

Brief

Dr. Hani Abu Qdais is a Professor of Environmental Engineering. With more than 25 years of diverse experience in public, private and academic sectors, Dr. Abu Qdais has served as an expert in many projects in Jordan and the region, especially in solid waste management in hot climates. He has published more than 40 papers in international refereed journals and proceedings of international conferences. Most of his publications are focusing on integrated solid waste management and waste to energy. In Addition, both his MSc and PhD thesis were devoted to Solid Waste Management in Hot Climate. During his career Dr. Abu Qdais served as a consultant for several national and international agencies, such as Ministry of Environment, Ministry of Municipal Affairs, UNDP, USAID, WHO, IDRC, JICA, GIZ, SWEEPNET, FAO and projects funded by the World Bank and European Development Bank. Prof. Abu Qdais obtained Shoman Award for Arab Researchers in the field of Solid Waste Management.

Education

- 1- **PhD in Environmental Engineering, University of Newcastle upon Tyne, UK, 1998**
Thesis Title "Management of Solid Waste Composting under Hot Climate Conditions".
- 2- **MSc. in Water Resources and Environmental Engineering, Jordan University of Science and Technology, Jordan, 1987. Thesis Title " Solid Waste Management: Evaluation and Possible Improvements for the City of Irbid".**
- 3- **BSc. in Civil Engineering, Kharkov Institute for Municipal Engineers, Kharkov, USSR, 1982.**

Experiences

- 1- 2016-2017 Sabbatical Leave, , Civil Engineering Department, Yarmouk University
- 2- 2010 – To date Professor, Civil Engineering Department, Jordan University of Science & Technology
- 3- 2013 - 2016, Assistant to The President, Jordan University of Science & Technology
- 4- 2008 - 2013 Director, Queen Rania Al Abdalla Center for Environmental Science and Technology, Jordan University of Science and Technology

- 5- 2006 - 2008, Dean of Scientific Research and Graduate Studies, German Jordanian University.
- 6- 2005 - 2010, Associate Professor of Environmental Engineering at the Civil Engineering Department, Jordan University of Science & Technology.
- 7- 1999 - 2005, Assistant Professor of Environmental Engineering at the Civil Engineering Department, Jordan University of Science & Technology
- 8- 1998-1999, Executive Director, Jouzy & Partners Consulting Engineering Bureau, Abu Dhabi, UAE
- 9- 1996-1998, Research Assistant in Environmental Engineering, University of Newcastle upon Tyne, UK
- 10- 1994-1996, Head of Water Transmission and Distribution Projects, Water & Electricity Department , Abu Dhabi-UAE
- 11- 1990-1993, Resident Engineer at Power and Water Plant Project, Toshiba Corporation, Abu Dhabi, UAE
- 12- 1984-1990, Environmental Engineer in the Ministry of Municipal, Rural and Environmental Affairs, Jordan
- 13- 1982-1984, Civil Engineer in the Jordanian Armed Forces

Consultation to International / National Agencies

1. **Technical Consultant for UNDP, on Zarqa Municipal Solid Waste Management Project. The project included the following:**
 - i. Solid waste characterization and estimation of generation rates.
 - ii. Studying and recommending an efficient and economic collection system
 - iii. Establishing a pilot recycling facility
 - iv. Carrying out a public awareness campaign
 - v. Recommending a new solid waste fee system to recover the service cost
 - vi. Training and capacity building

2. Technical Consultant for Medical Waste management in Northern Jordan. USAID funded project. The project objectives activities included the following:

- i. Description and assessment of the current medical waste management practices in Northern Jordan
- ii Determine the composition and generation rates of medical waste generated in northern Jordan Hospitals
- iii Enhance the efficiency and effectiveness of the medical waste management at King Abdullah Hospital
- iv. Providing training and capacity building to enhance the management capacity of the medical waste management staff in northern region
- v. Review and provide recommendations of the national regulatory framework
- vi. Assess the feasibility of involving the private sector in the process of medical waste management
- vii. Developing a manifest system to track the medical waste from cradle to grave.

3. Technical Consultant for Greater Amman Municipality to Prepare Rapid Environmental Assessment study for Al Ghabawi Landfill site. Served as a team leader to conduct the study, which included the assessment of the landfill project on the environment, the public health and its socio – economic impacts. Based on the study GAM obtained landfill equipment as a donation from the Japanese Government with a value of 5 million JD.

4. Team Leader on a project (Introducing the Biogas Technology into University Curriculum). Funded by UNDP. The project activities included training the Students on minimizing the GHGs from solid waste. A state of the art Laboratory in the area of waste to energy was established in JUST.

5. Team Leader on a project (Capacity Building of The Jordanian Professionals in Biogas Technology). The project included training sessions and on site training for the Decision Makers, Engineers, and Technicians from Jordan Biogas Company, Ministry of Environment, Municipalities and Common Services Councils.

6. Project Manger for Designing, Building and Comissioning a Pilot Biogas plant at Al Akeeder Lanndfill. A USAID funded project which aimed at constructing testing and commissioning a pilot biogas plant at Al Akeeder landfill site so as to estimate the energy potential of Al Akeeder Landfill and to list the landfill as a CDM project and preparing the TOR for private investors to build a full scale plant.

7. Consultant to The Ministry of Municipal Affairs/ Joint Services Council to Conduct a study to Improve the Environmental Performance of Al Akeeder Landfill. The study included the following activities:

- i. Conducting a sampling survey to estimate the quantities and composition of the solid waste
- ii. Measuring the methane emissions from the landfill
- iii. Evaluation of the financial and institutional aspects of the landfill operations
- vi. Developing a strategic framework for improving the landfill environmental performance

8. Consultant to The Ministry of Municipal Affairs/ Joint Services Council to develop a Strategic Framework for Al Hysainiyat Landfill in Mafraq Governorate. The tasks performed included assessment of the current status of the landfill operations and their impacts on the environment. SWOT analysisi of the landfill operations were carried out. Based on the assessment, a road map to improve the environmental as well as the financial performance of the landfill was recommended.

9. A Consultant to the The regional solid waste exchange of information and expertise network in Mashreq and Maghreb countries (SWEEPNET) **to Prepare the National Jordanian Solid Waste Profile.** The consultancy services included communication with all stakeholders, conducting workshops and interviews and preparing the national Jordanian Solid Waste Profile.

10. Consultant to a project funded by the European Development Bank to Estimate the Solid Waste Composition at Al Akeeder Landfill. First of its type study in Jordan, which followed the European Standards in estimating the solid waste composition from residential, commercial as well as institutional sources. A statistically designed survey that considered various socio-economic factors was conducted to assess the composition of the solid waste that is hauled and disposed at the second largest landfill in Jordan.

11. Consultant To Abu Dhabi Municipality to study the Composition and generation rates of the Residential Solid Waste Generated in Abu Dhabi City.

12. Consultant to Sanna Municipality in A project funded by GIZ to Improve the Solid Waste Management in Sanna City

13. National Team leader in a Study for **Assessing Synergies Between The Three Rio Environmental Conventions, Funded by Global Environmental Facility (GEF).**

14. Consultant to UNDP to prepare the study on National Capacity Self Assessment (NCSA) to Implement Rio Conventions (Strategic Planning and Linkage between Conventions)

15. Consultant to Dubai Municipality to Study the Composition and the generation rates of Al Hamriya Vegetable Market.

16. Consultant to WHO in Solid Waste Community Based Initiative.

17. Team Leader of the National Environmental, Economic and Development Study (NEEDS) for Climate Change, study funded by UNFCC.

18. Consultant to UNDP to prepare a Project Document on the Impact of Syrian Refugees on the Hosting Communities with special emphasis on Solid Waste Management.

19. Consultant to FAO to prepare a project document for biogas recovery from sewage sludge at Zattari wastewater treatment plant

Publications

1. **Abu Qdais H. A.**, Hamoda M.F. and Newham J. (1997) Analysis of Residential Solid Waste At Generation Sites, Waste Management and Research, 15, pp 395-405.
2. Hamoda M.F., **Abu Qdais H.A.**, Newham J. (1998) Evaluation of Municipal Solid Waste Composting Kinetics, Journal of Resources, Conservation and Recycling, V.23(4)1998, pp209-223
3. **Abu Qdais H.A.**, and Anderson G.K. (1998) A Low Cost Method for Municipal Solid Waste Characterization. Third Swedish Landfill Symposium, Lulea, Sweden, October 1998.
4. Walid Elshorbagy, **Abu Qdais H.A.**, Elsheemy M.K., (2000) Simulation of THM species in Water Distribution Systems of Abu Dhabi, Water Research, V.34, pp 3431-3439
5. M. Abu-Qudais and **Abu Qdais H.A.** (2000) Energy Content of Municipal Solid Waste in Jordan and Its Potential Utilization, Energy Conservation and Management , 41 pp 983-991.
6. **Abu Qdais H. A.**, and S. Abo-Qudais, (2000) Environmental Impacts Assessment of Road Construction Projects, Environment & Ecolog, 18(2), pp 405-419
7. M. Abu-Qudais and **Abu Qdais H.A.** (2000) Energy Content of Municipal Solid Waste in Jordan and Its Potential Utilization, Energy Conservation and Management , 41 pp 983-991
8. **Abu Qdais H. A.**, and Alnassay H. (2001) Effect of Pricing Policy on Water Conservation: A Case Study Abu Dhabi City, Water Policy, 3 (2001) pp 207-214.
9. **Abu Qdais H. A.** and Batayneh F. (2002) The Role of Desalination in Bridging

The Water Gap in Jordan, Desalination 150 , pp. 99-10

10. M.F. Hamoda and **Abu Qdais H. A.** (2003) Bench Scale Composting of Some Salt Tolerant Plants, Technology, 8, pp 79-87
11. **Abu Qdais H. A.** (2003) Water Demand Management, - Security for the MENA Region , Seventh International Water Technology Conference, Cairo, Egypt, 1- 3 April, 2003, pp 5-23.
12. **Abu Qdais H. A.** and Mousa H. (2004), Removal of Heavy Metals from Wastewater by Membrane Processes, Desalination, 164, pp 105-110.
13. **Abu Qdais H. A.** and Halalsheh R, (2004) Impact of Grey Water Recycling on the Performance of Wastewater Treatment Plants in Jordan, International Water Demand Conference, Jordan, May, 2004.
14. **Abu Qdais H. A.** (2004) Strategies of Integrated Water Resources Management, Emirates Center for Research and Strategic Studies, Abu Dhabi, UAE (In Arabic)
15. **Abu Qdais H. A.** (2005) Analysis of Leachate Treatment Technologies from Municipal Solid Waste Landfills , Proceedings of the Intercontinental Landfill Symposium, November, 2005, Lake Toya, Japan
16. Abo-Qudais and **Abu Qdais, H. A.**, (2005) Perceptions and Attitudes of Individuals Exposed to Traffic Noise in Working Places, Building & Environment, 40 pp 778-787
17. Abo-Qudais S. and **Abu Qdais H. A.**, (2005) Performance Evaluation of Vehicles, Emissions Prediction Models, Clean Technology & Environmental Policy, 7, pp 279-284.
18. Al-Jarrah O. and **Abu Qdais, H. A.** (2006) Municipal Solid Waste Landfill Siting Using Intelligent System, Waste Management, 26, pp 299-306
19. **Abu Qdais H. A.** (2007) Environmental Impact Assessment of Municipal Solid Waste Landfills: A Case Study from Jordan, Proceedings Sardinia 2007, Eleventh International Waste Management and Landfill Symposium S. Margherita di Pula, Cagliari, Italy; 1 - 5 October 2007
20. **Abu Qdais H. A.** (2007) Techno Economic Analysis of Municipal Solid Waste Management in Jordan, Waste Management, 27, pp 1666-1672
21. **Abu Qdais H. A.**, Abdulla F. and Rabi A. (2007), Characteristics of Medical Waste Generated at Jordanian Hospitals, Clean Technology and Environmental Policy, 9, pp 147-152

22. Abdulla F., **Abu Qdais H.** and Rabi A. (2008), Site Investigation on Medical Waste Management Practices in Northern Jordan, *Waste Management* 28, pp 450-458
23. **Abu Qdais H.** Abdulla F. and Qrenawi L. (2008) Simulation of Leachate Production from An Arid Solid Waste Landfill Using Hydrologic Evaluation of Landfill Performance (HELP) Model, *The Journal of Solid Waste Technology and Management*, 34, pp 177-186
24. **Abu Qdais H. A.** (2008) Environmental Impacts of Mega Desalination Projects, The Red-Dead Sea Conveyor, *Desalination*, 220, pp 16-23.
25. **Abu Qdais H. A.** and Alsheraideh A. A. (2008) Kinetics of Solid Waste Biodegradation in Laboratory Lysimeters, *Jordan Journal of Civil Engineering*, 2, pp 45-51.
26. **Abu Qdais H. A.**, N. Al –Abed, Z. Al Ghazawi, and F. Abdulla (2009), Prediction of Trihalomethane Formation in Water Distribution Systems, *Desalination and Water Treatment*, 2, pp 162-169.
27. **Abu Qdais H.**, Bani Hani K. and Shatnawi N. (2010) Modelling and Optimization of Biogas Production from A Waste Digester using Artificial Neural Network and Genetic Algorithm, *Resources Conservation and Recycling*, 54, pp 359-363
28. **Abu Qdais H.** (2010) Selection of Landfill Leachate Management Strategies Using Decision Support Systems, *The Journal of Solid Waste Technology and Management*, 36, pp 246-257
29. Abu Ashoor J., **Abu Qdais H.** and Al Widyan M. (2010) Estimation of Animal and Olive Solid Wastes in Jordan and Their Potential as A Supplementary Energy Source: An Overview, *Renewable and Sustainable Energy Reviews*, 14, pp 2227-2231.
30. **Abu Qdais H.**, Maqableh A., Nawayseh L. and AL Jamal N. (2012) Energetic and Methane Emission Reduction Potentials from Unsanitary Solid Waste Landfill, *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, 34:4, 360-369.
31. Abu-Daabes M., **Abu Qdais H.** Alsyouri H. (2013) Assessment of Heavy Metals and Organics in Municipal Solid Waste Leachates from Landfills with Different Ages in Jordan, *Journal of Environmental Protection*, 4, pp 344-352

32. **Abu Qdais H. A.** and Alsharaideh H. A. (2016), Selection of Management Option for Solid Waste from Olive Oil Industry Using the Analytical Hierarchy Process, *Journal of Material Cycles and Waste Management*, 18, pp 177-185
33. **Abu Qdais H. A.** and Al- Widyan M. I. (2016) Evaluating Composting and co-composting of Agro-industrial Wastes, *International Journal of Recycling of Organic Waste in Agriculture*, 5, pp 273-280.
34. Sameer Al-Asheh, Hani **Abu Qdais**, Adnan AlQuraishi, Osama Husain and Ismail Sadoon (2016) Pyhysico-Chemical Characterisation of an Artificial Pond to Control the Eutrophication Process: A Case Study, *International Advanced Research Journal in SCIENCE, Engineering and Technology* 3, pp27-40.
35. Alsharaideh H. A. and **Abu Qdais H. A.** (2017) Stochastic modelling and optimization of medical waste collection in Northern Jordan, *Journal of Material Cycles and Waste Management*, 19, pp 743–753
36. **Abu Qdais H. A.** and Al- Widyan M. I. (2017) Anaerobic digestion of low- and high-solids food waste under mesophilic conditions, *International Journal of Ecosystems and Ecology Sciences*, 7 pp 91-98.
37. **Abu Qdais H. A.**, Gibellini S., and Vaccari M. (2017) Managing solid waste under crisis: The case of Syrian refugees in Northern Jordan, *Proceedings Sardinia 2017 / Sixteenth International Waste Management and Landfill Symposium/ 2 - 6 October 2017 S. Margherita di Pula, Cagliari, Italy.*
38. Chede S., Anaya M. Carver V. Gorgannejad S. Harris T., Al-Mallahi J., Abu Dalo M., **Abu Qdais H. A.** and Escobar I. (2018) Desalination using low biofouling nanocomposite membranes: From batch-scale to continuous-scale membrane fabrication, *Desalination (in press)*
39. **Abu Qdais H. A.**, Begday I. V. , Shkarlet K. Y. Harin K.V , Bluzhina A. S. and Likhovid A.A. (2018), Leachability of heavy metals from stabilized/solidified mine tailing in Russia, *Engineering Research (In Press)*
40. **Abu Qdais H. A.**, Begday I. V. , Shkarlet K. Y. Harin K.V , Bluzhina A. S. and Likhovid A.A. (2018) Assessment of Heavy Metals Pollution from Tailing Sites in the North Caucuses Region, Russia, *Mine Water and The Environment (Accepted for Publications)*

Supervised Master Thesis

1. Feasibility of Municipal Solid Waste Recycling in Irbid City
2. Simulation of Solid waste biodegradation in landfills
3. Modelling Biogas Production from Closed Landfill of Russeifah
4. Environmental and Health Risks Impacts of Al Akeeder Landfill
5. Developing National Criteria for Setting Solid Waste Landfills Sites in Jordan
6. Simulation of Biogas Plant Performance Using Artificial Neural Networks
7. Evaluation of Medical Waste Ash Solidification Process
8. Analysis of Domestic Solid Waste Characteristics in Irbid City
9. The role of Water Demand Management in Bridging the Water Gap in Jordan
10. Role of Private Sector in the Management of Jordanian Water Sector
11. Comparison of Different Treatment Methods for Removal of Trihalomethane Precursors from Drinking Water
12. Modelling the Performance of Reverse Osmosis Desalination Process for Jordanian Brackish Water
13. Utilization of Wastewater Sludge for the production of Biogas
14. Impact of nano-materials on the performance of wastewater treatment plants
15. Water governance and integrity risk assessment for water sector in Jordan

Funded Projects

- 1- Promoting Water Demand Management Concepts in Municipal Sector, Funded by USAID, Amount of funds (US\$) 70,000.
- 2- Introducing Biogas Technology into University Curriculum, Funded By, United Nations Development Program (UNDP), Amount of funds (US\$) 90,000
- 3- Capacity Building for Integrated Solid Waste Management, Funded By, United Nations Development Program (UNDP), Amount of funds (US\$) 100,000
- 4- Simulation of THM Formation in Drinking Water Network , Funded By, Higher

Prof. Hani Ahmad Abu Qdais

- Council of Science & Technology (HCST), Amount of funds (US\$)10,000
- 5- Medical Waste Management in Northern Jordan (Phase one), Funded By, USAID, Amount of funds (US\$)450,000
 - 6- Medical Waste Management in Northern Jordan (Phase two), Funded By, USAID, Amount of funds (US\$) 90,000
 - 7- Estimating Energetic Potential of AL Akeeder Landfill, Funded By, USAID, Amount of funds (US\$) 69,000
 - 8- Physico-Chemical and Biological Characterization of The Artificial Pond Water at JUST to Control the Eutrophication Process, Funded By, Deanship of Scientific Research (JUST), Amount of funds (US\$) 30,000
 - 9- Heavy Metals Removal from Landfill Leachate Using Low Cost Adsorbents, Funded By, Deanship of Scientific Research (GJU), Amount of funds (US\$) 21,000
 - 10- Construction of ECOHOUSE in JUST campus, Funded by USAID, amount of fund US\$ 120,000

Administrative activities and committees membership

Department Level

- 1-Coordinator of water Resources and Environmental Engineering Division
- 2-Member of Departmental Scientific Research Committee
- 3-Member of Curriculum Review and Development Committee
- 4-Member of Graduation Projects review and Development Committee
- 5-Member of Students Affairs Committee

University Level

- 1- Member of Deans Council
- 2- Member of University Council
- 3- Chair of Scientific Research and Graduate Studies Council
- 4- Member of Higher Scientific Research Committee
- 5- Coordinator of MSc. Program in Water Demand Management
- 6- Member of University Scholarship Committee
- 7- Member of University Admission Committee
- 8- Member of The Technical Committee of Queen Rania Al Abdullah Centre for Environmental Science and Technology

- 9- Member of University Environment Committee
- 10- Member of Investigating Committee with Faculty Members
- 11- Member of the Technical Team to Build The Capacity of Water and Irrigation Ministry Staff
- 12- Member of Technical Team to Conduct Environmental Auditing of Several Industries.
- 13- Member of Green Campus committee
- 14- Member of Tendering Committee

Outside the University

1. Member of the National Team to Prepare A National Master Plan for Solid Waste Management in Jordan
2. Coordinator of National Team on Energy from Biomass
3. Member of the National Referees Team of the State Prize in Environment, Ministry of Culture, Jordan.
4. Member of the National Climate Change Committee
5. Member of the Consultative Council for The Ministry of Water and Irrigation
6. Member of the Higher Scientific Research Committee at the Ministry of Higher Education.
7. Member Board of Directors of Al Yarmouk Water Company
8. Member of Board of Trustees University of Applied Sciences
9. Board Member, Jordan Nuclear Regulatory Commission
10. Member of Scientific Committee at Scientific Research Fund
11. Committee Chair of Water and Environment Sector at Scientific Research Support Fund.
12. Board Member of Environmental Fund

Courses Taught

Undergraduate Course

1. Environmental Engineering
2. Sanitary Engineering
3. Hydraulics

4. Environmental & Sanitary Engineering Laboratory
5. Hazardous and Solid Waste Engineering
6. Water and Wastewater Systems Design
7. Environmental Geology
8. Water Treatment
9. Water Management in the Middle East
10. Design of Environmental Systems
11. Water Resources Management

Graduate Courses

1. Industrial and Hazardous Waste Management
2. Chemistry for Environmental Engineers
3. Strategic Planning in Water Demand Management
4. Integrated Water Resources Management
5. Advanced Wastewater Treatment

Professional Membership

- Member of Jordanian Engineers Association
- International solid Waste Association
- International Water Resources Association
- International Water Desalination Association
- International Water Quality Association
- Pacific Basin Consortium for Hazardous Waste Research & Management

Languages

- Arabic** : Mother Language
- English** : Excellent, read, write and speak.
- Russian** : Very good read, write and speak.

AWARDS

Abdel Hameed Shoman Award for the Arab Researchers (2015) in the field of Waste Management.

Al Farabi Medallion, Kazakh State University, Kazakhstan

University award as one of the best University Researchers, Jordan University of Science and Technology

Contact Information

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