



PROF DR. NASSIR SAAD N. AL-ARIFI

**Assistance of the KSU Vice Rector for Graduate Studies and
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Professor of Geophysics-Seismology

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Scientific Degrees

Bachelor's degree:

College of Science – King Saud University

24/1/1406 H – 8/10/1985

PhD degree

College of Science and Engineering – Manchester University

15/7/1417 H – 26/11/1996

PhD Title

Micro-seismicity and Lineament study of The Eastern Side of The Gulf of Aqaba, NW Saudi Arabia (1986-1994)

Academic Ranks

- **Professor 1430 H - Now**
- **Associate Professor 1426 – 1430 H**
- **Assistant Professor 1417 – 1426 H**

Experiences and Administrative / Academic Positions

- ❖ **Assistance of the KSU Vice Rector for Graduate Studies and Scientific Research**
12/07/1441 H - now
- ❖ **Vice Dean of Scientific Research, King Saud University 12/07/1435 H - 12/07/1441 H**
- ❖ **Supervisor of the Visiting Professor Program - Vice Rectorate for Graduate Studies and Scientific Research. 3/8/1433 – 2/8/1437 H**
- ❖ **Supervisor of the International Scientific Partnership Program - Vice Rectorate for Graduate Studies and Scientific Research. 3/8/1437 – Now**
- ❖ **Dean of the Faculty of Science and the Humanities- Al-Quwaiya Province.**
16/10/1431 – 3/2/1433 H.
- ❖ **Dean of the Community College- Al-Quwaiya province. 13/7/1429 – 15/10/1431 H**
- ❖ **Supervisor of the Faculty of Applied Medical Sciences- Al-Quwaiya Province.**
1/9/1429 – 1/1/1433 H.
- ❖ **Chairman of the Founding Committee- Community College- Al-Quwaiya Province.**
14/3/1429 – 13/7/1429 H.

- ❖ Vice Dean of the Harimlae Community College. 11/6/1428 – 14/3/1429 H.
- ❖ Head of the Department of Geology and Geophysics - College of Science – King Saud University (KSU). 4/9/1423 – 4/9/1427 H.

Membership of Scientific Associations

- Member of the Saudi Society for Earth Sciences
- Member of the Geological Society of London
- Member of the American Geophysical Union
- Member of the Egyptian Geophysical Society

Projects

1. Principle Investigator "Detection of the Subsurface Cavities in Al-Remah road and Chaouia Area, Central Region Of Saudi Arabia" In Favor Of The Ministry Of Transport Of Saudi Arabia In 2003. (*Finished*)
2. Partial Participant "System Of Integrated Management And Sustainable Development Of The Sources Of Surface Water And Groundwater Of Wadi Bisha" Supported By The King Abdul Aziz City For Science And Technology From 2002 To 2005. (*Finished*)
3. Principal Investigator "Geo-Information Integrated System for The Seismic Hazard mitigation In the Western Region of Saudi Arabia" Supported By The King Abdul Aziz City For Science And Technology In The Period From 2004 To 2007. (*Finished*)
4. Estimating Groundwater Pollution For Al-Quwaiya Area - Central Saudi Arabia From 2009 To 2011 (*Finished*)

5. **.Researcher "Integrated Management Of Groundwater In The Valley Nissah"**
Supported By The King Abdul Aziz City For Science And Technology In The Period
From 2007 To 2010. (*Finished*)
6. **Seismic microzonation and site-Specific ground motion simulation for The Western
Region Of The Kingdom Saudi Arabia (*Finished*)**
7. **In Addition To Numerous Small and Ending Projects Supported By The King Abdul
Aziz City For Science And Technology**
8. **As Well As Geophysical Projects That Have Been Ended as a Subcontract Work For
The Ministry Of Water And Electricity.**

List of recent supervised M.Sc. Thesis

- ✓ Ekab Saleh Alzahrani, 2014. Contribution of geophysical techniques for evaluation the groundwater resources at Al Quwy'yia area, central Saudi Arabia, 106 pages.
- ✓ Farhan khan, 2017. Estimation of dynamic soil properties and soil amplification ratios with passive ambient vibration technique, 176 pages.
- ✓ Moaeth ali al-aklabi, 2018. Identification of neotectonic characteristics of al-ayes, almadinah province, 141 pages.
- ✓ Zaher Abdulrahman H Al-Shehri, 2018. Shallow Subseafloor Geoacoustic Characterization of Western Jazan Port Red Sea Saudi Arabia, 142 pages.
- ✓ Askar bin Obaid Saud Al-Otaibi, 2019. Regional Landslide Zonation for Environmental Risk Assessment of Mashaar Mina, Makkah Region, 178 Pages.
- ✓ Ghazi Hussein Ali Al-qahtani, 2019. Evaluation of the new marine morpho-tectonic settings of the farasan islands revealed by high-resolution acoustic techniques in the southern red sea, 136 pages.

- ✓ SALEM ALQURISHI, 2020. Structural and Geothermal Studies for Harrat Khaybar Area using Magnetic and Gravity Survey data, 123 pages.

Publications

LIST OF RECENT PUBLICATION

Year 2023

- Mustafa El-Rawy, Okke Batelaan, Nassir Al-Arifi, Ali Alotaibi, Fathy Abdalla, Mohamed Elsayed Gabr, 2023. Climate Change Impacts on Water Resources in Arid and Semi-Arid Regions: A Case Study in Saudi Arabia, Water, Volume 15, Issue 3 Pages 606
- Yang Li, Mohamed Abdelkareem, Nassir Al-Arifi, 2023. Mapping Potential Water Resource Areas Using GIS-Based Frequency Ratio and Evidential Belief Function, Water, Volume 15, Issue 3 Pages 408.
- Ivan Koulakov, Pavel Izbekov, John Eichelberger, Nassir Al Arifi, Saleh Ismail Qaysi, 2023. Interconnection of magma sources beneath the Katmai volcanic system inferred from seismic tomography and petrology, Journal of Volcanology and Geothermal Research, Pages 107744.

Year 2022

- Saleh Ismail Qaysi, Andrei Ivanov, Ivan Koulakov, Nassir Al Arifi, Sami El Khrepy, Andrey Jakovlev, 2022. Crustal Structure Beneath the Arabian Shield Based on the Receiver Function Method, Geosciences, Volume 12, Issue 11, Pages 399.
- Ekaterina Kasatkina, Ivan Koulakov, Ronni Grapenthin, Pavel Izbekov, Jessica F Larsen, Nassir Al Arifi, Saleh Ismail Qaysi, 2022. Multiple magma sources beneath the Okmok caldera as inferred from local earthquake tomography, Journal of Geophysical Research: Solid Earth, Volume 127, Issue 10, Pages e2022JB024656.
- Tong Sun, Wuqun Cheng, Mohamed Abdelkareem, Nassir Al-Arifi, 2022. Mapping Prospective Areas of Water Resources and Monitoring Land Use/Land Cover Changes in an Arid Region Using Remote Sensing and GIS Techniques, Water, Volume 14, Issue 15, Pages 2435
- Faisal K Zaidi, Aref Lashin, Essam Aboud, Nassir Al Arifi, Abdulaziz Al-

- Bassam, Emad Al-Homadhi, Mohamed Abu Anbar, 2022. Silica geothermometry and multi indices approach to characterize groundwater from Midyan region in Northwestern Saudi Arabia, *Journal of African Earth Sciences*, Volume 192, Pages 104557
- Mohamed Abdekareem, Nassir Al-Arifi, Fathy Abdalla, Abbas Mansour, Farouk El-Baz, 2022. Fusion of Remote Sensing Data Using GIS-Based AHP-Weighted Overlay Techniques for Groundwater Sustainability in Arid Regions, *Sustainability*, Volume 14, Issue 13, Pages 7871
- Galina Yaroshenko, Ivan Koulakov, Nassir Al-Arifi, Saleh Qaysi, Sami El Khrepy, 2022. Structure of the magma plumbing system beneath Semisopochnoi Island (Aleutian Arc) inferred from seismic tomography, *Scientific Reports*, Volume 12, Issue 1, Pages 10771
- Ivan Koulakov, Galina Yaroshenko, Nassir Al-Arifi, Saleh Qaysi, Sami El-Khrepy, 2022. Structure of the magma plumbing system beneath Semisopochnoi Island (Aleutian Arc) inferred from seismic tomography, DOI: <https://doi.org/10.21203/rs.3.rs-1560553/v1>

Year 2021

- Sayed SR Moustafa, Mohamed S Abdalzaher, Farhan Khan, Mohamed Metwaly, Eslam A Elawadi, Nassir S Al-Arifi, 2021. A quantitative site-specific classification approach based on affinity propagation clustering, *IEEE Access*, Volume 9, Pages 155297-15531
- Mohamed Abdelkareem, Nassir Al-Arifi, 2021. Synergy of remote sensing data for exploring hydrothermal mineral resources using GIS-based Fuzzy Logic approach, *Remote Sensing*, Volume 13, Issue 22, Pages 4492
- Manoj Mukhopadhyay, Hakim Saibi, Eslam Elawadi, Nassir Al-Arifi, 2021. Pulsed emplacement under the Uyaijah granite ring structure, eastern Saudi Arabia—results from 3D gravity-magnetic inversion, *Arabian Journal of Geosciences*, Volume 14, Pages 1-13
- P Anbazhagan, Mohammad Rafiq Joo, Meer Mehran Rashid, Nassir SN Al-Arifi, 2021. Prediction of different depth amplifications of deep soil sites for potential scenario earthquakes, *Natural Hazards*, Volume 107, Pages 1935-1963
- Mohamed Abdelkareem, Nassir Al-Arifi, 2021. The use of remotely sensed data to reveal geologic, structural, and hydrologic features and predict potential areas of water resources in arid regions, *Arabian Journal of Geosciences*,

- Sami El Khrepy, Ivan Koulakov, Taras Gerya, Nassir Al-Arifi, Mamdouh S Alajmi, Ayman N Qadrouh, 2021. Transition from continental rifting to oceanic spreading in the northern Red Sea area, Scientific Reports, Volume 11, Issue 1, Pages 5594
- Manoj Mukhopadhyay, Basab Mukhopadhyay, Eslam Elawadi, Kasimahanti Durga Venkatesh, Nassir Al-Arifi, 2021. Crustal structure beneath the volcanic field in the Tihamat Plains, Saudi Arabia: An integrated model constrained by gravity modelling and receiver function results, Journal of Asian Earth Sciences, Volume 206, Pages 104614.

Refereed Journals

1. Al-Arifi, N. S., Al-Agha, M. R. & El-Nahhal, Y. Z. 2013b. Hydrogeology And Water Quality Of Umm Alradhma Aquifer, Eastern Saudi Arabia. *Journal Of Environment And Earth Science*, 3(14), Pp 222-240.
2. Hussein, M. T., Lashin, A., Al Bassam, A., Al Arifi, N. & Al Zahrani, I. 2013. Geothermal Power Potential At The Western Coastal Part Of Saudi Arabia. *Renewable And Sustainable Energy Reviews*, 26(668-684).
3. Al-Arifi, N., El Kherpy, S. & Koulakov, I. 3D Crustal Structure And 3D-B-Value In Abudabbab Seismogenic Source, Northern Red Sea. *EGU General Assembly Conference Abstracts*, 2014a. 5703.
4. Al-Arifi, N., Koulakov, I. & Sychev, I. 2014b. Seismic Attenuation Structure Beneath Harrat Lunayyir, Northern Arabian Shield. *AGU Fall Meeting Abstracts*, 1(4584).
5. Chandarasekharam, D. & Aref, L. 2014. CO 2 Mitigation Strategy Through Geothermal Energy, Saudi Arabia. *Renewable And Sustainable Energy Reviews*, 38(154-163).
6. Chandarasekharam, D., Lashin, A. & Al Arifi, N. 2014. Meeting Future Energy Demand Of Saudi Arabia Through High Heat Generating Granites. *International Journal Of Earth Sciences And Engineering*, 7(1-4).
7. 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*, Ahead-Of-Print), Pp 1-10.

8. Koulakov, I., El Khrepy, S., Al-Arifi, N., Sychev, I. & Kuznetsov, P. 2014a. Evidence Of Magma Activation Beneath The Harrat Lunayyir Basaltic Field (Saudi Arabia) From Attenuation Tomography. *Solid Earth*, 5(2), Pp 873-882.
9. Koulakov, I., El Khrepy, S., Al-Arifi, N., Sychev, I. & Kuznetsov, P. 2014b. Evidence Of Magma Activation Beneath The Lunayyir Basaltic Field (Saudi Arabia) From Attenuation Tomography. *Solid Earth Discussions*, 6(1), Pp 1401-1421.
10. Koulakov, I., El Khrepy, S., Al-Arifi, N., Sychev, I., Kuznetsov, P. & Kasatkina, E. Seismic Velocity And Attenuation Tomography Models Beneath The Lunayyir Basaltic Field (Saudi Arabia) Reveal The Activation Of Magma Sources. *EGU General Assembly Conference Abstracts*, 2014c. 5522.
11. Lashin, A. & 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 Reviews*, 30(771-789).
12. Lashin, A., Chandrasekharam, D., Al Arifi, N., Al Bassam, A. & Varun, C. 2014. Geothermal Energy Resources Of Wadi Al-Lith, Saudi Arabia. *Journal Of African Earth Sciences*, 97(357-367).
13. Metwaly, M., Elawadi, E., Moustafa, S. S., Al Arifi, N., El Alfy, M. & Al Zaharani, E. 2014a. Groundwater Contamination Assessment In Al-Quwy'yia Area Of Central Saudi Arabia Using Transient Electromagnetic And 2D Electrical Resistivity Tomography. *Environmental Earth Sciences*, 71(2), Pp 827-835.
14. Nazzal, Y., Ahmed, I., Al-Arifi, N. S., Ghrefat, H., Batayneh, A., Abuamarah, B. A. & Zaidi, F. K. 2014. A Combined Hydrochemical-Statistical Analysis Of Saq Aquifer, Northwestern Part Of The Kingdom Of Saudi Arabia. *Geosciences Journal*, 19(1), Pp 145-155.
15. Al-Arifi, N. 2015. Evaluation Of Metals That Are Potentially Toxic To Agricultural Surface Soils, Using Statistical Analysis, In Northwestern Saudi Arabia.
16. Anbazhagan, P., Bajaj, K., Moustafa, S. S. & Al-Arifi, N. S. 2015a. Maximum Magnitude Estimation Considering The Regional Rupture Character. *Journal Of Seismology*, 1-25.

17. Anbazhagan, P., Moustafa, S. S. & Al-Arifi, N. S. 2015b. Seismic Intensity Map Of South India For Estimated Future Earthquakes. *Arabian Journal Of Geosciences*, 1-7.
18. Aref Lashin, M. P., Nassir Al Arifi, Abdulaziz Al Bassam, Arianna Mocnik, Emanuele Forte. Geophysical Exploration Of The Western Saudi Arabian Geothermal Province: First Results From The Al-Lith Area. *Proceeding, World Geothermal Congress*, 2015.
19. Chandrasekharam, D., Lashin, A., Al Arifi, N., Al Bassam, A., El Alfy, M., Ranjith, P., Varun, C. & Singh, H. 2015a. The Potential Of High Heat Generating Granites As EGS Source To Generate Power And Reduce CO₂ Emissions, Western Arabian Shield, Saudi Arabia. *Journal Of African Earth Sciences*, 112(213-233).
20. Chandrasekharam, D., Lashin, A., Al Arifi, N., Al Bassam, A., Ranjith, P., Varun, C. & Singh, H. 2015b. Geothermal Energy Resources Of Jizan, SW Saudi Arabia. *Journal Of African Earth Sciences*.
21. Chandrasekharam, D., Lashin, A., Al Arifi, N., Al Bassam, A. & Varun, C. 2015c. Evolution Of Geothermal Systems Around The Red Sea. *Environmental Earth Sciences*, 73(8), Pp 4215-4236.
22. D Chandrasekharam, A. L., N Al Araf, C Varun, A Al Bassam 2015a. Climate Change Mitigation Strategy Through Utilization Of Geothermal Energy Resources From Western Arabian Shield, Saudi Arabia. *Journal Of Climate Change*, 1(1,2), Pp 129-134.
23. D Chandrasekharam, A. L., Varun Chandrasekhar Nassir Al Araf, Abdulaziz Al Bassam. High Heat Generating Granites Of Western Saudi Arabian Shield. *Proceeding, World Geothermal Congress*, 2015b.
24. El Alfy, M., Lashin, A., Al-Arifi, N. & Al-Bassam, A. 2015. Groundwater Characteristics And Pollution Assessment Using Integrated Hydrochemical Investigations GIS And Multivariate Geostatistical Techniques In Arid Areas. *Water Resources Management*, 29(15), Pp 5593-5612.
25. El Khrepy, S., Koulakov, I. & Al-Arifi, N. 2015a. Crustal And Uppermost Mantle Structure Beneath The Continental Rifting Area Of The Gulf Of Suez From Earthquake Tomography. *Tectonophysics*.
26. El Khrepy, S., Koulakov, I. & Al-Arifi, N. 2015b. Crustal Structure In The

Area Of The Cannon Earthquakes Of Abu Dabbab (Northern Red Sea, Egypt), From Seismic Tomography Inversion. Bulletin Of The Seismological Society Of America, 105(4), Pp 1870-1882.

- 27. El Khrepy, S., Koulakov, I., Burov, E., Cloetingh, S., Al-Arifi, N. & Bushenkova, N. Seismic Tomography Imaging Beneath The Arabian Peninsula And Red Sea. EGU General Assembly Conference Abstracts, 2015c. 1321.**
- 28. Ghandehariun, A., Nazzal, Y., Kishawy, H. & Al-Arifi, N. S. 2015. Investigation Of Sustainability In Machining Processes: Exergy Analysis Of Turning Operations. International Journal Of Exergy, 17(1), Pp 1-16.**
- 29. Koulakov, I., Burov, E., Cloetingh, S., El Khrepy, S., Al-Arifi, N. & Bushenkova, N. 2015a. Evidence For Anomalous Mantle Upwelling Beneath The Arabian Platform From Travel Time Tomography Inversion. Tectonophysics.**
- 30. Koulakov, I., El Khrepy, S., Al-Arifi, N., Kuznetsov, P. & Kasatkina, E. 2015b. Structural Cause Of A Missed Eruption In The Harrat Lunayyir Basaltic Field (Saudi Arabia) In 2009. Geology, 43(5), Pp 395-398.**
- 31. Koulakov, I., Jakovlev, A., Wu, Y. M., Dobretsov, N. L., El Khrepy, S. & Al-Arifi, N. 2015c. Three-Dimensional Seismic Anisotropy In The Crust And Uppermost Mantle Beneath The Taiwan Area Revealed By Passive Source Tomography. Journal Of Geophysical Research: Solid Earth, 120(11), Pp 7814-7829.**
- 32. Koulakov, I., Jakovlev, A., Zabelina, I., Roure, F., Cloetingh, S., El Khrepy, S. & Al-Arifi, N. 2015d. Subduction Or Delamination Beneath Apennines? Evidences From Regional Tomography. Solid Earth Discussions, 7(859-884).**
- 33. Koulakov, I., Jakovlev, A., Zabelina, I., Roure, F., Cloetingh, S., El Khrepy, S. & Al-Arifi, N. 2015e. Subduction Or Delamination Beneath The Apennines? Evidence From Regional Tomography. Solid Earth, 6(2), Pp 669–679.**
- 34. Koulakov, I., Kukarina, E., Fathi, I. H., El Khrepy, S. & Al-Arifi, N. 2015f. Anisotropic Tomography Of Hokkaido Reveals Delamination-Induced Flow Above A Subducting Slab. Journal Of Geophysical Research: Solid Earth.**
- 35. Lashin, A., Al Arifi, N., Chandrasekharam, D., Al Bassam, A., Rehman, S. & Pipan, M. 2015. Geothermal Energy Resources Of Saudi Arabia: Country**

Update. Proceeding, World Geothermal Congress.

36. Nazzal, Y. H., Al-Arifi, N. S., Jafri, M. K., Kishawy, H. A., Ghrefa, H., El-Waheidi, M. M., Batayneh, A. & Zumlot, T. 2015b. Multivariate Statistical Analysis Of Urban Soil Contamination By Heavy Metals At Selected Industrial Locations In The Greater Toronto Area, Canada. *Geologia Croatica*, 68(2), Pp 147.
37. Rathnaweera, T., Ranjith, P., Perera, M., Haque, A., Lashin, A., Al Arifi, N., Chandrasekharam, D., Yang, S., Xu, T. & Wang, S. 2015a. CO₂-Induced Mechanical Behaviour Of Hawkesbury Sandstone In The Gosford Basin: An Experimental Study. *Materials Science And Engineering: A*, 641(123-137).
38. Rathnaweera, T., Ranjith, P., Perera, M., Lashin, A. & Al Arifi, N. 2015b. Non-Linear Stress–Strain Behaviour Of Reservoir Rock Under Brine Saturation: An Experimental Study. *Measurement*, 71(56-72).
39. Singh, B., Ranjith, P., Chandrasekharam, D., Viete, D., Singh, H., Lashin, A. & Al Arifi, N. 2015a. Thermo-Mechanical Properties Of Bundelkhand Granite Near Jhansi, India. *Geomechanics And Geophysics For Geo-Energy And Geo-Resources*, 1(1-2), Pp 35-53.
40. Singh, H. K., Chandrasekharam, D., Vaselli, O., Trupti, G., Singh, B., Lashin, A. & Al Arifi, N. 2015b. Physico-Chemical Characteristics Of Jharkhand And West Bengal Thermal Springs Along SONATA Mega Lineament, India. *Journal Of Earth System Science*, 124(2), Pp 419-430.
41. Wanniarachchi, W., Ranjith, P., Perera, M., Lashin, A., Al Arifi, N. & Li, J. 2015. Current Opinions On Foam-Based Hydro-Fracturing In Deep Geological Reservoirs. *Geomechanics And Geophysics For Geo-Energy And Geo-Resources*, 1(3-4), Pp 121-134.
42. Saleh Ismail Qaysi, Andrei Ivanov, Ivan Koulakov, Nassir Al Arifi, Sami El Khrepy, Andrey Jakovlev, 2022. Crustal Structure Beneath the Arabian Shield Based on the Receiver Function Method, *Geosciences*, *Geosciences*, Vol. 12, Issue 11, pp 399.
43. Ekaterina Kasatkina, Ivan Koulakov, Ronni Grapenthin, Pavel Izbekov, Jessica F Larsen, Nassir Al Arifi, Saleh Ismail Qaysi, 2022. Multiple magma sources beneath the Okmok caldera as inferred from local earthquake tomography. *Journal of Geophysical Research: Solid Earth*, vol. 127, Issue10,

pp 24656

44. **Tong Sun, Wuqun Cheng, Mohamed Abdelkareem, Nasir Al-Arifi, 2022. Mapping Prospective Areas of Water Resources and Monitoring Land Use/Land Cover Changes in an Arid Region Using Remote Sensing and GIS Techniques, Water, vol. 14, issue 15, pp 2435.**
45. **Faisal K Zaidi, Aref Lashin, Essam Aboud, Nassir Al Arifi, Abdulaziz Al-Bassam, Emad Al-Homadhi, Mohamed Abu Anbar, 2022. Silica geothermometry and multi indices approach to characterize groundwater from Midyan region in Northwestern Saudi Arabia, Volume 192, 104557**
46. **Ivan Koulakov, Pavel Izbekov, John Eichelberger, Nassir Al Arifi, Saleh Ismail Qaysi, 2023. Interconnection of magma sources beneath the Katmai volcanic system inferred from seismic tomography and petrology, Journal of Volcanology and Geothermal Research, Volume 434, 107744**