

CURRICULUM VITAE**SUDHEESH V., PhD.**

Technical Officer

Central Instrumentation Facility

Central University of Kerala

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My research focuses on the marine biogeochemistry of the northern Indian Ocean, with a special emphasis on oxygen minimum zone dynamics and ecosystem responses. I am particularly interested in deoxygenation, carbon and nitrogen cycling, and greenhouse gas dynamics in marine environments. My work aims to explore the biogeochemical processes within oxygen-depleted waters and their broader impacts on marine ecosystems and climate change. Additionally, I investigate the interactions between physical and biological processes that drive variability in ocean chemistry, contributing to our understanding of global biogeochemical cycle.

Positions / Research experience

- ✓ Dec 2020 – present Technical Officer, Central University of Kerala, Kasaragod, India
- ✓ Dec 2017 – Dec 2020 Project Scientist B, CMLRE, MoES, Kochi, India
- ✓ Aug 2014 – Dec 2017 Research Scholar, CUSAT, Kochi, India
- ✓ Mar 2014 – Aug 2014 Project Assistant, IUCDMB, CUSAT, Kochi, India
- ✓ Dec 2011 – Mar 2014 Junior Research Fellow, CMLRE, MoES, Kochi, India
- ✓ Jul 2011 – Dec 2011 Junior Project Fellow, CWRDM, Calicut, India

Total research experience: 12 years (including PhD)**Educational qualifications**

- ✓ Ph.D. in Marine Sciences (2018) – Cochin University of Science and Technology, Kochi, India.
- ✓ PG Diploma in Observational Oceanography – NF-POGO Centre of Excellence, AWI, Germany
- ✓ M. Sc. in Hydrochemistry (2009) - Kannur University, Kerala, India.
- ✓ B.Sc. in Chemistry (2006) - Kannur University, Kerala, India.

Total no. of Publications: 38**Total impact factor: 101.8 Total Citations: 904, H index: 18, i10 index: 20****https://scholar.google.com/citations?user=BqPHf_MAAAAJ&hl=en****Scopus id 57188785158, Orcid id <https://orcid.org/0000-0003-1128-9279>,****Publons / Web of Science ResearcherID - K-6395-2017**

Awards/Achievements

1. Chair, IIOE-2 Early Career Scientist Network (ECSN) (2025-present)
2. Best Oral Presentation Award for the paper entitled “Effect of upwelling-driven acidification and deoxygenation on the dissolved inorganic carbon system over the southeastern Arabian Sea shelf” at the International Indian Ocean Science Conference 2025, held from 01–05 December 2025 at INCOIS, Hyderabad, India.
3. Top Cited Paper Award 2024 by IOP Publishing group for the research article ‘*The world's largest coastal deoxygenation zone is not anthropogenically driven*’
4. Member Secretary, Grievance Redressal Committee for Non-Teaching Staffs, CU Kerala (2024-present)
5. International Travel Grant for attending the NF-POGO Centre of Excellence closing Event and Workshop, AWI, Germany, (2024)
6. Associate Editor, Frontiers in Marine Sciences (Biogeochemistry) (2024-present)
7. Member, Admission Core Committee, Central University of Kerala (2024-present)
8. Joint Secretary, Swadeshi Science Movement (VIBHA Kerala Chapter) (2024-present)
9. Governing Council Member, Ocean Society of India (OSI) (2023-2025)
10. Executive Council Member, Ocean Society of India (Cochin Chapter) (2023-present)
11. Core Committee Member, Early Career Scientist Network – IIOE 2 (2022-2025)
12. EGU Early Career Scientist Co-representative for Ocean Science Division (2022-2024)
13. SOLAS, US International Travel Grant for attending the GTWS Symposium, Plymouth, UK, (2022)
14. DST, India International Travel Grant for attending the GTWS Symposium, Plymouth, UK (2022)
15. IOC-UNESCO International Travel Grant for attending the GO2NE Summer School, Xiamen, China (2019)
16. EGU International Travel Grant for attending the GO2NE Summer School, Xiamen, China (2019)
17. BES International Travel Grant for attending the MSAT Conference at Bali, Indonesia (2017)
18. NF-POGO Center of Excellence Scholar, AWI, Germany (2016-17),
19. IMBER International Travel Grant for attending the IMBER Open Science Conference at Bergen, Norway (2014)

Research Projects Associated with

1. An Inventory of Greenhouse Gases Emission from Coastal Wetlands of Kerala and their Impact on Regional Climate Change (2023-2025), as Co-PI, DST, CRG (ongoing)
2. Marine Ecosystem Dynamics of eastern Arabian Sea (MEDAS) at CMLRE, Kochi (Dec 2017 – Dec 2020), as Project Scientist B
3. Time-series studies on the biogeochemical aspects in the estuarine and coastal waters of Kochi, southwest coast of India (KoTS – Kochi Time Series) at CMLRE, Kochi (Dec 2012 - March 2014), as Junior Research Fellow

4. Role of micro-benthos in remineralisation of shelf sediments along the Kerala coast at CUSAT, Kochi (Aug 2015 – Aug 2016), as Junior Research Fellow
5. Water quality monitoring of Kerala State at CWRDM, Calicut (July 2011-Dec 2011) , as Junior Project Fellow

Membership in Statutory Bodies

- Life Member, Ocean Society of India (OSI)
- Member, Society of Aquatic Chemists (SAC)
- Member, IIOE2 Early Career Scientist Network (ECSN)
- Member, Early Career Ocean Professionals (ECOP)
- Member, NF POGO Alumni Network for Oceans (NANO)
- Life Member, Swadeshi Science Movement (VIBHA, Kerala Chapter)

Publications

1. Cindrella J.J., **Sudheesh V.**, Siva Kiran Kumar Busala, T.R. Resmi, K.R. Renjith (2026), Seasonal and diurnal controls on methane and nitrous oxide dynamics in a tropical Ramsar wetland (Ashtamudi Lake, Southwest India), *Mar. Poll. Bull.*, 231, 119917, <https://doi.org/10.1016/j.marpolbul.2026.119917>.
2. **Sudheesh V.**, Gupta G.V.M. (2026), Effects of upwelling-driven acidification and deoxygenation on the dissolved inorganic carbon system over the southeastern Arabian Sea shelf, *Mar. Chem.*, 276, 104638, <https://doi.org/10.1016/j.marchem.2026.104638>
3. Shashikala K., **Sudheesh V.**, Janardanan D., Devipriya S.P. (2026), Molecular dynamics insights into antibiotic-microplastic interactions: mechanisms, environmental risks, and predictive perspectives. *Comput. Toxicol.* 37: 100402
4. Prachi Marathe, Anil Kumar Vijayan, Bikram Reddy B., Sherin C.K., **Sudheesh V** (2026), Zooplankton trophic dynamics in response to upwelling phases in the eastern arabian sea: Insights from stable isotopes. *Mar. Environ. Res.* 215: 107838
5. Hood, R. R., Al-Yamani F., Beckley L. E., Cowie G. L., D’Adamo N., Hermes J., Kobryn H. T., Kiran Kumar N., Lotliker A. A., M. Koll R., Modi A., Pattabhi Rama Rao E., Sicre M- A., **Sudheesh V.**, Vinayachandran P. N., (2025), Second International Indian Ocean Expedition (IIOE-2): A Basin-Wide Research Program, Science Plan Addendum (2026 – 2030). Scientific Committee on Oceanic Research, Newark Delaware, USA. https://iioe-2.incois.gov.in/documents/IIOE-2/Publications/IIOE-2-DOC_AD_316.pdf
6. Shyla Hafza, Ammini Parvathi, Muhammed Iqbal P.M., **Sudheesh V.**, Sherin C.K., Harikrishnachari N.V. (2025), Spatial and temporal dynamics of prokaryotes in the Eastern Arabian Sea, *Environ. Monit. Assess.*, 197:458
7. Nampoothiri S.V.N., Kishore N., Rasheed K., **Sudheesh V.**, Ch. Venkata Ramu, Gupta G.V.M. (2025), Reassessing the structure and characteristics of watermass using ship-based repeat observations along the eastern Arabian Sea. *J. Earth Syst. Sci.* 134, 47. <https://doi.org/10.1007/s12040-025-02522-4> 3.
8. Prachi Marathe, Anil Kumar Vijayan, Bikram R., **Sudheesh, V.** (2025), Spatiotemporal dynamics of carbon isotope ratios and phytoplankton composition in the eastern Arabian Sea, *Marine Poll. Bull.*, 212: 117474 4.

9. Vishnu N.N.S., **Sudheesh, V***, Bepari, K.F., Bikram, R., Naseera, K., Rasheed, K., Vijayan, A.K. and Gupta, G.V.M. (2024), Formation mechanisms and biogeochemical response of coastal salinity front in the central eastern Arabian Sea. *Dyn. Atmos. Oceans*, p.101498, <https://doi.org/10.1016/j.dynatmoce.2024.101498>
10. Bikram Reddy B., Anil Kumar Vijayan, **V. Sudheesh**, C.K. Sherin, Rajdeep Roy, N.N. Vishnu, G.V.M. Gupta (2024), Nutrient stoichiometry drives the phytoplankton populations during the progression of upwelling along the eastern Arabian Sea, *Progress in Oceanography*, Volume 229, 103347, <https://doi.org/10.1016/j.pocean.2024.103347>
11. Arya K.S., Gireeshkumar T.R., Vignesh E.R., Muraleedharan K.R., Abdul Jaleel K.U., Abdul Razaque M.A., Furtado C.M., **Sudheesh V.**, Balakrishnan Nair T.M., Krishnamohan K.S (2024), Dynamics of nitrous oxide and methane in the southeastern Arabian Sea, *Mar. Chem.* 258:104333
12. Bourbonnais A., **Sudheesh V.**, Mark A. Altabet, Amal Jayakumar, Syed Wajih Ahmad Naqvi, Gireesh Kumar T.R (2023), Editorial: Recent developments in oxygen minimum zones biogeochemistry. *Front. Mar. Sci.* 10:1333731.
13. **Sudheesh, V.**, Naqvi, S. W., Kumar, T. R. G., Bourbonnais, A., Altabet, M. A., Jayakumar, A., eds. (2023). Recent developments in oxygen minimum zones biogeochemistry. Lausanne: Frontiers Media SA. doi: 10.3389/978-2-8325-4162-3
14. Bhavya P., Sanjeev Kumar, Gupta G. V. M., **Sudheesh V.**, Jabir Thajudeen (2023), Inter-seasonal variation in nitrogen uptake rates of the eutrophic Cochin estuary and adjacent coastal Arabian Sea, *Mar. Poll. Bull.* 194: 115310.
15. Sherin C.K., Gupta G.V.M., **Sudheesh V.**, Ramu Ch.V., Bikram Reddy, Harikrishnachari N.V., Anil Kumar Vijayan (2023), Nutriclines and nutrient stoichiometry in the eastern Arabian Sea: Intra-annual variations and controlling mechanisms, *Prog. Oceanogr.*, 215, 103048
16. Yet Yin Hee, Keith W., Suhaimi S., Mohd Fadzil A., and Mohd Talib L., **Sudheesh V.** (2023), Biogeochemical and physical drivers of hypoxia in a tropical embayment (Brunei Bay), *Environ. Sci. Pollut. Res.*, 30, 65351–65363
17. Mohammed I. Orif, Yasar N. Kavil, Radwan K. Al-Farawati, **Sudheesh V.** (2023), Deoxygenation turns the coastal Red Sea lagoons into sources of nitrous oxide, *Marine Poll. Bull.*, 189, 114806
18. Shaju, S.S., Ginchu Mariam Sunny, Sherin C.K., Vishnu N.N.S., Bikram Reddy, **Sudheesh V.**, Prachi M., Sanjeev Kumar, Anil Kumar Vijayan, Gupta G.V.M. (2022), Variability of particulate organic carbon and assessment of satellite retrieval algorithms over the eastern Arabian Sea, *Environ. Monit. Assess.*, 194:656
19. **Sudheesh, V.**, G. V. M. Gupta, Yudhishtir Reddy, Kausar F. Bepari, N. V. H. K. Chari, C. K. Sherin, S. S. Shaju, Ch V. Ramu, and Anil Kumar Vijayan (2022), Oxygen minimum zone along the eastern Arabian Sea: intra-annual variation and dynamics based on ship-borne studies, *Prog. Oceanogr.*, 102742, <https://doi.org/10.1016/j.pocean.2022.102742>
20. Albin, K.J., R. Jyothibabu, K.T. Alok, S. Santhi Krishnan, S. Sarath, **V. Sudheesh**, C.K. Sherin, K.K. Balachandran, C.R. Ashadevi, G.V.M. Gupta (2022), Distinctive Phytoplankton Size Responses to the nutrient enrichment of Coastal Upwelling and Winter Convection in the Eastern Arabian Sea, *Prog. Oceanogr.*, 102779

21. Vipindas, P. V., T. Jabir, KM Mujeeb Rahiman, T. V. Rehitha, **V. Sudheesh**, Y. Jesmi, and AA Mohamed Hatha (2022), Impact of anthropogenic organic matter on bacterial community distribution in the continental shelf sediments of southeastern Arabian Sea. *Marine Poll. Bull.*, 174, 113227, <https://doi.org/10.1016/j.marpolbul.2021.113227>
22. Karati K.K., C.R. Asha Devi, N.V. Harikrishnachari, **V. Sudheesh**, M. Kumaraswami, S.A. Naidu, M.V. Ramana Murthy (2021), Hydrodynamic variability and nutrient status structuring the mesozooplankton community of the estuaries along the west coast of India, *Environ. Sci. Pollut. Res.*, <https://doi.org/10.1007/s11356-021-13634-x>.
23. Gupta, G.V.M., R. Jyothibabu, C.V. Ramu, A.Y. Reddy, K.K. Balachandran, **V. Sudheesh**, S. Kumar, N.V.H.K. Chari, K.F. Bepari, P.H. Marathe, B.B. Reddy and A. K. Vijayan (2021), Is the world's largest coastal deoxygenation zone not anthropogenically driven?, *Environ. Res. Lett.*, <https://doi.org/10.1088/1748-9326/abe9eb>
24. Vijayan, Anil Kumar, B. Bikram Reddy, **V. Sudheesh**, Prachi Hemant Marathe, Vishnu N. Nampoothiri, N. V. Harikrishnachari, P. Kavya, G. V. M. Gupta, and M. V. Ramanamurthy (2021), Phytoplankton community structure in a contrasting physico-chemical regime along the eastern Arabian Sea during the winter monsoon, *J. Mar. Syst.*, 215, 103501.
25. **Sudheesh, V.**, G.V.M. Gupta, and S.W.A. Naqvi (2020), Massive methane loss during seasonal hypoxia/anoxia in the nearshore waters of southeastern Arabian Sea, *Front. Mar. Sci.*, 7:324
26. **Sudheesh, V** (2020), Comments on the article “Spatio-temporal variations in sulfur-oxidising and sulfate-reducing bacterial activities during upwelling, off south-west coast of India”, *Oceanologia*, 62, 408-410
27. Jabir, T., P.V. Vipindas, Y. Jesmi, **V. Sudheesh**, M.P. Prabhakaran, Arvind Singh and M. A. Hatha (2020), Nutrient stoichiometry (N:P) controls nitrogen fixation and distribution of diazotrophs in a tropical eutrophic estuary, *Marine Poll. Bull.*, 151, 110799
28. Hershey, Regina, S. Bijoy Nandan, P. R. Jayachandran, Akhilesh Vijay, and **V. Sudheesh** (2019), Nitrous oxide flux from a Tropical estuarine system (Cochin estuary, India), *Reg. Stud. Mar. Sci.*, 30, 1-9, 100725
29. Baliarsingh, S. K., Aneesh A. Lotliker, **V. Sudheesh**, Alakes Samanta, Sourav Das, and A. K. Vijayan (2018), Response of phytoplankton community and size classes to green Noctiluca bloom in the northern Arabian Sea, *Marine Poll. Bull.*, 129 (1), 222-230.
30. Bhavya, P. S., Sanjeev Kumar, G. V. M. Gupta, K. V. Sudharma, and **V. Sudheesh** (2018), Spatio- temporal variation in $\delta^{13}\text{C}$ DIC of a tropical eutrophic estuary (Cochin estuary, India) and adjacent Arabian Sea, *Cont. Shelf Res.*, 153, 75-85.
31. **Sudheesh, V.**, M. Movitha, A.A. Mohamed Hatha, K.R. Renjith, P. Resmi, Mujeeb Rahiman, and S.M. Nair (2017), Effects of seasonal anoxia on the distribution of phosphorus fractions in the surface sediments of southeastern Arabian Sea shelf, *Cont. Shelf Res.*, 150, 57-64
32. Bhavya, P.S., Sanjeev Kumar, G.V.M.Gupta, and **V. Sudheesh** (2017), Carbon Uptake Rates in the Cochin Estuary and Adjoining Coastal Arabian Sea, *Estuaries and Coasts*, 40(2), 447-456.
33. **Sudheesh, V.**, G.V.M.Gupta, K.V.Sudharma, H.Naik, D.M.Shenoy, M.Sudhakar, and S.W.A.Naqvi (2016), Upwelling intensity modulates N_2O concentrations over the western Indian shelf, *J. Geophys. Res. Oceans*, 121(12), 8551-8565.

34. Arvind Singh, Benjamin Kürten, Riaan Cedras, Michelle Fernandes, Nimit Kumar and **41 others (2016)**, Perspectives on future Indian Ocean research from early career scientists*. Cur. Sci., 111(11), 1742-1742.
35. Gupta, G.V.M., **V. Sudheesh**, K. V. Sudharma, N. Saravanane, V. Dhanya, K. R. Dhanya, G. Lakshmi, M. Sudhakar, and S. W. A. Naqvi **(2016)**, Evolution to decay of upwelling and associated biogeochemistry over the southeastern Arabian Sea shelf, J. Geophys. Res. Biogeosci., 121(1), 159-175.
36. Bhavya, P.S., Sanjeev Kumar, G.V.M.Gupta, K.V.Sudharma, **V.Sudheesh**, and K.R.Dhanya **(2016)**, Carbon isotopic composition of suspended particulate matter and dissolved inorganic carbon in the Cochin estuary during post-monsoon, Cur. Sci., 110(8).
37. Renjith, K.R., **V. Sudheesh**, Anu Shaji, Ejin George, Manju Mary Joseph, C.S. Ratheesh Kumar, and N. Chandramohanakumar **(2016)**, Geochemical distribution, bioavailability & potential toxicity of some trace metals in a complex micro-tidal estuary, Southwest India, Toxicol. Environ. Chem., 98(1), 36-52.
38. Bhavya, P.S., Sanjeev Kumar, G.V.M.Gupta, **V. Sudheesh**, K.V.Sudharma, D.S.Varrier, K.R.Dhanya, and N.Saravanane **(2016)**, Nitrogen uptake dynamics in a tropical eutrophic estuary (Cochin, India) and adjacent coastal waters, Estuaries and Coasts, 39(1), 54-67.
39. Pratima M. Kessarkar, S. Suja, **V. Sudheesh**, Shubh Srivastava, and V. Purnachandra Rao **(2015)**, Iron ore pollution in Mandovi and Zuari estuarine sediments and its fate after mining ban, Environ. Monit. Assess., 187(9), 572

Papers Presented in International/national Conferences

1. **Sudheesh V.**, Gupta G.V.M. **(2025)**, Effect of upwelling-driven acidification and deoxygenation on the dissolved inorganic carbon system over the southeastern Arabian Sea shelf, Gave and oral presentation on at the International Indian Ocean Science Conference 2025, held from 01–05 December 2025 at INCOIS, Hyderabad, India.
2. **Sudheesh V.**, Gupta G.V.M. **(2025)**, Need for High-Resolution Oxygen Profiles in the Eastern Arabian Sea. Gave an Oral Presentation at the One Ocean Science Congress 2025 (OOSC), held Nice France, from June 3-6, 2025.
3. **Sudheesh, V.**, Vishnu N. N, Gupta G.V.M. **(2023)**, Sealevel Anomaly (SLA) as a proxy to derive the upper Oxygen Minimum Zone dynamics of the eastern Arabian Sea, Gave an Oral Presentation at the Eighth National Oceanography Conference (OSICON 23), held at INCOIS, Hyderabad, India, from August 23-25, 2023.
4. **Sudheesh V.**, Gupta G.V.M. **(2022)**, Greenhouse gases (CO₂, CH₄ and N₂O) emissions from a tropical micro- tidal estuary (Cochin, India), Gave an Oral Presentation at Gas Transfer to Water Surfaces (GTWS) Symposium 2022, held at Plymouth, UK, from May 17-20, 2022.
5. **Sudheesh V.**, G. V. M. Gupta, Yudhishtir Reddy, Kausar F. Bepari, N. V. H. K. Chari, C. K. Sherin, S. S. Shaju, Ch V. Ramu, and Anil Kumar Vijayan **(2022)**, Oxygen minimum zone along the eastern Arabian Sea: intra-annual variation based on ship-borne studies. Gave an Oral Presentation at International Indian Ocean Science Conference (IIOSC) 2022, held virtually from March 14-18, 2022
6. **Sudheesh V.**, G.V.M. Gupta, and S.W.A. Naqvi **(2022)**, Massive methane loss during seasonal hypoxia/anoxia in the nearshore waters of southeastern Arabian Sea shelf. Gave an

Oral Presentation at International Indian Ocean Science Conference (IIOSC) 2022, held virtually from March 14-18, 2022

7. **Sudheesh, V.**, Cédric L. Meunier, and Maarten Boersma (2019), Elemental Homoeostasis: Selective retention and excretion of elements in a metazoan grazer *Acartia tonsa* (Calanoida, Copepoda) in response to food quality and temperature (Oral presentation in the national Seminar (AQUASEM-19) on "Recent Developments in Aquatic Chemistry", held at Cochin University of Science and Technology, India from 21-23rd March 2019).
8. **Sudheesh, V.**, Akhil Dileep, Movitha, M., Mohamed Hatha, A. A., Nair, S (2017). Effect of Indian Ocean dipole on seasonal oxygen deficiency and phosphorus fractionation in the surface sediment along the west coast of India (Oral presentation in the 1st international conference on Maritime Sciences and Advanced Technology, held on 3rd to 5th August 2017 at Bali, Indonesia).
9. **Sudheesh, V.**, G. V. M. Gupta and M. Sudhakar (2015). Methane emission from the shelf waters of southeastern Arabian Sea (Oral presentation in the National seminar OSICON'15 conducted by Ocean Society of India, held at NIO, Goa from 22-24th March 2015).
10. **Sudheesh, V.**, K. V. Sudharma, G. V. M. Gupta, (2014). Factors controlling N₂O saturation and fluxes from the continental shelf waters of southeastern Arabian Sea: A time series study (Oral presentation in the "Future Oceans" IMBER open science conference, held at Bergen, Norway on 23-27th June 2014).
11. **Sudheesh, V.**, K. V. Sudharma, G. V. M. Gupta (2013) Nitrous Oxide dynamics in shelf waters off Cochin, Southwest Coast of India, 2013. (Presented in the national seminar AQUASEM'13, held at CUSAT, India)

Ship-borne experience / Cruise experience

- ✓ Participated in **TWENTY-THREE** Oceanographic Research Expeditions with 295 days in the sea

Additional information's

Reviewer for research articles in -

Continental Shelf Research, Deep-Sea Research, Environmental Monitoring and Assessment, Frontiers in Marine Science, Journal of Coastal Conservation, Journal of Environmental Management, Journal of Geophysical Research, Journal of Sea Research, Limnology and Oceanography Letters, Modeling Earth Systems and Environment, Oceanologia, Ocean Dynamics, Regional Studies in Marine Science etc.

Invited Lectures/talk

1. **Fellowship, Internship, Research and Beyond (2026)**, Invited Lecture on 30th April 2026 as part of the training programme on "Scientific Methods and Advanced Research Training (SMART)" conducted by Dept. of Chemical Oceanography, CUSAT during April 20 to May 8th 2026.
2. **Role of Microbes in the Ocean (2025)**, Invited talk at the International Seminar on "Microbial Diversity and Bioremediation of Polluted Soil and Water Ecosystems", held on 17–18 November 2025 at Majlis Arts and Science College (Autonomous), Malappuram, Kerala, India.

3. ***Career Opportunities for Chemistry Graduates (2025)***, An Invited Talk delivered on 06th March 2025 as a part of the science day programmes of the Dept of Chemistry, Govt. College Kasaragod.
4. ***Biogeochemical Response to Seasonal Oxygen Deficiency on the Eastern Arabian Sea Shelf (2024)***, Invited talk at the International Webinar ‘Catalysing Ocean & Climate Action’ Organised by Estuarine and Coastal Studies Foundation as a part of World Ocean Day 2024.
5. ***Oxygen Deficiency and Biogeochemical Response in the Eastern Arabian Sea (2023)***, Invited webinar talk organised by the Ocean Society of India (OSI) on 21st April 2023.
6. ***Need of High-resolution Oxygen Measurement in the eastern Arabian Sea (2023)***, Invited talk in the National Science Workshop on Indian Ocean Biogeochemistry (NSWIO-BGC) held at CMLRE, Ministry of Earth Sciences, Kochi, from 26-28th April 2023.
7. ***Know the Ocean for its Opportunities (2023)***, Dept. of Environmental Sciences, Central University of Kerala. Invited talk as part of World Ocean Day Celebrations, 8th June 2023.
8. ***Sampling Precautions and Protocols for Biogeochemical Analysis (2023)***, Invited as a Resource Person in the workshop on ‘Ocean biogeochemistry through Ocean Observations and Chemical analysis’ organised by the Dept. of Chemical Oceanography, Cochin University of Science and Technology (CUSAT), 16th June 2023.
9. ***Oxygen Minimum Zone dynamics of eastern Arabian Sea (2023)***. Invited webinar talk organised by the Global Ocean Oxygen Network (GO2NE) Expert Group of the Intergovernmental Oceanographic Commission (IOC-UNESCO), July 26th 2023.