CURRICULUM VITAE

Dr Meenakshi Goyal

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RESEARCH STATEMENT:

- I am trained as a Quaternary Geologist towards the late-Pleistocene palaeoclimatic reconstruction during the Ph.D.
- I have separated clay fraction from loess-palaeosols and studied clay mineralogy using XRD, SEM-EDS, and FT-IR and interpreted clay chemistry using QICP-MS to infer three stadial periods intervened by two long inter-stadial periods.
- The Rietveld refinement of XRD data and understanding the natural variations in clay mineral structure adds value to my skills.
- Using organo-molecule geochemistry, and isotopic compositions paleo-vegetation was reconstructed for the loess-palaeosols of Kashmir valley.
- I have learned cosmogenic radionuclide (^{14}C, ^{26}Al and ^{10}Be) preconcentration and used radiocarbon dating to date the organic carbon embedded in palaeosols to reconstruct climate records of past 130 ka.
- I have helped in sample preparation, measurements and data analysis of countless university scholars during my Research Associateship at a national laboratory using XRD, WD-XRF, and FE-SEM with EDS and CL as well as Q-ICPMS.
- My recent experience in laterites and the petroglyphs carved over it (a project sanctioned under DST- SHRI program) is shaping me in understanding the archaeological findings and human evolutionary history.
- My interest lies in the CO_2 sequestration in the shallow depths of basalt in the form of carbonates as well as in soils in the form of organo-clay complexes. Of late, addition of the pulverized basalt over agricultural fields helps in improving soil fertility by CO_2 fixation in form of Ca, Fe and Mg carbonates.

ACADEMIC QUALIFICATION:

- **Ph.D.** in Geology from University of Delhi awarded in 2019 with thesis entitled "***Physil compositional, cell parameteric and organo-molecular records of the chronologically constrained loess-palaeosols from Dilpur Formation, Kashmir: Palaeoclimatic reconstruction***".
- **M.Sc.** Applied Geology from Kurukshetra University, Kurukshetra awarded in 2014 with 73.1%.
- **B.Sc.** from Kurukshetra University, Kurukshetra awarded in 2012 with 74.17%

AREA OF INTEREST

Research Work in:

- Soil organic geochemistry and Clay mineralogy

- Geochronology- CRN dating
- Sedimentology
- Quaternary Palaeoclimate

INSTRUMENTAL

- Hands on experience working on XRD, XRF, FE-SEM, EDS and Q-ICP-MS to analyze variety of samples and data interpretation. (including basic troubleshooting with accessories of these instruments)
- Experience working in ultra clean chemistry lab towards the pre-concentration of the element of Interest. (Can handle the acid distillation units and column chemistry independently)
- Experience handling various instruments, concentrated acids, acid distillation units independently.

COMPUTER PROFICIENCY

- Basic Knowledge of MS-Office, CorelDraw, Sigmaplot, SPSS, BGMN, Xpert HighScore etc.

RESEARCH EXPERIENCE

- Currently working as Assistant Professor Geology in Department of Mining Engineering, Unicersity Institute of Technology, Gondwana University, Gadchiroli. (29th September 2025 – Till date)

- Explored Laterite surface Geochemistry (to look for available dating material) while working as Post Doctoral Fellow at IITM Pravartak Technologies Foundation, Chennai while stationed at Jawaharlal Nehru University, New Delhi (September 12th, 2023 - March 31st, 2025)

- Worked as D. S. Kothari postdoc Fellow at Department of Geology, University of Ladakh, Leh Campus (December 1st, 2021 - September 6th, 2023) on Surface sediment Geochemistry of Kashmir Valley.

  [Co-supervised Mr. Shahbaz Hyder Ganie at University of Ladakh along with Dr. Rakesh Chandra, Coordinator, Department of Geology, UOL for his M.Sc. Dissertation during the tenure of D. S. Kothari Post Doctoral Fellowship.]

- Worked as Research Associate at IUAC (July 04th, 2019 - November 30th, 2021) on ‘Palaeoclimatic reconstruction and climatic variability over the latitudinal change and the time lapses in Pleistocene glacial-interglacial episodes in Rajasthan area (sanctioned as AUC-67125)’.

- UFR project fellow (October 26th, 2016 - March 31st, 2019) Isotopic Compositions, ^{10}Be and ^{14}C Dating of Loess-Palaeosol Sequences from Dilpur Formation of Kashmir: Palaeoclimatic Reconstruction (sanctioned as AUC-60323).

PUBLICATIONS

Articles

- Goyal Meenakshi, Sharma rishi, Uttarwar, Manish D., Bose, Subhashish, 2026. A Critical Appraisal of Mineral Resources of Gadchiroli District and Its contribution 1 towards transformation of Maharashtra State into a Trillion Dollar Economy. ISAMET-26, VNIT, Nagpur.

- Sreekesh, S., **Meenakshi**, Naik S R, S., Kumar, P., Sarpal, S., 2025. Sea level change reconstruction using mineralogical and geochemical proxies from sediment cores in understanding paleoclimate along the Southwest coast of India. Applied Geochemistry, 191, 106532. 10.1016/j.apgeochem.2025.106532

- Kumar, P., Saikia L., **Meenakshi**, Khandelwal, D., Kumar, P. V., Sharma, R., Ojha, S., Gargari, S., Mukherjee, P. K., Chopra, S., 2022. Statistical assessment of long-term performance for AMS measurements at IUAC, New Delhi. Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms, 529, 29-37. 10.1016/j.nimb.2022.08.008

- Pal, S., Jayananda, M., Shrivastava, J. P., **Meenakshi**, 2022. K-Pg boundary transition and attendant degeneration of clay lattices in late Maastrichtian-early Danian shelf facies of the Langpar formation, Meghalaya, India. Geosystems and Geoenvironment, 1 (3), 100050. 10.1016/j.geogeo.2022.100050

- Azad, A.M., Singh S. K., Alok, A., **Meenakshi**, Shekhar, S., Kumar, P., 2022. Geotechnical and geological studies of Adit-6 of the railway tunnel between Rishikesh and Karnprayag in India focusing on the excavation methods and design of support analysis: a case study. Arabian Journal of Geosciences, 15, 129. 10.1007/s12517-021-09355-7

- Shukla, T., Kumar, V., Mehta, M., Kotlia, B. S., **Meenakshi**, Mal, S. (2021) Size-dependent chemical depletion of sediments in glacial environments: a case study of Mandakini valley, central Himalaya, India. Hydrological Sciences Special Issue: Advancing socio-hydrology, 66(3), 373-388. 10.1080/02626667.2021.1877706

- **Meenakshi**, Shrivastava, J. P., Chandra, R., 2020. Pedogenically degenerated illite and chlorite lattices aid to palaeoclimatic reconstruction for Holocene-Late Pleistocene (8-130 ka) loess-palaeosols, Dilpur Formation, Kashmir, India. Geoscience Frontier 11 (4), 1353-1367. 10.1016/j.gsf.2019.11.007

- Kumar, A., Shrivastava, J. P., **Meenakshi**, Chopra, S., Chakraborty S., 2020. Impact glass applied as a standard for long-term performance assessment of Na-Ba borosilicate glass forms in geological environment. Applied Geochemistry 114, 104477. 10.1016/j.apgeochem.2019.104477

- Pal, S., **Meenakshi**, Shrivastava, J. P., Kumar, A., Dev, A. B., 2019. Evidence of K/PB Transition Linked Crystallographic Defects in the Smectites Associated with the Jhilmili Intertrappean Bed, Central India. Geological Society of India 94, 142-148. 10.1007/s12594-019-1283-9

- **Meenakshi**, Kumar P., Shrivastava, J. P., Chandra, R., Chopra, S., Roonwal, G. S., Sharma, R., 2018. High resolution ^{14}C AMS ages (~ 50 ka) of organic matter associated with the loess-palaeosol Holocene-Late Pleistocene (8-130 ka) sediments of Dilpur Formation, Karewa Group, Kashmir, India**.** Quaternary Geochronology 47, 170-179. 0.1016/j.quageo.2018.06.004

REFEREES

- Prof. J. P. Shrivastava, Department of Geology, University of Delhi
  jpshrivastava.du@gmail.com; +91-9868742144
- Dr. Sundeep Chopra, Scientist H, AMS Pelletron group, Inter-University Accelerator Centre, Delhi
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PERSONAL DETAILS

Date of Birth 04th June, 1992
Languages Known English, Hindi (also learning Chinese)

The above statements are true to the best of my knowledge and belief.

(Meenakshi)