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## Curriculum vitae

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**Avishek Adhikari** (He/Him) | DOB – 16/09/1992

Radiogenic Isotope Laboratory, Geology and Geophysics department, Indian Institute of Technology Kharagpur, Kharagpur - 721302, West Bengal, India.

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### Academic qualification (Undergraduate onwards)

Degree	Year	Subject	University/Institution	Marks
Bachelor of Science (B.Sc.)	2014	Geological sciences, Mathematics, Physics, Computer Science	Jadavpur University	75.5%
Master of Science (M.Sc.)	2016	Applied Geology	Jadavpur University	79.6%
Doctor of Philosophy (Ph.D.)	2024	Isotope geochemistry and crustal evolution	Indian Institute of Technology Kharagpur	Awarded

**M.Sc. Dissertation title:** Multiple generations and alterations of allanite in the Khetri Copper Belt, Rajasthan, India: constraints from mode of occurrences, texture and geochemistry.

**Supervisor:** Prof. Dipak C. Pal, Jadavpur University, Kolkata

**Year of award:** July 05, 2016

**Ph.D. Thesis title:** Geochemistry and geochronology of the Paleo-Mesoarchean Iron Ore Group metavolcanic rocks and Neoproterozoic dykes and Jagannathpur volcanics, Singhbhum craton, with implications on their petrogenesis and tectonic setting.

**Supervisor:** Prof. Ravikant Vadlamani, Indian Institute of Technology Kharagpur

**Year of award:** March 04, 2024

### Instruments acquainted/Expertise

1. Multi-Collector Inductively coupled plasma mass spectrometry (MC-ICPMS)
2. ICAP-Quadrupole Inductively coupled plasma mass spectrometry (Q-ICPMS)
3. IsoProbe-T Thermal ionisation mass spectrometry (TIMS)
4. Experience in clean chemistry laboratory procedures.

### Award/Fellowship received

Name of the Award	Awarding Agency	Year
DST-INSPIRE Scholarship	Dept. of Science and Technology, India	2011- 2016
Joint CSIR-UGC NET JRF & SRF	University Grants Commission, India	2017 - 2022

## Publications (List of papers published in peer-reviewed journals)

1. **Adhikari, A.**, Mukherjee, S., Vadlamani, R., 2021. A plume-mantle interaction model for the petrogenesis of komatiite – komatiitic basalt – basalt – basaltic andesite volcanism from the Paleoproterozoic (3.57–3.31 Ga) Iron Ore Group greenstone belts, Singhbhum craton, India: Constraints from trace element geochemistry and Sm–Nd geochronology. **Lithos**, 398, 106315 (<https://doi.org/10.1016/j.lithos.2021.106315>.) [IF = 3.5]
2. **Adhikari, A.**, Vadlamani, R., 2022. Petrogenesis of the Mesoproterozoic (~ 3.05 Ga) mafic volcanics from the western Iron Ore Group volcano-sedimentary succession, Singhbhum craton, eastern India: Constraints from geochemical modelling and Sm–Nd geochronology. **Lithos**, 106596. (<https://doi.org/10.1016/j.lithos.2022.106596>.) [IF = 3.5]
3. **Adhikari, A.**, Nandi, A., Mukherjee, S., Vadlamani, R., 2021. Petrogenesis of Neoproterozoic (2.80–2.75 Ga) Jagannathpur volcanics and the Ghatgaon and Keshargaria dyke swarms, Singhbhum craton, eastern India: Geochemical, Sr–Nd isotopic and Sm–Nd geochronologic constraints for interaction of enriched-DMM derived magma with metasomatised subcontinental lithospheric mantle. **Lithos**, 400, 106373. (<https://doi.org/10.1016/j.lithos.2021.106373>.) [IF = 3.5]
4. Mukherjee, S., **Adhikari, A.**, Vadlamani, R., 2019. Constraining paleoproterozoic (~ 1.7 Ga) collisional orogenesis between the Eastern Dharwar and Bastar cratons: New Sm–Nd garnet isochron and Th–U-total Pb monazite chemical ages from the Bhopalpatnam orogen, central India. **Lithos**, 350, 105247. (<https://doi.org/10.1016/j.lithos.2019.105247>.) [IF = 3.5]
5. Mukherjee, S., **Adhikari, A.**, Nicoli, G., Vadlamani, R., 2022. Neoproterozoic (~ 2.73–2.70 Ga) accretionary history of the eastern Dharwar Craton, India: Lu–Hf and Sm–Nd garnet geochronologic constraints from the Karimnagar granulite-facies supracrustal enclaves. **Precambrian Research**, 375, 106657. (<https://doi.org/10.1016/j.precamres.2022.106657>.) [IF = 3.8]

## Conference proceedings and abstracts

1. **Adhikari, A.**, Nandi, A., Mukherjee, S., Vadlamani, R. Modelling petrogenesis of Meso- and Neoproterozoic andesitic rocks: an example from Singhbhum craton, India. **EGU General Assembly**, 2022.
2. Mukherjee, S., Nandi, A., **Adhikari, A.**, Vadlamani, R. Improving the precision of garnet Sm–Nd ages using aqua regia leachate analysis. **EGU General Assembly**, 2022.
3. **Adhikari, A.**, Vadlamani, R. Paleoproterozoic (~3.3 Ga) crustal evolution inferred from Singhbhum craton, greenstone belt, India: constraints from trace element, Sr, Sm–Nd isotopes of eastern Iron Ore Group metavolcanics. **Goldschmidt Conference**, 2019.
4. Vadlamani, R., Bera, M. K., Samanta, A., Mukherjee, S., **Adhikari, A.**, Sarkar, A. Oxygen, Sr and Nd isotopic evidence from kyanite-eclogite xenoliths (KL-2 pipe, Wajrakarur) for pre 1.1 Ga mantle metasomatism in Eastern Dharwar SCLM. **Goldschmidt Conference**, 2019.

## Education oriented activities:

- **Supervisory Activities:** In the years 2017, 2018, and 2019, I supervised three summer interns at the Indian Institute of Technology (IIT) Kharagpur (Janees Shefali Kachhap, Rafaz L. A., and Rupashree Saha, who joined through the Indian Academy of Science internship program). Together, we planned and executed three separate research projects. I taught them the technical skills necessary to work efficiently in a geochemistry lab in addition to teaching them how to use the two distinct mass spectrometers (MC-ICPMS and Q-ICPMS) that they used for their projects. They co-generated the data, evaluated it, and wrote internship reports. Their efforts proved successful, and the data and insights they produced were intriguing. It's interesting to note that Rupashree Saha expressed her desire to carry on with her academic career after working on that project, and the skills she acquired should provide her a competitive advantage. She started working in our geochemistry lab at IIT Kharagpur in 2019 as a PhD fellow. The event provided valuable skills for future career goals, including motivating and mentoring students with no prior experience in mass spectrometry or lab work, managing expectations, and understanding research assignment requirements. The experience has boosted my leadership abilities.
- **Teaching Activities:** In 2019, I gave theory classes on "Planetary Science and Cosmochemistry" to undergraduate students. I took them through the nucleosynthesis, which includes the origin of elements and exothermic and endothermic reactions, starting from the big bang and ending with black body radiation. I was able to instruct them on the origins and development of the solar system, stars, and their life cycles (creation of red giant, neutron star, and white dwarf, supernova explosion, etc.) by using the H-R diagram. I taught the undergraduate students in my igneous petrology practical session in 2018 how to recognize minerals and igneous (plutonic and volcanic) rocks. I explained the many types of igneous textures and how to use thin section analysis to interpret the crystallization and post-magmatic events by calculating MODAL % and NORM. In 2022, I participated in a practical crystallographic course as an undergraduate. I taught them about a range of subjects, such as crystal classes, crystallographic projections, coordination numbers, steno's law, Miller and Weiss indices, and crystal lattice structures. I finished all of the practical course syllabi. The experience enhanced my communication skills with diverse students, utilizing interactive displays and questioning to enhance understanding of planetary and geological processes.

Citations: 65; h-index: 4; i10-index: 4

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I declare that the information provided above is correct to the best of my knowledge

Kharagpur

May 06, 2024

*Avishek Adhikari*  
(Avishek Adhikari)