

Curriculum Vitae

Personnel Data:

Name: Jafar Sadi Abu Rajab
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Education:

- M.Sc. degree in **Applied Geophysics**, 2000, Yarmouk University, Irbid, Jordan. Title of M.Sc. thesis “The Integration of Geoelectrical Methods to Study the Environmental Impact Effect of Ruseifa Landfill on Amman-Zarqa Basin.”
- B.Sc. degree in **Earth and Environmental Sciences**, 1997, *Yarmouk University, Irbid*, Jordan.

Award:

- M.Sc. Scholarship for Environmental Eng. and Managements from World University Services of Canada (WUSC).
- JOSCO (Jordan Oil Shale Company) first rank award for oil shale research supervision during two rounds: 2013 and 2014.

Working Experience:

- Tutor: 2013-present, Hashemite University, Jordan.
- Assistant Tutor: 2012-2013, Hashemite University, Jordan.
- Full Time lecturer: 2009-2012, Hashemite University, Jordan.
- Teaching and Research Assistant, 2002-2009, Hashemite University, Jordan.
- Math and Science Teacher, 1999-2002, Ministry of Education, Jordan.
- Graduate student (lab supervisors). 1997-2000, Yarmouk University, Jordan.

Teaching:

Geological field techniques, Field geology and mapping. Structural Geology, Practical Structural Geology Remote sensing & GIS lab. Practical Geology, Principle of Geophysics, Principle of Environmental Geophysics, Applied Geophysics, Seismology, General Geology, Computer application in Earth Sciences..

Departmental Committee Service:

Undergraduate course developments council, Instrumental specifications, design and consultation council.

Training Courses and Workshops:

Geomatica PCI and Arc GIS software: technical training course, Hashemite University, 2003. GPR system and processing software: technical training course, Hashemite University, 2005. TEM system and analytical software: technical training course, Hashemite University, 2007. Trimble software analytical software: technical training course, Hashemite University, 2007. e-learning workshop and supported programs with EDUtech cooperation, Hashemite University, 2007. Geomatica PCI software: technical training course, Hashemite University, 2008.

General Skills:

Windows OS/Office, AutoCAD, Surfer, Mathcad, Grapher, Rockware, Adobe Photoshop, Matlab Programming.

Geophysical Instruments and Softwares:

Syscal R1 plus, Syscal PRO 48 channel, Syscal Kid switch 24 (Resistivity and IP Functions) from IRIS. SmartSeis TM 24 Seismic refraction from Geometrics. Dolang 24 DBS seismograph from dolang, GEM Magnetometer G19 GW and VLF sensor. , EM16 (Electromagnetic and Resistivity measurements) from Geonics. GPS Receivers Trimble R7 (Portable and Permanent St.) from Trimble. TEM FAST 48 HPC. Geophysical Software: (Resistivity (Resix, RES2/3DINV,MOD), Seismic (Sip), SeisImager,and SeisImager/SW, VLF (EmixVLF), NetRS GPS Receiver, Trimble total control. Remote Sensing Software:(PCI Works V7 and V9- ENVI 4). GIS Software: (Arcveiw3.2,ArcGIS 8.3-9.3(Spatial,3D and Geostatistics Analysts).

Technical Graduate Student Supervision:

I involved in technical field design and acquisition, processing and modeling of geophysical and geological data for more than 10 graduate students: seven students from Hashemite University, one student from Yarmouk University, three students from Al Bayet University, and one student from Mutah University

Granted Researches:

1. Co- Researcher in the study of groundwater pollution in the landfill in the Amman-Azeaq basin using geophysical and hydrogeochemical methods, supported by the Higher Council for Science and Technology /Ministry of Higher Education, Jordan (2001-2003).

2. Co- Researcher in a project A dense GPS survey network for monitoring the movements of the dead sea / Jordan Valley Fault (2005-2013), supported by the Hashemite University, University of Missouri and NSF.
3. Co- Researcher in the project of remote sensing applications and GIS for the selection of nuclear waste sites supported by the Scientific Research and Innovation Fund / Ministry of Higher Education and Scientific Research / Hashemite Kingdom of Jordan (2015).
4. Principal Researcher in the electromagnetic induction project to isolate oil shale and simulate the size of a position in a three-dimensional model in central Jordan supported by the Scientific Research Fund / Hashemite University. One research publication (2016).
5. Principal Researcher in the electrical and electromagnetic induction project for saltwater intrusion in Aqaba area, Jordan, supported by the Higher Council for Science and Technology /Ministry of Higher Education, Jordan (2020).

Community service and other activities: Provide geophysical consultations in the following projects:

1. Geological Geophysical survey to Study Land Degradation in Dead Sea Region / Potash Company.
2. Geological and Geophysical survey of Um Qais archaeological area / Department of Antiquities.
3. Geological and Geophysical survey to assess the groundwater situation in the Jordan Petroleum Refinery / Jordan Petroleum Refinery.
4. Geological and Geophysical survey for the assessment of oil contaminants and the groundwater wells at Al Hussein Thermal Station .
5. Geological and Geophysical survey to evaluate Oil Shale deposits in Al-Ghudran area / Minexperts.
6. Geological and Geophysical Survey using geophysical methods to detect groundwater pollution in Al-Zaatari camp / Al-Bayt University.

Conducted Researches:

Resistivity survey for detecting faults in Azraq basin. Seismic refraction of al Mujeb Dam. Remote sensing and GIS application for geological mapping-Zerqa area. Application of DEM model for landslides detection in Jerash –Amman road. VLF-EM survey of Lava tube. TEM and Seismic refraction along Dead Sea shore line for cavity detection. Resistivity survey of Al-Samra waste water treatment plant. Groundwater investigation at Jordan petroleum refinery using electrical and electromagnetic methods. Geophysical survey to evaluate oil shale reserves. Geological and geophysical survey at the right abutment of Kufranjah dam. Integrated Hydrogeophysical and hydrogeological frameworks to study the groundwater salinization in Azraq basin. Hydrogeophysical characterization of oil spills at King Hussein thermal power plant in zarqa area. Geophysical study at Um Qais archaeological site, Magnetic and resistivity survey at Jerash archaeological site.

Professional Memberships:

- Society of Exploration Geophysicists (SEG), USA
- European Association of Geoscientists and Engineers (EAGE), Netherland
- Jordanian Geologists Association, Jordan

Reviewer for International Journals:

Journal of applied geophysics (Elsevier), Hydrogeology Journal (Springer), Geophysics (SEG), Jordan Journal of Environmental and Earth Sciences, Near surface Geophysics (EAGE).

Citations:

- **Google Scholar:** https://scholar.google.com/citations?user=_veGf2QAAAAJ&hl=ar.
- **Research Gate:** https://www.researchgate.net/profile/J_Rajab.
- **ORCID ID:** <http://orcid.org/0000-0001-6054-4227>.

Publications:

1. E. Al-Tarazi , A. El-Naqa , M. El-Waheidi and **J. Abu Rajab. 2006.** Electrical geophysical and hydrogeological investigations of groundwater aquifers in Ruseifa municipal landfill, Jordan, **Environmental Geology**, No. 7, Vol. 50. 1095 – 1103.

2. Ahmad AL-OUFI, Hakam A. MUSTAFA, Eid AL-TARAZI, and **Jafar ABU RAJAB. 2008.** Extension of Two Lava Tubes, Dikes and Faults Using Very Low Frequency- Electromagnetic Technique in Umm El-Quttein Area, NE Jordan. **Acta Geophysica**, vol. 56, no. 2, pp. 466-484.

3. E. Al-Tarazi ,**J. Abu Rajab**, A. El-Naqa and M. El- Waheidi.**2008.** Detecting Leachate Plumes and Groundwater Pollution at Ruseifa Municipal Landfill Utilizing VLF-EM method, ,Journal of Applied Geophysics. Volume65, Issues 3-4,Pages 121-131.

4. Al Tarazi, E. A. R., **J. Abu Rajab**, F. Gomez, W. J. Cochran, R. Jaafar, and M. A. Ferry, **2011.** GPS Measurements of Near-Field Deformation along the Southern Dead Sea Fault System, *Geochemistry Geophysics Geosystem*. 12, Q12021, doi:10.1029/2011GC003736.

5. **Abu Rajab**, J and El-Naqa, A. **2013.** Mapping groundwater salinization using electrical and electromagnetic methods in Azraq basin, Jordan, **Geophysics**, Vol.78, No.2, B89-B101.

6. Al-Amoush, H., Al Tarazi, E., **Abu Rajab, J.** Dwyek, Y., Al-Atrash, M., and Shudiefat, A. **2015,** Geophysical Investigation Using Time Domain Electromagnetic Method (TDEM) at Wadi Deir Al-Kahaf Area/Jordan for Groundwater Artificial Recharge Purposes. **Journal of Water Resource and Protection**, 7, 143-151. <http://dx.doi.org/10.4236/jwarp.2015.73012>.

7. Al-Amoush, H. , Al-Shabeeb, A. , Al-Ayyash, S. , Al-Adamat, R. Ibrahim, M. , Al-Fugara, A. and **Rajab, J. 2016.** Geophysical and Hydrological Investigations of the Northern Wadis Area of Azraq Basin for Groundwater Artificial Recharge Purposes. **International Journal of Geosciences**, 7, 744-760. doi: 10.4236/ijg.2016.75057.

8. **Abu Rajab, J. S.** and Tarazi, E. A. **2017.** Illuminating and optimising a three-dimensional model of an oil shale seam and its volume distribution using the transient electromagnetic induction method, central part of Jordan. **Geophysical Prospecting**. Published Online manuscript, 5-Oct.2017. doi:10.1111/1365-2478.12547. UR - <http://dx.doi.org/10.1111/1365-2478.12547>. Page 1-23.

9. Hani Al-Amoush, **Jafar Abu Rajab**, Eid Al-Tarazi , Abdel Rahman Al-Shabeeb , Rida Al-Adamat, A'kif Al-Fugara.2017. Electrical Resistivity Tomography Modeling of Vertical Lithological Contact using Different Electrode Configurations. Jordan **Journal of Earth and Environmental Sciences**, Vol.8, No. 1. Pages 27 - 34. ISSN 1995-6681.
10. Hani Al-Amoush, Abdel Rahman Al-Shabeeb, Rida Al-Adamat, A'kif Al-Fugara, Saad Al Ayyash, Akram Shudeifat, Eid Al-Tarazi, **Jafar Abu Rajab**. 2017. The Use of GIS Techniques and Geophysical Investigation for Flood Management at Wadi Al-Mafraq Catchment Area, **Jordan Journal of Earth and Environmental Sciences**, Vol.8, No. 2. Pages 97 - 103. ISSN 1995-6681.
11. **J.A. Rajab**, A. El-Naqa and M. Al-Qinna.2018. Hydrogeophysical characterization of shallow light non-aqueous phase liquid contamination at a karst aquifer. Near Surface Geophysics. 16,No.6. 643 - 662.
12. Al-Amoush, H. and **Rajab, J.A.**, 2018. The Use of Electrical Resistivity Tomography to Investigate Basaltic Lava Tunnel Based on the Case Study of Al-Badia Cave in Jordan. Indonesian Journal on Geoscience, 5 (2), p.161-177. DOI: 10.17014/ijog.5.2.161-177
13. **Rajab, J.A.**, 2021. Mapping the near-surface geoelectrical structure of the Mottled Zone using the very low frequency-electromagnetic method, Journal of Applied Geophysics, 184, 1-12, <https://doi.org/10.1016/j.jappgeo.2020.104240>.

International Conferences and Proceedings:

- GPS measurements of present-day deformation along the Dead Sea fault system: A preliminary view of near-field kinematics along the entire transform. Francisco Gomez, Rani Jaafar, Rob Reilinger, Simon McClusky, Eid Al-Tarazi, **Jafar Abu Rajab**, Gebran Karam, Mohamad Daoud, Abdulmutaleb Alchalbi, Muawia Barazangi. Invited talk.2008. 14th General Assembly of WEGENER Germany. <http://www.geodesy.tudarmstadt.de/psg/projekte/wegener2008/programme/programmeday317sept/index.en.jsp>
- New GPS constraints on the kinematics of the southern Dead Sea Fault System.: Gomez, F.; **Abu Rajab, J.**; Jaafar, R.; Al-Tarazi, E.; Ferry, M. 2008. AGU Fall Meeting, San Francisco. USA. <http://adsabs.harvard.edu/abs/2008AGUFM.T41A1938G>
- A comprehensive GPS velocity field along the Dead Sea fault system: A preliminary view of near- field kinematics from the Gulf of Aqaba to Iskanderun. Jaafar, R.; Gomez, F. G.; Reilinger, R. E.; McClusky, S.; **Abu Rajab, J.**; Al-Tarazi, E.; Karam, G.; Alchalbi, A.; Daoud, M. .2009. AGU Fall Meeting, San Francisco. USA. <http://adsabs.harvard.edu/abs/2009AGUFM.T54C..03J>
- Combined analysis of seismotectonics of the southern Dead Sea Fault (Eastern Mediterranean) using GPS measurements and seismicity.2010. Cochran, W. J.; Gomez, F. G.; **Abu Rajab, J.**; Al Tarazi, E.AGU Fall Meeting 2010, USA. <http://adsabs.harvard.edu/abs/2010AGUFM.G43A0836C>

- Comparison of Geodetic and Late Pleistocene Slip Rates for the Southern Dead Sea Fault System. **2012**. Cochran, W. J.; Gomez, F.; **Abu Rajab, J. S.**; Al-Tarazi, E. American Geophysical Union, Fall Meeting **2012**, abstract abstract #G53A-1123, USA. <http://adsabs.harvard.edu/abs/2012AGUFM.G53A1123C>