 119174, 2025. <https://doi.org/10.1016/j.desal.2025.119174>
- T. M. Ahmed, A. Al-Othman, A. Shamayleh, and M. Tawalbeh, "Water management and conductivity studies in novel polymer zirconium-based membranes for PEM fuel cells," *Case Studies in Chemical and Environmental Engineering*, vol. 11, 2024. <https://doi.org/10.1016/j.cscee.2024.101081>
- M. Tawalbeh, A. A. Ali, and A. Al-Othman, "Flexible collagen-based membranes for PEM fuel cells applications: A characterization study," *International Journal of Hydrogen Energy*, 2025. <https://doi.org/10.1016/j.ijhydene.2025.04.235>
- M. Tawalbeh, W. Nimir, A. Al-Othman, and A. Ka'ki, "Facile nanocellulose-lignin composite membranes for polymer electrolyte membrane fuel cells applications operating above the boiling point of water," *International Journal of Hydrogen Energy*, 2025. <https://doi.org/10.1016/j.ijhydene.2025.04.314>
- B. Aljawrneh, B. A. Albiss, A. Al-Othman, M. Tawalbeh, A. Alshanableh, S. Alrousan, and R. Hayajneh, "Ultrathin zinc cobalt oxide nanowalls for supercapacitive energy storage applications," *Nexus*, vol. 1, art. no. 100439, 2025. <https://doi.org/10.1016/j.nexus.2025.100439>

- M. Tawalbeh, M. F. Hassan, A. Al-Othman, and A. Ka'ki, "Facile polymer electrolyte membranes based on deep eutectic solvents and alginates for fuel cell applications," *International Journal of Hydrogen Energy*, 2025. <https://doi.org/10.1016/j.ijhydene.2025.04.215>
- W. Nimir, A. Al-Othman, and M. Tawalbeh, "Unveiling zirconium phytate-heteropolyacids-ionic liquids membranes for PEM fuel cells applications up to 150 °C," *International Journal of Hydrogen Energy*, 2024. <https://doi.org/10.1016/j.ijhydene.2024.06.120>
- Shomope, A. Al-Othman, M. Tawalbeh, H. Alshraideh, and F. Almomani, "Machine learning in PEM water electrolysis: A study of hydrogen production and operating parameters," *Computers & Chemical Engineering*, vol. 187, art. no. 108954, 2024. <https://doi.org/10.1016/j.compchemeng.2024.108954>
- R. D. Al Bostami, A. Al-Othman, M. Tawalbeh, and A. G. Olabi, "Advancements in zinc-air battery technology and water-splitting," *Nexus*, vol. 1, art. no. 100387, 2025. <https://doi.org/10.1016/j.nexus.2025.100387>
- A. A. Ali, A. Al-Othman, M. Tawalbeh, A. Ali, C. A. Quist-Jensen, and M. M. A. Shirazi, "Membrane technologies for sustainable development goals: A critical review of bright horizons," *Journal of Environmental Chemical Engineering*, vol. 13, no. 1, art. no. 114998, February 2025. <https://doi.org/10.1016/j.jece.2024.114998>
- H. Mortadha, H. B. Kerrouchi, A. Al-Othman, and M. Tawalbeh, "A comprehensive review of biomass pellets and their role in sustainable energy: Production, properties, environment, economics, and logistics," *Waste and Biomass Valorization*, published January 18, 2025. <https://doi.org/10.1007/s12649-024-02873-x>
- Shomope, M. Tawalbeh, A. Al-Othman, and F. Almomani, "Predicting biohydrogen production from dark fermentation of organic waste biomass using multilayer perceptron artificial neural network (MLP-ANN)," *Computers & Chemical Engineering*, vol. 192, art. no. 108900, January 2025. <https://doi.org/10.1016/j.compchemeng.2024.108900>
- S. S. Ravuri, A. Al-Othman, S. Al-Asheh, P. Nancarrow, K. Singh, and M. Al-Sayah, "Tuning the electrochemical potential window of niobium carbide based electrodes for symmetric electrochemical supercapacitors," *Case Studies in Chemical and Environmental Engineering*, vol. 10, art. no. 100812, December 2024. <https://doi.org/10.1016/j.cscee.2024.100812>
- M. Tawalbeh, I. Shomope, A. Al-Othman, and H. Alshraideh, "Prediction of hydrogen production in proton exchange membrane water electrolysis via neural networks," *International Journal of Thermofluids*, vol. 24, art. no. 100849, November 2024. <https://doi.org/10.1016/j.ijft.2024.100849>
- R. Garg, B. Alattar, R. Sabouni, and M. Ghommam, "'Turn-on' fluorescence-based diclofenac detection using metal-organic framework-coated silicon micropillars," *Journal of Water Process Engineering*, vol. 76, art. no. 108240, August 2025. <https://doi.org/10.1016/j.jwpe.2025.108240>
- W. El-Sayed, A. Awad, M. Azzouz, M. Shaaban, and E. El-Saadany, "Mobile energy storage for inverter-dominated isolated microgrids resiliency enhancement through maximizing loadability and seamless reconfiguration," *Protection and Control of Modern Power Systems*, vol. 10, no. 4, pp. 89–102, July 2025. <https://doi.org/10.23919/PCMP.2024.000214>

- M. S. Abdalzaher, E. Ghamry, K. A. Yusof, and M. Shaaban, "Toward automatic detection of Pi2 magnetic pulsation using machine learning," *IEEE Access*, vol. 13, pp. 109828–109839, 2025.
<https://doi.org/10.1109/ACCESS.2025.3582762>
- G. Abdalnasser, E. E. M. Mohamed, M. F. Shaaban, and A. Ali, "A multi-objective strategic planning of smart energy hubs and hydrogen refueling stations toward net-zero emissions," *Sustainable Energy, Grids and Networks*, vol. 42, art. no. 101690, June 2025. <https://doi.org/10.1016/j.segan.2025.101690>
- R. Al-Sharawi, A. Ali, M. Shaaban, N. Qaddoumi, and M. S. Abdalzaher, "Tackling the optimal phasor measurement unit placement and attack detection problems in smart grids by incorporating machine learning," *IEEE Open Journal of the Communications Society*, vol. 6, pp. 4036–4050, 2025.
<https://doi.org/10.1109/OJCOMS.2025.3564069>
- A. Youssef, H. H. Mousa, M. S. R. Saeed, Abdelfatah Ali, Mostafa F. Shaaban, Essam E. M. Mohamed, A. M. Ali, "A novel self-adjustable robust MPPT strategy for two-stage grid-integrated solar PV systems," *Electrical Engineering*, vol. 107, pp. 6245–6260, 2025. <https://doi.org/10.1007/s00202-024-02858-y>
- M. Ali et al., "Discontinuous modulation technique for isolated three-phase grid connected flyback inverter with selective harmonic compensation for PV and fuel cell systems," *IEEE Journal of Emerging and Selected Topics in Power Electronics*, vol. 13, no. 3, pp. 2849–2863, June 2025.
<https://doi.org/10.1109/JESTPE.2024.3492734>
- Ali, M. F. Shaaban, and K. Mahmoud, "Optimizing hydrogen systems and demand response for enhanced integration of RES and EVs in smart grids," *IEEE Transactions on Smart Grid*, vol. 16, no. 2, pp. 1366–1378, March 2025. <https://doi.org/10.1109/TSG.2024.3491774>
- Elkafrawy, A. Khalil, R. Hawileh, and M. AlHamaydeh, "Numerical study on shear-oriented parameters in RC beams with openings reinforced by Fe-SMA rebars," *Buildings*, vol. 15, no. 12, art. no. 2028, 2025.
<https://doi.org/10.3390/buildings15122028>