

MOHAMED A. METWALY

(mmetwaly70@yahoo.com, mmetwaly@ksu.edu.sa)

Full name Mohamed Ahmed Metwaly Mohamed
Nationality Egyptian
Birth date 26th, February 1970
Current academic degree Associate professor in Geophysics
Current occupation Associate Prof. King Saud University
Mobile in Saudi Arabia +966 50 9499610

ACADEMIC POSITIONS

2013- till now	Archaeology Dept., College of Tourism and Archaeology, King Saud University.
2011- 2013	Geology and Geophysics Dept., College of Sciences, King Saud University.
2008 - 2010	Vice dean at Al-Quwiyia Community College, King Saud University.
2006 - 2008	Postdoctoral JSPS fellowship Researcher at Geosystem Department, Graduate School of Engineering, Tokyo University, Japan.
2004 – 2006	Researcher at National Research Institute of Astronomy and Geophysics (NRIAG), Helwan, Cairo, Egypt.
2003 - 2003	Assistant researcher in the National Research Institute of Astronomy and Geophysics (NRIAG), Helwan, Cairo, Egypt.
2000 – 2002	Ph.D. student in Applied and Environmental Geophysics, Institute of Geophysics, Swiss Federal Institute of Technology (ETH), Zurich, Switzerland.
1999 – 2000	Assistant lecturer at NRIAG, Cairo, Egypt.
1996 – 1999	Assistant researcher at the National Research Institute of Astronomy and Geophysics (NRIAG), Helwan, Cairo, Egypt.

HIGHER EDUCATION

1988-1992	Graduation for B.Sc., Department of Geology, Faculty of Science, Mansoura University, Egypt. (Degree: Very Good, May 1992 in Geophysics).
1995-1996	Subsidiary courses for M.Sc., Department of Geology, Faculty of Science, Mansoura University, Egypt.
1999	Awarded the M.Sc. degree at Department of Geology, Mansoura University, Egypt. Under the title: “Geophysical Studies for the Environs of the Archaeological Site of Abydos Area, Sohag Governorate, Upper Egypt”.
2000-2003	Ph.D. student at Applied and Environmental Geophysics group, Institute of Geophysics, Swiss Federal Institute of Technology (ETH), Zürich, Switzerland.
2004	Awarded the Ph.D. degree from Swiss Federal Institute of Technology (Switzerland) and Mansoura University (Egypt) as a channel system under the title: “Geophysical Contributions for Inspection and Protection of the Archaeological Remains at Saqqara area, Egypt.”

PRIZE

- 1- Excellent Paper Prize from the 2nd International Conference of Applied Geophysics, Egyptian Society of Applied Petrophysics, Egypt (ESAP) in 2005.
- 2- The prize of distinguished publishing activities from King Saud University, 2010.

ACADEMIC AWARDS

- 1- Grant for the research work for the master degree, Geology Dept. Faculty of Science, Mansoura Univ. Egypt, (1996).
- 2- Grant for complete the research works of Ph.D. thesis, Switzerland Government (Federal Commission for Foreign Students), July 2000- July 2003.
- 3- Postdoctoral Fellowship, from JSPS, Tokyo University, Japan (May 2006-April 2008).
- 4-Grant from national program for science and technology, King Saud University, (09-ENV836-02) for the project "*Groundwater contamination assessment at Al-Quwiy'ya area, central Saudi Arabia*", (2011-2013)
- 5- Grant from King Abdulaziz for Science and Technology (KACST) for the project "Developing a new fusion geophysical system for shallow subsurface investigations", (2011-2014).
- 6- Grant from national program for science and technology, King Saud University, (11-ADV2094-02) for the project "Construction of a geophysical test site as an outdoor educational and research lab at King Saud University, Saudi Arabia", (2013-2015).

MASTER AND PHD THESIS SUPERVISIONS

1- Ph.D thesis:

"Geophysical Archaeoprospection in some Archaeological Sites at El-Baharya Oasis, Giza, Egypt."

For: Ashraf Khouzeim Salama, awarded from Ain-Shams University, 2007.

2- Master thesis:

1) **"Integrated Geophysical Study for site Investigation at New Dwelling Areas, Egypt."**

For: Monna Mahmoud Moustafa Abo-Shady, 2009, Ain-Shams University.

2) **"Contribution of geophysical techniques for evaluating the groundwater resources at Al Quwy'yia area, central Saudi Arabia"**

For: Egab El Zaharani, College of Science, King Saud University, Still running.

SOME OF ACHIEVED PROJECTS

1. Geoelectrical studies around Sphinx, Egypt (for studying the subsurface hazardous).
2. Geophysical studies for the subsurface situation at Soumied pipe line, Cairo, Egypt.
3. Geophysical studies for the safe paths for the heavy trucks, Wadi Houff, Cairo, Egypt.
4. Surface Geophysical studies for evaluating the subsurface site at El-Keffle Dam, Lake Nasser, Egypt.
5. Geophysical studies for the areas at Western side of Lake Nasser, Egypt.
6. Geoelectrical and Georadar studies for exploring El-Kabsh citadel, Cairo, Egypt.
7. Geophysical studies around Kallabsha fault area and evaluating the seepage water to subsurface, Egypt.
8. Studying the subsurface hazardous and degree of water saturation at Bayoun Temple, Cambodia.
9. Delineating the subsurface utilities under Al-Masfllah bridge, The Holly Makkah, Saudi Arabia.
10. Determine the water seepage inside the Holly Makkah tunnels, Saudi Arabia.
12. Groundwater probability along Al-Kharj old high way, Riyadh, Saudi Arabia.
13. Geoelectrical studies along Al-Dammam – Al-Khobar High way for delineating the possible cavities, Al-Dammam, Saudi Arabia.
14. Jeddah storm drainage program, the geophysical work, Jeddah, Saudi Arabia.
15. Geophysical exploration work for the Holly mosque expansion project, Makkah Al Mokaramah, Saudi Arabia.

TEACHING EXPERIENCE

- 1- Lecturer for Electromagnetic practical course, (winter semester, 2000-2001), ETH, Zurich, Switzerland.
- 2- Lecturer for applied geophysics courses (GPR, Seismic, and ER), (2005-2006), NRIAG, Egypt.
- 3- Lecturer for ICDL and General physics courses at King Saud University (2008-2010), Saudi Arabia.
- 4- Teaching different geophysical courses for undergraduate and postgraduate students at Geology and Geophysics dept. Faculty of Science, King Saud University (2010-2013).
- 5- Teaching the archaeo-geophysical courses at Faculty of Archaeology and Tourist, King Saud University (2011-2013).

ACCREDITATION SKILLS

- 1- Member in the accreditation committee at Geology and Geophysics Dept. King Saud University (2010-2013).
- 2- Rapporteur of the Committee Alumni Affairs and Employment at Geology and Geophysics Dept. King Saud University (2010-2013).
- 3- Member of the Committee Alumni Affairs and Employment at college of Science, King Saud University (2010-2013).

LIST OF PUBLICATIONS

Articles in Journals:

- 27- Mohamed Metwaly, Eslam Elawadi, Sayed S. R. Moustafa and Nasser Al Arifi (2013): Combined Inversion of Electric Resistivity and Transient Electromagnetic for Mapping Groundwater Contamination Plumes in Al Quwy'yia Area, Saudi Arabia, Journal of Environmental and Engineering Geophysics (JEEG), accepted.
- 26- Abeer El-Kenawy, Mohamed Metwaly, Khalid Gemal, Amr Abd El-Raouf (2013): Contribution of geoelectrical resistivity sounding for paleoenvironment assessment at Saft El-Henna and Tell El-Dab'a archaeological sites, eastern Nile Delta, Egypt, Exploration Geophysics, vol. 44, pp. 282–288.
- 25- Mohamed Metwaly, Eslam Elawadi, Sayed S. R. Moustafa, Nassir Al Arifi, Mohamed El Alfy, EKab Al Zaharani (2013): Groundwater contamination assessment in Al-Quwy'yia area of central Saudi Arabia using transient electromagnetic and 2D electrical resistivity tomography, Environ Earth Sci., DOI 10.1007/s12665-013-2485-x.
- 24- Mohamed Metwaly , Fouzan AlFouzan (2012): Application of 2-D geoelectrical resistivity tomography for subsurface cavity detection in the eastern part of Saudi Arabia, Geoscience Frontiers ,<http://dx.doi.org/10.1016/j.gsf.2012.12.005>
- 23- Sayed S. R. Moustafa, Elkhedr H. Ibrahim, Eslam Elawadi, Mohamed Metwaly and Naser Al Agami (2012): Seismic refraction and resistivity imaging for assessment of groundwater seepage under a Dam site, Southwest of Saudi Arabia, International Journal of the Physical Sciences Vol. 7(48), pp. 6230-6239.
- 22- Mohamed Metwaly & Mohamed Ahmed Khalil & El-Said Al-Sayed & Abeer El-Kenawy (2012): Tracing subsurface oil pollution leakage using 2D electrical resistivity tomography, Arab J Geosci., Volume 6, Issue 9 pp. 3527-3533.
- 21- Mohamed. Metwaly, Eslam Al Awadi, S. Shaaban, F. Al Fouzan, S. Al Mogren, N. Al Arifi (2012): Groundwater exploration using geoelectrical resistivity technique at Al-Quwy'yia area Central Saudi Arabia, International Journal of the Physical Sciences, vol. 7(2), pp. 317-326.
- 20- Ayman I. Taha, G. El-Qady, Mohamed A. Metwaly, Usama Massoud (2011): Geophysical Investigation at Tell El-Dabaa "AVARIS" Archaeological site, Mediterranean Archaeology and Archaeometry, vol. 11, No. 1, pp. 51-58.
- 19- Mohamed Metwaly, Gad El-Qady, Usama Massoud, Abeer El-Kenawy, Jun Matsushima and Nasser Al-Arifi (2010) Integrated Geoelectrical survey for ground water and shallow subsurface evaluation: Case study at Siliyin spring, El-Fayoum, Egypt. International journal of earth science, vol 99, No. 6, pp. 1427-1436.
- 18- Usama Massoud, Gad El Qady, Mohamed Metwaly, and Fernando Santos (2009): Delineation of Shallow Subsurface Structure by Azimuthal Resistivity Sounding and Joint Inversion of VES-TEM data: Case study near Lake Qaroun, El Fayoum, Egypt. Pure and Applied Geophysics, 166, pp. 701-719.
- 17- M. Metwaly, G. El-Qady, J. Matsushima, S. Szalai, N. S. N. Al-Arifi, and A. Taha, (2008): Contribution of 3-D electrical resistivity tomography for landmines detection. Nonlin. Processes Geophys., vol. 15, pp. 977–986.
- 16- Kyosuke Onishi, Tomochika Tokunaga, Mohamed Metwaly, Katsuro Mogi, Ichita Shimoda and Yoshinori

- Iwasaki (2007): Ground-penetrating radar survey in Bayon temple, Angkor, proc. SEGJ 117th, pp. 291-294.
- 15- M. Metwaly (2007): Detection of Metallic and Plastic Landmine using the GPR and 2D Resistivity Techniques, Natural Hazards and Earth Syst. Sci. J. (NHES), vol.7, pp. 755–763.
 - 14- Kyosuke Onishi, Tomochika Tokunaga, Mohamed Metwaly, Katsuro Mogi, Ichita Shimoda and Yoshinori Iwasaki (2007): Ground-penetrating radar survey in Bayon temple, Angkor, proc. SEGJ 117th, pp. 291-294.
 - 13- Adel Mohamed, Mohamed Metwaly, Mohamed Khalil, El Said Al Sayed (2007): Assessment of transient electromagnetic method in wadi-fill deposits, South Sinai, Egypt, Egyptian Geophysical Society Journal (EGS), vol. 20, pp. 12-19.
 - 12- Mohamed Metwaly, Ahmed Ismail, Jun Matsushima (2007): Evaluating some Factors that affect feasibility of using Ground Penetrating Radar for Landmine Detection, Applied Geophysics, vol. 4, No. 3, pp. 221-230.
 - 11- Mohamed Metwaly (2007): Metallic and plastic landmine-like objects assessment using GPR technique, SAGEEP 20th, pp. 850-860.
 - 10- Ahmed El-Galladi, Gad El-Qady, Mohamed Metwaly and Sultan Awad (2007): Mapping peat layer using surface geoelectrical methods at Mansoura environs, Nile Delta, Egypt. Mansoura Journal of Geology and Geophysics, vol.34(1), pp. 59-78.
 - 9- A. K. Mohamed, M. Metwaly, M. Khalil, and E. Al Sayed (2006): Evaluation of the transient electromagnetic method as applied in wadi-fill deposits, South Sinai, Egypt, Egyptian Geophysical Society Journal, vol.4, No. (1), pp. 189-198.
 - 8- El-Kenawy A., El-Said, A., El-Qady, G. and Metwaly M. (2006): Geophysical Survey for Archaeological Prospection At Tell Basta, Sharkia Governorate, Egypt. NRIAG J. of Geophysics, Special Issue, pp. 17-31.
 - 7- Mohamed Metwaly, J. Matsushima, Gad El-Qady and Abbas M. Abbas (2006): Landmines detection and assessment using GPR survey, in Proc. 8th SEGJ-Imaging and Interpretation, pp. 200-203.
 - 6- Mohamed Metwaly, Mohamed Khalil, El-Said El-Sayed and Salah Osman., (2006): Hydrogeophysical study to estimate water seepage from the northwestern Lake Nasser, Egypt. Journal of Geophysics and Engineering, vol.3, pp. 21-27.
 - 5- Mohamed Metwaly, Alan Green, Heinrich Horstmeyer, Hansruedi Maurer, Abbas M. Abbas, and A. Gh. Hassaneen., (2005): Combined seismic tomographic and ultra-shallow seismic reflection study of an early dynastic mastaba, Saqqara, Egypt. Archaeological prospection, vol. 12, No.4, pp.245 – 256.
 - 4- Mohamed Metwaly, Gad El-Qady and El-Said Ahmed., (2005): Detecting the defunct old Nile channel using joint inversion of VES and TEM data at Memphis area, Egypt. NRIAG J. of Geophysics, vol. 4, No. 1, pp. 35-49.
 - 3- Gad El-Qady, Mohamed Metwaly, Ahmed El-Galladi and Keisuke Ushijima., (2005): Credibility of Peat layer detection using surface geophysical techniques at Nile Delta, Egypt, Memoirs of the Faculty of Kyushu University, vol. 26, No. 1, pp. 1-13.
 - 2- A. S. El-Mahmoudi, M. M. El-Gamili, E. A. El-Sayed, A. Gh. Hassaneen & M. A. Metwaly, (1999): Geoelectric Resistivity Exploration of Abydos Area, Sohag Governorate, Upper Egypt., Proc. 1st International symposium on Geophysics, Egypt, pp. 54-67.
 - 1- M. M. El-Gamili, A. S. El-Mahmoudi, S. Sh. Osman, Abdel Radi, Gh. Hassaneen & M. A. Metwaly, (1999): Geoelectric Resistance Scanning on Parts of Abydos Cemetery Region, Sohag Governorate, Upper Egypt, Archaeological Prospection, vol. 6, pp. 225-239.

Book and Chapters in Book:

- 1- محمد متولي (2007): الكهرومغناطيسية وتطبيقاتها في مجال الاستكشاف الجيوفيزيقي , NRIAG ,Cairo ,Egypt
- 2- G El-Qady, A Mohamed, M Metwaly and M Atya, (2010): Contribution of geophysics for landmines and UXO detection: Case study in the Egyptian environment, in Using robots in hazardous environments: Landmine detection, de-mining and other applications, Woodhead Publishing Limited, ISBN 1 84569 786 3, 712p.
- 3- Mohamed Metwaly (2012): Archaeogeophysical exploration in Egypt: Exploration at Saqqara, LAP LAMBERT Academic Publishing, ISBN 3845472189.

Articles in International Conferences:

- 1- A. S. El-Mahmoudi, M. M. El-Gamili, E. A. El-Sayed, A. Gh. Hassaneen & M. A. Metwaly: Geoelectric Resistivity Exploration of Abydos Area, Sohag Governorate, Upper Egypt., First International Symposium on Geophysics, Tanta, Egypt, 8-9 September 1998.
- 2- A. Gh. Hassaneen, M. M. El-Gamili, A. S. El-Mahmoudi & M. A. Metwaly: Geophysical Studies for the Environs of the Archaeological Site of Abydos Area, Sohag Governorate, Egypt., International Union of Geodesy and Geophysics (IUGG), no. JSA19/05-A5, Birmingham, 19-24 July 1999.

- 3- A. Gh. Hassaneen, A. Green and M. Metwaly: Results of high-resolution geophysical surveying at Saqqara archaeological site, Egypt, 32nd International Geological Congress, (T16.07-Geosciences for Cultural Heritage, Geoprospecting applied to archeology), Florence, 20-28 August, 2004.
- 4- Mohamed Metwaly, Alan G. Green, Abdel-Rady Gh. Hassaneen and Abbas M. Abbas: High-resolution seismic tomographic inversion at early dynastic Mastaba, Saqqara, Egypt., 2nd International Conference of Applied Geophysics, National Research Centre, Cairo, Egypt, 12-13 March 2005.
- 5- Mohamed Metwaly, Alan G. Green, Abdel-Rady Gh. Hassaneen and Abbas M. Abbas: Ultra-shallow seismic reflection study of an early dynastic Mastaba, Saqqara, Egypt, 2nd International Conference of Applied Geophysics, National Research Centre, Cairo, Egypt, 12-13 March 2005.
- 6- Gad El-Qady, Mohamed Metwaly, Ahmed El-Galladi and Keisuke Ushijima: Evaluation of Peat layer using geoelectrical methods at Nile Delta, Egypt, 11th European meeting of Environmental and Engineering Geophysics, Near Surface 2005 — Palermo, Italy, 4 - 7 September 2005.
- 7- Mohamed Metwaly, Jun Matsushima, Gad El-Qady and Abbas M. Abbas (2006): Landmines detection and assessment using GPR survey, in Proc. of 8th SEGJ-Imaging and Interpretation, pp. 200-203.
- 8- Mohamed Metwaly: Metallic and plastic landmine-like objects assessment using GPR technique, SAGEEP 20th, Denver, 1-5 April 2007.
- 9- El-Galladi, A.; El-Qady, G.; Metwaly, M.; Awad, S.; Matsushima, J.: Mapping peat layer using integrated surface geoelectrical techniques at eastern part of Nile Delta, Egypt., EGU General Assembly, Session NH9.01, Vienna, 20-25 April 2007.
- 10- Mohamed Metwaly and Jun Matsushima (2007): Evaluating the 2D resistivity tomography technique for metallic and plastic landmines detection, proc. SEGJ 117th, pp. 287-290.
- 11- Mohamed Metwaly, Jun Matsushima and Ahmed Isamil (2007): Effects of physical conditions on the detectability of landmines using GPR technique, Proc. SEGJ 116th, Tokyo, pp. 231-234.
- 12- Usama Massoud , Gad El Qady , Mohamed Metwaly, Fernando Santos (2008): Delineation of Shallow Subsurface Structure by Azimuthal Resistivity Sounding and Joint Inversion of VES-TEM data: Case study near Lake Qaroun, El-Fayoum, Egypt, IAGA WG 1.2 on Electromagnetic Induction in the Earth, 19th Workshop Beijing, China, pp. S1.1_E05- S1.1_E05, 6/6.
- 13- Mohamed Metwaly, Gad El-Qady, Usama Massoud, Abeer El-Kenawy, Jun Matsushima and Nasser Al-Arifi (2009): Shallow subsurface evaluation using integrated geoelectrical surveys: Case study at Silliyn spring, El-Fayoum, Egypt. The 9th SEGJ International Symposium (Imaging and Interpretation), 12-14 October, Hokkaido, Sapporo, Japan.
- 14- Mohamed Metwaly, Eslam El-Awadi and Nasser Al-Arifi (2010): Flooding risk analysis of the central part of western Saudi Arabia using remote sensing data, Fifth National GIS Symposium in Saudi Arabia April 26 – 28, Al-Khobar – Eastern Province, Saudi Arabia.
- 15- Sayed Moustafa, Mohamed Metwaly, and Nasser Al-Arifi (2010): A GIS-Based Framework for the Evaluation of Seismic Geo- Hazards in the Greater Cairo Area, Fifth National GIS Symposium in Saudi Arabia April 26 – 28, Al-Khobar – Eastern Province, Saudi Arabia.
- 16- Mohamed Metwaly and Fouzan AlFouzan (2011): Subsurface cavity detection in the eastern parts of Saudi Arabia using 2D geoelectrical resistivity tomography. Proceedings of the 10th SEGJ International Symposium, 215-218.
- 17- Kyosuke Onishi, Tomochika Tokunaga, Yoshihiro Sugimoto, Naoyuki Yamada, Mohamed Metwaly, Katsuro Mogi, Ichita Shimoda, Yoshinori Iwasaki (2011): Classifying destruction areas in a stone structure from joint interpretation of resistivity and ground-penetrating radar data. Proceedings of the 10th SEGJ International Symposium, 298-301.
- 18- Mohamed Metwaly, Eslam Elawadi, Sayed Shabaan, Nasser Al Arifi (2013): Joint inversion of electric resistivity and transient electromagnetic for mapping the subsurface contamination plumes at Al Quwy'yia Area, Central Saudi Arabia, 10th meeting of the Saudi Society for Geosciences, 15-17 April, 2013.
- 19- Mohamed Metwaly and Eslam Elawadi (2013): Subsurface utility mapping by ground penetrating radar in dense urban area at Holly Makkah, Saudi Arabia, 10th meeting of the Saudi Society for Geosciences, 15-17 April, 2013.
- 20- Mohamed Metwaly and Eslam Elawadi (2013): Land subsidence hazards assessment using integrated geophysical techniques: International case studies, 10th meeting of the Saudi Society for Geosciences, 15-17 April, 2013.
- 21- M. METWALY, E. ELAWADI, S.S. R. MOUSTAFA, N. AL-ARIFI (2013): Joint inversion of transient electromagnetic and electric resistivity for mapping the contaminated subsurface of Al Quwy'yia urban area, Saudi Arabia, 6th Maghrebian Colloquium of Applied Geophysics, Meknes, Morocco, 3-5 May, 2013.

