## Nongmaithem Lakhan Singh, Ph.D.

Assistant Professor
Department of Earth and Environment Studies
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Faculty Profile | NIT Durgapur | Google Scholar | ResearchGate


### Professional Statement

"I am a committed geoscientist with a keen interest in igneous petrology, geochemistry, and geochronology. Driven by a deep curiosity about Earth's evolution, I actively seek opportunities for continuous learning and interdisciplinary collaboration. I thrive on intellectual challenges that expand my scientific perspective and contribute meaningfully to advancing our understanding of Earth's dynamic history."

### Academic Qualifications

| Degree | Institution | University/Board | Duration |
|---|---|---|---|
| PhD in Geology | Wadia Institute of Himalayan Geology, Dehradun, India | Banaras Hindu University, Varanasi | 13 January 2022 (PhD awarded) |
| M.Sc. in Geology | Hansraj College | University of Delhi | 2012–2014 |
| B.Sc. (Hons) in Geology | Hansraj College | University of Delhi | 2009–2012 |
| Higher Secondary (12th) | B. Borooah College, Guwahati | Assam Higher Secondary Education Council | 2007–2009 |
| Secondary (10th) | Martin Grammar School, Kakching | Board of Secondary Education, Manipur | 2007 |

### Professional Memberships

- Japan Geoscience Union (JpGU
- International Association for Gondwana Research (IAGR)
- The Geochemical Society

## Sponsored Projects

- **Principal Investigator (PI):** Dr Nongmaithem Lakhan Singh
  - **Title: "***Geochemical and Paleomagnetic Study of Dolerite Dykes in Meghalaya Plateau, Northeast India: Implications on Mantle Processes & Geodynamic Evolution".*
  - **Sponsoring Agency:** Anusandhan National Research Foundation (ANRF), Government of India (Statutory Body under SERB Act, 2008)
  - **Fellowship:** National Post-Doctoral Fellowship (NPDF)
  - **Project Grant & Duration:** 25,20,000.00 INR | 2 years
  - **Project Period:** March 13, 2024 – March 12, 2026

## Teaching & Research Experience

- **ANRF National Post-Doctoral Fellow** at the **Department of Earth Sciences, Manipur University**, Canchipur-795003, since **29 April 2025 – 12 March 2026**. Mentor: Prof. Y. Raghumani Singh, Adjunct Faculty, Department of Geology and Environmental Science, University of Pittsburgh, Pennsylvania, USA.
- **ANRF National Post-Doctoral Fellow** at the **Department of Applied Geology, Indian Institute of Technology (Indian School of Mines)** Dhanbad-826004, since **13 March 2024 – 21 April 2025**. Mentor: Prof. R. Anand, Professor (Associate).
- **Guest Faculty** at the Department of Geology, North-Eastern Hill University, Shillong Campus, Meghalaya- 793022, since 3 October 2022 – 30 April 2023.
- **Teaching Assistant (voluntary)** at the Department of Geology, Dhanamanjuri University, Imphal, Manipur-795001, since 04 April 2022 – 30 September 2022.
- **Open digestion acid protocol** for rock digestion set up at Prof. Y. Raghumani Singh's geochemical laboratory, Department of Earth Sciences, Manipur University, on 12 July 2023.
- Fieldwork conducted in and around **Meghalaya Plateau and Manipur Ophiolite Belt** during 2022 – 2023, guiding postgraduate geology students from North-Eastern Hill University, Shillong Campus, India.
- Conducted fieldwork along the **Manipur–Nagaland Ophiolite Belt** in February as part of a collaborative project with **Prof. McKenzie Ryan, Department of Earth & Planetary Sciences, The University of Hong Kong**.

## Conference Organization

- Program co-ordinator, national workshop on "***Geohazards Risk Management***", jointly organised by National Institute of Disaster Management, under Ministry of Home Affairs, Govt. of India and Dept. of Geology, Dhanamanjuri University, Imphal, India, Feb. 24, 2022.
- Organising Member, National Conference on "***Earth System Science with Special Reference to Himalaya: Advancement and Challenge***", WIHG, Dehradun, May 16–18, 2018.
- Organising Member, "***2nd National Geo-Scholars Meet***", Wadia Institute of Himalayan Geology (WIHG), Dehradun, May 2–5, 2017.
- Organising Member, "***2nd India International Science Festival 2016***", WIHG, Dehradun, November 28–29, 2016.

## Academic achievements & Examinations

- Anusandhan National Research Foundation - **National Post-Doctoral Fellowship** (March 2024– March 2026), Govt. of India.
- Selected as a **Special Associate Researcher** in **the Institute of Geochemistry, Chinese Academy of Sciences**, Republic of China (December 2023 – January 2024).
- Selected for the **Institute Post-Doctoral Fellowship (IPDF)** in the Department of Applied Geology, **Indian Institute of Technology (Indian School of Mines)** Dhanbad in November 2023 (Declined).
- Institute **Junior Research Fellowship** & **Senior Research Fellowship**, Wadia Institute of Himalayan Geology, Dehradun, India (2016 – 2021).
- Appeared in an **Assistant Geologist** interview conducted by the **Union Public Service Commission** (UPSC), Govt. of India. **Interview Session:** November 2016 | **Roll No.:** 4367
- Qualified the University Grant Commission – National Eligibility Test (**UGC-NET**) in **Geography**. **Exam Session:** June 2015 | **Roll No.:** 15031562
- Qualified Council of Scientific and Industrial Research-University Grant Commission National Eligibility Test (**CSIR-UGC NET**) in **Earth, Atmospheric, Ocean and Planetary Sciences**. **Exam Session:** December 2012 **| Roll No.:** 202266

## Publications

- **Lakhan, N., Singh**, A.K., Singh, B.P., Sen, K., Singh, M.R., Khogenkumar, S., Singhal, S. and Oinam, G., **2020**. Zircon geochronology, mineral and whole-rock geochemistry of the Khardung volcanics, Ladakh Himalaya, India: Implications for Late Cretaceous to Palaeogene continental arc magmatism. ***Geological Journal***, 55(5), pp.3297-3320, *https://doi.org/10.1002/gj.3594*.
- **Lakhan, N., Singh,** A.K., Singh, B.P., Premi, K. and Oinam, G., **2020**. Evolution of Late Cretaceous to Palaeogene basalt-andesite-dacite-rhyolite volcanic suites along the northern margin of the Ladakh magmatic arc, NW Himalaya, India. ***Journal of Earth System Science***, 129 (108), pp.1-23, *https://doi.org/10.1007/s12040-020-1372-6*.
- **Singh, N.L.,** Akhtar, S., Singh, A.K., Singh, B.P., Saikia, A. and Jeelani, S.H., **2023**. Petrogenesis and tectonic implications of the Late Cretaceous to Paleogene calc-alkaline volcanic rocks, Ladakh Himalaya. ***Journal of Asian Earth Sciences***, *253*, p.105700.
- **Lakhan, N.,** Singh, A.K., Akhtar, S. and Singh, B.P., **2022**. Geochemical characteristics and petrogenesis of magmatic rocks of the Shyok suture zone, NW Ladakh Himalaya, India. ***Arabian Journal of Geosciences***, 15(3), pp.1-23, *https://doi.org/10.1007/s12517-021-09361-9*.
- Khogenkumar, S., Singh, A.K., Santosh, K., **Lakhan, N.,** Chaubey, M., Imtisunep, S., Dutt, A., Oinam, G., **2020**. Subduction versus non-subduction origin of the Nagaland-Manipur Ophiolites along the Indo-Myanmar Orogenic Belt, northeast India: Fact and fallacy**.** ***Geological Journal***, 56(4), pp. 1773-1794, *https://doi.org/10.1002/gj.4030*.
- Baidya, S., Anand, R., Bose, S. and **Singh, N.L.**, **2025**. Ce-Yb Fingerprinting of Phanerozoic Volcanic Rocks and Its Applicability to Some Archean Greenstone Belt Magmas. ***Geological Journal***, 60(2), pp. 509-530, *https://doi.org/10.1002/gj.5126*.
- Singh, A.K., Kumar, N., Chung, S.L., Lee, H.Y., Santosh, M., Sharma, R., Kumar, N., Bikramaditya, R.K., Oinam, G. and **Lakhan, N**., **2023**. Tectonic evolution of the Neoproterozoic Tusham Ring Complex, Northwestern India: Constraints from geochemistry and zircn U-Pb geochronology, and implications for Rodinia supercontinent history. **Lithos**, 440-441, p.107022.
- Singh, M.R., Singh, A.K., Santosh, M., Lingadevaru, M. and **Lakhan, N., 2020**. Neoarchean arc-back arc subduction system in the Indian Peninsula: Evidence from mafic magmatism in the Shimoga greenstone belt, western Dharwar Craton. ***Geological Journal***, 55(7), pp. 5309-5329, *https://doi.org/10.1002/gj.3733*.
- Oinam, G., Singh, A.K., Joshi, M., Dutt, A., Singh, M.R., Singh, **N. Lakhan Singh**, and R.B., **2020.** Continental extension of northern Gondwana margin in the eastern Himalaya: constraints from geochemistry and U-Pb zircon ages of mafic intrusive in the Siang window, Arunachal Himalaya, India. ***Comptes Rendus. Géoscience***, 352(1), pp.19-41, *https://doi.org/10.5802/crgeos.6*.
- Premi, Kshetrimayum; Sen, Amit Kumar; Singh, A. Krishnakanta; **Lakhan, Nongmaithem**, **2021**. Petrogenesis and tectonic environments for the formation of peridotites and associated podiform chromite ore, the southern part of Manipur Ophiolite Belt, Indo-Myanmar Orogenic Belt, NE India. *Journal of Mineralogy and Geochemistry*, 197(3), 209-232.

- Singh, A.K., Guruaribam, V., Singh, Y.R., Singh, N.I., Singh, L.R., Chaubey, M., Tewari, V.C., Singh, W.I., **Lakhan, N**., Devi, L.D., and Chanu, R.S., 2022. Stable isotope geochemistry and microfossil assemblages of carbonate rocks in the ophiolite mélange zone of the Indo-Myanmar orogenic Belt., NE India: Implications on age and depositional environment. ***Geological Journal***, 57(12), 5308-5325, *https://doi.org/10.1002/gj.4550*.
- Kala, S., Devaraju, J., Tiwari, D.M., Rasheed, M.A. and **Lakhan, N.,** 2021. Organic petrology and geochemistry of Early Permian shales from the Krishna-Godavari Basin, India: Implications for Gondwana palaeoenvironment and climate. ***Geological Journal*****,** 56(11), pp. 5621-5641, *https://doi.org/10.1002/gj.4262*.

## Conferences & Presentations

- Presented a paper at the ***2nd National Geo-Scholars Meet,*** Wadia Institute of Himalayan Geology (WIHG), Dehradun, India, May 2-5, 2017.
- Presented a paper at the ***National Conference on Earth System Science with special reference to Himalaya: Advancement and Challenge,*** WIHG, India, May 16-18, 2018.
- Presented a paper at the ***105th Indian Science Congress***, Manipur University, Imphal, India, from 16 to 20 March 2018.
- Presented a paper at ***EGU2020 (online)***, Vienna, Austria, May 4-8, 2020; *https://doi.org/10.5194/egusphere-egu2020-113*
- Presented a paper at ***Connects 2023- Geological Society of America***, Pittsburgh, Pennsylvania, USA, October 15-18, 2023; *doi: 10.1130/abs/2023AM-394337*
- Presented a paper at ***Goldschmidt 2024***, Chicago, USA, August 18-23, 2024; *https://doi.org/10.46427/gold2024.21318*
- Presented a paper at ***Goldschmidt 2025,*** Prague, July 6-11, 2025; *https://doi.org/10.7185/gold2025.30331*

## International Collaborations & Visits

- Academic visit to the *Institute of Geochemistry, Chinese Academy of Sciences*, Guiyang, China, December 2023 – January 2024.
- **International Scientific Collaborative Institutes:**
    - Department of Earth & Planetary Sciences, The University of Hong Kong
    - Institute of Frontier Science and Technology, Okayama University of Science, Japan
    - Chinese Academy of Sciences, Guiyang, China

## Workshops & Training

- Attended a National Workshop on ***Isotopes in Earth, Ocean & Atmospheric Sciences***, jointly organised by Inter University Accelerator Centre, New Delhi & CSIR-National Institute of Oceanography, Goa, February 18-20, 2019.
- Participated in the training program on ***Analytical Geochemistry (A CSIR–integrated Skill Initiative)*** organised by CSIR-National Geophysical Research Institute, Hyderabad, February 10-20, 2020.
- Attended the ***National Workshop on Geochronology***, Inter-University Accelerator Centre, New Delhi, March 18-19, 2024.

## Academic Lectures

- Delivered a talk on ***Evolution of the Late Cretaceous to Paleogene basalt–andesite–dacite–rhyolite volcanic suites along the northern margin of western Ladakh Himalaya, India,*** at the Department of Earth Sciences, Manipur University, Manipur, April 5, 2021.
- Presented a lecture on ***Exploring Horizon of Geology: Uncovering Career Prospect,*** at the Department of Geology, Thoubal College (affiliated to Manipur University), Manipur, July 18, 2024.
- Delivered a lecture on ***Geology Beyond the Classroom: Pathways, Preparation, and Possibilities*** as part of the SSR outreach workshop at the Department of Earth Sciences, Manipur University, Canchipur, September 4, 2025.

## Laboratory & Analytical Techniques

- Thin section preparation for petrographic microscopy and EPMA investigations.
- Pressed pellet preparation for major oxide and trace element analysis (XRF, ICP)
- Sample digestion for trace and rare earth element (REE) analysis using open acid and microwave-assisted closed digestion methods
- **Heavy mineral separation** for U–Pb zircon geochronology

## Instrumental Knowledge & Hands-on Experience

- Electron Probe Micro-Analyser (**EPMA**) – quantitative mineral chemistry
- X-Ray Fluorescence (**XRF**) – major oxide and trace element analysis
- Quadrupole **ICP-MS** (Central Laboratory, Wadia Institute of Himalayan Geology, Dehradun, India)
- **LA-MC-ICP-MS** (Central Laboratory, Wadia Institute of Himalayan Geology, Dehradun, India)
- **ICP-OES** (Central Research Facility, IIT-ISM Dhanbad, India)

## Subject & Research Interests

- **Igneous Petrology**
- **Geochemistry**
- **Geochronology**

## International Institutional Collaboratoins

- Institute of Frontier Science and Technology, Okayama University of Science, Japan
- Department of Earth Sciences, The University of Hong Kong
- Institute of Geochemistry, Guizhou, P.R. China

## Key Research Focus

**1. Ophiolites of the Indo–Myanmar Range**

**2. Geodynamic Evolution of Precambrian Mafic–Ultramafic Rocks (Northeast India)**

**3. Critical minerals**

**4. CCUS**