

Mo'ayyad Shawaqfah, Ph.D.

Water Resources and Environmental Engineering Division

Department of Civil Engineering

Al al-Bayt University

Mafraq- JORDAN

Phone: (O) 00962-26297000 ext. 2797 and 2824

Mobile: 962-79-7935650 and 00962-79-6666277

E-mail: msss72@yahoo.com or mshawaqfah@aabu.edu.jo

Personal:

Date of Birth : Feb. 27, 1972

Place of Birth : Kitm, Jordan

Nationality : Jordanian

Marital Status: Married (Three children)



EDUCATIONAL BACKGROUND:

Ph.D. (Philosophy Doctorate) Civil Engineering/Environmental Engineering Option, June 2002, Washington State University, Pullman, U.S.A

Thesis title: Numerical Investigation of the Role of Muck layer in Contaminant Migration at Stream/Aquifer Interface.

M.Sc. (Masters of Science) Civil Engineering/Water Resources and Environmental Eng. Option, March. 1997, Jordan University of Science and Technology, Irbid , Jordan.

Thesis title: Decision Making Analysis to Evaluate Recharging an Un confined Aquifer in Jordan.

B.Sc. (Bachelors of Science) Civil Engineering/Water Resources and Environmental Eng. option, June 1994, Jordan University of Science and Technology, Irbid , Jordan.

Graduation Project title: Evaluation and redesign the university wastewater treatment plant (RBC system).

WORK HISTORY:

- (1) Vice Dean, Engineering Faculty, *Al al-Bayt University, September, 2013- present.*
- (2) *Department Head, Civil Engineering Department, Al al-Bayt University, September, 2013- present.*
- (3) *Associate Professor, Civil Engineering Department, Al al-Bayt University, October 2011- present.*
- (4) *Assistant Professor, Civil Engineering Department, Al al-Bayt University, September 2011- present.*
- (5) *Assistant Professor, Civil Engineering Department, Mutah University, September. 2002- September, 2011.*
- (6) *Research Assistant, Albrook Hydraulics Laboratory, WSU, Pullman, USA, September, 2001-August, 2002*
- (7) *Teaching Assistant, Washington State University, Pullman, USA, January, 2000-August, 2001*
- (8) *.Research Assistant, Water and Environmental Research Study Center, University of Jordan, Amman, Jordan, May, 1998- July, 1999.*
- (9) *Research Assistant, Jordan University of Science and Technology, Jordan. September, 1994- January, 1997.*

SKILLS:

Running and developing environmental models

Experience in groundwater flow and contaminant transport modeling using the following software's (PMWIN, GMS, HUDRUS 3D, FEFLOW and VISUAL MODFLOW).

Experience in watershed modeling using (WMS, and HEC-HMS)

Experience in HEC's group software (HEC-RAS, HEC-ResSim, HEC-DSS, ...etc)

Experience in wastewater treatment plant simulation modeling using GPS-X 6.0.

COURSES TAUGHT:

Graduate Level

1. Groundwater Flow and Contaminant Transport.
2. Modeling in Water Resources and Environmental Engineering.
3. Chemistry and Microbiology for Environmental Engineering.
4. Solid Waste Management.
5. Water Treatment Plant Design.
6. Computational Methods in Water Resources and Environmental Engineering.

Undergraduate Level

1. Engineering Mechanics (Statics).
2. Numerical Methods.
3. Engineering Economy.
4. Fluid Mechanics

5. Hydraulic Engineering
6. Hydraulic Engineering Lab
7. Applied Hydraulic.
8. Sanitary Engineering.
9. Sanitary Engineering Laboratory. (Water Quality Lab)
10. Environmental Engineering.
11. Environmental Engineering Lab.
12. Groundwater Engineering
13. Water Resources.
14. Special Topics for Environmental Engineering.
15. Project Design for Environmental Engineering.
16. Hydrology.

UNIVERSITY SERVICES:

1. Vice Dean of Engineering Faculty / Al al-Bayt University. (Sept. 2013 to present).
2. Member of the Sectoral Committee on Water and Environment for the determination of scientific research priorities in Jordan, Higher Council for Science and Technology. (August 2009 to Sep. 2010)
3. Chairperson of Civil Engineering Department / Al al-Bayt University. (Sept. 2013 to present).
4. Member of the Faculty Council, Engineering Faculty / Al al-Bayt University. (Sept 2011 to present).
5. Civil Engineering Department Scientific Research Committee, chairperson / Al al-Bayt University. (Sept 2011 to present).
6. Engineering Faculty Scientific Research Committee, member / Al al-Bayt University. (Sept 2011 to present).
7. Civil Engineering Department Scientific Research Committee, member / Mutah University. (Sept 2002 to Sept 2011).
8. Prince Faisal Center for Dead Sea, Environmental and Energy Research Advisory Committee, Member / Mutah University. (Sept. 2008 to Sept. 2011).
9. Head and member of many Graduation Project Exam Committees.
10. Head of many student transfer and equivalent courses committees, department of Civil Engineering.

11. Member of the Organizing and Scientific Committee of the National Research and Creative Conference for Undergraduate Students in Jordanian Universities, Al al-Bayt University, 2014.
12. Member of the Organizing and Scientific Committee of Irbid Engineering Conference, Irbid, Jordan, 2014

RESEARCH INTERESTS:

Groundwater and contaminant transport Modeling, Groundwater/Surface water interaction Modeling. Water and Wastewater treatment and reuse, Water quality and Waste management, surface water modeling, Application of ANN in Environmental Modeling and Environmental Impact Assessment.

PUBLICATIONS:

Specialized International Conference Proceedings

Blanford, W., Boving, T., Al-Ghazawi, Z., **Shawaqfah, M.**, Al-Rashdan, J., Saadoun, I., Schijven, J., and Ababneh, Q. 2010. "River Bank Filtration for Protection of Jordanian Surface and Groundwater ".World Environmental and Water Resources Congress May 2010, PP. 776-781

Saadoun, I., J. Schijven, **M. Shawaqfah**, Z. Al-Ghazawi, J. AL-Rashdan, W. Blandford, T. Boving, Q. Ababneh and H. van den Berg. 2008. Removal of Fecal Indicator Coliforms and Bacteriophages by Riverbank Filtration (RBF) in Jordan. In: Al-Mattarneh, H., Mohd Sidek, L and Yusoff, M.Z. (eds). Innovations in Water Resources and Environmental Engineering. Proceedings of the International Conference on Construction and Building Technology. Kuala Lumpur, 16-20 June, 2008. Malaysia, pp. 191-198.

Ahmed Bdour, Moshrik Hamdi, and **Moa'yyad Shawaqfah** (2006). Sustainable wastewater treatment technologies and reuse in the urban areas of the Mediterranean region. MEDA WATER International Conference on Sustainable Water Management Rational Water Use, Wastewater Treatment and Reuse, RUWTR 2006.

Bdour A., A. Abulaban, **M. Shawaqfah**, "Potentials and Limitations of Wastewater Reuse in Rural Areas in Jordan: The Reuse Options in the Jordan Valley, 1st international conference in urbanization wastewater reuse, Cypress, 14-16 sep. 2005.

Shawaqfah, M. and M. Barber, "Numerical Investigation of Contaminant Migration in Variably Saturated Region at Stream/Aquifer Interface", AWAR, 2002, p 23-28.

Refereed Indexed Journals

M. Shawaqfah, I. Alqdah, and O. K. Nusier, "Water Resources Management Using Modeling Tools in Desert Regions: The Azraq Basin, Jordan," International Journal of Modeling and Optimization vol. 5, no. 1, pp. 55-58, 2015.

Shawaqfah M. 2014, "Enhancing the Removal of Organic Matter and Nutrient from Wastewater by Using the Packed Bed Biological Reactor". Journal of Environmental Protection, Vol. 5, pp. 232-239.

Elshorbagy W. and **Shawaqfah M.**, 2014, "Development of an ASM1 Dynamic Simulation Model for an Activated Sludge Process in United Arab Emirates" Desalination and Water Treatment, Vol. 4(1), pp. 1-13.

Al-Momani A. and **Shawaqfah M.**, 2013, "Assessment and Management of Flood Risks at the City of Tabuk, Saudi Arabia". The Holistic Approach to Environment 3:1, 15-31.

Al-Momani F. and **Shawaqfah M.** 2013, "Agricultural Solids Waste in South of Jordan: Facts and Figures". Journal of Environmental Protection, Vol. 4(4), pp. 309-314.

Shawaqfah M., Al Momani F. and Al-Anber z., 2012, "Ozone Treatment of Aqueous Solutions Containing Commercial Dyes ", *Afinidad* Vol. (69), no. 559 pp. 229-234.

Saadoun I, Mohammad M., Hameed K., **Shawaqfah M.**, 2008, "Microbial Populations Of Crude Oil Spill Polluted Soils At The Jordan-Iraq Desert (The Badia Region)", Brazilian Journal of Microbiology, Vol. 39: 453-456.

Ahmed Bdour, Moshrik Hamdi, **Shawaqfah, M.**, and Mohammad M. Al-Hussin, 2008 "Enhancing Public Participation in Local Air Pollution Assessment: A Citizen Participation Prototype from Zarqa Governorate, Jordan". Environmental Engineering Science. 25(4): 451-459.

Al Momani F., **Shawaqfah, M.** and Shawaqfah A., Al-Shannag, M., 2008, "Impact of Fenton and Ozone on Oxidation of Wastewater Containing Nitroaromatic Compounds", Journal of Environmental Sciences Vol. 20 , No. 5: 675-682.

Al Momani F., Shawaqfaeh, A. and **Shawaqfah M.**, 2007, Solar wastewater treatment plant for aqueous solution of pesticide, Solar Energy. Vol. 81, issue 10: 1213–1218

Shawaqfah M., Rebhi. A. Damseh, A. J. Chamkha, H. M. Duwairi and Moudar H. Zgoul, 2007, Forced Convection of Blasius Flow of "SECOND-GRADE" Visco-Elastic Fluid, International Journal of Heat and Technology. Vol. 25, n. 1: 145-149.

Al-Sheriadeh, M., Barakat, S., and; **Shawaqfah, M.**, 1999 “Application of a decision making analysis to evaluate direct recharging of an unconfined aquifer in Jordan, Water Resources Management”, Vol13, n. 4. : 233-252.

Training Material:

1. Developed the Training course: Groundwater Modeling.
2. Developed the training course: Applied Groundwater Modeling.
3. Developed training course on Artificial Groundwater Recharge.
4. Developed training course on Geochemistry Modeling.
5. Developed training course on Wastewater Treatment Modeling.
6. Developed training course on Pipe Network Design using EPANET and WATERCAD.
7. Developed training course on Sewer System Modeling Using SEWERCAD.

Funded Research Projects:

1. “Evaluation of River Bank Filtration for Protection of Jordanian Surface and Ground Water Resources”, funded by NATO-Science Program (US \$ 420,000), Co-PI. (2005-2010)
2. “Hydro-geological and Hydro-chemical Investigation of Al-Mujib Basin Using Experimental, Numerical Modeling and GIS”, funded by Mutah University (US \$ 15000), PI. (2009-2010)
3. “Improvement of aerobic biological processes: Increasing organic contaminant removal and decrease the amounts of Sludge”, funded by Mutah University (US \$ 15000), Co- PI. (2007-2008)
4. “Treatment of Volatile Organic by Biological Treatment and Advanced Oxidation Technologies”, funded by Spanish agency for International cooperation, Bilateral Grant. (US \$90,000) Co-PI. (2009-2010).
5. “Numerical and Experimental Investigation of The Environmental Impact of the Dead Sea level fluctuation on the Eastern Part of Dead Sea (fresh/salt water interface migration, Sinkholes Formation and Red Sea-Dead Sea Canal effects)”, funded by Ministry of Higher Education and Scientific Research, Jordan.(\$ 240,000). PI. (2009-2012)

6. "Development of a Biogas Plant as an Alternative Source of Energy", funded by Ministry of Higher Education and Scientific Research, Jordan. (\$ 50,000). Co-PI. (2009-2011)
7. "Piloting and Strengthening Adaptation Capacity to Climate Change in the Zarqa River Basin", funded by UNDP, Jordan. (\$ 135,000). Co-PI, (2010-2012)
8. "Flood wave Propagation and Infiltration in Desert Regions: The Azraq Basin, Jordan", funded by USAID (PEER Program).(\$ 93,350). PI. (2012-2014).
9. "Reclaimed Wastewater as Groundwater Recharge" funded by Al al-Bayt University.(\$ 80,000). PI. (2014-2015).

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

- Jordanian Engineers Association (JEA)
- Jordan Environment Society (JES)
- Arab Healthy Water Association (AHWA)

HONORS:

- Second student award, Dept. of Civil Eng., :Jordan University of Science and Technology Univ., 1994/1995
- First student recognition in the water resources & environmental eng. Masters program, JUST Univ. 1997.
- Scholarship for the M.Sc. degree by Jordan University of Science and Technology , 1995
- Scholarship for the Ph.D. degree by Mutah University, 1999.

M.Sc. THESES SUPERVISED:

1. " Groundwater resources management in Al-Jafer basin using modeling tools ", by Saif Shawawreh, Civil and Environmental Engineering Department, Mutah University, August 2007.
2. " Reclaimed Wastewater as: Groundwater Recharge (Experimental and Model Analysis ", by Mohammad Makawi, Civil and Environmental Engineering Department, Mutah University, January 2008.
3. " Paper recycling in Jordanian University ", by Jafer Al-Btoush, Civil and Environmental Engineering Department, Mutah University, August 2008.

4. " Development of three dimensional groundwater model for Al-Corridor well field/Amman–Zarqa basin ", by Amjad Al-Adaileh. Civil and Environmental Engineering Department, Mutah University, December 2008.
5. "Improving the work and maintenance procedures using the Key Performance Indicators (KPI's): Field study on the management of operation and maintenance of the Region Tabuk –General Directorate of Water" by Abdulaziz Rashed Alharbi. Civil and Environmental Engineering Department, Mutah University, June 2011.

M.Sc. Theses Co-Supervised Or Examining Committee Member:

1. "The Use of Modflow to Study the Possibilities of Artificial Ground Water Recharge to Mujib Watershed". By Tamer Assa'ad, Civil Engineering Department, Jordan University of Science and Technology. April 2004.
2. "Image-Based ANN Modeling of the Performance of Wastewater Treatment Plants", by Rami Alawneh, Civil Engineering Department, Jordan University of Science and Technology, 2005
- 3."Impacts of Hospital Liquid Waste on Domestic Wastewater Treatment Plants", by Sumaiah Fraiwan, Civil Engineering Department, Jordan University of Science and Technology, 2006.
4. "Water and Sediment yield for Wala Dam Catchment area ", by Esra Al-Tarawneh. Civil and Environmental Engineering Department, Mutah University, December 2007.
5. "Evaluation of Car Emission As One the Main Contributors to Air Pollution", by Nagam Al-Soub. Civil and Environmental Engineering Department, Mutah University, December 2007.
6. "Simulation of Groundwater Recharge from Wala Dam Reservoir", by Hamed Al-Nouaimat. Civil and Environmental Engineering Department, Mutah University, December 2007.
7. "A Geo-hydrological Study of Groundwater Artificial Recharge in Madoneh Area", by Basam Al-Qaisi. Civil and Environmental Engineering Department, Mutah University, April 2008.
- 8."Fate and Transport of Nitrate in the Coastal Aquifer of Gaza Strip and the Feasible Management Options". Civil Engineering Department, Jordan University of Science and Technology. April 2008.

9. "Development of Design Criteria for the Construction of Four Retention Dams in Wadi Modeneh/Jordan", by Mohammad Al-Bustanji. Civil and Environmental Engineering Department, Mutah University, May 2008.
10. "Environmental Impact Assessment of the Jordanian oil shale retort water", by Mohammad Al-Jaradeen. Civil and Environmental Engineering Department, Mutah University, August 2008.
11. "The Environmental Impact Assessment of Scrap Tires Combustion in Jordan", by Emad Al-Soud. Civil and Environmental Engineering Department, Mutah University, January 2009.
12. "Evaluation Soil Collapsibility due to presence of Salt using Ultra Sound technique", by Odeh Abu Odeh, Civil Engineering Department, Hashmite University, July, 2011.
13. "Xeriscaping in Amman: A sustainable Water Conservation Approach", by Hana Hani Badad , IWRM Program, Jordan University, January, 2013.
14. "Climate change impacts on the water balance- analyzing approach for a hydrologic multi-model ensemble. A case study from Chiba watershed, Tunisia", by Iberle, Claudia , IWRM Program, Jordan University, January, 2013.

Technical Consultation:

- ✓ April- May 2005, "Design a wastewater treatment plant in Al-Ghor". IDRC, Canada
- ✓ June-August 2006, "Best Management Practices to Improve On-Farm Water and Chemical Use Efficiency ". Al- Anbat Farms.
- ✓ June-August 2007, "Realizing Economic Value From Industrial Waste Streams". Al- Kilani Paints.
- ✓ June-August 2008, "Refrigeration Using Solar Energy". Jarash Modern Ice Factory.
- ✓ June-August 2009, "Design an Industrial Wastewater Treatment Plant". Rum Paints Factory.
- ✓ June, 2009–June 2010, "Activated Sludge Modeling using ASM1". AL-Ain University, UAE.

- ✓ June-August 2010, "Food Processing Industrial Wastewater Treatment Plant".
Alfa Beta Factory.

References

Professor Mohammad Shatanawi, Ph.D.
Former Minister of Water and Irrigation
Amman, Jordan
(962) 777484499

Professor Osama Nusair, Ph.D.
Vice President/ Al al-Bayt University
Mafraq, Jordan
(962) 799066999

Professor Abbas Ijam, Ph.D.
Civil Engineering Department/ Mutah University
Karak, Jordan
(962) 777867044