

DR. ANMOL NAIK
Curriculum Vitae

Dr. Anmol Naik

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Contact Information:

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Google Scholars: <https://scholar.google.com/citations?user=t4mRlfoAAAAJ&hl=en>

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Objective: As an enthusiastic Earth Sciences researcher, my objective is to secure a post-doctoral or faculty position within a dynamic academic institution. I am committed to furthering my research and contributing valuable insights to the field, while actively participating in a vibrant academic community. My goal is to engage in innovative research, promote intellectual growth, and champion the advancement of knowledge across scientific exploration and environmental studies. I am keen on collaborating with esteemed colleagues to drive forward the boundaries of our understanding, and am dedicated to educating and inspiring the next generation of scientists through dedicated teaching and mentorship.

ACADEMIC AND PROFESSIONAL BACKGROUND

- **Honorary Visiting Faculty**, Department of Geology, St. Xavier's College, Mumbai, January 2024 – June 2024.
- **Visiting Scientist**, School of Earth Sciences, Zhejiang University, March 2024 – May 2024
- **Project Research Associate**, Indian Institute of Technology Bombay, August 2023 – November 2023.
- **Institute Post-doctoral Fellow**, Indian Institute of Technology Bombay, August 2022 - July 2023.
- **Ph.D.** in Earth Sciences, Indian Institute of Technology Bombay, 2017-2022.
 - **Thesis:** "From Gabbro-granophyre Plutons to Rhyolitic Ignimbrites: A Field and Textural Perspective on Volcanic Systems of the Deccan Traps"
 - **Supervisor:** Prof. Hetu Sheth
- **M.Sc.** in Applied Geology, Goa University, 2017
 - **Score:** 77%
- **B.Sc.** in Geology, Dhempe College of Arts and Science, Goa University, 2015
 - **Score:** 82%

RESEARCH INTERESTS

- Volcanology, Igneous Petrology, and Geochronology
- Silicic magmatism in Continental Flood Basalt provinces, focus: Deccan Traps, India
- Explosive volcanism and its implications
- Volcanic rifted margins: Exploration of magmatism and tectonics in western India

- Analysis of magma plumbing systems, dikes, and their roles in volcanic activities
- Rock microstructures and their significance in magmatic processes

RESEARCH EXPERIENCE

- **Deccan Traps Volcanic Systems:** For the past eight years, I've delved deeply into the study of the Deccan Traps volcanic system. My research includes new field data, detailed petrographic analysis, and mineral chemical studies, covering an expansive area of this significant volcanic province.
 1. **Thane–Vasai Region, Panvel Flexure Zone Study**
 - **Reference:** A. Naik et al., J. Earth Syst. Sci., 2021
 - **Findings:** Investigated late-stage Deccan volcanism and plutonism, revealing a fractional crystallization origin of silicic melts in gabbro intrusions.
 2. **Osham Hill, Saurashtra Volcanological Study**
 - **Reference:** A. Naik et al., J. Volcanol. Geotherm. Res., 2021
 - **Findings:** Identified “Snake River-type” ignimbrites, advancing global understanding of high-grade, lava-like ignimbrites.
 3. **Southeastern Saurashtra Volcanics**
 - **Reference:** A. Naik et al., Geol. Mag., 2023
 - **Findings:** Detailed rapid subaerial volcanism in the region, highlighting the presence of mafic enclaves in silicic dikes and insights into volcanic rifted margins.
 4. **Alech Hills, Saurashtra Rhyolites Study**
 - **Reference:** H. Sheth, A. Naik et al., Int. J. Earth Sci., 2022
 - **Findings:** Uncovered a giant silicic caldera with potential implications for understanding Deccan CFB volcanism and biological mass extinctions.
 5. **Deccan Traps Palaeoclimates Research**
 - **Reference:** H. Sheth et al., Geol. Mag. 2022
 - **Findings:** Presented evidence of a wet climate in western India 65.5 million years ago, linking basalt structures and textures with ancient meteoric water interactions.
 6. **Chhapariyali Rhyolite Dyke, Southeastern Saurashtra Study**
 - **Reference:** Sheikh et al., Geochemistry 2023
 - **Findings:** Highlighted rhyolite crystallization's interaction with basalt and its effect on rhyolite petrogenesis.
 7. **Physical Volcanology in Saurashtra and Mount Pavagadh, Gujarat**
 - **Reference:** J. M. Sheikh et al., Bull. Volcanol. & J. Volcanol. Geotherm. Res., 2020
 - **Findings:** Developed stratigraphy for rhyolites, interpreting explosive-effusive-explosive eruptions.
 8. **Lava Squeeze-ups and Volcanic resurfacing: A Review**
 - **Reference:** H. Sheth, A. Naik et al., J. Volcanol. Geotherm. Res., 2024
 - **Findings:** Investigated the characteristics, formation mechanisms, and geological significance of lava squeeze-ups in basaltic lava flow-fields.

Science Outreach and Community Development:

- Over a decade of involvement in science outreach through a DST & E-funded initiative under the Government of Goa. Achievements include public talks, exhibitions, workshops, TV appearances, and establishing four rural astronomy centers.
- Led a community development project assessing groundwater quality in a Goan village during my B.Sc.

- Contributed to a DST-funded project studying Dharwar Komatiites as part of my M.Sc. dissertation.

PRESENTATIONS:

- **Terra Talk:** Invited talk at the Department of Geology in St. Xaviers College, Mumbai: "Volcanic Textures: The Window to Geological Processes". January 2024.
- **Pre-Conference Workshop at Deccan Next 2023, SPPU India.**
 - *Resource Person:* Delivered a talk titled "Volcanic Textures: The Window to Geological Processes".
- **Conferences:**
 - Oral Presentation at *Deccan Next 2023, SPPU India.*
 - Oral Presentation at *Frontiers in Geosciences Research Conference-2021, Physical Research Laboratory, India.*
 - **Awards:** Best Poster and Flash Talk Award.
 - Poster Presentation at *International Conference on Ophiolites and the Oceanic Lithosphere, Muscat, Oman.*

TEACHING EXPERIENCE:

- **St. Xavier's College, Mumbai (Autonomous)**
 - Taught the Petrology Lab course on igneous textures and process interpretation for MSc students (January – June, 2024)
 - Led a geological field work for the B.Sc. students at Elephanta island, Mumbai.
- **IIT Bombay, Department of Earth Sciences:**
 - Co-designed and taught the Petrology Lab course for MSc students (2018-2024).

PROFESSIONAL AFFILIATIONS:

- Life Member, *Geological Society of India.*

PROFESSIONAL COURSES & WORKSHOPS ATTENDED:

- **Workshop: "Melts, Glasses and Magmas"**
 - **Mode:** Virtual
 - **Date:** 5-9 July 2021
 - **Course Coordinator:** Professor Dr. Donald Dingwell, University of Munich, Germany
- **HS791xA17: Technical Communication for Scientists and Engineers**
 - **Provider:** IITBombayX, an online learning initiative of Indian Institute of Technology Bombay
- **Refresher Course on Igneous and Metamorphic Petrography**
 - **Provider:** RTD, ER, GSITI, Kolkata
 - **Date:** 17-21 August 2020
 - **Details:** E-training focused on the in-depth study of igneous and metamorphic petrography.
- **Advanced Course on PGE Exploration in Ultramafic Complexes**
 - **Provider:** RTD, SR, GSITI, Hyderabad
 - **Date:** 24-29 August 2020
 - **Details:** E-training dedicated to advanced techniques and practices in PGE exploration within ultramafic geological structures.
- **Refresher Course on Petrological and Geochronological Laboratory Techniques**
 - **Provider:** RTD, ER, GSITI, Kolkata
 - **Date:** 10-15 May 2021

- **Details:** E-training offering insights into advanced petrological and geochronological lab techniques

AWARDS/RECOGNITIONS:

- **Institute Post-doctoral Fellowship**, 2022, IIT Bombay.
- **Best Poster and Flash Talk Award** at Frontiers in Geosciences Research Conference 2021, PRL Ahmedabad, September 2021.
- **CSIR-NET Senior Research Fellowship**, 2019-2022, IIT Bombay.
- **CSIR-NET Junior Research Fellowship**, 2017-2019, IIT Bombay.
- **Prof. F. B. Antao Gold Medal** for securing first position at MSc level examination, Goa University, 2017.
- **ONGC Scholarship** for securing first rank in MSc part 1, Goa University, 2016.
- **Award of the Year** from the Association of Friends of Astronomy (funded by DST and E, Government of Goa, 2012).

SKILLS & COMPETENCIES**Laboratory & Technical Skills:**

- Preparation of high quality petrographic thin sections.
- Proficient in sample preparation for geochemical analyses, including ICP-AES, XRF, and ICP-MS.

Fieldwork & Geological Expertise:

- Extensive field geology experience, specializing in igneous rock with focus on silicic magmatism in the Deccan Traps.

Software Proficiency:

- Adept with graphical and statistical software including Corel Draw, Photoshop, Snapseed, OriginPro, and SigmaPlot.

Mentorship:

- Guided PhD, MTech, and MSc students, fostering their academic and research growth

PERSONAL INFORMATION:

- **Date of Birth:** 08th August 1994.
- **Sex:** Male
- **Place of Birth:** Panjim, Goa, India.
- **Citizenship:** Indian.
- **Passport Details:** Z3630796, valid up to August 2026.
- **Marital Status:** Unmarried.
- **Language Skills:** Multilingual
 - **Indian Languages:** Fluent in Hindi, Marathi, and Konkani.
 - **Foreign Language:** Fluent in English.

EXTRA-CURRICULAR INTERESTS:

- **Amateur Astronomy:** Involved in science popularization and astrophotography.
- **Nature & Nature Photography.**
- **Travelling and Trekking.**

INTERNATIONAL TRAVELS:

- **Oman (2020)** for the International Conference on Ophiolites and the Oceanic Lithosphere.
- **P. R. of China (2024)** for a post-doctoral research as a Visiting Scientist at Zhejiang University.

List of Publications:

Articles published in peer-reviewed journals

10. Shekhar, A., Jourdan, F., Cucciniello, C., Naik, A., Sheth, H., Astha, B., 2024. Geology and $40\text{Ar}/39\text{Ar}$ age of the Khopoli olivine gabbro intrusion, Konkan Plain, western Deccan Traps. *Geological Magazine*, v. 161, <https://doi.org/10.1017/S0016756824000293>
9. Sheth, H., Naik, A., Shekhar, A., Astha, B., Samant, H., 2024. Lava squeeze-ups and volcanic resurfacing: a review. *Journal of Volcanology and Geothermal Research*, v. 450, art. 108085, <https://doi.org/10.1016/j.jvolgeores.2024.108085>
8. Naik, A., Sheth, H., Alok Kumar, Sheikh, J. M., 2023. The physical volcanology of large-scale effusive and explosive silicic eruptions in southeastern Saurashtra, Deccan Traps. *Geological Magazine*, v. 160, pp. 1395–1416 <https://doi.org/10.1017/S0016756823000432>
7. Sheikh, J. M., Cucciniello, C., Naik, A., Sheth, H., Duraiswami, R. A., 2023. Basaltic thermal and material inputs in rhyolite petrogenesis: the Chhapariyali rhyolite dike, Saurashtra, Deccan Traps. *Geochemistry*, v. 83, No. 3, art. 125984 <https://doi.org/10.1016/j.chemer.2023.125984>
6. Sheth, H., Duraiswami, R. A., Ghule, V., Naik, A., Das, T., 2022. Flood basalt structures and textures as guides to cooling histories and palaeoclimates: the Deccan Traps of Saurashtra, western India. *Geological Magazine*, v. 159, pp. 1415–1436 <https://doi.org/10.1017/S0016756822000279>
5. Sheth, H., Naik, A., Sheikh, J. M., Alok Kumar, 2022. Giant (30 km-diameter) silicic caldera of K/Pg boundary age in the northwestern Deccan Traps: the Alech Hills, Saurashtra. *International Journal of Earth Sciences (Geol Rundsch)*, v. 111, pp. 379–399 <https://doi.org/10.1007/s00531-021-02119-4>
4. Naik, A., Sheth, H., Sheikh, J. M., Alok Kumar, 2021. Extremely high-grade, lava-like rhyolitic ignimbrites at Osham Hill, Saurashtra, northwestern Deccan Traps: stratigraphy, structures, textures, and physical volcanology. *Journal of Volcanology and Geothermal Research*, v. 419, art. 107389 <https://doi.org/10.1016/j.jvolgeores.2021.107389>
3. Naik, A., Sheikh, J. M., Sheth, H., Samant, H., D'Souza, S., 2021. Diverse late-stage (≤ 62.5 Ma) Deccan volcanism and plutonism in the Thane-Vasai region, Panvel flexure zone, western Indian rifted margin. In: *Deccan Traps and Other Flood Basalt Provinces: Recent Research Trends. G. Sen Memorial Volume*, *Journal of Earth System Science*, v. 130, art. 152 <https://doi.org/10.1007/s12040-021-01654-7>
2. Sheikh, J. M., Sheth, H., Naik, A., Keluskar, T., 2020. Physical volcanology of the Pavagadh rhyolites, northern Deccan Traps: stratigraphic, structural, and textural record of explosive and effusive eruptions. *Journal of Volcanology and Geothermal Research*, v. 404, art. 107024 <https://doi.org/10.1016/j.jvolgeores.2020.107024>

1. Sheikh, J. M., Sheth, H., Naik, A., Keluskar, T., 2020. Widespread rheomorphic and lava-like silicic ignimbrites overlying flood basalts in the northwestern and northern Deccan Traps. *Bulletin of Volcanology*, v. 82, art. 41 <https://doi.org/10.1007/s00445-020-01381-9>

Conference and seminar abstracts and talks, invited talks

10. Naik, A., 2024. Volcanic Textures: The Window to Geological Processes. TERRA Talk: Invited talk at the Department of Geology in St. Xaviers College, Mumbai: "Volcanic Textures: The Window to Geological Processes". January 16, 2024.
9. Naik, A., 2023. Volcanic Textures: The Window to Geological Processes. In: Deccan-NEXT pre-conference workshop, October 1-5, 2023. Department of Geology, Savitribai Phule Pune University. (TALK)
8. Astha, B., Naik, A., Sheth, H., Shekhar, A., 2023. Combining Google Earth satellite imagery with toposheets and field studies for mapping Deccan dike swarms: new insights, new complexities. In: Deccan-NEXT, October 1-5, 2023. Department of Geology, Savitribai Phule Pune University, p. 28.
7. Shekhar, A., Sheth, H., Naik, A., Astha, B., 2023. Late-Deccan (Danian-age) explosive silicic eruptions in Mumbai: the Dongri ignimbrite sequence. In: Deccan-NEXT, October 1-5, 2023. Department of Geology, Savitribai Phule Pune University, p. 11.
6. Naik, A., Sheth, H., Sheikh, J.M., Kumar, A., 2023. Extremely high-grade, lava-like rhyolitic ignimbrites at Osham Hill, Saurashtra, northwestern Deccan Traps: stratigraphy, structures, textures, and physical volcanology. In: Deccan-NEXT, October 1-5, 2023. Department of Geology, Savitribai Phule Pune University, p. 8. (TALK)
5. Sheikh, J.M., Sheth, H., Naik, A., Keluskar, T., 2023. Physical volcanology of the Pavagadh rhyolites, northern Deccan Traps: Stratigraphic, structural, and textural record of explosive and effusive eruptions. In: Deccan-NEXT, October 1-5, 2023. Department of Geology, Savitribai Phule Pune University, p. 7.
4. Naik, A., Sheth, H., Sheikh, J. M., Alok Kumar. 2021. Extremely high-grade, lava-like rhyolitic ignimbrites at Osham Hill, Saurashtra, northwestern Deccan Traps: stratigraphy, structures, textures, and physical volcanology. Poster and Flash Talk at Frontiers in Geosciences Research Conference-2021, Physical Research Laboratory. 27-28 September 2021. (TALK)
3. Sheikh, J. M., Sheth, H., Naik, A., Keluskar, T., 2021. Physical volcanology of the Pavagadh rhyolites, northern Deccan Traps: stratigraphic, structural, and textural record of explosive and effusive eruptions. Poster and Flash Talk at Frontiers in Geosciences Research Conference-2021, Physical Research Laboratory. 27-28 September 2021
2. Naik, A., Sheth, H., Sheikh, J. M., Samant, H., D'Souza, S., 2020. Gabbro-granophyre relationships in the Chena gabbro pluton, western Deccan Traps: implications for

passive margin ophiolites. International Conference on Ophiolites and the Oceanic Lithosphere, Muscat, Oman, 12-14 January, 2020, p. 164.

1. Naik, A., Sheth, H., Samant, H., D'Souza, S., 2018. Some observations on spilitized basalts of the western Deccan Traps, India. In: Magmatism of the Earth and Related Strategic Mineral Deposits. Vernadsky Institute of Geochemistry and Analytical Chemistry, 3-7 September 2018, Abstracts volume pp. 211-213. (TALK)