



## **Research Interests**

- Hydraulics
- Environmental Hydrology and Water Resources
- Erosion and Sediment Transport
- Fluvial Geomorphology
- Surface and Ground Water Modeling

## **Courses Taught**

### **At The University of Jordan**

Hydraulics, Hydraulic Structures, Environmental Engineering, Fluid Mechanics, statics, Advanced Surface Water Hydrology, Advanced Hydraulic Structures, advanced hydraulics for Master Degree.

### **At The Hashemite University**

Hydraulics, Special Topics in Civil Engineering, Surface Water Hydrology, Hydraulics and Fluid Lab, Contracts and Specifications, Wastewater Engineering, Technical Writing, Mechanical structures, Statics, Engineering Drawing-Visual communication (Manual drawing, Auto CAD), Sediment Transport, Groundwater Hydrology, Water Treatment Methods

## **Responsibilities**

Teaching and doing Research in the field of hydraulics, hydrology and sediment transport

## **Professional Experiences**

Dr. Hadadin has more than 30 years as qualified experience as hydraulic and hydrologic engineering. He worked as designer engineers in Ministry of public works and Housing in Jordan. His responsibilities were studying and designing the hydraulic structures such as box and pipe culverts, lining ditches, furrow ditches, dike, manholes, drop inlet structure, side slope protection, erosion control, surface and subsurface drainage system. Furthermore he worked as material engineer; he has an experience in testing construction materials. He got his master degree from Jordan University in hydraulic and hydrologic division, and he got PhD from Colorado State University in Hydraulics and Fluvial Geomorphology.

## **Computer Use**

- HEC-RAS Water surface Profile
- HEC-6 River and Reservoir Scour and Deposition
- GMS Ground Water Modeling System

- SWM Stanford Watershed Model Watershed Rainfall Runoff Simulation Process.
- SPSS Statistical Analysis of Hydrological Data.
- ARMA Time series Analysis and Generation (Runoff)
- ARIMA Time series Analysis and Generation. (Rainfall)
- EC HMS Event rainfall- Runoff Simulation Process.
- SSARR Stochastic hydrology- synthetic monthly flows.
- HEC ResSim Reservoir Simulation and Operation.
- HEC-5Q Reservoir System Operation Including Water Quality Control
- MODFLOW
- SMADA
- HEC-HMS
- EPANET

## **Training Courses**

- Advanced international training program on “Environment and Public Transport Management”, Sida-Swedish International Development Cooperation Agency and the Swedish National Road and Transport Research Institute, Sweden-Linkcoping, April 13-May 20,1999
- Environmental Impact Assessment (EIA), World University Service of Canada, April 1998,
  1. Report Review Course
  2. Scoping and term of Reference Development Course
  3. EIA Overview Workshop

## **Thesis Supervisor**

1. "Study the effect of temperature on water consumption in great Amman municipality", by: Tareq Al-Ghunme, Civil Engineering Department, 2012 (External Committee Member Examiner)
2. "Performance evaluation of decentralized domestic wastewater treatment system during startup phase- Case Study :Al-Kfrain" by: Jumana Al-Jafari, Civil Engineering Department, 2013 (External Committee Member Examiner)

## **Awards**

1. On the Honor Dean's List, College of Engineering, Yarmouk University, 1981-1982
2. Civil Engineering Dept. Scholarship /The Hashemite University in 2000
3. Research and Teaching Assistantships, Colorado State University, Fort Collins, 2000-2003
4. SGEM Award Certification No. 00008134 in Recognition of Outstanding Accomplishment Contribution, 2008

5. Awards of Scientific Research at the Hashemite University (3 times), in 2012 and 2013
6. The University of Jordan, UJ's High Impact Researchers Ranking of July 2015
7. The University of Jordan, UJ's High Impact Researchers Ranking of January 2016
8. Citations for my research papers reach to 287 citations until this date

## **Professional Membership**

Jordan Engineers Association- Civil Engineering  
 International Water Association (IWA)  
 Water Environmental Federation (WEF)  
 American Water Resources Association (AWRA)

## **Experiences**

### **-1985-Aug.2000**

Ministry of Public Works and Housing (MPWH), (Amman-Jordan)

Position: Hydraulic and Hydrologic Engineer

- Study and design the drainage systems for several roads in different region in Jordan. These roads are classified as highway, primary, secondary, rural and village road
- Supervising the construction several of hydraulic structures.
- Creating a simulation model to predict the relationship between rainfall and runoff to simulate portion of hydrologic cycle in Jordan by modifying Stanford Watershed Model (S.W.M).

### **-Aug. 2000-2003**

PhD student in Civil Engineering Hydraulic in CSU, working with many professors in Colorado State University as Research and Teacher Assistant

### **- Aug.2003- Sep. 2014**

Hashemite University / Zarqa

- 2003-2009 **Assistant professor, Civil Engineering Department**, Faculty of Engineering, The Hashemite University , Zarqa, Jordan
- August 2009-Septemer 2010 **Head, Civil Engineering Department**, The Hashemite University , Zarqa, Jordan
- 2009- 2014 **Associate professor Civil Engineering Department**, The Hashemite University, Zarqa, Jordan

### **Sep. 2014-Still**

**Associate Professor, Civil Engineering Department**, The University of University, Amman, Jordan

## Selected Publications

1. **Hadadin N.** (2016). "Variation in hydraulic geometry for stable versus incised streams in the Yazoo River basin – USA" *International Journal of Sediment Research*, <http://dx.doi.org/10.1016/j.ijsrc.2016.03.003>, Available online 8 April 2016, Publisher: by Elsevier, In Press
2. **Hadadin N.** (2016). "Modeling of Rainfall-Runoff Relationship in Semi-Arid Watershed in the Central Region of Jordan", *Jordan Journal of Civil Engineering*, Volume 10, No. 2, 2016, 209-218, [www.just.edu.jo/~jjce](http://www.just.edu.jo/~jjce)
3. **Hadadin N.** (2016). "Floodplain Hazard Mitigations, Solutions and Recommendations for Wadi Asla in Jeddah-Saudi Arabia", *Journal of Environmental Science and Engineering A*, Vol. 5, No. 2, pp. 71-81, publisher: DAVID Publishing, <http://www.davidpublishing.com/journals>, DOI: 10.17265/2162-5298/2016.02.003,
4. **Hadadin N.** (2015). "Dams in Jordan current and future perspective", *Canadian Journal of Pure and Applied Sciences*, Vol. 9, No. 1, pp. 3279-3290, publisher: SENRA Academic Publishers British Columbia Available online at: <http://www.cjpas.net/>
5. **Hadadin N.** (2015). "The effect of shape factor on the average bed shear stress in open channel flow", *Global Nest Journal*, 14th International Conference on Environmental Science and Technology, Rhodes, Greece, 3-5 September 2015, Publisher CEST, Issue: CEST2015\_00642
6. **Hadadin N.**, Tarawneh Z., Shatanawi k., Banihani Q., and Hamdi M., (2013). "Hydrological Analysis for Floodplain Hazard of Jeddah's Drainage Basin, Saudi Arabia", *The Arabian Journal for Science and Engineering (AJSE)*, Arab J Sci Eng DOI 10.1007/s13369-013-0812-x, Publisher: Springer
7. Akawwi E, Al-Rzouq R., **Hadadin N.**, Qtishat K., Alabsi I., Al-Qara K., (2013) "Estimating the Landslides magnitudes along the Na'ur–Dead Sea Highway- Jordan by Using Geomatics Techniques" *Australian Journal of Basic and Applied Sciences*, 7(7): 721-731, 2013, ISSN 1991-8178
8. **Hadadin N.**, Shatanawi K., Al-Weshah R., (2013). "Rainwater harvesting in Jordan: a case of Royal Pavilion at Amman Airport" *Desalination and Water Treatment*", Publisher: Taylor & Francis, (2013) 1–11, <http://dx.doi.org/10.1080/19443994.2013.817506>
9. **Hadadin N.**, Shawash S., Tarawneh Z., Banihani Q., and Hamdi M., (2012). "Spatial hydrological analysis for water harvesting potential using ArcGIS model: the case of the north-eastern desert, Jordan", *Water Policy*, IWA Publishing, doi: 10.2166/wp.2011.058 14, 524–538, <http://www.iwaponline.com/wp/default.htm>

10. **Hadadin N.** (2012). "Evaluation of several techniques for estimating stormwater runoff in arid watersheds", *Environmental Earth Sciences*, DOI 10.1007/s12665-012-2010-7, Publisher: Springer-Verlag Berlin Heidelberg Environ Earth Sci (2013) 69:1773–1782
11. Banihani Q., **Hadadin N.**, and Jamrah A., (2012). "Start-up of Anaerobic Ammonium Oxidation (Anammox) from Conventional Return Activated Sludge in Up-flow Anaerobic Sludge Blanket (UASB) Reactor for Autotrophic Nitrogen Removal from Wastewater" , *Jordan Journal of Civil Engineering*, Volume 6, No. 1, 2012, 17-27, [www.just.edu.jo/~jjce](http://www.just.edu.jo/~jjce)
12. **Hadadin N.** (2012). "Development new sediment transport equation for natural channel", *World Academy of Science, Engineering and Technology* 68 2012, 2010, 1639-1643, <http://www.waset.org>
13. **Hadadin N.** (2011). "Spatial stochastic and analytical approaches to describe the complex hydraulic variability inherent channel geometry", *Hydrology and Earth System Sciences Discussions*, 8, 1–26, 2011, 2011, 6967-6992, [www.hydrol-earth-syst-sci-discuss.net/8/1/2011](http://www.hydrol-earth-syst-sci-discuss.net/8/1/2011) Publisher: Copernicus Publications on behalf of the European Geosciences Union
14. **Hadadin N.**, Qaqish, M., Akawwi, E., and Bdour, A., (2010). "Water shortage in Jordan—Sustainable solutions", *Desalination*, 250 (2010), published by Elsevier B.V., 197–202, [www.elsevier.com/locate/desal](http://www.elsevier.com/locate/desal)
15. **Hadadin N.** (2010). "Theoretical and Analytical Approaches for Investigating the Relations between Sediment Transport and Channel Shape", Refereed International Conference: *World Academy of Science, Engineering and Technology (WASET)*, 48 2010, 156-161, <http://www.waset.org>.
16. **Hadadin N.** (2009). "An integrated sustainable water management in Jordan", *Modern Management of Mine Producing Geology and Environmental Protection*. SGEM 2009 pp:1- 10
17. Tarawneh, Z., and **Hadadin, N.** (2009) "Reconstruction of the rainy season precipitation in central Jordan", *Hydrological Sciences Journal*, Publisher: Taylor & Francis 54(1), 189-198, <http://www.tandf.co.uk/journals/THSJ>
18. Akawwi, E., Kakish, M., **Hadadin, N.** (2009). "Geological Model and Groundwater Aspects of the Area Surrounding Eastern Shores of Dead Sea (DS)–Jordan" *WSEAS Transactions on Information Science and Applications*, , Issue 4, Volume 6, 2009, 670-683, <http://www.wseas.org>
19. Tarawneh, Z., **Hadadin, N.** and Bdour, A., (2008). "Policies to Enhance Water Sector in Jordan". *American Journal of Applied Sciences*, 5 (6): 698-704, 2008.

20. **Hadadin N.** (2008). "Development new sediment transport equation for flume" *Modern Management of Mine Producing Geology and Environmental Protection. SGEM 2008*, pp. 43-50
21. Bdour, A., Altrabsheh, B, **Hadadin, N.**, and Al-Shareif, M., (2007). "Assessment of Medical Wastes Management Practice: A Case Study of the Northern Part of Jordan" *Journal of Waste Management*, published by Elsevier B.V, Vol 27, pp: 746-759.  
<http://dx.doi.org/10.1016/j.wasman.2006.03.004>
22. **Hadadin, N.**, (2007). "Downstream Hydraulic Geometry for Incised Channels", *WIT Transactions on the Built Environment*, Vol.92, pp: 225-234.
23. **Hadadin, N.** and Tarawneh, Z., (2007). "Environmental Issues in Jordan, Solutions and Recommendations". *American Journal of Environmental Sciences*, Vol. 3, Issue 1 pp: 30-36.
24. **Hadadin, N.**, (2006). "Watershed Models and their Applicability to the Simulation of the Rainfall- Runoff Relationship", *WIT Transactions on Engineering Sciences*, Vol.52, pp:193-202.
25. **Hadadin, N.**, (2005). "Rainfall Intensity Duration Frequency Relationship in the Mujib Basin in Jordan". *Journal of Applied Sciences*, Vol. 8(10), pp: 1777-1784.
26. **Hadadin, N.**, and Bdour, A., (2005). "At station Hydraulic Geometry for Incised Channels". *Journal of Applied Sciences*, Vol 5(9), pp: 1606-1612.
27. Bdour, A., and **Hadadin, N.**, (2005). "Potentials and Limitations of Wastewater Reuse in Rural Area in Jordan. The Reuse Option in the Jordan Valley." *Journal of Agronomy*, Vol. 4(4), pp: 315-322.  
<http://www.ansinet.com/current.php?issn=1812-5379>

## Research Papers to be Published

1. **Hadadin, N.**, "Modifying HEC-RAS computer program". (*To be published*).
2. **Hadadin, N.**, "Creating a new method for stable channel design based on maximum sediment transport hypotheses at high sediment concentration and at lower and upper regime". (*To be published*).

## Institutional and Professional Services

### At The University of Jordan

- Coordinator of the Department Scientific Research Committee

- Member of the Department Scientific Research Committee in Engineering College
- Coordinator of the Department Library Committee in Engineering College
- Member of the Department Library Committee
- Member of the Department high studies Committee
- Member of the university of Jordan committee for water harvesting

### **At The Hashemite University**

- Member of the College Examinations Committee
- Member of the Department Scientific Research Committee
- Member of the Department Graduate Projects Committee
- Member of Studying Schedule Committee
- Member of the Social Committee
- Member of Library Committee
- Member of the Lab Committee
- Member of the Department Students Training Committee
- Coordinator for Several Courses
- Commentator of the Department Examinations Committee
- Member of the College Examinations Committee
- Member of the Department Scientific Research Committee
- Member of Studying Schedule Committee
- Students Advising
- Graduating Projects Supervision
- Coordinator of the department Strategic Planning

### **Other universities**

- Prepared the B.Sc curriculum study Plan for under graduate Civil Engineering/water and Environmental courses at The American University of Madaba/ Jordan
- Prepared the B.Sc curriculum study Plan for under graduate Civil Engineering/water and Environmental courses at The Hashemite University/ Zarqa-Jordan

## **Conferences**

1. CEST2015 14th International Conference on Environmental Science and Technology, Rhodes, Greece, 3-5 September 2015, <http://cest.gnest.org>.
2. *World Academy of Science, Engineering and Technology (WASET)*, Malaysia, Kuala Lumpur 24-29 August, 2012, <http://www.waset.org>
3. *World Academy of Science, Engineering and Technology (WASET)*, Singapore August, 20-25 2011, <http://www.waset.org>

4. 9<sup>th</sup>International Multidisciplinary Scientific Geo-Conference and EXPO SGEM 2009 , Modern Management of Mine Producing Geology and Environmental Protection, 14-19 June, 2009, Bulgaria
5. 8<sup>th</sup>International Scientific Conference SGEM 2008, Modern Management of Mine Producing Geology and Environmental Protection, 16-20 June, 2008, Bulgaria
6. International Conferences in Fluid Structure Interaction IV. New Forest, UK, 14-16 May, 2007.
7. ELTeCS Workshop for Teachers of English, Developing Critical Thinking and Problem-Solving Skills. Scientific Day, British Council, 29 Oct, 2007
8. International Conferences in Advances in Fluid Mechanics VI, Skiathos, Greece, 8-10 May, 2006.
9. The Scientific Week in Water, Energy and Environment, the Higher Council for Science and Technology No.12 Amman, Jordan. 27-28 Nov, 2006.
10. International Hydrology Program (IHP), Jordan University of Science and Technology, Amman, Jordan, 30 May 2006.
11. 2005 New York City Watershed Science and Technical Conference, Advancing the Science of Watershed Protection, 2005.
12. The International Forum on Water Resources, Technologies and Management in the Arab World, 8-10 May, 2005, Sharjaj, UAE.
13. The 8<sup>th</sup> International Conference on Fluvial Sedimentology. Delft, the Netherlands, 7-12 August, 2005.
14. World Conference in Ecological Restoration Zaragoza, Spain, 12-18 Sep.2005.
15. AGU Hydrology Days 2003, Colorado State University, Fort Collins, USA, March 31- April 2, 2003.
16. AGU Hydrology Days 2002, Colorado State University, Fort Collins, USA, April 1- 4, 2002.
17. Environment and Public Transport Management, Advance International Training Program in Sweden 11 May to 20 August 2000

