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Research Area

Geochemistry of Earth Surface Processes: *River processes geochemistry, Desert processes geochemistry, Chemical Weathering of Rocks, Sediment Geochemistry, Paleoclimatology / Paleolimnology*

Education

- Ph. D. (School of Environmental Sciences, 1997, JNU, New Delhi), Topic: "Geochemical aspects of weathering of rocks and sediments of South Delhi area" (Mentor: Prof. V. Rajamani).
- M. Phil. (School of Environmental Sciences, 1993, JNU, New Delhi), Topic: "Trace Element Geochemistry of Mussorie Phosphorites" (Mentor: Prof. V. Rajamani).
- CSIR National Eligibility Test (1990, Earth, Atmosphere and Ocean Sciences, CSIR).
- M. Sc. (Geology, 1990, BHU, Varanasi).
- B. Sc. (Geology Honors, 1988, BHU, Varanasi).

National award

- Recipient of National Geoscience Award-2009 (Govt. of India)

Other awards

- Best Research Paper of the Wadia Institute of Himalayan Geology (DST) in 2008.
- Awarded INQUA financial support to attend the INQUA Congress, 2003, Reno, USA.
- Awarded financial support from DST to attend the AOGS, Singapore, 2005.
- Awarded financial support from CSIR to attend the Goldschmidt conference, Massachusetts, USA, 1999.

Professional Experience

- Associate Professor at School of Environmental Sciences, Jawaharlal Nehru University, New Delhi 110067 (June, 2014 - continuing).
- Assistant Professor at School of Environmental Sciences, Jawaharlal Nehru University, New Delhi 110067 (October, 2006 – June, 2014).
- Scientist "C" at Wadia Institute of Himalayan Geology, Dehradun, (August 2005 to October, 2006).
- Scientist "C" in the DST funded National Facility for Geochemical Research (2003 to 2005) at School of Environmental Sciences, JNU, New Delhi
- Fast Track Young Scientist Project, DST, India (2002-2003): School of Environmental Sciences, JNU, New Delhi. Project Title: "Geochemistry of sediments of Chambal sub basin of Ganga basin".
- Post-Doctoral Fellow to work in GEOMAR, Kiel, Germany in the years of 2001 and 2002 (6 months) in DST-DAAD-PPP exchange program project to study the Isotope Geochemistry (Rb-Sr and Sm-Nd systems). Project title "Geochemistry of Yamuna basin sediments".
- Post-Doctoral work-CSIR-RA (1998-2002): School of Environmental Sciences, JNU, New Delhi. Project title "Geochemical Evolution of the Thar Desert".

Projects

1. "Geochemistry of sediments of Chambal sub basin of Ganga basin". DST- Fast Track. (2002-2003).
2. "Tectono-climatic evolution of Ganga river system in the Himalaya through Late Pleistocene". (In-house project of Wadia Institute of Himalayan Geology (DST)) (2005-2006).
3. "Geochemistry and genesis of iron nodules in the Ganga plains and implications to the elemental dynamics, palaeoclimate and environment". DST.
4. "A network of projects on "Integrated Transcriptomics, Proteomics, Metabolomics and Ionomics approach to understand response of rice under salinity stress" Department of Biotechnology. Jayant K. Tripathi (PI for Ionomics part) Coordinator Prof A. Pareek).

Supervision and Mentoring

Ph. D. Theses Supervision

1. Fractionation and distribution of phosphorus in the Kaveri river catchment region. Akanksha Mishra (2010).
2. Geochemistry of iron nodules and host sediments in the Ganga-Ghaghra interfluves region and implications to elemental mobility in alluvial environment. Divya Sharma (2014).
3. Geochemistry of Surface Water and Sediments of Ghaghra River and its Geoenvironmental Implications. Sandeep Gautam (2014).
4. Geochemistry of peninsular rivers of the Ganga Basin. Chinmaya Maharana (2016).
5. Role of source area weathering and floodplain storage on the Geochemical evolution of the Yamuna River sediments. Deepika Srivastava (submitted).
6. Geochemistry of floodplain sediments of Brahmaputra river and its tributaries. Sumi Handique (Co-guide, Registered with Tezpur University, ongoing).
7. Geochemistry of iron phases in the Ganga river sediments and environmental implications. Swati Singh (ongoing).
8. Geochemical aspects of granite weathering on an east-west climatic transect of northern India. Maroof Azam (ongoing).

M. Phil Dissertations Supervision

1. Hydrogeochemistry of Subarnrekha river- Jharkhand. Sandeep Gautam (2009).
2. Geochemistry of iron nodules and host sediments of Ganga-Ghaghra doab. Divya Sharma (2009).
3. Texture and Geochemistry of sediments from Delhi ridge on the Thar desert margin. Yama Dixit (2009).
4. Hydrogeochemistry of Son river. Chinmaya Maharana (2011).
5. Hydrogeochemistry of northern Himalayan Tributaries of the Ganga River System. Maroof Azam (2014).
6. Grain size and mineralogical control on geochemistry of dune sediments from the northeastern Thar Desert. Parmindra Kumar (2014).
7. Environmental geochemistry of the Gangetic alluvial soil of the Kukrail Reserve Forest, Lucknow. Monika Kumari (2015).

Post-Doctoral Mentoring

1. Akanksha Mishra (RA under the DST project "Geochemistry and genesis of iron nodules in the Ganga plains and implications to the elemental dynamics, palaeoclimate and environment") (2011-2014).
2. M. Rajamanickam (Dr. D. S. Kothari UGC Post-Doctoral Fellow to work on "Geochemical and Geochronological study of metavolcanic rocks from Shimoga greenstone belt, Dharwar craton, India to understand Archaean crust-mantle Evolution") (2015-ongoing).
3. Tanu Shukla (Dr. D. S. Kothari UGC Post-Doctoral Fellow to work on "Geochemistry of Kaimur sediments and implications towards their origin and palaeoclimate during the Proterozoic" (2016-ongoing).

Expertise in handling and managing major analytical instruments/facility

1. Inductively Coupled Plasma Optical Emission Spectrometer (ICP-OES) for major and trace elements analysis using the destructive method.
2. X-Ray Fluorescence (XRF) for major and trace elements analysis using the non-destructive method.
3. X-Ray diffraction (XRD) for mineralogical analysis.
4. Ultraclean geochemical lab for sample processing.
5. Inductively Coupled Plasma - Mass Spectrometer (ICP-MS) for trace elements analysis using the destructive method.
6. Thermal Ionization Mass Spectroscopy (TIMS) for Sr (^{86}Sr and ^{87}Sr) and Nd (^{143}Nd and ^{144}Nd) isotopes analysis.

Selected publications in peer reviewed journals

- Tripathi, J. K. and Rajamani, V. (1999). Geochemistry of the loessic sediments on Delhi ridge: Its implication to Exogenic processes. *Chemical Geology (Elsevier)* 155, 265-278.
- Tripathi, J. K. and Rajamani, V. (1999). In situ maturation of sediments within the weathering profiles: An evidence from REE behaviour during weathering of Delhi quartzites. *Current Science*, 76, 1255-1258.
- Mohan R., Singh A. K. Tripathi J. K. and Choudhary, G. C. (2000). Hydrochemistry and quality assessment of groundwater in Naini industrial Area, Allahabad district, Uttar Pradesh. *Jour. Geol. Soc. India*, 55, 77-89.
- Tripathi, J. K. and Rajamani, V. (2003). Geochemistry of Delhi quartzites: Implications for the provenance and source area weathering. *Jour. Geol. Soc. India*, 62, 215-226.
- Tripathi, J. K. and Rajamani, V. (2003). Weathering control over geomorphology of supermature Proterozoic Delhi quartzites of India. *Earth Surface Processes and Landforms (Wiley)* 28, 1379-1387.
- Tripathi, J. K., Bock, B., Rajamani, V., Eisenhauer, A. (2004) Is river Ghaggar, Saraswati? Geochemical constraints. *Current Science*, 87, 1141-115.
- Tripathi, J. K., Bock, B., Rajamani, V., Eisenhauer, A. (2004) Ca & Sr dynamics in the Indogangetic plains: different sources and mobilization process in northwestern India. *Current Science*. 87, 1153-1158.
- Pruseth K. L., Yadav, S., Mehta P., Pandey D., Tripathi., J. K., (2005) Problems in microwave digestion of high Si and high Al rocks, *Current Science*, 89, 1068-1071.
- Tripathi, J. K., Ghazanfari, P., Rajamani, V, Tandon, S. K. (2007) Geochemistry of sediments of the Ganga alluvial plains: Evidence of large-scale sediment recycling in the foreland basin of the Himalaya. *Quaternary International (Elsevier)* 159, 119-130.
- Tripathi, J. K., and Rajamani, V. (2007) Geochemistry and origin of ferruginous nodules in weathered granodioritic gneisses, Mysore plateau, Southern India. *Geochimica et Cosmochimica. Acta (Elsevier)*71, 1674-1688.
- Sundriyal, Y. P., Tripathi, J. K., Sati, S. P., Srivastava, P. and Rawat G.S (2007) Landslide dammed lakes in the Alaknanda basin (Lesser Himalaya): causes and implications. *Current Science*, 93, 568-574.
- Sensarma, S., Rajamani, V. Tripathi, J. K. (2008) Petrography and Geochemical characteristics of the sediments of the small river Hemavati, South India: Implications for Provenance and weathering processes. *Sedimentary Geology (Elsevier)* 205, 111-125.
- Srivastava, P., Tripathi, J. K., Islam, R., Jaiswal, M. K. (2008) Fashion and phases of Late Pleistocene aggradation and incision in Alaknanda River, western Himalaya, India. *Quaternary Research (Elsevier)* 70, 68-80.

- Jaiswal, M. K., Srivastava, P., Tripathi, J. K., Islam, R. (2008) Feasibility of the SAR technique on quartz sand of terraces of NW Himalaya : a case study from Deoprayag. *Geochronometria*, 31, 45-52.
- Rajamani, V., Tripathi, J. K. and Malviya, V. (2009) Weathering of lower crustal rocks in the Kaveri river catchment, southern India: implication to sediment geochemistry. *Chemical Geology (Elsevier)* 265, 410–419.
- Tripathi, J. K., Bock, B., Rajamani, V., (2013) Nd and Sr isotope characteristics of Quaternary Indo-Gangetic plain sediments: Source distinctiveness in different geographic regions and its geological significance. *Chemical Geology (Elsevier)* 344, 12–22.
- Mishra, A., Tripathi, J. K., Mehta, P., Rajamani, V. (2013) Phosphorus distribution and fractionation during weathering of amphibolites and gneisses in different climatic setups of the Kaveri river catchment, India. *Applied Geochemistry (Elsevier)* 33, 173–181.
- Srivastava, P., Kumar, A, Mishra, A., Meena, N. K., Tripathi, J. K., Sundriyal, Y. P., Agnihotri, R., Gupta, A. K. (2013) Early Holocene monsoonal fluctuations in the Garhwal higher Himalaya as inferred from multi-proxy data from the Malari paleolake. *Quaternary Research (Elsevier)* 80, 447-458.
- Gautam, S. K. Maharana, C., Sharma, D., Singh, A. K., Tripathi, J. K., Singh, S. K., (2015) Evaluation of groundwater quality in the Chotanagpur plateau region of the Subarnarekha river basin, Jharkhand State, India. *Sustainability of Water Quality and Ecology (Elsevier)*. 6, 57-74.
- Sridhar, A., Laskar, A., Prasad, V., Sharma, A., Tripathi, J. K., Balaji, D., Maurya, D. M., Chamyal L.S. (2015) Late Holocene flooding history of a tropical river in western India in response to southwest monsoon fluctuations: A multi proxy study from lower Narmada valley. *Quaternary International (Elsevier)* 371, 181-190.
- Raj, R., Chamyal, L. S., Prasad, V., Sharma, A., Tripathi, J. K., Verma P. (2015) Holocene climatic fluctuations in the Gujarat Alluvial Plains based on a multiproxy study of the Pariyaj Lake archive, western India. *Palaeogeography, Palaeoclimatology, Palaeoecology (Elsevier)* 421, 60-74.
- Maharana, C., Gautam, S. K., Singh, A. K., Tripathi J. K. (2015) Major ion chemistry of the Son River, India: Weathering processes, dissolved fluxes and water quality assessment. *Journal of Earth System Science (Springer)* 124, 1293-1309.
- Yadav, S., Tandon, A., Tripathi, J. K., Yadav, S., Attri A. K. (2016) Statistical assessment of respirable and coarser size ambient aerosol sources and their timeline trend profile determination: a four year study from Delhi. *Atmospheric Pollution Research (Elsevier)* 7, 190-200.
- Azam, M. M. and Tripathi, J. K. (2016) Recent Contributions in the Field of Sediment Geochemistry. *Proc. Indian National Science Academy*. 82, 805-816.