Dr. Rekha S. Assistant Professor Deptartment of Earth & Atmospheric Sciences NIT Rourkela Odisha – 769008 India

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Specialization:

Broad area of research:GeologySpecific area of research:Metamorphic petrology, Structural geology, Geochronology

Educational Qualifications:

Ph.D.	Indian Institute of Technology, Kharagpur, India	-	2013
M.Sc.	Pondicherry University, Puducherry, India	79.04 %	2009
B.Sc.	Kerala University, Kerala, India	85.50 %	2007
H.S.E	Board of Higher Secondary Examination, Kerala	75.30 %	2004
S.S.L.C	Board of Public Examination, Kerala, India	92.67 %	2002

<u>**Post-doctoral research:**</u> Research Associate at Pondicherry University from March 2014 to March 2015 where I was involved in operating the EPMA laboratory.

<u>**Teaching experience:**</u> Joined NIT Rourkela in 2015 and teaching various subjects from thereon.

- 1) Mineral sciences/ Mineralogy and Crystallography (Theory + Laboratory)
- 2) Igneous and Metamorphic petrology (Theory + Laboratory)
- 3) Geochemistry
- 4) Stratigraphy
- 5) Isotope geology
- 6) Instrumentation for earth scientist
- 7) Mining geology (BTech Mining Engineering)
- 8) Introduction to Earth Sciences (MTech Atmospheric and ocean sciences)

Experience in handling instruments: Six years of experience in handling Scanning Electron Microscope (SEM) and Electron Probe Micro Analyzer (EPMA).

List of Publications:

Articles published in peer-reviewed Journals

- Rekha, S., Upadhyay, D., Bhattacharya, A., Kooijman, E., Goon, S., Mahato, S., Pant, N.C., 2012. Lithostructural and chronological constraints for tectonic restoration of Proterozoic accretion in the eastern Indian Precambrian shield. Precambrian Research 187, 313-333.
- 2) Rekha, S., Bhattacharya, A., Viswanath, T.A., 2013. Microporosity linked fluid focusing and monazite instability in greenschist facies para-conglomerates, western India. Geochimica et Cosmochimica Acta 105, 187-205.
- 3) Rekha, S., Viswanath T.A., Bhattacharya, A., Prabhakar, N., 2013. Meso/ Neoarchean crustal domains along the north Konkan coast, western India: the Western Dharwar Craton and the Antongil-Masora Block (NE Madagascar) connection. Precambrian Research 233, 316-336.
- 4) Rekha, S., Bhattacharya A., 2013. Growth, preservation of Paleoproterozoic-shearzone-hosted monazite, north of the Western Dharwar Craton (India), and implications for Gondwanaland assembly. Contributions to Mineralogy and Petrology 166, 1203-1222.
- 5) Rekha, S., Bhattacharya, A., 2014. Paleoproterozoic/Mesoproterozoic accretionoutgrowth north of the Western Dharwar Craton (India): Its relevance to Gondwanaland and Columbia Supercontinent reconstructions. Tectonics 33, 552-580.
- 6) Rekha, S., Bhattacharya, A., Chatterjee, N., 2014. Tectonic restoration of the Precambrain crystalline rocks along the west coast of India: correlation with eastern Madagascar in East Gondwana. Precambrian Research 252, 191-208.
- 7) Bhattacharya, A., Rekha, S., Nicole Sequeira, Aditi Chatterjee., 2018. "Transition from shallow to steep foliation in the early Neoproterozoic Gangpur accretionary orogen (Eastern India): Mechanics, significance of mid-crustal deformation, and case for subduction polarity reversal?" Lithos 348-349, 1-16.
- Praharaj, P., Rekha, S., Bhattacharya, A., 2021. Structure and chronology across the Achankovil terrain boundary shear zone system (South India), and its Madagascar connection in the Gondwanaland. International Journal of Earth Sciences 110, 1545–1573.
- 9) Praharaj, P., **Rekha, S.,** 2022. Tectono-metamorphic evolution of the Trivandrum and Southern Madurai Blocks in the Southern Granulite Terrane, south India: its correlation with southcentral Madagascar. **Geological Magazine** (accepted).

Conference abstracts

- S Rekha and P Praharaj (2016). The Achankovil shear zone, Southern India: A terrane boundary? AGM of Geological society of India and National conference on "Developments in Geosciences in the Past Decade Emerging Trends for the Future and Impact on Society" at Indian Institute of Technology Kharagpur, 21st -23rd October 2016, pp. 358.
- 2) P Praharaj and S Rekha (2018). Structure, Petrology and Chronology of the Trivandrum block of Southern Granulite Terrain, South India, National Seminar on Dynamics of Surface and Subsurface Geological Processes, Pondicherry University, 8-9 February 2018.
- 3) P Praharaj and S Rekha (2018). The Achankovil Shear Zone, Southern India: It's Extension into Madagascar. AGU Fall Meeting 2018, Washington D.C., United States of America. https://ui.adsabs.harvard.edu/abs/2018AGUFM.T33C0420P/abstract. T33C-0420.
- 4) P Praharaj and S Rekha (2019). Crustal evolution of the Madurai Block of Southern Granulite Terrain, South India. Research Scholars Week, NIT Rourkela
- 5) P Praharaj and S Rekha (2021). Role of P-T conditions and bulk rock composition in the mineralogical variations in millimeter scale: a study from South Maharashtra Shear Zone, western India. EGU General Assembly 2021, online, 19–30 Apr 2021, EGU21-9966, <u>https://doi.org/10.5194/egusphere-egu21-9966</u>, 2021.
- 6) D Pal, S S Chinnasamy and S Rekha (2021). Ore fluid characteristics at Gadag Gold Field, Dharwar Craton, southern India: Evidences from tourmaline chemistry and fluid inclusion study. EGU General Assembly 2021, online, 19–30 Apr 2021, EGU21-12132, <u>https://doi.org/10.5194/egusphere-egu21-12132</u>, 2021.
- 7) M Swain and S Rekha (2021). Structure and geochronology of Sargur schist belt, Western Dharwar Craton, southern India, EGU General Assembly 2021, online, 19–30 Apr 2021, EGU21-6013, https://doi.org/10.5194/egusphere-egu21-6013, 2021.

Sponsored Projects:

- *I.* Structure, metamorphism and chronology of melting and deformation in the Kerala Khondalite Belt and across the Achankovil Shear Zone: relevance to Gondwanaland assembly. DST-SERB. Completed (2015-2018).
- **2.** Tectonic evolution of Bavali Shear Zone and its Gondwana connection: a structural, metamorphic and chronological analysis. DST-SERB. Ongoing 2019-2022.

Research Interests:

- Precambrian crustal evolution, with emphasis on accretion tectonics
- Mineral transformation and growth processes
- Monazite geochronology using EPMA
- High-T/ultra high-T metamorphism
- Micro-structural studies

Career Objective:

Under-graduate and post-graduate teaching, and do high-quality research and contribute to understanding middle/deep crustal processes.