CURRICULUM VITAE DR. AREF ADEL LASHIN



1. Personal

Name: Aref Adel Lashin
 Academic Position: Professor
 Born: 1970 Benha, Egypt

Nationality: Egyptian

Language Proficiency: Arabic (Mother Tongue), English and German

o Marital Status: Married have two girls and one son

 Working Address (Egypt): Professor, Benha University, Faculty of Science, Geology Department, Benha, P.O. Box 13518

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2. Education:

- Ph.D., 2002: Freiberg University of Mining and Technology, Institute of Geophysics-Germany and Benha University, Faculty of Science-Egypt.
- o M. Sc., 1997: Benha University, Faculty of Science, Geophysics Department Egypt.
- Pre Master, 1992: Benha University, Faculty of Science, Geophysics Department-Egypt.
- o **B. Sc., 1991:** Benha University, Faculty of Science, Egypt.

3. Academic Record

- o **Professor (2015-now):** Benha University, Faculty of Science, *Egypt*.
- o **Associate professor** (2013-Now): King Saud University- College of Engineering, Petroleum and Natural Gas Engineering Department, *KSA*.
- Associate professor (2008-2013): King Saud University- College of Science, Geophysics Department, KSA.
- Assistant professor (2006 2007): Omer Al Moukhtar University, Faculty of Science, *Libya*.
- o Assistant professor (2002 2006): Benha University, Faculty of Science, *Egypt*.
- o **Postdoctoral Fellow** (May Nov. 2005): United Nations University, Geothermal Institute (GTP), Reykjavik, *Iceland*.
- Ph. D. Researcher (2000-2002): Institute of Geophysics, Freiberg University of Mining and Technology, Germany.
- Assistant Lecturer (1997-2002): Benha University, Faculty of Science, *Egypt*.
- o **Demonstrator** (1993-1997): Benha University, Faculty of Science, *Egypt*.

4. Teaching Interest

- Under-graduate Courses: Geophysical Exploration, Geothermal Resources, Petroleum Systems Analysis, Petrophysics.
- o **Post-graduate Courses:** Geothermal, Reservoir Characterization, Well Logging.

5. Research Grants and Fellowships

- o **A ward of best faculty member:** Petroleum and Natural Gas Engineering Department, King Saud University, 2013/2014.
- o **A ward of the Centre of Excellence in Teaching and Learning**: King Saud University, 2013/2014.
- UNU-GTP Invitation Grant (2010): Grant covered by the United Nations University-GTP, for attending the full proceedings of the World Geothermal Congress 2010, Bali-Indonesia.
- Visiting Professor Award (2009): International summer programme on Geothermics, International Centre for Science and High Technology, Trieste, Italy.
- o **Prize of best research paper:** The 22nd annual meeting of the Egyptian Geophysical Society (EGS), Cairo-Egypt (12-13, April **2006**).
- o **Postdoctoral Fellowship** (2006): Funded by the council of scientific and industrial research and the **academy of sciences** for the developing world (TWAS), **Italy.**
- Postdoctoral Fellowship (2005): Funded by the United Nations University –
 Geothermal Institute (GTP), for studying the geothermal reservoirs, Geothermal
 Institute-National energy authority, Iceland.
- Ph.D Fellowship (2000-2002): Institute of Geophysics, Freiberg University of Mining and Technology, Freiberg-Germany. Selected by the Egyptian Ministry of Higher Education according to channel system between **Germany** and Egypt.
- Postgraduate Fellowship (1991-1993): Benha Faculty of Science, Benha-Egypt.
 Funded by Benha University, Egypt.

6. International Scientific Cooperation

- Prof. D. Chandra: Department of Earth Sciences, Indian Institute of Technology Bombay Mumbai, 400076, India. Board of Directors, International Geothermal Association.
- Prof. Ranjith Pathegama Gamage: Director, Deep Earth Energy Lab, Monash University, Clayton, VIC 3168, Australia.
- o **Prof. V.P. Dimri:** Distinguished Professor, FTWAS, FNA, FNASc. CSIR National Geophysical Research Institute, Hyderabad-500 007, India.
- o **Prof. Dr. Harald Lindner:** Institute of Geophysics, Freiberg University of Mining and Technology, Freiberg-Germany.
- Prof. Dr. M. Pipan: Department of geosciences and mathematics, Vice Rector Director, Trieste University- Italy. Director of the International Summer School on Geothermics.

7. Supervised Theses and Joint Projects

- Supervised up to 15 postgraduate projects (M.Sc. & Ph.D) in the Petroleum and Natural Gas/Geophysics Departments, Colleges of Engineering & Science, King Saud & Benha Universities.
 - Field of work: **Hydrocarbon Exploration**, **Geothermal Potential**, **Petrophysics**, **Well Logging**, **Reservoir Characterization**, etc.
- Participated in a number of international and national projects with many oil, energy authorities, companies and universities. Some Examples:
 - Characterizing the Nullipore Carbonate reservoir rocks in Ras Fanar Oil Field, Gulf of Suez-Egypt.

- Evaluating the geothermal potential around the coastal parts of Gulf of Suez.
- Studying the petrophysical and the mechanical properties of the **fractured geothermal reservoir of the Kalderholt geothermal** field, Iceland.
- Evaluation of the petroleum habitat in Wadi El-Riyan area, Western Desert-Egypt. Joint project with RWTH Aachen University, Institute of Geology and Geochemistry of Petroleum and Coal, Aachen-Germany.
- Studying the seismic and sequence stratigraphy of the Upper Cretaceous -Tertiary sequences in the Southwest area of the Gulf of Suez (Bremen University, Institute of Geology, Bremen-Germany).

8. Projects

[I] Finished Projects:

1st Project

Field: Evaluation the **Geothermal** resources in the south-western parts of Saudi Arabia, for possible electricity production and other utilizations.

Location: Saudi Arabia

Fund: (NPST)

Status: Finished project (2011-2013).

Aim: Studying the geothermal hot spots and thermal springs encountered at many locations in the western coastal parts of Saudi Arabia, especially at Jizan and Al Lith areas. This project includes an integrated **geophysical**, geochemical, remote sensing and petrothermal methodologies, to be applied for studying and evaluating the geothermal resources. A PC-based feasibility and reserve study will be performed for estimating the possible potential energy. A binary proto-type power plant is proposed for possible generation of electricity. This research project is supported by the National Plan for Science and Technology (NPST)-King Saud University.

[II] Running Projects:

1st Project (PI)

Title: Investigating the geothermal power potential of the basaltic lava fields (Harrats).

Location: Saudi Arabia

Fund: (NPST)

Status: In progress project (2014-2017).

This research project is supported by the National Plan for Science and Technology (NPST) - King Saud University. The intended duration of the project is two years.

Aim: The west coast of Saudi Arabia is enriched by several basaltic volcanic eruptions, referred to as "Harrats," that are structurally related to the main tectonic events in the Red Sea rift and are typically associated with a series of Cenozoic eruptions, volcanic rocks and ridges. Such type of volcanic activity assumes presence of high-grade geothermal source with a sufficient high temperature to produce energy (in the MW range). The proposed electricity production would mainly be used to supply the area of Al Madinah Al Munwarah (including the holy places) and its vicinities with a new, alternative, source of clean energy.

2nd Project (PI)

Title: Enhanced geothermal systems (EGS) of high heat generating granites: Midyan

granite, Northwest of Saudi Arabia.

Location: Saudi Arabia

Fund: (NPST)

Status: In progress project (2015-2018).

This research project is supported by the National Plan for Science and Technology (NPST) - King Saud University. The intended duration of the project is two years.

Aim: Arabian shield extending from Midyan to Jizan has granitic rocks that are rich in radioactive elements. These rocks are generating high heat that no other in the world is generating. The aim of this project is to 1) assess the heat production capacity of this high generating granite through an integrated comprehensive methodology that implies utilization of different categories of geological, geochemistry, geophysical, radiometry and simulations datasets, and to 2) apply a lab-based thermo-mechanical- injection experiment on selected representative granite samples to evaluate the possible heat conversion and its energy production. The enhanced geothermal systems (EGS) of hot dry rocks, is a new existing technology that could be used to avail such heat to generate electric power.

3rd Project (CoI)

Title: The integration of GIS and remote sensing, hydrogeology, hydrochemistry and well logging to assess aquifer vulnerability to pollution in Hail - Qassim areas, KSA.

Fund: (NPST)

Status: In progress project (2015-2018).

This research project is supported by the National Plan for Science and Technology (NPST) - King Saud University. The intended duration of the project is two years.

Aim: The main objectives of the proposed project are to provide current baseline groundwater quality data throughout the area and to address the potential pollution sources. Greater emphasis on determining the trends in groundwater quality and correlating water quality with possible contributing factors, such as location, land-use, and aquifer depth. Evaluation of the groundwater quality will be carried out for domestic, agricultural and industrial uses as well as preventing the groundwater quality degradation with time. The geochemical characteristics and processes of the groundwater will be assessed using geochemical modeling, environmental isotopes and statistical analyses.

9. Conferences & Workshops

- 27 30 Oct. 2014: International Geoscience and Geomatics Conference. Istanbul-Turkey.
- <u>25 37, July, 2014:</u> Workshop on Geothermal Energy: Status and future in the Peri-Adriatic Area, Croatia.
- 19 21 November 2012: New Zealand Geothermal Workshop Auckland, New Zealand.
- <u>4 6 Dec. 2012:</u> Introduction to Geothermal Economics & Risk and Geothermal. Workshop arranged by GreenPower, Budapest, Hungary.
- <u>16 -20 Oct. 2011:</u> The World **Renewable Energy** Congress, **Bali-Indonsia**, **2011.** One paper is represented in this conference.
- <u>10 March, 2011:</u> Leader of the KSU team Participating in the 2nd Imperial Barrel Award-**Dubai UAE**, organized by American Association of Petroleum Geologists, 2011.
- **<u>25-30 April, 2010:</u>** The World **Geothermal** Congress, Bali-**Indonesia**, 25-30 April, 2010. One paper is represented in this conference
- <u>25 Oct 8 Nov. 2009:</u> International summer programme on **Geothermics.** International Centre for Science and High Technology, **Trieste**, **Italy**.
- 29 30 Oct. 2009: 10th FKPE workshop in Borehole Geophysics, Petrophysics and

- **Geothermal** organized by Deutsche Geophysikalische Gesellschaft e.V. FKPE, Oberpfalz-Bayern, **Germany.** One paper is published in the proceedings of the conference.
- <u>17 21 Nov. 2008:</u> 4th Symposium of the Tethys Geo. Soc., Cairo-**Egypt.** One paper is represented in this conference.
- <u>3 4 Dec. 2007:</u> 5th International Symposium on Earth Science and Technology, December 3-4, 2007, Kyushu, **Japan**. One paper is published in the proceedings of the conference.
- <u>18 -20 April, 2007:</u> Attended the 4th international conference of Applied Geophysics, under the auspices of the Egyptian society of applied geophysics (ESAP). Two papers are represented in this conference, **Egypt.**
- <u>12 -13 April, 2006:</u> Participated in the 22nd annual conference of the Egyptian Geophysical society (EGS). Two papers are represented in this conference.
- 18 -20 March, 2006: Attended the 3rd international conference of Applied Geophysics, under the auspices of the Egyptian society of applied geophysics. One paper is represented in this conference.
- <u>11 15 July, 2005:</u> Participated in a **geothermal** field training seminar around Iceland organized by the United Nations University GTP, **Iceland**. A number of power plants, hot springs and high and low temperature geothermal fields were visited.
- <u>21 June, 2005:</u> Workshop organized in the Icelandic National Energy Authority and the Geothermal programme-United Nations University, Iceland.
- <u>27 29 April, 2004:</u> Workshop organized by Mansoura University, Geology Dept., together with IES (Integrated Exploration Systems) Gmbh Co., **Juelich-Germany**. The workshop dealt with Petroleum Systems in the Nile Delta, beside training in *PetroMod* petroleum system analysis software.
- <u>3 4 April, 2004:</u> Attended the 21st annual conference of the Egyptian Geophysical Society (EGS). One paper is represented in this conference.
- <u>25 26 Oct. 2001:</u> FKPE workshop in Borehole Geophysics and Petrophysics organized by Deutsche Geophysikalische Gesellschaft e.V. FKPE Hannover, Germany. (http://fkpe.ggahannover.de/agruppen/fkpe_akbg/workshop6/vortraege/Lashin et al 2001.pdf).
- <u>18 19 June, 2001:</u> Participated in a field excursion workshop organized by well logging measuring company (BLM), **Magdeburg** and Institute of Geophysics, Freiberg University of Mining and Technology, **Freiberg Germany**.
- <u>19 23 June, 2000:</u> Participated in a field excursion seminar organized by Institute of Geophysics, Freiberg University of Mining and Technology, **Freiberg Germany**.
- <u>17 19 Feb. 1998:</u> Participated in the Africa/Middle East 2nd International Geophysical Conference § Exposition, Cairo, **Egypt**.

10. Publication List

- 1. Rathnaweera, P.G. Ranjith, M. S. A. Perera, **A. Lashin** and N. Al Arifi (**2015**): Non-linear stress-strain behaviour of reservoir rock under brine saturation: An experimental study. Measurements, Volume 71, pp. 56-72.
- 2. **Aref Lashin,** Nassir Al Arifi, Dornadula Chandrasekharam, Abdulaziz Al Bassam, Shafiqur Rehman and Michele Pipan (**2015**): Geothermal Energy Resources of Saudi Arabia: Country Update. Proceedings World Geothermal Congress, Melbourne, Australia, 19-25 April 2015, pp, 1-15.
- 3. Hemant K. Singh, D. Chandrasekharam, O. Vaselli, Trupti G.1 B. Singh, **Aref Lashin**, Nassir Al Arifi (**2015**): Physicochemical characteristics of Jharkhand and West Bengal thermal springs along SONATA mega lineament, J. Earth Syst. Sci. 124, No. 2, March 2015, pp. 419–430.

- 4. **Aref Lashin** (2015): Geothermal resources of Egypt: Country Update. Proceedings World Geothermal Congress, Melbourne, Australia, 19-25 April 2015, pp, 1-13.
- 5. Chandrasekharam, D, **Aref Lashin,** Nassir Al Arafi, Varun Chandrasekhar and Al Bassam A., (**2015**): Clean development mechanism through geothermal, Saudi Arabia. Proceedings World Geothermal Congress, Melbourne, Australia, 19-25 April 2015, pp, 1-6.
- 6. **Aref Lashin,** Michele Pipan, Nassir Al Arifi, Abdulaziz Al Bassam, Arianna Mocni and Emanuele Forte (2015): Geophysical exploration of the western **Saudi Arabian geothermal** province: First results from the Al-Lith area. Proceedings World Geothermal Congress, Melbourne, Australia, 19-25 April 2015, pp. 1-9.
- 7. **A. Lashin,** D. Chandrasekharam, N. Al Arifi, A. Al Bassam, C. Varun (**2014**): Geothermal energy resources of wadi Al-Lith, Saudi Arabia. Journal of African Earth Sciences 97 (2014) 357–367.
- 8. Chandreasekharam, **Aref Lashin**, Nassir Al Arifli, (**2014**): CO2 mitigation strategy through geothermal energy, Saudi Arabia. Renewable and Sustainable Energy Rev. 38, pp. 154–163.
- 9. **Lashin, A.,** Zahra, H., Ibrahim, F., Serag Eldien, S., Al-Bassam, A (**2014**): Petrophysical and electrofacies analysis of Nullipore reservoir, Ras Fanar Field, Gulf of Suez-Egypt. Petroleum Science and Technology, V. 32, pp.1851–1860.
- 10. D. Chandreasekharam, **Aref Lashin**, Nnassir Al Arifi, and Hemant K. Singh (**2014**): Meeting future energy demand of Saudi Arabia through high heat generating granites. International Journal of Earth Sciences and Engineering. Vol. 7 (1), pp. 1-4.
- 11. Chandrasekharam, D., **Lashin, A.,** Al Arifi, N. (**2014**): The potential contribution of geothermal energy to electricity supply in Saudi Arabia. International Journal of Sustainable Energy.Doi.org/10.1080/14786451.2014.950966.
- 12. Chandrasekharam, D., **Lashin, A.,** Al Arifi, N.,Al Bassam, A.A.,Varun, C. (**2014**): Evolution of geothermal systems around the Red Sea. Environmental Earth Sciences. DOI 10.1007/s12665-014-3710-y.
- 13. Abdulsalam Al Asmari, Saad Mogren, **Aref Lashin**, Mohamed Hussein, Fouzan Al Fouzan (**2014**): Analysis and study of petrophysical characteristics of Wajid Formation in Saudi Arabia using well logging data. International Journal of Geosciences and Geomatics, Istanbul-Turkey Vol. 2, Issue 2, pp. 51-60.
- 14. PIPAN, Michele, FORTE, Emanuele, DOSSI, Matteo, DEL BEN, Anna, MOCNIK, Arianna, **LASHIN**, **Aref** and ARIFI, Nassir S.N (**2014**): High-resolution geophysics for porosity and fracture network assessment in shallow geothermal applications. Workshop on Geothermal Energy: Status and future in the Peri-Adriatic area. 25 37 July, Croatia.
- 15. **Lashin, A**. and Al Arifi. N. (**2014**): Geothermal energy potential of southwestern of Saudi Arabia "exploration and possible power generation": A case study at Al Khouba area Jizan. Renewable and Sustainable Energy Rev. 30, pp. 771 -789.
- 16. **Aref Adel Lashin** & Ahmed Abd El-Naby (**2014**): Petrophysical, seismic structural and facies analysis of the Miocene reservoirs of East Morgan oil field, Gulf of Suez, Egypt. Arab J Geosci (2014) 7:3481–3504.
- 17. Nassir S. Al-Arifi, R. E. Fat-Helbary, Ahmad R. Khalil, **Aref A. Lashin (2013):** A new evaluation of seismic hazard for the northwestern part of Saudi Arabia. Nat Hazards 69, pp. 1435–1457.
- 18. Hussein, M., Lashin, A., Al Bassam, A., Al Arifi, N. and Al Zahrani. I., (2013): Geothermal power potential at the western coastal part of Saudi Arabia. Renewable and Sustainable Energy Rev. 26, pp. 668 684.
- 19. Lashin, A., (2013): A preliminary study on the potential of the geothermal resources

- around the Gulf of Suez, Egypt. Arabian Journal of Geosciences, 6, pp. 2807–2828.
- 20. Abd El-Aziz, W., **Lashin, A.,** and Abd El-Aal, M., (**2013**): The implied hydrocarbon potentiality and the entrapment style of the hydrocarbon bearing-reservoirs in the area North of Port Said Concession, Offshore Nile Delta-Egypt. J. Appl. Geophys. V. 8. No. 2.
- 21. **Lashin, A., and** Al-Arifi, N., (2012): The geothermal potential of Jizan area, Southwestern parts of Saudi Arabia. Int. J Physical Sciences 7(4), pp. 664 675.
- 22. **Lashin, A.,** and Al-Arifi, N., and Al Bassam, A. (2012): Assessment of geothermal resources at the Al-Lith area, Kingdom of Saudi Arabia. Proceedings of New Zealand Geothermal Workshop, Auckland-New Zealand, 7p.
- 23. **Lashin, A.,** and Serag Al Din (2012): Reservoir parameters determination using artificial neural networks: Ras Fanar field, Gulf of Suez, Egypt. Arabian Journal of Geosciences, 6, pp. 2789–2806.
- 24. Nassir S. Al-Arifi, **Aref Lashin** and Saad Al-Humidan and (**2012**): Migration of local earthquakes in the Gulf of Aqaba, Saudi Arabia. Earth Sci. Res. SJ. Vol. 16, No. 1 (June, 2012): 35 40.
- 25. **Lashin, A.** and Mogren, S., (2012): Total organic carbon enrichment and source rock evaluation of the Lower Miocene rocks based on well logs: October Oil Field, Gulf of Suez-Egypt. International Journal of Geosciences. Vol. 3, 683-695.
- 26. Nassir S. Al-Arifi, Saad Al-Humidan and **Aref Lashin** (2012): Spatial distribution of maximal earthquake effects in the Red Sea region. International Journal of the Physical Sciences Vol. 7(16), pp: 2486 2492.
- 27. Nassir S. Al-Arifi, Saad Al-Humidan and **Aref Lashin** (2012): Duration magnitude calibration of Kuwait national seismic network. Scientific Research and Essays Vol. 7(4), pp. 453-459.
- 28. **Lashin, A.** and Shata, A. (2012): An analysis of wind power potential in Port Said, Egypt. Renewable and Sustainable Energy Reviews, 16, pp. 6660–6667.
- 29. **Lashin, A.** and Mogren, S., (2012): Analysis of well log and pressure data of the gasbearing sand reservoirs of Kafr El-Sheikh formation: Case study from the off-shore Nile Delta-Egypt. International Journal of the Physical Sciences Vol. 7 (35), pp. 5353-5366.
- 30. **Lashin, A**, Al-Arifi, N., and Abu Ashour, N., (2011): Evaluation of the ASL and Hawara formations using seismic- and log-derived properties, October Oil Field, Gulf of Suez, Egypt. Arabian Journal of Geosciences 3-4, pp. 365-383
- 31. **Lashin, A.,** and Al-Arifi, N., (2010): Some aspects of the geothermal potential of Egypt. Case study: Gulf of Suez-Egypt. World Geothermal Congress, Bali, Indonesia, 25-29 April.
- 32. **Lashin, A.,** Al-Arifi, N., Mousa, G., and Abd El Aal, M., (2009): Reservoir characterization using Monte Carlo simulation and Stochastic analyses. Case studies: Off-shore Nile Delta and Ras Fanar oil field, Egypt. 10th FKPE workshop in Borehole Geophysics and Petrophysics, DeutscheGeophysikalische Gesellschaft e.V. FKPE,Oberpfalz-Bayern, Germany.
- 33. Lashin, A., Abd El-Aziz, W., Awad, S., Abd El-Aal, M., and Khatab, A., (2009): Reservoir characterization of Baharyia Formation in Beni Suef area, Egypt, using well logging analysis. J. Appl. Geophys. V. 8. No. 1.
- 34. Abd El Naby, A., Abd El-Aal, M., Kuss, J., Boukharay, M., and **Lashin, A., (2009)**: Structural and basin evolution in Miocene time, Southwestern Gulf of Suez, Egypt. Neues Jahrbuch für Geologie und Paläontologie Abhandlungen, Germany V. 251, No. 3, pp. 331-353.
- 35. Salem, M., Al-Shahat, W., Lashin, A., Sharaf, M., and Madian, E., (2008): Seismic

- Reflection Study of GPT Oil Field, Abu Sennan Concession, Abu Gharadig Basin, North Western Desert- Egypt. 4th Tethys Geo. Soc. Cairo, Egypt, 17-21 Nov.
- 36. **Lashin, A., (2007):** Evaluation of the geothermal potential around the coastal parts of the Gulf of Suez, Egypt, using well logging and the geo-thermometer data. J. Appl. Geophys., V. 6, No.2, pp 215-248.
- 37. **Lashin, A., (2007):** Velocity modelling of the Upper Cretaceous Baharyia reservoir, using variogram and principal component analyses, North of Qattara Depression, Western Desert-Egypt. J. Appl. Geophys., V. 6., No.1, pp 279-303.
- 38. **Lashin, A., (2006):** Application of artificial neural networks (ANN) in estimating the petrophysical parameters of Nullipore reservoir rocks in Ras Fanar field, Gulf of Suez-Egypt, using well logging and limited core measurement data. J. Appl. Geophys., V. 5, No. 1, pp 143-163.
- 39. Lashin, A., (2006): Characterization of the fractured Basaltic reservoirs using temperature logs, acoustic televiewer and production history data, Kaldárholt Geothermal field, South Iceland. J. Egypt. Geophys. Soc., (EGS), V. 4 (1), pp 17-42.
- 40. **Lashin, A.,** Ahmed, G., and Abd El Aal, M., (2006): Improving and predicting the petrophysical parameters of the reservoirs using Monte Carlo Simulation and Stochastic analysis. J. Egypt. Geophys. Soc., (EGS), V. 4 (1), pp 1-16.
- 41. **Lashin, A.,** and Abd El Aal, M., (2005): Contribution of AVO and multi attribute analysis in delineating the fluid content and rock properties of the gas-bearing reservoirs in the Northeastern part of Nile Delta, Egypt. J. Appl. Geophys., V. 4, No. 2, pp 279-301.
- 42. **Lashin, A.** (2005): Reservoir parameter estimation using well logging data and production history of the Kalderholt geothermal filed, S-Iceland. UNU-GTP, Iceland, Report 12.
- 43. **Lashin**, **A.**, Zahra, H., Sharaf El Dien, M., Ibrahim, F., and El Dien, S. S., (2005): Nullipore reservoir zonation and evaluation using special core analysis, coralline algae and well logging data, Ras Fanar field, Gulf of Suez, Egypt. J. Egypt. Geophys. Soc., (EGS), V. 3 (1), pp 151-172.
- 44. Abd Elkader, S., S., Ismail, F., and **Lashin, A., (2005):** Validation of sandstone microzonation using waterflood performance and fault seal analysis. Oil, Gas and Petrochemical Strategic Conference. INTERGAS III, CICC Cairo.
- 45. **Lashin, A.,** and Abd El Aal, M., (2004): Seismic data analysis to detect the depositional process environment and the structural framework of east central part of Gharib Province, Egypt. Ann. Geol. Surv., Egypt, V. XXVII, pp 523-550.
- 46. Abd El Rahman, A., and **Lashin, A.,** (2004): Evaluation of the basement reservoir rocks in some selected wells in north Gulf of Suez and south Sinai, Egypt Ann. Geol. Surv., Egypt, V. XXVII, pp 459-477.
- 47. **Lashin, A.,** and Abd El Aal, M., (2004): Juxtaposition and fault seal analysis of some mixed clastic reservoirs, Egypt. J. Egypt. Geophys. Soc., (EGS), V. 2 (1), pp 165-184.
- 48. **Lashin, A.,** El Shahat, W., and Sharaf, M., (2003): Formation evaluation of the Cenomanian and Lower Cretaceous rocks in the north eastern part of Sinai, Egypt. Egypt. J. Geol., V. 47 (2), 1297-1324.
- 49. **Lashin**, **A.**, Lindner H., Abu Ashour, N., Sharaf, M., and Zahra. H., (2001): Hydrocarbon potentialities and source rocks recognition in the area north of October Field, Gulf of Suez, Egypt. Deutsche Geophysikalische Gesellschaft e.V. FKPE Hannover, Germany, 6p. (http://fkpe.ggahannover.de/agruppen/fkpe_akbg/workshop_6/vortraege/Lashin_etal_2001.pdf).
- 50. Lashin, A., Hassan, A., A., Sharaf, M., and El Awady, M. M., (1998): Analysis of well logging data of some litho-stratigraphic units of Lower to Middle Pliocene in the

area east of the Nile Delta; Africa/Middle East 2nd International Geophysical Conference & Exposition, Cairo, Egypt, 23p.

11. References

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