

## Dwarakish G S

Professor

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### Education

Ph. D., (Coastal Engineering, Remote Sensing & GIS), Institute of Remote Sensing, Anna University, Chennai, India (2001).

M.Tech. (Hydraulics) (1993), National Institute of Engineering, Mysore University, Mysore, India. Completed in First class with distinction.

B.Tech. (Civil Engineering) (1990), National Institute of Engineering, Mysore University, Mysore, India. Completed in First class with distinction.

College Education, National College, Basavanagudi, Bangalore, India.

High School Education, Ryots Education High School, Hanakere, Mandya, Karnataka, India.

Primary Education, Govt. Higher Primary Boys School, B. Gowdagere, Mandya, Karnataka, India.

### Professional Experience

01/01/2018	31/07/2018	Dean Planning and Development
27/03/2015	14/03/2017	Professor and Head of Department
09/03/2015	Till Date	Professor [4-Tier Faculty Structure]
17/02/2010	09/03/2015	Professor
17/02/2006	17/02/2010	Associate Professor
17/02/2003	17/02/2006	Assistant Professor
17/02/2000	17/02/2003	Senior Lecturer
17/02/1995	17/02/2000	Lecturer
08/08/1993	17/02/1995	Assistant Lecturer
1990	1991	Site Engineer

### Life Membership of Professional Bodies

Member	Indian Society of Remote Sensing (MISRS)	<a href="http://www.isrsindia.org">www.isrsindia.org</a>
Member [LM 712]	Indian Society for Hydraulics (MISH)	<a href="http://www.e-ish.net">www.e-ish.net</a>
Member [LM 628]	Indian Society of Geomatics (MISG)	<a href="http://www.isgindia.org">www.isgindia.org</a>

Member [LM 52236]	Indian Society of Technical Education (MISTE)	www.isteonline.com
Member [92950546]	Institution of Electrical and Electronics Engineers [IEEE]	www.ieee.org
Member	Indian Association of Hydrology (MIAH)	www.iah/index.html
Member [88543]	Kannada Sahithya Parishath	
Member [LM 513]	Ocean Society of India	www.oceansociety.in
Member [LM 2022-7924]	Indian Water Resources Society	www.iwrs.org.in
Member [F-1276715]	Institution of Engineers (India)	www.ieindia.org

### Courses Taught

#### Under Graduate Level

Engineering Mechanics  
Strength of Materials  
Mechanics of Materials  
Fluid Mechanics  
Irrigation Design and Drawing  
Remote Sensing & Geographical Information System  
Geomatics Applications in Civil Engineering  
Digital Image Processing  
Strength of Materials Lab.  
Fluid Mechanics Lab.

#### Post Graduate Level

General Oceanography  
Principles of Remote Sensing  
Geomatics Applications for Water Resources Engineering  
Geomatics Applications for Coastal Engineering  
Digital Image Processing  
ICZMP  
Digital Image Processing Lab.  
Remote Sensing & Geographical Information System Lab.

### Sponsored Research Projects Undertaken [8+2]

Period	Title of the Project	Amount (Rupees) and Sponsored Agency	Status
1999 - 2001	Modelling of Suspended Sediment Concentration off Mangalore Coast (As Research Scholar)	<b>5.0 Lakhs</b> RESPOND Programme Indian Space Research Organisation, Dept. of Space, Govt. of India	Completed
2003 - 2005	Nearshore Processes Information System for Mangalore Coast- A RS and GIS Approach. (Principal Investigator)	<b>10 Lakhs</b> Ministry of Human Resources and Development, Govt. of India	Completed
2003 - 2006	Management of Tidal Inlets along West Coast of India (Co-Investigator)	<b>45 Lakhs</b> Integrated Coastal Marine Area Management – Project Directorate (ICMAM-PD) , Department of Ocean Development (DOD), Govt. of India	Completed

2004 - 2011	Integrated Coastal Zone Management Plan for Karnataka Coast ( <b>Principal Investigator</b> )	<b>23 Lakhs</b> Ministry of Environment and Forestry, Govt. of India	Completed
2006 - 2011	RS & GIS Application for Sustainable Management of Sacred Grooves in Kodagu District ( <b>Principal Investigator</b> )	<b>11.65 Lakhs</b> DST, Govt. of India, New Delhi, India.	Completed
2006 - 2011	Analysis of Satellite Derived Wind and Wave Parameters of Karnataka Coast ( <b>Principal Investigator</b> )	<b>12.5 Lakhs</b> RESPOND Programme Indian Space Research Organisation, Dept. of Space, Govt. of India	Completed
2014	Modelling of Sediment Transport in Near shore along Mangalore Coast using Conventional and Remote Sensing Data under GIS Environment ( <b>Principal Investigator</b> )	<b>129.835 Lakhs</b> Ministry of Earth Sciences (MoES), Govt. of India	Submitted
2014	Simulating the Impact of Land use Changes on Hydrological Response of Humid and Sub-humid Catchments in Karnataka state, India. ( <b>Principal Investigator</b> )	<b>14.80 Lakhs</b> RESPOND Programme National Remote Sensing Center Dept. of Space, Hyderabad.	Submitted
2014	To Strengthen the post-graduate teaching and research facilities in the Department ( <b>As H.O.D</b> )	<b>220 Lakhs</b> DST, Govt. of India, New Delhi, India.	Ongoing
2016	Coastal Ocean Technology [COT]	<b>29 Lakhs</b> Ministry of Earth Sciences (MoES), Govt. of India	Ongoing
2017	National Post Doctoral Fellowship [N-PDF] - ( <b>As Mentor</b> )	<b>19 Lakhs</b> DST- SERB, Govt. of India, New Delhi, India.	Completed

### Bachelors Degree (B.E./B.Tech.) Project Guided [14+1]

### Master Degree (M.Tech.) Dissertation Guided [62+4]

Sl. No.	Title of Thesis	Name of the student	Year	Placement of the Student
1.	Soil Conservation and Watershed Management using Remote Sensing and GIS Techniques: A Case Study	M. Anisha	1995 - 1996	Assistant Executive Engineer, Govt. of Andra Pradesh, Hyderabad, India

2.	Beach Sediment Characteristics Along Mangalore Coast	Raghavendra Majaker	1995 - 1996	Working in PWD, Kerala State
3.	A Study of Sediment Characteristics of Netravathi-Gurpur River Estuary and Neighbouring Beaches	V. Raghupal Reddy	1997 - 1998	Working as a Marine engineer in Royal Haskoning- NewBombay
4.	Shoreline Change Detection Through an Integrated Approach: A Case Study	Mallikarjuna Rao. I	1998 - 1999	Tata Consultancy Services, Present placement at USA
5.	Modelling of Sediment Dynamics of Mangalore Coast through MIKE 21 and Remote sensing	Sankar Babu K	2001 - 2002	After completing his Ph.D. from IIT, Madras, now he is working in coastal engg. deptt. Govt. of Dubai.
6.	Harbour Area Information System (HIS) Using RS and GIS	Suresh Naik	2003 - 2004	Working as a Design Engineer in coastal Engineering Software company, Pune
7.	Coastal Zone Information System for Mangalore Coast using RS, GIS, and V.B.6.0.	Rajaram	2005 - 2006	Working as a Marine engineer in Royal Haskoning, New Bombay
8.	Integrated Coastal Zone Management Plan for Udupi Coast Through RS and GIS	Vinay. S	2006 - 2007	Working as a Marine engineer in Royal Haskoning, New Bombay
9.	Effect of Coastal Dams on Coastal Processes	Babita M. K.	2007 - 2008	Working for L & T construction company, Chennai
10.	EIA Studies in Mangalore Coastal Zone	Angel Zeba	2007 - 2008	Working for Chemical Company in Chennai
11	Proximity Analysis for Mangalore City using Remote Sensing, GIS, GPS, and VB 6.0	Namratha V.	2007 - 2008	Working for GIS Company at UK
12.	Development of Sediment Yield Model for Periyar River Basin Through RS, GIS & GPS	Preethi Jacob	2008 - 2009	Working as faculty at Dayanand Sagar College of Engineering, Bangalore
13.	Modelling of Shoreline Configuration Along NITK and Cochin Coast	Indu Shekhar	2008 - 2009	Working for Coastal Structures Construction Company
14.	Modelling of Coastal Sediment Dynamics: A Case Study	Amruth Karjagi	2009 - 2010	Working for L & T, Chennai
15.	Study of Shoreline Configuration Using Multi-date Satellite Data for NITK Beach	Mohan Kumar	2009 - 2010	Working for GIS Company, Bangalore

16.	Numerical Modelling of Shoreline Configuration – A Case Study	Ms. Arya Ratish	2010 - 2011	Working for L & T, Chennai
17.	Applications of RS GIS and GPS for Sacred Groves Monitoring and Management	Harish Kumar S.	2010 - 2011	Working for ITC, Bangalore
18.	Groundwater Level Fluctuation Along Mangalore Coast Through Conventional and Modelling Approach	Suman B. S.	2010 - 2011	Looking after his own construction company, Shimoga
19.	Numerical Modelling of Sediment Dynamics: A Case Study	Pavithra N. R.	2011 - 2012	Working as a faculty in BIT, Bangalore
20.	Shoreline Configuration Through Conventional Methods	Sabarimon	2011 - 2012	Working as a site Engineer, Kerala
21.	Developments in Capital and Maintainance Dredging : NMPT	Sameer	2011 - 2012	Working as a site Engineer, Kerala
22.	Study of Sediment Dynamics Around Mulki-Pavanje Rivermouth Through Statistical Analysis	Mrinal S. Murali	2012 - 2013	Working as Faculty
23.	Planning of Marine Facilities for an LNG Terminal– A Case Study for the Development of an LNG Terminal in India	Rushith M. D.	2012 - 2013	Working as Site Engineer
24.	Prediction of Tides Along Karwar Coast Using Artificial Neural Networks	Shetty Rakshith	2012 - 2013	Working as Design Engineer for TCE
25.	Flood Risk Assessment in the Bagmathi and Adhwara River Basins, North Bihar Plains, India	Tilak N.	2012 - 2013	Working as Faculty
26.	Development of Flood Alert System	Uday Kumar	2012 - 2013	Working as a RS specialist
27.	Development of Algorithm for the Study of Sediment Dynamics Through Sediment Trend Analysis: A Case Study of Mangalore Coast, West Coast of India	P. Sri Ram Kumar	2013 - 2014	Working for L & T, Chennai
28.	Wave Forecasting Along Karnataka Coast Using Artificial Neural Networks	Deepthi I. Gopinath	2013 - 2014	Working as Assistant Professor
29.	Application of Neural Network Model for LU/LC Classification of Satellite Image	Nujuma Nazimudhin	2013 - 2014	Working as Assistant Professor
30.	Impact of Regional Economic Growth on Spatial Development, Case Study of Dakshina	S. D. Suman	2013 - 2014	Working for Software company in Bangalore

	Kannada and Udupi Districts (Karnataka)			
31.	Prediction and Analysis of Land Use/Land Cover Dynamics with Respect to Driving Factors in Netravati and Harangi River Basin	Gayathri K. Devi	2014 - 2015	Working as Assistant Professor
32.	Flood Inundation Mapping for Bangalore Urban Area	Rajeesh R.	2014 - 2015	Working as Assistant Professor
33.	Prediction of Tides along Karnataka Coast Using PSO and Support Vector Machine	Akhil M.	2014 - 2015	Working as Assistant Professor
34.	Wave Forecasting Along Karnataka Coast Using PSO and Support Vector Machine	Liju K. V.	2014 - 2015	Working for Software company
35.	Assessment of Wave Energy Potential Along West Coast of India through Numerical Modelling	Justin Thomas T.	2014 - 2015	Working for Software company
36.	Shoreline Change Configuration and Coastal Protection Along Undivided Dakshina Kannada Coast- An Integrated Approach	L. Revanth Reddy	2015 - 2016	Working as a Engineer in L & T, Chennai.
37.	Coastal Sediment Dynamics through Numerical Modelling	Shabnum Suhura Shamsudeen	2015 - 2016	Working as Assistant Professor
38.	Hydromechanics Study for Netravathi Catchment Area	Fashamol T. M.	2015 - 2016	Working as Assistant Professor
39.	Prediction and Forecasting of Ocean Parameters Through Soft Computing Techniques - A case study	Nithyapriya B.	2015 - 2016	Pursuing her Ph.D. At IIT Bombay, Mumbai, under IITB-Monash Programme.
40.	Pollutant Identification & Mapping Using RS & GIS	Vineet Kumar Powal	2016 - 2017	Working in MNC in Delhi
41.	Runoff Estimation Using Advanced Geospatial Hydrologic Modelling Tools	Jubina C. K.	2016 - 2017	Working as Assistant Professor in College of Engineering Vadakara
42.	Development of a QGIS Plugin for the Application in RS & GIS	Barane Prathamesh K.	2016 - 2017	Working as JRF in Symbiosis Institute of Geoinformatics, Pune
43.	Hydrodynamic Analysis of Offshore Floating Wind Turbine Along Rameshwaram Kanyakumari Coast of Tamil Nadu	S. Sharad Kumar	2016 - 2017	Working as Technical Trainee in Chennai
44.	Aersol Optical Studies Using Space Borne Measurements.	M. Gopika	2016 - 2017	Working as Business Analyst in Bengaluru

45.	Shoreline Monitoring and Management Through an Integrated Approach- A Case Study	Bhavya	2017 - 2018	Working as Faculty
46.	Analysis Climate Impacts on Costal Karnataka	S. B. Gowthami	2018 - 2019	Completed
47.	Application of Geoinformatics for Prioritisation of Watersheds in Netravathi Catchment, Karnataka, India	Waleed Makhdumi	2018 - 2019	Pursuing his Ph.D. at NIT Karnataka, Surathkal
48.	Coastal Vulnerability Assessment of the Kasaragod Coast in Kerala, West Coast of India	Anjita N. A.	2019 - 2020	Pursuing her Ph.D. At IIT Bombay, Mumbai
49.	Development of Graphical User Interface Spreadsheet to Perform Sediment Trend Analysis: A Case Study of Mangalore Coast	Aseem V.	2019 - 2020	Assistant Engineer at Rashtriya Gram Swaraj Abhiyan
50.	Automated Shoreline Detection From Satellite Imagery Using Image Processing Techniques and its Change Analysis Along Mulki-Pavanje River Mouth	Linda Regi	2019 - 2020	Geo Analytics at WRI India's Sustainable Cities and Transport program
51.	Statistical and Hydrological Evaluation of Satellite Precipitation Products in Two Diverse Contrasting River Basins: Nethravathi and Ponnaiyar	M. Satish Kumar	2019 - 2020	Software Systems Engineer at TATA Consultancy Services Pvt Ltd
52.	Future Land Use Land Cover Prediction of Netravati River Basin Through Cellular Automata Markov Chain Model	Nayana N.	2019 - 2020	Completed
53.	Port Performance Analysis Using DEA: A Case of NMPT Port	S. Chekatla	2019 - 2020	Planning Engineer at Meka Infrastructure Pvt Ltd
54.	Flood Frequency Studies of Sita Catchment, Karnataka, India	Soumya S. Nyamathi	2019 - 2020	Working at ATKINS
55.	Selection of Algorithm for Land Use Land Cover Classification and Change Detection	Arnab Chowdhury	2020 - 2021	Pursuing his Ph.D. at IIT Roorkee, Uttarakhand
56.	Oil Spill Trajectory Detection By GNOME and SAR	G. Masthan Wali	2020 - 2021	Completed
57.	Drought Forecasting by Using Support Vector Machine Approach	Molaka Maruthi	2020 - 2021	Completed

58.	Rapid Mapping of Cyclone Amphan (2020) Induced Flooding in Parts of West Bengal, India Using Automated Thresholding Algorithms on SAR Images	Rasheeda Soudagar	2020 - 2021	Completed
59.	Ground Subsidence Monitoring With SAR Differential Interferometry in Chennai	S. Jyotna	2020 - 2021	Completed
60.	Oceanic Impact of Cyclone Phailin in The Bay of Bengal	Shrestha Rout	2020 - 2021	Completed
61.	Shoreline Change Detection Using Coastsat and QGIS along Kasaragod Coastline, Southwest Coast of India	G. Pavan Sai	2021 - 2022	Completed
62.	Evaluation and Determination of Reliability on Advanced Neural Network models for Prediction of Soil Moisture	Nagashree G. E.	2021 - 2022	Completed
63.	Coastal Process Along Kasargod Coast, Kerala using MIKE-21	Angayarkkani R.	2022 - 2023	Ongoing
64.	Ground Water Modelling	Sagar	2022 - 2023	Ongoing
65.	Hydrological Modelling for Studying Climate Change Impacts	Sreejith K. S.	2022 - 2023	Ongoing
66.	Watershed Management Through Hybrid Approach	Suraga M. R.	2022 - 2023	Ongoing

### Master Degree (M.Sc.) Dissertation Guided [7+3]

Sl. No.	Title of Thesis	Name of the student	Year	Placement of the Student
1.	Web Based Information System for New Mangalore Port Trust	Shwetha Nayak	2004 - 2005	Working as a faculty in Udupi
2.	Coastal Zone Information System for D.K. Coast	Nisha	2005 - 2006	Working as a faculty in Mangalore University
3.	NITK Information System	Shakila	2005 - 2006	Working in a Software company
4.	Coastal Zone Information System For Udupi Coast	Amrithkala M. Shetty	2006 - 2007	Working as a faculty in Mangalore University
5.	Integrated Modelling Approach for Shoreline Monitoring and Management	Aashvija	2008 - 2009	Working for KRSRAC, Mangalore



6.	Integrated Modelling Approach for Sediment Yield Estimation for Periyar River Basin	Supriya J. Anchan	2008 - 2009	Working for SOI, Bangalore
7.	A Study on Beach Morphology and Shoreline Changes Along Dakshina Kannada Coast	Vijay Laxmi	2013 - 2014	Mangalore University, Mangalore
8.	Sediment Dynamics Along Mangalore Coast	Bharat N.	2022 - 2023	Ongoing (Mangalore University)
9.	Shoreline Change Detection Through Geo-informatics	Gopika C.	2022 - 2023	Ongoing (Bharathidaran University)
10.	Rainfall Runoff Modelling Using Remote Sensing and Conventional Data	Swathi K. K.	2022 - 2023	Ongoing (Mangalore University)

### Ph.D. Research Supervision [13+10]

Sl. No.	Name of Student	Reg. Year and Status (FT/PT)	Title of Dissertation	Other Supervisor	Completed [placement]/ Ongoing
1.	Jagadeesha Pai B.	Full Time Institute Scholar 2004 - 2009	Retrieval of Wind and Wave Parameters Over Indian Ocean Region Using Synthetic Aperture Radar Data	Prof. A. Vittal Hegde.	Completed and working as a faculty at MIT Manipal.
2.	Ashok Kumar T.	Part Time 2004 - 2010	Advanced Image Processing Techniques And Algorithms For Classification of Semi-Urban Land Use/Land Cover Features Using High-Resolution Satellite Data	Prof. Shivaprakash Koliwad MCE – Hassan.	Completed and working as a Principal of VCET, Puttur.
3.	Rajagopal B.	Q.I.P. Full Time [Polytechnic] 2005 - 2013	Studies on Land Use/Land Cover Changes and Water Quality Due to Urbanization Along the Coastal Areas Of Dakshina Kannada District, Karnataka, India	Dr. Srihari. S	Completed and working as a Principal in Plytechique college in A.P.
4.	Abdu Rahiman K. U.	Q.I.P. Full Time [KUSAT] 2006 - 2009	River Runoff and Sediment Flow Changes Induced by Dams in Periyar River Basin, Kerala, India	-	Completed and working as a faculty at CUSAT, Cochin
5.	Shushma S. B.	Part Time (Under Project) 2008 - 2015	RS and GIS tools to Support Conservation and Sustainable Management of Sacred Groves in Kodagu District	Dr. K. B. Kiran	Completed and working as a Scientist in Mines and Geology

6.	Gumageri Nagaraj	Institute Fellowship – Full Time 2009 - 2013	Study of Geomorphology and Dynamics of Shoreline Associated With Mulki-Pavanje River Mouth, Dakshina Kannada Coast, Karnataka, India	-	Completed and working as a faculty in BIT, Mangalore
7.	Gowthaman R.	Part Time 2010 - 2016	Modelling of Shoreline Configuration Along Rameshwaram Island, East Coast Of India	-	Completed and working as a Scientist, NIO, Goa
8.	Raju A.	Institute Fellowship – Full Time 2011 - 2014	Development of Contrast Enhancement Algorithms for Coastal Applications Using Satellite Images	Prof. D. V. Reddy	Completed and working as a faculty in Japan
9.	Ganasri B. P.	PGRA- Institute Fellowship - TEQIP - Full Time 2012	Impact of Land Use changes on Hydrological Response of Humid and Sub-humid Catchments in Karnataka State, India	-	Completed and working in USA
10.	Arega Mulu Adal	Ethiopian Government Fellowship 2013 - 2016	Simulation of Hydrological Effects of Land Use /Land Cover, Climate Change and Effect of Dam at Gilgel Abay River Basin, Ethiopia	-	Completed and working as faculty in Ethiopia
11.	Preeti Jacob	Part Time 2014	Experimental Study on Effect of Aggregate Size on the Hydraulic Properties of Pervious Concrete	-	Ongoing
12.	Dayanand Shetty	Part Time 2015 - 2019	Optimisation of Vessel Turnaround Time in a Seaport With a Special Reference to New Mangalore Port Trust	-	Completed
13.	Arunkumar Yadav	Institute Fellowship – Full Time 2015 - 2020	Shoreline Dynamics in Response to River Sediment: A Case Study	Dr. B M Dodamani	Completed
14.	Pruthvin. C. Shetty	Institute Fellowship – Full Time 2016	Selection of Suitable Site for Smart City Through Geoinformatics Approach	-	Ongoing
15.	Abiot Ketema Demmsie	Ethiopian Government Fellowship 2016 - 2021	Simulation of the Hydrological Impacts of Climate and Land Use / Cover Change on Tikur Wuha Watershed in Ethiopia	-	Completed and working as faculty in Ethiopia

16.	Thejashree G.	Part Time 2016	Integrated Studies on Landslides in and Around Western Ghats of Karnataka Using Remote Sensing and GIS and Geophysical Technique	Prof. K N Lokesh [CED]	Ongoing
17.	Dinu Maria Jose	Institute Fellowship – Full Time 2017	Temporal Analysis of Land Use Land Cover and Climate Change on Streamflow and Sediment Yield of Netravathi River Basin, India	-	Ongoing
18.	Waleed Makhdumi	Institute Fellowship – Full Time 2019	Soil Erosion Modelling and Estimation Using Geoinformatics in Netravathi Catchment, Karnataka, India	Dr. H. R. Shwetha	Ongoing
19.	G. Praveen Kumar	Institute Fellowship – Full Time 2020	Development of a Hydrological Model to Analyse the Catchment Response	-	Ongoing
20.	Mukul Kumar Sahu	Institute Fellowship – Full Time 2020	Hydrological and Hydrodynamic Modelling Using Remote Sensing and GIS	Dr. H. R. Shwetha	Ongoing
21.	Parvathy M. M.	Part Time 2020	Coastal Vulnerability Assessment to Climate Change Impacts for the State of Kerala, South - West Coast of India	-	Ongoing
22.	Anurag Labh Aman	Institute Fellowship – Full Time 2021	-	-	Ongoing
23.	Avinash R.	Institute Fellowship – Full Time 2022	-	-	Ongoing

### List of Publications (266)

	International	National
Journal papers	75	15
Conference/workshop/Symposium	94	82

### International Journals [67]

- 2022** Ketema, A., **Dwarakish, G. S.** and Makhdumi, W. (2022). “Hydrological responses to land use/land cover change in Tikur Wuha Watershed in Southern Ethiopia.” *Sustain. Water Resour. Manag.*, 8, 134 <https://doi.org/10.1007/s40899-022-00716-y>
- Mulu, A., Jacob, P. and **Dwarakish, G. S.** (2022). “Hydraulic Performance of Pervious Concrete Based on Small Size Aggregates.” *Advances in Material Science and Engineering*, 1-12, <https://doi.org/10.1155/2022/2973255>
- Jose, D. M., and **Dwarakish, G. S.** (2022). “Frequency-intensity-distribution bias correction and trend analysis of high-resolution CMIP6 precipitation data over a tropical river basin.” *Theor Appl Climatol*, 149, 683–694. <https://doi.org/10.1007/s00704-022-04078-5>
- Jose, D. M., Vincent, A. M., and **Dwarakish, G. S.** (2022). “Improving multiple model ensemble predictions of daily precipitation and temperature through machine learning techniques.” *Scientific Reports*, 12, 4678. <https://doi.org/10.1038/s41598-022-08786-w>
- Chowdhury, A., and **Dwarakish, G. S.** (2022). “Selection of Algorithm for Land Use Land Cover Classification and Change Detection.” *International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)*, 2, 1, doi: 10.48175/ijarsct-2610
- Jose, D. M., and **Dwarakish, G. S.** (2022). “Ranking of NEX-GDDP dataset at a basin scale: Case study of a tropical river basin on the South West coast of India.” *Arabian Journal of Geosciences*, 15, 120. <https://doi.org/10.1007/s12517-021-09289-0>
- Jose, D.M., and **Dwarakish, G. S.** (2022). “Bias Correction and Trend Analysis of Temperature Data by a High-Resolution CMIP6 Model over a Tropical River Basin.” *Asia-Pacific Journal of Atmospheric Sciences*, 58, 97-115. <https://doi.org/10.1007/s13143-021-00240-7>
- 2021** Ketema, A., and **Dwarakish, G. S.** (2021). “Hydro-meteorological impact assessment of climate change on Tikur Wuha watershed in Ethiopia.” *Sustainable Water Resources Management*, DOI: 10.1007/s40899-021-00547-3.
- Yadav, A., Dodamani, B. M., and **Dwarakish, G. S.** (2021). “Effect of disturbed river sediment supply on shoreline configuration: A case study.” *ISH Journal of Hydraulic Engineering*. <https://dx.doi.org/10.1080/09715010.2021.1878068>
- 2020** Jose, D. M., and **Dwarakish, G. S.** (2020). “Uncertainties in predicting impacts of climate change on hydrology in basin scale: a review.” *Arabian Journal of Geosciences*. 13 (1037). <https://doi.org/10.1007/s12517-020-06071-6>
- Ketema, A., and **Dwarakish, G. S.** (2020). “Trend and variability of hydro-meteorological variables of Tikur Wuha watershed in Ethiopia.” *Arabian Journal of Geoscience*, 13 (142), 1 - 20. DOI: 10.1007/s12517-020-5139-9.
- Ketema, A., and **Dwarakish, G. S.** (2020). “Prioritization of sub-watersheds for conservation measures based on soil loss rate in Tikur Wuha watershed, Ethiopia.” *Arabian Journal of Geosciences*, 13(19), 1-16. DOI: 10.1007/s12517-020-06054-7.

- 2019** Ketema, A., and **Dwarakish, G. S.** (2019). “Water erosion assessment methods: a review.” *ISH Journal of Hydraulic Engineering*. DOI: 10.1080/09715010.2019.1567398
- Thejashree, G., Lokesh, K. N., and **Dwarakish, G. S.** (2019). “Use of Geoinformatics and Geophysical Applications in Landslide Studies: An Overview”. *Disaster Advances*, 12(2), 37-49.
- 2018** Yadav, A., Dodamani, B. M., and **Dwarakish, G. S.** (2018). “Shoreline analysis using Landsat-8 satellite image.” *ISH Journal of Hydraulic Engineering*. DOI: 10.1080/09715010.2018.1556569
- Shetty, D. K., and **Dwarakish, G. S.** (2018). “Measuring port performance and productivity.” *ISH Journal of Hydraulic Engineering*. DOI: <http://doi.org/10.1080/09715010.2018.1473812>
- Shetty, D. K., and **Dwarakish, G. S.** (2018). “Performance appraisal of Indian major ports.” *Journal of Indian Port Association*. 48,29-34.
- 2016** Mulu, A., and **Dwarakish, G. S.** (2016). “Hydrological effects of land use /land cover changes on stream flow at Gilgel Abay River Basin, Upper Blue Nile, Ethiopia.” *International Journal of Earth Sciences and Engineering*. 9(5), 1881-1886.
- Gopinath, D. I., and **Dwarakish, G. S.** (2016). “Real Time prediction of waves using neural networks trained by particle swarm optimization.” *The International Journal of Ocean and Climate Systems*. 7(2), 70–79. DOI: 10.1177/1759313116642896
- Dwarakish, G. S.,** and Nithyapriya, B. (2016). “Application of Soft Computing Techniques in Coastal Study – A Review.” *Journal of Ocean Engineering and Science*. 1(4), 247-255. DOI: 10.1016/j.joes.2016.06.004
- Thomas, J. T., Barve, K. H., Ranganath, L. R. and **Dwarakish, G. S.** (2016). “Assessment of Wave Energy Potential along South Maharashtra Coast.” *International Journal of Earth Sciences and Engineering*. 9(3), 26-31.
- 2015** **Dwarakish, G. S.,** Raju, A. P., Kumar, S. R., and Murali, M. S. (2015). “Sediment Movement in and around Mulki – Pavanje River Mouth Inferred from Sediment Trend Analysis.” *International Journal of Coastal and Ocean Research*, 1(1), 34-38.
- Dwarakish, G. S.,** Gopinath, D. I., Kumar, P. S. R., and Nujuma, N. (2015). “Review on State of The Art on Applications of Soft Computing Methods in Coastal Engineering.” *International Journal of Coastal and Ocean Research*, 1(1), 16-26.
- Shashi, B. S., **Dwarakish, G. S.,** and Kiran, K. B. (2015). “GIS for Conservation of Sacred Groves of Kodagu District – A Traditional Culture.” *International Journal of Earth Sciences and Engineering*, 8(2), 377-385.
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- 1999 Dwarakish, G. S.,** Anisha M.,(1999),’ Prioritization of Micro watersheds by Remote Sensing and GIS Techniques: A case study ‘ , Proc. National Seminar on Watershed Management for Sustainable Development, Tirupathi, March 1999.  
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### Conferences / Seminars / Workshops attended

- |             |  |  |
|-------------|--|--|
| <b>2016</b> | National Conference of Advanced Trends in Civil Engineering & Sustainable Development (ATCESD-16) on 26 <sup>th</sup> & 27 <sup>th</sup> February 2016 | Flood Risk Assesment: A Review   |
|             | National Conference of Advanced Trends in Civil Engineering & Sustainable Development (ATCESD-16) on 26 <sup>th</sup> & 27 <sup>th</sup> February 2016 | A Review on Hard option to Prevent Beach Erosion: Do they Really Work?   |
|             | National Conference of Advanced Trends in Civil Engineering & Sustainable Development (ATCESD-16) on 26 <sup>th</sup> & 27 <sup>th</sup> February 2016 | Applications of Remote Sensing & GIS for Flood Alert System Using. A case study of Adhwara Basin                         |
|             | 10 <sup>th</sup> International Symposium on Lowland Technology (ISLT 2016), during September 15-16, 2016   | Chairperson  |
|             | 10 <sup>th</sup> International Symposium on Lowland Technology (ISLT 2016), during September 15-16, 2016   | Paper Presentation   |
| <b>2015</b> | 8 <sup>th</sup> KSTA Annual Conference on Science and Technology for GenNext Urban Space held between 5 <sup>th</sup> and 6 <sup>th</sup> November     | Coastal Erosion Mitigation Measures – State of the Art   |
|             | 8 <sup>th</sup> KSTA Annual Conference on Science and Technology for GenNext Urban Space held between 5 <sup>th</sup> and 6 <sup>th</sup> November     | Assessing the Dynamic Changes in Land Use and Land Cover and Hydrological Processes in Netravati River Basin, Karnataka, |
|             | 8 <sup>th</sup> KSTA Annual Conference on Science and Technology for GenNext Urban Space held between 5 <sup>th</sup> and 6 <sup>th</sup> November     | Study of Mulky-Pavanje River Mouth Dynamic, Mangalore Coast, West Coast of India: An Integrated Approach                 |
|             | 8 <sup>th</sup> International Conference on Asian and Pacific Coasts (APAC 2015) held during 7 <sup>th</sup> and 10 <sup>th</sup> September            | Weekly Prediction of Tides using Neural Networks   |
|             | DFi-NITK Workshop on Recent Trends in Piling and   | ---  |



Ground Improvement on 31 <sup>st</sup> July and 1 <sup>st</sup> August 2015.	
National Conference on Geospatial Information & Technology Advancement (GITA-2K15)	Application of Neural Network model for LU/LC classification of satellite images of Netravathi river basin.
4 <sup>th</sup> International Conference on Emerging Trends in Engineering, Science & Technology (ICETEST). 9-11 December, 2015	Chairing a session
i-managers International Conference on Engineering and Technology on 10 <sup>th</sup> and 11 <sup>th</sup> April	GIS and Open Geosuite for Sacre Groves of kodagu District
<b>2014</b> Introduction to CAD/CAM and STAAD, Centre for Continuing Technical Education in karnataka, Batwal during 3 July, 2014	RS and GIS for Civil Engineering,
Introduction to CAD/CAM and STAAD, Centre for Continuing Technical Education in karnataka, Batwal during 23 June, 2014	Effective Teaching Methodologies/Engineering Mechanics
Certificate Course on Mining Survey (CCMS), Dept. of Mining Engineering, NITK, Surathkal, during 09, July, 2014	CCMS on Remote Sensing and GIS
Ananul Conference on Innovations and Developemnts in Civil Engineering (ACIDIC-2014), Departemnt of Civil Engineering, NITK, Surathkal, 19-20 May, 2014	Geoinformatics for Civil Engineering
Faculty of Science, Technology, Engineering and Mathematics (FOSTEM), INTI International University, Kaula Lumpur, Malaysia during 16 April, 2014	Geoinformatics for Coastal Engineering
3 days technical fest SRISHTI 2K14, Department of Civil Engg., LBS College of Engineering, Kasaragod during 13,14 and 15 March 2014	Remote Sensing and GIS in Civil Engineering
2014 IEEE Region 10 Technical Symposium, during 14-16, 2014, Kaula Lumpur, Malaysia	Satellite Image Contrast Enhancement Algorithm based on Plateau Histogram Equalization
Short term Course on Adavnaces an dLatest Developments in Mining Geology and Rock Mechanics (STCMGRM-2014), during 02-04, April, 2014	Geoinformatics for Civil and Mining Engineering
National Workshop on Civil Engineering Challenges in 21st Century (CEC21-2014), Department of Civil Engineering, Managlore Institute of Technology and Engineering (MITE), Moodabidri. Mangalore during 21-22 February, 2014	Geoinformatics for Civil Engineering
Fifth indian National Conference on Harbour and Ocean Engineering (INCHOE 2014), NIO, Goa, 5-7 February, 2014	Study of Coastal Sediment Dynamics and Sand Spit Morphology Around Netravati – Gurpur Rivermouth Through Integrated Approach

- 3<sup>rd</sup> World Conference on Applied Sciences, Engineering and Technology, 27-29 September
- 3<sup>rd</sup> World Conference on Applied Sciences, Engineering and Technology, 27-29 September
- 2013** National Conference on New Horizons in Civil Engineering (NHCE-2013), Department of Civil Engineering, Manipal Institute of Technology, Manipal, Karnataka, 12-13 April, 2013
- National Seminar on Coastal Environments and their Management, Department of Marine Geology, Mangalore University, 22-23 January, 2013
- International Conference on Conserving Biodiversity for Sustainable Development (INCCBSD 2013), DBME, NIT Rourkela, during 16-18, August, 2013
- 2012** National Workshop on Conservation of West Flowing Rivers in Coastal Karnataka, Department of Applied Mechanics and Hydraulics, NITK, Surathkal and Dept of Civil Engg., VCET, Puttur, during 14-15 December, 2012
- 2011** National Conference on Coastal Hazards, Resources & Management, Department of Marine Geology, Mangalore University, Mangalagangothri, Karnataka, India, 25 & 26 March, 2011.
- National Conference on Coastal Hazards, Resources & Management, Department of Marine Geology, Mangalore University, Mangalagangothri, Karnataka, India, 25 & 26 March, 2011.
- National Conference on Coastal Hazards, Resources & Management, Department of Marine Geology, Mangalore University, Mangalagangothri, Karnataka, India, 25 & 26 March, 2011.
- 2010** National conference on Sustainable Water Resources Management [SwaRM 2010], NITK-Surathkal, India, 7th -9th January 2010.
- National conference on Sustainable Water Resources Management [SwaRM 2010], NITK-Surathkal, India, 7th -9th January 2010.
- National Conference on Coastal Processes, Resources and Management, CESS, Thiruvananthapuram, Kerala, India, 5-7th February 2010.
- Histogram Equalization Based Mean Self-Adaptive Plateau Histogram Equalization for Brightness Preserving and Contrast Enhancement.
- Relocation of Waste bins: A GIS Approach.
- Sediment Trend Analysis and Determination of Sediment Movement Patterns Along Coastline in the vicinity of Mulki-Pavanje River Mouth
- Coastal erosion and mitigation measures along Mangalore Coast, South West Coast of India
- RS and GIS Tools to Support Conservation and Sustainable Management of Sacred Groves in Kodagu District, Karnataka, India
- Geoinformatics for Water Resources Engineering
- Integrated Coastal Zone Management [ICZM] – An Indian Scenario.
- Development of DEM Using ERDAS Imagine 9.0 and ArcGIS 8.3 for mangalore Coastal Zone, Dakshina Kannada District, Karnataka, India.
- Spit Evolution in the vicinity of Mulki-Pavanje Rivermouth, West Coast of India.
- Determination of Global Water Quality Indices for River Nethravati, South India..
- Variable Source Area Watershed Model for Konganahole Catchment Area in Western Ghats
- A study on Variations in the Sediment Dynamics along the Dakshina Kannada Coast, West Coast of India.

- 2009** Theme meeting on retrofitting & Rehabilitation of Structures (TMRRS) and International Seminar on Structural Rehabilitation, NITK Surathkal, 30-31 March, 2009. ---
- International Conference in Ocean Engineering [ICOE- 2009], IIT Madras, India, 1-5th February 2009. Interference of Dams in Periyar River Basin, Kerala, on Coastal Sedimentation.
- National Workshop on Present and Future Trends in Marine Geology and Geophysics, Mangalore University, India, 21-22nd April 2009. ---
- KSCST- 32nd Series of Student Project Programme [SPP], Seminar cum Exhibition, NITK-Surathkal, India, 4-5th September 2009. ---
- 24th Indian Engineering Congress, NITK-Surathkal, India, 10-13th December 2009. Land Use Land Cover Change Detection Using Digital Image Processing
- 39th ISTE Annual Convention, NITK-Surathkal, India, 18-20th December 2009 ---
- 2008** KU-NITK Joint seminar 2008- Recent Advances in Engineering & Technology, June 26, 2008, Inamori Auditorium, Kagoshima University, Japan. ---
- International Conference on Content Based Image Retrieval, PES Institute of Technology, Bangalore, India, 16-18th July 2008. Decision tree: A non-parametric approach for classification of High-resolution remote sensing data.
- 3rd International Conference on Advanced Computing & Communication Technologies, Asia Pacific Institute of Information Technology SD India, Panipat, 08-09th November 2008. Effectiveness of decision tree algorithm in classification of semi urban land cover classes 2-5m resolution satellite imagery.
- National Conference on Hydraulics, Water Resources & Environment HYDRO 2008, Anuvrat Vishwarbharti, Jaipur, India, 15-16th December 2008. Changes in Hydrology and coastal sedimentation by Dams – A case study.
- 2007** Indo- Japan workshop on Coastal Problems and Mitigation Measures – Including the effects of Tsunami, IIT Madras, 16-17<sup>th</sup> July 2007. ---
- SPIE Remote Sensing International Conference, Florence, Italy, September, 17-21, 2007. Integrated Coastal Zone Management Plan and Coastal Zone Information System for Udupi Coast, West Coast of India
- 2006** Initiative for Research and Innovation in Science [IRIS-2006] Assessment of potential locations for offshore wind energy
- SPIE- 5<sup>th</sup> Asia Pacific Remote Sensing International Symposium, Marriot Hotel, Panjim, Goa, India, 13-17<sup>th</sup> November 2006. Integrated Coastal Zone Management system for Mangalore Coast west coast of India
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National conference on Rehabilitation Measures for ---  
the Tsunami affected Coasts of Tamilnadu, Andhra  
Pradesh, Kerala, Pondicherry and Andaman &  
Nicobar Islands, IIT Madras. 11-12 December 2006.

### Books, Monographs, Lab or Design Manuals – Authored/Edited

1. Coastal Land Use/Land Cover and Shoreline Studies for Dakshina Kannada Coast, Karnataka, India Shabnum Suhura, B. Nithyapriya, L. Revanth Reddy, Noelle Philipose, Mary Manisha and G. S. Dwarakish. Water Resources Management by the Springer - Nature under the Water Science and Technology Library 78, ISBN 978-981-10-5710-6.
2. Guest Editor - Elsevier Aquatic Procedia-Special Issue on ICWRCOE'15
3. Guest Editor-In-Chief for Special Issue on RS & GIS Applications, International Journal of Earth Sciences and Engineering
4. Lecture Volume prepared for the Two Days Curriculum Workshop on Geoinformatics in Coastal and Water Resources Engineering. Department of Applied Mechanics and Hydraulics, NITK, during 23-24 September 2013 (Coordinator: **Dr. G S Dwarakish**)
5. Lecture volume prepared for the training programme sponsored by TEQIP on ETMS'10 (2010), held at GEC, Goa. (Coordinators: **Dr. G S Dwarakish**, Dr. K B Kiran, Dr. B M Dodamani, Dr. V N Shet, Dr. Ulhas Sawaikar and Dr. Vanessa.C)
6. Prepared the complete PPTs for the two subjects namely Remote Sensing & GIS and Digital Image Processing.
7. Contributed two research papers for the book titled “Coastal Environments: Problems and perspectives” Edited by K.S.Jayappa and A.C.Narayana, 2009.
8. Lecture volume prepared for the summer School sponsored by AICTE-MHRD on ETMS'10 (2010). (Coordinators: **Dr. G S Dwarakish** & Dr. K B Kiran)
9. Lecture volume prepared for the winter School sponsored by AICTE-MHRD on GIRBD'09 (2009).
10. Lecture volume prepared for the winter School sponsored by AICTE-MHRD on GICZMP'09 (2009).
11. Written complete chapter on Geographical Information System (GIS) in the text books one on “Applied Geology’ and another on ‘Engineering Geology’ by Prof. D. Venkat Reddy.
12. Lecture Volume prepared for the “Workshop on Wetland Monitoring and Management” sponsored by TEQIP, conducted in our department. Coordinators: Prof. Arkal Vittal Hegde and **Dr. G. S. Dwarakish**).
13. Lecture volume prepared for the workshop on ‘ICZMP-D.K and Udupi Coast’ Sponsored by MOEF, ‘RS & GIS’ Course and GPS Course sponsored by TEQIP, MHRD, Govt. of India.

### Technical Reports (External & Internal)

Authors	Title of Report	Particulars (Sponsored R&D/ Consultancy/ Status Reports, etc.)
Dr. G.S. Dwarakish (P.I.)	Simulating the Impact of Land Use Changes on Hydrological Response of Humid and Sub-Humid catchments in Karnataka State, India	Final report was prepared & Submitted to ISRO RESPOND
Dr. G. S. Dwarakish (Research Co-ordinator)	Proposal for Creation of Ocean and Atmospheric Science and Technology Cell (OASTC), Centre for Ocean Technology (COT)	Final report was prepared & Submitted.
Dr. G. S. Dwarakish (P.I.) Dr. S.G. Mayya (Co-P.I.)	Nearshore processes information system for Mangalore coast – A RS & GIS Approach”	Final report was prepared & Submitted.
Dr. G. S. Dwarakish (P.I.) Prof. G. Srinikethan (Co-P.I.)	Integrated Coastal Zone Management Plan for Karnataka Coast	First Draft of Final report was Prepared and Submitted
Dr. Subba Rao Dr. Kiran G Shirlal Dr. G. S. Dwarakish (Co P.I.) Mr. Subramanya K.	Management of Tidal Inlets along West Coast of India	Final report was Prepared and Submitted
Dr. G. S. Dwarakish (P.I.) Mr. K. B. Kiran (Co P.I.)	RS and GIS tools for sustainable management of Sacred Groves in Kodagu district	Annual progress report was prepared
Dr. G. S. Dwarakish (P.I.)	Analysis of satellite derived wind and wave parameters for coastal waters off Karnataka	Annual progress report was prepared

### Continuing Education Programmes / Short Term Courses/ Workshops / Seminars Etc. Organized

Date	Title of Programme	Funding Agency
11/04/2014	Special Lecture by Dr. M. Baba	Institute Fund, NITK, Surathkal
21/09/2013	Special Lecture by Prof. Venkatlakshmi, University of South Carolina (USC)	Institute Fund, NITK, Surathkal
05/09/2013	Special Lecture by T. N. Singh	Institute Fund, NITK, Surathkal
17/12/2012	Special Lecture by Prof. J. Dattatri	Institute Fund, NITK, Surathkal
13/06/2011 – 17/06/2011	Effective Teaching Methodologies [ETM 10]	TEQIP, NITK, Surathkal, Govt. of India, New Delhi. [Conducted at NIT Goa, GEC Campus]
11/05/2010 – 14/05/2010	Effective Teaching Methodologies - Statics [ETMS'10] – Summer School	MHRD, Govt. of India, New Delhi.
15/02/2010 – 19/02/2010	NURTURANCE Programme for NTS Awardees	NCERT, Govt. of India, New Delhi.

29/12/2009 –	INSPIRE - Winter Science Camp	DST, Govt. of India, New Delhi
02/20/2010		
20/07/2009 –	Geoinformatics for Integrated River Basin Development [GIRBD] – Summer School	MHRD, Govt. of India, New Delhi.
31/07/2009		
19/01/2009 –	Geoinformatics for Integrated Coastal Zone Management Plan [GICZMP] – Winter School	MHRD, Govt. of India, New Delhi.
30/01/2009		
26/04/2007	One day workshop on Integrated Coastal Zone Management Plan [ICZMP-2007]	MoEF, Govt. of India, New Delhi.
24/03/2007	One day awareness programme on Global Positioning System [GPS]	MHRD, TEQIP, NITK, Surathkal.
10/03/2007	One Day Awareness Program on Remote Sensing & Geographic Information System for College Students	MHRD, TEQIP, NITK, Surathkal
02/02/2005	Workshop on Wetland Monitoring and Management” sponsored by TEQIP, conducted in our department. (Coordinators: Dr. Arkal Vittal Hegde and Dr. G. S. Dwarakish).	MHRD, TEQIP, NITK, Surathkal

### Professional Training Received / Summer / Winter Schools attended [06]

Year	Nature of Training	Duration	Organization where training was provided
1995	P. C. Professional Course	One week	KREC, Surathkal
1995	Digital Image Analysis in the Field of Remote Sensing Technology	Two weeks	RRSSC Bangalore
1996	Remote Sensing for Land and Water Resources Management	Two weeks	IIT, Kharagpur
1997	Quality Assurance in Engineering Education	One week	KREC, Surathkal
1998	Remote Sensing Applications in Marine Sciences	Two days	Anna University Chennai
1998	Site Investigation Techniques for Civil Engineering Constructions and Development of Engineering Geology and Geotechnology in India	Two weeks	KREC, Surathkal
1999	Recent advances in Chemical, Electro-chemical and Nuclear Energy Systems	Two weeks	P.E.S. College of Engineering Mandya
2000	Engineering Geology and Geotechnology role in Country Planning and Development	Two weeks	KREC, Surathkal
2000	Introduction to ArcView and Spatial Analyst	One week	ESRI India, New Delhi

<b>Year</b>	<b>Nature of Training</b>	<b>Duration</b>	<b>Organization where training was provided</b>
2002	Remote Sensing and Geographic Information System for Resources Management	Two weeks	KREC, Surathkal
2003	Remote Sensing and Geographic Information System for Resources Management	Two weeks	KREC, Surathkal
2003	Coastal Erosion Areas (CEA)- Protection and Management	Two weeks	NITK, Surathkal
2003	Advances and Latest Trends in Engineering Geology and Geotechnology	Two weeks	NITK, Surathkal
2004	Integrated Water Resources Management using Numerical Methods, Remote Sensing and GIS	One week	IIT, Bombay
2004	Planning, Development and Management of Modern Urban Core Infrastructure Solution for India	Two weeks	NITK, Surathkal
2004	Satellite Oceanography	Two weeks	DOD, ICMAM-PD, Chennai
2004	Computer Aided 3-D Modelling and Animation	One week	MIT, Manipal
2005	Introduction to Statistics using SPSS-19.01.05	One day	NITK Surathkal, by SPSS South Asia
2005	GIS training programme -22.06.2005	One week	ESRI India, Bangalore
2008	RISAT –UP Radar Remote Sensing and Applications- 01-12 December 2008.	Two weeks	SAC, ISRO, DOS, Ahmedabad, India
2009	Short term training program on “Isotope Tracer Techniques for Water Resources Development and Management” 15-20 June 2009.	One week	CWRDM, Calicut, Kerala, India.
2009	Indo-US Engineering Faculty Leadership Institute- June29- July 3,2009.	One week	Infosys Mysore Center
2010	Summer School on “Field methods and eco-hydrological models for integrated water management in rural areas” sponsored by DAAD, Germany-16-29 September 2010.	Two weeks	Department of Hydrology and Water Resources Management, Ecology Center, Kiel, Germany.

## Summary of R & D Projects

### RESPOND project

The coastal zone of Mangalore is acquiring an ever increasing importance due to its rich ocean resources and favorable condition for development of port based major industries. All weather New Mangalore Port Trust (NMPT) is the administrative unit of the port which caters to the needs of large, medium and small scale industries.

The present study is carried out with a view (i) to understand sediment dynamics and interaction of coastal structures with beach morphology, (ii) to study the coastal processes in the vicinity of the New Mangalore Port (NMP) breakwaters, (iii) to develop an algorithm for the estimation of Suspended Sediment Concentration (SSC) from in-situ and Indian Remote Sensing Satellite (IRS)-P4 Ocean Colour Monitor (OCM) data and (iv) to study the change detection of shoreline. These objectives are addressed using the various conventional and satellite data. A 40km stretch of the Mangalore Coast, starting from Talapady in the South and Mulky in the North, along the West Coast of India is the study area.

Survey of India toposheet was used to prepare the basemap. The predominant direction of sediment transport was determined by drawing sediment trend matrices based on the statistical parameters of beach face sediments. Sea sled survey data were used to study the effects of seawalls on beach profile morphology. The performance of breakwaters at NMP was assessed by leadline soundings data. Sea bed sediments data were analysed to detect the source of siltation along the outer approach channels and lagoon of NMP. In-situ measurements in synchronized with IRS-P4 satellite overpass were used to validate the SSC algorithm developed from OCM data. Shoreline changes were detected using IRS-1A/1B satellite data.

Based on the analysis of conventional and satellite data, it is concluded that the littoral drift in the study area is negligibly small which is supported by the results of other analyses. Net sediment transport along the Mangalore coast is very small. Siltation in the approach channel and lagoon of NMP is due to the offshore-onshore movement of sediments.

The analysis to study the effect of coastal structures with coastal processes, shows that, seawalls constructed along the Mangalore coast are properly designed and located away from the active zone of the beach and hence they are not affecting the beach profiles and beach recovery processes either in front of it or on the neighbouring beaches. There is no significant changes observed in the bathymetry and shoreline in the vicinity of NMP due to breakwaters construction.

Analysis of satellite data indicates that there is no large scale variation in the shoreline configuration, except at the unprotected river mouth. The accuracy of algorithm developed using IRS-P4 OCM data for the estimation of SSC is satisfactory. Hence, it is concluded that satellite data can be used for studying the coastal processes.

### MHRD project

The proposed work mainly concentrates on nearshore coastal processes of Mangalore coast. It involves identification of eroding/accreting critical areas along the Mangalore coast. The performance of coastal structure in the study area will be assessed in the proposed study. The Suspended Sediment Concentration (SSC) model relating remotely sensed data and in-situ data will be developed by considering the state-of-the-art technology. It is also proposed to develop a model, which gives the vertical distribution of SSC along the Mangalore coast. The sediment dynamics in the vicinity of all weather New Mangalore Port (NMP) is proposed to find out the main reason for siltation problem in the approach channel and lagoon of NMP. The movements and distribution of dredged material from the dumping site will be tackled through Sediment Trend Analysis (STA). The study will be carried out using both



conventional and remotely sensed data and other attribute informations of the study area. The nearshore processes information system for the study area will be developed under Geographical Information System (GIS) environment. This gives the online informations about the long-term and short-term shoreline configuration, effect of coastal structure on the coastal processes, surface as well as vertical distribution of SSC and sediment dynamics in the vicinity of NMP approach channel and lagoon.

### **MOEF project**

The main objectives of this project are:

1. To identify the critical erosion areas of the Karnataka coast using RS & GIS.
2. To prepare area specific management plan for mitigation of erosion along Karnataka Coast.
3. To develop a Critical Erosion Areas Information System (CEAIS) in GIS environment.

The following are the sub-components of the project work:

- i. Shoreline Change detection using Topo sheets and multi-date Remotely Sensed data.
- ii. Analysis of the data to identify and classify the erosion prone areas as critical, moderate, and zero-erosion areas.
- iii. Land use/Land cover change detection and analysis.
- iv. Arriving at Area specific management of erosion areas based on the land use/ land cover analysis.
- v. Integrating all the data generated into GIS environment.
- vi. Development of a Critical Erosion Areas Information System (CEAIS).
- vii. Final Document / Report generation.

### **ICMAM-PD, DOD project**

This project mainly concentrates on dynamics of river mouth along Karnataka Coast. As an experimental basis only Netravati-Gurpur river mouth is selected in the beginning. All the available data such as wind velocity & direction, wave direction, currents, tides, sediment concentration and its distribution, bathymetric details, beach profile, quantity of sediment brought in by the rivers, high resolution remotely sensed data at frequent intervals will be used to understand the river mouth dynamics and shoreline configuration at Netravati-Gurpur river mouth. Based on the experience gained while conducting the present study for Netravati-Gurpur river mouth, same study will be extended to remaining river mouths of Karnataka Coast. For this project major equipments will be given by ICMAM-PD, DOD, Pallikarani, Chennai. This project is challenging, since it involves lot of field data collection both in the estuary as well as in the vicinity of Netravati-Gurpur river on the ocean side.

### **DST Project**

The DST project titled “RS & GIS Application for Sustainable Management of Sacred Groves” in Kodagu District” is basically for development of database for the Sacred Groves in Kodagu district. Database includes location details, areal extent of the sacred groves, monitoring agency, temple name and other details, threats to the sacred groves and some development plan for the existing sacred groves. The actual areal extent of the sacred groves are extracted through the analysis of high resolution IRS satellites data, using ERDAS Imagine 9.3 software and analysed in Arc View- Master lab kit GIS environment.

### **RESPOND Project**

The second RESPOND project, sponsored from Indian Space Research Organisation (ISRO) under RESPOND programme titled “Analysis of Satellite Derived Wind and Wave Parameters of Karnataka Coast”. For the execution of this project ENVISAT data was

purchased from ESA. The programme was written in FORTRAN to extract the wave and wind information. The different activities completed under this project includes a) Understanding the SAR concepts b) retrieval and validation of Wave spectra and Wind speed from SAR c) Algorithm to deriving level 2 from Level 1 data of wavemode data d) preparation of wave spectra and wind speed map for the new datasets purchased from ESA e) Completion of algorithm for wave mode data.

### Consultancy works undertaken/ Industry interaction

Only the departmental testing and consultancy works related to strength of materials lab (tension test, bending & re-bending test) and fluid mechanics lab (Calibration of pressure gauges and watermeter) have been undertaken.

I am regularly interacting with New Mangalore Port Trust (NMPT), Panambur, India Meteorological Department (IMD) observatory, Panambur; Minor Irrigation Department, Public Works Department, Port & Harbour Sub-division, Mangalore; KERS, Mangalore Sub-division; RRSSC, KRSRAC, Bangalore; MPT, Goa; IIT Madras, IIT Mumbai, IIT Kharagpur, IIT Delhi, NIT- Calicut, Trichi, Warangal, Nagpur, Surath, Raipur, Rourkela, Pandichery, Goa, NIO Goa; NIOT Chennai; IRS, Anna University, Chennai; GEC, Farmagudi, Ponda, Goa, Anna University, Chennai, Bangalore University, Bangalore, Mangalore University, Mangalore, VTU, Belgaum, College of Engineering, Trivendrum, etc.

### Experience in Administrative Positions, Curriculum and Lab Development, Student Welfare, Professional and Outreach Activities

#### Administrative Positions

Dean Planning and Development	National Institute of Technology Karnataka, NITK
Head of the Department	Applied Mechanics Department, NITK, Surathkal
Faculty In-Charge	IIP Cell, NITK Surathkal
Deputy Co-ordinator	NIT Goa
Chief Warden [In-charge]	NIT Goa, GEC Campus, Ponda, Goa
Hostel block Warden	NITK Hostels for two terms
Associate Dean (Students' Welfare)	NITK Surathkal
Member	SC/ST Cell, NITK Surathkal
Member	Health Care Centre, NITK Surathkal
Board of Directors	Consumer's Society, NITK Surathkal
Secretary	Consumer's Society, NITK Surathkal
Board of Directors	Credit Society, NITK Surathkal
Member	Provident Fund Committee, NITK Surathkal
Member	Fire Committee, NITK Surathkal
Member	AIEEE Counseling & Admission, NITK Surathkal [2004-05]
Dy. In-charge	Help Centre & Admission Centre, AIEEE' 10 & AIEEE' 11, NIT Goa
Member	AIEEE Counseling & Admission NIT Goa [2010-11]
Member	Institute Staff Selection Committee, NITK & NIT Goa
Member	Institute Magazine Committee, Vitruvian (Kannada Section)
Faculty In-charge	MUNDA ABHIVRUDI SAMANYA SAMITHI [MASS], to develop the Munda Village, under Services to the Community under ENGINEER'09.

## Academics

Member	RPAC
Member	DRPC, DPGC and DUGC
Secretary	DPGC, DRPC
Faculty in-charge	Department time table for three years
Faculty Advisor	II year CIVIL Engineering Branch II year M.Tech [RS & GIS]
Faculty In-charge	RS & GIS and Departmental Computer Labs
Member	DAAB committee
Secretary	Civil Engineering Association
Faculty Advisor	First year and Second year – NIT Goa

## Others

Co-coordinator	INSPIRE- Winter Science Camp
Co-coordinator	NURTURANCE Programme for NTS Awardees
Co-coordinator	RS & GIS programme
Co-coordinator	GPS programme
Co-coordinator	GICZMP'09, GIRBD'09 & ETMS'10 and ETM'11 at NIT Goa
Member	Annual Convocation
Member	Golden Jubilee Celebrations
Co-convener	Transportation committee, INCHOE'2007
Convener	Transportation committee, SWaRM'2010
Member	Stage Committee ISTE Annual Convention, Indian Engineering Congress
Member	ENGINEER [Technical Fest], INCIDENT [Cultural Fest], CRRESCENDO [Inter year cultural competition]
Member	World Coastal Clean-up Day
Coordinator	World Water Day, World Wetland Day and World GIS Day
Returning Officer	Student's Union Elections
Faculty Advisor	Music Club, Kannada Vedike, Artist forum, Ganesha Festival, Holi, Deepavali, New Year's Day celebration
Faculty Advisor	Civil Engineering Model Competitions
Secretary	Staff Recreation Club
Performed in several Kannada Dramas namely Deepadinda Deepa Hacha, Panchabootha, Panchabootha'08, Devarapalayana	

## Awards / Recognitions

**2018** Awarded **best session's paper** for Shoreline change threat to coastal zone: A case study on Karwar coast. 2nd International Conference on Climate Change (ICCC 2018) held at Sri Lanka on 18th and 19th of February 2018.

**2016** Awarded **best paper** for "Coastal Inundation Study Using Remote Sensing", 10<sup>th</sup> International Symposium on Lowland Technology September 15-17, 2016 at Mangalore, India.  
Received **Venus International Faculty Award for the year 2016**, instituted by Venus Education Foundation, Chennai, in recognition of outstanding contribution in the field of Coastal Engineering Sciences.

- 2015** Guest Editor - Elsevier Aquatic Procedia-ICWRCOE'15  
Received **Young Scientist Award** and **Best Paper Award** for the paper titled “Study of Land Use/Land Cover Dynamics through Classification Algorithms for Harangi Catchment Area, Karnataka State, INDIA” presented at the International Conference on Water Resources, Coastal and Ocean Engineering (ICWRCOE '15), 12-14 March 2015 organised by Department of Applied Mechanics and Hydraulics, NITK Surathkal.
- 2014** Board of Examiners (BoE), PG, UVCE, Bengaluru, Karnataka.
- 2013** Received **Prof. Satish Dhawan Young Engineers State Award** for the year **2013**, instituted by the Government of Karnataka in recognition of outstanding contribution in the field of Engineering Sciences.  
Guest Editor-In-Chief for Special Issue on RS & GIS Applications, International Journal of Earth Sciences and Engineering  
Awarded **best young scientist** for “ Land use/ Land cover changes along D. K. Coast, West coast of India using Remote sensing and GIS ” which was presented during the *8<sup>th</sup> International congress on climate change, Territorial classification and socio-economic crisis*, organised by Bharathidasan University, Tamilnadu and National Polytechnic Institute, Mexico, Bharathidasan University, Tamilnadu, 23<sup>rd</sup>-27<sup>th</sup> April 2013.  
Serving as a **Secretary** of Indian Society of Geomatics [ISG]  
Executive Member, Kodagu- Dakshina Kannada- Udupi Engineers' Association  
Awarded Indian Government Fellowship to pursue Ph.D. (Q.I.P)  
Awarded Ph.D. from Institute of Remote Sensing, Anna University, Chennai
- 2010** Awarded **best paper** for “Sediment Characteristics of Dakshina Kannada Coast, West Coast of India” which was presented during the International Conference on Earth Sciences and Engineering, held at Hyderabad, on 21<sup>st</sup> August 2010.  
Selected as Board of Examiners (BoE), PG, UVCE, Bengaluru, Karnataka.  
Selected as Board of Examiners (BoE), VTU, Belgaum, Karnataka  
Selected as Board of Examiners (BoE), Anna University, Chennai, Tami Nadu.  
Selected as Board of Examiners (BoE), Coimbatore Institute of Technology, Coimbatore, Tamil Nadu.  
Selected as one of the Committee Members of Board of Studies (BoS), for NIE, Mysore and NMAMIT, NITTE University , Nitte, and College of Engineering, Thiruvananthapuram  
One of the Editors of International Journal of Earth Sciences and Engineering  
Reviewer of International Journal of Earth Sciences and Engineering, India  
Reviewer of International Journal of Coastal Research, USA  
Reviewer of International Journal of Imaging  
Reviewer of Climate Change



Received **Prof. Satish Dhawan Young Engineers State Award for the year 2013**, instituted by the Government of Karnataka in recognition of outstanding contribution in the field of Engineering Sciences.

Received **Venus International Faculty Award for the year 2016**, instituted by Venus Education Foundation, Chennai, in recognition of outstanding contribution in the field of



Coastal Engineering Sciences.

### Extra Curricular Activities

Reviewed the text book titled “An Introduction to Geographic Information Technology” [ISBN: ISBN 81-88237-66-3] written by Sujith Choudhury, Deepankar Chakraborti and Suchandra Choudhury, published by I.K. International Publishing House Pvt. Ltd.

Identified as one of the resource persons in the area of remote sensing, GIS and image processing and delivered the invitation talks in several institutes and schools. In addition to this, I had also gave lectures in high schools both in Kannada and English, about remote sensing, GIS and GPS

Execution of all the works related to counseling, admission, academic, administration, hostel affairs, students’ affairs at NIT Goa, under the able guidance and support from the Director, NITK and other Administrative officials of NITK Surathkal and Goa College of Engineering, Ponda, Goa, in addition to taking Engineering Mechanics subject.

Serving as a Secretary of Indian Society of Geoinformatics [ISG]

Chairman of one of the technical sessions of ICOE’09, held at IIT Madras, India, 1-5th February 2009.

Co-Chairman of one of the technical sessions of SwaRM’10, held at NITK, Surathkal, India, 7th - 9th January 2010.

Extra curricular activities- Drama, Sports, Singing, Folk Songs

Executive Member, Kodagu- Dakshina Kannada- Udupi Engineers’ Association

One of the panel of judges for Dakshina Kannada – Udupi Vijgana Mela held at Vidyadayini School

Served as one of the judges for various events such as Kannada light music, folk dance/songs, Kannada drama etc., held in D. K. District

Chairman of one of the technical sessions of INCHOE’14, held at NIO, Goa, India, 5th – 7th February 2014.

### List of Mini Projects/ Technical Seminars Guided (M.Tech/Ph.D.)

- a. Indian Satellite Family
- b. Integrated Coastal Zone Management (Ph.D. Scholar).
- c. Satellite Launch Vehicles past, present & future
- d. Sediment Trend Matrix
- e. Granulometric analysis of Netravati- Gurpur rivers
- f. Landuse/Land cover map preparation by DIP
- g. Nearshore Bathymetric Study by using RS data
- h. Coastal pollution
- i. Satellite Oceanography
- j. Space Shuttle
- k. International Space Station
- l. Global Positioning System [GPS]
- m. Variable Source Area Watershed Model
- n. River Basin Soil Erosion Model [MUSLE]
- o. Interlinking of Rivers
- p. Numerical modelling to estimate the groundwater contamination
- q. Crime analysis using GIS
- r. Littoral drift along D.K. Coast
- s. Urban Hydrology
- t. LU/LC change detection using high resolution RS data
- u. Dredging Equipments for Deep and Shallow Water Marine Applications

### Technical Talks Delivered

- |   |  |
|---|--|
| 1. Modes of Sediment Transport  | Training Programme for KERS Engineers, Mysore.                         |
| 2. Fundamentals of Fluid Mechanics, Selection of Turbines & Pumps   | Transfer of Technology to Rural Areas, KREC, Surathkal                 |
| 3. Performance of Seawalls along D.K.Coast  | Departmental Technical Talk, KREC, Surathkal.                          |
| 4. Decision Support System for civil engineering problems   | During Workshop, Institute of Remote Sensing, Anna University, Chennai |
| 5. Applications of RS & GIS for Coastal Engineering   | AICTE / ISTE – STTP, KREC, Surathkal.                                  |
| 6. Sediment Dynamics along Mangalore Coast through RS & GIS.  | Engineer's Day, Institute of Engineers, Mangalore Chapter, Mangalore.  |
| 7. Fundamentals of Digital Image Processing   | AICTE / ISTE – STTP, KREC, Surathkal                                   |
| 8. Digital Image Processing Methods & Applications  | AICTE / ISTE – STTP, KREC, Surathkal                                   |
| 9. Study of Suspended Sediment Concentration (SSC) and its distribution along Mangalore Coast using RS & GIS. | AICTE / ISTE – STTP, KREC, Surathkal                                   |
| 10. Civil Engineering Applications of RS & GIS.   | Engineer's Day, MIT, Manipal.  |
| 11. Physics of Remote Sensing   | NNRMS – STTP, Kongu Engineering College, Erode, TN.                    |
| 12. Platforms and Sensors for Satellite Remote Sensing.   | NNRMS – STTP, Kongu Engineering College, Erode, TN.                    |

13. Visual Interpretation Techniques of RS data. NNRMS – STTP, Kongu Engineering College, Erode, TN.
14. Digital Image Processing of RS data. NNRMS – STTP, Kongu Engineering College, Erode, TN.
15. Fundamentals of Microwave Remote Sensing and its applications. NNRMS – STTP, Kongu Engineering College, Erode, TN.
16. Applications of Remote Sensing. RSIP- 03, Kongu Engineering College, Erode, TN.
17. RS and GIS & Visualisation Capabilities for Interlinking of Rivers. National Seminar on Interlinking of Rivers, UVCE, Bangalore.
18. Integrated Coastal Zone Management Plan (ICZMP) through RS & GIS – An Indian Scenario. National Seminar on National Resources Management for Sustainable Development, UVCE, Bangalore.
19. Bird's Eye view of RS and GIS. STTP – AICTE – ISTE, IIT, Mumbai.
20. Fundamentals of Remote Sensing and GIS. STTP – AICTE – ISTE, College of Technology  
G. B. Pant University and Technology, Pantnagar, Uttaranchal state
21. Visual and digital Image Processing. STTP–AICTE–ISTE, College of Technology; G. B. Pant University and Technology, Pantnagar, Uttaranchal state
22. Application of RS and GIS for Natural Resources Management. STTP – AICTE – ISTE, College of Technology G. B. Pant University and Technology, Pantnagar, Uttaranchal state
23. Remote Sensing Application in Coastal Engineering. Awareness programme on RS & GIS application in civil engineering, MIT, MAHE, Manipal
24. Applications of RS & GIS for Marine Pollution. World environment Day, NITK, Surathkal
25. Application of RS & GIS for Infrastructure Development in India. STTP – AICTE – ISTE, Applied Mechanics Department NITK, Surathkal
26. Land use/land cover change Detection Analysis: An Indian Scenario. NASA-CWRDM-LU/LC Internation meet, CWRDM, Calicut
27. Tsunami Prediction and Mitigation measures. National workshop on Natural disasters, mitigation and management, NIE, Mysore
28. RS & GIS Applications in Natural Resources Management. National workshop on Geoinformatics, Mysore University, Mysore
29. RS & GIS Applications in Water Resources Engineering. National Conference on New Horizons in Civil Engineering - NHCE 2013, MIT Manipal
30. Fundamentals of Microwave Remote Sensing and its Applications in Coastal Engineering. Dept. of Civil Engineering, College of Engineering, Thiruvananthapuram
31. RS, GIS & GPS Applications in Civil Engineering. Christ The King College of Engineering, Coimbatore, Tamil Nadu
32. RS & GIS A RS & GIS Applications in Water Resources Engineering. One day Workshop on Application of RS & GIS in Civil Engineering, Faculty of Engineering, EBET Group of Institutions, Erode, Tamil Nadu
33. Remote Sensing and GIS Applications in Sacred Groves Information System and. International Conference on Conserving Biodiversity for Sustainable Development,



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|--|---|
| Management- A case study of Kodagu District  | 16-18 August, 2013, NIT, Rourkela, Odisha   |
| 34. RS & GIS Applications in Civil Engineering   | National Workshop on Civil Engineering Challenges in 21st Century, MITE, Moodabidri, Karnataka  |
| 35. Geoinformatics in Coastal Engineering  | Shristi 2K14, LBS College of Engineering, Kasaragod, Karnataka  |
| 36. Tsunami Generation and its Mitigation Measures   | ACCE Mangalore Chapter, Mangalore   |
| 37. RS & GIS A RS & GIS Applications in Water Resources Engineering                              | ACCE Week long Programme, KVG College of Engineering, Sullia, Karnataka, India  |
| 38. Geoinformatics for Civil Engineering   | INTI International University, Kaula Lumpur, Malaysia   |
| 39. Remote Sensing and GIS in Civil Engineering  | 3 days technical fest SRISHTI 2K14, during 13,14 and 15 March 2014, LBS Collge of Engineering, Kasaragod, India   |
| 40. Effective Teaching Methodologies/ Engineering Mechanics                                      | Centre for Continuing Technical Education, Karnataka  |
| 41. Coastal Erosion along Dakshina Kannada Coast   | Recent Challenges in Atmospheric and Earth Sciences, 27-30 December 2014, Dept. of Chemical Engineering, NITK, Surathkal  |
| 42. Harnessing Energy From the Ocean   | Renewable Energy Sources and Emerging Technologies (RESET), 1-5 September 2014, PESCE, Mandya   |
| 43. Geoinformatics in Integrated Coastal Zone Management Plan for Undived Dakshina Kannada Coast | Special lecture series programme on Integrated Coastal Zone Management for PG students,13-14 November 2014, Karnataka Veterniary, Animal and Fisheries Sciences University, College of Fisheries, Mangalore |
| 44. Geoinformatics in Coastal and Water Resources Engineering                                    | 1st International Conference on Ingenious Technologies and Sustainable Developments in Civil Engineering, 8th October, 2014, Noorul Islam University, Tamilnadu   |
| 45. Application of RS & GIS in Mining  | Short term course on Advances and Latest Developments in Mining Geology and Rock Mechanics, 2-4 April 2014, Dept. Of Mining, NITK, Surathkal  |
| 46. Applications of Remote Sensing and GIS in Coastal/Ocean Engineering                          | For M.Tech. Students, Dept. of Civil Engineering, College of Engineering, Thiruvananthapuram, 6th November 2014   |
| 47. Fundamentals of Remote Sensing and GIS   | Short term training programme on Introduction to CAD/CAM and STAAD, 3-7 July 2014   |
| 48. Digital Image Processing- A game of Numbers  | Short term training programme on Introduction to CAD/CAM and STAAD, 3-7 July 2014   |
| 49. RS, GIS, GPS and Conventional Survey in Coastal Engineering                                  | 3 dyas traing on advaced survey, NAMIT, Nitte, 29-30 July 2014  |

- 50 Advanced Coastal Survey Three days State level Workshop on Advanced Surveying and Mapping Techniques, organised by AIET, Moodbidri, 26th - 28th February 2015
- 51 Selection of suitable Soil and Water conservaion Structures through RS & GIS- A Case Study One day National Workshop on Management Techniques of Rainwater Harvesting- Artificial Recharge Structures D.K. and Udupi Districts of Karnataka conducted by MITE, Moodbidri, 18th April 2015
- 52 Ocean Energy Invited talk at Srinivasa Institute of Technology, Mangalore on 11.09.2015.

### Countries Visited

Country visited	Period of Visit		Purpose of visit
	From	To	
Colombo, Sri Lanka	13/02/2018	18/02/2018	To attend and present paper in the 2nd International Conference on Climate Change 2018 ICCC.
McGill University, Montreal, Canada	26/10/2015	03/11/2015	Research interaction with Prof. Shiv O. Prasher and academic and research collaboration and intiation of MoU and GIAN program.
Kaula Lumpur, Malaysia	14/04/2014	17/04/2014	To attend and present paper in the International Conference 2014 IEEE Region 10.
University of South Carolina, USA	21/02/1012	04/03/2012	For research interaction with the Professors of Dept. Of Geological Sciences & Marine Science Program, USC, USA
Kiel, Germany	13/09/2010	02/10/2010	To attend the Summer School on “Field methods and eco-hydrological models for integrated water management in rural areas” held at Kiel University
Kagoshima, Japan	20/05/2008	03/07/2008	For research interaction with the Professors of Ocean Civil Engineering, from Kagoshima University, Japan.
Florence, Italy	15/09/2007	21/09/2007	To attend and present paper in the International Conference SPIE’07.

### Computer Skills

Image processing software	ERDAS Imagine 9.0 – 9.2, ENVI, EASI / PACE
GIS Software Professional, GRAM	ARC/INFO, ARCVIEW, ARC GIS, Geomedia
Marine Modeling software	MIKE 21, OCM DAS
Statistical Analysis Tool	SPSS
Operating System	Windows, UNIX
Others	MS Office

**Name & Address of Professional References**

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<p><b>Prof. M. C. Deo</b> Professor and Former Head Department of Civil Engineering IIT Bombay, Powai, Mumbai. India. Email: mcdeo@civil.iitb.ac.in</p>	<p><b>Dr. Toshiyuki Asano</b> Professor Department of Ocean Civil Engineering Kagoshima University, 1-21-40, Korimoto, Kagoshima - 890 0065, Japan Tel. &amp; Fax. :+81-99-285-8482 Email: asano@oce.kagoshima-u.ac.jp</p>
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Dwarakish G. S.