

NIHARIKA SHARMA

Postdoctoral Fellow
Physical Research Laboratory
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Personal

Date of Birth : 27 June 1990
Nationality : Indian
Gender : Female

Research interest

- Nutrient cycling in forested ecosystems
- Trace gas fluxes from terrestrial and aquatic ecosystems
- Effect of climate change on elemental cycling
- Stable isotope biogeochemistry in different ecosystems

Education

- 2014-2019: Ph.D. in Chemistry Physical Research Laboratory, Ahmedabad, India
- 2010-2012: M.Sc. in Applied Chemistry from Devi Ahilya Vishwavidyalaya, Indore, India
- 2007-2010: B.Sc. (Hons.) in Chemistry from Institute for Excellence in Higher Education, Bhopal, India

Professional experience

- Sept 2019-present: Postdoctoral Fellow at Physical Research Laboratory, Ahmedabad, India
- 2016-2019: Senior Research Fellow at Physical Research Laboratory, Ahmedabad, India
- 2014-2016: Junior Research Fellow at Physical Research Laboratory, Ahmedabad, India

Research Experience

- Study of biogeochemical cycling of nitrogen in the terrestrial ecosystems of India using stable isotopes (Ph.D. thesis)
- Chemical Separation of pre-solar grains from Murchison meteorite and identification of their parent stellar source (Ph.D. Course Work Project)
- Optimization of AS/FA ratio and NaOH molarity and effect of different curing conditions for class F fly-ash based geopolymer cement (M.Sc. Dissertation)
- Microbiological and biochemical techniques in food analysis (Summer Internship Project)

Field Experience

- Soil sampling from moist-deciduous forests of the Western Ghats and montane forests of the Shivalik Himalayas, Uttarakhand for isotope dilution experiments
- Soil sampling from semi-arid Plains of Banni grassland and Rann of Kutch salt marshes, Gujarat for isotope dilution experiments
- Water sampling from Chilika Lagoon, Odisha and Cochin Estuary, Kerala for experiments using isotope tracer technique
- Cruise participation (ORV- *Sagar Kanya* - 364) to measure rates of nitrogen loss processes during winter monsoon using ^{15}N isotope pairing technique in the oxygen minimum zone of the Arabian Sea

Instrumentation Skills

- Delta V plus and MAT 253 Isotope Ratio Mass Spectrometer with Elemental Analyzer, GasBench, PreCon, Kiel Carbonate device, Laser Ablation technique
- Continuous flow segmented nutrient autoanalyzer
- Cavity Ring Down Spectrometer
- UV-VIS spectrophotometer
- Gas Chromatograph

Research Publications

- **Sharma N.** and S. Kumar (2020) Effects of the type of forest alteration on gross nitrogen mineralization in soils of southern India. **Journal of Forestry Research**; IF: 1.689. <https://doi.org/10.1007/s11676-020-01225-4>
- **Sharma N.** and S. Kumar (2020) Gross rates of nitrogen transformation in soils of a global biodiversity hotspot (Western Ghats, India). **Journal of Plant Nutrition and Soil Science**; IF: 2.083. <https://doi.org/10.1002/jpln.201900126>
- **Sharma N.** and S. Kumar (2020) Gross nitrogen transformation rates in the Himalayan soils at different temperature and elevation conditions. **Journal of Soils and Sediments**; IF: 2.763. <https://doi.org/10.1007/s11368-020-02722-z>
- **Sharma N.**, Kumar S. (2020) Gross nitrogen transformation rates in semiarid tropical soils under different salinity and vegetation conditions. **Ecosphere** 11(2):e03034; IF: 2.878. <https://doi.org/10.1002/ecs2.3034>
- Lenka N.K., S. Lenka, P. Mahapatra, **N. Sharma**, S. Kumar, S.B. Aher, D.S. Yashona (2019) The fate of ¹⁵N labeled urea in a soybean-wheat cropping sequence under elevated CO₂ and/or temperature. **Agriculture, Ecosystems and Environment** (282) 23-29; IF: 4.241. <https://doi.org/10.1016/j.agee.2019.04.033>
- Dutta, M.K., S. Kumar, R. Mukherjee, **N. Sharma**, A. Acharya, P. Sanyal, R. Bhushan, S.K. Mukhopadhyay (2019) Diurnal carbon dynamics in a mangrove-dominated tropical estuary (Sundarbans, India). **Estuarine, Coastal and Shelf Science** (229) 106426; IF: 2.333. <https://doi.org/10.1016/j.ecss.2019.106426>

Under review

- Kumar S., **N. Sharma**., L. Kellman (Under review – **Soil Science Society of America Journal**) Relative importance of nitrification and denitrification in N₂O emissions from N-amended soils of a managed northern temperate forest chronosequence.
- **Sharma N.**, S. Kumar (Under review – **Soil Ecology Letters**) Regional climate controls soil organic matter dynamics in tropical ecozones: stable isotopic evidence.

Abstracts in conferences

- **Sharma N.**, Kumar S. Increase in salinity and moisture in semi-arid coastal dryland soils diminishes gross nitrogen transformation rates. *Asia Oceania Geosciences Society-Annual Meeting 2019* at Singapore.
- **Sharma N.**, Kumar S. Increase in temperature accelerates gross N mineralization in the Himalayan soils. *European Geosciences Union-General Assembly 2019* (presented) at Vienna, Austria.
- **Sharma N.**, Kumar S. Effect of land use and vegetation cover on gross nitrogen transformation rates in semi-arid soils of the western India. *Soils Across Latitudes: Soil Science Society of America 2019* at San Diego, California

- **Sharma N.**, Kumar S. Thakkar M. G. Gross rates of nitrogen transformations in soils from tropical semi-arid climate. *21st World Congress of Soil Science 2018* at Rio de Janeiro, Brazil
- Kumar S., **Sharma N.**, Ramaswamy V. Gross rates of nitrogen transformation in tropical forest soils of Western Ghats, India. *5th iLEAPS Science Conference 2017* (presented) at Oxford, UK
- **Sharma N.**, Kumar S., Sudheesh V. Nutrient dynamics in tropical forests of India. *National Space Science Symposium-2016* (presented) at Kerala, India

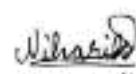
Awards and Achievements

- Qualified for Lectureship in National Eligibility Test (NET), 2014 conducted by the Council of Scientific and Industrial Research, Government of India
- Qualified Physical Research Laboratory research fellowship for Ph.D. funded by Department of Space, Government of India

References

[1] Dr. Sanjeev Kumar
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