Curriculum vitae



Dhananjay A. Sant Specialties: Earth Science

Designation & Address: Professor in Geology, Faculty of Science, The Maharaja Sayajirao University of Baroda, Vadodara – 390 002.

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Date of Birth : November 3, 1962

In brief:

Dr. Dhananjay A. Sant, a retired Professor of Geology from the Department of Geology at Maharaja Sayajirao University of Baroda, Vadodara, India, holds over 38 years of academic and research experience. His expertise spans multidisciplinary studies in aeoloav, geomorphology, paleoclimatology, geoarchaeology, and near-surface seismology. Dr. Sant obtained his Ph.D. in Geology in 1992 and a master's degree in Geology (Honors) in 1987 from the Maharaja Sayajirao University of Baroda. His research focuses on climate change dynamics, sedimentary processes, and subsurface imaging techniques. His impactful publications have significantly contributed to Earth Sciences, appearing in prestigious journals such as Geophysical Research Letters, Soil Dynamics and Earthquake Engineering, Palaeogeography, Palaeoclimatology, Palaeoecology, Journal of Asian Earth Sciences, Chaos, Solitons & Fractals, Frontiers Earth Science, Cretaceous Research, Current Science, Journal Geological Society of India. Dr. Sant has collaborated with esteemed institutions, including IISc Bangalore, Department of Ancient History and Archaeology at MSU, CSIR Fourth Paradigm Institute, Bengaluru, Geological Survey of India, Jammu University, Indian Institute of Geomagnetism, and the University of Cambridge. He has guided numerous Ph.D. students and serves as a reviewer for numerous international scientific journals



and funding bodies. Dr. Sant's pioneering research is on high-resolution quantitative sedimentology and profiling low-velocity zones within Quaternary sediments and beneath the Deccan Traps using microtremor HVSR technique. Microtremor HVSR technique has practical applications in engineering and mineral exploration, as well as carbon dioxide and hydrogen sequestration. Additionally, Dr. Sant actively participates in professional associations and has held key administrative positions at the university, including serving as a Senate member and Director of the All-India Central Services Training Centre.

EDUCATION

- 1. Ph.D. (1992) from the Maharaja. Sayajirao. University of Baroda, Vadodara
- Masters in Geology (Honors) (1987) from the M. S. University of Baroda, Vadodara, India.

EMPLOYMENT

3/11/07 to till 14-06-2025	Professor, Department of Geology
	The Maharaja Sayajirao University of Baroda.
2/11/99 to 2/11/07	Reader, Department of Geology,
	The Maharaja Sayajirao University of Baroda.

Responsibilities held at university

- 1. Director All India Central Services Training Centre, The Maharaja Sayajirao University of Baroda from 2009 to 2015.
- 2. Coordinator Prof. C. C. Mehta Auditorium (2009-2012).
- 3. Senate Member 2011 to 2016

Research Collaboration

- 1. Prof. Govindan Rangarajan, IISc Bangalore
- 2. Retired Prof. K. Krishnan, MSU Baroda
- 3. Retired Prof. Nathani Basavaiha, Institute of Geomagnetism
- 4. Dr. Sudesh Wadhawan Ex-Director General, Geological Survey of India
- 5. Retired Prof. Rajinder Ganjoo, University of Jammu
- 6. Prof. Parth R. Chauhan, IISER Mohali
- 7. Dr. Imtiyaz Parvez, CSIR, Fourth Paradigm Institute, Bangalore
- 8. ONGC Vadodara

Ph. D STUDENT GUIDED

 Prabhin Sukumaran Thesis title: High-resolution studies on Late Holocene sediments from Lower Reaches of Narmada Valley, western India.



ONGOING Ph.D. STUDENT

1. Naresh Gor

Delineation of Groundwater potential zones in the southwest of Bhuj, Kachchh, western India

2. Gunjankumar K Makwana Subsurface Investigation in Kachchh Basin Using Microtremor HVS Technique

REVIEWER FOR JOURNALS

- 1. Journal Geological Society of India
- 2. Current Science
- 3. Journal of Quaternary Science
- 4. Chaos, Solutions & Fractals
- 5. Quaternary International
- 6. Quaternary International Review
- 7. Frontiers
- 8. Geological Society of London (Special Publications)
- 9. Journal of Earth System Science
- 10. Carbonate and Evaporites
- 11. Scientific Reports
- 12. Tectonostratigraphic Evolution

PUBLICATIONS

- R.V. Karanth, D. A. Sant, and N.C. Shah, Geology and Structure of the area around Naswadi with special reference to Bagh Bed exposures. Dist Baroda Gujarat State India. Journal Geological Society of India V.32, no. 3, pp. 239-243. 1988.
- 2. **D. A. Sant** and R.V. Karanth, Morphometric parameters and their correlation with lithology and structure of the area between Uchh Nadi and Narmada River in Central Gujarat. **Navnirman**. V29, no.2, pp. 17-28. **1988**.
- D. A. Sant and R. V. Karanth, Emplacement of Dyke swarm in the Lower Narmada Valley, Western India. In: Mafic Dykes and Emplacement Mechanism (eds.) Parker, Rickwood and Tucker. Rotterdam, Netherlands, pp.383-389, 1990.
- 4. D.A. Sant, R.V. Karanth and P.C. Jadhav. A note on the occurrence of carbonatite dyke in the Lower Narmada Valley. Journal Geological Society of India V. 37. no. 2, pp. 119-127. 1991
- 5. **D.A. Sant,** R.V. Karanth. Drainage evolution of the Lower Narmada Valley, Western India. **Geomorphology.** V.8, pp.221-224. **1993**.



- R.V. Karanth and D. A. Sant. Lineaments and Dyke Swarms of Lower Narmada Valley and Southern Saurashtra, Western India. Geological Society of India Memoir. 33. 239-243. 1995.
- Rangarajan and D. A. Sant. A Climate Predictability Index and its Applications. Geophysical Research Letters. Vol. 24 no. 10. Pp. 1239-1242. 1997.
- 8. D. A. Sant and R. V. Karanth Structure of the Bagh Beds around Surpan in Lower Narmada Valley. Mineral Wealth V. XXIX-1 Jan-June issue. 1998.
- 9. D. A. Sant. Landscape, Structure and Morphological development of Saurashtra Peninsula and Lower Narmada Valley, Western India. In Geological Society of India Memoir-43 (1), pp. .335-352. 1999.
- A.S. Khadkikar, D.A. Sant, V. Gogte, and R.V. Karanth. The influence of Deccan Trap volcanism on climate during K/T: Insights from lacustrine intertrappean deposits, Anjar, western India. Palaeogeography, Palaeoclimatology, Palaeoecology V.147, no.1-2, pp.141-147. 1999.
- Sant, D.A. Application of fractal dimension in studying geomorphic processes: A case study from historical climatic data set. In Application of Fractals in Earth Science. Ed. Dimri, V.P., Balkema Publishers, Brookfield, pp. 227-236. 2000.
- 12. Govindan Rangarajan and **Dhananjay. A. Sant**, Palaeoclimatic data from 74KL and Guliya Cores: New Insights. **Geophysical Research Letters** Vol. 27, no. 6, pp.787-790, **2000**.
- 13. Dhananjay A. Sant and Govindan Rangarajan, Onset of Climate change at Last Glacial-Holocene transition: Role of the tropical Pacific, Current Science v. 83, no. 11, pp. 1398-1402, 2002.
- Dhananjay A. Sant, George Mathew, Aniruddha S. Khadkikar, V. Gogte, T.K. Gundurao, Co-existent cristobalite and iridium at 65Ma, Anjar Intertrappeans, Kachchh, western India. Cretaceous Research. v. 24, no. 2, pp. 105-110. 2003.
- Govindan Rangarajan and Dhananjay A. Sant. Fractal dimensional analysis of Indian climatic dynamics. Chaos, Solutions and Fractals. v.19 no. 2, pp 285-291 2004.
- 16. Dhananjay A. Sant, K. Krishnan, Govindan Rangarajan, N. Basavaiah, Chintan Pandya, Mitesh Sharma and Yogi Trivedi. Characterization of flood plain and climate change using multi-proxy records. J. Indian Geophysical Union, v. 8, no.1 pp. 39-48. 2004.



- 17. Dhananjay A. Sant, K. Krishnan, Govindan Rangarajan, N. Basavaiah, Chintan Pandya, Mitesh Sharma and Yogi Trivedi. Flood Plain record of the southwest Indian Monsoon during the Last Glacial. Man and environment, XXXI(2), pp. 9-20. 2006.
- Prabhin Sukumaran, Imtiyaz A. Parvez, Dhananjay A. Sant, Govindan Rangarajan, K. Krishnan. Profiling of late Tertiary–early Quaternary surface in the lower reaches of Narmada valley using microtremors. Journal of Asian Earth Sciences 41, 325–334, 2011.
- 19. Dhananjay A. Sant, Sudesh K. Wadhawan, Rajinder K. Ganjoo, Nathani Basavaiah, Prabhin Sukumaran, and Sourabh Bhattacharya. Morphostratigraphy and Palaeoclimate Appraisal of the Leh Valley, Ladakh Himalayas, India. Journal Geological Society of India, Vol.77 (6) pp.499-510, June 2011.
- 20. Dhananjay A. Sant, Sudesh K. Wadhawan, Rajinder K. Ganjoo, Nathani Basavaiah, Prabhin Sukumaran, And Sourabh Bhattacharya. Linkage of Paraglacial Process from Last Glacial to Recent Inferred from Spituk Sequence, Leh valley, Ladakh Himalayas, India. Journal Geological Society of India Vol. 78 (8) pp.147-156. 2011.
- 21. Prabhin Sukumaran, **Dhananjay A Sant**, K Krishnan, Govindan Rangarajan. High Resolution Facies record on Late Holocene Flood Plain Sediments from Lower reaches of Narmada Valley, Western India. **Journal Geological Society of India** v.79(1) pp 41-52. **2012.**
- 22. Prabhin Sukumaran, C. Rajshekhar, **Dhananjay A Sant**, K Krishnan. Late Holocene Storm Records from Lower Reaches of Narmada Valley, western India. **Journal of the Geological Society of India.** Vol.80, pp.403-408. **2012.**
- 23. P. Morthekai, P.R.Chauhan, M. Jain, A.D. Shukla, H.M. Rajapara, K. Krishnan[,] D.A. Sant[,] R. Patnaik[,] D.V. Reddy, A.K. Singhvi. Thermally redistributed IRSL (RD-IRSL): A new possibility of dating sediments near B/M boundary. Quaternary Geochronology v. 30, 154–160 2015.
- 24. Dhananjay A. Sant, Imtiyaz A. Parvez, Govindan Rangarajan, Satish J. Patel, Madhuri N. Bhatt and T. A. Sanoop Salam. Profilling Along Banni Plains And Bounding Faults, Kachchh, Western India Using Microtremors Method. Journal of Asian Earth Sciences 146 326–336. 2017.
- 25. P.R. Chauhan, K. Krishnan, N. Tiwari, A. Mukherjee, A. Anoop, Dhananjay. A. Sant, R. Patnaik. At The Forest Edge: General Observations On New Microlithic Occurrences In The Central Narmada Basin, Madhya Pradesh. *Rethinking the Past: A Tribute to Professor V.N. Misra* (S.G. Deo, Andre Baptista and Jayendra Joglekar Eds.), pp. 65-80, Pune. ISPQS . 2017.



- 26. Apurva Shitole, Dhananjay A Sant, Imtiyaz Parvez, Govindan Rangarajan, Satish Patel, S. G. Viladkar, A. S. N. Murty, Garima Kumari. Shallow seismic studies along Ambadonger to Sinhada (longitude 74° 3'50"E) Transect western India. Abstract published in 'International Seminar on "Carbonatites alkaline rocks, and associated economic mineral deposits" held on December 8 to 11, 2017.
- Dhananjay A. Sant, Imtiyaz A. Parvez, Govindan Rangarajan, Satish J. Patel, T. A. Sanoop Salam and Madhuri N. Bhatt. Subsurface imaging of brown coal bearing Tertiary sedimentaries - Deccan Trap interface using microtremor method. Journal of Applied Geophysics 159: 362-373. 2018.
- 28. Aditya U Joshi, Dhananjay A. Sant, Imtiyaz A. Parvez, Govindan Rangarajan, Manoj A Limaye, Soumyajit Mukherjee, Mitesh J. Charola, Meghnath N. Bhatt, Sagar P. Mistry. Subsurface profiling of granite pluton using microtremor method: A case study from southern Aravalli Mountain belt, Gujarat, India. Int J Earth Sci (Geol Rundsch) 107:191–201. 2018.
- 29. Prabhin Sukumaran, **Dhananjay A Sant**, K Krishnan, Govindan Rangarajan, Nathani Basavaiah, Jean-Luc Schwenninger. Multi-proxy records of late Holocene flood events from the lower reaches of the Narmada River, Western India. in **Frontiers Earth Science**, V. 9:634354. **2021**.
- 30. **Dhananjay A Sant**, Gunjankumar K Makwana, Prabhin Sukumaran, Imtiyaz A Parvez, Govindan Rangarajan, K Krishnan. Modeling near-surface velocity inversion in a sediment sequence using microtremor HVSR. **Soil Dynamics and Earthquake Engineering** 190, 109235, 2025.

MEMBERSHIP OF PROFESSIONAL ASSOCIATIONS

- 1. Life member of the Geological Society of India, Bangalore, India.
- 2. Life member of the Indian Society of Remote Sensing, Dehradun, India.

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