

Shadi Y. Moqbel

Civil Engineering Department

School of Engineering

The University of Jordan

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Education

Ph.D. Environmental Engineering, 2009, University of Central Florida, Orlando, Florida, USA.

Dissertation: Characterizing spontaneous fires in landfills

Advisor: Debra Reinhart

M.Sc. Civil Engineering, 2004, Jordan University of Science & Technology, Irbid, Jordan. Major: Water Resources and Environmental Engineering.

B.Sc. Civil Engineering, 2002, Jordan University of Science & Technology, Irbid, Jordan. Major: Water Resources and Environmental Engineering.

Research Interest

- Solid waste management
- Social interaction with environmental system
- Environmental systems modeling

Working experience

- **Associate Professor** at the Civil Engineering Department, The University of Jordan, Amman, Jordan (October 2018 – present). Responsibilities include teaching various environmental engineering courses, conducting research, supervising graduation projects and master thesis students, participating in university committees including the ABET accreditation committee and curriculum committee.
 - **Assistant Professor** at the Civil Engineering Department, The University of Jordan, Amman, Jordan (September 2013 – October 2018). Responsibilities include teaching various environmental engineering courses, conducting research, supervising
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graduation projects, participating in university committees including the ABET accreditation committee and curriculum committee.

- **Assistant Professor** at Civil Engineering Department, Al-Isra Private University, Amman, Jordan (June 2010 – September 2013). Position duties were teaching at least 4 civil engineering courses per semester, supervising graduation projects, and participating in department committees.
 - **Adjunct faculty** for the Civil Engineering Department at Jordan University of Science and Technology, Spring 2012.
 - **Postdoctoral Fellow**, April 2009 – April 2010, in the Geology and Geological Engineering Department at Colorado School of Mines, Golden, Colorado, USA. Responsibilities included building a coupled hydrological-atmospheric model for the San Joaquin Basin (Central Valley)-California and studying the interaction between subsurface-surface-atmospheric parameters. Software used is ParFlow for simulating groundwater and surface water and Community land model (CLM) and Weather Research Forecasting model (WRF) for surface interaction and atmospheric forcing. The work evaluated the groundwater system in the San Joaquin Basin, the surface water hydrology, and the water and energy interactions between the surface and subsurface. The uniqueness of this work comes from simulating effectively a huge basin at high resolution and including mountains and flat terrain.
 - **Guest lecturer**, University of Central Florida. I served as a guest lecturer on solid waste management on two occasions: one for an environmental engineering class and one for non-engineering students.
 - **Graduate Research Assistant**, August 2006 – March 2009, in the Civil, Environmental and Construction Engineering Department at University of Central Florida, Orlando Florida. Work included investigating spontaneous fires in landfills, waste piles, and bioreactors, designing landfills including landfills applying waste reduction and recycling strategies, conducting a survey filled by landfill operators and owners, diagnosing landfill fires causes and conditions, assessing landfill operators' response to landfill fires and extinguishing methods used, performing solid waste characterization study, and modeling landfill thermal behavior
 - **Civil Engineer**, June 2004 – August 2004, Dorsch Consult, Amman, Jordan.
 - **Graduate Research Assistant**, May 2003- May 2004, at Jordan University of Science & Technology (J.U.S.T), Irbid, Jordan. (Project: Modeling Groundwater Flow and Contaminants Transport).
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Work included simulating the 3-D movement of groundwater for two aquifers in a three overlaid aquifer system with a surface area estimated to be about 12,700 km². Then, results from the ParFlow model were coupled with SLIM-Fast to simulate the solute movement. Duties included assessing solute transport, water age, and flow routes

- **Graduate Research Assistant**, August 2002 – April 2003, in the Civil Engineering Department at Jordan University of Science & Technology (J.U.S.T), Irbid, Jordan. (Project: Treatment of Grey Water Using Subsurface Constructed Wetland and Impact of Treated Grey Water on Soil and Vegetation). Work included the construction of subsurface constructed wetland, construction of greywater collection and irrigation systems, operation and maintenance of the hydraulic system, sampling, and data collection.

Student Advisement

- Supervised 6 M.Sc. Theses
- Supervised 25+ B.Sc. Capstone Project

Supervised MS Theses

- Development of a priority-based model for rehabilitation of water networks in Amman distribution zones
- Predicting municipal solid waste generation using artificial neural network in northern Jordan
- Life cycle assessment of municipal solid waste: a case study of Gaza municipality, Palestine
- Feasibility study for implementing a pharmaceutical take-back program in Jordan
- Assessment of drinking water quality using Water Quality Index in Al Baqa'a Refugees Camp - Jordan
- The Impact of Syrian - Refugees on the solid waste management in the Mafraq City

University Activities

- JU University council member (Academic year 2020/2021)
 - School of Engineering Quality Assurance and Accreditation Committee
 - School of Engineering Emergencies Response Committee
 - Department of Civil Engineering Representative for Specification
 - Department of Civil Engineering ABET accreditation Committee (Chair and member).
 - Developing an ABET learning-outcome-based course file generator.
 - Department of Civil Engineering Social Committee
 - Undergraduate Civil Engineering Curriculum Committee
 - Department of Civil Engineering Laboratories Upgrading Committee
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- Water and Environmental Engineering track coordinator in the Civil Engineering Department (2014/2015 and September 2020- now).
- Monitoring the JU Student Union elections at the Civil Engineering Department several times
- Judging over 40 capstone projects in the Civil Engineering Department
- Environmental assessment of the new prosthetics workshop inside JU.
- JU representative in the Jordan Standards and Metrology committee for decentralized wastewater treatment plants.
- Participate in formulating a new international eMaster degree in Water Resources Engineering (eMWRE) program. The program is supervised by IHE and five international universities including the University of Jordan.

Publications:

- **Shadi Moqbel**, Debra Reinhart and Ruey-Hung Chen, “Factors Influencing Spontaneous Combustion of Solid Waste” Waste Management (2010), Vol. 30, p 1600-1607.
 - **Shadi Moqbel**, Debra Reinhart and Ruey-Hung Chen, “Spontaneous Combustion Fires in MSW Landfills: Energy Consideration” Eurasia Waste Management Symposium Proceedings (2011).
 - **Shadi Moqbel** and Debra Reinhart, “Spontaneous Landfill Fires: Investigation and Simulation” 5th Jordanian International Civil Engineering Conference proceedings, Amman, Jordan (2012).
 - Amin Almasri and **Shadi Moqbel**, “Numerical Evaluation of AASHTO Drag Force Coefficients of Water Flow around Bridge Piers”, Journal of Engineering Materials and Technology, (2016) Vol 139 (2).
 - **Shadi Moqbel** and Wa’il Abu-El-Sha’r, “Modeling Groundwater Flow and Solute Transport at Azraq Basin Using ParFlow and Slim – Fast”, Jordan Journal of Civil Engineering (2017), Vol 12(2).
 - Assal Haddad, **Shadi Moqbel**, Monther Abdelhadi "Evaluating the effect of rain on the fate of polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) accumulated in polluted trees in Amman, Jordan" Environmental Science and Pollution Research, Vol 25 (11): 10644–10653 (2018).
 - Assal Haddad, **Shadi Moqbel** " Modeling of dioxin levels in pine needles exposed to solid waste open combustion emissions" Waste Management Vol. 79 (510-515) (2018)
 - **Shadi Moqbel** "Solid Waste Management in Educational Institutions: The Case of The University of Jordan" Environmental Research, Engineering and Management, Vol. 74 (2), 23-33 (2018).
 - **Shadi Moqbel**, Ziad El-tah, Assal Haddad. "Littering in the developing countries: The case of Jordan" Polish Journal of Environmental Studies. Vol. 28 (5), 3819-3827 (2019).
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- **Shadi Moqbel**, Ziad El-tah, Assal Haddad. "Anti-Littering in developing countries: motivating the people of Jordan " *Waste Management and Research* Vol. 38 (7), 726-733, (2020).
- **Shadi Moqbel**, Rund Abu-Zurayk, Ayat Bozeya, Raed Alsisan, Abeer Al Bawab "Assessment of sustainable recycling at The University of Jordan", *International Journal of Sustainability in Higher Education*. Vol. 21 (6), pp. 1111-1129. <https://doi.org/10.1108/IJSHE-11-2019-0334> (2020)
- **Shadi Moqbel** "Evaluating bioreactor landfill as an energy source", *International Journal of Energy and Environmental Engineering*. Vol 12 (1) (2021). <https://doi.org/10.1007/s40095-020-00350-4>.
- Husam Abu Hajar, Lubna Al-Qaraleh, **Shadi Moqbel**, Amal Alhawarat "Prospects of Sustainable Waste Management in Developing Countries: A Case Study from Jordan". *Environmental Monitoring and Assessment*, Vol 193, 731 (2021). <https://doi.org/10.1007/s10661-021-09522-z>

Conferences:

- **Shadi Moqbel** & Debra Reinhart, "*Behavior of Landfills Leading to Spontaneous Combustion*", at the 5th Intercontinental Landfill Research Symposium (ICLRS), Copper Mountain, Colorado, USA, September 10-12, 2008.
 - **Shadi Moqbel**, Reed Maxwell, Andrew F. B. Tompson, Jeff L. Wagoner, Kayyum Mansoor, Steve Smith, Carol Woodward, Julie Lundquist, and Jeffrey Mirocha, "Integrated Hydrologic Modeling of the Greater San Joaquin River Basin, California". 2009 AGU Fall Meeting, San Francisco, California, USA, December 14-18, 2009.
 - **Shadi Y. Moqbel**, Reed M. Maxwell, Andrew Tompson, Jeffery Wagoner, Kayyum Mansoor; Steven Smith, Carol Woodward, Jeffrey Mirocha, Julie Lundquist. *Climate Change Effects On the Greater San Joaquin River Basin, California*. 2010 Groundwater Summit, Denver, Colorado, USA, April 11-15, 2010.
 - **Shadi Moqbel**, Debra Reinhart and Ruey-Hung Chen, "Spontaneous Combustion Fires in MSW Landfills: Energy Consideration" *Eurasia Waste Management Symposium* (2011).
 - **Shadi Moqbel** and Debra Reinhart, "Spontaneous Landfill Fires: Investigation and Simulation" 5th Jordanian International Civil Engineering Conference, Amman, Jordan (2012).
 - Amin Almasri and **Shadi Moqbel**, "Numerical Evaluation of drag coefficient of flow around different bridge piers shapes", *Multi-physical solutions for harsh environments: Computations and Experiments*, Seoul, Korea, March 21-22, 2016.
 - Assal Haddad and **Shadi Moqbel**, "Impact assessment of open combustion of municipal solid waste (MSW) through biomonitoring of dioxin concentration in pine trees needles in an urban site in Amman Jordan", *Sardinia 2017 / sixteenth international waste management and landfill symposium / 2 - 6 October 2017*.
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Funded Projects:

- Co-utilization of *Eisenia fetida* and *Galleria mellonella* in disposable paper cups disposal (2020-2022). Fund: 14,750 JOD (\$20,775). PI: Shadi Moqbel.
- Evaluating the use of MSW continuously aerobic bioreactor landfill as an alternative energy source (2016-2019). Fund: 20,000 JOD (\$30,000). PI: Shadi Moqbel.
- Studying the viability of composting food waste at the University of Jordan (2016-2019). Fund: 6,050 JOD (\$9,000). PI: Shadi Moqbel

Reviewer:

I served as a reviewer for:

- 1- Waste Management
- 2- Waste Management and Research
- 3- Environmental Progress and Sustainable Energy
- 4- Environmental Research, Engineering, and Management
- 5- Journal of Porous Medium
- 6- Journal of Environmental Planning and Management

Associations membership and Volunteering

- Member of American Academy of Environmental Engineers & Scientists
- Member of the American Society for Engineering Education
- Member of Jordanian Engineers Association
- Fellow to the Royal Department for Environment Protection, Jordan
- Member of Air and Waste Management Association (2005-2011)
- President of the AWMA student chapter at UCF (2005-2007)
- President of the WEF student chapter at UCF (2005-2007)
- Treasure for UCF Society of Environmental Engineers (2007-2008)
- Volunteered as a judge in 2006 for the Science fair at University High School Orlando, Florida.

Awards & Certificates

- J. W. Fulbright Scholarship – US Department of State (2004-2006) for pursuing a Ph.D. in Environmental Engineering at the University of Central Florida
 - Honor student for academic achievement at Jordan University of Science and Technology, 2000.
 - Air and Waste Management Association - Florida section scholarship (2006), 3rd place.
 - 3rd place Poster Award at the 5th Intercontinental Landfill Research Symposium (ICLRS), Copper Mountain, Colorado, USA, September 10-12, 2008
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- Graduate Teaching Assistance (GTA) Certificate from the University of Central Florida (2008)
- Supervising Graduation Projects Award by the Jordanian Engineers Association in 2018 for graduation projects achieving 1st and 3rd place in the Jordanian Engineers Association Graduation Projects competition
- Attending Biological Safety workshop in 2005 at UCF
- Attending Chemical Safety and Environmental Management for Laboratories in 2005 at UCF.
- Training of Trainers' Certificate 2013
- Teaching using MethodX, 2018
- Blended Learning, 2019
- Creating Online Courses Certificate, 2020
- OpenStreetMap for GIS analysis in Water Resources Engineering, 2021
- Programming for Geospatial Hydrological Applications, 2021
- Training of Trainers in Didactical Skills, 2021
- Management and Leadership Skills, 2022
- Time Management, 2022

Languages

- Arabic
- English
- German (Beginners level)

Programming languages

- C
 - QBasic
 - Visual Basic
 - Fortran
 - Tcl/Tk
 - PBS and Linux Shell
 - Python
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