



Dr. Mahesh Ramrao Kapawar

Scientist 'B'

Activity-4A (Sedimentology and Quaternary Geology)

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Research Interests

- Paleomagnetism
- Rock and Environmental magnetism
- Paleointensity
- Anisotropy of magnetic susceptibility (AMS)

Educational Qualification

- **2021: Ph.D.** (Geology), Osmania University, Hyderabad and CSIR-NGRI, Hyderabad.
Thesis Title: Paleomagnetism, rock magnetism, and paleointensity studies of Rajmahal and Sylhet Traps, India.

During Ph.D., I developed an interest in understanding the geodynamic processes operational during the early Cretaceous time. The rock magnetic study of ~117 Ma old Rajmahal and Sylhet Traps basalts (India) reports the dominant magnetic mineralogy carried by magnetite, fine-medium grain size, and PSD domain state that stood useful for the rock's further usefulness and suitability in experiments like paleomagnetism and paleointensity. The paleomagnetic study suggested the southern hemispheric position of the Indian Plate during ~117 Ma and contributed a highly reliable paleopole from this region, with this strengthened the apparent polar wander (APW) path for the Indian Plate. The paleointensity study of these rocks documented the low strength of Earth's magnetic field during the early Cretaceous (and CNS). The anisotropy of magnetic susceptibility (AMS) tool was used to understand lava/magma flow dynamics and estimated the best possible feeder zone, i.e., the Comei-Cona region of southern Tibet, for the emplacement of these rocks on the Indian Plate. Apart from my Ph.D. work, I gained experience in the field of environmental magnetism where the rock magnetic properties of soils and dusts were analyzed to comment on the environmental pollution caused by anthropogenic activities like vehicular and industrial emissions.

- **2014: M.Sc.** (Geology), Department of Geology, Savitribai Phule Pune University, Pune.
- **2012: B.Sc.** (Geology, Physics, Chemistry), NES Science College, SRTM University, Nanded.

Professional Experience

- **05/2022- Present:** Scientist 'B', Wadia Institute of Himalayan Geology, Dehradun.
- **11/2021- 04/2022:** Senior Project Associate, CSIR-NGRI, Hyderabad.
- **03/2016- 05/2021:** Research Scholar, Osmania University and CSIR-NGRI, Hyderabad.
- **12/2014- 03/2015:** Field Executive, Spectra GeoServices Pvt. Ltd., Hyderabad.
- **08/2014- 11/2014:** Visiting Lecturer, MGM's College of Engineering, Nanded.

Fellowships/Awards/Lectures

- **2022:** E-lecture delivered in a webinar organized by the Department of Geology, Parul Institute of Applied Sciences, Parul University, Gujrat.
- **2018:** CSIR- Senior Research Fellowship (SRF)
- **2016:** Awarded 'Best Oral Presentation' at INGWC-2016
- **2015:** CSIR-NET with Junior Research Fellowship (JRF)
- **2015:** Qualified in Maharashtra State Eligibility Test (MH-SET) for Assistant Professorship

Services

- **M.Sc./M.Tech. Dissertation:** 03
- **Summer/Winter Training/Internship:** 03

Collaborations

- **Dr. M. Venkateshwarlu** (Senior Principal Scientist), CSIR-National Geophysical Research Institute (NGRI), Hyderabad, India.
- **Dr. S. J. Sangode** (Professor & Head), Department of Geology, Savitribai Phule Pune University, Pune, India.

Research Training

- **12-21 Mar 2018:** CSIR Integrated Skill Initiative "Advanced Training Program on Analytical Geochemistry" at CSIR-NGRI, Hyderabad, India.
- **26-30 Nov 2018:** Indo-French School cum Conference on "Molecular Magnetism in Natural Systems" at IISc, Bengaluru, India.

Conferences/Conventions/Seminars

- **2019: M. R. Kapawar** and M. Venkateshwarlu, 2019. Determination of lava flow direction and possible fissure locale by Anisotropy of magnetic susceptibility study of Rajmahal Traps basalts, India. 3rd National Geo-Research Scholars Meet (NGRSM) at WIHG, Dehradun, India.
- **2017: M. R. Kapawar** and M. Venkateshwarlu, 2017. Rock Magnetism and Anisotropy of magnetic susceptibility (AMS) investigations on Sylhet Traps, Shillong Plateau, NE India. 9th Association of Exploration Geophysicists (AEG) Convention at BHU, Varanasi, India.
- **2017: M. R. Kapawar** and M. Venkateshwarlu, 2017. New Paleomagnetic results on Sylhet Traps, Shillong Plateau, NE India. 54th Indian Geophysical Union (IGU) Convention at CSIR-NGRI, Hyderabad, India.
- **2016: M. R. Kapawar**, Bhavana Umrikar and P. D. Sabale, 2016. Groundwater quality and its suitability for domestic and agricultural use: A study in Kalas watershed from Indapur tehsil, Pune district, Maharashtra. 1st Indian National Groundwater Conference (INGWC) at JNTU, Hyderabad, India.

Research Publications

2023

- Venkateshwarlu, M., Babu, N. R., **Kapawar, M. R.**, Kotlia, B. S., Singh, A. K., & Satyakumar, A. V. 2023. Magnetostratigraphy of palaeolake sequence from Kumaun Lesser Himalaya, India: Implications on young geomagnetic excursions. *Geological Journal* 58(4), 1644-1655. <https://doi.org/10.1002/gj.4682>.

2022

- Rimjhim Maity., Supriya Mondal., M. Venkateshwarlu., **Mahesh Kapawar** and Debesh Gain. 2022. Characterization of anthropogenic contaminants in urban soils around Budgebudge current generating station of West Bengal, India. *Arabian Journal of Geosciences* 15, 1428. <https://doi.org/10.1007/s12517-022-10724-z>.

- Rimjhim Maity., M. Venkateshwarlu., Supriya Mondal., **M. R. Kapawar.**, Debesh Gain., Saurodeep Chatterjee and Punyotoya Paul. 2022. Mineral magnetic and geochemical characterization of the dust and soils around Mejia Thermal Power Plant, West Bengal: Implications to source apportionment. *Journal of Earth System Science* 131 (2), 1-20. <https://doi.org/10.1007/s12040-022-01882-5>.

2021

- **M. R. Kapawar** and Mamilla, V. 2021. Paleointensity of the Earth's magnetic field at ~117 Ma determined from the Rajmahal and Sylhet Trap Basalts, India. *Journal of Earth System Science* 130, 154. <https://doi.org/10.1007/s12040-021-01652-9>.
- **M. R. Kapawar.**, Venkateshwarlu Mamilla and S. J. Sangode. 2021. Anisotropy of magnetic susceptibility study to locate the feeder zone and lava flow directions of the Rajmahal Traps (India): Implications to Kerguelen mantle plume interaction with Indian Plate. *Physics of the Earth and Planetary Interiors* 313, 106692. <https://doi.org/10.1016/j.pepi.2021.106692>.
- Rimjhim Maity., M. Venkateshwarlu., Supriya Mondal., **M. R. Kapawar.**, Debesh Gain and Punyotoya Paul. 2021. Magnetic and microscopic characterization of anthropogenically produced magnetic particles: a proxy for environmental pollution. *International Journal of Environmental Science and Technology* 18, 1793-1808. <https://doi.org/10.1007/s13762-020-02902-x>.

2020

- **M. R. Kapawar** and M. Venkateshwarlu. 2020. Paleomagnetism and rock magnetism of early Cretaceous Rajmahal basalts, NE India: Implications for paleogeography of the Indian subcontinent and migration of the Kerguelen hotspot. *Journal of Asian Earth Sciences* 201, 104517. <https://doi.org/10.1016/j.jseaes.2020.104517>.

2019

- **M. R. Kapawar** and M. Venkateshwarlu. 2019. Rock Magnetic and paleomagnetic investigations of Sylhet traps, Shillong Plateau, NE India. *Journal of Geodynamics* 127, 31-41. <https://doi.org/10.1016/j.jog.2019.05.003>.

Place: Dehradun, India.

Date: 17.07.2023

Dr. Mahesh Ramrao Kapawar