

JAMAL K. NEJEM PhD, MIEAust (Australia), CPEng (Jordan)

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Education

- 2007 -2012 **Doctor of Philosophy (PhD) in Civil and Environmental Engineering**
University of Technology, Sydney (UTS)
Sydney, Australia
- 1989 -1994 **Master of Science (MSc) in Civil Engineering**
Specialized in Water Resources and Environmental Engineering
King Fahd University of Petroleum & Minerals (KFUPM)
Kingdom of Saudi Arabia (KSA)
- 1981 – 1986 **Bachelor of Science (BSc) in Civil Engineering**
Yarmouk University
Jordan

Training and Professional Development

- **Social Water Studies in the MENA Region:** State of the Art and Perspective. German Jordanian University, Madaba, Jordan, 28 - 30 September 2014
- **Grey Water Recycling for Mosques.** A workshop conducted by GreenLife GmbH, Kreditanstalt für Wiederaufbau-Deutsche Investitions- und Entwicklungsgesellschaft (KfW-DEG), and Universität Rostock, Amman, Jordan, 25 September 2014
- **Water in the Arab World Conference:** Status, Challenges, and Opportunities. Amman, Jordan, 25 – 27 February 2014
- **Surveying Engineering and Geomatics.** A scientific symposium conducted by Arab Company for Engineering Applications and Planning Survey, German Jordanian University, Madaba, Jordan, 10 February 2013
- **Awareness of Universities' Students on Climate Change.** A workshop conducted by Royal Scientific Society-Friedrich Ebert Stiftung, German Jordanian University, Madaba, Jordan, 23 October 2013
- **MATLAB Fundamentals.** A three-day short course conducted by MathWorks Company, Sydney, Australia, 27-29 September 2010
- **Research Commercialisation.** A two-day workshop offered by UniQuest, Sunshine Coast, Australia, 5-6 March 2009
- **Learning Teaching.** A three-half-day program offered by University of Technology, Sydney (UTS), Australia, December 2007
- **7th Australian Groundwater Modelling School.** A four-day workshop conducted by Centre for Groundwater Studies, Brisbane, Australia, 7-10 August 2007
- **Safety Induction.** offered by University of New South Wales, Sydney, Australia, 2005
- **Training on Stack Emission Monitoring System.** A four-day short course offered by Sick- Maihak Company, Germany, June 2002

- **Introduction to dBase IV.** A two-week short course offered by the Data Processing Center, Dhahran, KSA, December 1993
- **Wastewater Treatment - System Design and Plant's Evaluation.** A one-week short course offered by KFUPM, KSA, May 1993
- **Statistical Analysis System (SAS).** A two-week short course offered by the Information Technology Center, KSA January 1993
- **Hazardous Waste Management.** A four-day short course offered by the Department of Applied Civil Engineering, KFUPM, December 1992
- **Personal Computers & DOS.** A seven-day short course offered by the Data Processing Center, November 1992

Teaching, Research, Projects and Publications

- Taught **courses** and laboratory sessions for undergraduate students in civil and environmental engineering (e.g. statics, mechanics of materials, structural analysis, design of reinforced concrete structures, surveying, fluid mechanics, hydrology, hydraulics, water resources and pollution control, wastewater engineering, environmental quality control, hazardous wastes management)
- Published seven research **papers** in refereed journals and international conference proceedings (Ref. enclosed Professional Achievement)
- Successfully completed twelve client-funded **projects** on groundwater, air pollution, and environmental problems of diversified nature (Ref. enclosed Professional Achievement)
- Prepared fourteen technical **reports on research** findings (Ref. enclosed Professional Achievement)
- Completed seventeen **proposals for projects** on groundwater, air pollution, and environmental problems (Ref. enclosed Professional Achievement)

Professional Experience

Feb. 2013- Feb. 2016 **Department of Water and Environmental Engineering (DWEE)**

**School of Natural Resources Engineering & Management
German Jordanian University (GJU)**

Job Title: **Assistant Professor**

Job Description: Teaching civil, water resources and environmental engineering courses for undergraduate students, supervising undergraduate students in their water and environmental engineering graduation projects, committee member evaluating and examining graduation projects.

Responsibilities:

- Teaching undergraduate courses in the areas of civil, water resources and environmental engineering
- Supervision of water resources and environmental engineering undergraduate students in their graduation projects
- Participating in and contributing to the BSc- Study Plan modifications for water and environmental engineering

- Carrying out Exchange Coordinator duties and responsibilities between DWEE-GJU and German universities

March-Nov. 2011

Learning and Design Centres (LDCs)

**Faculty of Engineering & Information Technology
University of Technology, Sydney (UTS)**

Job Title:

LDC Administration Assistant

Job Description:

Working with staff and faculty members to enhance students' understanding of their subjects by informal learning. This takes place outside the formal classroom settings through peer-based interaction.

Responsibilities:

- Assisting students in the use of self-selected references and other resources
- Guiding students to the proper experimentation and practice
- Liaising individual students' consultation with staff and faculty members

May, 1999 to 2006

Center for Environment & Water

**The Research Institute
King Fahd University of Petroleum & Minerals (KFUPM)**

Job Title:

Engineer-I (Instructor)

Job Description:

Working as a leading technical person dealing with multidisciplinary client-funded *projects* on civil and environmental studies and groundwater modelling (Ref. enclosed Professional Achievement), teaching *courses* and laboratory sessions for undergraduate students in civil and environmental engineering, contribute in *supervision* of undergraduate students in their civil and environmental engineering graduation projects, assist in supervising postgraduate students (MS and PhD) specialised in water resources and environmental engineering

Responsibilities:

- Conducting high level theoretical and experimental investigations including computer based modelling, management and analysis in the fields of surface water and groundwater hydrology and hydraulics, water quality, environmental pollution (land, water, and air), water resources planning and management
- Participate in teaching undergraduate civil and environmental engineering courses
- Partial supervision of water resources and environmental engineering postgraduate students (MS and PhD)
- Development of FORTRAN Codes for data entry, analysis and reporting
- Developing research proposals and preparing technical reports, papers, tenders and contract documents in the area of water resources and environmental engineering
- Application of innovative techniques such as computer modelling to water resources and environmental studies
- Liaising, collaborating and negotiating with consultants, academics, clients and contractors

- Advising clients and external committees on progress in project activities and other issues of interest
- Providing specialist advice and services to Environment Section management, Water Section, other government authorities, industries, environmental consultants and the community on matters related to groundwater and environment

May, 1995 to 1999

Water Resources and Environment Division

King Fahd University of Petroleum & Minerals (KFUPM)

Job Title:

Engineer-II (Lecturer)

Job Description:

Working as a team member dealing with several multidisciplinary client-funded *projects* on civil and environmental studies and groundwater modelling (Ref. enclosed Professional Achievement), teaching undergraduate *courses* in civil and environmental engineering

Responsibilities:

- Conducting theoretical and experimental investigations including computer based modelling, data collection, and analysis of surface water and groundwater hydrology and hydraulics, water quality, and environmental pollution
- Giving lectures and laboratory sessions at undergraduate level
- Participate in supervising water resources and environmental engineering postgraduate students (master (MS) level)
- Utilising database packages for data entry, analysis and reporting
- Applying computer modelling to water resources and environmental studies
- Advising clients on progress in project activities

Aug. 1989 to

Civil Engineering Department

Mar. 1994

King Fahd University of Petroleum & Minerals (KFUPM)

Job Title:

Research Assistant

Responsibilities:

- Carrying out tutorials and laboratory sessions in civil and environmental engineering
- Conducting lectures and tutorials for engineering graphics and pre-calculus courses in Civil Engineering and Mathematical Sciences Departments
- Performing marking and assessment duties
- Working as a team member in various projects on water resources, civil and environmental engineering including computer based modelling and wastewater investigation
- Using advanced computational models
- Working as a team member of Personal Computer Laboratory

Dec. 1988 to **SoLiCo Construction & Contracting Company S. A. L.**
Jun. 1989
Job Title: **Project Engineer** (Design and Construction)

Responsibilities:

- Structural analysis and design of buildings
- Project cost estimation and budgeting
- Supervision of construction works

Mar.1988 to **Al-Amara Office for Engineering Studies**
Dec. 1988

Job Title: **Engineer** (Design and Construction)

Responsibilities:

- Structural analysis and design of buildings
- Capacity estimation of domestic water supply network
- Project cost estimation and budgeting
- Building construction and pipeline layout supervision

PROFESSIONAL ACHIEVEMENTS

PhD Research **Modelling Groundwater Flow in a Variably-Connected Aquifer-Stream System.** School of Civil & Environmental Engineering, University of Technology, Sydney, 2012

MS Research **Numerical Simulation of Groundwater Depletion Problem in Al-Hasa Area.** Civil Engineering Department, King Fahd University of Petroleum & Minerals, KSA (1994)

Published Work

1. Nakhla G., **J. Qubaiah***, N. Abuzaid, and M. Abdulappa (1990). Impact of Nitrogen on the adsorptive capacity of activated charcoal. *Environmental Technology*, v. 11, pp. 731 – 738

* Nejem previously known as Qubaiah

2. Abderrahman W. A., M. Rasheeduddin, and **J. K. Nejem** (1997). Impacts of agricultural developments on shallow water table rise in parts of the Eastern Province, KSA. Proceedings of the *Development & Environmental Impact Conference*, September 21-23, Ministry of Municipal & Rural Affairs, Riyadh, KSA

3. Abuzaid, N., M. Abul Hamayl, and **J. Nejem** (1998). Wastewater contaminated with Phenol: characteristics, environmental impact, and treatment. Proceedings of the *11th Industrial Security Symposium*, November 22- 25, Riyadh, KSA

4. Abderrahman W. A., M. Rasheeduddin, and **J. K. Nejem** (2000). Impacts of irrigation on shallow groundwater in Eastern Province, KSA. *Water Resources Development*, v. 16, no. 3, pp 369-390
5. El-Amin A. S., **J. K. Nejem**, B. S. Eqnaibi (2002). Groundwater management for large irrigation schemes in Eastern Province, KSA. Proceedings of the *Joint Kingdom of Saudi Arabia-Japan Symposium in 2002, "New Attempt at Improvement and Rehabilitation of the Desert Environment"*, January 27-28, K. F. University of Petroleum & Minerals, Dhahran, KSA
6. El-Amin A. S., **J. K. Nejem**, B. S. Eqnaibi (2003). Water irrigation conservation in sizeable agricultural projects, KSA. Proceedings of *WATA Sixth Gulf Water Conference in concurrence with Second Symposium on Water Use Conservation in the Kingdom of Saudi Arabia "Water in the GCC ... Towards Sustainable Development"*, March 8-12, Riyadh, KSA
7. **Nejem, J.** (2008) Literature review: Cox's Creek coupled surface water-groundwater model (Upper Namoi Study), National Centre for Groundwater Management (NCGM), University of Technology, Sydney, NCGM Report 2008/1
8. **Nejem, J.** (2008) Cox's Creek coupled surface water- groundwater model, presentation at the one-day project meeting (UTS, USYD, ANU), 27 June 2008
9. **Nejem, J.** (2008) Synthetic model: scale issues, presentation at the Losing & disconnected groundwater systems: modelling component, Department of Water & Energy, 27 August 2008
10. **Nejem, J.** (2008) Coupled streamflow and groundwater modelling for improved irrigation allocation estimates, presentation at the *Cotton Catchment Communities CRC Annual Science Forum*, 15-16 October, 2008, Narrabri, Australia
11. **Nejem, J.**, (2008) Coupled streamflow and groundwater modelling: challenges in analytical approaches, NZHS/NZMS Conference in Shantytown, Greymouth, New Zealand, 17-20 November 2008
12. **Nejem, J.** (2009) Scale issues in coupled groundwater-surface modelling, Proceedings of the *Cotton Catchment Communities CRC Annual Science Forum*, 17-19 August, 2009, Narrabri, Australia
13. **Nejem, J.** (2009) Effect of scale on groundwater-surface water estimates, International Association of Hydrogeologists (IAH), 20 October 2009, Sydney
14. **Nejem, J.**, Yates, D., Merrick, N. (2009) Analytical solutions in coupled streamflow and groundwater modelling, Proceedings of the *32nd Hydrology and Water Resources Symposium (H₂009) "Adapting to Change"*, Engineers Australia, Newcastle, Australia, 30 November- 3 December 2009

Research Projects and Technical Reports

1. *University of Technology, Sydney (UTS) data gathering at the Cox's Creek site (Project No. 2.02.06)*. Cotton Catchment Communities CRC, 2006-2009.
2. *Groundwater Resources Study for the Dammam- Khobar- Dhahran Metropolitan Area (on going)*. Interim Report submitted to Al-Hejailan Consultants, May 2004
3. *Field Measurement of Stack Gases for the Combustion Facilities and Study for Air Monitoring Stations in Al-Khafji City*. The Final Report (Volumes I and II) submitted to the Khafji Joint Operations, March 2003

4. *Field Measurement of Stack Gases for the Combustion Facilities and Study for Air Monitoring Stations in Al-Khafji City.* Second Interim Report submitted to the Khafji Joint Operations, January 2003
5. *Field Measurement of Stack Gases for the Combustion Facilities and Study for Air Monitoring Stations in Al-Khafji City.* First Interim Report submitted to the Khafji Joint Operations, August 2002
6. *Hydrogeological Study of Jubail Industrial City.* The Final Report submitted to the Royal Commission for Jubail and Yanbu, January 2002
7. *Technical Assistance in Selection of Air Pollution Control Devices.* The Final Report submitted to El-Saif Development Company, July 2001
8. *Groundwater Resources Evaluation in Three Regions of the Kingdom of Saudi Arabia.* The Interim Report submitted to the Research Institute Top Management, KFUPM, 1997
9. Design and Development of New Production Wells at K. F. University of Petroleum & Minerals. Project in the Research Institute at KFUPM, 1995-1997
10. *Chemical Composition of Scale Samples - WARAQ Company,* 1995-1997
11. *Water Utilization for Desert Greening Along the Gulf Coastal Belt of SA.* The Final Report submitted to Idemitsu Kosan Co., Japan, March 30, 1997
12. *Wastewater Disposal from the Fish Farm of Saudi Fisheries Company,* March 1996
13. *Possible Alternatives for Brine Water and Industrial Wastewater Disposal at Saudi Paper Manufacturing Company,* March 1996
14. *Causes of Shallow Water Table Rise and Disposal of Agricultural Wastewater in the Area West of AL-Awjam,* July 1995

Research Project Proposals Completed

1. Feasibility of the Utilization of Groundwater for Domestic Purposes. Submitted to the Ministry of Water and Electricity, SA, March 2004. Proposed duration of the study: 4 working months.
2. Study of Sinkhole Development in North-Eastern SA. Submitted to Ministry of Petroleum and Minerals Resources, January 14, 2004. Proposed duration of the study: 8 working months.
3. Study for the Construction of Air Pollution Monitoring Stations in Riyadh City. Submitted to KAID for Environmental studies, August 2, 2003.
4. Source Emission Testing for a Predictive Emission Monitoring System. Submitted to ATCO-Honeywell, June 1, 2003. Proposed duration of the study eight working weeks.
5. Groundwater Management Study for the Dammam- Khobar- Dhahran Metropolitan Area. Submitted to Al-Hejailan Consultants, May 2003. Proposed duration of the study: 36 calendar working months.
6. Study of Groundwater Management for Al-Safi dairy "South-East Haradh". Submitted to Al-Safi Dairy Establishment, February 2003. Proposed duration of the study: 18 working months.

7. Computerized and Dynamic Irrigation Water Management System. Submitted to Al-Safi Dairy Establishment, February 2003. Proposed duration of the study: 12 working months.
8. Customization of Computerized Dynamic Irrigation Water Management System. Submitted to the Agricultural Development Company (INMA), June 2002. Proposed duration of the study: 12 working months.
9. Assessment of Groundwater Resources for AzZabirah Region. Submitted to Saudi Arabian Mining Company (MA'ADEN), May 2002. Proposed duration of the study: 16 working weeks.
10. Assessment of Groundwater Resources for Ain Dar Region. Submitted to Saudi Arabian Mining Company (MA'ADEN), May 2002. Proposed duration of the study: 16 working weeks.
11. Groundwater Management Study for Tabuk Agricultural Development Company (TADCO), March 2001
12. Assessment of Groundwater Resources for Long Term Mining Operations of MA'ADEN in Northern Region, 1999
13. Design, Development, and Supervision of Production Wells at SADAF Salt Plant in Jubail Area, 1997
14. Investigation on Possible Alternatives for Brine Water Disposal at the Proposed Delco Freedom Battery Plant, Second Industrial City, 1996
15. Industrial Wastewater Effluent Disposal and/or Reuse at the Second Industrial City, 1995
16. Computerized Irrigation Water Management System for al-Jouf Agricultural Development Company (JADCO), 1995
17. Shallow Groundwater Investigation at the Shrimp Farm Project of Al-ASMAK Fisheries Company, 1995

Computer Knowledge and Skills

- Expert in using the groundwater industry standard code MODFLOW and MODFLOW-SURFACT under Groundwater Vistas (GWV) graphical user interface
- Post-graduate professional experience in development and use of computer procedures and programming in FORTRAN under various operating systems and environments such as:
 - IBM PCs and IBM-compatible running under DOS and Windows
 - IBM and Amdhal Main Frames running under VM and MVS/TSO
- Expert in efficient use of Windows Based Word Processors, Spreadsheets (Excel), Power Point, and graphical packages

Awards/ Rewards

- Australian Postgraduate Award-Industry (APAI), University of Technology, Sydney, March 2007- December 2011
- Learning Teaching Scholarship, University of Technology, Sydney, Australia, December 2007
- Prince Nayef Ibn Abd al-Aziz Al-Saud First Reward for the best paper in the 11th Industrial Security Symposium, November 22- 25, 1998, Riyadh, KSA

- Research and Teaching Assistantships, King Fahd University of Petroleum and Minerals, 1989-1993
- On the Honour Dean's List, College of Engineering, Yarmouk University, 1981-1982

Professional Memberships

- Member, Institution of Engineers, Australia (MIEAust)
- Member, International Water Resources Association (IWRA) until 2008
- Member, American Society of Civil Engineers - SA Section (ASCE - SAS) until 2004
- Chartered Professional Engineer (CPEng), Jordan Engineers Association (JEA)
- Member, Jordan Environment Society (JES)

References

Available upon request.