

## Curriculum Vitae

### **Name and address: Shahid Iqbal**

Department of Earth Sciences  
Faculty of Natural Sciences,  
Quaid-i-Azam University Islamabad, Pakistan  
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### **University Education**

- 2018-2019      **Post-Doc** (Climate-environmental deteriorations during greenhouse phases)  
University of Vienna, Austria
- 2014-2018      **Doctor of Philosophy (PhD)** Sedimentology and depositional sequence stratigraphy  
University of Vienna, Austria (**Distinction**)  
  
Thesis Title: "Stratigraphic architecture and depositional sequence stratigraphy of the Jurassic Datta Formation in the low latitude Tethyan Salt Range, Pakistan"
- 2004-2006      **Master of Philosophy (MPhil)** Geology  
Quaid-i-Azam University Islamabad, Pakistan with A-Grade and **Chancellor Gold Medal**  
  
Thesis Title: "Lateral and vertical facies variation in the Jurassic Datta Formation in the Kasanwala Nala and Kaowaali sections, western Salt Range, Pakistan"
- 2002-2003      **MSc** Geology  
University of Peshawar, Pakistan with A-Grade  
  
Thesis Title: "Sedimentology and Depositional Environments of the Triassic Succession (Musa Khel Group) in Nammal Gorge section western Salt Range, Pakistan"
- 1998-2001      **BSc (Hons)**  
Geology at University of Peshawar, Pakistan with A-Grade

### **Languages**

English: fluent in spoken and written language

German: basics

Urdu: native language

Pashto: native language

## **Professional Career**

2012-date working as Assistant Professor at Quaid-i-Azam University Islamabad, Pakistan

2021 worked as Guest Lecturer (short term) at the Department of Geology, University of Vienna, Austria

2018-2019 worked as a Post-Doc researcher at the Department of Geology, University of Vienna, Austria

2004-2011 worked as Lecturer at Quaid-i-Azam University Islamabad, Pakistan

2003-2004 worked as Geoscientist in LMK Resources Islamabad, Pakistan

## **Field expertise**

1. Fieldwork and project experience especially connected to foreland sedimentary basins in the northwest Himalayan Fold and Thrust Belt (HFTB) in Pakistan. Local and Basinal scale sedimentological studies of different rock units in the foreland zone, north Pakistan, to understand the depositional environments, stratigraphic architecture, and depositional sequence stratigraphy. Expertise in clastic sedimentology especially in fluvial and deltaic systems.
2. Extensive fieldwork experience in the Peshawar Basin, Pakistan in search for the Pleistocene glaciation signals and Pleistocene–Holocene–Anthropocene transition.
3. Fieldwork and project experience in Northern Calcareous Alps, Austria.

## **Research interests**

1. Mesozoic paleoclimates especially late Triassic and Jurassic and the paleoclimatic transition across the Triassic–Jurassic Boundary (TJB) interval.
2. Paleoclimatic fluctuation during the Pleistocene glaciation and the Pleistocene–Holocene paleoclimatic transition.
3. Using geochemical signals in search for the early Anthropocene, focusing latest Holocene fluvial-floodplain sedimentary archives and investigation of the archaeological sites to trace anthropogenic signals.
4. Expertise in petrographic studies and point counting, XRD analysis, clay mineralogy, detail sediments geochemistry and heavy mineral analysis for rock type identification and depositional environments interpretation, paleoclimates and understanding different phases of diagenesis and sediment provenance analysis.
5. Expertise in the using heavy metals as signals in the search for the early Anthropocene.

## **Students Supervision**

Supervised theses of more than 70 BS, MSc and MS and MPhil students, Currently, 5 BS, 7 MPhil and 4 PhD students are enrolled under supervision.

## **Professional Activities**

Reviewer for journals (e.g., Geological Society of London (GSL), International Journal of Earth Sciences (IJES), Sedimentary Geology (SedGeol), Austrian Journal of Earth Sciences (AJES), Geological Journal

(GJ), Acta Geologica Sinica, Arabian Journal for Science and Engineering (AJSE), Arabian Journal of Geosciences (AJG), Journal of Himalayan Earth Sciences (JHES))

- Collaborator in IGCP-732 (2021-2025)
- Collaborator in IGCP-739 (2021-2025)
- Collaborator in IGCP-710 (2020-2024)
- Collaborator in Gondwana Map Project (IGCP-628)
- Member of the European Geosciences Union (EGU)
- Member of Society of Exploration Geophysics (SEG)
- Member of International Association of Sedimentologists (IAS)
- Member of the Scientific committee of 2<sup>nd</sup> and 3<sup>rd</sup> Conference of the Arabian Journal of Geosciences (CAJG)
- Participant in International Geoscience and Geoparks Programmes (IGCP-589, IGCP-608, IGCP-609, IGCP-628, IGCP-630, IGCP-632)

### Research Collaboration

- University of Vienna, Austria.
- University of Oslo, Norway.
- Nanjing University of Science and Technology, China .
- National Centre of Excellence in Geology, University of Peshawar, Pakistan.

### Membership and administrative expertise

- Member of the Central Library discipline committee at QAU
- Elected Member of the Academic Council of QAU
- Member of the Board of Studied of the Department of Earth Sciences, QAU
- Member of the Board of Faculty of the Natural Sciences, QAU
- Member of the PhD comprehensive examination committee at the Department of Earth Sciences, QAU
- Member of the BS, MSc, MPhil, and PhD admission committees at the Department of Earth Sciences QAU

### Key Publications

#### Book Chapters

2021 Iqbal, S. Jurassic Climates. In: Alderton, David; Elias, Scott A. (eds.) Encyclopedia of Geology, 2nd edition. vol. 5, pp. 504-513. United Kingdom: Academic Press.  
<https://doi.org/10.1016/B978-0-12-409548-9.12018-4>

#### Articles

2022 Ullah, S., Ali, N., Latif, K., **Iqbal, S.**, Tahir, M., Hussain, H. S., Turab, S. A., Mumtaz, A., Mohibullah. Paleoenvironments and sequence stratigraphy of the Early Jurassic Datta Formation, Chichali Nala, Surghar Range, Pakistan. Himalayan Geology, Vol. 43 (1A), 2022, pp. 111-121.

2021 **Iqbal, S.**, Wagreich, M., Bibi, M., Jan, I. U., and Gier, S. Multi-Proxy Provenance Analyses of the Kingriali and Datta Formations (Triassic–Jurassic Transition): Evidence for Westward Extension of the Neo-Tethys Passive Margin from the Salt Range (Pakistan). Minerals, 11(6), 573. <https://doi.org/10.3390/min11060573>

- 2021 Khan, N., Jan, I. U., **Iqbal, S.**, Swennen, R., Hersi, O. S., Hussain, H. S. 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*, 130(3), 1-22. <https://doi.org/10.1007/s12040-021-01649-4>
- 2021 Hafeez, A., Shah, M., Ehsan, M., Jamjareegulgarn, P., Ahmed, J., Tariq, M.A., **Iqbal, S.**, and Naqvi, N.A. Possible atmosphere and ionospheric anomalies of the 2019 Pakistan earthquake using statistical and machine learning procedures on MODIS LST, GPS TEC and GIM TEC. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*. <https://doi.org/10.1109/JSTARS.2021.3119382>
- 2021 Van, T. H., **Iqbal, S.**, Czarniecka, U., Wysocka, A., Dong, P. P., Quoc, C. N., Ha, V. V., and Minh, T. D. (2021). Geochemistry and mineralogy of the Truc Thon Clay, Hai Duong Province, North Vietnam: implication for paleoclimatic and provenance analysis. *Vietnam Journal of Earth Sciences*, 43(4), 524-545. <https://doi.org/10.15625/2615-9783/16572>
- 2020 Bibi, M., Wagreich, M., and **Iqbal, S.** Trace metals as markers for historical anthropogenic contamination: Evidence from the Peshawar Basin, Pakistan. *Science of the Total Environment*. (703) 134926. <https://doi.org/10.1016/j.scitotenv.2019.134926>.
- 2020 Sames, B., Wagreich, M., Conrad, P. C., and **Iqbal, S.** Aquifer eustasy as the main driver of short-term sea-level fluctuations during Cretaceous hothouse climate phases. *Geological Society, London, Special Publications*, (498) <https://doi.org/10.1144/SP498-2019-105>
- 2020 Bibi, M., Wagreich, M., **Iqbal, S.**, Gier, S., and Jan, U. I. Sedimentation and glaciations during the Pleistocene: Palaeoclimate reconstruction in the Peshawar basin, Pakistan. *Geological Journal*. (55) 671–693. <https://doi.org/10.1002/gj.3445>.
- 2019 Bibi, M., Wagreich, M., and **Iqbal, S.** Regional sediment sources versus the Indus River system: The Plio-Pleistocene of the Peshawar basin (NW-Pakistan). *Sedimentary Geology*. 389, 26-41. <https://doi.org/10.1016/j.sedgeo.2019.05.010>.
- 2019 **Iqbal, S.**, Wagreich, M., Jan, I. U., Kuerschner, W. M., and Gier, S., Hot-house climate during the Triassic/Jurassic transition: The evidence of climate change from the southern hemisphere (Salt Range, Pakistan). *Global and Planetary Change* (172) 15–32. <https://doi.org/10.1016/j.gloplacha.2018.09.008>.
- 2019 Khan, M. Y., Rehman, K., Wajid, A., Turab, S. A., Latif, K., and **Iqbal, S.** Characterization of Ground Penetrating Radar (GPR) wave response in shallow subsurface for forensic investigation in controlled environment. *Journal of Himalayan Earth Sciences*, 52(1), 58-64.
- 2018 Haider, N., Khan, S., Rashid, M., Siddiqui, R. H., Zeb, J., **Iqbal, S.**, Khan, A., and Ahmad, W. Geochemistry and Petrographical Study of Langrial Iron Ore from Tethyan Hazara Area Pakistan, with Emphasis on its Economic Characterization and Depositional Setting. *Int. J. Econ. Environ. Geol.* Vol. 9 (2)40-48.
- 2018 Iqbal, I., Tian, G., **Iqbal, S.**, and Khan, A. Integrated Geophysical Analysis and Rock Physics Study to Confirm the Hydrocarbon Reservoir of the Bitrisim Area in Pakistan. *J Geol Geophys*, 7(330), 2. DOI: 10.4172/2381-8719.1000330.
- 2017 **Iqbal, S.** (collaborator in Gondwana Map Project IGCP 628) Gondwana Geological Map reconstructed to 183 Ma, scale = 1: 5,000,000: [http://www.gondwana.geologia.ufri.br/en/wp-content/uploads/2016/02/GondwanaMap\\_Bangkok2017.pdf](http://www.gondwana.geologia.ufri.br/en/wp-content/uploads/2016/02/GondwanaMap_Bangkok2017.pdf)
- 2017 Jan, I. U., **Iqbal, S.**, Davies, S. J., Zalasiewicz, J. A., Stephenson, M. H., Wagreich, M., Haneef, M., Hanif, M., and Ahmad, S., A periglacial palaeoenvironment in the Upper Carboniferous-Lower Permian Tobra Formation of the Salt Range, Pakistan. *Acta Geologica Sinica, English Edition*. 91(3) 1063–1078. <https://doi.org/10.1111/1755-6724.13324>
- 2016 Jan, I. U., Shah, A., Stephenson, M. H., **Iqbal, S.**, Hanif, M., Wagreich, M., and Hussain, H. S. The Sedimentology of the Lower Permian Dandot Formation: A component of the Gondwana deglaciation sequence of the Salt Range, Pakistan. *Rivista Italiana di*

- Paleontologia e Stratigrafia (Research In Paleontology and Stratigraphy), 122(1).  
<https://doi.org/10.13130/2039-4942/6948>
- 2016 Khan, S., Latif, Z., Hanif, M., Jan, I. U., and **Iqbal, S.** Velocity and Structural Modelling of Mesozoic Chiltan Limestone and Goru Formation for Hydrocarbon Evaluation in the Bitrisim Area, Lower Indus Basin, Pakistan. *Acta Geologica Sinica*, 90(1), 258-275.  
<https://doi.org/10.1111/1755-6724.12656>
- 2015 **Iqbal, S.**, Akhter, G., and Bibi, S. Structural model of the Balkassar area, Potwar Plateau, Pakistan. *International Journal of Earth Sciences*, 104(8), 2253-2272.  
<https://doi.org/10.1007/s00531-015-1180-4>
- 2015 **Iqbal, S.**, Jan, I. U., Akhter, M. G., and Bibi, M. Palaeoenvironmental and sequence stratigraphic analyses of the Jurassic Datta Formation, Salt Range, Pakistan. *Journal of Earth System Science*, 124(4), 747-766. <https://doi.org/10.1007/s12040-015-0572-y> (IF=1.423).
- 2014 **Iqbal, S.**, Jan, I. U. and Haneef, M. The Mianwali and Tredian formations: An example of the Triassic progradational deltaic system in the low-latitude western Salt Range, Pakistan. *Arab Journal for Science and Engineering*. 39(7), 5489–5507 DOI:  
<https://doi.org/10.1007/s13369-013-0836-2>
- 2014 Imraz, M., Ali, F., Haneef, M., Saboor, A., Ahmad, S. (Jr) and **Iqbal, S.** Thanetian foraminiferal algal deposits of the inner ramp facies from the Lockhart Formation, Western Salt Range, Indus Basin. *Arab Journal of Geosciences*. 7(11), 4911–4926. <https://doi.org/10.1007/s12517-013-1099-7>

### Abstracts and oral presentations

- 2021 **Iqbal, S.**, Tethyan realm in Pakistan: A possible connection between the eastern and western Tethys, 1<sup>st</sup> workshop of the IGCP-710, EGH, Kraków, Poland.
- 2021 **Iqbal, S.**, and Bibi, M., Climate change and monsoon variability: Anthropogenic role in floods in Pakistan, 1<sup>st</sup> workshop of IGCP-732, Vienna, Austria.
- 2021 **Iqbal, S.**, and Ali, R. Climate change and glacier lake outburst flood risk-assessment in Hunza area, north Pakistan, 1<sup>st</sup> workshop of IGCP-732, Vienna, Austria.
- 2021 Bibi, M., **Iqbal, S.**, and Wagreich, M., Significance of archaeological sites as markers for historical anthropogenic contamination: Evidence from the Peshawar, Pakistan. 1<sup>st</sup> workshop of IGCP-732, Vienna, Austria.
- 2021 Bibi, M., **Iqbal, S.**, and Wagreich, M., Precious and trace metals as markers for historical anthropogenic contamination: Evidence from the Peshawar Basin, Pakistan, AGU, USA.
- 2019 Bibi, M., Wagreich, M., and **Iqbal, S.** Precious metals and the early Anthropocene: Evidences from the Peshawar Basin, Pakistan (EGU2019). 7–12 April 2019. Vol. 21. P1.
- 2019 Sames, B., Wagreich, M., Wolfgring, E., and **Iqbal, S.** Aquifer eustasy was the main driver of short-term sea-level fluctuations during Cretaceous hothouse climate phases (Strati2019). *Società Geologica Italiana, Roma, Milano (Italy)*, 2-5 July 2019. 296.
- 2017 **Iqbal, S.**, and Wagreich, M., Jan, I. U., Kürschner, W. M. and Gier, S. Extreme greenhouse conditions: palaeoenvironmental reconstructions at the Triassic-Jurassic boundary from the southwestern margin of the Neotethys in the Salt Range, Pakistan. 6th International Symposium of the IGCP 589, Kraków (Poland), 29 September – 5 October 2017. p. 24
- 2017 **Iqbal, S.**, and Wagreich, M., Jan, I. U., Kürschner, W. M. and Gier, S. Extreme greenhouse conditions: Mesozoic examples of palaeoclimatic fluctuations from the southwestern margin of the Neotethys in the Salt Range, Pakistan 10th ISC, Vienna, Austria, 22-26 August 2017, Vienna, Austria, p. 126.
- 2017 Bibi, M., Wagreich, M., **Iqbal, S.**, (2017): Palaeoenvironmental analyses of the Pleistocene and Holocene deposits of the Peshawar Basin, Pakistan – in search for the early Anthropocene.

- 10th International Symposium on the Cretaceous, August 21 - 26, 2017, Vienna, Austria, p. 35.
- 2017 **Iqbal, S.**, Kuerschner, W. M., Wagreich, M., Jan, I. U., and Gier, S., Geochemical evidences for palaeoclimatic fluctuations at the Triassic-Jurassic boundary: southwestern margin of the Neotethys in the Salt Range, Pakistan. EGU2017, Vienna, Austria. Vol. 19, EGU2017-408, 2017.
- 2017 Kuerschner, W. M., **Iqbal, S.**, Wagreich, M., Jan, I. U., and Gier, S., Palynology and Carbon isotope stratigraphy of the Triassic – Jurassic transition in the Salt Range (Pakistan) EGU2017, Vienna, Austria. Vol. 19, EGU2017-15291-1, 2017.
- 2016 **Iqbal, S.**, and Wagreich, M., Evidences of marine regression and Pangaea breakup: Triassic-Jurassic boundary from the Tethyan Salt Range, Pakistan. 35<sup>th</sup> IGC, Capetown South Africa. Paper Number: 1979.
- 2016 **Iqbal, S.**, and Wagreich, M., Sea level reconstructions at the Triassic-Jurassic boundary: southwestern margin of the Neotethys in the Salt Range, Pakistan. 35<sup>th</sup> IGC, Capetown South Africa. Paper Number: 1883.
- 2016 **Iqbal, S.**, and Wagreich, M., Sea level reconstructions and non-marine sedimentation at the Triassic-Jurassic boundary: southwestern margin of the Neotethys in the Salt Range, Pakistan. European Geosciences Union (EGU) General Assembly 2016. Vienna, Austria. (Convener and presenter) Vol. 18, EGU2016-1249, 2016.
- 2015 **Iqbal, S.**, and Wagreich, M., Marine regression and terrestrial sedimentation at the Triassic-Jurassic boundary: southwestern margin of the Neotethys in the Salt Range, Pakistan. IGCP609 Workshop Nanjing, China. (Invited Talk). p. 24.
- 2015 **Iqbal, S.**, and Wagreich, M., End Triassic regression: Triassic-Jurassic boundary from the Tethyan Salt Range, Pakistan. Strati 2015, Graz Austria. ISSN 1608-8166. p. 177.
- 2014 **Iqbal, S.**, Jan, U. I., and Akhter G. M., Wagreich, M., Hanif, M. Triassic-Jurassic boundary: Evidences from the Tethyan Salt Range, Pakistan and correlation with Europe. International conference on Earth Sciences Pakistan. Journal of Himalayan Earth Sciences p. 59.
- 2013 **Iqbal, S.**, Jan, U. I., and Akhter G. M. Palaeoenvironmental analysis of the Jurassic Datta Formation, Salt Range, Pakistan. 30th International Association of Sedimentologists meeting, Manchester, September 2-5th, 2013.
- 2013 Hanif, M. Jan U. I., Ali, F. and **Iqbal, S.** Hydrocarbon Prospects in Khyber Pakhtunkhwa: A review. International Conference on “Conventional and Unconventional Hydrocarbon Prospects of Pakistan” Jointly organized by Department of Geology, University of Peshawar & Pakistan Association of Petroleum Geoscientists (PAPG), May 24-27, 2013, Baragali Summer Campus, Pakistan.
- 2012 **Iqbal, S.**, Mianwali and Tredian formations; an example of the Triassic progradational deltaic system in the western salt range, Pakistan. International conference Earth sciences Pakistan. 23-24 June, 2012 at Baragali summer campus. Journal of Himalayan Earth Sciences. Abstract volume 45 (2) 60p.
- 2009 **Iqbal, S.**, Shah, M. M., Monalisa and Ali, K. A. Facies analyses and depositional environments of Mianwali and Tredian Formations in the vicinity of Nammal gorge, western Salt Range, Pakistan. 12e Congrès Français de Sedimentologie, Renne 2009. Livre des résumés. Publ. ASF. No. 64, p. 362.
- 2009 **Iqbal, S.**, Tectonics of the Tethyan Belt with special reference to the formation of Chagai Magmatic arc and its significance (economic minerals)”. Five days national workshop on the seismicity, seismotectonics and earthquake forecasting in the north Pakistan, July 20-24, 2009.