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| <p>Nationality Date & Place of Birth Present Position & Profession</p> | <p>Jordanian 9/6/1965, Amman, Jordan Head of the Department of Water Management and Environment (1999-2002), May 2004- 2005 Professor and Expert Engineer in Water Resources and Environment</p> |  |
| <p>Address for Correspondence</p> | <p>Work: Hashemite University, Jordan Dept. of Water Management & Environment Dept. of Earth & Environmental Sciences Tel. 962 5 3903333 (ext. 4231) Fax. 962 5 3826823 E-mail: elnaqa@hu.edu.jo Home: Amman-Jordan Amman 11121, P.O.Box 8696 Tel. 00962-6-5512796, Mobile No. 00962-777439609 00962-799047033</p> | |
| <p>Marital Status</p> | <p>Married, one son and two daughters</p> | |

Academic Qualifications

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| <p>1994</p> | <p>Ph.D Groundwater Engineering, University of Ferrara, Italy. Fields: engineering geology and Hydrogeology Dissertation Title: Studio geologico-tecnico e geofisico della zona di imposta della diga e studio idrologico ed idrogeologico del suo bacino/ Giordania. "Geotechnical and geophysical study of Wadi Mujib Damsite and hydrological and hydrogeological study of its basin/Jordan".</p> |
| <p>1990</p> | <p>M.Sc. In Hydrogeology and Hydrochemistry, University of Jordan, Jordan. Fields: Hydrochemistry and Hydrogeology of Groundwaters. Dissertation Title: Hydrogeochemistry of groundwaters resources in the area between Wadi El-Yabis and Yarmouk River/ Jordan Valley area.</p> |
| <p>1987</p> | <p>B.Sc. Earth and Environmental Sciences, Yarmouk University, Jordan.</p> |

Professional Experience

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| 2010- | Professor |
| 2003-2005 | Associate Professor Head of the Department of Water Management and Environmental Hashemite University – Jordan. Assistant Professor |
| 1999-2002 | Head of the Department Department of Water Management and Environmental, Institute of Lands, Water and Environment Hashemite University – Jordan. |
| 1996-1998 | Assistant Researcher Environment and Water Resources Research Unit Al al-Bayt University, Jordan |
| 2/1996-8/1996 | Geological Engineer Al-Remal Consulting Engineers, Amman, Jordan. |
| 8/1995-2/1996 | Water and Environmental Researcher Environmental Resources Management Consultants (ERMC), Amman, Jordan |
| 11/1994-1995 | Consultant Engineer , Al-Remal Consulting Engineers, Amman, Jordan |
| 1987-1990 | Research Assistant Water Research and Study Center, University of Jordan, Amman, Jordan |

Training Courses

- **Building internet-based multimedia applications for training and education** which was held at the Hashemite University, Zarqa, 8-12 September, 2002.
- **Safety and health aspects of wastewater reuse** which was held at the Ministry of Water and Irrigation, Amman, 5-9/9/1999.
- **Remote sensing and Geographic Information System** which was held at the University of Wales-Cardiff/Great Britain from 22 March - 20 April, 1997
- **ERDAS IMAGINE 8.2** which was held at the Al al-Bayt University from Feb. 20 April, 1997
- **Remote sensing and photo interpretation using GIS** which was held at Bologna province /Italy from November 1992-March 1993.
- **Applied Geostatistics** which was held at the University of Ferrara/Institute of Mineralogy – Italy from 4-6 June 1991.
- **Theory of finite element groundwater modelling** which was held at the university of Jordan in June 13-20, 1990 with the cooperation of German Embassy (DAAD establishment) and the Water Research & Study Center (WRSC)/University of Jordan.
- **Wastewater treatment and reuse in irrigation** which was held at the University of Jordan on 26 May-2 June, 1990 with the cooperation of the UNDP (United Nation Development Program) and the WRSC/University of Jordan

Professional Memberships

- 1988** Member of Jordan Geologists Association.
- 1995** Member of Jordan Engineers Association.
- 2000** Member of the Jordanian Committee of the International Hydrological Program (IHP-UNESCO)
- 2001** Member of International Association of Hydrological Sciences
- 2010** Member of the Jordanian Committee of climate change

Languages/Computer skills

| Language | Reading | Writing | Speaking |
|-----------------|-----------|-----------|-----------|
| Arabic | Excellent | Excellent | Excellent |
| English | Excellent | Excellent | Very Good |
| Italian | Excellent | Excellent | Very Good |
| Computer skills | Excellent | | |

Publications

1. **El-Naqa, A**, Rimawi, O and Abu-Hamatteh, Z (2010): Upper aquifer complex in Azraq Basin: saltwater intrusion and interface delineation. Accepted for publication in the Sixteenth International Water Technology Conference, IWTC 16 2012, Istanbul, Turkey.
2. Rimawi, O, **El-Naqa, A**, Al Zubi, Y, Jiries, A and Abu-Hamatteh, Z (2010): Groundwater modeling of Eshiydia phosphate mining area, southern Jordan. Accepted for publication in the Sixteenth International Water Technology Conference, IWTC 16 2012, Istanbul, Turkey.
3. **El-Naqa, A.** and Ammar Al-Shayeb (2009): Groundwater protection and management strategy in Jordan. *Water Resources Management Journal*, Volume 23, Number 12, pp. 2379-2394.
4. Ta'any, A, Ta'any, R., Rimawi, O. and **El-Naqa, A.** (2009): Evaluation of net recharge in al Salt urban area/ Jordan using SCS curve number method. *Biosciences, Biotechnology Research Asia*, Volume 06 Number(1).
5. Rimawi, O., Jiries, A., Zubi, Y. and **El-Naqa, A.** (2009): Reuse of mining wastewater in agricultural activities in Jordan. *Environment, Development and Sustainability*, vol. 11: pp. 695-703
6. **El-Naqa, A.**, Hammouri, N., Khader, K. and Al Taj, M. (2009): Integrated approach for groundwater exploration in Wadi Araba using remote sensing and GIS. *Jordan Journal of Civil Engineering* (in press)
7. Hammouri, N and **El-Naqa, A.** (2008): GIS based hydrogeological vulnerability mapping of groundwater resources in Jerash area-Jordan. *Geofisica Internacional* Vol. 47 (2), pp. 85-97.
8. Al-Tarazi, E., Abu Rajab, J, **El-Naqa, A.**, El-Waheidi, M., (2008): Detecting leachate plumes and groundwater pollution at Ruseifa municipal landfill utilizing VLF-EM method. *Journal of Applied Geophysics* Vol.65, pp 121-131
9. TA'ANI, R.; Jiries, A; **El-Naqa, A.**, Momani, M. and Samara, M. (2008): Evaluation of water quality of groundwater recharge in Wadi Feifa, Southern Jordan Valley. *World Applied Sciences Journal* 5 (1): 88-93, 2008.
10. Hammouri, N and **El-Naqa, A.** (2007): Hydrological modeling of ungauged wadis in arid environments using GIS: a case study of Wadi Madoneh in Jordan. *REVISTA MEXICANA DE CIENCIAS GEOLÓGICAS*, vol.24, No.2, p.185-196.
11. Hammouri, N and **El-Naqa, A** (2007): Drought Assessment using GIS and Remote Sensing in Amman-Zarqa Basin, Jordan. *International Jordanian Journal of civil engineering*, Vol.1, No.2.
12. **El-Naqa, A.**, Al-Momani, M. , Kilani, S., Hammouri, N. (2006) Groundwater Deterioration of Shallow Groundwater Aquifers Due to Overexploitation in northeast Jordan. *Clean soil, Air, Water* vol. 35, issue No.2, 156-166).
13. Kuisi, M. **El-Naqa, A**, Hammouri, N (2006): Vulnerability mapping of shallow groundwater aquifer using SINTACS model in the Jordan Valley area, Jordan. *Environmental Geology*

Vol. 50, No.5, : 651-667.

14. **El-Naqa, A**, Hammouri, N and Kuisi, M. (2006): GIS-based modeling of groundwater vulnerability in the Russeifa Area, Jordan. *REVISTA MEXICANA DE CIENCIAS GEOLÓGICAS*, vol.23, No.3, 277-287.
15. **El-Naqa, A** and Abdelghafoor, M (2006): Application of SINMAP terrain stability model along Amman-Jerash-Irbid highway, North Jordan. *Electronic Journal of Geotechnical Engineering*, Vol. 11, Bunde B
16. Al-Tarazi, E., **El-Naqa, A.**, El-Waheidi, M., Abu Rajab, J. (2006): Electrical geophysical and hydrogeological investigations of groundwater aquifers in Ruseifa municipal landfill, Jordan. *Environmental Geology* Vol. 50, No. 7, pp. 1095-1103
17. Al Kuisi, M, **El Naqa, A** and Shaqour, F (2005): Improvement of Dam Foundation Using Grouting Intensity Number (GIN) Technique at Tannur Dam site, South Jordan. *Electronic Journal of Geotechnical Engineering*, Vol. 10 Bundle A
18. **El-Naqa, A** (2004): Environmental Impact Assessment Using (RIAM) for Russeifa Landfill, Jordan. *Environmental Geology*, Vol. 47, 5: 632-639
19. **El-Naqa, A.** and Al Kuisi, M. (2004): Hydrogeochemical modeling of the water seepages through Tannur Dam, Southern Jordan. *Environmental Geology* Vol. 45, No.8 : 1087-1100.
20. **El-Naqa, A.** (2004): A comparative Review of Estimating Bearing Capacity in Jointed Rock masses in Northeast Jordan. *Bulletin of Engineering Geology and the Environment*, 63: 233-245.
21. **El-Naqa, A.** and Al Kuisi, M. (2002): Engineering geological characterization of the rock masses at Tannur dam site, south Jordan. ***Environmental Geology* Vol. 42: 817-826.**
22. **El-Naqa, A.** (2001): Application of RMR and Q geomechanical classification systems along the Wadi Mujib Tunnel. ***Bulletin of Engineering Geology and the Environment*, Vol. 60, No. 4: 257-269**
23. **El-Naqa, A.** (2001): Engineering geology assessment of El-Rabweh landslide/southeast of Amman City/Jordan. ***Bulletin of Engineering Geology and the Environment*. Vol. 60: 109-116.**
24. **El-Naqa, A.** (2001): The hydraulic conductivity of the fractures intersecting the Cambrian sandstone rock masses/Central Jordan. ***Environmental Geology*, Vol. 40, No. 8: 973-982.**
25. **El-Naqa, A.** (2001): Application of statistical methodology for the characterization of discontinuous rock masses. ***Dirasat*, Vol. 28, No.2: 214-229**
26. **El-Naqa, A.** and Ibrahim, K(2001) : Hydrogeochemical characteristics of Hummar Aquifer in Amman-Zarqa Basin, Jordan. ***Proceedings of the Tenth International Symposium on Water Rock Interaction WRI-10*, Villasimius, Italy, June 10-15, 2001, Cidu (ed), A.A. Balkema Publisher, Vol 1: 501- 504.**
27. Rimawi, O; Salameh, E. and **El-Naqa, A.** (1999): Chemical changes of yeast industry wastewater during infiltration in Ruseifa area/Jordan. ***Hydrological Sciences Journal*, Vol. 44, No. 5: 799-810**
28. Rimawi, O.; Al Ansari, N.; Salameh, E. and **El-Naqa, A.** (1999) : Hydrochemistry of the groundwater resources in the northeastern part of Mafraq area, Jordan. ***Al Manara*, Vol. 4, No. 2: 275-303.**
29. **El-Naqa, A.** and Rimawi, O. (1998): WEDGE: A computer program for rock wedge stability analysis. ***Dirasat*, Vol. 25, No. 1: 43-55**

30. **El-Naqa, A.** (1996): Assessment of geomechanical characterization of rock mass using seismic geophysical technique. **Journal of Geological and Geotechnical Engineering, Vol. 14, : 291-305**
31. Rimawi O. and **El-Naqa, A.** (1995): Assessment of transmissivity from specific capacity data of the fractured Basalt Aquifers in north-northeastern part of Jordan. **Arab Gulf Journal of Scientific Research, Vol. 13, No.3: 463-479**
32. Rimawi, O., **El-Naqa, A.** and Salameh, E. (1992): Hydrochemical characteristics of groundwaters in North Jordan Valley. **Dirasat , Vol. 19B, No.1: 87-117.**
33. **El-Naqa, A.** (1993): Hydrological and hydrogeological characteristics of Wadi el Mujib catchment area, Jordan. **Environmental Geology, Vol. 22, No. 3: 257-271.**
34. **El-Naqa, A.** and Abu Zeid, N. (1993) : A program of frequency analysis using Gumbel's method. **Groundwater, Vol. 31, No.6: 1021-1024**
35. **El-Naqa, A.** and Abu Zeid, N. (1993): A basic program for calculating subsurface water temperatures using chemical geothermometers-implication to geothermal reservoir estimation. **Computers & Geosciences, vol.19, No.10: 1445-1461**
36. **El-Naqa, A.** (1994): Estimation of transmissivity from specific capacity data in fractured carbonate rock aquifer, Central Jordan. **Environmental Geology, Vol.23,No.1: 73-80.**
37. **El-Naqa, A.** (1994): Rock mass characterization of Wadi Mujib Damsite, Jordan. **Engineering Geology, Vol. 38: 81-93.**

Papers published in refereed conference proceedings

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| 1. Turrini, A; Abu Zeid, N. ; Semenza, E. and El-Naqa, A (1994): New study of the Tessina landslide, Belluno/North Italy. Proceedings of the Seventh International Congress of Engineering Geology , 5-9 September 1994, Lisboa/Portugal. Theme 2: Engineering geology and natural hazards, pp. 1667-1675. |
| 2. El-Naqa, A. and Ibrahim, K (2001): Hydrogeochemical characteristics of Hummar Aquifer in Amman-Zarqa Basin, Jordan. Proceedings of the Tenth International Symposium on Water Rock Interaction , Villasimius, Italy, June 10-15, 2001. |
| 3. El-Naqa, A. and Al Kuisi, M. (2002): Engineering geological characterization of the rock masses at Tannur dam site, south Jordan. Paper presented at International workshop on "Roller Compacted Concrete dam construction in Middle East" Irbid, 7 th to 10 th April, Jordan |

4Referees

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