



Dr. M. RAJA

(Assistant Professor) "The Present Is the Key to the Past"

PROFILE

My research interests involve the Climate and ocean history using oxygen and carbon isotopes in foraminifera, biostratigraphic techniques, and sediment lithology. I use high-resolution, multiple-proxy records in order to understand the mechanisms controlling abrupt climate change and the response of ecosystems to rapid environmental shifts.

ACADEMIC QUALIFICATIONS

Feb, 2013 - Jul, 2018	Ph.D - Geology (Micropaleontology) Degree awarded November - 2019 Department of Geology, University of Madras, Guindy Campus, Chennai. <u>Thesis Title:</u> Paleoenvironmental analysis of shallow sediment core based on foraminiferal proxies off Odisha coast, Bay of Bengal, East coast of India.	
Jul, 2011 - Aug, 2012	M.Phil - Geology Department of Geology, University of Madras, Guindy Campus, Chennai. <u>Dissertation Title:</u> Distribution of heavy minerals and its provenance studies of Mahabalipuram beach, south east Coast of Chennai, Tamilnadu.	72%
Jun, 2009 - Apr, 2011	M.Sc - Geology Department of Geology, University of Madras, Guindy Campus, Chennai. <u>Dissertation Title:</u> Distribution of recent benthic foraminifera and its environmental conditions of Karaikal, central coast of Tamilnadu.	65.4%
Aug, 2006 - Jun, 2009	B.Sc - Geology V. O. C College, Manonmaniyam Sundranar University, Thoothukudi.	54%

National Experience

Dec, 2022 - Present
Assistant Professor – Department of Geology, National College, Trichy.
Responsibility:

- Teaching for UG and PG Geology Students.
- Involving in various Academic activities.

Sep, 2019 - Mar, 2020
Research Associate - Geodynamics unit, Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bengaluru.

Project title: Geological and Geomorphic Characterization of Frontal thrust at Central and northeast Himalaya.

Responsibility:

- Contributed in geological field work along the lower Himalaya region associated with our team.
- Known to handle Total Station.
- Handled Paleoseismic trenching operations for Paleoseismic investigations.
- Organized and prioritized work to complete assignments in a timely, efficient manner.

PERSONAL INFO

Address

28/2/1A, Ramasamy Puram 2nd street, Thoothukudi, Tamilnadu, India. Pin code: 628 003.

DOB: 15/07/1988

Phone: +91-8754657370

Email: raja3geo@gmail.com

Research Gate:

<https://www.researchgate.net/profile/Raja-m-2>

SKILLS

Software

Windows Platform, ORIGIN-9, Corel draw, Adobe Photoshop, Strater-5, Ocean Data View (ODV), IBM SPSS Statistics-21, Paleontological Statistics Software Package (PAST-3). (★★★★★ 5/5)

Surfer, ArcGIS. (★★★★☆ 3/5)

Foraminifer's identification

Quaternary, Plio-Pleistocene Forms (★★★★☆ 4/5)

Laboratory techniques

Separation of calcareous Microfossils, Picking and Mounting Foraminifera tests, processing samples for Geochemistry analysis. (★★★★★ 5/5)

Instruments handled

Eltra CS Carbon Sulfur Determinator, X- ray Fluorescence Spectroscopy (XRF), Atomic Absorption Spectroscopy (AAS), Scanning electron microscope (SEM), Delta V- plus Isotope Ratio Mass Spectrometry (IMRS). (★★★★☆ 4/5)

Linguistic proficiency

Tamil, English (speak and write) (★★★★★ 5/5)

Hobbies & Interest

Internet surfing (scientific), Travelling, Reading books, listening music.

Sep, 2018 - **Technical Assistant** - Geodynamics unit, Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR),
Jun, 2019 Bengaluru.

Project title: Evaluation of Tsunami Hazard for the Eastern Seaboard of India.

Responsibility:

- Conducted geological field work along east coast of India to identify the potential site for paleotsunami studies.
- Organized the gravity core operations in several sites.
- Foraminiferal identification and correlating with paleotsunami evidences.
- Interpreting multiple data sets and preparing final report.

Jul, 2013 - **Ph.D Research scholar** - Department of Geology, University of Madras, Chennai.

Jul, 2018

Received UGC Non Net fellowship (Oct, 2014 – Oct, 2017)

- Key involvement in day to day lab practices on the aspect of isolation of Foraminifera and Geochemistry from the sediments.
- Expertise in Plio-Pleistocene foraminifera.
- Initiated collaboration with Physical Research Laboratory India to Isotope establish the analysis.
- Experienced in of samples for Isotopic analysis.
- Known to preparation handle IRMS, XRF, AAS, Stereozoom Microscope and SEM.
- Friendly cooperation with the superiors, co-workers and collaborators
- Troubleshooting all assays through literature search and Researchgate with positive approach.
- New strategies development, Proposal & Report preparation and Team management.

Jul, 2012 -
Jan, 2014

JRF (UGC Fellowship) - Department of Geology, University of Madras, Chennai

Project Title: Coastal landforms and siltation in Palk Strait, east coast of India implication for quaternary Environmental studies.

Responsibility:

- Conducted geological Field work for sample collection.
- Preparation of samples for laboratory analysis.
- Engaged with Foraminifera picking, identification, and SEM studies.
- Interpreting all data sets.

List of Publications

- **M.Raja**, M. Suresh Gandhi and A. Nallapa Reddy, (2022) Plio-Pleistocene Foraminiferal diversity and Oxygen isotope records of Site GC-94, off Odisha Coast, Bay of Bengal. (**In Review**)
- Harini Santhanam., Anandasabari Karthikeyan and **M. Raja**, (2020) "Saturation indices of aqueous mineral phases as proxies of seasonal dynamics of a transitional water ecosystem using a geochemical modeling approach" Model. Earth Syst. Environ. <https://doi.org/10.1007/s40808-020-00910-x>
- M. Suresh Gandhi., N. Rajeshwara Rao., K.Kasilingam and **M. Raja**, (2018) "Distribution, ecology and paleoenvironments of Benthic foraminifera – A case study off Manora, Palk Strait, Tamilnadu" Indian Journal of Geo-Marine Sciences, Vol. 47 (02), PP. 281-290.
- M. Suresh Gandhi., N. Rajeshwara Rao., **M. Raja** and N. Suresh, (2016) "Benthic Foraminiferal distribution and its ecological studies in a shallow shelf setting off Colachel, Kanyakumari District, Tamilnadu" Indian Journal of Geo-Marine Sciences, Vol.45 (6), pp.742-748.
- M. Suresh Gandhi., S. Vasudevan., **M. Raja**., S. Chenthamil Selvan and G. Sathiyamoorthy, (2016) "Textural, Heavy minerals and FTIR characteristics of beach sediments between Besant Nagar and Marakanam, Tamil Nadu" Annamalai University Science Journal, (50), PP: 99-108.
- M. Suresh Gandhi., K. Kasilingam., **M. Raja** and T. Arumugam, (2014) "Recent Benthic Foraminifera in Surficial Sediment off Kodyakarai, Palk Bay, Tamilnadu, East Coast of India" Earth Science India, ISSN: 0974 – 8350 Vol. 7 (III), pp. 73 – 88.

- M. Suresh Gandhi and **M. Raja**, (2014) “Heavy mineral distribution and geochemical studies of coastal sediments between Besant Nagar and Marakkanam, Tamil Nadu, India” Journal of Radiation Research and Applied Sciences, Elsevier Publication, Vol.7, Issue 3, Pages 256–268.
- M. Suresh Gandhi., N. Rajeshwara Rao., **M. Raja**, (2013) “Environmental Conditions off Karaikal, South-East Coast of India, as Deciphered from Recent Benthic Foraminiferal Distributions” Journal of Environment and Earth Science ISSN 2224-3216, Vol.3, No.13, Pages 10-22.

Conferences and Workshops

- National workshop on “Biodiversity Conservation” held on February 2017, Organized by Center for Ocean and Coastal Studies, University of Madras, Chennai.
- Workshop on “Placer Mineral Resources and Sedimentary Environments” held on March 2016, Organized by Department of Geology, University of Madras, Chennai.
- National seminar on “Quaternary Stratigraphy, Sedimentation and Sea level Changes” (QSSS), held on March 2015, Organized by Department of Geology, University of Madras, Chennai.
- **Presented paper** in National Conference on “Climate Change Impacts and Coastal Area Management” held on February 2015, Organized by Department of Applied Geology, University of Madras, Chennai.
- Workshop on “Recent Developments in Micropaleontology and Its Applications” held on November 2014, Organized by Department of Geology, University of Madras, Chennai.
- International Conference on “Environmental Earth Science, Accomplishments, Plans and Challenges” held on March 2014, jointly organized by Department of Geology and Applied Geology, University of Madras, India & Instituto Politecnico Nacional (IPN), Mexico.(Chennai)
- Training Workshop on “Basic Geostatistical Analysis for Experimental Data Sets” held on March 2014, Organized by Department of Geology, University of Madras, Chennai.
- National Conference on “Emerging Trends in Stratigraphy” held on December 2013, Conducted by Fergusson College, Pune.
- **Presented paper** in “XXIV Indian Colloquium on Micropaleontology and Stratigraphy” held on November 2013, Organized by Institute of Himalayan Geology, Dehradun.
- Workshop on “Coastal Climate Change” held on September 2013, Organized by Department of Geology, University of Madras, Chennai.
- Workshop on “Marine geosciences research in India: Current status and future directions” held on February 2013, Conducted by National Institute of Oceanography, Goa.
- Workshop on Recent Advances in Geology of Tamil Nadu, Presidency College, Chennai.
- **Presented paper** in “XXIX Convention of Indian association of sedimentologists” held on December 2012, Organized by Department of Earth sciences, Pondicherry University, Pondicherry.
- International conference on “Global environmental change challenges and innovations” held on February 2012, University of Madras, Chennai, 2012.
- Workshop on “Coastal environments” held on March 2010, Organized by Department of Geology, University of Madras, Chennai.

Training and Industrial Visits

- Participated in the 21 days Interaction programme for Ph.D scholars and obtained Grade “B” conducted by University grants commission academic staff college University of Madras on February 2015, Chennai.
- Participated in training program on “Geoinformatics for coastal Disaster Management” held on April 2012, Conducted by Government of India Ministry of Earth Science (ICMAM) Project Directorate, Chennai.
- Participated in Inplant Training at Neyveli Lignite Corporation on June 2010.

Cruise Experience

- Participated in the ORV – Sagar Purvi (National Institute of Ocean Technology, Department of Ocean Development) scientific cruise during July 2013 for the collection of core and Grab samples of the coast off Cuddalore, Tamilnadu in Bay of Bengal.
- Participated in ORV- Sagar Kanya (National Centre for Antarctic and Ocean Research) 308th cruise during 30-Dec-2013 to 21-Jan-2014, from Chennai to Paradip on continental shelf and slope off Bay of Bengal in-between 28m to 2825m bathymetry ranges and collected several Multi cores, Gravity cores and Grab samples in collaboration with NIO-Goa.

References

- Dr. M. Sureshgandhi, Associate Professor, Department of Geology, University of Madras, Chennai-600025, Email: msureshgandhi@gmail.com, Mobile: +91-9443806534.
- Prof. Dr. Devesh K Sinha, Department of Geology, Center of Advanced Studies, University of Delhi, Delhi-110007, Email: deveshksinha@yahoo.com, dsinha@geology.du.ac.in Mobile: +91-9818546353.
- Dr. Rajeev Saraswat, Principal Scientist, Geological Oceanography Division, National Institute of Oceanography, Dona Paula, Goa- 403004, Email: rs.niog@gmail.com, rsaraswat@nio.org
- Prof. C. P. Rajendran, Geodynamic Unit, Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Jakkur, Bangalore- 560064 Email: cprajendran@gmail.com

Declaration

I hereby declare that the information furnished above is true to the best of my knowledge.

(M. RAJA)