CV of P. Vethamony

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Educational Qualifications

Qualification	Year	Board/University	Subjects	
PhD	1990	IIT Bombay, India	Coastal Engineering	
MSc	1980	Cochin University, India	Oceanography	
BSc	1977	Madurai University, India	Physics, Mathematics and Chemistry	

After obtaining PhD, received a UNDP fellowship (for 6 months) to visit US and Canada: Texas A&M University, NASA, NOAA and Oregon State University during July–Nov 1991; Bedford Institute of Oceanography, Nova Scotia, Canada during Nov 1991- Jan 1992.

Research & Academic career

Position	Overniestica	Period	
Position	Organization	From	То
Research Professor	Qatar University, Doha	Mar-2018	Continuing
Adjunct Professor	IIT Bombay, India	Aug-2017	Feb-2018
Visiting Faculty	IIT Kharagpur, India	Jun-2017	July-2017
Scientist-G/ Chief Scientist, DU Leader & AcSIR Professor	NIO, Goa, India	Feb-2009	Apr-2017
Scientist-EII, F & DU Leader	NIO, Goa, India	Feb-1998	Feb-2009
Scientist-B,C,EI	NIO, Goa, India	Feb-1983	Feb-1998
Trainee Scientist	NIO, Goa, India	July-1982	Feb-1983
CSIR-Junior Research Fellow	NIO, Goa, India	Oct-1980	July-1982

NIO - National Institute of Oceanography; IIT - Indian Institute of Technology

Subject Specialization

- Coastal processes and Coastal engineering; Air-sea interaction: winds, waves, currents and tides; Arabian Gulf dynamics.
- Marine environmental studies: Hydrodynamics, Sediment transport, Dredge & effluent disposal, Marine pollution, Oil spill, Tar ball/Tar mat and Microplastics.
- EIA related to marine facilities such as Water intake, Marine outfall, Submarine pipelines, Breakwaters, SPMs, Port & Harbor development and Tourism.

Publications

Scientific papers in peer-reviewed journals and books: 130

Conference proceedings / Abstracts/Posters: 101

Technical Reports: 9

Project Reports: 159

Students' supervision for PhD/Masters/Bachelor's theses

• PhD awarded: 10

MSc (Environmental Engg) by thesis: 1

MSc/ BTech/ MTech/ by dissertation: 22 (including international students)

Academic & Research activities at Qatar University (since March 2018)

• Member of Graduate Faculty with Supervisory Status to teach graduate level courses, supervise graduate students and serve on thesis/dissertation committees.

Co-supervisor: dissertation work of a graduate student (2019-2020).

Member: to evaluate the progress of PhD work of a student (Sept 2020).

Examiner: to evaluate the Masters' thesis (May 2020).

- **Given an Advanced Seminar Course (BIOL 600):** Seminar on "Coastal processes and pollutant transport" on 7 Oct 2018 and 24 Sept 2019 (3h duration each) for the First Year PhD students at the Biological & Environmental Sciences Dept.
- Attended the following Seminars/ Workshops organized by ESC/ CAM/QU/MME in Qatar:

Qatar University Annual Research Forum and Exhibition, Qatar, October 20, 2021 (online).

Qatar University Annual Research Forum and Exhibition, Qatar, October 28, 2020 (online).

Vision workshop on EIA of Zulal designation resort at Ras Rakan (17 Jan 2019).

Arabian Gulf circulation and its effect on the coastal environment of Qatar (24 Oct 2019).

SLIM: A multiscale model of the land-sea continuum - application to the Arabian Gulf (11 Nov 2019).

Marine litter in the Arabian Gulf (14 Nov 2019).

Identification of Micro-organic Pollution Sources (25 Nov 2019).

Solar-Desalination-CO₂ Emission (27 Nov 2019).

BIG Earth Data: Building Geospatial capacity to the world (4 Dec 2019).

QA/QC of Analytical Research (29 Apr 2018).

Air Quality (23 Sept 2018).

Statistical Analysis (6 Nov 2018).

GIS & Remote Sensing (14 Nov 2018).

Participated in the following international meetings (online):

Regional Workshop on Marine Spatial Planning and Sustainable Blue Economy, IOC-UNESCO / PERSGA, November 16, 2020.

The Joy of Discovery, Texas A&M University, Qatar, October 1, 2020.

Ensuring ecosystem-based approach principles in Marine Spatial Planning, IOC/UNESCO, Paris, May 6, 2020.

An introduction to multidisciplinary research at the DOE, URI, USA with a focus on Ocean Renewable Energy, January 19, 2020.

- **Participated** in the Intl. Conf. for the Protection of Endangered Marine Species held at Qatar University in April 2019.
- Participated in the UK-Qatar Bilateral Workshop on Aquaculture organized by the Ministry of Municipality and Environment at Aquatic Research Center, Al Khor, Qatar during 14-15 January 2019.
- Collaborating with UC Louvain/ Brussels (Arabian Gulf modelling); University of Alabama/US and University of Malaya/Malaysia (Tarmat project of Qatar Petroleum); Kuwait University and Sultan Qaboos University/Oman (UNESCO Chair).
- Discussed collaboration with **Qatar Meteorology Dept** (QMD) in Ocean-atmosphere problems, and that has resulted in QU and QMD **signing a MoU**.
- Invited to give a talk on "Activities of UNESCO Chair in Marine Science at Qatar University" at the 8th Session of the IOC Regional Committee for the Central Indian Ocean (IOCINDIO-VIII) held during 17-19 May 2021.
- **Invited to give a presentation** on "Management and protection of marine resources within the EEZ of Qatar" on 6 May 2021 in the IO Blue Economy Summit of UNESCO/IOC.
- Invited to give a presentation on "Water as an input to production and socio-economic activity" at the launch of the 2021 edition of the World Water Development Report- Valuing Water", held in collaboration with Qatar National Commission and Qatar University on 22 April 2021.
- Invited to give a talk on "QU's experience in establishing the UNESCO Chair and the Chair's scientific work plan at the virtual consultative meeting on "UNESCO Chairs and UNITWIN Program" for member states in the GCC. The meeting was organized by UNESCO Doha Office in collaboration with the Oman National Commission to UNESCO and the UNESCO Regional Bureau for Science & Tech in the Arab states (Cairo) during 29-30 March 2021.

Committees

- UNESCO Chair in Marine Sciences at Qatar University (2020 continuing).
- Chairman, Center Promotion Committee of Qatar University (QU) to review the promotion applications of Faculty members (2021).
- Member, appointed by the Vice-President of Qatar University to select one faculty for the Research Excellence Award for 2020.
- Member, Vice-President –RGS Promotion Committee to review the promotion application of a Faculty member (2020).
- Member, Selection Board of Faculty and Sr. RA positions at ESC, Qatar University (2018-2019).
- Reviewed articles for the following journals: Continental Shelf Research, Ocean Engineering, Meteorological Applications, Pure and Applied Geophysics, Regional Studies in marine

Science, Journal of coastal conservation. Indian Journal of Geo-Marine Sciences, International Journal of Climatology, Geocarto International, Marine Pollution Bulletin, Frontiers of Environmental Science and Engineering, Soil and Sediment Contamination, Journal of Earth System Science, Climate Dynamics, Current Science, Coastal Engineering, etc.

- Reviewed the oil spill bio-remediation project of Exxon Mobil in May 2019.
- **Reviewed** the report, "State of Environment of Qatar: Marine Part" of Ministry of Municipality and Environment, Qatar in Nov 2019.
- Reviewed several project proposals received for grants from Kuwait Foundation for the Advancement of Sciences, Qatar University and Indian organizations (DST, GITA, MoES, MoEF, CSIR, IITs, NIO).

Editorial Board

- Topic Editor for "Challenges in Characterizing Nano- to Macro-Plastics and Adhered Substances in the Aquatic Environment" Special Issue in the Frontiers in Environmental Science (2021-2022), Switzerland.
- Member, Editorial Advisory Board of ISH Journal of Hydraulic Engineering, published by Taylor & Francis, UK (2010- continuing).

Cruises/ Field work

- Prepared a **Cruise Plan document** for R.V. Janan, QU, led/participated in several field work programs and cruises onboard R.V. Janan.
- Participated as well as led fieldwork / Cruises onboard RV Janan and boats, and collected environmental, oceanographic and meteorological parameters (including CTD casts and mooring of RCMs, ADCPS and WLRs).

Recent and Ongoing R & D projects

- 1. Giant Freshwater Prawn, and production of aquaculture feed with only Qatar inputs, innovation for Freshwater Aquaculture, Hydroponics, and Feed Production; MME-QNRF award; Duration: 2021-2024; Self is Pl.
- 2. UNESCO Chair in Marine Sciences at QU was awarded: The Science Plan of the award: Oceanography of the Arabian Gulf with particular reference to EEZ of Qatar. It covers the following components: Arabian Gulf circulation, Climate change, Sea level rise, Shamal winds and swells, Geomorphological changes due to coastal and offshore developments, Marine pollution and its management, Hypoxia formation, Ocean acidification and Impact on the coastal zone due to anthropogenic stressors, besides Capacity building and Socio-economics; project duration: 4 years (2021-2024); funded by Qatar University. UNESCO Chair-holder: Self.
- Tarmats of Qatar Coast: Resilience to Weathering Processes and Quantification of Environmental Hazards (QUEX-ESC-QP-TM-18/19-01); International collaborator: University of Alabama, USA and University of Malaya, Malaysia; Project duration: April 2019- March 2022; awarded under Qatar Petroleum (QP) Funding Program; Lead Principal Investigator: Self.
- 4. Impact on the coastal environment of Qatar due to natural and anthropogenic stressors, awarded under QU International Research Collaboration Co-Funds (IRCC); (IRCC-2019-002).

- International collaborator: National Institute of Oceanography, Goa, India; Project duration: January 2020-December 2021; Lead Principal Investigator: Self.
- 5. The Biogeochemistry and Circulation in the Exclusive Economic Zone of the State of Qatar (Central Arabian Gulf); Award No. QUEX-ESC-QAFCO-20/21-2; Project duration: March-September 2021; self is PI.
- 6. Natural microbial communities and biodegradation processes in tar balls of Qatar coast, and the role of nutrient limitations and biodegradation pathways of PAHs using engineered methods (Project No. QUST-2-ESC-2019-3). Project duration: August –November 2019; funded by Qatar University. Lead Principal Investigator: Self.
- 7. Accretion and erosion in the Ras Abu Abboud (RAA) Corniche, Doha for a Water Front Project using remote sensing data and field investigations (Ref. No. ESCPR0000137002); project duration: April-July 2019; Sponsor: Qatar Design Consortium, Doha; Self was Pl.

Academic Activities (before March 2018)

- Taken a series of seminars and taught the course "Marine Renewable Energy" to the MTech students of Ocean Engineering, Dept. of Civil Engg, IIT Bombay (Aug 2017 Feb 2018).
- Taught the course "Coastal processes and modelling" to the MTech/PhD students of Dept. of Ocean Engg & Naval Architecture, IIT Kharagpur (June-July 2017).
- **Taught** "Waves and tides" and Introduction to Oceanography to the PhD students of AcSIR (2009-April 2017).
- Coordinator of AcSIR (CSIR Academy), NIO, Goa for the PhD course on 'Tides and Waves' (2009- April 2017).
- **Taught** the following courses in Goa University: Remote Sensing -1995; Coastal Structures 1996; Dynamical Oceanography 2009.
- Was PhD Supervisor of Kurukshetra University, Goa University, Andhra University, Bharathidasan University and AcSIR Academy.
- **Examiner** for CUSAT/ Kochi, Kerala University and Goa University; VC's FRC nominee for PhD students in Goa University; DRC member of IIT Bombay.
- Evaluated PhD theses from IIT Madras, IIT Kharagpur, IIT Delhi, IIT Bombay, Pune University, CUSAT/Kochi, Kerala University, Andhra University, Anna University, MS University and Annamalai University.
- **Doctoral Advisory Committee Member** of around 20 PhD students of Goa University, Bharathidasan University and IIT Bombay.

Invited Talks

India: Invited talks were given at Indian Coast Guard, Mumbai and Delhi; Oil and Natural Gas Commission, Goa; Dept. of Higher Education, Goa; Madras Christian College, Chennai; Central Institute of Fisheries Education, Mumbai; Central Marine Fisheries Institute, Kochi; NITK Surathkal; VIT Chennai; CUSAT Kochi; IIT Kharagpur; IIT Bombay; NCESS Thiruvananthapuram; Mangalore University; Industries.

International: Invited talks were given at GST, Dubai; Tropical Marine Science Institute, NUS, Singapore; Okinawa National College of Technology, Japan; ICCT, Tsukuba, Japan; IIUM Univ, Malaysia; Obukhov Institute for Physics of Atmosphere of the Russian Academy of Sciences (IAP)

RAS), Moscow. East China Normal University, Shanghai; University of Edinburg, UK; CSIRO, Perth, Australia; Heriot Watt University, UK; International students when visited Goa. International Environmental Auditors; Scientists from SAARC countries.

Role in the Committees of India and International *India*

- Reviewer, promotion dossiers of faculty members of IIT Bombay and IIT Kharagpur.
- Member, Selection Boards of IIT Kharagpur, Bharathidasan University, Shivaji University and NCESS, Thiruvananthapuram.
- Chairman, Recruitment Committee of Project personnel, NIO, Goa.
- Member, Screening Committee of Scientist recruitment, NIO, Goa.
- Member, Research Advisory Council, ICMAM, Chennai, Min. of Earth Sci, Govt. of India (2017-2020).
- Chairman, Pondicherry Beach Restoration Project, NIOT, Chennai, Min. of Earth Sci, Govt. of India (2015- 2018).
- Chairman, HYCOM Modelling Technical Committee, ICMAM, Chennai, Min. of Earth Sci, Govt. of India (2017).
- Member, Committee on Restructuring the Function of Central Water & Power Research Station (CWPRS), Pune, appointed by Ministry of Water Resources, Govt. of India in 2013 and 2016.
- Vice Chairman, Indian National Conf. in Harbour & Ocean Engg (INCHOE-2014) at CSIR-NIO, Goa in February 2014.
- Member, Expert Appraisal Committee of Ministry of Environment and Forests and Climate Change (MoEF-CC) for Ports, CRZ and Infrastructure, Govt of India (2010).

International

- Member, Asia-Oceania Geosciences Society, Singapore (2007 till date)
- National Consultant (for India), Marine Litter Program, South Asia Co-operative Environment Program (SACEP), Colombo (Nov 2017–Mar 2018) in association with NCCR (MoES), Chennai.
- Member, India-Brazil-South Africa Ocean Program (IBSA -OCEAN).
- Organizer, WISE International Meeting at CSIR-NIO, Goa in March 2015.
- Steering Committee Member of COHERENS project, Royal Belgian Institute Natural Sciences, Belgium (2008-2010).
- Organizer, SAARC Workshop on Coastal and Marine Risk Mitigation, held in Goa during March 2008.

Research Experience

- Project Leader (2002-2017) for a major NIO institutional project, "Impacts of environmental stresses on the coastal zone of India". There were 34 members in this group: Scientists & Technical staff (17) and Research Scholars & Project Assistants (17).
- Project Leader (2002-2004) for a nationally important project "Integrated Coastal Zone Management (ICZM) Plan for the Gulf of Kachchh (GoK)" funded by ICMAM / MoES. This project involved massive data collection in 3 phases on all aspects of oceanography and modelling. 65 personnel participated in this field programme to collect observations in the entire GoK. Under ICZM plan of GoK, identified various issues in GoK and suggested solutions; 15 boats, 2 ships, 2 hovercrafts and 1 helicopter were used as platforms for data collection.

 During my career at NIO, Goa, carried out approximately 20 R&D National & International Projects and 155 National & International Contract Research / Consultancy Projects for various Govt. agencies, PSUs and industries dealing with coastal modelling. Design parameters for coastal and offshore structures; sediment transport; water quality & ecology; coastal zone management; site selection for water intake, marine outfall, port & harbour, submarine pipelines, dredge disposal, SPMs; marine environmental impact assessment, etc.

R & D projects executed (before 2017)

India

- 1. Establishment of a National Facility for fingerprinting of oil spills and tar balls for the identification of source: Project Leader (2013-2016).
- 2. Impact of natural and anthropogenic stresses on the coastal environment of India: Project Leader (2012 -2017).
- 3. Impact on the coastal zone due to anthropogenic pressures: Project Leader (2007-12).
- 4. Simulation and forecast of coastal winds, INCOIS, Hyderabad: Project Leader (2006-2007)
- 5. Mathematical modelling and computer simulation, CSIR Network Project of NIO, Goa and CMMACS, Bangalore: Project Leader (2004-2007).
- Modelling the impacts of environmental stresses on coastal zone: Project Leader (2002-2007).
- 7. Coastal processes off Gujarat and Konkan coasts through measurements and modeling, SAC, Ahmedabad: Member (2003-2007).
- 8. Ballast water control and management, DG Shipping, Mumbai: Member (2003-2007).
- 9. Integrated Coastal Zone Management (ICZM) Plan for the Gulf of Kachchh, ICMAM/DOD, MoES: Project Leader (2002-2005).
- 10. Sea state with satellite inputs (P4 MSMR data utilization), funded by SAC, Ahmedabad): Member (1999-2002).
- 11. Engineering analysis and design methodology for marine structures (funded by NIO): Member (1997-2002).
- 12. Tethered float breakwater system to control sediment transport near tidal inlets (funded by the Salt Commissioner, GoI; experiments conducted at IIT-Bombay): Project Leader (1984-1987).
- 13. Oceanography of the seas around India (funded by NIO and other Govt. Organizations): Member (1982-1997).

International

- 14. Marine Litter Status of India, a project by the South Asia Co-operative Environment Programme (SACEP), Colombo through NCCR, Chennai, MoES (Nov 2017 Mar 2018).
- 15. A joint project on "Removing barriers to tidal energy development in India's Gulfs", between the Heriot Watt University and UK Engineering and Physical Sciences Research Council (EPSRC) and CSIR-NIO, 2016-17 (IIT Bombay was the other partner).
- 16. DST-RFBR (Russia and India) project, "A long-term statistical features of wind and wave fields in the Indian Ocean"; jointly executed by IAP RAS, Moscow and CSIR-NIO during 2015-17.
- 17. UKIERI (UK and India) project, "Tidal Energy Resource Assessment for Potential Indian Sites and Impact of Energy Extraction on Environments" jointly executed by Edinburgh University and CSIR-NIO, IIT Bombay and IIT Madras (2015-2017).

- 18. Project funded by Royal Society of London and DST, India, 2014; one of the components under this project is a visit to the University of Edinburg, Scotland to attend the UK-India International Scientific Seminar during March 2014 (jointly executed by IIT Bombay, IIT Delhi and ICMAM Chennai).
- 19. Collaborative Project between Obukhov Institute for Physics of Atmosphere of the Russian Academy of Sciences (IAP RAS), Moscow and CSIR-NIO on wave modelling, 2011-2013.
- 20. UNDP project on Satellite data analysis for oceanographic investigations, 1987-92.

Scientific collaborations through MoUs

Have initiated the following scientific collaborations, and accordingly, MoUs have been signed:

- Bharathidasan University, Tiruchirappalli, Tamil Nadu and CSIR-NIO, Goa signed a MoU in May 2016 to carry out research jointly in Marine Sciences comprising of Physical, Chemical, Biological and Geological Sciences (MoU was valid upto May 2018).
- MoU was signed between Environmental Science Center, Qatar University and CSIR-NIO in Dec 2014 with the following objectives: Joint research work in marine sciences utilizing the respective resources and infrastructure, Capacity building through scientific exchanges and expertise sharing, EIA studies for coastal projects and Training in Marine sciences.
- 3. MoU between Space & Earth Geodetic Analysis Laboratory, SEGAL, University of Beira Interior, Portugal and CSIR-NIO was signed in Jan 2012; the identified joint research projects were: (a) to monitor the sea level in the Indian Ocean. This project aimed to complement the existing tide gauge installations by collocating one GNSS receiver in Goa where NIO is already operating one tide-gauge. (b) to compute accurate loading models and (c) to improve the Real-Time GNSS orbits in this part of the globe.
- 4. The Brazilian funding agency CNPq approved the project proposal submitted by the University of Sao Paulo (USP), Brazil under the India-Brazil-South Africa (IBSA) program. NIO, Oceanographic Institute, University of Sao Paulo, Brazil and Univ. of Cape Town, S. Africa were the partners. The main goal of the program was to develop a downscaling system to investigate impacts of large-scale climate changes on coastal regions of the three countries using numerical modeling.
- MoU between CSIR-NIO, India and AM Obukhov Institute of Atmospheric Physics of RAS (IAPRAS), Moscow, Russia was signed in 2012 to carry out research on "Long term trends of wind and wave fields in the Indian Ocean".
- 6. Tropical Marine Science Institute (TMSI)/ National University of Singapore (NUS) and CSIR-NIO signed a MoU in Oct 2009; one area of research was Ocean Dynamics, which includes remote sensing, sea level anomalies, storm surges, wave modeling and coastal circulation and admixture transport. This MoU was renewed, and extended upto March 2018.
- 7. MoU between **International Islamic University Malaysia and CSIR-NIO** was signed with the following objectives: Research in Marine Water Quality, Water Quality Modeling, Dispersion Modeling and Hydrodynamic Modeling.
- **8. Environ Software Pvt Ltd, Bangalore and CSIR-NIO**, Goa signed an agreement in 2002 for "Developing and applying numerical models in marine projects jointly in the areas of hydrodynamics, tides, storm surges, currents and water quality and carrying capacity. Several projects were completed utilising these models.

Visits abroad

Visited the following countries for Cruises or Field/Project works, on Exchange visits or fellowships and attending meetings/Conferences/Workshops/Symposia:

- 1. UK during 10-17 Dec 2016: invited to attend a joint project meeting on "Removing barriers to tidal energy development in India's Gulfs", organized by the Heriot Watt University and UK Engineering and Physical Sciences Research Council (EPSRC).
- 2. Italy during 22-26 May 2016: to attend the WISE meeting held at ISMAR.
- 3. Russia during 5-19 Oct 2015: Exchange visit to Obukhov Institute of Atmospheric Physics of RAS, Moscow under the DST-RFBR Project.
- 4. Australia during 27-30 April 2015: as an expert to participate in the IORA Workshop on Marine Oil Spill Response Capability and Science Support, organized by CSIRO, Perth.
- 5. Brazil during 18-22 August 2014:to attend the Steering Committee meeting of the Ocean Numerical Modeling Workshop, held under the India-Brazil-South Africa Cooperation Program in Oceanography (IBSA-Ocean).
- 6. UK during 6-13 June 2014: to attend the WISE (Waves In Shallow water Environment) meeting held at the European Centre for Medium-range Weather Forecasts, Reading.
- 7. UK during 25-29 March 2014: to the University of Edinburg, Scotland to attend the UK-India International Scientific Seminar, organized by Royal Society of London and DST, India.
- 8. Australia during 24-28 June 2013: Session convener and presented a paper in the 11th meeting of AOGS held in Brisbane.
- 9. China during 5-12 January 2013: invited to State Key Laboratory of Estuarine and Coastal Research (SKLEC), East China Normal University, Shanghai, to discuss on the Submarine Groundwater Discharge Project, and to give a few seminars.
- 10. Russia during 22-30 August 2012: Exchange visit to Obukhov Institute for Physics of Atmosphere of the Russian Academy of Sciences (IAP RAS), Moscow, under the collaborative project between CSIR-NIO and IAP RAS on wave modelling.
- 11. Singapore during 13 18 August 2012: organized a session in the AOGS meeting held in Singapore.
- 12. Brazil during 03-11 March 2012: invited to attend the Third India-Brazil-South Africa (IBSA) meeting held in Rio De Janeiro, organized by Brazil Science & Tech Dept.
- 13. Malaysia during 9 -13 October 2011: Invited to give a few lectures and to finalize the work at BERU/IIUM on Waste Assimilative Capacity.
- 14. Singapore during 25 September 8 October 2011: Invited to discuss the work jointly initiated on MM5/WRF and WW3/WAM modeling under the NIO-NUS MoU.
- 15. Taiwan during 08-12 August 2011: presented a paper in the Sixth meeting of AOGS held in Taipei.
- 16. Japan during 1-7 August 2010: invited as a speaker by the ICCT, Tsukuba to give a talk in the Environmental Issues session.
- 17. Japan during 24-29 March 2010: invited by the Okinawa National College of Technology, Okinawa to discuss about Coastal Environmental Problems and give a seminar.
- 18. Singapore during 10 17 August 2009: organized a session in the Sixth meeting of AOGS held in Singapore; also presented a paper.

- 19. Belgium during 29 September 5 October 2008: invited to attend the First Workshop for applications of the COHERENS model on marine environment, organized by the Royal Belgian Institute of the Natural Sciences, Brussels.
- 20. Singapore during 3 July 2 September 2008: offered Visiting Research Fellowship by the Tropical Marine Science Institute, NUS, Singapore.
- 21. South Korea during 15-23 June 2008: to attend and present a paper in the Fifth meeting of AOGS held in Busan.
- 22. Oman during 11-19 April 2008: invited by HMR, Muscat to visit the project site at Barka and assessing the data requirements as well as project related discussions.
- 23. Brazil during 18-22 February 2008: invited to attend the First India-Brazil-South Africa (IBSA) meeting, followed by PIRATA meeting held at Natal, organized by Brazil Science & Tech Dept.
- 24. Maldives during 23-27 Oct 2007: invited to attend the SAARC Workshop on Coastal Zone Management; organized in Male by SAARC.
- 25. Singapore during 29 Sept 1 October 2007: to attend the International Maritime-port Tech and development Conf. as well as visit to Tropical Marine Science Institute, NUS, Singapore.
- 26. France during 18-25 Sept 2007: invited to attend the GLOBWAVE Workshop, held in Ifremer, Brest, France.
- 27. Thailand during 30 July 5 August 2007: to attend and present a paper in the Fourth meeting of AOGS held in Bangkok.
- 28. Australia during 13 25 April 2007: to present a paper at the Waves In Shallow Environments (WISE) Meeting held at Victoria, and to discuss the Australia India Strategic Research Fund and possibilities for developing collaboration between NIO and Griffith University, Gold Coast.
- 29. Yemen during 22-24 April 2006: to visit the Ras Issa coast in connection with an EIA project of
- 30. Oman & Yemen during 19-25 April 2006: invited by HMR, Muscat to discuss the project on EIA and modeling of Ras Issa coast, Yemen.
- 31. UAE during 19-21 Dec 2005: invited by GST, Dubai again to discuss on a Dubai Municipality project, "Coastal processes and modeling off Dubai".
- 32. UAE during 26 June 1 July 2005: invited by GST, Dubai to discuss on a Dubai Municipality project, "Coastal processes and modeling off Dubai".
- 33. Singapore during 29-31 October 2001: to present a paper at the International Conference on Port and Maritime R&D Tech.
- 34. Canada during Nov 1991- Jan 1992: to undergo training in Altimetry under the Govt of India UNDP project on Satellite data analysis for oceanographic investigations.
- 35. USA during July Nov 1991: to undergo training in Altimetry under the Govt of India UNDP project on Satellite data analysis for oceanographic investigations.
- 36. Italy during 26 September -28 October 1988: to attend the course on 'Ocean waves and tides' held at the International Centre for Theoretical Physics, Trieste.
- 37. China during June1987: to attend the COPEDEC Conference in Beijing.
- 38. Sri Lanka during March 1984: to participate in a cruise onboard R V Gaveshani and to visit NARA, Colombo.
- 39. Seychelles during March 1983: to participate in a cruise around Seychelles waters onboard R V Gaveshani.

Students' Guidance for Bachelors/Masters and PhD Dissertations

Bachelors/Masters Dissertations:

- 1 Haseeba, K.P., Dept. of Biological and Environmental Sciences, Qatar University completed her Masters Thesis, "Genomic Patterns of Bacterial Communities Related to Tarmats and Chemical Quantification of Total Hydrocarbon in Tarmats along the Qatar Coast" in April 2020.
- 2 Rupali S Patgaonkar completed her MSc Engg in Environmental Engg by Research in 2010. The topic is: Pollutant dispersion and residence time of pollutant in the Gulf of Kachchh. VTU, Bangalore.
- **Sultan Al Nahian**, Res. Associate, Dept. of Oceanography, University of Dhaka is working with me since Nov 2016 on "Catastrophic storm surge modelling in the Bay of Bengal using MIKE 21 FM" under NAM S&T Centre Research Training Fellowship for Developing Country Scientists (RTF-DCS).
- **Praveen Kumar** (MSc), School of Earth, Ocean and Climate Science, IIT Bhubaneshwar, 2016. Improving the coastal bathymetry using bathymetric and topographic datasets off Paradip, Orissa along the east coast of India, A summer internship report.
- **Logesh Babu** (BTech), B.Tech Production Engineering, National Institute of Technology, Tiruchirappalli, 2016. Risk assessment and management of oil spill across the coast of Goa.
- **George Victor Emmanuel** (MSc), School of Ocean Studies and Technology, Kerala University of Fisheries and Ocean Studies, 2015. A study on wave-current interactions during extreme weather events, using coupled ADCIRC+SWAN model.
- **Selvam G**. (BE), Indian Institute of Information Technology and Management, Thiruvananthapuram, India, 2014. Estimation of extreme and long term trends of Significant wave heights in the Indian Ocean.
- **Niraj. P.S** (MTech), IIT Bombay, 2013. Pre-monsoon hydrodynamic modeling of Goa coast, West Coast of India.
- **Ebin, S.** (MSc). School of Marine Science, Bharathidasan University, Tiruchirappalli, Tamil Nadu; India, 2013. Dissolved oxygen saturation and seasonal water quality variation in the Mandovi estuary, west coast of India.
- **Jerome, S. and Ebin**, S.(MSc). School of Marine Science, Bharathidasan University, Tiruchirappalli, Tamil Nadu; India, 2013.Dissolved oxygen saturation and seasonal water quality variation in the Mandovi estuary, west coast of India.
- 11 Saishree, A. (BSc). Pondicherry Central University, Puducherry, India, 2012.Recent shoreline changes of Puducherry coast GIS and Remote Sensing Approach
- **Jerome, S** (MSc). School of Marine Science, Bharathidasan University; Tiruchirappalli, Tamil Nadu, India, 2012. Deciphering surface water quality of Gulf of Khambhat through observations and water quality modeling.
- **Ebin, S**. (MSc). School of Marine Science, Bharathidasan University, Tiruchirappalli, Tamil Nadu, India (2012). Elucidating the influence of climatic variability on water quality along the Indian coastal regions.
- **Mohit Sharma** (BTech), Presidency College of Engineering Kota, Rajasthan, 2011.A study on diffusion of coastal waters off Mumbai and estimating the diffusion coefficient.
- **Palanik Kumar K** (MTech), Anna University, Chennai, 2011.Sea level and Eddy Kinetic Energy variability in the Bay of Bengal from Satellite Altimetry.

- 16 **Gupta, P.R**. (BTech), IIT, Guwahati, 2010. Hydrodynamics and pollutant transport off Mumbai Coastal Region
- 17 **Balaguru, B** (MTech), Anna University, Chennai, 2010. Seasonal variations of eddy kinetic energy from altimeter observations.
- 18 **Vinod Kumar,** K. (MSc), CUSAT, Kerala, 2010. Simulation of hydrodynamics in the central west coast of India during Cyclone Phyan.
- 19 Haris, K. (MTech), CUSAT, Kerala, 2010. Numerical modelling of sediment dynamics off Mangalore.
- 20 **Goyal, R**. (BTech), Indian School of Mines, Dhanbad, 2010. Modelling hydrodynamics and water quality off Dwarka.
- 21 Jahfer Sharif, K.K. (MSc), CUSAT, Kerala, 2009. Numerical simulation of flow off Ratnagiri.
- 22 **Malhotra Ankit** (BTech), IIT Kharagpur, 2005. Review of studies carried out in the Hoogly Estuary.

PhD Supervision

Supervised the PhD work of the following students, and they are all working in reputed organizations and continuing their research:

- 1. **R. Rashmi (Environ Software, Bangalore):** awarded in August 2019 for her thesis, "Momentum flux exchange processes in the marine atmospheric boundary layer" by the Bharathidasan University, Tiruchirapalli.
- 2. **Soumya Mohan (Scientist, CSIR-NIO, Goa):** awarded in Oct 2017 for her thesis, "Climate modes on inter-annual sea level variability in the Eastern Indian Ocean and South China Sea" by the AcSIR, New Delhi.
- 3. **Prakash Mehra (Sr. Principal Scientist, CSIR-NIO, Goa):** awarded in April 2017 for his thesis, "Sea level variability at select coastal and Island regions in the Indian Ocean" by the Goa University.
- 4. **Samiksha, S.V (Scientist, CSIR- NIO, Goa)**: awarded in Sept 2016 for her thesis, "Wave energy dissipation due to currents, suspended sediments and vegetation along the coast of India" by the Bharathidasan University, Tiruchirappalli.
- 5. **Renjith V.R (Research Associate, IIT Bombay):** awarded in Sept 2016 for his thesis, "Waste assimilative capacity studies of select regions of the west coast of India" by the Goa University.
- Mani Murali R (Principal Scientist, CSIR-NIO, Goa): awarded in July 2016 for his thesis, "Coastal processes responsible for morphological changes along the central Orissa coast" by the Goa University.
- 7. **V. Suneel (Scientist, CSIR-NIO, Goa):** awarded in Sept 2014 for his thesis, "Transport and finger-printing of tar balls deposited along the west coast of India" by the Andhra University.
- 8. **Grinson George (Scientist-G, CMFRI, Kochi)**: awarded in Nov 2011 for his thesis, "Fish larval transport in the coastal waters through ecological modeling" by the Goa University.
- 9. V.M. Aboobacker (Research Assistant Professor, Qatar University, Qatar): awarded in Feb 2011 for his thesis, "Wave transformation at select locations along the Indian coast through measurements, modelling and remote sensing" by the Goa University.
- 10. Prasad Kumar Baskaran (Professor, Dept. of Ocean Engg. and Naval Arch, IIT Kharagpur): awarded in 1998 for his thesis, "Ocean wave prediction model for the Indian Seas" by the Kurukshetra University.

Publications (Journals/ Chapters in books/Conf. Proc/ Abstracts and Reports)

Journals:

- 1. Elnaiem Ali Elobaid, Ebrahim M.A.S. Al-Ansari, Oguz Yigiterhan, V. M. Aboobacker and P. Vethamony (2021). Spatial variability of summer hydrography in the central Arabian Gulf, Oceanologia, https://doi.org/10.1016/j.oceano.2021.09.003.
- 2. Aboobacker, V.M., Samiksha, S.V., Veerasingam, S, Al-Ansari, E.M.A.S, Vethamony, P (2021). Role of shamal and easterly winds on the wave characteristics along the north coast of Qatar, Ocean Engineering, 236, 109457. https://doi.org/10.1016/j.oceaneng.2021.109457.
- Sankaran Rajendran, P. Vethamony, Fadhil N. Sadooni, Hamad Al-Saad Al-Kuwari, Jassim A. Al-Khayat, Himanshu Govil, Sobhi Nasir (2021). Sentinel-2 image transformation methods for mapping oil spill A case study with Wakashio oil spill in the Indian Ocean, off Mauritius. MethodsX 8, 101327, 10.1016/j.envpol.2021.116618.
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- 9. Rajendran. S, Vethamony. P, Sadooni F.N, Hamad Al Saad, Jassim A. Al-Khayat, Govil. H, Nasir. S (2021). Detection of Wakashio oil spill off Mauritius using Sentinel-1 and 2 data: capability of sensors, image transformation methods and mapping. Environmental Pollution, 274, 116618. https://doi.org/10.1016/j.envpol.2021.116618.
- Rajendran, S., Jassim A. Al-Khayat, Veerasingam, S., Nasir. S., Vethamony, P., Fadhil N. Sadooni, Hamad Al Saad (2021). WorldView-3 mapping of Tar deposits of the Jazirat Ras Rakan Island, Northern Coast of Qatar: Environmental perspective. Marine Pollution Bulletin, 163 (2021) 111988.
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- 1. Marine EIA study for expansion of 2 X 800 MW (Phase-II) Udupi Thermal Power Project Numerical modelling part, sponsored by Udupi Power Corporation Limited (SSP2968).
- 2. EIA study for the proposed Marina off Reis Magos Physical component, sponsored by M/s Spark Healthline Pvt Ltd. (SSP2958).
- Directional wave measurements at Kadmath and current and tide measurements at Kadmath, Kiltan, Chetlat and Bitra Island, Lakshadweep, Andaman-Lakshadweep Harbour works (SSP2953).
- 4. Numerical modelling of the sediment transport around the seawater intake system for the 2x600MW Udupi power project, sponsored by Udupi Power Co. Ltd (SSP2872).
- 5. Preparation of Oil Spill Management Plan off Veera near Kandla, sponsored by Kandla Port Trust (SSP2655).
- 6. Net Environmental Benefit Analysis (NEBA) for Oil spill risk contingency planning for Kandla and Vadinar Ports, Gujarat, sponsored by Kandla Port Trust (CNP2980).
- Study of inland water of NW-1 for the stretch between Farakka and 'base line' declared by MEA. Sponsored by Transport Dept., Govt. of West Bengal. Report No. NIO/CON-5/2016 (CNP2931).
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- 11. Environmental Impact Assessment study for the desilting of a section of the river Sal between Khareband bridge and Talaulim-Varca new bridge, Captain of Ports, Govt. of Goa (SSP2909).
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- 15. Rapid Marine EIA Studies associated with the beach resort at Sagartirth, Vengurla Taluk, Maharashtra: Physical aspects. Report submitted to Elite Township Pvt. Ltd. Report No. NIO/SP-14/2013 (SSP2748).

- 16. Rapid Marine Environmental Impact Assessment of the proposed desalination plant, Tuticorin. Report submitted to Sterlite Industries (India) Limited, Tuticorin. Report No. NIO/SP-2/2013 (SSP2750).
- 17. To assess the salinity and water quality parameters for salinity profile of a creek originating from the Thane Creek near Mumbra, Mumbai for CRZ demarcation (SSP2731). Sponsored by Focus Maritime & Marine Services Pvt. Ltd. Stat date: 28/06/2012; End date: 25/07/2012.
- 18. Numerical modelling studies for proposed thermal Power Plant (TPP) at Kasargod, Kerala (SSP2493). Sponsored by Kerala State Industrial Development Corporation, Govt. of Kerala, Kowdiar Road, Thiruvananthapuram. Start date: 04/02/2011; End date: 31/03/2014.
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- 24. Numerical modelling to study the impact of alignment 4 A of Sethusamudram channel on marine environment. Report submitted to Sethusamudram Co. Ltd., Chennai. Report No. NIO/SP-45/2011 (SSP2324).
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- 28. Preparation of Oil Spill Management Plan off Veera near Kandla, KPT. Report submitted to Kandla Port Trust. Report No. NIO/SP-36/2012 (SSP 2655).
- 29. Wave hind casting (30 years) off Mumbai High at two deep water locations (SSP2565). Sponsored by Oil and Natural Gas Corporation Ltd., Mumbai. Start date: 09/02/2011; End date: 31/03/2014.
- 30. Recirculation Study for 2nd Ultra Mega Power Project (UMPP) near Nayunipalli Village, Prakasam District, A.P. (SSP2530). Sponsored by PFC Consulting Limited, New Delhi. Start date: 11/12/2010; End date: 31/12/2013.
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- 32. Numerical modelling study of hydrodynamics for Environment Impact Assessment (EIA) of proposed marina at Sancoale Bay. Report submitted to Yacht Haven (Goa) Pvt. Ltd. Report No. NIO/SP-27/2012 (SSP 2522).

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- 50. Study to identify the marine outfall and intake locations of the proposed desalination plant, Sponsored by Sterlite Industries (I), Ltd., Tuticorin (CNP2415). Report No. NIO/CON-20/2010.
- 51. Impact of proposed Adani port and breakwater on the Paradip coastline and adjacent port facilities. Report No. NIO/CON-19/2010, submitted to Mundra Port and Special Economic Zone Limited, Ahmedabad. (CNP 2411); amount sanctioned: Rs. 29.0 lakhs.
- 52. Mathematical modelling studies for the proposed jetty alignment in connection with the coal based 2X800 MW Udangudi super critical thermal power project at Udangudi, Tuticorin district, Tamil Nadu. Report submitted to Udangudi Power Corporation Limited, Chennai. Report No. NIO/SP-14/2010. (SSP 2290).
- 53. Numerical modelling of oil spill in the vicinity of IOCL SPMs off Paradip. Report submitted to Indian Oil Corporation Limited, New Delhi. Report No. NIO/CON-13/2010. (CNP 2354).
- 54. Impact of dredging along the Dhamra and Gahirmatha coastline. Report No. NIO/CON-12/2010, submitted to The Dhamra Port Company Limited. (CNP 2205).
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- 56. Advisory Services Relevant to the Mitigation of impacts due to anthropogenic activities on Ecologically Sensitive Marine Habitats (CNP2270). Sponsored by New Kolkotta International Development Pvt. Ltd. (NIKD). Start date: 01/09/2009; End date: 30/04/2012.
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