

Rund A. Abu-Zurayk

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Education

PhD “The Effect of Processing On Structure and Properties of Polypropylene/Clay Nanocomposites”, Queen’s University Belfast – 2009.

M.Sc. Chemical Engineering - University of Jordan- 2004 – 4.0/4.0

B.Sc. Chemical Engineering- University of Jordan- 2001- 3.72/4.0

Job Positions

Director 01/2018-09/2023, Nanotechnology Center, The University of Jordan

Vice Director 05/2014-15/07/2022, Hamdi Mango Center for Scientific Research, The University of Jordan

Associate Researcher 05/2017-present

Assistant Researcher 03/2013-05/2017, Hamdi Mango Center for Scientific Research, The University of Jordan

Researcher 09/2011-02/2013, Hamdi Mango Centre for Scientific Research, The University of Jordan

Research Fellow 02/2009-5/2011, School of Mechanical and Aerospace Engineering- Queen’s University Belfast - UK

Standardization Engineer 08/2002-08/2005- Jordan Institution For Standards and Metrology- Standardization Department – Jordan

Main Research interests

- Nanoparticle synthesis using green and chemical techniques
- Photocatalysts synthesis.
- Water treatment via adsorption, photocatalytic degradation, and polymeric membranes.

Publications/conferences

1. Alanazi, Abdulaziz A., Fahad Abdulaziz, Mohammed Alyami, Satam Alotibi, Salah Sakka, Saida Abu Mallouh, **Rund Abu-Zurayk**, and Mazen Alshaaer. "The Effect of Full-Scale Exchange of Ca²⁺ with Zn²⁺ Ions on the Crystal Structure of Brushite and Its Phase Composition." *Biomimetics* 8, no. 4 (2023): 333.
2. Abu-Dalo, M. A., Bozeya, A., Sawalmeh, Z., Albiss, B., Alnairat, N., & **Abu-Zurayk, R.** (2023). Antifouling polymeric nanocomposite membrane based on interfacial

- polymerization of polyamide enhanced with green TiO₂ nanoparticles for water desalination. *PeerJ Analytical Chemistry*, 5, e26.
3. Bustanji, Y., Taneera, J., Semreen, M.H., Abu-Gharbieh, E., El-Huneidi, W., Faris, M.A.I.E., Alzoubi, K.H., Soares, N.C., Albustanji, B., Abuhelwa, A.Y. **and Abu-Zurayk, R., 2023.** Gold Nanoparticles and Breast Cancer: A bibliometric Analysis of the Current State of Research and Future Directions. *OpenNano*, p.100164..
 4. Bozeya, A., Makableh, Y.F., Al-Mezead, L.A. , **Abu-Zurayk, R.,** Wet ball milling and hot press for the preparation of UHMWPE/modified MWCNTs nanocomposite with enhanced mechanical and thermal properties. *Polym. Bull.* (2023).
 5. **Abu-Zurayk, R.,** Alnairat, N., Khalaf, A., Ibrahim, A. A., & Halaweh, G. (2023). Cellulose acetate membranes: Fouling types and antifouling strategies—A brief review. *Processes*, 11(2), 489.
 6. Al-Bataineh Q, Telfah M, **Abu-Zurayk R,** Benchaabane A, Tavares C, Telfah A, Nano-SnO₂/polyaniline composite films for surface plasmon resonance, *Materials Chemistry and Physics*, Volume 293, **2023.**
 7. Al-Bataineh, Q. M., Telfah, A. D., Ahmad, A. A., Bani-Salameh, A. A., **Abu-Zurayk, R.,** & Hergenröder, R. E/Z reversible photoisomerization of methyl orange doped polyacrylic acid-based polyelectrolyte brush films. *Journal of Applied Polymer Science*, e53138. **2022**
 8. Shibli, R., Mohusaien, R., **Abu-Zurayk, R.,** Qudah, T., & Tahtamouni, R. Silver Nanoparticles (Ag NPs) Boost Mitigation Powers of Chenopodium Quinoa (Q6 Line) Grown under In Vitro Salt-Stressing Conditions. *Water*, 14(19), 3099. **2022.**
 9. Hudaib, B., **Abu-Zurayk, R.,** Waleed, H., & Ibrahim, A. A. Fabrication of a Novel (PVDF/MWCNT/Polypyrrole) Antifouling High Flux Ultrafiltration Membrane for Crude Oil Wastewater Treatment. *Membranes*, 12(8), 751. **2022.**
 10. Fontananova, E., Tocci, E., **Abu-Zurayk, R.,** Grosso, V., Meringolo, C., Muzzi, C., ... & Di Profio, G.. An environmental-friendly electrostatically driven method for preparing graphene oxide composite membranes with amazing stability in aqueous solutions. *Journal of Membrane Science*, 655, 120587, **2022.**
 11. Al-Qudah, T., Mahmood, S. H., **Abu-Zurayk, R.,** Shibli, R., Khalaf, A., Lambat, T. L., & Chaudhary, R. G.. Nanotechnology Applications in Plant Tissue Culture and Molecular Genetics: A Holistic Approach. *Current Nanoscience*, 18(4), 442-464, **2022.**
 12. **Abu-Zurayk, R.,** Barboiu, M. D., Gotzias, A., Kouvelos, E., Mahmoudi, H., Roualdes, S., & Tocci, E.. Special issue on International Conference on Water and Energy (ICWE21) Hassiba Benbouali University of Chlef, Algeria on 25-27 May 2021 Foreword. *DESALINATION AND WATER TREATMENT*, 255, 1-3, **2022**
 13. AL-Mohusaien, R. M., Shibli, R. A., **Abu-Zurayk, R. A.,** & Tahtamouni, R. . An Outlook on the Chenopodium Quinoa Willd (Quinoa) Plant and the Role of the in Vitro Culture and Nanotechnology in Mitigation of Salinity Stress: A Review. *Jordan Journal of Agricultural Sciences*, 18(1), 17-27. **2022**
 14. Bozeya, A.; Makableh, Y.F.; **Abu-Zurayk, R.;** Khalaf, A.; Al Bawab, A. Thermal and Structural Properties of High Density Polyethylene/Carbon Nanotube Nanocomposites: A Comparison Study, *Chemosensors*, 9, 136, **2021**
 15. Hudaib B , Al-Shawabkeh A , Omar W, Al-Zoubi H , **Abu-Zurayk R,** Removal of high-concentration sulfate ions from industrial wastewater using low-cost modified Jordanian kaolin, *Desalination and Water Treatment*, 231, 359–366, **2021**
 16. Alnairat, N.; Abu Dalo, M.; **Abu-Zurayk, R.;** Abu Mallouh, S.; Odeh, F.; Al Bawab, A. Green Synthesis of Silver Nanoparticles as an Effective Antibiofouling Material for

- Polyvinylidene Fluoride (PVDF) Ultrafiltration Membrane. *Polymers*, *Polymers*, 13, 3683, **2021**
17. **Abu-Zurayk, R.**, Khalaf, A., Abbas, H. A., Nasr, R. A., Jamil, T. S., & Al Bawab, A. Photodegradation of Carbol Fuchsin Dye Using an $\text{Fe}_2\text{-xCu}_x\text{Zr}_{2-x}\text{W}_x\text{O}_7$ Photocatalyst under Visible-Light Irradiation. *Catalysts*, 11(12), 1473, **2021**.
 18. **Abu-Zurayk R**, Qtaishat MR, Al Bawab A, Desalination Membranes: Characterization Techniques, *Membrane Desalination*, 229-249, **2020**
 19. **Abu-Zurayk R.**, Hamadneh I, Al Dujaili H, "Preparation and Characterization of Polyethylene/Cellulose Composite with Diatomite and Bentonite as Fillers", *Polymer-Plastics Technology and Materials*, 59(5): 546-554, **2020**
 20. I Hamadneh, **RA Abu-Zurayk**, AH Al-Dujaili, Removal of phenolic compounds from aqueous solution using MgCl_2 -impregnated activated carbons derived from olive husk: the effect of chemical structures", *Water Science and Technology* 81 (11), 2351-2367, **2020**
 21. Abbas HA, Nasr RA, **Abu-Zurayk R**, Al Bawab A, Jamil TS, "Decolourization of crystal violet using nano-sized novel fluorite structure $\text{Ga}_2\text{Zr}_{2-x}\text{W}_x\text{O}_7$ photocatalyst under visible light irradiation, *Royal Society open science* 7 (3), 191632, **2020**
 22. Moqbel S, **Abu-Zurayk R**, Bozeya A, Alsisan R, Al Bawab A. Assessment of sustainable recycling at The University of Jordan. *International Journal of Sustainability in Higher Education*. **2020**.
 23. Al Bawab A, Al-Hunaiti A, Abu Mallouh S, Bozeya A, **Abu-Zurayk R**, Hussein T. Contamination of plants, soil, and building stones at a Roman heritage archaeological site in an urban area. *Fresenius Environmental Bulletin*. **2020**.
 24. Jaffal A , **Abu- Zurayk R** , Al-Hussein M., "Two-Step Approach Based on Solution Mixing and Hot Compaction for CNT/HDPE Nanocomposite Preparation", *Int. J. Electrochem. Sci.*, 14, 6489-6499, **2019**
 25. Al Bawab A, Bozeya A, Abu-Mallouh S, Daqour I, **Abu-Zurayk R**, "The Dead Sea Mud and Salt: A Review of Its Characterization, Contaminants, and Beneficial Effects", *IOP Conference Series: Materials Science and Engineering* 305 (1), 012010, **2018**
 26. Al Bawab A, Bozeya A, Abu-Mallouh S, Daqour I, **Abu-Zurayk R**, "The Dead Sea Mud and Salt: A Review of Its Characterization, Contaminants, and Beneficial Effects", *IOP Conference Series: Materials Science and Engineering* 92 (1), 012010, **2018**
 27. Al Bawab A, Ghannam N, **Abu-Zurayk R**, Odeh F, Bozeya A, Abu Mallouh S, Al-Rawashdeh N, Abu-Dalo M, "Olive mill wastewater remediation by granular activated carbon impregnated with active materials", *Fresenius Environmental Bulletin* 27 (4), 2118-2126, **2018**
 28. Mohammed N., **Abu-Zurayk R.**, Hamadneh I, .Al-Dujaili A., "Phenol adsorption on biochar prepared from the pine fruit shells: Equilibrium, kinetic and thermodynamics studies", *Journal of Environmental Management*, 226, 377-385, **2018**.
 29. Al Bawab A., Al-Omari R., Abd-Allah R., Bozeya A., **Abu-Zurayk R.A.**, Odeh F. " The Application of a Modified Sol-Gel Silica Coating for the Protection of Corroded Roman Soda-Lime-Silica Glass: An Experimental and Analytical Study". In: Kouï M., Zezza F.,

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35. Al Bakain R, **Abu-Zurayk R.**, Hamadneh I, Khalili F, Al-Dujaili A, “ A study on removal characteristics of o-, m-, and p-nitrophenol from aqueous solutions by organically modified diatomaceous earth”, *Desalination And Water Treatment* 56(3):826-838, **2015**.
36. **Abu-Zurayk R.**, Harkin-Jones E, "The influence of processing route on the structuring and properties of HDPE/clay nanocomposites". *Polymer Engineering and Science* 52, 2360–2368, **2012**.
37. Shen Y, Harkin-Jones E, Hornsby P, McNally T, **Abu-Zurayk R.** “The effect of temperature and strain rate on the deformation behaviour, structure development and properties of biaxially stretched PET–clay nanocomposites” *Composites Science and Technology* 71, 758-764, **2011**.
38. **Abu-Zurayk R.**, Harkin-Jones E, Hornsby P, McNally T. “An Investigation of Process-Material Interactions in the Manufacture of HDPE/Clay Nanocomposite”. *Hybrid Materials 2011*, Strasbourg, France, 6-10 March **2011**
39. Shen Y, Harkin-Jones E, Xie S, **Abu-Zurayk R.**, McNally T, Hornsby P, Patel R, Benkreira H, Khan A, Coates P , “Tailored Structuring and Biaxial Deformation Behaviour of Polyethylene Terephthalate – Clay Nanocomposites”, *PPS-26*, Banff, Canada, 4-8 July **2010**.
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44. **Abu-Zurayk R**, Harkin-Jones E, McNally T, Menary G, Martin P, Armstrong C, "Investigating The Effect Of Processing Route On Polypropylene/Clay Nanocomposite Performance", *Polymer Processing Society 24th Annual Meeting ~ PPS-24 ~ June 15-19, 2008* Salerno (Italy)
45. Xu B, Leisen J, Beckham HW, **Abu-Zurayk R**, Harkin-Jones E, McNally T, "Evolution of Clay Morphology in Polypropylene/Montmorillonite Nanocomposites upon Equibiaxial Stretching: A Solid-State NMR and TEM Approach" *Macromolecules*, 42, 8959–8968, **2009**.