1. **Name: Dr. Naveen Hakhoo**

   Assistant Professor in Geology, Higher Education Department, Govt. of Jammu and Kashmir. Govt. Degree College, Anantnag

2. **Father's Name :** Sh. Rajinder Hakhoo

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4. **Nationality:** INDIAN (Male, Married).

5. **Date of Birth:** 20th October 1980.

6. **Educational Qualifications:**

a) **B. Sc., Geology (2005)**, University of Jammu, India.

b) **M. Sc., Geology- Gold Medalist (2007),** University of Jammu, India.

c) **NET- JRF (2008)**, Council of Scientific and Industrial Research (CSIR), India.

d) **Ph. D. (2014),** University of Jammu (UoJ), India in collaboration with University College London (UCL), UK.
   Supervisors: Prof. G. M. Bhat (UoJ), and Prof. Juergen Thurow (UCL).
   Research Topic: Structural Evaluation and Hydrocarbon Reservoir Potential of the Neoproterozoic Sirban Limestone, Jammu (India).

7. **Field(s) of specialization:** Structural Geology and Tectonics. Petroleum Geology. Rock Deformation. Conventional and Unconventional Hydrocarbon Exploration. Field Geology. Natural Hazards.

8. **Research Interests and Expertise:** Contractional, Transpressional and Trasntensional Regimes. Rock Deformation. Trap Formation, Assessment and Integration. Reservoir Characterization. Stable Isotope, Major- Minor, Trace and Rare Earth Element Geochemistry. Source Rock Geochemistry and Geochronology of Organic Rich Sedimentary Rocks. Drivers and Implications of Natural Hazards.

9. **Total Experience: Seven (7+) Years**

a) **Teaching-**
   - Assistant Professor/Lecturer (ad-hoc/on contract), in the Postgraduate Department of Geology, University of Jammu. (2009-2011; 2014-2015; 2015-2016; 2016-2017, 2017-2018, and 2018-2022 sessions). Presently posted as full-time Assistant Professor in GDC Anantnag since April 2022.
   Courses Taught: Structural Geology; Petroleum Geology; Geo-exploration; Geo-hydrology; Oceanography; Igneous Petrology; Carbonate Sedimentology; Mineralogy.

b) **Research-**

Visiting Scientist, Energy and Geoscience Institute (EGI), University of Utah, USA (May – July, 2013). ***Indian Subcontinent Shale Resource Plays, Phase 1*** project with research focusing on the Himalayan Foreland Basin (HFB).

Researcher Investigator in the project titled ""Increasing Resilience to Environmental Hazards in Border Conflict Zones" from January to October 2017. University College London and University of Jammu. Principal Investigator: Prof. Peter Sammonds (UCL)

10. Research Collaborations:

a) Eni (Milan and India). Ph. D. research project, on the understanding and assessment of the global Neoproterozoic petroleum system analogue from the NW Himalaya, India. This research project not only led to the understanding of the evolution of the petroleum system elements, but also enabled to renew the 150 years old geological understanding of this part of the NW Himalaya. **(2008-2013)**

b) National Geophysical Research Institute (NGRI), Hyderabad. This project was about the understanding of the hydrocarbon source potential of shales in NW Himalaya of India. **(2011-12)**

c) Durham University, University College London and Geological Society London (United Kingdom) – Re-Os geochronology of the Mesoproterozoic black shales, this is the first Re-Os isochron form this part of the NW Himalaya. **(2011-12)**

d) Simprentis Group, London. Oil-Simulation to understand the reservoir and trap geometry in oil/gas fields and provinces. **(2012)**

e) Energy and Geoscience Institute (EGI), University of Utah, USA. Shale resources exploration in the sedimentary basins on India (Himalayan Foreland, Cambay and Damodar). **(2013)**

f) UCL, Institute of Disaster Risk Reduction (IRDR). Project on, "Increasing resilience to environmental hazards in border conflict zones." **(2017)**

g) Eni, Geological Survey of India (GSI), Pakistan Petroleum Limited (PPL), Oil and Natural gas Corporation (ONGC), University College London (UCL). Joint review publication – "Petroleum systems and hydrocarbon potential of the NW Himalaya of India and Pakistan." **(2017-18)**

h) National Institute of Hydrology (NIH). Project on, "spring sanctuary development in the foot-hills of the NW Himalaya." **(Ongoing)**

11. Awards and Recognitions:

(a) Best Teacher Award, awarded for the year 2022 on 05-09-2022 at the Govt. Degree College Anantnag, Higher Education Department, Govt. of Jammu and Kashmir.

(b) Wadia Memorial Award' for the best oral paper presentation (Earth Sciences), *101st Indian Science Congress, Jammu,* February 2014.

(c) First Position in the Student Photography Contest and Second position in the Student Extempore Competition at *Geo-India 2011 conference*, 12-14 January 2011. *Organised by ONGC, APG and AAPG.*

(d) Second Prize for poster presentation", *17th Convention of IGC and International Conference* in ISM Dhanbad, Jharkhand. November 10-12, 2011.

(e) Citation for oral paper presentation (co-author) in International conference on *"Geothermal and Other Energy Resources of Ladakh: Technological and Business Viability"*, July 5-7, 2010 at Leh, Ladakh.

(f) Young Scientist Award - *5th JK Science Congress*, February 2010.

(g) Citation for contribution in *Children's Education Programme (EEC)*, May, 2009.

12. Internships/Fellowships:

(a) Geological Society, London, Fermor Fund grant. Awarded for the year 2012.

(b) Simprentis Group Internship, Getenergy Conference, UCL, U.K. June 2012.

(c) CSIR, India- research fellowship 2009.

(d) eni, India- research fellowship 2008.

13. Membership of learned bodies:

(a) Past Fellow, Geological Society London (GSL), London, United Kingdom.

(b) Life Member, Jammu University Geology Alumni Association (JUGAA).

(c) Past Student Member, American Association of Petroleum Geologists (AAPG).

(d) Life Member, Indian Association of Sedimentologists (IAS).

(e) Member, Indian Geological Congress (IGC).

(f) Life Member (M-0006), Geological Society of India.

14. Visiting Scientist: Energy and Geoscience Institute (EGI), University of Utah, USA.
https://www.egi.utah.edu/about/affiliate-scientists/naveen-hakhoo

15. Details of Publications:

a) Books:

Mateen Hafiz, Sudeep Kanungo, **Naveen Hakhoo** and Manas Pathak (editors) 2016. ***India Shale Gas Workshop – Proceedings Volume***. Published by Energy and Geoscience Institute (EGI), University of Utah, USA (EP00083).

b) Research Papers in Peer Reviewed and Refereed Journals:

(i) Mateen Hafiz, **Naveen Hakhoo**, Ghulam Bhat, Sudeep Kanungo, Bindra Thusu, Jonathan Craig, Waquar Ahmed, Rahul Magotra. (2022). *An assessment of the source potential and reservoir characterization for tight gas exploration in the Subathu Formation shale, Himalayan Foreland Basin, Northwestern India.* ***Journal of Asian***

***Earth Sciences*. 230. 102-205. Publishing Date: 01-06-2022.** https://doi.org/10.1016/j.jseaes.2022.105205

(ii) Mateen Hafiz, **Naveen Hakhoo**, Ghulam M Bhat, Sudeep Kanungo, Bindra Thusu, Jonathan Craig, Waquar Ahmed. (2020). Source potential and reservoir characterization of the Cambay Shale, Cambay Basin, India: Implications for tight gas and tight oil resource development. American Association of Petroleum Geologist (AAPG) Bulletin. 104. 8. 1707-1749. https://doi.org/10.1306/03162017174

(iii) **Naveen Hakhoo**, Ghulam M. Bhat, Sundeep Pandita, Gulzar Hussain, Ashan Ul Haq, Mateen Hafiz, Waquar Ahmed, Yudhbir Singh and Bindra Thusu. (2019). *Natural Hazards their drivers, mechanisms and impacts in the Shyok-Nubra Valley, NW Himalaya, India.* ***International Journal of Disaster Risk Reduction (IJDRR).*** **35.** *https://doi.org/10.1016/j.ijdrr.2019.101094* .

(iv) Bayes Ahmed, Peter Sammonds, Naomi M. Saville, Virginie Le Masson, Kavita Suri, Ghulam M. Bhat, **Naveen Hakhoo**, Tsering Jolden, Gulzar Hussain, Kuenga Wangmo and Bindra Thusu. (2019). *Indigenous Mountain People's Risk Perception to Environmental Hazards in Border Conflict Areas*. ***International Journal of Disaster Risk Reduction (IJDRR).*** **35.** DoI: https://doi.org/10.1016/j.ijdrr.2019.01.002.

(v) J. Craig, **N. Hakhoo***, G.M. Bhat, M. Hafiz, M.R. Khan, R. Misra, S.K. Pandita, B.K. Raina, J. Thurow, B. Thusu, W. Ahmed, S. Khullar. (2018). *Petroleum systems and hydrocarbon potential of the North-West Himalaya of India and Pakistan.* ***Earth-Science Reviews*** **187**, 109-185. DoI: 10.1016/j.earscirev.2018.09.012. ***Corresponding Author.** DoI: https://doi.org/10.1016/j.earscirev.2018.09.012

(vi) Waquar Ahmed, G. M. Bhat, J. McLennan, H. N. Sinha, S. Kanungo, S. K. Pandita, Y. Singh, **N. Hakhoo**, M. Hafiz, B. Thusu, N. H. Choudhary. (2018). *Kerogen typing using palynofacies analysis in Permian Barren Measures Formation in Raniganj sub–basin, East India.* **The Palaeobotanist 67**, 113-122. URI: http://14.139.63.228:8080/pbrep/handle/123456789/2161

(vii) **Naveen Hakhoo**, Bindra Thusu, Devleena Mani, Ghulam M. Bhat, Jonathan Craig, Juergen Thurow, Mateen Hafiz, Sudeep Kanungo, Sumita Koul, Mateen Hafiz and Waquar Ahmed. (2016). *Hydrocarbon Source Potential of the Proterozoic Sirban Limestone Formation, NW Himalaya, Jammu (India).* ***Journal, Geological Society of India*** **88**, 685-692. DoI: https://doi.org/10.1007/s12594-016-0535-1

(viii) **Naveen Hakhoo**, Bindra Thusu, Ghulam M. Bhat, Jonathan Craig, Juergen Thurow and Mateen Hafiz. (2016). *Rhenium (Re) – Osmium (Os) Geochronology of the Proterozoic Sirban Limestone Formation, NW Himalaya, Jammu (India).* ***Journal, Geological Society of India*** **88**, 267-272. DoI: https://doi.org/10.1007/s12594-016-0489-3

(ix) Devleena Mani, D. J. Patil, A. M. Dayal, S. Kavitha, Mateen Hafiz, **Naveen Hakhoo** and G. M. Bhat. (2014). *Gas potential of Proterozoic and Phanerozoic shales from the NW*

Himalaya, India: Inferences from pyrolysis. ***International Journal of Coal Geology*** **128-129,** 81-95. DoI: https://doi.org/10.1016/j.coal.2014.04.007

(x) J. Craig, A. Absar, G. Bhat, G. Cadel, M. Hafiz, **N. Hakhoo**, R. Kashkari, J. Moore, T.E. Ricchiuto, J. Thurow, and B. Thusu. (2013). *Hot springs and the Geothermal Energy potential of Jammu and Kashmir State, N.W. Himalaya, India*. ***Earth-Science Reviews*** **126**, 156–177. DoI: https://doi.org/10.1016/j.earscirev.2013.05.004

(xi) Craig, J., Biffi, U., Galimberti, R.F., Ghori, K.A.R., Gorter, J., **Hakhoo, N.**, Le Heron, D., Thurow, J., and Vecoli, M. (2013). *The Palaeobiology and Geochemistry of Precambrian Hydrocarbon Source Rocks*. ***Journal of Marine and Petroleum Geology*** **40**, 1-47. DoI: https://doi.org/10.1016/j.marpetgeo.2012.09.011

(xii) Bhat, G.M., Craig, J., Hafiz, M., **Hakhoo, N.**, Thurow, J.W., Thusu, B. and Cozzi, A. (2012). *An Introduction to the Geology and Hydrocarbon Potential of Neoproterozoic – Cambrian Basins in Asia*. In: Bhat, G.M., Craig, J., Thurow, J.W., Thusu, B. and Cozzi, A. (editors) 2012. *Geology and Hydrocarbon Potential of the Neoproterozoic- Cambrian Basins in Asia*. ***Geological Society, London, Special Publications*** **366**, 1-17. **DoI:** https://doi.org/10.1144/SP366.15

c) Technical Research Papers - In-house Publications (Proceeding Volumes):

(i) **Naveen Hakhoo**, Bindra Thusu, Ghulam M. Bhat, Jonathan Craig, Juergen Thurow, Mateen Hafiz, Sudeep Kanungo and Waquar Ahmed. (2016). *Unconventional and Conventional Hydrocarbon Prospects in the Himalayan Foreland Basin - Frontal Fold Thrust Belt, Riasi, NW Himalaya (India).* In: Mateen Hafiz, Sudeep Kanungo, Naveen Hakhoo and Manas Pathak (editors) 2016, ***India Shale Gas Workshop – Proceedings Volume*** 75-83. Published by Energy and Geoscience Institute (EGI), University of Utah, USA (EP00083). https://egi.utah.edu/indian-workshop-proceedings/

(ii) Mateen Hafiz, **Naveen Hakhoo**, Ghulam M. Bhat, Bindra Thusu Jonathan Craig, Sudeep Kanungo and Waquar Ahmed. (2016). *Shale Fabric and Pore Types in the Cambay Shales, Cambay Basin, Western India.* In: Mateen Hafiz, Sudeep Kanungo, Naveen Hakhoo and Manas Pathak (editors) 2016, ***India Shale Gas Workshop – Proceedings Volume*** 65-72. Published by Energy and Geoscience Institute, University of Utah (EGI), USA (EP00083). https://egi.utah.edu/indian-workshop-proceedings/

(iii) Sudeep Kanungo, Mateen Hafiz, **Naveen Hakhoo**, Nick Dahdah, Bryony Richards-McClung and Bindraban Thusu. (2016). *Shale Resource Evaluation of the Barren Measure Formation, Damodar Basin, for Unconventional Hydrocarbons.* In: Mateen Hafiz, Sudeep Kanungo, Naveen Hakhoo and Manas Pathak (editors), ***India Shale Gas Workshop – Proceedings Volume*** 109-115. Published by Energy and Geoscience Institute (EGI), University of Utah, USA (EP00083). https://egi.utah.edu/indian-workshop-proceedings/

(iv) Waquar Ahmed, John McLennan, Ghulam M. Bhat, Bindra Thusu, **Naveen Hakhoo**, Mateen Hafiz and John Buragohain. (2016). *Reservoir Characterisation of the Barren Measures Formation, Damodar Basin, India.* In: Mateen Hafiz, Sudeep Kanungo, Naveen Hakhoo and Manas Pathak (editors) 2016, ***India Shale Gas Workshop – Proceedings***

Volume 23-30. Published by Energy and Geoscience Institute (EGI), University of Utah, USA (EP00083). https://egi.utah.edu/indian-workshop-proceedings/

d) Non-technical Papers:

(i) **Naveen Hakhoo**, Mateen Hafiz and Waquar Ahmed**. (**2016). *Shale Resources Exploration: Towards Energy Independence of India.* In: Mateen Hafiz, Sudeep Kanungo, Naveen Hakhoo and Manas Pathak (editors), ***India Shale Gas Workshop – Proceedings Volume*** 87-98. Published by Energy and Geoscience Institute (EGI), University of Utah, USA (EP00083). https://egi.utah.edu/indian-workshop-proceedings/

e) Extended Abstracts:

(i) **Naveen Hakhoo**, G. M. Bhat, Sumita Koul, Jonathan Craig and Bindra Thusu. (2011). *Potential Proterozoic Petroleum System: Northwest Himalayan Thrust Belt, Jammu (India).* **AAPG, International Conference and Exhibition (ICE), Milan, Italy**, 23-26 October 2011. AAPG Search & Discovery Article #90135 ©2011**.** http://www.searchanddiscovery.com/pdfz/documents/2012/50570hakhoo/ndx_hakhoo.pdf.html

f) Articles:

(i) **Naveen Hakhoo**. (2015). *A Catastrophe in the Making*. 2015. ***Daily Excelsior (Sunday Magazine)***. Page 1. DOP: 09/08/2015. https://www.dailyexcelsior.com/a-catastrophe-in-the-making/

(ii) EGI Informatics team (Anne Barrow) and **Naveen Hakhoo**. (2014). *Sustainable Resource Development in the Himalaya - Educating a New Generation*. (***On-line article***).

(iii) Jonathan Craig, Bindra Thusu, Juergen Thurow, Heather Cheshire, Ghulam M. Bhat, **Naveen Hakhoo**, Sumita Koul, Sandeep Pandita, Vinay Sharma and Yudhbir Singh. (2012). *Road to Shangri-la*. ***Geological Society of London, Geoscientist***, 12-17. https://www.geolsoc.org.uk/Geoscientist/Archive/March-2012/The-Road-to-Shangri-La

(iv) **Naveen Hakhoo. (**2016). *Earthquake in J and K*. Letter to the Editor, Daily Excelsior. Page 6. DOP: 06/06/2016.

g) Booklets:

G. M. Bhat, **Naveen Hakhoo**, Mateen Hafiz, Jonathan Craig, Bindra Thusu *et al*; *"Eni Children's Education Programme & Energy Efficiency Campaign"*. I Ed. 2008, II Ed. 2009, III (International Ed.) 2010, IV Ed. 2011 & V (International Ed.) 2012, Reprint 2014.

Waquar Ahmed, **Naveen Hakhoo**, Mateen Hafiz et al; Booklet on Natural Hazards and Disasters, Risk and Risk Reduction (Safety, Preparation and Perception). I Ed. 2017, II Ed. 2019.

12. Important lectures, papers and presentations in the conferences/workshops:

a) S. S. Rawat, P. G. Jose, S. P. Rai and **N. Hakhoo.** (2018). *Spring Sanctuary Development: Sustaining Water Security in the Himalayan Region in Changing Climate.* Proceedings Vol., p. 151-160. International Conference on Water, Environment and Climate Change: Knowledge Sharing and Partnership, Nepal – 04/2018.

b) **Naveen Hakhoo. (**2018). *Disasters – Information, Smartness and Preparedness (Our Response)*. One day disaster management workshop for civil defense wardens on their role before, during and after the disasters.

c) **Naveen Hakhoo. (**2017). *Constructing and Defining Curricula for the Children's Education Programme: Masterclass in International Development Delivering a Schools' Programme*. **UCL Humanitarian Institute Masterclass Programme and the Evening Conference Series on the UN Sustainable Development Goal Series**. London, October 20, 2017. https://mediacentral.ucl.ac.uk/Player/45154202

d) **Naveen Hakhoo. (**2017). *Natural Hazards and their Drivers in the Shyok-Nubra Valley, Ladakh Himalaya: Sustainable Development in the Himalaya*. **UCL Humanitarian Institute Masterclass Programme and the Evening Conference Series on the UN Sustainable Development Goal Series**. London, October 20, 2017.

e) **Naveen Hakhoo et al. (**2016). *Unconventional and Conventional Hydrocarbon Prospects in the Himalayan Foreland Basin - Frontal Fold Thrust Belt, Riasi, NW Himalaya (India).* **One-Day International "Shale Oil and Gas" workshop and Indian Association of Sedimentologists conference**, Annamalai University, Tamil Nadu, India. January 8 2016.

f) **Naveen Hakhoo. (**2014). *Could the Himalaya be Self-Sufficient in Conventional and Unconventional Hydrocarbon Resources?* **International conference on *"Sustainable Resource Development in the Himalaya".*** Organised by the Geological Society London (GSL) and the Institute of Energy research and Training (IERT), UoJ. Leh (Ladakh), 24-26 June, 2014.

- Citations: 357, h-index: 8 and i10-index: 8 (as on 18-09-2022) (Source: Google Scholar). https://scholar.google.co.in/citations?user=dhCkD0cAAAAJ&hl=en

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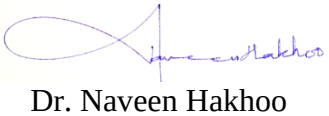

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