

Issa Mohammad Issa Makhoulf

Professor
Department of Earth & Environmental Sciences
Hashemite University
Jordan



Personal Data

Date & place of birth: 1951 Fuheis - Jordan
Nationality: Jordanian
Marital status: Married - Four children
Specialization: Sedimentology and Stratigraphy

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Qualifications

Degree	University	Country	Year
B.Sc. (Hons.)	Peshawar	Pakistan	1973
M.Sc.	Peshawar	Pakistan	1974
Ph.D.	Newcastle upon Tyne	England	1987

Title of Theses

- **M.Sc.;** Stratigraphy, petrography and pebble orientation study of the Topra Formation, Salt Range, Punjab, Pakistan.
- **Ph.D.;** The stratigraphy and sedimentation of upper Middle Cambrian, Permo-Triassic and Lower Triassic rocks along the northeastern margin of the Dead Sea Basin, Jordan.

Administrative Experience

- Dean of Petra Intermediate College, Zarqa, Jordan; 1988-1989.
- Chairman of Department of Earth & Environmental Sciences, Hashemite University, Zarqa, Jordan; 1998-1999.

Career to Date

- Lecturer, Department of Geology, Wahran University, Algeria; 1987-1988.
- The Dean, Petra University Intermediate College, Zarqa, Jordan; 1988/1989.
- Geologist Researcher, Subsurface Geology Division, Geology Directorate, Natural Resources Authority, Ministry of Energy & Mineral Resources, Amman, Jordan; 1989 -1996.
- Assistant Professor, Department of Geology, Sebha University, Libya;1992-1994.
- Assistant Professor, Department of Earth and Environmental Sciences, Hashemite University, Zarqa, Jordan; 1996 -2000.
- The Head, Department of Earth & Environmental Sciences, Hashemite University, Zarqa, Jordan; 1998/1999.

- Associate Professor, Department of Earth and Environmental Sciences, Hashemite University, Zarqa, Jordan; 2001-2007.
- Professor, Department of Earth and Environmental Sciences, Hashemite University, Zarqa, Jordan; 2008 - Present.
- The Director, Center of Environmental Studies. Hashemite University, Zarqa, Jordan; 2009 - Present.
- The Dean, Faculty of Natural Resources & Environment, Hashemite University, Zarqa, Jordan; 2009 - Present.

Graduate Studies

- Supervision of M.Sc. students and Member of Examining Committees of M.Sc. and Ph.D. students at the Hashemite University and Jordan University.

University Committees

- Participated in many department, faculty and university committees.

National Committees

- Member of the Supervision and Steering Committee of Earth and Environmental Sciences Books and Curriculum for Secondary and Elementary Schools; ninth, tenth and eleventh levels, Ministry of Education, Jordan.
- Member of the Ministry of Education Advisory Committee for improving the school courses of Earth Sciences, Jordan.
- Participation in the training courses for school teachers, Ministry of Education. Methods and procedures in Laboratory Exercises of Earth and Environmental Sciences.
- Member of the Certificate Equivalency Committee of the Jordanian Geological Association.
- Member of Judging Committee Intel ISEF for Ministry of Education school projects, Jordan.

Membership

- Member of the Jordanian Geologists Association.
- Member of the International Association of Sedimentologists (IAS no.1080).
- Member of the University of Newcastle Graduate Society.
- Member of the Jordanian Astronomical Society.

Workshops

- "Industrial Pollution at Zarqa Area" Held at the Hashemite University in collaboration with the Jordan Environmental Observatory Society, Jordan studies Centre, on Oct. 22, 2003.
- "The First Conference of Science Research" organized by the Scientific Research Friendship society of Jordan Universities, Amman, Oct. 25-26, 2003.
- "Natural Resources and Environmental Conservation" organized by the Jordanian Geologists Association at Amman University, Apr. 6-7, 2004.
- "The Role of Geological Sciences in development of Local Community" organized by the natural Resources Authority in coordination with UNESCO Office, Amman, May, 9-11, 2005.
- "Aquifer Vulnerability & Risk in Jordan" Held at the Hashemite University in coordination with UNESCO Office, Amman, Sept. 28, 2005.

Conferences

- 1985** (22-24 April) The 2nd Jordanian Geological Conference, University of Jordan, Amman, Jordan: (1) "Fluvial depositional sequences and environments in the Triassic Umm Irna Formation, central Jordan", (2) Depositional environments of the lower Cretaceous White sandstones, Jordan".
- 1991** (24-26 August) Symposium on the geodynamic of the Arabian Lithosphere, Yarmouk University, Irbid, Jordan.
- 1998** (21-25 February) Geology of the Arab World (4th International Conference), Cairo University, Cairo, Egypt: "*Tidal terrigenous-carbonate sedimentation of the Early Triassic Dardur Formation, Dead Sea area, Jordan*".
- 1998** (5-8 October) The 6th Jordanian Geological Conference (Earth Resources Basis of Sustainable Economic Development), University of Jordan, Amman, Jordan.
- 2000** (21-24 February) Geology of the Arab World (5th International Conference), Cairo University, Cairo, Egypt.
- 2001** (2-4 April) The 7th Jordanian Geological Conference (Geology and Investment), University of Jordan, Amman, Jordan: "*Origin and distribution of quartz geodes in the Cretaceous Lower Tar Member, Libya*".
- 2001** (2-5 September) Sediment 2001, International Association sedimentologists, Davos, Switzerland.
- 2002** (22-26 September) Littoral 2002, The Changing Coast. EUROCOAST / EUCC. Porto-Portugal: "*Sea level fluctuations and storm wave influence on Ordovician shelf sediments, Jordan*".
- 2003** (7-9 April) Braided Rivers 2003. International Association sedimentologists, Birmingham, England: "*Early Mesozoic marine /Fluvial interactions along the northern coasts of the Gondwana*".
- 2004** (6-7 April) The 8th International Conference of Jordanian Geologists Association "Natural Resources and Environmental Conservation", Amman University, Jordan (1) "Braided river model and associated facies of Early Cambrian age in South Jordan", (2)"Depositional environments and facies of the Late Triassic Abu Ruweis Formation, Jordan". (3) "Sequence stratigraphy and depositional environment of an upper Ordovician (Hirnantian) peri-glacial petroleum source rock",

- 2004** (15-17September) The 23rd IAS Meeting of Sedimentology, Coimbra, Portugal: *"Palaeoenvironments and sequence stratigraphy of the Triassic succession in Jordan"*.
- 2005** (5-9 September) The 7th International Symposium on the Cretaceous. Neuchatel, Switzerland. *"Palaeoenvironments and sequence stratigraphy of the Cretaceous succession in Jordan"*.
- 2006** (27/8-1/9/2006) 17th International Sedimentological Congress ISC 2006 Fukuoka-Japan: *"Palaeoenvironments and sequence stratigraphy of the East Gondwana Paleozoic succession in Jordan"*.
- 2007** (3-7/9/2007) 9th International Conference on Paleocyanography, Shanghai, China: *" Combined tide and storm influence on sedimentation patterns of the Ordovician Tethyan Ocean"*.
- 2008** (30/8/2008-3/9/2008) 26th IAS Meeting of Sedimentology, Bochum, Germany. *"Sedimentology and morphology of Quaternary alluvial fans in Wadi Araba, Jordan"*.

Teaching

- **B.Sc. courses:** Sedimentology, Sedimentary rocks, Stratigraphy, Geomorphology, Geology of Jordan, Field Geology, General geology (1), General Geology (2).
- **M.Sc. courses:** Basin Analysis, Selected subjects.

Current Research

- Palaeoenvironmental and High Resolution Sequence Stratigraphic Analysis of the Ordovician-Silurian Strata in Southern Jordan. Sponsored by the Hashemite University, Jordan (2000-2002). With Dr. Brian Turner, University of Durham, England. Budget 3000 JD.
- Environmental and biological change during the end Ordovician glaciation– a case study from the high latitude succession of eastern Gondwana. Sponsored by the United Kingdom National Environmental Research Council (NERC) (2000-2004). With: Dr. Brian Turner and Dr. Howard Armstrong (From Durham University, UK). Budget: 37000 Pound.
- Sedimentation modelling of alluvial fans in a subsiding listric half-graben basin typified by Wadi Araba colluvial fans, Jordan. Sponsored by the University of Jordan, and the Hashemite University (2001-2003). With: Dr. Abdul Kader Abed and Bilal Amereh (From Jordan University). Budget: 4000 JD.
- Palynology, Biostratigraphy, Palaeoecology and palaeogeography of the Triassic strata along the northeastern Dead Sea region, Jordan Valley. Sponsored by the Hashemite University (2003-2006). With: Dr. Fayez Ahmad, Budget: 4465 JD.

- Genesis and palaeoenvironmental significance of hot spring travertines along the Dead sea and Jordan Valley. (2004-2007). With Dr. Khalil Ibrahim and Dr. Ali El-Naqa, Budget 6000 JD.

Research interests

Clastic sedimentology, depositional environments, especially glacial, fluvial and tidal systems; clastic sequence stratigraphy; basin analysis; Palaeozoic and Triassic sediments of Jordan, high latitude East Gondwana glaciation; Quaternary alluvial fans of Wadi Araba and travertines of the Dead Sea Rift and Jordan Valley.

Books

Earth and Environmental Sciences (Manual of Laboratory Exercises), 12th class (General Secondary Examination “Tawjehi”), 1st edition (1997). Publisher: Ministry of Education, Jordan. With Rabadi, Qaqish, Mahmoud, Jarrar and Qadan (editor).

Earth and Environmental Sciences (Teacher Guide), 12th class (General Secondary Examination “Tawjehi”), 1st edition (1998). Publisher: Ministry of Education, Jordan. With Khader (editor) Rabadi, Qaqish, Mahmoud and Barjous.

Postgraduate student supervision

1. Geological and Land Use Mapping Using Integrated Geographic Information System and Remote Sensing Techniques of Ruseifa Area, Jordan (By: Maha Al-Turani, August 2005).
2. Sedimentology, Geochemistry, and petrographic Study of Travertine Deposits along the Eastern Side of the Jordan Valley and Dead Sea Areas(By: Sana' Al-Thawabteh, May 2006).

List of Publications

1. **Makhlouf, I. M.**, Turner, B. R. and Abed, A. M. 1990. Depositional facies and environments in the Lower Triassic Ma'in Formation, Dead Sea area, Jordan. J. Dirasat, Series B, V. 17, 7-26. Amman, Jordan.
2. **Makhlouf, I. M.** and Abed, A. M. 1991. Depositional facies and environments in the Umm Ishrin Sandstone Formation, Dead Sea area, Jordan. J. Sediment. Geol.,71, 177-187. The Netherlands.
3. **Makhlouf, I. M.**, Turner, B. R. and Abed, A. M. 1991. Depositional facies and environments in the Permian Umm Irna Formation, Dead Sea area, Jordan. J. Sediment. Geol.,73, 117-139. The Netherlands.

4. **Makhlouf, I. M.** and Abed, A. M. 1991. Deformed cross-bedding patterns in the Umm Ishrin Sandstone Formation, on the northeastern margin of the Dead Sea, Jordan. *J. Dirasat, Series B*, V. 18, 108-126. Amman, Jordan.
5. Abed, A.M., **Makhlouf, I. M.** Amireh, B. and Khalil, B. 1993. Upper Ordovician glacial deposits in southern Jordan. *J. Episodes*, V.16, 316-328. USA.
6. **Makhlouf, I. M.** and Shami, K. 1994. The destructive effect of sand dunes migration on the Sebha-Brak Road, South Libya. *Jour. of Sci. Sebha University*, V. 1, 27-48, In Arabic, Libya.
7. **Makhlouf, I. M.** 1995. Tempestite facies displaying hummocky cross-stratification and subaqueous channels in Ordovician shelf deposits, South Jordan. *J. Africa Geoscience Review*, V. 2, 91-100, France.
8. **Makhlouf, I. M.** and Abed, A. M. 1996. Recycled Cambrian, Permian and Triassic sandstones in Jordan, and their relation to the tectono-sedimentary provenances. *J. Abhath Al-Yarmouk*. V. 5/2, 93-114.. Irbid, Jordan.
9. **Makhlouf, I. M.** 1998. Storm-generated channels in the Middle Dubaydib Sandstone Formation, South Jordan. *Jour. Coll. Sci., King Saud University, Science* V. 10/1, 61-77, Riyadh, Saudi Arabia.
10. **Makhlouf, I. M.** 1998. Facies analysis of the Triassic Ain Musa Formation, Dead Sea area, Jordan. *J. Abhath Al-Yarmouk*, V. 8/1, 93-100, Irbid, Jordan.
11. **Makhlouf, I. M.** 1999. Shallowing upward facies of the Triassic Hisban Limestone Formation in Jordan. *J. Al Manarah, Al al Bayt University*, V. 4, 259-274, Mafrak, Jordan.
12. **Makhlouf, I. M.** 2000. Early Triassic intertidal / subtidal patterns of sedimentation along the southern margins of the Tethyan seaway, Jordan. *J. Asian Earth Sciences*, V. 18, 513-518. London, England.
13. **Makhlouf, I. M.** 2000. Sedimentology of mixed siliciclastic-carbonate tidal deposits of the Dardur Formation, Dead Sea area, Jordan. *J. Dirasat*, V. 27/2, 215-225, University of Jordan, Amman, Jordan.
14. **Makhlouf, I. M.** 2002. Sea-level fluctuations and storm-wave influence on Ordovician shelf sediments, Jordan. *Littoral 2002, The Changing Coast. EUROCOAST / EUCC*. Porto, Portugal. Ed. EUROCOAST –ISBN 972-8558-09-0. 319-324, Portugal.
15. Turner, B. R. and **Makhlouf, I. M.** 2002. Recent colluvial sedimentation in Jordan: fans evolving into sand ramps. *J. Sedimentology*, V. 49, 1283-1298, England.
16. **Makhlouf, I. M.** 2003. Fluvial / tidal interaction at the southern Tethyan strandline during Triassic Mukheiris times in central Jordan. *J. Asian Earth Sciences*, V. 21/4, 377-385, England.

17. **Makhlouf, I. M.** 2003. Depositional Environments of the Late Triassic / Early Jurassic Abu Shaybah Formation along the southern Neotethys. *Mu'tah Lil-Buhuth wad-Dirasat, Mu'tah University*, V. 18/1, 61-76, Jordan.
18. **Makhlouf, I. M.** 2003. Braided river model and associated facies of lower Cambrian age in South Jordan. *J. Africa Geoscience Review*, V. 10 No. 3, 289-300, France.
19. **Makhlouf, I. M.**, Al Haddad, A. and Al Badri, O. 2003. Quartz geodes and their distribution in the Cretaceous Lower Tar Member, Libya. *N. Jb. Geol. Palaont. Mh.* 11, 667-682, Germany.
20. Armstrong, H.A., Turner, B.R., **Makhlouf, I.M.**, Weedon, G.P., Williams, M., Al Smadi, A. and Abu Salah, A. (2005). Origin, sequence stratigraphy and depositional environment of an Upper Ordovician (Hirnantian) deglacial black shale, Jordan. *J. Palaeogeography, Palaeoclimatology & palaeoecology*, V. 220, No. 3-4, 273-289. Netherland.
21. Turner, B. R., **Makhlouf, I. M.** and Armstrong, H. A., 2005. Late Ordovician (Ashgillian) glacial deposits in southern Jordan. *J. Sedimentary Geology*, V.181, No. 1-2, 73-91.
22. Turner, B. R. and **Makhlouf, I. M.**, 2005. Quaternary sandstones, northeast Jordan: age, depositional environments and climatic implications. *J. Palaeogeography, Palaeoclimatology & Palaeoecology* 229, 230-250.
23. **Makhlouf, I.M.**, 2006. Late Triassic-early Jurassic Neotethyan evolution at Northern Gondwana (Jordan and Libya, Mediterranean region). *J. Geologica Acta*, 4/3, 371-376.
24. **Makhlouf, I.M.** and El-Haddad, A., 2006. Depositional environments and facies of the Late Triassic Abu Ruweis Formation, Jordan. *J. Asian Earth Sciences* 28, 372-384, England.
26. Armstrong, H.A., Abbott, G.D., Turner, B.R., **Makhlouf, I.M.**, Muhammad, A.B., Pedentchouk, N., Peters, H. (2009). Black shale deposition in an Upper Ordovician–Silurian permanently stratified, peri-glacial basin, southern Jordan. *Palaeogeography, Palaeoclimatology & Palaeoecology*, 273, 3-4, 368-377. Netherland.
27. **Makhlouf, I.M.**, Amireh, B. S., Abed, A.M. 2008. Sedimentology and morphology of Quaternary alluvial fans in Wadi Araba, Jordan (Submitted).
28. **Makhlouf, I.M.**, Tarawneh, K., and Moumani, K. (in Prep.). Recognition of quartz geodes in the Cretaceous Wadi Umm Ghudran Formation, Jordan.
29. **Makhlouf, I.M.** (in prep.). Palaeoenvironments and sequence stratigraphy of the East Gondwana Palaeozoic succession in Jordan.
30. **Makhlouf, I.M.** (in prep.). The effects of sea level fluctuations and glaciation on the Ordovician-Silurian boundary of Jordan.

