

Dr. Praveen K. Mishra

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FIELD OF SPECIALIZATION:

- **Environmental Geochemistry** with special reference to stable isotopes of carbon, nitrogen and oxygen, biogeochemistry (biomarkers, and amino acids).
- **Climate study** with special reference to Indian monsoon using **multiproxy approach** (e.g., isotope geochemistry- $\delta^{13}\text{C}$, $\delta^{15}\text{N}$, biogeochemistry, organic-inorganic geochemistry).
- **Testing and development** of climate sensitive proxies for the past environmental reconstruction.

ACADEMIC DETAILS:

- **Ph. D.** (07 May, 2015)
Department of Earth sciences, Freie Universität, Berlin
Thesis title: Late quaternary climate variability in the Indian monsoon domain
- **M.Sc. (Tech.) Geology** (June, 2011)
Department of Geology, Banaras Hindu University, India
Project title: Petrology and Geochemistry of Proterozoic Mafic Dyke Swarms from the Central Bastar Craton, Central India
- **B.Sc. (Hons.), Geology** (June, 2008)
Department of Geology, Banaras Hindu University, India
- **Intermediate (+2)** (2003)
Central Board of Secondary Education (CBSE- Board)
- **High school** (2001)
Central Board of Secondary Education (CBSE- Board)

EMPLOYMENT HISTORY

- **March 2022-present:** Assistant Professor at Cluster University of Jammu
- **October 2021 to March 2022:** Postdoctoral Fellow at IISER Mohali
- **May 2016 to May 2021:** INSPIRE faculty, at Wadia Institute of Himalayan Geology, Dehradun
- **March 2015-July 2015:** Research assistant in Department of Earth and Environmental Sciences, Universität Potsdam, Germany

PROJECTS

- **SERB funded CRG** project based on the topic of “Understand the proxy (in)coherence in lake basins from varied climatic regimes - implications for paleoclimate reconstruction” (~54 lakhs).
- **Project funded by SERB-Research Scheme (SRS)** based on the topic of “Unravelling the impact of past climate change and anthropogenic activity on peatland ecosystems – a sedimentological and multiproxy based reconstruction from the Indian subcontinent”. (**NOT AVAILABLE**)
- Completed **DST-INSPIRE Faculty** funded project: *Lake sediments- a natural laboratory to study the past climate variability.* (~35 lakhs)
- Involved in **HIMPAC (Himalaya: Past and Modern climate)** project to *understand the Late Quaternary climatic variability in the Indian summer monsoon domain.*

PHD/MSC SUPERVISION

- PhD supervision (as co-guide)

- **Name:** Mr. Avinash Bhagat (Jammu University)
Topic: Spatial and Temporal distribution of contaminants in the Tawi River, Jammu (India)
- **Name:** Mr. Vimal (Jammu University)
Topic: Unravelling the impact of past climate change and anthropogenic activity on Gharana wetland ecosystem Jammu district, J&K, India.
- M.Sc. dissertation
 - Name: Ms. Diksha Sharma (Cluster University of Jammu) (Year 2022)
Topic: The Long-term variability determined through Molecular proxies-based approach from freshwater lake system in lesser Himalayas

ACADEMIC ACHIEVEMENTS/AWARDS

- **International Travel grant (ITS)** from Science and Education Research Board (SERB)- 2017
- Awarded **INSPIRE faculty fellowship** (2016)
- Qualified national level examination for Lecturer (**CSIR-NET**-Dec. 2010 and June 2011).
- **Graduate Aptitude Test for Engineering (GATE)**-2010 qualified
- Got 3rd rank in **B.Sc. (Hons.) –Geology** (2008).
- Secured all India 41st rank in **Joint Admission for MSc/MTech.** (2008).

INTERNSHIP/COURSES

1. **Faculty induction program (FIP) (Online mode)**
Period: 14th Nov 2022 to 10th Dec 2023.
Organized by UGC-HRDC, University of Jammu
2. **Title: Carbonaceous Aerosol**
Period: May-July, 2010
Geosciences Division
Physical Research Laboratory, Ahmedabad (Gujarat, India)
3. **Title: Atmospheric Water Vapour Collection and its Isotopic Analysis.**
Period: May-July, 2009
Geosciences Division
Physical Research Laboratory, Ahmedabad (Gujarat, India)

INSTRUMENTATION

- **Field instrument/Modern monitoring**
Brunton compass, Bathymetric Eco sounder, Multiparameter water probe, Gravity corer, Ruttner water sampler
- **Lab instrumentation**
Petrological microscope, Isotopic Ratio Mass Spectrometer (IRMS); Gas Chromatographic Mass Spectrometer (GC-MS); Accelerator Solvent Extractor (ASE); Laser particle size analyser (LPSA).

SOFTWARE SKILLS

- Statistical software: *R-studio* (based on R-language), *PAST*, *Xlstat*
- Scientific programs: *Surfer* (3D contour plot), *TecDEM* (geomorphological study of the area using DEM image)
- Image editing software: *Adobe Photoshop*, *Adobe illustrator*, *Corel Draw*
- Basic programs: *MS-office*, *Excel*, *Power point*, *Grapher*, etc.

INVITED/GUEST TALK

- At IIIT Delhi, Guest lecture -2021
- At Limnological Institute, University of Konstanz, Konstanz (Germany)- 2018
- At Physical research laboratory, Ahmedabad (India)- 2018
- At Department of Earth Sciences, Freie University, Berlin (Germany) – 2015

TEACHING

- Sedimentology, Geochemistry, Geobiology,
- Environmental Geochemistry
- Environmental geology
- Introduction to Earth Sciences

PROFESSIONAL CONTRIBUTION

- **Guest-editor** “Frontier in Earth Sciences” – issue based on “*Terrestrial impacts of the Holocene Asian Monsoon*”
- Involved in the **lab establishment** at Wadia Institute of Himalayan Geology and IISER Mohali
- **Part time teaching** at DBS college (in Dehradun)
- **Organised a session** at the **EGU-2019 as a convener** (in the session Past-Present-Future climates).
- **Reviewer** for Quaternary research, Applied Geochemistry, The Holocene, Journal of Earth System and Science (JESS), Geomorphology and Himalayan Geology.
- Guided masters student for their dissertation.

PUBLICATIONS

- **Published/accepted:** 26
- **First/Corresponding author:** 13
- **Total Impact factor:** ~98 (Highest IF: 8.9)

Published book

Mishra, Praveen K*. Implication of lake sediments for climate studies – a review (*Publisher – Springer*). <https://doi.org/10.1007/978-3-031-34709-2>

Peer-reviewed published/accepted

1. **Mishra Praveen K.***, Jehangir Arshid, Yousuf, A. R., Prasad Sushma, Anoop Ambili, Gaye Birgit. Testing and refinement of elemental proxies in the tropical lakes from the Indian subcontinent. *Earth Surface Processes and Landform*.
2. Muneer, W., Behera, D., Chirakkal, A., Ankit, Y., Anoop, A., **Mishra, Praveen K.***, Jehangir, A. Historical trends of heavy metal contamination and eutrophication in an aquatic system from Kashmir Himalayas, India. *Environmental Challenges*, 12, 100721.
3. Singh, S., **Mishra, Praveen K.***, Stefanidis, K. A critical review of morphometric parameters of lake basins from the Indian subcontinent – implications for lake management (*Environmental Earth Science; IF: 2.1*)
4. Ankit, Y., **Mishra, Praveen K.***, Mehta, B., Ambili, A., Misra, S., Jamir, T. Hydroclimatic variability in northeast India during the last two millennia: sedimentological and geochemical record from Shilloi Lake, Nagaland (*Palaeogeography, Palaeoclimatology, Palaeoecology, Accepted*)
5. Behara, D., **Mishra, Praveen K.**, Sabale, P., Bhattacharya, S., Anoop, A., 2022. The Late Holocene culture and climate dynamics in the Indian summer monsoon realm (*Accepted*)
6. Ankit, Y., Muneer, W., Gaye, B., Lahajnar, N., Bhattacharya, S., Bulbul, M., Jehangir, A., Anoop, A., **Mishra, Praveen K.***, 2022. Apportioning sedimentary organic matter sources and its degradation state: Inferences based on aliphatic hydrocarbons, amino acids and $\delta^{15}\text{N}$. *Environmental Research* 205, 112409
7. Prasad, S., **Mishra, Praveen K.**, Priya, P., Yousuf, A.R., Andersen, N., Anoop, A., Jehangir, A., Yaseen, T., Gaye, B., Stebich, M., 2022. Impact of precipitation and temperature changes on limnology and sediment characteristics in NW Himalaya. *Applied Geochemistry* 137, 105200
8. Abdur Rahman, Ajayeta Rathi, Romi Nambiar, **Mishra, Praveen K.**, Anoop Ambili, Ravi

- Bhushan, Sanjeev Kumar, 2021. Signatures of natural to anthropogenic transition in lake sediments from the Central Himalaya using stable isotopes. *Applied Geochemistry*, 134, 105095.
9. Yadav, A., Muneer, W., Gaye, B., Lahajnar, N., Bhattacharya, S., Mehta, B., Jehangir, A., Anoop, A., **Mishra, Praveen K***, 2021. Apportioning organic matter sources and its degradation state: inferences based on lipid biomarkers and amino acids in the lake sediments from Kashmir Himalaya, India. *Environmental Research*, 205, 112409
 10. Ankit, Y., Wani, M., Gaye, B., Mishra, S., Jehangir, A., Anoop, A., **Mishra Praveen K.***, 2021. Long term natural and anthropogenic forcing on aquatic system - evidence from biogeochemical and pollen proxies from lake sediments in Kashmir Himalaya (India). *Applied Geochemistry*, 131.
 11. Ajay, K., Behera, D., Bhattacharya, S., **Mishra, Praveen K.**, Ankit, Y., Anoop, A. 2021. Distribution and characteristics of microplastics and phthalate esters from a fresh water lake system in lesser Himalaya, India. *Chemosphere* 283, 1-11.
 12. Prasad, S., Marwan, N., Eroglu, D., Goswami, B., **Mishra, Praveen K.**, Gaye, B., Anoop, A., Basavaiah, N., Stebich, M., Jehangir, A., **2020**. Holocene climate forcings and lacustrine regime shifts in the Indian summer monsoon realm. *Earth Surface Processes and Landforms*. doi:10.1002/esp.5004
 13. Misra, S., Bhattacharya, S., **Mishra, Praveen K.**, Misra, K.G., Agrawal, S., Anoop, A., **2020**. Vegetational responses to monsoon variability during Late Holocene: Inferences based on carbon isotope and pollen record from the sedimentary sequence in Dzukou valley, NE India. *Catena* 194.
 14. **Mishra, Praveen K.***, Chauhan, P.R., Diwate, P., Parth, S., Anoop, A., **2020**. Holocene climate variability and cultural dynamics in the Indian subcontinent. *Episodes* 43, 552–562.
 15. Samal, A.K., **Mishra, Praveen K.**, Biswas, A., **2020**. Assessment of origin and distribution of fluoride contamination in groundwater using an isotopic signature from a part of the Indo-Gangetic Plain (IGP), India. *HydroResearch* 3, 75–84.
 16. **Mishra, Praveen K.***, Ankit, Y., Gautam, P.K., C.G., L., Singh, P., Anoop, A., **2019**. Inverse relationship between south-west and north-east monsoon during the late Holocene: Geochemical and sedimentological record from Ennamangalam Lake, southern India. *Catena* 182.
 17. **Mishra, Praveen K.**, Parth, S., Ankit, Y., Kumar, S., Ambili, V., Kumar, V. V., Singh, S., Anoop, A., **2019**. Geochemical and sedimentological characteristics of surface sediments from Ashtamudi Estuary, Southern India: implications for provenance and modern sedimentary dynamics. *Environmental Earth Sciences* 78, 1–11.
 18. **Mishra, Praveen K.**, Prasad, S., Jehangir, A., Anoop, A., Yousuf, A.R., Gaye, B., **2018**. Investigating the role of meltwater versus precipitation seasonality in abrupt lake-level rise in the high-altitude Tso Moriri Lake (India). *Palaeogeography, Palaeoclimatology, Palaeoecology* 493, 20–29.
 19. **Mishra, Praveen K.**, Prasad, S., Marwan, N., Anoop, A., Krishnan, R., Gaye, B., Basavaiah, N., Stebich, M., Menzel, P., Riedel, N., **2018**. Contrasting pattern of hydrological changes during the past two millennia from central and northern India: Regional climate difference or anthropogenic impact? *Global and Planetary Change* 161, 97–107.
 20. Ankit, Y., **Mishra, Praveen K.**, Kumar, P., Jha, D.K., Kumar, V. V., Ambili, V., Anoop, A., **2017**. Molecular distribution and carbon isotope of n-alkanes from Ashtamudi Estuary, South India: Assessment of organic matter sources and paleoclimatic implications. *Marine Chemistry* 196, 62–70.
 21. Ankit, Y., Kumar, P., Anoop, A., **Mishra, Praveen K.**, Varghese, S., **2017**. Mid-late Holocene climate variability in the Indian monsoon: Evidence from continental shelf sediments adjacent to Rushikulya river, eastern India. *Quaternary International* 443, 155–163.
 22. Prasad, S., **Mishra, Praveen K.**, Menzel, P., Gaye, B., Jehangir, A., Yousuf, A. R., **2015**. Testing the validity of productivity proxy indicators in high altitude tso Moriri Lake, NW Himalaya (India). *Palaeoclimatology, Palaeoecology Paleogeography* 449, 421-430.
 23. **Mishra, Praveen K.**, Prasad, S., Anoop, A., Plessen, B., Jehangir, A., Gaye, B., Menzel, P., Weise, S. M., Yousuf, A. R., **2015**. Carbonate isotopes from high altitude Tso Moriri Lake (NW Himalayas) provide clues to late glacial and Holocene moisture variability and atmospheric

- circulation changes. *Palaeoclimatology, Palaeoecology Paleogeography* 425, 76-83.
24. **Mishra, Praveen, K.***, Anoop, A., Schettler, G., Prasad, S., Jehangir, A., Menzel, P., Naumann, R., Yousuf, A.R., Basavaiah, N., Deenadayalan, K., Wiesner, M.G., B. Gaye, B., **2015**. Reconstructed late Quaternary hydrological changes from Tso Moriri Lake, NW Himalaya. *Quaternary International* 371, 76-86.
 25. Menzel, P., Gaye, B., **Mishra, Praveen, K.**, Anoop, A., Basavaiah, N., Marwan, N., Plessen, B., Prasad, S., Riedel, N., Stebich, M. Wiesner, M.G., **2014**. Linking Holocene drying trends from Lonar Lake in central India to North Atlantic cooling events. *Paleoclimatology Paleocology Paleogeography* 410, 164-178.
 26. **Mishra, Praveen, K.***, Anoop, A., Jehangir, A., Prasad, S., Menzel, P., Schettler, G., Naumann, R., Weise, S., Anderson, N., Yousuf, A. R., Gaye, B., **2014**. Limnology and modern sedimentation patterns in high altitude Tso Moriri Lake, NW Himalaya – implications for proxy development. *Fundamental of Applied Limnology. Fundamental of Applied Limnology* 185, 329-348.

*****corresponding author**