

MOHAMMAD A. BATIHA

Professor of Chemical Engineering
Al-Hussein Bin Talal University, Jordan

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EDUCATION

- 2006 – 2009** **Ph.D. in Chemical/Environmental Engineering**
Universiti Kebangsaan Malaysia (National University of Malaysia), Malaysia
- 2003 – 2004** **M.Sc. in Chemical/Environmental Engineering**
Ivanovo State University of Chemistry & Technology, Russia
- 1999 – 2003** **B.Sc. in Chemical/Environmental Engineering**
Ivanovo State University of Chemistry & Technology, Russia



CAREER HISTORY

- 2022 – Now** **Professor**
Chemical Engineering Department, Al-Hussein Bin Talal University, Jordan
- 2016 – 2022** **Associate Professor**
Chemical Engineering Department, Al-Hussein Bin Talal University, Jordan
- 2012 – 2016** **Assistant Professor**
Chemical Engineering Department, Al-Hussein Bin Talal University, Jordan
- 2011 – 2012** **Senior Lecturer**
Chemical Engineering Department, Al-Hussein Bin Talal University, Jordan
- 2010 – 2011** **Project Manager**
Rama Environmental Consultations and Studies, Dammam, Saudi Arabia

Selected projects:

- EIA for Laying of New Hout Gas 24" Transmission Line.
- EIA for Rahimah STP Sea Outfall Rehabilitation.
- EIA for HQ492/PC-05 SO-16 Feed for Hout Gas Facilities.
- EMP for Construction and Post Construction Phases: The Amended Scope of Work for New Hout Gas Transmission.

ADMINISTRATIVE EXPERIENCE

- 2016 – 2017** **Head of Department**
Chemical Engineering Department, Al-Hussein Bin Talal University, Jordan

TAUGHT COURSES

- Physical Chemistry for Engineers
- Thermodynamics (I) and (II)
- Fluid Mechanics
- Heat Transfer
- Unit Operation
- Principles of Chemical Engineering (I) and (II)
- Chemical Reaction Engineering (I)
- Methodology of Scientific Research for Engineers
- Communication Skills
- Wastewater treatment
- Equipment Design
- Plant Design

SUPERVISION

- Many graduation projects for bachelor's degree students.
- Master degree theses in Health, Safety and Environment Engineering (Pollution Characteristics and Ecological and Human Health Risks Assessment of Toxic Elements in Dust Collected from Air Conditions Filters in Ma'an Region).

FUNDED RESEARCH PROJECTS

- 2015 – 2016** An integrated solar desalination system for enhanced performance (12/2015), King Abdullah II Fund for Development (KAJD), Jordan, JD 5500.
- 2006 – 2008** Dynamic multi-compartmental mass balance model of POPs (03-01-02-SF0302), Ministry of Science, Technology & Innovation, Malaysia, US\$ 41828.

SOFTWARE DEVELOPMENT

Multimedia Agricultural Fate and Risk Assessment Model (MAFRAM). 2008. MAFRAM was written in Microsoft Visual Basic 6. It an environmental fate and risk assessment methodology for comparing and establishing the general features of new and existing organic chemicals used in agricultural activities, based on simple and readily available properties.

INTERNATIONAL REFEREE/REVIEWER

1. Journal of Water Science and Technology.
2. Journal of Separation Science and Technology.
3. Journal of Hazardous Materials.
4. Journal of Oceanography and Marine Science.
5. Journal of Case Studies in Thermal Engineering.
6. Journal of Thermal Engineering

PROFESSIONAL AFFILIATIONS

Jordan Engineers Association

PUBLICATIONS (h-index = 11)

1. **Batiha, M.A.**, Al-Makhadmeh, L.A., Rawadieh, S.E., Batiha, M.M., Alqasaimeh, M., Alhasan, A., Atalah, A., Abo Aljoud, M. & Nasralah, S. 2024. Pollution characteristics and ecological and human health risk assessment of toxic elements in fallout dusts of Ma'an district schools. *Jordanian Journal of Engineering and Chemical Industries* 7 (1): 23-40.
2. **Batiha, M.A.**, Rawadieh, S.E., Batiha, M.M., Al-Makhadmeh, L.A., Marachli, A.A. & Kayfeci, M., 2023. Thermal insulation performance curves for exterior walls in heating and cooling seasons. *Journal of Thermal Engineering* 9 (4): 1053-1069.
3. Rawadieh, S.E., Altarawneh, M., Altarawneh, I.S., **Batiha, M.A.** & Al-Makhadmeh L.A. 2020. A kinetic model for evolution of H₂ and CO over Zr-doped ceria. *Molecular Catalysis* 498: 111256.
4. Altarawneh, I.S., **Batiha, M.A.**, Rawadieh, S.E., Alnaief, M. & Tarawneh, M.S. 2020. Solar desalination under concentrated solar flux and reduced pressure conditions. *Solar Energy*: 206 983-996.
5. **Batiha, M.A.**, Marachli, A.A., Rawadieh, S.E., Altarawneh, I.S., Al-Makhadmeh, L.A. & Batiha, M.M. 2019. A study on optimum insulation thickness of cold storage walls in all climate zones of Jordan. *Case Studies in Thermal Engineering* 15: 100538.
6. Rawadieh, S.E., Altarawneh, I.S., **Batiha, M.A.**, Al-Makhadmeh, L.A., Almatarneh, M.H., & Altarawneh, M.K. 2019. Reaction of hydroperoxy radicals with primary C₁₋₅ alcohols: A profound effect on ignition delay times. *Energy & Fuels* 33 (11) 11781-11794.
7. Altarawneh, I.S, Rawadieh, S.E., **Batiha, M.A.**, Al-Makhadmeh, L.A., Al-Shaweesh, M.A, Altarawneh, M.K. 2018. Structures and Thermodynamic Stability of Cobalt Molybdenum Oxide (CoMoO₄-II). *Surface Science* 677: 52-59.
8. Al-Makhadmeh, L.A., **Batiha, M.A.**, Maier, J., Rawadieh, S.E., Altarawneh, I.S & Scheffknecht, G. 2018. Effect of air and oxyfuel staged combustion on oil shale fly ash formation with direct in-furnace limestone addition for sulphur retention. *Fuel* 220: 192-199.
9. Al-Makhadmeh, L.A., **Batiha, M.A.**, Al-Harashsheh, M.S., Altarawneh, I.S & Rawadieh, S.E. 2018. The effectiveness of Zn leaching from EAFD using caustic soda. *Water, Air, & Soil Pollution* 229: 33.
10. Altarawneh, I.S., Rawadieh, S.E., **Batiha, M.A.**, Al-Makhadmeh, L.A. & Tarawneh, M.S. 2017. Experimental and numerical performance analysis and optimization of single slope, double slope and pyramidal shaped solar stills. *Desalination* 423: 124-134.

11. Al-Makhadmeh, L., Maier, J., **Batiha, M.A.** & Scheffknecht, G. 2017. Oxyfuel Technology: Oil shale desulphurisation behaviour during staged combustion. *Fuel* 190: 229-236.
12. **Batiha, M.A.**, Chijova, E.A., Batiha, M.M., Al-Makhadmeh, L.A., Rawadieh, S.I., Alqasaimeh, M. & Marashli, A. 2017. The effect of pyridine and tribenzilamine on the hydrolysis kinetics of benzoyl chloride in water-dioxane solutions. *Asian Journal of Chemistry* 29: 1888–1890.
13. Al-Makhadmeh, L. & **Batiha, M.A.** 2015. Removal of iron and copper from aqueous solutions using Jordanian kaolin and zeolitic tuff. *Desalination & Water Treatment* 57(44): 1-14.
14. Tarawneh M.A., YU L.J., Tarawni M.A., Ahmad S.H., Al-Banawi O. & **Batiha M.A.** 2015. High performance thermoplastic elastomer (TPE) nanocomposite based on graphene nanoplates (GNPs). *World Journal of Engineering* 12 (5): 437-442.
15. **Batiha, M.A.**, Al-Makhadmeh, L., Batiha, M.M. Ramadan, A. & Kadhum, A.A.H. 2013. MAFRAM generalization to semi-volatile organic chemicals. *Water, Air, & Soil Pollution* 225:1789.
16. **Batiha, M.A.** Chizhova, E.A. & Batiha, M.M. 2013. Effect of tertiary amines on the hydrolysis kinetics of benzoyl chloride in water-dioxane solutions. *Asian Journal of Chemistry* 25 (7): 4087-4090.
17. **Batiha, M.A.**, Kadhum, A.A.H., Batiha, M.M., Takriff, M.S. & Abu Bakar, M. 2010. MAFRAM – A new fate and risk assessment methodology for non-volatile organic chemicals. *Journal of Hazardous Materials* 181: 1080-1087.
18. **Batiha, M.A.**, Kadhum, A.A.H., Abu Bakar, M., Takriff, M.S., Zahedi, F., Wan Ramli, W.D. & Batiha, M.M. 2009. Modeling the fate and transport of non-volatile organic chemicals in the agro-ecosystem: A case study of Cameron Highlands, Malaysia. *Process Safety & Environmental Protection* 87: 121-134.
19. **Batiha, M.A.**, Kadhum, A.A.H., Zahedi, F., Abu Bakar, M., Wan Ramli, W.D., Takriff, M.S. & Batiha, M.M. 2008. MAM – An Aquivalence-Based Dynamic Mass Balance Model of the Fate of Non-Volatile Organic Chemicals in the Agricultural Environment. *American Journal of Engineering & Applied Sciences* 1 (4): 252-259.
20. **Batiha, M.A.**, Kadhum, A.A.H., Zahedi, F., Abu Bakar, M., Wan Ramli, W.D., Takriff, M.S. & Batiha, M.M. 2007. The Fate of Non-Volatile Organic Chemicals in the Agricultural Environment. *American Journal of Applied Sciences* 2 (7): 456-464.
21. Kadhum, A.A.H., **Batiha, M.A.**, Musa, A.Y. & Abu Bakar, M. 2009. Elemental Characterization of PM₁₀ in UKM Campus. Proceeding of the 2009 International Conference on Space Science and Communication, 26-27 October 2009, Port Dickson, Malaysia, pp. 93-95. Published in IEEE.
22. **Batiha, M.A.**, Kadhum, A.A.H., Takriff, M.S., Zahedi, F., Abu Bakar, M. & Wan Ramli, W.D. 2008. Multimedia Agricultural Model. Proceeding of the 1st Postgraduate Engineering Conference, October 22, 2008. National University of Malaysia (UKM), Bangi, Malaysia.

23. Kadhum, A.A.H. & **Batiha, M.A.** 2007. Investigation on Heavy Metal Contents in The Urban Air Particles. Proceeding of the Workshop on The Haze Event of 2005 in Peninsular Malaysia. December 28, 2007. National University of Malaysia (UKM), Bangi, Malaysia.
24. **Batiha, M.A.**, Kadhum, A.A.H., Takriff, M.S., Zahedi, F., Abu Bakar, M. & Wan Ramli, W.D. 2007. Modeling the Distribution of Spinosad in the Environment. Proceeding of the 3rd Seminar of Japanese Society for the Promotion of Science & Vice Chancellors Council (JSPS-VCC) on the Planning of Urban Energy and Environmental Systems. September 10-11, 2007. Malaysian University of Technology, Johor, Malaysia, pp. 169-181.
25. **Batiha, M.A.**, Kadhum, A.A.H., Zahedi, F., Abu Bakar, M., Wan Ramli, W.D. & Takriff, M.S. 2007. Developing a Multimedia Model of Pollutants Dynamic in the Agricultural Environment. Proceeding of the 2nd Regional Conference on Ecological and Environmental Modeling. August 28-30, 2007. Malaysian University of Science, Penang, Malaysia, pp. 47.
26. Bubnov, A.G. & **Batiha, M.A.** 2005. Destruction of Formaldehyde in a Barrier Discharge Plasma. Proceeding of the 4th International Symposium on Theoretical and Applied Plasma Chemistry. May 13-18, 2005, Ivanovo, Russia (Written in Russian language).

LANGUAGE SKILLS

- Arabic: Mother tongue.
- English: Very Good – spoken and written.
- Russian: Very Good – spoken and written.

OTHER SKILLS

- Aspen HYSYS.
- International computer driving license (ICDL).
- Maple (mathematical and analytical software).
- AQUASEA (surface water and contaminant transport modeling software).
- CORMIX Mixing Zone Software.

ANALYTICAL INSTRUMENTS

- X-ray Diffraction (XRD).
- X-ray fluorescence (XRF).
- Atomic Adsorption Spectrometry (AAS).

COMMITTEES MEMBERSHIPS

- Member of the Board of Chemical Engineering Department: 2011-Now.
- Chairman of the Scientific Committee of the College of Engineering for the academic year 2024/2025.
- Chairman of the Study Plans Committee of the College of Engineering for the academic year 2022/2023.
- Member of the Graduate Studies Committee at the College of Engineering for the academic year 2022/2023.
- Member of the College of Engineering Council for many academic years.
- Member of the Quality and Academic Accreditation Committee in the College of Engineering for the academic year 2021/2022.
- Member of the University Council for the academic year 2016/2017.
- Member of the strategic plan committee of the College of Engineering for the years 2016 – 2020.
- Member of the Jury Committee for the graduation projects of the Jordanian Engineers Association 2016-2019.