**ZIAD AL-GHAZAWI, Ph.D.**

Environmental and Water Resources Engineering Division

Department of Civil Engineering

Jordan University of Science and Technology (JUST)

PO Box 3030

Irbid 22110 - JORDAN

Phone: (H) 962-79-742-9048, (O) 962-2-7201000 ext. 22139, 22134

Mobile: 962-79-923-7156

E-mail: [alghazawi@gmail.com](mailto:alghazawi@gmail.com) or [gziad@just.edu.jo](mailto:gziad@just.edu.jo)



Personal:

# Date of Birth : Dec. 20, 1963

Place of Birth : Irbid, Jordan

Nationality : Jordanian

Marital Status : Married

### Summary

Over 28 years of experience in environmental and water resources engineering, management, training and consultation. Managing (tech director) the WASH&CC Innovation Hub, funded by UNICEF (US $ 1.2 Million). Managed the irrigation wastewater reuse project-Phase I, II &III (1.14 Million US $, funded by USAID and Jordan’s Ministry of Water) in north Jordan. Managed the project: Ecosystem approaches to human health in north Jordan Valley Phase I&II (150, 000 CAN $, funded by IDRC). Managed the Jordan’s part of the project: Regulating PPPs for the poor in the water and sanitation sector (280,000 Pounds, funded by DFID). Managed the River Bank Filtration Project at Zarqa River (281,000 Euros, funded by NATO Science Program). A certified trainer in PA (public awareness) and PRA (Participatory Rural Appraisal) by the world university service of Canada (WUSC) and CIDA. Senior scientific advisor for IFS (International Foundation of Science), Sweden. Recipient of the 2009 International Water Day’s appreciation award by the Ministry of Water in Jordan. Recipient of the Fulbright scholarship to the University of California-Irvine 2009/2010. Supervised numerous graduate students and published numerous project reports, training modules and research articles in international journals and symposia.

### Accomplishments

TEACHING:

Building a successful teaching career in one of the leading engineering schools in Jordan

Established the environmental research laboratory for graduate studies at the Civil Eng. Dept. (JUST)

Supervised thesis work for more than 20 graduate students at the civil engineering department at JUST

Co-supervised or examining committee member for thesis work of more than 35 graduate students at JUST and other Jordanian universities

Founder and organizer of the Water and Environment Seminar at the Civil Eng. Dept. at JUST

Developed curricula for several courses at the CE Department of JUST University such as the course: Water and wastewater systems design

Administered (and taught in) the first *distant learning* graduate course (CE 785) offered by JUST in collaboration with the University of Arizona, USA in 2006.

RESEARCH GRANTS:

Co-Authored the proposal “Impacts of climate change on water resources of Jordan”, submitted to the United Nations Development Program (UNDP), awarded US$ 80,000

Authored (Principal Investigator, PI) the proposal, “Estimation of Jordanian coefficients for green house gases from all emitting sectors”, submitted to UNDP and General Corporation for Environmental Protection (GCEP), awarded US$ 0.1 million

Authored the proposal “Water reuse pilot implementation in agriculture-Phase I” , awarded by USAID, US$ 0.5 million

Co-Authored the proposal “Water reuse pilot implementation in agriculture-Phase II”, Awarded by USAID, US$ 0.13 million

Authored (PI) the proposal, “Ecosystem approaches to human health improvement in North Jordan Valley-Pilot Study”, submitted to the International Development and research Center (IDRC), Ottawa, Canada, awarded C$ 20,000

Co-Authored (PI) the proposal, “Ecosystem approaches to human health in North Jordan Valley-Diarrhea Problems”, IDRC, Ottawa, Canada, awarded, US$ 0.13 million

Co-Authored the proposal, “Investigating pollution levels in soil, crop, irrigation water and air in the Jordan Valley”, submitted to the National Center for Agricultural Research and Technology Transfer (NCARTT), Ministry of Agriculture, awarded US$ 0.22 million

Co-Authored (PI) the proposal, “Economics of wastewater treatment in Jordan” submitted to the Higher Council of Science and Technology (HCST), awarded US$ 9,000

Co-Authored the proposal, “Characterization of precipitation patterns and surface runoff for the Badia region” submitted to HCST, awarded US$ 150,000

Co-Authored the proposal, “Removal of THM precursors by coagulation, activated carbon and reverse osmosis” submitted to HCST, awarded US$ 14,000

Co-Authored the proposal, “Using GIS in siting solid waste landfills in Jordan” submitted to HCST, awarded US$ 12,000

Co-Authored the proposal, “Extent of soil salinization problem in the Jordan Valley” submitted to HCST, awarded US$ 18,000

Co-Authored the proposal, “Characterization and treatment of Olive Mills wastewater in Jordan”, submitted to the Deanship of Scientific Research (JUST), awarded US$ 20,000

Co-Authored the proposal, “Regulating PPPs for the Poor”, submitted to DFID in UK, awarded 280,000 Pounds

Co-Authored the proposal, “Assessment of River Bank Filtration to protect Jordan’s surface and ground water resources”, submitted to NATO-Science Program, awarded 281,000 Euros

Authored the proposal, "WASH & CC Innovation Hub", submitted to UNICEF, awarded US$ 1.2 million.

Several research grants from the Deanship of Scientific Research at JUST to cover graduate students’ research activities in the water and environmental engineering areas.

SCIENTIFIC AND TECHNICAL PUBLICATIONS

Over 25 research papers in refereed indexed journals

More than 40 papers in proceedings of specialized international and regional conferences

Authored or co-authored 10 final project reports and authored/co-authored 3 Book chapters

Authored or co-authored over 20 professional engineering manuals, research case studies, technical modules, policy briefs and other publications

CONSULTATION and PRACTICAL EXPERIENCE:

Co-supervised retrofit of JUST wastewater treatment plant (RBC system), US$ 1 million.

Co-supervised operation and odor control system in Baq’aa wastewater treatment plant (Jordan)

Member of the higher national committee on sanitation and wastewater treatment plants, Ministry of Water and Irrigation, Jordan. 1998-2009

Senior Consultant to US Engineering and Environmental firms such as CDM-International and PA Consulting

Training consultant to InWent (Capacity Building International, Germany) on wastewater treatment and reuse

Building resilience to cope with climate change in Jordan through improving water use efficiency in the agriculture sector (BRCCJ), FAO, 2021

TRAINING:

Organized and delivered numerous training workshops in and outside Jordan

COMMUNITY SERVICE:

Member, Jordan Swimming Federation, Dec 2021-present (elected)

Member, Swimming Committee, Al-Hasan Sports City, Irbid, Jordan, Sept 2021-present

Advisor to the Mayor of Irbid city, 2017-2019

Member, Higher national committee on sanitation and wastewater treatment plants, Water Authority of Jordan (WAJ), 1998-2009

Member, Committee for wastewater reuse in Jordan Valley Agriculture, National Center for Agricultural Research and Tech Transfer (NCARTT), Ministry of Agriculture, Jordan, 2003-2006

Member, Board of Directors, Yarmouk Water Co. (YWC), Nov. 2020-Present

Senior scientific advisor, IFS foundation, Stockholm, Sweden, 2003-Present

Member, Central Bureau, Jordan Engineers Association (JEA), (elected), Feb 2018-Feb 2022

President, Civil Engineering Section Committee, JEA-Irbid Section, May 2018-May 2022

Member, Irbid Ajmal Foundation (NGO) for youth empowerment and city beautification.

SELECTED PROJECTS MANAGED & IMPLEMENTED

Demonstrating and documenting safety of wastewater reuse and EIA of reuse

Waste to (Positive) Energy, Project Processing No.4.4066.8-004.00, GIZ, 01/10/2017 to 31/12/2020

Ecosystem approaches to human health

River bank filtration (RBF) as IWRM for adaptation to climate change impacts on water resources

Management of domestic sludge: solutions for Jordan

WASH and Climate Change Innovation Hub, on-going

AWARDS and RECOGNITIONS

Recipient of the “Best Proposal” award on water & Environmental issues, by the Deanship of scientific research at JUST University, 2004.

Recipient of the Nawab Zain best paper award by the Institution of Engineers (India), 1999.

Nominated for Chi-Epsilon academic honor society, Virginia Tech 1992, 1993 and 1994

General Biochemistry Certificate by the American Chemical Society (ACS), 1994

Several invited talks on various Environmental Engineering issues in and outside Jordan

Senior scientific advisor for the International Foundation of Science (IFS), Stockholm, Sweden, since 2005 - Present

Recipient of the Fulbright scholarship to UC-Irvine, California, 2009/2010

Recipient of the appreciation award of the Jordan Ministry of Water in 2009 on International Water Day

Co-Recipient of the 2008 first honor award of the IWA (International Water Association) for small projects and the 2008 first award by the American Academy of Environmental Engineers for the RIAL (Reuse for Agriculture, Industry and Landscape) Project.

**EDUCATIONAL BACKGROUND:**

Ph.D. (Philosophy Doctorate) Civil Engineering/Environmental Engineering Option, July 1995, Virginia Tech, Blacksburg, VA, USA.

*Thesis title*: Enhanced Petroleum-contaminated soil bioremediation by plants.

M.Sc. (Masters of Science) Civil Engineering/Water Resources and Environmental Eng. Option, Nov. 1990, Jordan University of Science and Technology, Irbid, Jordan.

*Thesis title*: Utilization of magnetized iron particles for bacterial adsorption and subsequent removal from water and wastewater.

B.Sc. (Bachelors of Science) Civil Engineering/Water Resources and Environmental Eng. option, August 1986, Yarmouk University, Irbid, Jordan

*Graduation Project title*: Developing a computer code for the design of culvert drainage systems for secondary roads in Jordan.

**PROFESSIONAL EXPERIENCE AND WORK HISTORY:**

**Board Member**, Board of Directors, Yarmouk Water Company (3 million customers), Water Authority of Jordan, Ministry of Water and Irrigation, November 2020-Now

**Technical Director,** WASH and Climate Change Innovation Hub, funded by UNICEF, August 2018-Now

Incubation center to promote and support untapped creativity of individual innovators and to assist them to become entrepreneurs at the fields of water, sanitation, hygiene and climate change. Bassmati Climate and WASH Innovation Community is a collaborative initiative of the United Nations Children’s Fund (UNICEF) and Jordan University of Science and Technology (JUST)

The Vision of the Initiative to become a leading initiative that empowers innovators and entrepreneurs to develop world-class solutions to climate and WASH challenges that creates growth and skilled jobs, in addition to generating data and evidence through quality research.

“Bassmati” an Arabic word stands for “My Fingerprint” is used as the initiative's brand to emphasize the role current actions play in determining the future of mankind and to echo that “Unless We Act Now” we might get to the “no turn-back point” when it is too late to take corrective actions for climate change impacts on the water and sanitation sector (https://www.facebook.com/bassmatijo/).

Under the umbrella of the Sustainable Development Goals, specifically, SDGs 6,8, 13 and 17 the Hub has been successful in erecting 25 startups some of these are in the acceleration phase and some are already in the market place. The Hub has, so far, sponsored 10 quality water research projects, all are executed and several have published results in international journals. My role is to provide technical coaching for all startups and research projects.

**Chairman,** Civil Engineering Department,JUST University, Jordan, September 2017- Resigned 3 months later for other professional commitments

**Research Scientist (Full),** Kuwait Institute for Scientific Research (KISR), Kuwait, July 2015-October 2016

**Vice Dean of Research**, Jordan University of Science and Technology, Sept. 2013-Sept. 2014

**Visiting Research Professor,** University of California-Irvine, Civil and Environmental engineering Department, Urban Water Research Center ([www.urbanwater.uci.edu](http://www.urbanwater.uci.edu)), Irvine, California, Aug 2009-June 2010

**Associate Professor**, Water Resources and Environmental Engineering Division, Department of Civil Engineering, Jordan University of Science and Technology (JUST), Irbid, Jordan, March 2006-Present

**Project Manager,**

Reclaimed wastewater reuse in agriculture, a USAID funded project. Reclaimed wastewater is used to irrigate 72 hectares of field crops, cash crops and forest trees in North Jordan. Duties included managing the project activities and working team that consisted of irrigation, mechanical, environmental and civil infrastructure engineers, agronomists, technical communicators and agricultural economists towards a successful implementation of a water reuse project in irrigation, Irbid, Jordan. The Project team was formed from 20 professionals and engineers. The Project was recognized by the 2008 first honor award of the IWA (International Water Association) for small projects and the 2008 first award by the American Academy of Environmental Engineers for the RIAL (Reuse for Agriculture, Industry and Landscape) mother project, September 2002-August 2009

**Assistant Professor**, Water Resources and Environmental Engineering Division, Department of Civil Engineering, Jordan University of Science and Technology (JUST), Irbid, Jordan, October 1995- March 2006

**Chief Environmental Engineer and Project Coordinator,** Water Reuse Implementation Program (WRIP), PAConsulting, Inc. and USAID. 2002-2003

**Chief Environmental Engineer and Project Coordinator,** Reuse for Industry, Agriculture and Landscape (RIAL) Project, Camp Dresser and McKee (CDM) International Inc. and USAID. 2004-2006

**Coordinator**, Division of Water Resources and Environmental Engineering, Dept. of Civil Engineering, JUST University, Irbid, Jordan, Sept. 1997-Sept. 1998 and Sept. 2003-Sept. 2004.

**Member**, Council of the Engineering Faculty, JUST, 2007/2008 and 2017/2018

**Graduate Research Assistant**, Environmental Engineering Division, Department of Civil Engineering, Virginia Tech, VA, USA, August 1992-July 1995.

-Monitoring levels of Petroleum contamination, BETX and Naphthalene in particular, in contaminated soil and drainage water using solvent extraction and gas chromatography, Clinchfield Coal Company, southwest Virginia.

-Investigating Bioremediation as a potentially efficient, cost effective technology to treat Petroleum-contaminated soils.

-Investigating Phytoremediation and the plants' role in the enhancement of petroleum-contaminated soil Bioremediation.

**Site Engineer**, Municipality of Irbid city, Jordan, Dec. 1990-May 1991.

**Graduate Teaching Assistant**, Dept. of Civil Engineering, JUST University, Sept. 1988-Oct. 1990. Teaching assistance was in the following courses:

1. Sanitary Engineering

2. Sanitary Engineering Laboratory

3. Hydraulics

**Site Engineer**, Jadara Engineering, Jordan, Sept. 1986-Sept. 1988.

**Site Engineer**, Weston Inc. and WAJ, Rehabilitation of network and Installation of 600 mm water mains in Irbid city, May 1986-Sept. 1986

SKILLS:

Water/environmental policy writer and diplomacy speaker

IWRM for climate change adaptation expert

Urban planning and environmental management expert

Management and design of hazardous waste remediation systems especially for petroleum-contaminated soil and water.

Design of water and wastewater treatment plants

Solid waste management engineer

Certified Experience in the design and implementation of environmental public awareness campaigns.

Certified Experience in Participatory rural appraisal (PRA), Community participation, Gender roles and rural development.

Running and developing environmental models

Experience in gas chromatography, mass spectrometry, ion chromatography and atomic absorption

Experience in Fortran 77, and many software packages like Word perfect, Microsoft word, Quatropro, Sigmaplot, Freelance and SAS.

COURSES TAUGHT:

## Graduate Level

1. CE 753: Wastewater Engineering: treatment, disposal and reuse

2. CE 754: Chemistry for Environmental Engineers.

3. CE 758: Industrial and Hazardous Wastes

4. CE 756: Special Topics: IWRM tools for urban adaptation to Climate Change

**Undergraduate Level**

1. CE 452: Environmental Engineering

2. CE 453: Environmental Engineering Laboratory. (Water Quality Lab)

3. CE 558: Water and Wastewater Systems Design.

4. CE 352: Hydraulic Engineering.

5. CE 200: Engineering Drawing.

6. CE 555: Aquatic Chemistry

**International “For-Credit” Courses**

1. CE 785: Management of Water Reuse in Irrigation (Distant Learning Graduate Level Course with the University of Arizona), Feb-June, 2006

2. Intensive Course: Water policies and Transboundary Water, University of Mississippi, May-June, 2011

INVITED TALKS:

1. “Drinking water concerns, Quantity and Quality, in Alkorah Province”, Nov. 1995, by Jordan Environment Society (NGO).

2. “ Methane emissions from wastewater treatment plants and municipal solid waste landfills in Jordan”, March 1997, by the General Corporation for Environment protection (GCEP) and United Nations Development Program (UNDP), Amman, Jordan.

3. “ Mitigation of greenhouse gases (GHGs) emissions from the waste sector in Jordan”, Nov.1997, by GCEP and UNDP, Amman, Jordan.

4. “Water quality issues of water resources in northern Jordan”, May 1998, by Jordan Environment Society (NGO).

5. “Teaching wastewater treatment, solid waste management and bioremediation of petroleum-contaminated soil-comparative study between the US and middle-eastern universities”, Oct.1998, by USIA and ASA, 90th annual meeting of ASA, CSSA and SSSA, Baltimore, MD, USA.

6. "Improving the solid waste management program in the municipality of Irbid city", July 1999, by Irbid Municipality, Jordan.

7. “Water issues in Jordan: quality and quantity”, March 2001, by the Center of International Programs at the Washington State University, Idaho Department of Environmental Quality and EPA region 10, WA & ID, USA.

8. “Wastewater treatment practices in Jordan”, Oct. 2001, by the National Center for Agricultural Research and Technology Transfer (NCARTT), Amman, Jordan.

9.“Irrigation water quality in the Jordan Valley”, Oct. 2001, by the Inter-Islamic Network on Water Resources Development and Management (INWRDM), Amman, Jordan

10.“Jordan’s experience in wastewater reuse”, Feb. 2003, by INRST-Tunisia and JICA-Japan, in Tunis, Tunisia.

11. “Grey water and wastewater reuse in Jordan: issues and concerns”, May 2005, by INWRDAM and the International Foundation of Science (IFS), Amman, Jordan

12. “River Bank Filtration for protection of Jordanian surface and ground water resources”, May 2005, by NATO-science program, Brussels, Belgium

13. “Documentation and demonstration of safe water reuse in agriculture”, Sept. 2005, by the National Research Institute-Egypt and InWent, in Cairo, Egypt.

14.“Sustainable sanitation: Elaboration research projects proposals”, Oct. 2005, by the International Foundation of Science (IFS), Ouagadougou, Burkina Faso

15. “Environmental impacts of wastewater reuse”, December 2007, by the Jordan Agricultural Engineers Association, Irbid, Jordan

16. “Wastewater Reuse in Jordan”, April 2011, by the Spanish Agency for International Development, Sevilla, Spain.

|  |  |
| --- | --- |
| |  | | --- | | 17."River Bank Filtration for CC adaptation", by IWA - Efficient 2013 Conference, Paris, France | |

18. "Advances in wastewater treatment and effluent reuse" by KAUST (King Abdalla University for Science and Technology), January 2013, KSA

19.“Demonstration and documentation of safe wastewater reuse in irrigation”, by KISR (Kuwait Institute for Scientific Research), Workshop: Technology, Efficiency and Socioeconomic Constraints in marginal Water Reuse, March 2013, Kuwait

20. "Water supply and NRW issues in Jordan" (panel of experts), by Jordan Engineers Association's 2nd International Irbid Engineering Conference, Oct. 2018

21. "Rainfall Drainage in Urban Areas" , Workshop on: Flood control and Risk mitigation, Yarmouk University, March 28th 2019

22. "Trans-boundary water resources in western Asia", November 2019, by the school of law at Nanjing-Hopkins Chinese American University, Nanjing, China

23. "Potentials of saline agriculture for subsistence and livelihoods of local poor communities in the Jordan Valley, by Saline Future Conference (International), Sept. 2020, Leeuwarden, The Netherlands

24. "Wastewater sludge management & Disposal", Dec.2021, Dubai, UAE

25. "Industrial wastewater treatment & management", Dec. 2021, Karachi, Pakistan

26. "Water & energy resources optimization in Jordanian industries", June 2022, by the German, INFA Co., Amman, Jordan

RESEARCH INTERESTS:

Water and wastewater treatment and Reuse, Waste management, Petroleum-contaminated soil remediation, Environmental uses of zeolites, Climate change, Ecosystem approaches to human health, Water Governance and Environmental Policy.

TECHNICAL CONSULTATION:

Many consultation assignments such as:

1) Consultant to the climate change project at GCEP (General Corporation for Environmental Protection, Amman, Jordan) during GHGs-inventory assessment, 1997

2) Consultant to the climate change project at GCEP on mitigation scenarios for the Waste sector (wastewater treatment plants and solid waste landfills), 1998

3) Consultant to JUST University on the campus wastewater treatment plant retrofit.

4) Consultant to Sahab industrial park on sludge-bulking problems in their wastewater treatment plant.

5) Consultant to the Jordan oil refining company on retrofit of wastewater treatment plant and sludge treatment.

6) Consultant to UNDP (Amman, Jordan) on Climate Change impacts on Jordan's wastewater treatment plants (waste stabilization ponds), Project No. JOR/95/G31/IG/99, UNDP, 1999-2000

7) Consultant to Ministry of Water and Irrigation and the World Bank on Water quality of southern Jordan Valley water resources, 2000

8) Consultant to PA Consulting, Inc. on water reuse in agriculture, 2002-2003

9) Consultant to CDM-International on water reuse in agriculture, 2004-2006

10) Integrated Water Resources Management (IWRM) tools to Adapt human settlements in the Arab Courtiers to Climate Change, funded by ESCWA and implemented by ACWUA (Arab Countries Water Utility Association), 20015-20016

11) Development of a GIS/CIVIL 3D-Based Management Model for

Wastewater Infrastructure in Kuwait under Extreme Events by Climate Change, Team Leader, 2015-2016, Kuwait

12) Facilitator and consultant on Climate Change adaptation training, Arab Water Academy (AWA), 2011-2013, Abu Dhabi, UAE

13) Consultant to the Ministry of Local Administration (MoLA) and the German GIZ on Future of solid waste management scenarios in Jordan, 2020

14) Consultant to MoLA on Olive Mill waste management at Al-Akaider Landfill, Jordan, 2019

15) Consultant to MCC unit at the office of the Prime Minister, Jordan, 2012, on socio-economic return of Rusaifeh/Zarqa water and wastewater networks system rehabilitation, funded by the Millennium Challenge Corporation (MCC), 220 million US $

RESEARCH GRANTS and CONTRACTS

1. Demonstrating and documenting the safety of wastewater reuse in irrigation
2. Ecosystem approaches to human health in north Jordan Valley
3. River bank filtration applied to Zarqa river
4. Propagation and technology transfer of water reuse
5. Economics of wastewater treatment and reuse
6. Finite difference modeling of Phytoremediation of petroleum-contaminated soils
7. Regulating PPPs for the Poor in water and sanitation utilities
8. Tools of IWRM as adaptation to climate change in the Arab region
9. WASH and climate change Innovation hub
10. [Evaluation of incorporating oil shale filler aggregate into hot mix asphalt using Superpave mix design](https://www.researchgate.net/publication/283685991_Evaluation_of_incorporating_oil_shale_filler_aggregate_into_hot_mix_asphalt_using_Superpave_mix_design?_sg=e5CKMKRk49oZcyN3Jr6DaoJcowaa_diO-dNMwJtcEMfvSVOf5zRToy2hLoQpt4-8iICRyG_1t1WCZu0lszC7pbwPNC_iH3sKfcAERM_j.kfZMWjouOWpI5vYKgTfphSMF9tWwrm5oKnHMwrM6EzCWFARnTz6KCzhSGB1tbYLsitGUflMKvNhaJkQkG-Jmtg)
11. “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)
12. “Flood wave Propagation and Infiltration in Desert Regions: The Azraq Basin, Jordan”, funded by USAID (PEER Program).($ 93,350). PI. (2012-2014).
13. Waste-to Energy, GIZ, 2018-2020
14. Salinity Removal of Reclaimed Wastewater Using Natural and Modified Zeolite and Nano Zeolite Particles, MEDRC (Middle East Desalination Center), 2019-2021

PUBLICATIONS:

**Specialized International Conference Proceedings**

Al-Ghazawi Ziad, Shahalam Abulbashar and Mansour Awad, Utilization of Magnetized Iron Particles for the Bacterial Adsorption and Subsequent Removal from Wastewater, Proceedings (Poster) of the 42nd Purdue Industrial Waste Conference, Indiana, USA, 1993.

Al-Ghazawi, Ziad and Novak, J.T, Enhanced Petroleum-contaminated soil bioremediation using plant systems, Proceedings of the Air & Waste Management Association's international conference: Challenges and Innovations in the management of hazardous wastes, Washington, D.C., May 10-12, 1995.

Novak, J.T and Al-Ghazawi, Ziad, Plants-assisted Bioremediation of hydrocarbon contaminated soils, Proceedings of the mid-Atlantic hazardous waste conference, Blacksburg, Virginia, July 1997.

Abdulla, Fayez and Al-Ghazawi, Ziad, Assessment of methane emissions from industrial and municipal wastewater treatment plants in Jordan, Proceedings of the International Conference on Water Problems in the Mediterranean countries, 17-21 November 1997, Nicosia, Cyprus.

Al-Ghazawi, Ziad Abdulla, Fayez, Assessment of methane emissions from solid waste landfills in Jordan, Proceedings of the International Conference on Water Problems in the Mediterranean countries, 17-21 November 1997, Nicosia, Cyprus.

Al-Ghazawi Ziad and Abdulla Fayez, Appropriateness of Waste Stabilization Ponds to Arid and Semi-Arid Regions of the Middle East, Proceedings of the 2nd International Conference on Sustainability in Desert Regions, 20-22 Nov., 1999, United Arab Emirates University, Al-Ain, UAE.

Abdulla Fayez, Al-Ghazawi Ziad and Al-Khatib M., Developing Groundwater Modeling for Azraq basin-Jordan, Proceedings of the international conference on Calibration and Reliability in Groundwater Modeling-Coping with Uncertainty, model CARE’99, Vol. 2, pp. 509-514, Zurich, Switzerland, 20-23 Sept. 1999.

Al-Ghazawi Ziad and Al-Lawzi Mamdouh, Gasoline-contaminated Soil from a Jordanian UST Site: A Decision Case Study in Soil Remediation, Proceedings of the International Workshop on Decision Case Studies in: Wastewater management, Solid waste management, and Land reclamation, American University of Beirut, Lebanon, May 1999.

Al-Ghazawi Ziad, Sallal Abdulkarim and Al-Mefleh, Moh'd, Treatment of petroleum refinery wastewater by acclimated strains of *Pseudomonas sp*. bacteria, Proceedings of the International Water Association (IWA) conference, Beijing, China, Sept. 2000

Al-Ghazawi, Ziad and Novak, J.T., Mechanisms involved in Phytoremediation, Proceedings of the International Conference on Geoenvironment (ICG 2000), March 4-7, 2000, Sultan Qaboos University, Muscat, Oman.

Al-Ghazawi Ziad, Abo-Qudais Hani and Al-Hadidi Mahmoud, Building local and regional expertise in water desalination, MEDAQUA conference, Amman, Jordan, May 2001.

Al-Ghazawi Ziad and Ayesh Sa’ed, Characterization and treatment of Olive mills wastewater, Proceedings of the IWA conference: Water and wastewater technologies for developing countries, Kuala Lumpur, Malaysia, 29-31 October 2001.

A. Qudah, Z. Al-Ghazawi, F. Abdalla and S. Bataineh, Economics of wastewater treatment – Developing an expert system, Proceedings of the Dubrovnik conference on sustainable development of energy, water and environment systems, Paper 154, Dubrovnik, Croatia, 2003

Abdulla, F., Widyan, M., Al-Ghazawi, Z., Kiwan, S., Abu-Qdais, H., Hayajneh, M., Harb, A., Al-Nimr, M. "Status of Jordan renewable energy sector: Problems, needs and challenges”. Beirut Regional Workshop on Energy Efficiency and Renewable Energy Technology. Beirut, Lebanon, 2004.

Al-Ghazawi Ziad, Waste to Energy: Jordan’s Experience, Proceedings of the 14th World Scientific Conference: Environmental Management Symposium, Havana, Cuba, 27-30 June 2005.

Al-Ghazawi Ziad, Hakeem Okour and Muntaha Gharaibeh, Environmental and Socio-economic determinants of the human health status in North Jordan Valley, Proceedings of Ecohealth 2006, Madison, WI, USA; October 2006

Al-Ghazawi Ziad, Ecosystem approaches to human health protection in North Jordan Valley, World Water Week 2007, Stockholm, Sweden, August 2007.

Al-Ghazawi Ziad, Jumah Amayreh, Laith Rousan and Amal Hijazi, Water reuse in agriculture, Proceedings of the International Conference ICCBT 2008 – Water Resources and Environment, KL, Malaysia, 16-20 June 2008

I. Saadoun\*,J. Schijven, M. Shawaqfah, Z. Al-Ghazawi, J. AL-Rashdan, W. Blandford,

# T. Boving, Q. Ababneh, H. van den Berg, Removal of Fecal Indicator Coliforms and Bacteriophages by Riverbank Filtration (RBF) at Zarqa River in Jordan, Proceedings of the International Conference ICCBT 2008 – Water Resources and Environment, KL, Malaysia, 16-20 June 2008

Z. Al-Ghazawi, I. Saadoun\*,J. Schijven, M. Shawaqfah, J. AL-Rashdan, W. Blandford,

T. Boving, Q. Ababneh, and H. van den Berg, Establishing base-line data by measuring the concentration of E. Coli, Fecal and total Coliforms, and Fecal Streptococci in Zarqa River-Jordan prior to evaluation of the riverbank filtration technology (RBF), Proceedings of the International Conference ICCBT 2008 – Water Resources and Environment, KL, Malaysia, 16-20 June 2008

Khedaywi Taisir, Ziad Al-Ghazawi and Alaa Gouneem, Pollution reduction and reuse of sludge waste in Asphalt paving mixtures, Proceedings of the 12th International Conference on Integrated Diffuse Pollution Management (IWA DIPCON 2008), Khon Kaen University, Thailand; 25-29 August 2008

W. Blanford and Z. Al-Ghazawi, Evaluation of riverbank filtration as efficient means for treating water from the Zarqa river in Jordan, Proceedings of the 2008 Ground Water Summit, Memphis, TN, USA, April 2008.

T. Boving, Z. Al-Ghazawi, M. Shawaqfah, J. AL-Rashdan, W. Blandford, I. Saadoun, J. Schijven, River bank filtration for protection of Jordanian surface and groundwater, Proceedings of the World Environmental & Water Resources Congress: Challenges of Change, EWRI and ASCE, Providence, RI, USA, May 16-20, 2010

Al-Ghazawi Ziad, Water Reuse Experience in Jordan, SmallWat 2011, Sevilla, Spain, April 24-28, 2011.

Al-Ghazawi Ziad, River Bank Filtration for Water Reuse: Adaptation to Climate Change, Proceedings of the International Conference: Water and Climate Change in the MENA Region: Adapation, Mitigation, and Best Practices, Berlin, Germany, April 28-29, 2013

Al-Ghazawi Ziad, Jordan Water Strategy and Challenges for Implementation, Proceedings of the International Water Resources Conference, Tripoli, Lybia, Nov. 2013

Al-Ghazawi et al, Testing and Evaluation of the Use of Digital Image Analysis and Artificial Neural Networks (ANN) in Monitoring Wastewater Quality, 9th Annual International Conference on Civil Engineering, 24-27 June 2019, Athens, Greece

Ziad Al-Ghazawi, Nidal M. Hussein and Zaid Abdelkhaleq, Impacts of Non-Pharmaceutical Interventions (NPIs) on the Trends of COVID 19 Pandemic in selected MENA Region Countries, Proceedings of the 9th Jordan International Chemical Engineering Conference (JICHEC9), 12-14 Oct. 2021

Al-Ghazawi Ziad, Potential of biosaline agriculture for climate change adaptation and poverty alleviation in the Jordan valley, Proceedings of 3rd Coordinating Engineering for Sustainability and Resilience (CESARE 22), May6th – May9th, 2022, Irbid, Jordan

Ziad Al-Ghazawi and Esraa Thiabat, Salinity removal of reclaimed wastewater using natural and modified zeolite and nano zeolite particles, Proceedings of XXIInd International Multidisciplinary Scientific GeoConference Surveying, Geology and Mining, Ecology and Management – SGEM 2022, Varna, Bulgaria, 2-11 July, 2022

W. Banford, T Boving, Ziad Al-Ghazawi, and others, River Bank Filtration for Protection of Jordanian Surface and Groundwater. World Environmental and Water Resources Congress 2010: Challenges of Change. © 2010 ASCE

**National Conference Proceedings**

Al-Ghazawi Ziad, Shahalam Abulbashar and Mansour Awad, Utilization of Magnetized Iron Particles for the Adsorption and Subsequent Removal of Bacteria from Water, Proceedings of the 1st Civil Engineering Conference, Jordan Engineers Association, Amman, Jordan, 18-22 October 1997.

Al-Ghazawi Ziad, Waste Stabilization Ponds versus Mechanical Wastewater Treatment Plants Under the Arid/Semi arid Climate of the Middle East, The 4th Scientific day of the school of Engineering, JUST University, Irbid, Jordan, 1998

Al-Ghazawi Ziad and Ayesh Sa’ed, Characterization and Treatment of Olive Mills Wastewater, The 5th Scientific day of the school of Engineering, JUST University, Irbid, Jordan, 1999.

Al-Ghazawi Ziad, Assessing River Bank Filtration (RBF) for protecting Jordan’s surface and ground water resources, The 11th Scientific day of the school of Engineering, JUST University, Irbid, Jordan, 2005.

Al-Ghazawi Ziad, Wastewater reuse in agriculture: global trends and local issues, 3rd National conference on scientific research, Jordan Society of Scientific Research, Nov. 2007, Invited Paper.

**Sample Project Final Reports and Book Chapters**

Saadoun, I. and Al-Ghazawi, Z. 2004. Bioremediation of petroleum contamination. In: Bioremediation of Aquatic and Terrestrial Ecosystems, Milton Fingerman and R. Nagabhushanam and (eds.), **ISBN 1-57808-364-8**, September 2005; 420 pages.

Al-Ghazawi Ziad, Jumah Amayreh, Laith Rousan and Amal Hijazi, 2007. Wastewater reuse in Agriculture at the Jordan University of Science and Technology. In: Efficient Management of Wastewater: Its Treatment and Reuse in Water Scarce Countries, Al Baz, Ismail; Otterpohl, Ralf; Wendland, Claudia (Eds.) 2008, XIX, 303 p. 79 illus., Hardcover.**ISBN:978-3-540-74491-7, Springer**, Due: December 17, 2007

Al-Ghazawi Ziad, Water Quality Aspects of Irrigation Water in the Jordan Valley, Final Report submitted to the Jordan Valley Authority and World Bank, September 2001

Al-Ghazawi, Ziad, Impact of Climate Change on Wastewater Treatment Plants of Jordan (Chapter) in UNDP book entitled: Impacts of Climate Change on Water Resources of Jordan, UNDP Study Project No. JOR/95/G31/IG/99.

Al-Ghazawi Ziad and Abdulla Fayez, Inventory of Greenhouse gases from the waste Sector in Jordan, Jordan’s Final report on GHG Inventory, submitted to UNDP-GEF, 1996.

Abdulla Fayez and Al-Ghazawi Ziad , Options to mitigate Greenhouse gases from the waste Sector in Jordan, Jordan’s Final report on GHG Mitigation, submitted to UNDP-GEF, 1997.

Al-Ghazawi, Ziad (2004). Summary Report of the Findings of the Review of the UNDP/GEF Methane Capture and Utilization Demonstration Project in Jordan. JOR/96/G31,Submitted to UNDP, New York

Al-Ghazawi Ziad, Muntaha Gharaibeh and Abdul-Hakim Okour, Diarrhea in North Jordan Valley: Ecosystem Approaches to Human Health Improvement. Final Project Report submitted to International Development Research Center (IDRC), Grant number: Centre file 100771-005, June 2006.

Tom Boving, Ziad Al-Ghazawi, Ismail Sadoun, Jamal Al-Rashdan, Jack Schijven, Moayyad Shawagfah, William Blanford, River Bank Filtration for Protection of Jordanian Surface and Groundwater, Final Project Report submitted to NATO-sfp Program, Grant number: sfp 981454, October 2010

**Refereed Indexed Journals**

Abdulla Fayez and **Al-Ghazawi Ziad**, Methane emissions from domestic waste management facilities in Jordan-Applicability of IPCC methodology, Journal of the Air & Waste Management Association (USA), Vol. **50**, pp. 234-239, Feb. 2000.

**Al-Ghazawi Ziad** and Abdulla Fayez, Mitigation of methane emissions from sanitary landfills and sewage treatment plants in Jordan, Clean Technologies and Environmental Policy, DOI 10.1007/s10098-008-0145-8 Original Paper, April 2008

**Al-Ghazawi, Ziad** and Abdulla, Fayez, Assessment of Methane emissions from sanitary landfills and raw sewage dumping ponds in Jordan, Journal of the Institution of Engineers (India)-Environmental Engineering Division, Vol. 79, pp. 29-31, Feb. 1999

Abdulla, Fayez and **Al-Ghazawi, Ziad**, Assessment of Methane emissions from Industrial and Municipal Wastewater Treatment plants in Jordan, Journal of the Institution of Engineers (India)-Environmental Engineering Division, Vol. **79**, pp. 1-3, Aug. 1998

Abdulla Fayez, Al-Khatib M. and **Al-Ghazawi Ziad**, Development of Groundwater Modeling for the Azraq basin-Jordan, International Journal of Geosciences: Environmental Geology, Vol. **40** (1-2), pp 11-18, 2000

**Al-Ghazawi Ziad**, Saadoun Ismael and Al-Shak’ah Abdalla, Selection of bacteria and plant seeds for potential use in the remediation of diesel contaminated soils, Journal of Basic Microbiology, **45** (2005) 4, pp. 251-256

**Al-Ghazawi Ziad**, Ecosystem Approaches to Human Health in North Jordan Valley: Scoping the Problems, Ecohealth, Vol. 1, Supplement 2, Dec. 2004

Qdais Hani, Naseem AL-Abed, **Al-Ghazawi Ziad** and Fayez Abdulla, Prediction of trihalomethane formation in water distribution systems, Desalination and Water Treatment, Vol. **2**, pp. 162-169, February 2009

Mohammed Azzam, Kamal Al-Malah, **Ziad Al-Ghazawi**, and Saad Al-Omari, “Dynamic Treatment Response of Olive Mills Wastewater (OMW) Using Series of Adsorption Steps”, CLEAN – Soil, Air, Water, 38, 9 (2010) 822-830.

Al-Akhras N., **Al-Ghazawi Z.** and Zayed Al-Harafshah, Stabilization of medical waste ash in mortar mixtures, Waste and Resource Management, Volume 164 Issue WR0, Pages 1–8 (2014), ICE Publishing, UK,

Saadoun I. and **Al-Ghazawi Z**., Toxicity of Diesel fuel towards plant seeds as reflected by seed germination outcomes, sprout length and fresh weight, American-Eurasian Journal of Agricultural and Environmental Sciences, 8 (2): 167-172, 2010.

Abdelhakeem Okour, **Ziad Al-Ghazawi**, Muntaha Gharaibeh, Diarrhea Among Children and the Household Conditions in a Low-Income Rural community in the Jordan Valley, Jordan Medical Journal, Vol. 46 (2): 108-117, 2012

# Mohammed Azzam, **Ziad Al-Ghazawi** and Awni Al-Otoom, Incorporation of Jordanian oil shale in hot mix asphalt, Journal of Cleaner Production, UK, Elsevier, JCP 112 (2016) 2259-2277

# **Ziad Al-Ghazawi** and Rami Alawneh, Use of artificial neural network for predicting effluent quality parameters and enabling wastewater reuse for climate change resilience –a case from Jordan, Journal of Water Process Engineering, UK, Elsevier, 44 (2021) 102423

# Mohammed Azzam and **Ziad Al-Ghazawi**, [Evaluation of incorporating oil shale filler aggregate into hot mix asphalt using Superpave mix design](https://www.researchgate.net/publication/283685991_Evaluation_of_incorporating_oil_shale_filler_aggregate_into_hot_mix_asphalt_using_Superpave_mix_design?_sg=e5CKMKRk49oZcyN3Jr6DaoJcowaa_diO-dNMwJtcEMfvSVOf5zRToy2hLoQpt4-8iICRyG_1t1WCZu0lszC7pbwPNC_iH3sKfcAERM_j.kfZMWjouOWpI5vYKgTfphSMF9tWwrm5oKnHMwrM6EzCWFARnTz6KCzhSGB1tbYLsitGUflMKvNhaJkQkG-Jmtg), Construction and Building Materials, UK, Elsevier, CBM 101 (2015) 359–379

**Al-Ghazawi Ziad**, Qasaimeh Ahmad and Beni-Melhem Khalid, Ablution gray water qualitative assessment and treatment by submerged membrane bioreactor: a case study in Jordan, Desalination and Water Treatment, 127 (2018): 213-221

Qasaimeh Ahmad and **Al-Ghazawi Ziad**, Regression Modeling for Rapid Prediction of Wastewater BOD5, Desalination and Water Treatment, 201 (2020): 165–172.

**Al-Ghazawi Ziad**, Ahmad Qasaimeh and Bilal Bataineh, [Investigation of Nickel Adsorption onto Low Jordanian Zeolite Dose: Efficiency and Langmuir- Freundlich Behavior](https://www.editorialsystem.com/jwld/article/228083/view/), Journal of Water and Land Development, 2021, No. 50 (VI–IX): 151–159

**Al-Ghazawi Ziad** and Omran Zboun, Environmental and Economic Evaluation of Municipal Solid Waste Composting Facility in Irbid Greater Municipality, Jordan, Jordan Journal of Civil Engineering, Volume 15, No. 4, 2021

M. Malkawi, **Z. Al-Ghazawi**, Z. Alshboul, A. Al-Yamani i and O. Murad, Internet of Things Based Monitoring System of Leaks in Water Supply Networks Using Pressure-Based Model, Inf. Sci. Lett. 11, No. 2, 495-500 (2022)

Al-Mrayat, T., Al-Hamaiedeh, H., El-Hasan, T., Aljbour, S.H., **Al-Ghazawi, Z**., Mohawesh, O., Pyrolysis of Domestic Sewage Sludge: Influence of Operational Conditions on the Product Yields Using Factorial Design, HELIYON, <https://doi.org/10.1016/j.heliyon.2022.e09418>.

Fayez Abdulla; Saif Allah Farhat; **Ziad Al-Ghazawi**; Hamed Assaf Assessing Performance of Wastewater Treatment Plants under Heavy Loadings and Component Failures", Water Resources Management, *In Review*.

Lara Daradkeh, Yasmein Okour, Marwa Al Khalidi, **Ziad Al-Ghazawi**, Understanding climate change adaptation barriers at Jordan local level, Ecology and Society, *In Review*

**Al-Ghazawi Ziad** and Esraa Thiabat, Salinity removal of reclaimed wastewater using natural and modified zeolite and nano zeolite particles ", Desalination, *In Review*

**Al-Ghazawi Ziad**, Waddah Abdalla and Rabab Haneih, Modeling the Phytoremediation of Total Petroleum Hydrocarbons Contaminated Soils using Squash Plant, Journal of Hazardous Materials, *In Review*

**Ziad Al-Ghazawi**, Omran Zboon, Technical Evaluation of Municipal Solid Waste Composting Facility in Greater Irbid Municipality, Jordan, *In Review*

**Al-Ghazawi Ziad**, Nusair Moh’d and Ahmad Alawneh, Retardation of Landfill Leachate by Modified Soil Layers with Zeolite, Journal of Hazardous Materials, *In Review*

**Other Publications (technical manuals and case studies):**

1. Al-Ghazawi Ziad, Laith Rousan and Jumah Amayreh, Management Practices for On-Farm Applications of Reclaimed Water and Bio-Solids, Hands on Manual for Practitioners, Supported by USAID, University of Arizona, Jordan University of Science and Technology, International Arid Land Consortium (IALC) and Jordan Badia Research and Development Center (BRDC), June 2009. Published both in English and Arabic languages

2. Al-Ghazawi Ziad, Muntaha Gharaibeh, Abdul-Hakeem Okour and Muhamed Ramzy, Fighting Diarrhea in the North Jordan Valley-Taking a closer look at this Fragile Ecosystem: The case of Sheikh Hussein, Case Study Publication (Print as well as electronic: www. copeh-mena.org), HEALTH an Ecosystem Approach Series. Supported by Ford Foundation, International Development Research Center (IDRC), JUST, Near East Foundation and Center for Development Services (CDS). Cairo, Egypt, April 2007

3. Ziad Al-Ghazawi-Research Partner, Regulating Public Private Partnerships for the Poor, DFID Knowledge and Research Contract R 8320, 10 (Ten) case studies and a Book, published by DFID, UK and also available at DOCSTOC (<http://www.docstoc.com/docs/document-preview.aspx?doc_id=43730617>)

4. Ziad Al-Ghazawi, Author, Module: Adaptation of Arab Cities to climate change using IWRM tools, ESCWA UN-publications, 2018

**PAPERS UNDER PREPARATION**

1. Effect of Batch-Centrifugation on Olive Mill Wastewater Properties
2. Mobile solar water desalination system
3. Integrated Management of Wastewater and Sludge in Decentralized Wastewater Treatment Plants
4. Decentralized low energy-consumption system for grey water treatment
5. From a global Pandemic to a global climate change crisis: Lessons Learned

**FUNDED RESEARCH PROJECTS:**

1. “Environmental Curriculum Development for University and Professional Education in the Middle East and the United States-wastewater treatment, solid waste management and bioremediation”, Funded by the United States Information Agency (USIA). Joint project between American Univ. of Beirut, Purdue Univ. and JUST

2. “Characterization of precipitation patterns and surface runoff for the Badia Region”, funded by the Badia Project, Grant # 55/97, Higher Council of Science and Technology (HCST), Amman, Jordan.

3. "Vulnerability and Adaptation of Jordan's Water Resources to Climate Change", UNDP Project No. JOR/95/G31/IG/99, Funded by UNDP/GEF to Al-Shamil Engineering Consulting Office, Amman, Jordan.

4. “Ecosystem approaches to human health in north Jordan valley", funded by IDRC, Canada. (Principal Investigator)

5. “Water quality concerns in distribution systems”, funded by HCST, Amman, Jordan

6. “Using GIS in Siting Solid Waste Landfills”, funded by HCST, Amman, Jordan.

7. “Economics of wastewater treatment in Jordan”, funded by HCST, Amman, Jordan.

(Principal Investigator)

8. “Investigating soil salinization due to wastewater reuse in the Jordan Valley”, funded by HCST, Amman, Jordan

9.“Characterization and treatment of Olive mills wastewater in Jordan”, funded by Deanship of Scientific Research at JUST university.

10.“Regulating PPPs for the Poor in water and sanitation sector”, funded by DFID (280,000 Pounds)

11.”Demonstration and Documentation of Safe Water Reuse”, Phase I , II & III, funded by USAID and Water Authority of Jordan (US $1.14 million), PI

12. “Evaluation of River Bank Filtration for Protection of Jordanian Surface and Ground Water Resources”, funded by NATO-Science Program (Euro 281,000), PI

13. “Community of Practice for Ecohealth projects in MENA Region”, funded by IDRC and FORD foundation (US $ 0.5 million)

14. “Renewable energy and energy efficiency: regional capacity building”, funded by US State Department through AUB (American University of Beirut).

15. WASH and Climate Change Innovation Hub, funded by UNICEF, (US $ 1.2 million), 2018

16. Municipal sludge treatment and reuse options: Solutions for Jordan, Solicited and funded by HCST, 2015 (US $ 0.5 million) for the benefit of the Ministry of Water and Irrigation (MWI), Jordan

**MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS**

Jordanian Engineers Association (JEA)

Jordan Environment Society (JES)

ASCE

Air and Waste Management Association (A&WMA) in the US

Arab Healthy Water Association (AHWA)

Global Network for Environmental Science and Technology (GNEST)

The Mediterranean Education Initiative for Environment (MEdIES), Greece

MenaWater: a community of practice for water professionals in the Middle East and North Africa

Co-founder and member of COPEH-MENA: a community of practice for Ecohealth researchers in the Middle East and North Africa

**HONORS AND RECOGNITIONS:**

College of Engineering Honor List, Yarmouk Univ. 1982-1986

First student award, Dept. of Civil Eng., Yarmouk Univ., 1982/1983

First student in the water resources & environmental eng. Masters program, JUST Univ. 1990

Scholarship for the Ph.D. degree by Jordan University of Science and Technology, 1991

Nomination for Chi-Epsilon academic honor society, 1992, 1993 and 1994

Passed the 1993 General Biochemistry Exam by the American Chemical Society.

The Nawab Zain Yar Memorial Medal by the Institution of Engineers (India), Jan. 2000

Grant award: Best research proposal on water issues (co-authored), by Deanship of Scientific Research at JUST University, Sept. 2001.

Senior Scientific Advisor to IFS (International Foundation of Science), Sweden

Fulbright Scholarship to the United States, Academic year 2009/2010

Appreciation award by the Jordan Water Ministry for the 2009 International Water Day

The 2008 first honor award of the IWA (International Water Association) for small projects and the 2008 first award by the American Academy of Environmental Engineers for the RIAL (Reuse for Agriculture, Industry and Landscape) Project.

Short listed (invited) for the position: Director of Arab Water Academy in Abu Dhabi, 2009

Short listed (invited) for the position: Manager of water networks projects in Zarqa and Rusiafeh, MCC project, MWI, Jordan, 2013

Member/ review panel for ERANET-MED project proposals, meeting in Istanbul, Turkey, June 2016

Member/ official Jordanian delegation to the high level meeting "Linking research and innovation to industry", Bologna, Italy, May 2015

Member/ official Jordanian delegation to the high level meeting "Evaluation of research funding programs across the Mediterranean", Library of Alexandria, Egypt, Sept. 2017

M.Sc. THESES SUPERVISED:

1. "Retrofit of an RBC Wastewater Treatment Plant for Nitrogen Removal: Experimental Investigation and Computer Simulation", by Husam Kilani, Civil Engineering Department, JUST University, June 1999.

2. "Leachate Retardation by Modified Soil Layers", by Moh’d Nusair, Civil Engineering Department, JUST University, October, 1999

3. "Economics of Wastewater Treatment in Jordan: Developing an Expert System", by Suzan O. Bataineh, Civil Engineering Department, JUST University, June 2000.

4. “Diesel Toxicity to Selected Plant Seeds and Bacterial Strains: Feasibility of Phytoremediation / Bioremediation Clean-up Technology for Petroleum-Contaminated Sites”, by Abdulla El-Shak’aa, Civil Engineering Department, JUST University, June 2000.

5. "Industrial Wastewater Management for Jordan Petroleum Refinery", by Shakeeb Saed, Civil Engineering Department, JUST University, May 2001

6. “Mechanisms of Phytoremediation-Modeling Contaminant Transport in the Rhizosphere”, by Rabab Haneiah, Civil Eng. Dept., JUST University, 2003

7. “Feasibility of Decentralized Wastewater Systems in Jordan-GIS Based Investigation”, by Qais Omari, Civil Eng. Dept., JUST University, 2004

8. “Using Artificial Neural Networks (ANN) in simulation of the performance of an activated sludge wastewater treatment plant”, by Awad Omari, Civil Eng. Dept., JUST University, 2004

9. “Image-Based ANN Modeling of the Performance of Wastewater Treatment Plants”, by Rami Alawneh, Civil Eng. Dept., JUST University, 2005

10.”Impacts of Hospital Liquid Waste on Domestic Wastewater Treatment Plants”, by Sumaiah Fraiwan, Civil Eng. Dept., JUST University, 2006

11.”Wastewater Reuse in Corn Growing”, by Ahmad Abo-Dalo, Dept. of Earth and Environmental Sciences, Yarmouk University, 2004 (Co-Supervision)

12. “Olive Mills Wastewater Treatment Using Packed Bed of Zeolite”, by Manal Abu Al-Haija, Chemical Eng. Department, JUST University, December 2007 (Co-Supervision)

13. “Removal of THM precursors from drinking water: Coagulation, AC adsorption and RO”, by Salameh Mahasneh, Civil Eng. Dept., JUST University, April, 2005 (Co-Supervision)

14. "Treatment of Olive Oil Mills Wastewater (OMW) Using Series of Adsorption Steps", by Saad Al-Omari, Chemical Eng. Department, JUST University, December 2007 (Co-Supervision)

15. "Salinity removal of reclaimed wastewater using natural and modified zeolite and nano zeolite particles ", by Esraa Thiabat, 2021

16."Techno-economic feasibility of Irbid compost plant", by Omran Zboon, 2021

17."Modeling Biogas production from Akaider landfill", by Abdalla Awawdeh, Feb 2020.

18. " Techno-economic assessment of solid waste recycling in northern Jordan", by Rashed Batainaeh, January 2022

19. The use of modeling and simulation for evaluating performance and reliability of wastewater treatment plant systems under different scenarios, Saif-Allah Farhat, June 2019

MS THESES CO-SUPERVISED OR EXAMINING COMMITTEE MEMBER:

"Gaseous Transport of Contaminants: Perturbation Solution of the Dusty Gas Model (DGM) Equations for Ternary Gas Systems", by Riyadh Al-Raoush, Civil Engineering Department, JUST University, April 1997.

"Phenolic Interaction with Bentonite: a Kinetic Study", by Osama Hayajneh, Civil Engineering Department, JUST University, June 1997.

"Hazard Identification for Various Environmental Factors in Irbid Region Using Human Studies", by Eyad Barakat, Civil Engineering Department, JUST University, Dec. 1997.

"Development of Hydrological Models for Arid and Semi-Arid Regions of the Iraqi Western Desert", by Adel Hossain, Civil Engineering Department, JUST University, January 1998.

"Characterization and Treatment of Olive Oil Mills Effluent Wastewater", by Nehal Abu-Lail, Chemical Engineering Department, JUST University, January 1998.

"Modified Coagulation for the Removal of Trihalomethane (THM) Precursors", by Majeda Al-Zoubi, Civil Engineering Department, University of Jordan, March 1998.

"Application of Hydrological Rainfall-Runoff Models for Greater Zab Basin in the North of Iraq", by Laith Al-Badranih, Civil Engineering Department, JUST University, June 1998.

"Common Pathogens in Municipal Wastewater Treatment Plants", by Monther Kayyali, Civil Engineering Department, University of Jordan, June 1998.

"Development of Groundwater Model for the Two Upper aquifers (Shallow and Middle) of the Azraq Basin", by Mohammed Al-Khatib, Civil Engineering Department, JUST University, January 1999.

10. “EIA of Zeolite Mining in Jordan”, by Aiman Jaradat, Dept. of Land and Environmental Sciences, Yarmouk University, Irbid, Jordan.

11. “Using GIS for land use in Jordan”, by Moh’d Bataineh, Dept. of Land and Environmental Sciences, Yarmouk University, Irbid, Jordan.

12. “Modeling biogas production in Rusaifeh landfill”, by Rasha Qdaisat, Civil Eng. Dept., JUST University, July 2005.

13. “Assessment of suspended solids dynamics and their effect on irrigation networks case study: Northern Jordan Valley”, by Ra’ed Ahmad Zahrawi, Civil Eng. Dept., JUST University, May 2005.

14. “Solid waste biodegradation enhancement and waste stabilization in landfills”, by Asma AlShraideh, Civil Eng. Dept, JUST University, October 2004

15.“Solid waste management for Irbid city”, by Lubna Al-Khalidi, Civil Eng. Dept., JUST University, Irbid, Jordan.

16. “Assessment of global warming potential of Jordan’s MSW landfills”, by Lubna Nawaiseh, Civil Eng. Dept., JUST University, Irbid, Jordan, December 2007

17.“Pricing policies and water use efficiency in the Jordan Valley”, by Haitham Ja’afreh, Civil Eng. Dept., JUST University, Irbid, Jordan, December 2007

18.“Ground water recharge of reclaimed wastewater”, by S. Tarawneh, Civil and Environmental Eng. Dept., Mu’tah University, Karak, Jordan, Jan 2008

19.“Soil pollution with heavy metals in farms along the upper course of Zarqa river”, by Ayman Abdalla, Department of Earth and Environmental Sciences, Yarmouk University, Irbid, Jordan, Aug. 2009

20.“The optimum conditions of anaerobic treatment of olive mill wastes (OMW) using continuously stirred tank reactor” by Khalid Ali Hasayen, Department of Environmental Sciences and Management, University of Jordan, Aug. 2002

21.“Modeling the hydrologic characteristics of the lower Jordan River” by Lubna Bani Hani, Department of Civil Engineering, Jordan University of Science and Technology, May 2011

22."The Impact of Climate Change on Diarrheal Diseases in Jordan 2004-2018", By Tareq Al-Ahdal, Department of Public Health, JUST University, April 2021

23."Sustainable Alternative Solutions for Clean Organic Waste in Al-Karak Governorate" by Ahmad Al-Nawaiseh, Mu'tah University, May 2020

24."Management of domestic sewage sludge in Al-Karak WWTP", by Tuqa Adel, Mu'ta University, Jan 2020

25."The impact of climate change on chickenpox in Jordan, 2004-2018" By Reem Al-Jawlahi, Department of Public Health, JUST University, July 2021

26."Greywater characterization for west Irbid and methods of treatment for household use" By Qais Haziemh, Jordan University of Science and Technology, May 2021

27."Performance evaluation and modeling of Al-Me'rad wastewater treatment plant" by By Reham Saleh Abdullah Mohamad, Jordan University of Science and Technology, October 2021

28."Assessment of drinking water quality using water quality index in al baqa’a refugees camp- Jordan" by Marwa Izmeqna, University of Jordan, January 2022

29."Evaluation of Existing Sorting Plant for Solid Waste in Al-Karak and the Potential of Utilization of the Output Valuable Fractions and Sustainability of Operation" by Esra'a Amin Ali Al-Athamin. Mu'tah University, Feb 2021

30.Treatment of Grey water using Expanded Polystyrene in Batch Reactor", by Tasneem Al-Khateeb, Jordan University of Science and Technology, April 2022

31."Generation of synthetic daily rainfall data in Jordan" by Ahmad Osama Musleh, Jordan University of Science and Technology, May 2022

**WORKSHOPS/SHORT COURSES ATTENDED:**

1. The Environment of the Red Sea and Gulf of Aden Regional Workshop, by the International Coral Reef Initiative (ICRI), Aqaba, Jordan, Sept. 1997.

2. Environmental Health Workshop, by CEHA, WHO office, Amman, Jordan, May, 1998.

3. Training of Trainers (TOT) Workshop, by the Institute of Public Administration, Amman, Jordan, Nov. 1998.

4. Environmental Public Awareness-Environmental Management Course, by WUSC (World University Service of Canada) and KHEMTP (King Hussain Environmental Management Training Program), Feb. 8-Feb. 29, 1999, Vancouver, Canada.

5. Participatory Methods in Environmental Research-Environmental Management Course, by WUSC and KHEMTP, Feb. 1-Feb. 8, 1999, Ottawa, Canada.

6. Wastewater Reuse in Agriculture, by InWent, Sept. 4-14, 2005, Cairo, Egypt

7. Integrated Pest Management (IPM), by USAID October 2005.

8. Mitigation and Adaptation of Natural Disasters, by NATO SfP, Santiago de Compostela, Spain, March 2008.

9. Water Governance for Future Leaders, by Arab Water Academy (AWA), Arab Water Council (AWC), and Environment Agency-Abu Dhabi, June 28 to July 2nd, 2009, Abu Dhabi, UAE

10. High Performance Leadership Course, by Saiid Business School, Feb. 2010, University of Oxford, UK

11. EXCEED project workshop (non-conventional water resources), Antalya, Turkey, May 2014

12. Urban planning and water management, by Connective Cities foundation, Germany, 2018

13. Arab Regional Preparatory Meeting for the Midterm Comprehensive Review of the Water Action Decade/Beirut on 18-19 May 2022, by ESCWA

14. Transboundary water issues and water diplomacy, by WDC (Water Diplomacy Center), Jordan May 2021

## 15. Resource Efficiency in Industry, by UNIDO and the Royal Scientific Society (RSS), Amman, Jordan, October 2020

16.Water-Energy Nexus and the National Carrier Project, By MWI and University of Jordan, Dead Sea, Sept. 2021

**WORKSHOPS/SHORT COURSES ORGANIZED:**

1. Domestic Wastewater Treatment, Consultation Center for Science & Technology, JUST, Dec. 1997.

2. Industrial Wastewater Treatment, Consultation Center for Science & Technology, JUST, Dec. 1997.

3. Design of Environmental Public Awareness Campaigns, KHEMTP and JES, Jordan Environment Society, Amman, Jordan, October 1999.

4. Industrial Water Treatment, Training Center of Muscat Municipality, Oman, September 1998.

5. Domestic and Industrial Wastewater Treatment, Training Center of Muscat Municipality, Oman, June 2000.

6. Desalination Technologies and Water Management, Training Center of Muscat Municipality, Oman, June 2000.

7. Skills of ecosystem approaches to human health improvement, EcoJUST, JUST University, Jordan, June 2001

8. Media education on water and environmental issues, University of Jordan (USAID/MWI training project), August 2001.

9. Advanced management of wastewater: treatment and reuse, Engineers Training Center, Jordan Engineers Association, June 22-26, 2003, Amman, Jordan

10. Water skills enhancement and information to decision-makers in Jordan’s water sector, a continuing several-year-training project for engineers and decision-makers in the ministry of water and irrigation (MWI) of Jordan. The project is funded by the US Agency for International Development (USAID). I participated in the organization and/or training of many short courses so far including: Water-related environmental health planning and management, Wastewater treatment and reuse, Drinking water supply systems, Sources of water pollution and their control, Quality assurance/quality control and laboratory certification, and Physical/ chemical and biological techniques for drinking and wastewater quality. University of Jordan, Amman, March 2000 – 2004.

Ecosystem approaches to human health, Eco-JUST and IDRC, May 2004, JUST university, Irbid, Jordan

11. Water reuse in Agriculture, funded by InWent (Germany), Irbid, Jordan, Dec 3-12, 2006 and May 5-15, 2007

12. PPPs in Water services, funded by INWRDAM (Inter-Islamic Network on Water Resources Development and Management), Kuala Lumpur, Malaysia, August 23- September 3rd, 2007

13. Capacity Building for various stakeholders on issues of wastewater treatment and reuse in Jordan as adaptive capacity to climate change, Team Leader, 2006-2008, funded by US-IALC (International Arid Land Consortium) and USAID, Jordan

14. Managing Training programs for InWent (Capacity Building International, Germany) on wastewater reuse and adaptation to CC for Arab experts, 2006-2007

15.Tools of IWRM for climate change adaptation, June 2016, Amman, Jordan for ESCWA

16.Urban flood modeling and early warning tools, Consultative Center for Science and Technology, JUST university, April 2018

**PROFESSIONAL VOLUNTRY SERVICE:**

Referee for Clean Technologies and Environmental Policy (CTEP)

Referee for "Abhath Al-Yarmouk Journal" of Yarmouk University, Jordan

Referee for “Mu’tah Journal” of Mu’tah University, Jordan

Referee for "Dirasat" Journal of the University of Jordan, Jordan

Referee for "Jordan Journal of Civil Engineering", Jordan

Referee for the "Journal of Scientific Research-*Science and Technology"* of the Sultan Qaboos University, Oman.

Referee for Arabian Journal of Chemistry, KSA

Referee for ECOHEALTH Journal, USA

Referee for ASCE Journal (Practice Periodical of Hazardous, Toxic, and Radioactive Waste Management), USA

Referee for the Environmental Engineering Journal (ASCE)

Referee for Water International Journal, USA

Referee for Bioresource Technology Journal, UK

Referee for Hydrological Sciences Journal, UK

Referee for the Journal of Hazardous Materials, Elsevier

Member of the Higher National Committee for Sanitation and Wastewater Treatment Plants, Water Authority of Jordan, Ministry of Water and Irrigation, Jordan.

Member of the committees on “irrigation water quality in the Jordan Valley” and “enhancing effluent quality of Jordan’s wastewater plants”, National Center for Agricultural Research and Technology Transfer (NCARTT), Ministry of Agriculture, Amman, Jordan.

Founding member of the Arab-Euro Desalination Network (AEDN). ([www.just.edu.jo/~AEDN](http://www.just.edu.jo/~AEDN))

Founder and president of EcoJUST: the Jordan’s focal point on ecosystem approaches to human health improvement. ([www.ecohealth-jordan.org](http://www.ecohealth-jordan.org))

Co-founder and member of COPEH-MENA: a community of practice for Ecohealth researchers in the Middle East and North Africa ([www.copeh-mena.org](http://www.copeh-mena.org))

**COUNTRIES LIVED IN / VISITED:**

Lived in: USA (Virginia and California), Kuwait and Jordan.

Visited : Canada (Ontario, Quebec and BC), Germany, Netherlands, Belgium, Switzerland, UK, France, Italy, Sweden, Spain, Turkey, Greece, Tunisia, Cyprus, Syria, Egypt, Senegal, Lebanon, Saudi Arabia, UAE, Oman, Bahrain, Yemen, China, Pakistan, Hong Kong, Malaysia, Thailand and Cuba.

**LinkedIn:**

https://www.linkedin.com/in/ziad-al-ghazawi-75267614/

**REFERENCES:**

Available upon request