

## Detailed CV



Name **Busnur Rachotappa Manjunatha**

Educational Qualification MSc, PhD, PDF at Canada and U.K.

Designation: Professor

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Research Areas

### **Main theme of the research:**

*Understanding the present and past natural processes, and anthropogenic impacts on earth-atmosphere-ocean system along south-western India.*

### **Areas of specialization**

- Atmospheric, riverine, estuarine, coastal and marine geochemistry,
- Applications of radionuclides in marine geology
- Big data analytics, climate change, environmental pollution and smart city planning,
- Biogeochemistry, Paleoclimate, paleoceanography and global change, aerosols and acid rainwater chemistry.

Professional Teaching Experience

### **TEACHING PROFILE**

**1991-1993 & 1994 – 2003: Lecturer/Senior Lecturer, 2003 – 2009: Associate Professor and 2009 till date Professor**

***Courses/subjects taught*** for M.Sc. and PhD students: Earth System Science, Meteorology and Climatology, Geochemistry, Chemical Oceanography, Biological Oceanography, Marine Geology, Stratigraphy, Mineralogy, Igneous and Metamorphic Petrology, Structural Geology, Earth Resources, Economic Geology, Hydrogeology, Geo-Instrumentation and Exploration Geology.

## Research Guidance (M.Phil. /Ph.D.):

### Completed students' list (with hyperlinks to their CV if available)

- Prashant Hegde (2002) The impact of anthropogenic activities on the quality of natural waters in the monsoon-dominated regions of the South Western India with special reference to Dakshina Kannada. Ph.D. thesis, Mangalore University, 109p. [https://www.researchgate.net/profile/P\\_Hegde](https://www.researchgate.net/profile/P_Hegde)
- K.N. Krishnakumar (2004) Geochemistry of Natural Waters from the South-West Coast of India, Ph.D. thesis, Mangalore University, 149p.
- Anil Kiran Pratihary (2007) Benthic Exchange of Biogenic Elements in the Estuarine and Nearshore Waters of Western India. Ph.D. thesis, Mangalore University, 178p. <https://www.researchgate.net/scientific-contributions/A-K-Pratihary-2143945285>
- Banavalikar Narayan Monappa (2007) Environmental Chemistry and Pollution Assessment of the Coastal Karnataka, South-Western India. Ph.D. thesis, Mangalore University, 171p.
- Sarkar, A. (2016) Reductive Nitrogen Transformations in the Seasonal Oxygen Deficient Zone along the Western Continental Shelf of India. Ph.D. thesis, Mangalore University, 181p, (co-guide [https://www.researchgate.net/profile/Amit\\_Sarkar5](https://www.researchgate.net/profile/Amit_Sarkar5))

### Ongoing Registered Students' list

- H.V. Manjunatha Atmospheric Environmental Monitoring of a Petroleum Refinery, Near Mangalore, South-West Coast of India. (working since 2009).
- Sivanandan C. Subin Geological and Geochemical Characteristics of Atmospheric Aerosols Depositing over the Middle East (working since 2009).
- Jithin Jose Assessment of atmospheric Pollution around Mangalore west coast of India (working since 2013).
- Rajesh R Impact of anthropogenic activities on the chemistry of atmospheric compartments along the south-west coast of India (working since 2013).
- Naveen Kumar Geochemical investigation on Atmospheric Particles Setting in the Indian Ocean: Their Sources and Sinks and Paleoclimatic Implications (working since 2013).
- Ahmed, A. Impact of Atmospheric Aerosols on the Climate of West coast of India (enrolled for PhD during 2016).
- Bhadra Kumary SR. Paleoceanography of the Northern Indian Ocean adjacent to the Indian Sub-continent for understanding the fluctuations of Monsoons during the late-Quaternary (working since 2017)
- Birhan Getachew Recent hydrological response of the lake Tana Basin to the changes in climate and land use and land cover, using remote sensing and GIS, Ethiopia (working since 2017).
- Gebremedhin, G. M. Geospatial technologies for Hydrogeological Investigation of the Geba River Basin, Tigray, Ethiopia: Implications of climate change (enrolled for PhD in 2019).

## Research Projects (List) (if applicable)

### Completed

*Assessing the Anthropogenic Impact on South-West Coast of India, Ministry of Earth Sciences, Government of India during 2012-2017.*

Atmospheric Input of Nutrients and Trace Elements to South-Western Continental Margin of India: Implications to Primary Productivity during 2012-2015.

An assessment on the impact of anthropogenic activities on coastal embayment along the south-western India, UGC, New Delhi (2009-2012).

Impact of Natural Processes and Anthropogenic Activities on Atmospheric Chemistry of Dakshina Kannada and on the Quality of Natural Waters (1999 to 2002).

## Ongoing

### Professional Collaboration (if applicable)

#### International

- Global marine and Atmospheric Chemistry, School of Environmental Sciences, East Anglia University, Norwich, U.K. on *Impact of Atmospheric Pollution on Northern Indian Ocean*
- Marine Chemistry Division, Bedford Institute of Oceanography, Canada on *Utility of rare earth elements for tracing hydrocarbon pollution in marine environments of Atlantic Coast, Canada and Southwest Coast of India.*

#### National

- Physical Research Laboratory, Ahmedabad on *Major ions in atmospheric and terrestrial components in the Western Ghats, and the adjoining coast of southwestern India.*
- National Institute of Oceanography, Goa on Benthic Fluxes of Nutrients from the Estuarine and Coastal region
- Indira Gandhi Centre for Atomic Research, Kalpakkam on *Trace and rare earth elements in earth, terrestrial and marine environments along the south western coast of India.*
- Cochin University of Science and Technology, Cochin and Centre for Earth Science Studies, Thiruvananthapuram on *Sediment and elemental accumulation rates in the land-sea interaction zones along the southern west coast of India.*
- National Centre for Antarctic and Ocean Research, Goa on *paleoclimate/paleoceanography*

### Research Journal Publications (list)

#### International

1. Getachew, B., Manjunatha, B.R. and Gangadhara Bhar, K. (2020) Spatio-temporal distribution of aerosol optical depth and cloud properties over Lake Tana Basin, Upper Blue Nile River Basin, Ethiopia. *Remote Sensing Applications: Society and Environment*, vo. 20 (in press).
2. Gad, Ibrahim, Doreswamy, A., Manjunatha, B. R. and Ghoneim, O. (2020). A Robust Deep Learning Model for Missing Values Imputation in Big NCDC Dataset. *Iranian J. Computer Sci.*, (in press).
3. Solomon, G., Manjunatha, B.R. and Gangadhara Bhat (2019) Monthly to Inter-Decadal Rainfall Variability of the Southern Regional State of Ethiopia, Links with El Niño-Southern Oscillation. *Global J. Sci. Frontire Res.*, 19, 13-31pp.
4. Solomon, G., Gangadhara Bhat and Manjunatha, B.R. (2019) Seasonal to long-term temperature variability in the southern regional state of Ethiopia. *International Journal of Advances in Science Engineering and Technology*, ISSN (p): 2321 –8991, ISSN (e): 2321 –9009 Vol-7, Iss-2, Spl. Issue-2 Jun.-2019, <http://iraj.in.>, pp. 28-37.
5. Doreswamy, Kunal, G.S., Manjunatha, B.R. (2018) Performance Evaluation of Various Clustering Techniques for Gathering Big Data in Distributed Wireless Sensor Network. 017 IEEE International Conference on Computational Intelligence and Computing Research, ICCIC 2017.
6. Doreswamy, Gad I., Manjunatha B.R. (2018) Multi-label Classification of Big NCDC Weather Data Using Deep Learning Model. In: Zelinka I., Senkerik R., Panda G., Lekshmi Kanthan P. (eds) *Soft Computing Systems. ICSCS 2018. Communications in Computer and Information Science*, vol 837. pp 232-241 | Springer, Singapore.
7. Muni Krishna K, Manjunatha B . Coastal Upwelling and Its Teleconnections with Large Scale Indices in a Changing Environment along the Southwest Coast of India. *Oceanogr Fish Open Access J.* 2018; 6(4): 555692. DOI: 10.19080/OFOAJ.2018.06.555692 006.
8. Doreswamy, Gad, I., Manjunatha, B. (2017) Performance evaluation of predictive models for missing data imputation in weather data. In: *International Conference on Advances in Computing, Communications and Informatics (ICACCI)*, pp. 1327–1334. IEEE, September 2017.

9. Gad, Ibrahim, BR Manjunatha et al. (2017), Hybrid data warehouse model for climate big data analysis, em 'Circuit, Power and Computing Technologies (ICCPCT), 2017 International Conference on', IEEE, pp. 1–9.
10. Ghoneim, O. A., Doreswamy, & Manjunatha, B. R. (2017). Forecasting of ozone concentration in smart city using deep learning. 2017 International Conference on Advances in Computing, Communications and Informatics (ICACCI). doi:10.1109/icacci.2017.8126024
11. Doreswamy, Ghoneim, O.A. and Manjaunatha, B.R. Scalable k-means algorithm using mapreduce technique for clustering big data (2016). International Journal of Latest Trends in Engineering and Technology Special Issue SACAIM 2016, pp. 408-414 e-ISSN: 2278-621X.
12. Gune M, Harshavardhana BG, Balakrishna K, Udayashankar HN, Shankar R, Manjunatha BR. (2016) Rock magnetic finger-printing of soil from a coal-fired thermal power plant. Environmental Monitoring and Assessment 188, pp. 1-13 (**IF 1.633**).
13. Gune M, Balakrishna K, Udayashankar HN, and Manjunatha BR. (2016) Distribution of major ions in ground water, river water and estimation of ground water recharge in Mulki 0.River basin, South- west coast of India. International Journal of Earth Sciences and Engineering October 2016 (**IF 0.54**).
14. Manjunatha, B.R., K. Muni Krishna and A. Aswini (2015). Anomalies of the sea surface temperature in the Indonesian Throughflow regions: A need for further investigation. The Open Oceanography Journal, Vol. 8, pp. 2-8 (**IF 0.54**).
15. Kumar, A., Manjunatha, B.R. and Kurian, J. (2015) Glacial-interglacial productivity contrasts along the eastern Arabian Sea: Dominance of convective mixing over upwelling. Geoscience Frontiers, Vo. 6, pp 1-13 (**IF 1.345**).
16. Manjunatha, B.R., K. Muni Krishna and Y. N. Raju (2015). Relationship Among Sea Surface Temperature, ENSO and Indian Ocean Dipole in the Indian Ocean: A clue to recognizing convective systems. The Open Oceanography Journal, Vol. 8, pp. 20-27 (**IF 0.54**).
17. Manjunatha, B.R., K. Balakrishna, K.N. Krishnakumar, H.V.Manjunatha, K. Avinash, A.C. Mulemane and K Muni Krishna (2015). Increasing Trend of Rainfall Over Agumbe, Western Ghats, India in the Scenario of Global Warming. The Open Oceanography Journal, Vol. 8, pp. 39-44 (**IF 0.54**).
18. Manjunatha, B.R., D.VENKAT REDDY, K.N. KRISHNAKUMAR, K. BALAKRISHNA and G.P.GURUMURTHY (2014) Selection Criteria for Decorative Dimension Stones. International Journal of Earth Sciences and Engineering Vol. 7, pp. 408-414 (**IF 0.14**).
19. Balakrishna, K., G P Gurumurthy, A M Shiller, G Mugeraya, B R Manjunatha and B S Srinivasa Prabhu (2014) Impact of Paper Mill Effluents on the Chemistry of a Large Tropical River, India International Journal of Earth Sciences and Engineering Vol. 7, pp. 651-657 (**IF 0.14**).
20. Pratihary, A.K.; Naqvi, S.W.A.; Narvenkar, G.; Kurian, S.; Naik, H.; Naik, R.; Manjunatha, B.R. (2014) Benthic mineralization and nutrient exchange over the inner continental shelf of western India *Biogeosciences*, vol.11; 2014; 2771-2791 . (5-yr av. **IF - 4.477**).
21. Muni Krishna, K. Guiting Song, Dennis Jack and B.R. Manjunatha. (2014). Tropical Indian Ocean Surface and Subsurface Temperature Fluctuations in a Climate Change Scenario. J. Geology and Geosciences, 3(3), 1-17. (doi:10.4172/2329-6755.1000152), ISSN: 2329-6755 (**IF 1.24**).
22. Warriar, A.K., R. Shankar, B.R. Manjunatha and B.G. Harshavardhana Mineral Magnetism of Atmospheric Dust over Southwest Coast of India: Impact of Anthropogenic Activities and Implications to Public Health J. Appl. Geophysics 102: 1-9 (**5 yr av. IF 1.58**).
23. Manjunatha, B.R. (2012) Resolving archaeological controversy regarding ages of human skulls of Annigeri, Dharwar, Karnataka, India through Radioisotope Dating (editorial). *International Journal of Earth Sciences and Engineering*, vol. 04 (2012), pp. 1&2 (**IF 0.14**).
24. Manjunatha, B.R. and D. Venkat Reddy, 2012. Is the prediction of human generation end by the year 2012? A geologic perspective on mass extension. International Journal of Earth Sciences and Engineering, 05, pp 1-2 (**IF 0.14**).
25. Gurumurthy, G.P., K. Balakrishna, J. Riotte, J-J. Braun, S. Audry, H.N. Udaya Shankar and B.R. Manjunatha (2012) Controls on intense silicate weathering in a tropical river, southwestern India. *Chemical Geology* vol. 300–301, pp. 61–69 (**5-yr av. IF - 4.111**).
26. Manjunatha, B.R. (2010) Importance of bioinorganic chemistry for monitoring and mitigating environmental degradation. International Journal of Earth Sciences and Engineering, 03, (2010) 143-154 (**IF 0.14**).
27. Manjunatha, B.R. (2010) National Seminar report on Water Harvesting in the Coastal Areas of India, Geoinformatics, Department of Marine Geology, Mangalore University and Central Groundwater Board, India, 21, January 2010 International Journal of Earth Sciences and Engineering, 02 (2010), i-ii (**IF 0.14**).
28. Pratihary, A.K., S.W.A. Naqvi, H. Naik , B.R. Thorat, G. Narvenkar, B.R. Manjunatha, and V.P.C. Rao. (2009) Measurement of seasonal variability of benthic nutrient fluxes in the Mondovi estuary, central west

- coast of India and Implications for the Primary Productivity. *Estuarine Coastal Shelf Science*. 85, 387–398 (**5-yr av. IF - 2.762**).
29. Hegde, P., Sudheer, A.K., Sarin, M.M., and Manjunatha, B.R., 2007. Chemical characteristics of atmospheric aerosols over southwest coast of India. *Atmospheric Environment* 41: 7751-7766 (**5-yr av. IF - 3.841**).
  30. Prashanth Hegde and Manjunatha, B.R. (2003) Atmospheric deposition of H<sup>+</sup> and major ions around Mangalore, southwest coast of India. *Journal of Applied Geochemistry* 5, 89-93.
  31. Sreekumar, N.V., Narayana, B., Prashanth Hegde, Manjunatha, B.R. and Sarojini, B.K. (2003) Determination of nitrate by simple diazotization method. *Mikrochemical Journal* (American Microchemical Society). *Microchemical Journal* 74: 27–32 (**5-yr av. IF - 3.164**).
  32. Sreekumar, N.V., Nazareth, R., Narayana, B., Prashanth Hegde and Manjunatha, B.R., 2002. Indirect complexometric determination of mercury (II) using potassium bromide as a selective masking agent. *Mikrochemica Acta* (Springer-Verlag) 140: 63-67 (**5-yr av. IF - 3.164**).
  33. Sreekumar, N.V., Nazareth, R., Narayana, B., Prashanth Hegde and Manjunatha, B.R., , 2002. Indirect complexometric determination of thorium (IV) using sodium as a selective masking agent. *Mikrochemica Acta* (Springer-Verlag) 140: 77-79 (**5-yr av. IF - 3.164**).
  34. Sreekumar, N.V., Bhat, N.G., Narayana, B., Nazareth, R., Prashanth Hegde and Manjunatha, B.R. (2003) Selective complexometric determination of titanium(IV) using sodium potassium tartrate or ascorbic acid as masking agent. *Microchimica Acta*, 141: 29-33. Springer-Verlag, Macta-0/922 (**5-yr av. IF - 3.164**).
  35. Sreekumar, N.V., Narayana, B., Bhat, N.G., Nazareth, R., Prashanth Hegde and Manjunatha, B.R. Indirect complexometric determination of cadmium(II) using sodium thiosulfate as a masking agent', *Chemica Analytica* 47: 765-768. (**IF~0.43**)
  36. Sreekumar, N.V., Narayana, B., Nazareth, R., Bhat, N.G., Prashanth Hegde and Manjunatha, B.R. (2009) Indirect complexometric determination of thorium(IV) using 5-sulfosalicylic acid as a masking agent', *Chemical Analysis- Warsaw, Poland, Ref. Vol. No. 47, p. 759-764*.
  37. Balakrishna, K., Shankar, R., Sarin, M. M. and Manjunatha, B. R. 2001. Distribution of U-Th nuclides in the riverine and coastal environments of the tropical southwest coast of India. *Journal of Environmental Radioactivity* (Elsevier) 57: 21-33 (**5-yr av. IF - 2.35**).
  38. Manjunatha, B. R., Balakrishna, K. and Shanakar, R. 2001. Geochemistry and assessment of metal pollution in soils and river components of a monsoon-dominated environment near Karwar, southwest coast of India. *Environ. Geol.* (Springer-Verlag) 40: 1462-1470 (**5-yr av. IF - 2.699**).
  39. Manjunatha, B.R. and Shankar, R., 1997. The influence of rivers on the geochemistry of shelf sediments, southwestern coast of India. *Environ. Geol.* (Springer-Verlag) 31: 107-116 (**5-yr av. IF - 2.699**).
  40. Shankar, R. and Manjunatha, B.R., 1997. Onshore transport of shelf sediments into the Netravati-Gurpur estuary, west coast of India: Geochemical evidence and implications. *J. Coast. Res.* (Fortlauderdale, Florida) 13: 331-340 (**Five-year IF - 0.794**).
  41. Manjunatha, B.R., Balakrishna, K., Shankar, R., Thiruvengadasami, A., Prabhu, R.K., Mahalingam, T.R. and Iyengar, M.A.R., 1996. The transport of elements from soils around Kaiga to the Kali river, southwestern coast of India. *Science of the Total Environment* (Elsevier) 191: 109-118 (**5-yr av. IF - 4.317**).
  42. Manjunatha, B.R. and Shankar, R., 1996. Signature of Non-steady-state diagenesis in continental shelf sediments. *Estuar. Coast. Shelf Sci.* (Academic Press) 42: 361-369 (**5-yr av. IF - 2.762**).
  43. Manjunatha, B.R. and Shankar, R., 1992. A note on the factors controlling the rate of sedimentation along western continental shelf of India. *Marine Geology* (Elsevier) 104: 219-224 (**Five-year IF - 2.89**).

## National

44. Manjunatha, B.R. and C. Krishnaiah (2013) Why didn't the human race end by year 2012? *Geography and You*. Vol 13, 16-20 (**popular magazine**).
45. Krishnakumar, K.N. and B.R. Manjunatha. 2012. Geochemistry of rainwater in and around Kochi (Cochin): An industrial belt of Kerala, India. *Journal of Applied Geochemistry*. Vol. 14, No. 4 (2012). pp 482 – 495, ISSN: 0972-1967.
46. Manjunatha, B.R. (2010) Frontiers in atmospheric sciences. *Current Science* 99, (2010) pp. 1313-1314 (**IF 0.926**).
47. Manjunatha, B.R. 2009. Influence of sub-orbital-scales climatic variability on monsoons. *Current Science* 96, 1433-1434 (**IF 0.926**).

48. Manjunatha, B.R. and Balakrishna, K., 1999. An insight into the depositional history of Late Quaternary sediments around Mangalore, west coast of India. *Indian J. Mar. Sci.* 28: 449-454 (**IF - 0.316**).
49. Karbassi, A. R., Shankar, R. and Manjunatha, B.R. (2001) Geochemistry of shelf sediments off Mulki, Southwest coast of India and its paleoenvironmental significance. *J. Geol. Soc. India* 58: 37-44 (**IF - 0.596**).
50. Manjunatha B.R. and Shankar, R. (2000). Behaviour and distribution patterns of particulate metals in estuarine and coastal surface waters near Mangalore, southwest coast of India. *J. Geol. Soc. India* 55:157-166 (**IF - 0.596**).
51. Balakrishna, K., Manjunatha, B.R. and Shankar, R., 1997. A laboratory study of flocculation of heavy metals in Kali river during estuarine mixing, west coast of India. *J. Geol. Soc. India* 50: 753-758 (**IF - 0.596**).
52. Shankar, R. and Manjunatha, B. R., 1995. Late Quaternary sedimentation history in the Laccadive Trough, southeastern Arabian Sea. *J. Geol. Soc. India* 45: 689-694 (**IF - 0.596**).
53. Manjunatha, B.R. and Shankar, R., 1994. Magnetic and sedimentological studies of Netravati and Gurpur river- bed sediments, west coast of India. *J. Geol. Soc. India* 44: 413-426 (**IF - 0.596**).
54. Shankar, R. and Manjunatha, B.R., 1994. Elemental composition and particulate metal fluxes from Netravati and Gurpur rivers to the coastal Arabian Sea. *J. Geol. Soc. India* 43: 255-265 (**IF - 0.596**).

### Books / Book chapters / Translations published

1. B. R. Manjunatha, K. Balakrishna, Jithin Jose and Naveen Kumar, A. (2020) Importance of the Geochemistry of Northern Indian Ocean Sediments for Assessing the Quaternary Climate Change and Future Directions. In *Quaternary Climate Change over Indian Subcontinent*, ed. N. Khare, Taylor and Francis (in press).
2. *Manjunatha, B.R., 2007. Thermal springs: sites for recreation and ecotourism development in India. In: B.B. Hosetty (ed.), Ecotourism Development and Management. Pointer Publishers Jaipur, India, pp. 304-311.*
3. *Manjunatha, B.R. and Reddy, D.V., 1998. Application of remote sensing techniques for EIA. In: B.B. Hosetty and A. Kumar (eds.), Environmental Impact Assessment and Management. Daya Publishing House, Delhi, pp. 316-324.*
4. Ravindra, B.M., Manjunatha, B.R. and Harry, N.A., 1998. Surface and ground water budgets for Dakshina Kannada. In: B.B. Hosetty and A. Kumar (eds.), *Environmental Impact Assessment and Management*. Daya Publishing House, Delhi, pp. 306-315.
5. Reddy, D.V., Shivakumar, A.P. and Manjunatha, B.R., 1998. Deforestation - A critical issue. In: B.B. Hosetty and A. Kumar (eds.), *Environmental Impact Assessment and Management*. Daya Publishing House, Delhi, pp. 212-219.
6. Manjunatha, B.R., 1994. Coastal geomorphology and late Quaternary sea-level changes in Karnataka. In: B.M. Ravindra and N. Ranganathan (eds.), *Geo-Karnataka: Mysore Geological Department Centenary Volume*. Karnataka Assistant Geologists Association, Department of Mines and Geology, Bangalore, pp. 327-336.
7. Manjunatha, B.R. and Harry, N.A., 1994. Geology of Western Karnataka. In: B.M. Ravindra and N. Ranganathan (eds.), *Geo-Karnataka: Mysore Geological Department Centenary Volume*. Karnataka Assistant Geologists Association, Department of Mines and Geology, Bangalore, pp.109-116.

#### Lecture Notes

1. Manjunatha, B. R. Rain-bearing winds of India. (in Kannada) In: Environment Series Lectures, Prasaraanga, Mangalore University.
2. Manjunatha, B.R., 1994. *Internal Structure and Composition of the Earth*. Orientation Course in Geology for High School Teachers, organised by the Lions Club, Mangalore, 4p.
3. Shankar, R. and Manjunatha, B.R., 1992. Application of Isotopes in Marine Geology. Lecture notes for a Three-week National Workshop on Radiochemistry and Application of Radioisotopes in Allied Topics (October 29 - November 18, 1992), Mangalore University, Mangalagangothri, 15p.

#### Technical Reports

1. Manjunatha, B.R. (2007) Continuing Climate Curse on Africa Needs Greater Humanitarian Assistance. ProQuest Cambridge Scientific Abstracts (CAS), Western Regional Office, San Diego, California, U.S.A., 13p.

2. Manjunatha, B.R. (2006) Impact of the Regional Atmospheric Pollution on the Biogeochemistry of the Northern Indian Ocean: A Contribution to the SOLAS project. Association of Commonwealth Universities, London, 2p.
3. Manjunatha, B.R. and B. Narayana (2003) The Impact of Natural Processes and Anthropogenic Activities on the Atmospheric Chemistry of Dakshina Kannada and on the Quality of Natural Waters. Department of Science and Technology, Government of India, 80p.
4. Manjunatha, B.R., 1998. Geochemical and Isotopic Tracers for Understanding Natural Processes and Anthropogenic Activities on Nearshore Oceanography of the Southwestern India, Department of Science and Technology, Government of India, 79p.
5. Shankar, R., Siddappa, K.S., Manjunatha, B.R. and Balakrishna, K., 1998. Heavy Metals and U-Th nuclides around Kaiga and the adjacent segment of the Arabian Sea, Department of Atomic Energy, Government of India 194p.
6. Shankar, R. and Manjunatha, B.R., 1992. Geochemical, Magnetic and Mineralogical studies of sediments around Mangalore, Department of Ocean Development, Government of India, 97p.

## Papers / poster presentations in Conferences / Seminars / Symposia (list)

### International

1. Manjunatha, B.R. and H.V. Manjunatha (2019) Aggravation of summer monsoon rainfall over south-western India by the dust entrainment in Middle East. International Union for Quaternary Research Congress, Dublin, Ireland.
2. Manjunatha, B.R. Naveen Kumar, Jithin Jose, Karunakara, N., Rahaman, W. and Mohd Tarique (2019) Enrichment of hazardous trace elements in Kochi Backwaters sediments, India. International Union for Quaternary Research Congress, Dublin, Ireland.
3. Manjunatha, B.R., Balakrishna, K., and Prakash Narasimha, K.N. (2013). Do instrumental data co-vary with the paleoclimate proxy records of Southern India?. In: Fourth International Open Science Meeting, Past Global Changes, at Cidade De Goa, India, p. 40.
4. Manjunatha, B.R. 2010. Geoarchaeology of central west coast of India. In: Space, Time, Place. Proc. Third International Conference on Remote Sensing in Archaeology (eds. M. Forte, S. Campana and C. Liuzza), British Archaeological Reports (International Series 2118), Archaeopress Ltd., Oxford, England, pp. 301-304.
5. Manjunatha, B.R., 2009. Relationship between fluctuations in climate during the late-quaternary and human settlement along the west coast of India, International conference on the Holocene Climatic Changes to be held from 5<sup>th</sup> to 8<sup>th</sup> March at Panjab University, Chandigarh. Edited by B.S. Kotlia, N. Kishore, L.M. Joshi, G.C. Kothyari, A. Bohra and N. Arya, pp. 83-86.
6. Manjunatha, B.R., Shankar, R., Narayana, A.C. and Prakash, T.N., 2008. Sediment Accumulation Rates in the Monsoon-Dominated Southwestern Coast and inner continental shelf of India. In: N-E Abriak, D. Damidot and R. Zentar (eds.), Proc. International Symposium on Sediment Management, Lille, France, pp. 481-487.
7. Singh, S.K. et. al. (2007) Report of the Arabian Sea and Western Indian Ocean Working Group, International GEOTRACES Indian Ocean Workshop Report pp. 6-10 ([http://www.ldeo.columbia.edu/res/pi/geotraces/documents/historyDOC/GEOTRACES\\_Indian\\_Report\\_000-4.pdf](http://www.ldeo.columbia.edu/res/pi/geotraces/documents/historyDOC/GEOTRACES_Indian_Report_000-4.pdf)).
8. Manjunatha, B.R. and R. Shankar (2009) Late Holocene increase of precipitation over SW India, inferred from the geochemistry of continental margin sediments. In: Third International Open Science Meeting, Past Global Changes, Corvallis, USA, p67.
9. Manjunatha, B. R., 2008. Paleochannel sediments of west coast of India and Implications for Neotectonic Activity. In the International Conference on Terrestrial Planets: Evolution through time, held at Ahmedabad, India.
10. Manjunatha, B. R., 2007. Sediment inputs to the western continental margin of India. In International Seminar on Crustal Evolution, Sedimentary Processes and Metallogeny. SDM College, Dharwad, India, p.87.
11. Manjunatha, B. R., 2006. Understanding secrets of high primary productivity in the north-western Indian Ocean. In: International Workshop on Sustained Indian Ocean Biogeochemical and Ecological Research (SIBER), National Institute of Oceanography, Goa.
12. Manjunatha, B. R., Jickells, T., Baker, A. 2006. Atmospheric input of nutrients to the south-eastern Arabian Sea. In: 9<sup>th</sup> International Conference on Atmospheric Chemistry at the Interfaces, Cape Town, South Africa.

13. Manjunatha, B.R., 2005. Application of water balance model for water resource assessment and management for the western India. In: International Conference on Integrated Assessment of Water Resources and Global Change: A North-South Analysis held at Bonn, Germany.
14. Manjunatha, B.R., 2005. The modern concept of coastal groundwater chemistry and Indian scenario. In: International Conference on Coastal Hazards, organised by the Indian Geological Congress, held at Thanjavur, India.
15. Manjunatha, B.R., P. Hegde, N.V. Sreekumar, B. Narayana, Krishnakumar, K.N., Banavalikar, N.M., 2005. Groundwater Chemistry of the Southern West Coast of India. International Conference on Hydrological Perspectives for Sustainable Development, (HYPESD-2005) Indian Institute of Technology, Roorkee, India.
16. Manjunatha, B. R., Prashant Hegde, Sreekumar, N. V., Narayana, B., 2005. Trace Metal Characterisation of the Atmospheric Particles Transported to the South-Eastern Arabian Sea, 3<sup>rd</sup> Annual Meeting of the Geological Society of Asia Oceania, Singapore.
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18. Manjunatha, B. R., Prashant Hegde, Sreekumar, N. V., Narayana, B., K. N. Krishnakumar, Banavalikar, N.M., 2004. Groundwater Chemistry of the Southern West Coast of India. In: International Symposium on Hydrology, Bonn, Germany.
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20. Manjunatha, B.R., Shankar, R. 2002. Estuarine Sedimentation along the West Coast of India. Int. Sem. Sedimentation and Tectonics in Space and Time held at Karnatak University, Dharwad, April 2002, p. 56-57.
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22. Manjunatha, B.R., Shankar, R., Balakrishna, K., 2002. Lead-210 distribution in land-ocean interaction zones along the southwest coast of India. In: International Conference on Eco-Toxicology and Radio-Ecology, France.
23. Manjunatha, B.R., 2000. Anthropogenic forces on distribution of heavy metals in the Monsoon-dominated western continental shelf of India. In: Sixth SPERA (South Pacific Environmental radioactivity Conference), 19<sup>th</sup> – 23<sup>rd</sup> June 2000, at Noumea, New Caledonia.
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27. Manjunatha, B.R. and Shankar, R., 1996. Geochemical investigations of riverine, estuarine and marine environments of a tropical region, SW India. In: 30th International Geological Congress, IGC, Beijing, China, vol.2, p. 242.
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31. Shankar, R., Manjunatha, B.R., Balakrishna, K.M. and Siddappa, K., 1995. Microtron for Marine and estuarine Geochemical research. Intl. Conf. Research and Development using Electron Accelerators, Mangalore University.



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## National

1. Manjunatha, B.R. (2015) Recent Advancements in Earth, Atmosphere, Ocean Sciences for Societal Benefits. In Earth Science, Planetary Science, and Geography under; 39th Indian Social Science Congress, held at Department of Marine Geology, Mangalore University from December 1 to 5, 2015.
2. Manjunatha, B.R., K. Balakrishna, K.N. Krishnakumar and H.V. Manjunatha (2015). "Trend analysis of rainfall over the high rainfall region of the Western Ghats' of the Karnataka State, Monsoon Workshop, Pune, 2-3 March.
3. Manjunatha, B.R. 2012 Marine Bio-inorganic Chemistry and its Applications for Understanding the Reduction in the Biodiversity. In: National Seminar on "Emerging Trends in Aquaculture: Challenges and Opportunities-2012" during 30-31 August, 2012, Sri Venkateswara University, Tirupati.
4. Manjunatha, B.R. 2011. Geochemical investigation of a coastal aquifer around mangalore, south-west coast of India. In national conference on Geology, Mineral and Groundwater Resources of India, organized jointly by the Post Graduate Department of Geology, Institute of Science, Aurangabad, and Gondwana Geological Society, Nagpur, India, p. 71.
5. Manjunatha, B.R. 2011. Geological perspectives of global climate change. National Conference on Global Climate Change: Perspectives. Organized by the Kuvempu University, Shimoga, Karnataka, India, p. 87.
6. Manjunatha, B.R. 2011. Why Pollution is Ubiquitous in the Coastal Region? In: National Seminar on Coastal Hazards, Resources and Management'. Organized by the Department of Marine Geology, Mangalore University, P. 30.
7. Manjunatha, B.R. (2010). Coastal groundwater and its biogeochemical implications. In: National Seminar on Rainwater Harvesting and Artificial Recharge to Groundwater with Special Reference to Coastal Areas was organized by the Mangalore University by Geoinformatics of the Department of Marine Geology, Mangalore University Mangalagangothri, Karnataka, India and the Central Groundwater Board (CGWB) Bengaluru on 21st January 2010.
8. Manjunatha, B. R., 2007. Water quality and management problems of the southern-west coast of India. In: Coastal Zone Environment and Sustainable Development Vulnerability, Adaptation and Beyond. Jawaharlal Nehru University, New Delhi February 12-14, 2007.
9. Manjunatha, B.R., 2005. The modern concept of coastal groundwater chemistry and Indian scenario. In: International Conference on Coastal Hazards, organised by the Indian Geological Congress, held at Thanjavur, India.
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12. Prashant Hegde, B. R. Manjunatha, 2001. Atmospheric Deposition of H<sup>+</sup> and major ions in and around Mangalorere, southwest coast of India. *Int. Symp. Appl. Geochim., Osmania University, Hyderabad, India*.

13. Manjunatha, B.R., Shankar, R., 2001. Geochemical environments of sediment deposition in the continental shelf off Mangalore, West coast of India. In: National Seminar on Four Decades of Marine Geosciences in India: A Retrospective. Geol. Surv. India, Mangalore, p. 101.
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19. Manjunatha, B.R., Smith, J.N., Yeats, P.A., Shankar, R., Narayana, A.C. and Prakash, T.N., 1998. Sediment accumulation rates in the Land-Ocean Interaction Zone of Karnataka. In: National Seminar on Coastal Zone Management, Karnatak University, India.
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22. Manjunatha, B.R. and Shankar, R., 1998. Pneumatophores in mangrove sediments: Indicators of sea level rise? In: Natl. Symp. Late Quaternary Geology and Sea Level Changes, and Annual Convention of Geol. Soc. India, Cochin University of Science and Technology, p. 43.
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28. Shankar, R. and Manjunatha, B. R., 1994. A preliminary study on flocculation of dissolved metals during estuarine mixing. In: N.B. Nair, C.D. Eapen, V.N. Bapat, S. Sadasivan and P. Gangadharan (eds.), Proc. Third Natl. Symp. on Environ., Thiruvananthapuram, India, pp.219-223.
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31. Balakrishna, K., Manjunatha, B.R., Shankar, R. and Siddappa, K., 1994. Heavy metals and U-Th nuclides around Kaiga, in Kali river and the adjacent segment of the Arabian Sea. In: N.B. Nair, C.D. Eapen, V.N.

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  34. Shankar, R. and Manjunatha, B. R., 1987. Investigation on brown frothy material from the Netravati estuary, near Mangalore, Natl. Sem. Estuarine Management, Trivandrum, p. EC.05.

## Seminars, workshops, courses attended

1. National Seminar and Workshop on Functional Nanomaterials for Energy, Environment and Health, organized by the Industrial Chemistry Department Mangalore University under DST-PURSE scheme, March 21-22, 2016.
2. Attended 39<sup>th</sup> Indian Social Science Congress, Mangalore University, Mangalagangothri, from December 1 to 5, 2015.
3. Radiation - Its Applications in Physical, Chemical and Life Sciences, *UGC-DAE Consortium for Scientific Research Kolkata Centre, organized by the Department of Physics Mangalore University, Mangalagangothri, from June 24-25, 2015.*
4. Consultation process on State Action on Climate Change at Mangaluru at DC Office, Mangaluru on 6<sup>th</sup> February 2015.
5. Monsoon Workshop at Indian Institute of Tropical Meteorology, Pune, March 2-3, 2015.
6. Recent Advancement in atmospheric research. National Institute of Technology, Suratkal December 2014.
7. STTP programme on Latest Developments in Mining Geology, NITK Suratkal April 2, 2014.
8. Workshop on Soubhagya Sanjeevini interlinking of coastal rivers of undivided Dakshina Kannada, Organized by the Coastal Development Authority, Mangalore on March 26, 2012.
9. Fourth Conference of Karnataka State Science and Technology Academy at Mangalore University, Karnataka Science held at Mangalore University between 28<sup>th</sup> and 29<sup>th</sup> February, 2012.
10. National Seminar on "Emerging Trends in Aquaculture: Challenges and Opportunities-2012" during 30-31 August, 2012, in the Department of Fishery Science and Aquaculture, Sri Venkateswara University, Tirupati.
11. National Workshop on Conservation of Water Resources of West Flowing Rivers in Coastal Karnataka, National Institute of Technology, Suratkal from 14<sup>th</sup> and 15<sup>th</sup> December 2012.
12. Workshop on Community Participation in Biodiversity Conservation on 12<sup>th</sup> April 2011, organized by the Department of Biosciences in association with Karnataka Rajya Vijnana Parishat under the auspices of Ministry of Environment and Forest, Government of India.
13. National conference on *Global Climate Change: Perspectives*, held between March 23 and 24, 2011 at Kuvempu University, Shimoga.
14. *National Seminar on Coastal Hazards, Resources and Management'*, held between 24 and 25, March 2011, organized by the Department of Marine Geology, Mangalore University.
15. *National conference on Geology, Mineral and Groundwater Resources of India, held between February 11 and 12, 2011, organized jointly by the Post Graduate Department of Geology, Institute of Science, Aurangabad, and Gondwana Geological Society, Nagpur, India.*
16. National conference on *Global Climate Change: Perspectives*, held between March 23 and 24, 2011 at Kuvempu University, Shimoga
17. Green Earth celebration at Mangalore University during May 26, 2011.
18. Vision Group on Science and Technology (VGST), Inter-University subject-based conference (2010-11, organized by the Mangalore University during May 27 - 28, 2011.
19. Refresher course on 'Frontiers in *Atmospheric Sciences* conducted by Indian Institute of Tropical Meteorology, Pune from 14 to 25 June 2010.
20. National Seminar on Rainwater Harvesting and Artificial Recharge to Groundwater with Special Reference to Coastal Areas was organized by the Mangalore University by Geoinformatics of the Department of Marine Geology, Mangalore University Mangalagangothri, Karnataka, India and the Central Groundwater Board (CGWB) Bengaluru on 21<sup>st</sup> January 2010.
21. Earth Day celebration organized by the Ocean & Atmospheric Science and Technology Cell, Mangalore University, and Karnataka State Pollution Control Board, Dakshina Kannada district on 22<sup>nd</sup> April 2010.
22. National workshop on Present and Future Trends in Marine Geology and Geophysics held from April 21 to 22, 2009, organised by the Ocean and Atmospheric Technology Cell, Mangalore University.
23. Green Management – Vision 2020. Organized by the Bapuji Academy of Management and Research at Davanagere between 14<sup>th</sup> and 15<sup>th</sup> November 2008 .

24. Refreshers Course on *Geoinformation Science* at Kuvempu University (21<sup>st</sup> November to 11<sup>th</sup> December 2001) from 21<sup>st</sup> November to 11<sup>th</sup> December 2001 at Shankaraghatta, Shimoga.
25. National Seminar on Four Decades of Marine Geosciences in India: A Retrospective. Geol. Surv. India, Mangalore from 14-16, March 2001.
26. National workshop on *Teacher Education in Environmental Sciences; Environmental Magnetism*, organised by the Ocean Science and Technology Cell, Mangalore University and Association of British Scholars, Mangalore Center, at Mangalore University (February 9-18, 2001). Prof. Frank Oldfield, Former Executive Director of the Past Global Changes Programme, Bern, Switzerland, conducted this course.
27. National Symposium on Problems and Prospects of Environment in the New Millennium Mangalore University, December 2000.
28. Rapporteur for the Technical Session on Atomic and Strategic Minerals during the Second Convention of Mineralogical Society of India and a National Seminar on Earth Resources, Mangalore University (January 10-11, 2000).
29. *Isotope Geochemistry and Radiochemistry in the Marine Environment*, organised by the Ocean Science and Technology Cell, Mangalore University (May 22 – 30, 2000). Prof. B.L.K. Somayajulu and Dr. R. Ramesh, Physical Research Laboratory, Ahmedabad conducted this course.
30. Special Session for Young Scientists on focal theme: Opportunities and Challenges in Science on the Threshold of Next Millennium, during the 86th Indian Science Congress, Anna University, Chennai, January 3, 1999.
31. *University Grants Commission's (U.G.C.) Refresher Course in Geology for College and University Teachers*, conducted by Mangalore University (December 28, 1998 - January 20, 1999).
32. National Seminar on Coastal Zone Management, Karnatak University, India. 1998.
33. *U.G.C. Refresher Course in Marine Geology (Emphasis on Remote Sensing)* conducted by Mangalore University (Feb. 28 - March 22, 1997).
34. National Symposium on Paleooceanography/ Palaeoclimatology of the Arabian Sea and Annual Convention of the Geological Society of India. Mangalore University, October 1996.
35. National Workshop on Environmental Management of Industrial Operations in Core Sectors, KREC, Suratkal, India, 1996.
36. International Symposium on Geology and Geophysics of the Indian Ocean (GIO-96), National Institute of Oceanography (NIO), Goa, 21-25 October 1996.
37. National Conference on Granite Mining, Karnataka Regional Engineering College (KREC), Suratkal 1996.
38. International conference of the Discovery of X-rays and Radioactivity, BARC, Mumbai.
39. International Conference on Research and Development Using Electron Accelerators, Mangalore University, 1995.

## Regional

### Invited / plenary talks delivered (list) (if applicable)

1. Relevance of the High-Resolution Reconstruction of Paleomonsoon for Futuristic Climatic Models during an International Conference Paleoclimate Changes (ICPC-2020), on virtual platform organized by the School of Civil Engineering Vellore Institute of Technology, Chennai in Association with M/s Sense Image Technologies, Chennai during July 9-10, 2020.
2. Advantages and Hazards of the Ozone during the World Ozone Day 2020 on National Webinar organized by the RLS Institute, Belgavi on 16<sup>th</sup> September 2020.
3. Atmospheric Input of Nutrients to the South-Western Continental Margin of India during the online meeting on Surface Ocean - Lower Atmosphere Study (SOLAS) Indian Ocean Meeting, organized by Indian Institute of Meteorology, Pune on 30 September 2020.
4. World Water Day 2019, leaving no one behind at Vivekananda College Puttur, on 22<sup>nd</sup> March 2019.
5. Connecting people to nature – in the city and on the land, from the poles to the equator during the World Environmental Day 2017 at Mangalore Refinery and Petrochemicals Limited, Mangalore on 5<sup>th</sup> June 2017.
6. What should be the roles of Engineers? During the World Environmental Day 2017 talk organized by the Institution of Engineers (I), Mangaluru Local Centre at Woodlands Hotel, Mangalore on 5<sup>th</sup> June 2017.

7. Engineers India at Mangalore Refinery and Petrochemicals Limited, Mangalore on 5<sup>th</sup> June 2017.
8. Delivered an invited talk on Fate and Effects of Pollutants on Marine Environment at College of Fisheries, Mangalore during an ICAR Sponsored workshop on Aquatic Pollution and Abatement, 6th to 15th November 2017.
9. Delivered two invited talks - *Soil & Mineral Resources, and Atmosphere and Climate* during the two-day workshop on Earth sciences for High School Teachers at Pilikula Regional Science Centre, Pilikula, Mangalore on 8th & 9th December 2016. This program was funded by the Ministry of Earth Sciences, Government of India, New Delhi.
10. Delivered a talk on *Radionuclides in the Marine Environment* during the Marine Biogeochemistry: Insights, during the course of Global Initiative of Academic Networks (GIAN), Ministry of Human Resource Development, Government of India organized by the Department of Marine Geology, Mangalore University from Nov. 21 to Dec. 6, 2016.
11. *Research tips to a fresh Research Fellows* during a National Seminar on 'Interdisciplinary Research: Challenges and Opportunities' organized by the Association of British Scholars, Mangalore Chapter at Mangalore University on 18th Oct. 2016.
12. World Environment Day 2014 invited lecture *Raise Your Voice Not The Sea Level: What Should be the Role of General Public?* to Officers of the Karnataka Pollution Control Board, Mangalore and general public.
13. Talk on *Distribution of Elements in Different Rocks and Geochemical Criteria for Mineral Deposits* for the participants of STTP programme on Latest Developments in Mining Geology, NITK Surathkal on 2<sup>nd</sup> April 2014
14. Invited talk on *Weather & Climate, and Climate Cycles* during the National Seminar on Climate Change: the Past and the Present organized by the Government College Kasargod from February 27-28, 2013
15. Delivered invited talk *Greenhouse effect and Global warming, and Geohazards* delivered to graduate students of the college of Fisheries, Mangalore on 4<sup>th</sup> February 2013.
16. *Global Climate Change: Perspectives*, held between March 23 and 24, 2011 at Kuvempu University, Shimoga, Karnataka, India.
17. Advocacy talk delivered during *Atmospheric Input of Nutrients to the Northern Indian Ocean*. the GEOTRACES Indian Ocean Planning Workshop at the International Centre, Goa, India (October 24 - 26, 2007).
18. *Impact of Anthropogenic Activity on the Indian Monsoon Climate*. During the Earth Day celebrations organized by the Ocean & Atmospheric Science and Technology Cell, Mangalore University, and Karnataka State Pollution Control Board, Dakshina Kannada district on 22<sup>nd</sup> April 2010.
19. *Importance of atmospheric inputs for ocean productivity*. Talk delivered on the occasion of Golden Jubilee celebration of the Central Marine Fisheries Research Institute, Mangalore, India (October 1, 2007).
20. *Understanding secrets of high primary productivity in the North-western Indian Ocean* during the International Workshop on Sustained Indian Ocean Biogeochemical and Ecological Research (SIBER), National Institute of Oceanography, Goa (October, 3-6 2006).
21. *Atmospheric and groundwater nutrient fluxes to south-eastern Arabian Sea during the INSA-IGBP Brain Storming Session on Joint- Implementation of Surface Ocean - Lower Atmosphere Study (SOLAS) and Integrated Marine Biogeochemistry and Ecosystem Research (IMBER) at National Chemical Laboratory, Pune (December 28-29, 2003).*
22. *Acid Rain Potential in India* during the University Grants Commission's (U.G.C.) Refresher Course on Geoinformation Science at Kuvempu University (21<sup>st</sup> November to 11<sup>th</sup> December 2001).
23. *West-flowing rivers and estuaries of Karnataka* during the brain storming Session on Land-Ocean Interactions in the Coastal Zone (Core project of the International Geosphere and Biosphere Programme) at National Institute of Oceanography, Goa (April 21, 1995).
24. *Hydrological Processes*, during an Orientation Course in Geology for High School Teachers at Mangalore University (March 15, 1996).
25. *Internal Structure and Composition of the Earth* during the Orientation Course in Geology for High School Teachers, organised by the Lions Club, Mangalore (April 8, 1994).

Impact of publications in terms of (Non-science faculty can leave out this item, if unable to fill up).

h-index: 12

i10 index: 14

Citation index: 569

#### Conferences / Seminars / Workshops / Symposia organized (if applicable)

Organized Global Initiative of Academic Networks (GIAN) on **Managing Coastal Systems, A Biogeochemical Perspective** at Mangalore University, Mangalagangothri from September 24 to 28, 2018. This course was benefited by the students, research fellows and some faculty members of Mangalore University and a few from different universities/institutes from Southern India. For this Professor Tim Jickells a multidisciplinary researcher, teacher and academic scientist from School of Environmental Sciences, University of East Anglia **Great Brittan** was invited to conduct the GIAN course.

*Manjunatha, B.R. (2015) Recent Advancements in Earth, Atmosphere, Ocean Sciences for Societal Benefits. In Earth Science, Planetary Science, and Geography under; 39<sup>th</sup> Indian Social Science Congress, held at Department of Marine Geology, Mangalore University from December 1 to 5, 2015.*

#### Awards / Fellowship / Recognition (Specify) (if applicable)

- **Best Teacher Award** during 2016 for outstanding contributions in teaching and research in the faculty of Science and Technology instituted by the Mangalore University. The award carries a cash prize of Rs. 25,000, memento and a citation.
- The first three winners of **“Your Opinion”** contest for September 2010 of the Dream 2047 magazine, conducted by the **Vigyan Prasara** – An autonomous organization under the Department of Science and Technology, Government of India on the topic: *“Is it worthwhile to plan for human settlements in space, to escape disasters on Earth in future?”*
- Won US\$ 500/- as honourable mention in the **Sociological Discovery Prize** from the ProQuest Cambridge Scientific Abstracts (CAS), Western Regional Office, San Diego, California, U.S.A. during the year 2007 for the work on *Continuing Climate Curse on Africa Warns Greater Humanitarian Assistance*.
- **Commonwealth Academic Staff Exchange Fellow** at Laboratory for Global Marine and Atmospheric Chemistry, School of Environmental Sciences, East Anglia University, Norwich, U.K. from October 2005 to March 2006 to work on the *Impact of Atmospheric Pollution on the Northern Indian Ocean*.
- Recipient of Nobel Laureate **Sir C.V. Raman Award** for an outstanding contribution in the field of *Earth Science* during the year 2001. The award instituted by the Government of Karnataka that comprises of a cash prize of Rs. 25,000, a memento and a citation.
- **BOYSCAST Fellow** (Better Opportunities for Young Scientists in the Chosen Areas of Science and Technology, Department of Science and Technology (DST), Government of India) during 1996-97. This award was in terms of overseas fellowship to conduct advanced research/undergo specialized training in the field of *Isotope and Chemical Tracers for Oceanography* for one year at Marine Chemistry Division, Bedford Institute of Oceanography, Canada

#### Membership of Professional Bodies

- Fellow of the Geological Society of India
- Life Member, *Indian Association for Radiation Protection*, Bhabha Atomic Research Center (B.A.R.C.), Bombay.
- Life Member, *Indian Association of Nuclear Chemists and Allied Scientists*, B.A.R.C., Bombay.
- Association of British Scholars in India
- Member of the Board of Studies in Geology, Department of Civil Engineering, Manipal University since last year.
- **Subject expert** for assessing the research progress of PhD students in Department of Civil Engineering, Manipal University since 2009.
- Executive Committee member in the Association of British Scholars, Mangalore Chapter since 2015.

## Any other Information

### Reviewer for journals

- Current Science
- Indian Journal of Marine Sciences
- International Journal of Earth Sciences and Engineering.
- Journal of Geography and Regional Planning

### Reviewer for research projects funded by:

- Department of Science and Technology, Government of India, and
- Ministry of Earth Sciences, Government of India.

### Overseas Institutes/ Universities visited

- Dublin, Ireland to present two research papers during the International Union for Quaternary Research Congress -2019 at Dublin, from 25-31 July 2019.
- Laboratory for Global Marine and Atmospheric Chemistry, School of Environmental Sciences, East Anglia University, Norwich, U.K. (2005-06)
- Department of Earth Sciences, University of Cambridge, U.K. (2006)
- Department of Geography, Oxford University, U.K. (2006)
- National Oceanographic Center, Southampton, U.K. (2006)
- Plymouth Marine Laboratory, Plymouth, U.K. (2006)
- Chinese Academy of Sciences, Beijing, China to attend PAGES meeting (2005)
- Bedford Institute of Oceanography, Nova Scotia, Canada (1997-98).
- Dalhousie University, Halifax, Nova Scotia, Canada (1997-98)
- Saint Mary's University, Halifax, Nova Scotia, Canada (1997-98)
- Marine Environmental Laboratory, International Atomic Energy Agency, Monaco(1998)