Affiliation:

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NAME:	**DR. NASAR KHAN**
Date of Birth:	1st February 1989
Nationality:	Pakistani
Designation	Assistant Professor

Career Objectives

To contribute to an academic and research organization that nurtures innovation, offers cutting-edge technologies and provides a dynamic, productive environment for achieving its goals with optimal growth. Seeking a role where I can enhance research outcomes, mentor students, contribute to scientific advancements and create meaningful societal impact.

Academic Qualification

Degree	Grade	Passing Year	Institution
PhD (Geology)	-	2024	KU Leuven (Belgium)
MS (Geology)	A	2016	University of Peshawar
BS (Geology)	A	2012	University of Peshawar
HSSC	A	2007	BISE Malakand
SCC	A	2005	BISE Malakand

Additional Diplomas

- Diploma in **Gemmology** (A Grade) from University of Engineering and Technology (UET) Peshawar, Pakistan.
- Diploma in **Material Testing** (A Grade) from Haris Institute, Peshawar, Pakistan.

Distinctions & Scholarships

- Winner of HEC **Overseas PhD Scholarship** under Faculty Development Programme at University of Malakand, session 2019-2023.
- Winner of **2nd Best Poster Presenter Award** in the International Conference on Earth Sciences Pakistan, 15-17 July 2016, University of Peshawar, Pakistan.
- Winner of **HEC Merit Based Scholarship** for MS (session 2013-2015) research at NCE in Geology, University of Peshawar, Pakistan.
- Stood **"A"** Grade throughout academics.
- **1st Position** holder in the SSC Annual Examination (2005).

Major Subjects Studied

- Petroleum geology, applied sedimentology, sequence stratigraphy, palynology, organic geochemistry, geophysics, economic and environmental geology.

Languages

- English, Urdu and Pashto (Fluent in reading, writing and speaking).

Research Interests

- Depositional environments, conventional/unconventional reservoirs, PETM, palynofacies, carbon and hydrogen storage.

Academic Thesis

- **PhD thesis (2024)** *"Evaluation of reservoir potential for unconventional hydrocarbon, Potwar Basin, Pakistan (Paleocene Patala and Jurassic Datta Formations): Insights from sedimentological, geochemical and petrophysical analyses."*
- **MS thesis (2016) "***Hydrocarbon source rock potential evaluation of the Early Jurassic Datta Formation, Salt Range, Pakistan."*
- **BS thesis (2012)** *"Depositional environment and diagenesis of the Middle Jurassic Samana Suk Formation at Tarnawai Section, District Abbottabad, Pakistan."*

Publications (published and under review)

1. **Khan N.,** Anjum N., Ahmad M., Awais M., Ullah N. (2018). Hydrocarbon source rock potential evaluation of the Late Paleocene Patala Formation, Salt Range, Pakistan: Organic geochemical and palynofacies approach. *Journal of Earth System Science*. doi.org/10.1007/s12040-018-0998-0
2. Awais M., Ullah F., **Khan N.,** Ghani M., Siyar S. M., Wadood B., Mukhtiar A. (2019). Investigation of reservoir characteristics, depositional setting and T-R sequences of the Lockhart Limestone of Meyal Oil Field, Pakistan: A Petrophysical approach. *Journal of Petroleum Exploration and Production Technology*. doi.org/10.1007/s13202-019-0730-x
3. Saboor A., **Khan N.,** Hanif M., Jan I. U., Ahmad S., Ahmad W. (2020). Paleo-depositional and sequence stratigraphic setting of the middle Jurassic Samana Suk Formation at Tarnawai Section, lesser Himalayas and its regional comparison. *Himalayan Geology Journal*, 41 (2), 121-132.
4. **Khan N.,** Ahmad I., Ishaq M., Jan I. U., Khan W., Awais M., Salam M., Khan B. (2020). Reservoir potential evaluation of the Middle Paleocene Lockhart Limestone of the Kohat Basin, Pakistan: Petrophysical analyses. *International Journal of Economic and Environmental Geology*. doi.org/10.46660/ijeeg.vol11.iss1.1919
5. Wadood B., Aziz M., Ali J., **Khan N.,** Wadood J., Khan A., Shafiq M., Ullah M. (2021). Depositional, diagenetic and sequence stratigraphic constrains on reservoir characterization: A case study of Middle Jurassic Samana Suk Formation, western Salt Range, Pakistan. *Journal of Sedimentary Environments*. doi.org/10.1007/s43217-020-00043-2
6. **Khan N.,** Jan I. U., Iqbal S., Swennen R., Salad-Hersi O., Hussain H. S. (2021). Bulk organic geochemical and palynofacies analyses of the Hettangian Datta Formation (Potwar Basin, Pakistan): Regional comparison with the time equivalent Lathi Formation (Jaisalmer Basin, India). *Journal of Earth System Science*. doi.org/10.1007/s12040-021-01649-4
7. Kamran S. M., Pujun W., **Khan N.,** Hassan M. (2021). Organic geochemistry and source rock potential assessment of Late Paleocene Patala Formation in Margalla Hill Range, North Pakistan. *Global Geology Journal*. doi: 10. 3969 /j. issn. 1673-9736. 2021. 04. 03
8. **Khan N.,** Weltje G. J., Jan I. U., Swennen R. (2022). Depositional and diagenetic constraints on the quality of shale-gas reservoirs: A case study from the Late Paleocene of the Potwar Basin (Pakistan, Eastern Tethys). *Geological Journal*. doi.org/10.1002/gj.4439
9. **Khan N.,** Ullah W., Siyar S. M., Wadood B., Ayyub T., Ullah T. (2022). Hydrocarbon source rock assessment of the shale and coal bearing horizons of the early Paleocene Hangu Formation in Kala-Chitta Range, Northwest Pakistan. *Journal of Petroleum Exploration and Production Technology*. doi.org/10.1007/s13202-021-01433-6
10. **Khan N.,** Awais M., Siddiqui M. E., Shahzada K., Khan J. (2023). Feasibility study of Weir Site of the Koto Hydropwer Project, District Lower Dir, Khyber Pakhtunkhwa, Pakistan; Geological and Geotechnical approach. *Himalayan Geology Journal*, 43 (2), 397-405.

11. Javed T., Siyar S. M., Sajjad S. M. W., Ali F., Raziq F., Ullah S., **Khan N.,** Ali A. (2023). Hydrocarbon Source Rock Potential of the Late Paleocene Patala Formation, Kohat Basin, Pakistan. *Iranian Journal of Earth Sciences (IF=0.8).* https://journals.iau.ir/article_703071.html?lang=en

12. **Khan N.,** Siddiqui M. E., Ullah N., Awais M., Khurshid S. (2023). Geological and geotechnical evaluation of Tunnel Site of the Koto Hydropower Project, Khyber Pakhtunkhwa, Pakistan. *Quarterly Journal of Engineering Geology and Hydrogeology*. doi.org/10.1144/qjegh2021-155

13. Hafeez M., **Khan N.,** Wadood B., Khattak S. A. (2024). Paleoenvironmental and diagenetic analysis of the Middle Palaeocene Ramp Carbonates in Northwestern Pakistan: Implications for deciphering the reservoir potential. *Doklady Earth Sciences.* doi.org/10.1144/qjegh2021-155

14. Awais M., Wadood B., Bilal M., Zafar Z., **Khan N.,** Khan A. (2024). Depositional and bio-sequence stratigraphic framework of Kawagarh Formation, Kala Chitta Range, Pakistan: Equivalent of Gurpi Formation (Iran). *Journal of Earth Science*, *35*(2), 332-348. 10.1007/s12583-022-1703-4

15. **Khan N.,** Littke R., Weltje G. J., Swennen R. (2024). Black shale deposition during the Paleocene-Eocene Thermal Maximum: shale-gas pontential of the Patala Formation, Himalayan Fold-and-Thrust Belt, Pakistan (Eastern Tethys). *International Journal of Earth Sciences.* doi.org/10.1007/s00531-024-02436-4

16. Khattak S. A., **Khan N.,** Khan W., Dhas S. S. J., Kontakiotis G., Islam I., Janjuhah H. T., Antonarakou A. (2024). Sedimentology and reservoir characterization of Lower Jurassic clastic sedimentary rocks, Salt and Trans Indus Ranges, Pakistan: Evidences from petrography, SEM and petrophysics. *Depositional Record* (Accepted).

17. **Khan N.,** Ullah U., Awais M., Baidar B., Ishaq M., Jain S., Aziz M. A., Mohammadi Z., Abioui M., Swennen R. (2024). Characterizing depositional-diagenetic aspects and geochemistry for assessing source rock potential of the Thanetian Lockhart Limestone, Lesser Himalayas, Pakistan (Eastern Tethys). *Marine and Petroleum Geology (Under review).*

18. Khattak S., Khan W., Wang L., Zhong Y., Khan N., Wan Q., Islam I., Qadir A. (2024). Paleoenvironmental and diagenetic analysis of the Middle Jurassic Carbonates in Nizampur Basin, Pakistan: Implications for deciphering the reservoir potential. *Journal Physics and Chemistry of the Earth (Under review).*

19 Ullah N., Mustapha1 K. A., Khattak N. U., Hanif M., Osman M.S., **Khan N.** (2024). Organic geochemistry and petrology of organic-rich siliciclastic rocks within early Eocene Bahadur Khel Salt and Jatta Gypsum, Kohat Basin, Pakistan. *Petroleum Science (Under review).*

20. **Khan N.,** de Oliveira-Silva R., Claes H., Weltje G. J., Sakellariou D., Swennen R. (2024). Pore network characterization and shale-gas potential of the Paleocene Patala Formation, Potwar Basin, Pakistan (Eastern Tethys): Comparative results from WIP, NMR and MICP analyses on porosity distribution (In prep.).

Conference Abstracts

1. **Khan N.,** Jan I. U., Iqbal S., Hanif M., Hussian S., Khattak S. A., Alam J. (2016). Organic geochemical and palynofacies analyses for source rock potential evaluation of the Jurassic Datta Formation, western Salt Range, Pakistan. International conference on Earth Sciences Pakistan (ESP). *Journal of Himalayan Earth Sciences*, Abstract Volume, p. 82. http://nceg.uop.edu.pk/ESP-2016AbstractVol.html

2. **Khan N.,** Saboor A., Ahmad S., Khattak S. A., Ahmad W. (2016). Microfacies, diagenetic fabric and depositional environment of the Middle Jurassic Samana Suk Formation at

Tarnawai Section, District Abbottabad, Pakistan. Conference on Sustainable Utilization of Natural Resources (SUN-R), Pakistan. *Journal of Himalayan Earth Sciences*, Abstract Volume, p. 5. http://nceg.uop.edu.pk/gb-specialvolume2016.html#

3. Khattak S. A., Khan W., Hussain S., Qadir N., **Khan N.,** Khan A., Anwar S., Pervaiz A., Saif N. (2016). Microfacies analysis diagenetic fabric and depositional environment of Middle Jurassic Samana Suk Formation Khwari Khawar Section, Nizampur Basin, Khyber Pakhtunkhwa, Pakistan. Conference on Sustainable Utilization of Natural Resources (SUN-R), Pakistan. *Journal of Himalayan Earth Sciences*, Abstract Volume, p. 33. http://nceg.uop.edu.pk/gb-specialvolume2016.html#

4. Jehan S., Khattak S. A., Khan S., Ullah S., **Khan N.,** Tariq M., Rashid A. (2016). Physio-chemical assessment of drinking water quality of Salarzai Tehsil, Bajur Agency, FATA, Pakistan. International conference on Earth Sciences Pakistan (ESP). *Journal of Himalayan Earth Sciences*, Abstract Volume, p. 61. http://nceg.uop.edu.pk/ESP-2016AbstractVol.html

5. Awais M., Ahmad L., **Khan N.** (2017). Limestone in stratigraphy of Pakistan: Implications for economic geology. International conference on Emerging Trends in Earth and Environmental Sciences (ETEES). Abstract Volume, p. 35-36. http://www.cees.edu.pk/conference/

6. Awais M., **Khan N.** (2017). Health and safety environment cognizance and acquiescence during geological fieldwork. International conference on Mining and Fuel Industries (CMFI), Pakistan. Abstract Volume, p. 39. http://www.econ-environ-geol.org/pdf/Abstract.pdf

7. **Khan N.,** Awais M., Khattak S. A., Din I. U., Anjum N. Ahmad M. (2017). Organic geochemical and palynofacies analyses for petroleum source rock potential evaluation of the Paleocene Patala Formation, western Salt Range, Pakistan. International conference on Mining and Fuel Industries (CMFI), Pakistan. Abstract Volume, p. 42. http://www.econ-environ-geol.org/pdf/Abstract.pdf

8. **Khan N.,** Awais M., Khan J., Muhammad A., Siddiqui E. A., Khan J., Arif M., Bacha G. A. (2017). Geological and geotechnical evaluation of Weir Site of the Koto Hydropower Plant, Dir Lower, Khyber Pakhtunkhwa, Pakistan. International conference on Mining and Fuel Industries (CMFI), Pakistan. Abstract Volume, p. 43. http://www.econ-environ-geol.org/pdf/Abstract.pdf

9. **Khan N.,** Siddiqui M. E., Ahmad I., Khurshid S., Ullah N., Ahmad B., Shah S. S., Jan I. U. (2018). Geological and geotechnical assessment of Tunnel Site of the Koto Hydropower Project, District Lower Dir, Khyber Pakhtunkhwa, Pakistan. International conference on Earth Sciences Pakistan (ESP). *Journal of Himalayan Earth Sciences*, Abstract Volume, p. 40. http://nceg.uop.edu.pk/ESP-2018AbstractVol.html

10. Khattak S. A., **Khan N.,** Khan A., Hassan U., Khurshid S., Khan W., Qadir A. (2018). Composition, diagenesis and reservoir rock characterization of Middle Jurassic Datta Formation, Salt Range, Pakistan. International conference on Earth Sciences Pakistan (ESP). http://nceg.uop.edu.pk/GeologicalBulletin/ESP-2018 AbstractVolume/abstracts103.pdf

11. Ahmad S., Khan S., Ahmad S., **Khan N.,** Khan R. (2018). Sedimentology and biostratigraphy of the Cretaceous Mughal Kot Formation, Rakhi Gorge section, Sulaiman Range, Pakistan. International conference on Earth Sciences Pakistan (ESP), Pakistan.

12. Awais M., Hanif M., Aamir M., Ahmad A., **Khan N.,** Wadood B., Ullah S., Ahmad N., Aziz T., (2018). Depositional and diagenetic studies of the Patala Formation carbonates

exposed in Pir Sohawa section, Hazara Basin, Pakistan: Implications for reservoir characterization. International conference on Earth Sciences Pakistan (ESP), Pakistan.

13. Awais M., Wadood B., Ishaq Ishaq., Ahmad Liaq., Bilal M., Zafar Z., Khan A. U., **Khan N.** (2018). Diagenetic studies and reservoir potential of the Cretaceous Kawagarh Formation, Kala-Chitta Range, Pakistan.

14. **Khan N.,** Swennen R., Weltje G. J., Jan I. U., (2021). Lithofacies, Depositional Environment and Diagenetic Evolution of the Paleocene Patala Formation, Potwar Basin, Pakistan: Implication for Shale Gas Potential. EGU21 General Assembly.

https://doi.org/10.5194/egusphere-egu21-12555

15. **Khan N.,** Claes H., De Oliveira-Silva R., Weltje G. J., Sakellariou D., Swennen R. (2021). Petrophysical characterization and shale-gas potential of the Late Paleocene Patala Formation, Potwar Basin, Pakistan (Eastern Tethys): Comparative study on porosity distribution in mudstones. Young Belgian Magnetic Resonance Scientists Symposium (YBMRS-21). Abstract Volume, p. 46. https://archive.ybmrs.be/2021/

Experience

- **Assistant Professor,** Department of Geology, University of Malakand, Pakistan, from November 2024 to present.
- **Lecturer,** Department of Geology, University of Malakand, Pakistan, from April 2016 to October 2024.
- **Teaching Assistant,** Department of Earth and Environmental Sciences, KU Leuven, Belgium, from February 2021 to June 2022.
- **Team Leader** (Site Geologist), Sarwar and Company (Pvt.) Limited, Pakistan, from March 2014 to June 2015.
- **Field Geologist**, Electra Consultants, Peshawar, Pakistan, from March 2013 to February 2014.
- Worked as **Laboratory Technician** in the Laboratory of Sedimentology and Palynology NCE in Geology University of Peshawar, Pakistan for 4 months.
- Worked as **Internee Geologist** at OGDCL (Oil & Gas Development Company Limited), Pakistan, for 2 months.

Professional Projects

- Worked as a field geologist in the Shigokas Hydropower Project, Shirengal Hydropower Project and Kalkot Hydropower Project, District Dir, Pakistan.
- Worked as a team leader in the Koto Hydropower Project, District Lower Dir, Pakistan.

Conferences and Trainings

- Participated in "Young Belgian Magnetic Resonance Scientists Symposium (YBMRS)" 6-7th December 2021, KU Leuven, Belgium.
- Participated in "European Geosciences Union (EGU)" General Assembly Meeting, 19-30th April 2021 in Vienna, Austria.
- Participated in the International Conference on "Earth Science Pakistan (ESP)" 11-13th August 2018 at Baragali Campus, University of Peshawar, Pakistan.

- Participated in International Conference on "Mining and Fuel Industries (CMFI)" 19-21th October 2017 at Sheikh Zayed Islamic Research Centre, Karachi, Pakistan.
- Participated in International Conference on "Sustainable Utilization of Natural Resources (SUN-R)" 3rd October 2016 at NCE in Geology, University of Peshawar, Pakistan.
- Participated in International Conference on "Earth Science Pakistan (ESP)" 15-17th July 2016 at Baragali Campus, University of Peshawar, Pakistan.
- Participated in one day workshop on "Quantitative Seismic Interpretation" 4th December 2015 at NCE in Geology, University of Peshawar.
- Participated in "3 Days Technical Workshop on Seismic and Well Log Analysis" 14-16th October 2011, at Department of Geology, University of Peshawar, Pakistan.

Membership

- AAPG (American Association of Petroleum Geologists) member.
- IAS (International Association of Sedimentologists) member.
- EGU (European Geosciences Union) member.

Computing Skills

- MS Office, Corel Draw, JMicroVision, Arc GIS, Windows, Profex 4.5, Google Earth.

Laboratory Techniques

- Micropscopy (transmitted, fluorescence, cathodoluminescence, FEG-SEM), and X-ray diffraction.
- TOC, Rock-Eval pyrolysis, vitrinite reflectance, palynofacies and stable isotopes analyses.
- Water Immersion Porosimetry (WIP), Nuclear Magnetic Resonance (NMR) and Mercury Injection Capillary Pressure (MICP).

Thesis Supervised

Student Names	Thesis Title	Completion
Abdul Samad, Sajid Ali & Osama Amjad	Water quality assessment and pollutant sources in Panjkora River, Lower Dir, Khyber Pakhtunkhwa, Pakistan	2024 (ongoing)
Wasif Ullah, Tariq Ullah & Tariq Ayub	Hydrocarbon generation potential of the Early Paleocene Hangu Formation at Attock-Cherat and Kala-Chitta Ranges, Pakistan	2018 (completed)
Bakht Baidar, Awais Aziz & Obaid Ullah	Sedimentology and source rock potential of the Paleocene Lockhart Limestone in the Kala-Chitta Range, Pakistan	2018 (completed)
Sher Nawab, Izhar Khan & Mujeeb U. Rehman	Feasibility study of Lawi Hydropower Project, District Chitral, Khyber Pakhtunkhwa, Pakistan: Geological and geotechnical approach	2018 (completed)
Wasim Khan, Mohsin Salam & Bilal Khan	Reservoir potential evaluation of the Middle Paleocene Lockhart Limestone at Shakardara, Kohat Basin, Pakistan	2017 (completed)
Bilal Ahmad, Naveed Ullah & Sanaullah Shah	Feasibility study of Tunnel Site of the Koto Hydropower Project, Lower Dir, Khyber Pakhtunkhwa, Pakistan	2017 (completed)
M. Jawad,	Geological and geotechnical investigations for feasibility study	

M. Arif & Gohar A. Bacha	of Weir Site of the Koto Hydropower Project, District Dir Lower, Khyber Pakhtunkhwa, Pakistan	2016 (completed)
Naveed Anjum & Mansoor Ahmad	Hydrocarbon source rock potential evaluation of the Late Paleocene Patala Formation, Salt Range Pakistan	2016 (completed)

Reviewer and External Examiner

- Reviewed BS Geology thesis entitled "Microfacies analysis, depositional environment and reservoir potential evaluation of the Paleocene Patala Formation, Hazara Basin, Pakistan" University of Swabi, Pakistan.
- Reviewed BS Geology thesis entitled "Reservoir characterization and sequence stratigraphic interpretation of the Lockhart Limestone at Meyal Oil Field, Potwar Plateau, Pakistan" University of Swabi, Pakistan.
- I also review research articles for Geological Journal, Frontiers in Earth Science, Petroleum Geoscience.

References

- **Prof. Dr. Rudy Swennen**
  Emeritus Professor,
  Department of Earth and Environmental Sciences, KU Leuven, Belgium.
  Email: rudy.swennen@kuleuven.be

- **Prof. Dr. Muhammad Hanif**
  Professor,
  National Centre of Excellence in Geology, University of Peshawar, Pakistan.
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