

Curriculum Vitae

Name : Ghaleb H. Jarrar
Address : Department of Applied & Environmental
Geology, University of Jordan, Amman-Jordan
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Place & date of birth: Al-Hashimiyya, Jordan,
August 25, 1954

Nationality: Jordanian.

Marital Status: Married.

Position: Faculty member

Specialization: Petrologist, Geochemist and Geochronologist.

University Education :

B. Sc. in Geology & Mineralogy from the University of Jordan, 1977
M. Sc. in Geology and Mineralogy from the University of Jordan,
1979
(*Dr. rer. Nat.*) in Geology and Mineralogy,
Technische Universität Braunschweig, Federal Republic of Germany,
1984

Employment: Professor at the University of Jordan, April 2002-present
Associate Professor at the University of Jordan, June 1992-March
2002.
Assistant Professor at the University of Jordan, September 1985 -
May 1992
Full-time lecturer, the University of Jordan, April 1985 - September
1985

Administration:

Head of Department (97/98)
January 2003-September 2005
Vice- Dean, Faculty of Graduate Studies, December 2009- present

Scholarships and Fellowships:

D A A D short-term scholarship (Oct. 79 - Oct. 84)

D A A D short-term scholarship (June - August 1988)
 D A A D short-term scholarship (June - August 1991)
 D A A D short-term scholarship (June- August 1994)
 D A A D short-term scholarship (June-August 1998)
 D A A D short-term scholarship (July –September 2002)
 DAAD short-term scholarship (July-September 2006)
 DAAD short-term scholarship (June-July 2010)

Fulbright Fellowship: (October 1998 – July 1999) at the Geosciences
 Department, University of Texas at Dallas, USA.

Attended Scientific Meetings and Workshops

1. 61 Jahrestagung der Deutschen Mineralogischen Gesellschaft und der Tagung der Scocie'te Francaise de Mineralogie et de Cristallographie, in Münster / Germany, Sept. 1983
2. The first Jordanian geol. conf., Amman, September, 1982
3. The second Jordanian geol. conf., Amman, April, 1985
4. The third Jordanian geol. conf., Amman, April, 1988
5. A seminar on the Geodynamics of the Arabian plate, organized by the Dept. of Earth and Environment Sciences, Yarmouk University, August 1991.
6. The second International conf. on the Geology of the Arab World, Cairo 22-26th Jan. 1994. *presentation*
7. The fifth Jordanian Geological conference and the second meeting on the geology of the Middle East Geocom II, Amman, 3-5th Oct. 1994. *presentation*
8. The third Jordanian science week "The Earth resources towards a strategy of a better exploitation" Amman, 26-31, August 1995. *session chairman*
9. The third international conference on the Geology of the Arab World, Feb. 27-March 1, 1996, Cairo. *Presentation*
10. Fall meeting of the American Geophysical Union, convened in San Francisco, on December 6-10, 1998. *Poster*
11. The 33rd Annual Meeting of the Geological Society of America, South-Central section, in Lubbock, Texas, on March 15-16, 1999. *Poster*
12. The Fulbright Visiting Scholar Conference " The Global Environment : Challenges for the Future" held in Washington D.C., on March 24-27, 1999, sponsored by the USIA and administrated by the CIES. *discussions*
13. The Fall 2000 Meeting of the Geological Society of America, Reno, Nevada, USA; November 9-17, 2000. *presentation*
14. The Margins Red Sea/Gulf of Suez Education and Planning Workshop (March 17-23, 2001) organized by Margins office at Lamont-Doherty Earth Observatory, Columbia University, Palisades, New York. *presentation and discussions*
15. The Seventh Jordanian Geologic Conference, April 2001, Amman. *presentation*
16. The 8th Jordanian Geologic Conference, April 2004, Amman, Presentation.

17. The organization of special session on the Neoproterozoic evolution of the Arabian-Nubian Shield at the 32nd International Geological Congress in Florence, Italy, August 2004 and a presentation on “the metamorphic evolution of Arabian-Nubian Shield in south Jordan” together with H. Khoury and Thomas Theye (Stuttgart University, Institut fuer Mineralogie).
18. The Eastern Desert of Egypt Workshop (February 17-24, 2007) organized by Victoria Pease and Osama Kassem.
19. The Goldschmidt Meeting 2007, August 17-24 in Cologne, Germany. The role of crustal assimilation and fractional crystallization in the generation of a hybrid composite dikes suite in the Arabian-Nubian Shield, SW Jordan.
20. The Jebel Workshop in the Sinai Peninsula, Egypt. October 24-30, 2008.
21. The Jebel-SGS (Saudi Geological Survey) workshop in Saudi Arabia. October 24-30, 2009.

Memberships in Professional Associations:

- ◆ A member of the Jordanian Geological Association
- ◆ A member of the Mineralogical Society of America
- ◆ A member of the Geological Society of America

Teaching:

Undergraduate courses (B.Sc.-level):

General geology, petrology, mineralogy, igneous and metamorphic petrology, principles of geochemistry, environmental isotopes.

Graduate courses (M.Sc. and Ph.D. levels):

Advanced igneous petrology, advanced metamorphic petrology, advanced geochemistry Isotope geochemistry.

Supervision of M.Sc. Students

1. Dina Abduljaber (1989): Petrology and geochemistry of the Quaternary basalts of Wadi Al-Mujib and Wadi Al-Heidan, Central Jordan.
2. Najel Abdullah (1989): Geology, geochemistry and petrology of the Precambrian rocks of Wadi Rahma (Darba), Wadi Araba, SW Jordan.
3. Mahmoud Hassuneh (1994): The petrology and geochemistry of Janub metamorphic suite, S-Jordan.
4. Amjad Abu-Hilal (1995): The genesis of the Qunaia monzodiorite and its associated megaphorphyry.

5. Muna El-Hilue (1995): The geochemistry and petrogenesis of the Humrat Granite (A-type granite), in the Quweira area, NE of Aqaba.
6. Suha El-Dajani (1995) :The petrology and geochemistry of El-Suchna Nepheline basanite, Central Jordan.
7. Mahmoud Hboush (1996): Al-Muhtadi quartz diorite and its enclaves: Petrography, geochemistry and petrogenesis.
8. Khaled Sha'aban (1996): Rahma Synplutonic diorite dikes: Geology, petrography and geochemistry.
9. Dhirar Maso'ud (1996): Ferric/ferrous ratios of biotite and garnet from the andalusite-staurolite and sillimanite zones and their implications on thermobarometric evaluations (In Arabic).
10. Hashem Al-Zu'bi (1996, co-supervisor):Geology, Petrology and geochemistry of the granitoids of Wadi es-Sabil area, southwest Jordan.
11. Mustafa H. Berjawi 1998. Geochemistry and mineralogy of the radioactive elements in the Cambrian sandstone, Ain Al-Hashim, South Jordan.
12. Ayman Abu Eid (2003): Water quality and the environmental status of Wadi Al-Fari'a area/ Nablus / Palestinian Authority.
13. Hend Abdul Qader Ghanem 2009. Petrology, Geochemistry, and thermobarometry of the contact metamorphic aureole in the Saramuj Conglomerate, Southeast Dead Sea, Jordan
14. Farah Al Muhanna; Abu-Saqa Metamorphic Suite: Petrology and Geochemistry (in progress)

Supervision of Ph.D students:

1. Mahmoud Haboush (2004): The metasediments of the Janub Metamorphic Suite: Their geochemistry, petrogenesis and economic potential with special emphasis on the opaque minerals.
2. Ibrahim Bany Yaseen 2006.(co-supervisor) in progress: Geochemistry, Mineralogy, and Petrology of the Calc-alkaline granitoids of Wadi Huwar area, SW Jordan and their economic potential.
3. Rima Mushtaha (In progress): Age, Petrogenesis, and Tectonic Setting of the Humrat-Feinan Suite of the Araba Complex, in the northernmost segment of the Arabian-Nubian Shield in SW Jordan

A member of the examining committees of 30 M.Sc. and Ph.D. students at the Department of Geology.

- Al-Hawari, Z. (1986): Clay minerals associated with the Jordanian phosphates and their possible industrial utilization
- Ibrahim, Kh. (1987): Geochemistry and petrology of some of the basaltic outcrops in central Jordan

- Salameh, S. (1987): Petrology and geochemistry of the dike swarm in wadi Turban, south Jordan
- Dina Abduljaber (1989): Petrology and geochemistry of the Quaternary basalts of Wadi Al-Mujib and Wadi Al-Heidan, Central Jordan
- Najel Abdullah (1989): Geology, geochemistry and petrology of the Precambrian rocks of Wadi Rahma (Darba), Wadi Araba, SW Jordan
- Nadia Al-Bakri (1990): Geochemistry and petrography of the Feinan porphyrite stock, central Wadi Araba, Jordan.
- William T. Al-Bajjali (1990): Isotopic and hydrochemical characteristics of precipitation in Jordan
- Alia Bayook (1992): Batn el-Ghoul clay deposits as a potential source for aluminium.
- Hasan M. Katbeh Bader (1992): Hydrogeology and hydrochemistry of the area located between wadi Mujib and wadi Zerqa Main
- Ahmad Abu-Jeyyab (1992): Distribution and characterization of the Jordanian Volkonskoite
- Hakam M. Al-Alami (1992): The potential of weir use as Dam substitute for surface water storage and artificial recharge in the Kerak area.
- Tareq Shohadeh (1993): Geochemical exploration for uranium and thorium in the Ordovician sandstone (Sabellarifex unit), southern Jordan
- Mohammed Abu-El Haj (1993): Geochemical soil survey in the vicinity of Warda iron occurrence, Ajlun district, Jordan
- Mohammed Al-Hwaiti (1993): Spatial and geochemical variability in Wadi Khalid stream sediment (Feinan district), southern Jordan.
- Mahmoud Hassuneh (1994): The petrology and geochemistry of Janub metamorphic suite, S-Jordan (M.Sc Thesis).
- Ayman Nassar. 1994. Petrographical and sedimentological study of subsurface upper Ordovician sandstone Risha Gas Field. NE Jordan. (M.Sc Thesis).
- Omar Al Khushman. 1994. Geochemistry of Mn-nodules from Wadi Ed-dalu, south Jordan and their genetic bearing. (M.Sc Thesis).
- Amjad Abu-Hilal (1995): The genesis of the Qunaia monzodiorite and its associated megacrrophy (M.Sc Thesis)
- Muna El-Hilue (1995): The geochemistry and petrogenesis of the Humrat Granite (A-type granite), in the Quweira area, NE of Aqaba
- Suha El-Dajani (1995) :The petrology and geochemistry of El-Suchna Nepheline basanite, Central Jordan. (M.Sc Thesis)
- Younes Al_Omary 1995. Mineralogical and Engineering properties of clayey beds at failure areas along the Irbid Jerash Amman and Amman Naur Highways. (M.Sc Thesis).
- Mnawer Atiyyat 1996. Depositional Environment, mineralogy, and paleogeography of the subsurface Early Cretaceous Kurnub sandstone in Jordan (M.Sc Thesis)

- Fawazi Al Qadi. 1996. Subsurface microfacies analysis of Cenomanian formations (Naur Shueib) in Azraq basin. (M.Sc Thesis)
- Hashem Al-Zubi 1996. Geology, Petrology and geochemistry of the granitoids of Wadi Es Sabil area, SW Jordan. (M.Sc Thesis).
- Mustafa Berjawi 1998. Geochemistry and mineralogy of the radioactive elements in the Cambrian sandstone in Ain Al Hashim area, south Jordan. (M.Sc. Thesis)
- Rushdi Sadaqah. 2000 Phosphogenesis, geochemistry, stable isotopes and depositional sequences of the upper Cretaceous phosphorite formation in Jordan. (PhD Thesis).
- Talal Al Momani. 2000. Characterization, industrial utilization and environmental Impact of the Hiswa Clay Deposits, south Jordan. (PhD Thesis).
- Zain Tadros. 2001. Groundwater vulnerability in the area surrounding the solidwastes disposal site of Ruseifa, Jordan. (PhD Thesis).
- Ahmad Abu Jeyyab 2001. Mineralogical and geochemical properties and industrial applications of Azraq gypsum deposits, Jordan (Ph. D. Thesis).
- Mohammed Qaadani. 2004. Performance effectiveness of As Samra stabilization ponds and its impact on the surface and groundwater resources of lower reaches of Wadi Dhuleil. (PhD Thesis).
- Amal Al Zoubi . 2005 Characterization of unusual green Cr rich clays from Suweilih area. (M.Sc Thesis).
- Khadidja Balkhir 2005. Hydrogeology and hydrochemistry of groundwater of sahal ghriss of mascara northwestern Algeria (M.Sc. Thesis)
- Abeer Salman. 2009. Geo-environmental quality assessment of Wadi El-Mujib Groundwater resources using advanced statistical and geographical information systems. (PhD Thesis)

Significant Consulting Services:

1. Petrographic analysis of sand and gravel samples from the site of the Karameh Dam (submitted to the Engineering Studies Company for testing of soils and materials and foundations, 1987) and many other similar investigations since then.
2. Rusting problems in concrete foundations. A joint study with Dr. Saffarini (submitted to the Royal Scientific Society, June 1986).
3. Scanning electron microscope and chemical study of wool rock samples (submitted to the Jordanian wool-rock company 1986).
4. Petrography and geochemistry of metamorphic rocks from south Jordan (submitted to the Natural Resources Authority (NRA), 1989).
5. Petrographic and geochemical evaluation of igneous and metamorphic samples from the South Yemen Republic (submitted to the Arab Mining Company, 1990).

6. A member of the project " Water quality of dam waters in Jordan ", which is executed at the Water Research and Study Center, University of Jordan (1990-1992).
7. Petrographic characterization of gravel and sand samples according to the American standards for testing materials (submitted to the Engineering Company for Testing of Soils, Materials and Foundations, 1993, 94,95,96).
8. Mineralogical investigation of sand samples from the vicinity of the phosphoric acid plant, Aqaba (submitted to Engineering office, Touqan & Al-Saket, 1994).
9. Scanning Electron Microscope study of rock wool samples (submitted to the Jordanian Rock Wool Company, 1994).
10. Examination of brake, pipes and ceiling tiles for their content in asbestos minerals for the Department of customs, and Ministry of Health.
11. A member of research team on the project "Sinkholes of Ghor Al-Haditha " submitted to the Ministry of Water and Irrigation 1995.

References:

1. Prof. Dr. Omar Rimawi, President of the Applied Sciences University, Salt, Jordan
2. Prof. Dr. Abdul-Kader abed; Prof. Dr. Hani Khoury; all at Dept. of Geology, University of Jordan, Amman-Jordan.
3. Prof. Dr. Harald Dill, Bundesanstalt fuer Geowissenschaften und Rohstoffe, Hannover, Germany
4. Prof. Dr. Robert Stern, University of Texas at Dallas, Center for lithospheric studies, Fax. : 214-883-2829

List of Publications and current research:

Jarrar, G. , T. Theye. Low Pressure metamorphism of Neoproterzoic Pelites in the Central Wadi Araba, SW Jordan (*in preparation*)

Jarrar, G., Yaseen, N., Wachendorf, H, & Zachmann, D. Age, geochemistry, and petrogenesis of ovoidal alkali feldspar xenocrysts bearing hybrid dikes from south west Jordan. (*in preparation*).

Ghanem, H. & **Jarrar, G.** Geochemistry, Geothermometry, and Petrogenesis of Qunai Monzogabbro, Southeast Corner of the Dead Sea, Jordan . *Submitted to Journal of African Earth Sciences*

Habboush, M and **Jarrar, G.** 2009. Petrology and Geochemistry of the metasediments of the Janub Metamorphic Suite, south of Jordan: Implications for tectonic setting, provenance, geothermobarometry, and economic potential. Published on-line in Jordan Journal of Earth and Environmental Sciences **2**: 7-17

Jarrar, G. W. Manton, & R. Stern & D. Zachmann 2008. Late Neoproterozoic A-type granites in the Northernmost Arabian-Nubian Shield formed by fractionation of basaltic melts. *Chemie der Erde*, 68: 295-312

Shaqour, F, **Jarrar G.**, Hencher, S and Al Kuisi M. 2007. Geotechnical and mineralogical characteristics of marl deposits in Jordan. *Environmental Geology*.

Jarrar, G. , Saffarini, G., Wachendorf, H., A. Baumann. 2004. Origin, age and petrogenesis of Neoproterozoic composite dike from the Arabian-Nubian Shield, SW Jordan. *Geological Journal* **39**:157-178

A co-author of "Essentials of Environmental Science" in Arabic. 2nd edition 2004

Jarrar, G., Stern, R.J., Saffarini, G. & Al-Zubi. 2003. Late and post-orogenic intrusions of Jordan: Implications for crustal growth in the northernmost segment of the East African Orogen. *Precamb Res.* **123**: 295-319.

Saffarini, G. & **Jarrar, G.** 2002. Petrogenesis and tectonic setting of a two-mica granite from Wadi Huwar, SW Jordan. *Dirasat, Pure Sciences*, vol. 25, 105-126.

Jarrar, G. 2002. Duheila Hornblendic suite, Wadi Araba, SW Jordan : Geochemistry and petrogenesis. *Dirasat, Pure Sciences* vol. **29**, 89-104

Jarrar, G. 2001. The youngest Neoproterozoic Mafic Dike Suite in the Arabian Nubian Shield; mildly alkaline dolerites from south Jordan: their petrogenesis and geochemistry. *Geological Magazine*, **138**, 309-323.

A co-author of "Essentials of Environmental Science" in Arabic. 1st edition 2000.

Jarrar, G., Amireh, B. & Zachmann, D., 2000. The major, trace and rare earth elements geochemistry of glauconites from the early Cretaceous Kurnub Group of Jordan. *Geochemical Journal* **34**, 207-222.

Amireh, B. Amireh, B. S., **Jarrar, Gh.**, Henjes-Kunst, F., and Schneider, W., 1998. K-Ar dating, X-Ray diffractometry, optical and scanning electron microscopy of glauconies from the early Cretaceous Kurnub Group of Jordan. *Geological Journal*. **33**, 49-65.

Saffarini, Gh., and **Jarrar, Gh.** 1998. Quantifying the chemical variability of a Precambrian diabase from south Jordan using stochastic techniques: a proposal. *Journal of Volcanology and Geothermal Research* **86**:199-217.

Jarrar, G. 1998. Mineral chemistry in dioritic hornblendite from Wadi Araba, Southwest Jordan. *Journal of African Earth Sciences*.**26**: 285-295

A co-author of the "Earth and environmental sciences" for the Tawjihi students (1996)

Salameh, E. & **Jarrar, G.** 1996. *Translation of the Report no.111 from the research reports of the Federal Ministry for Economic Cooperation and Development, Germany. the report is concerned with the reduction of water losses in drinking water supply systems of the developing countries. 410 pages (German-Arabic).*

Jarrar, G. 1995. Pan-African amphibolites from SW-Jordan: Their origin, mineralogy, bulk and mineral chemistry as a pressure and temperature indicator. *Chemie der Erde* 55: 31-45.

Jarrar, G., Wachendorf, H. & Zachmann, D. 1993. A pan-African alkaline pluton intruding the Saramuj Conglomerate, Southwest Jordan. *Geol. Rundsch.* 82: 121-135.

Saffarini, G. & **Jarrar, G.** 1992. Ocelli formation in late Proterozoic ocellar diabase of Wadi Um-Salab / Sw - Jordan: Petrographic inferences, *Dirasat*, vol. 19B, No.1:63-85.

Jarrar, G. 1992. Geochemistry and petrogenesis of an alkali-feldspar rhyolite suite from Wadi Museimir, Central Wadi Araba, Jordan. *Chemie der Erde* 52: 301-312.

- Jarrar, G.**, Wachendorf, H. & Saffarini, G. 1992. A late Proterozoic bimodal volcanic/subvolcanic suite from Wadi Araba, southwest Jordan.- *Precamb. Research* 56: 51-72.
- Saffarini, G. & **Jarrar G.** 1991. Geochemical and petrographic aspects of late Precambrian diabase in Wadi Um Salab, SW Jordan: Implications for mantle below Jordan. *Chemie der Erde* 51: 261-274.
- Jarrar, G.** 1991. Petrology and geochemistry of a Triassic subvolcanic suite from Central Jordan, east and northeast of the Dead Sea. *Mu'tah Journal for Research and Studies.*, vol. 6, 2: 183-196.
- Jarrar, G.**, Wachendorf, H., Zellmer, H. 1991. The Saramuj Conglomerate: Evolution of A Pan-African molasse sequence from southwest Jordan. *N. Jb. Geol. & Paläont. Monatsh.* 6: 335-356.
- Bayer, H.-J., Kaufmann, H., Ringle, K., El-Isa, Z., Saffarini, G. **Jarrar, G.**, & Mustafa, H. **1986.** Aktiv Lateralkonstruktion am NW Rand der Arabischen Platte. In: *Spannung und Spannungsumwandlung in der Lithosphäre. Berichtsband, Universität Karlsruhe*, pp. 995-1007.
- Jarrar, G. 1985.** Late Proterozoic crustal evolution of the Arabian-Nubian Shield in the Wadi Araba area, SW Jordan.- *Geol. Jb. Reihe B, Heft 61*: 3-87; Hannover.
- Wachendorf, H., **Jarrar, G.**, & Zachmann, D. **1985.** The role of pressure in control of potassium, sodium, and copper concentration in hypabyssal intrusives as demonstrated in late Precambrian dikes in southwest Jordan. *Precamb. Res.* 30: 221-248; Amsterdam
- Jarrar, G.**, Baumann, A. & Wachendorf, H. **1983.** Age determinations in the Precambrian basement of the Wadi Araba area, southwest Jordan.- *Earth Planet. Sci. Lett.*, 63: 292-304; Amsterdam.