

CURRICULUM VITTE

DR. MANU

Objectives

- To be an integral part of the Institution.
- To be actively involved in challenging and innovative projects.
- To grow with the Institution.



Age and Date of Birth : 42 Years, 30.03.1977

Qualification : **B.E (Civil), M.Tech (Structural Engg.)**
Ph. D (Marine Structure).

Academic Profile :

Degree	University/ Institution	Year	% of Marks	Class
SSLC	Deepika High School	1992	65.00	FIRST CLASS
PUC	S.V.S College, Bantwal	1994	61.00	FIRST CLASS
B.E (Civil Engg.)	N.I.E Mysore	1998	78.30	FIRST CLASS WITH DISTINCTION
M.Tech (Structural Engg.)	M.I.T, Manipal MAHE (Deemed Uni.)	2001	76.67	FIRST CLASS WITH DISTINCTION
Ph.D (Marine Structures)	N.I.T.K., Surathkal	2012	Studies on Tandem Breakwater – A Physical Model Approach	

Experience : **Teaching ≈ 15 Years**
Research = 14 Years

Professional Career

Name of Institution	Designation	Duration
N.I.T.K., Surathkal	Lecturer (Temporary)	Aug 2001 – Feb 2004
R.V.C.E., Bangalore	Lecturer (Temporary)	March 2004 – July 2004
N.I.T.K., Surathkal	Senior Research Fellow	Aug 2004 – Nov 2007
N.I.T.K., Surathkal	Assistant Professor	Dec 2007 – Sept 2019
N.I.T.K., Surathkal	Associate Professor	Sept 2019 - Till Date

Research Area : Coastal Engineering and Marine Structures
ORCID id : <https://orcid.org/0000-0002-9993-190X>
Scopus Author ID : 11240474400

Research Publications :

(Annexure – I)

International Journal	: 12
National Journal	: 05
Book Chapter	: 06 ^[1] _{SEP}
International Conference	: 27
National Conference	: 14
Research Bulletin	: 02

Short Term Courses/Work shop /Conferences Attended :

(Annexure – II)

International Conference	: 18
National Conference	: 09
Short Term Training Programme	: 03
Work Shop	: 13
Training Programme	: 02

Achievements:

- Received the **Financial Assistance from Dept. of Science and Technology, New-Delhi**, under the Young Scientist Scheme, to attend an International Conference, APAC-2009, at Singapore held during 13th -16th October, 2009.
- **Best Paper award** for the paper titled “A semi empirical approach to model the wave transmission characteristics for submerged reef breakwater” in 2nd International Conference on Earth Science and Engineering (**ICEE 2015**) held during 20th – 21st March, 2015, at Nehru Institute of Technology, Coimbatore, Tamil Nadu, India.

Foreign Visits

- Visited Ocean Civil Engineering Department, **Kagoshima University, Japan** for Research Interaction during the period of 15th November to 6th December, 2008.
- Visited **Nanyang Technological University, Singapore** to attend the 5th International Conference on Asian and Pacific Coasts – APAC-2009 held from 13th – 16th October, 2009.

- Visited **Kumamoto University, Japan**, to attend International Engineering Symposium-IES 2011, held from 3rd March to 5th March, 2011.
- Visited **Plymouth University, United Kingdom**, to attend 12th International Coastal Symposium-ICS 2013, held from 8th to 12th April, 2013.
- Visited **Dubai**, to attend International Journal Conference on Civil and Transport Engineering – 2013, held from 4th to 5th October, 2013.
- Visited **Hamburg University, Hamburg, Germany**, to attend 11th International Conference on Hydro-Science and Engineering – 2014, held from 28th September to 2nd October, 2014.
- Visited School of Engineering & Technology, **Asian Institute of Technology, Bangkok, Thailand**, for Research Interaction during the period of 11th to 15th January, 2016.
- Visited **Zurich, Switzerland**, to attend 19th International Conference on Coastal and Ocean Engineering – ICCOE 2017, organized by World Academy of Science, Engineering and Technology (WASET.org) held from 13th to 14th January, 2017.

Member of Professional Bodies:

- Member of International Association for Hydraulic Research (IAHR) – CN - 1777
- Life Member of Indian Society for Hydraulics (ISH) – LM 807

Assignments / Responsibilities

Department Level :

- Secretary – DUGC (July 2008 – June 2009, July 2010 – June, 2011)
- Secretary – DRPC (July, 2012- June 2014)
- Time-Table In-charge (July, 2014 to June, 2016)
- In-charge – Wave Mechanics & Marine Geotechnical Lab.
- Faculty Advisor –for M.Tech (MS) – (July, 2019 – June, 2021)

Institute Level :

- Treasurer – KSCST – SPP 32nd Series held during 4th – 5th September, 2009.
- Co-convenor – Food Committee – Annual Convocation, from 2013 to 2019
- Co-convenor – Inauguration of Diamond Jubilee Celebration Committee
- Faculty advisor, Music Club, 2019-20

Outside Institute Level:

- Chairman for the technical session in the 19th International Conference on Coastal and Ocean Engineering – ICCOE 2017, organized by World Academy of Science, Engineering and Technology (WASET.org) held at Zurich, Switzerland, from 13th to 14th January, 2017.

Consultancy work :

1. Consultancy Project on Technical View on the ongoing interlock touch piles for the construction of pump house for augmentation of fire-fighting facilities at berth No. 13, NMPT, Panambur” submitted to Chief Engineer (Civil), NMPT, Panambur, September, 2015. (Consultancy Charge: Rs. 5.725 Lakhs).

Sponsored R & D Projects :

SI.No.	Title of the Project	Amount (Rs.)	Year /Duration	Sponsoring Agency
1.	Stability of Submerged Breakwater with Artificial Armour Units under Regular Waves	5 Lakhs	2009 2 Years	N.I.T.K., Surathkal
2.	Hydrodynamic Performance Characteristics of Caisson Type Breakwater [2015]	78.84 Lakhs	2015 5 Years	MoES, Gol New-Delhi
3.	Fund for improvement of S&T infrastructure in Universities and Higher Educational Institutions (FIST) Program - 2014. Level 1: Engineering Science.	209 Lakhs	2015 5 Years	Ministry of Science and Technology, DST, Gol

Project and Thesis (Dissertation) Supervision :

Level	SI.No.	Title of the Project	Name of the Student	Academic Year
M.Tech	1.	An Experimental Study on Tandem Breakwater	Shrikant Lamani	2007-08
	2.	Laboratory investigation of Tandem Breakwater with concrete cubes as artificial armour units	Usharani P.T.	2008-09
	3.	Stability of Submerged Breakwater with Artificial Armour Units	Manohara H.R.	2009-10
	4.	Dynamic Analysis of Piled Jetty	Harish	

	5.	Stability of Defenced Breakwater with Concrete Cube Armour	Kiran Kodge	2010-11
	6.	A Comprehensive Study of Port Safety management	Anil Kumar Rai	
	7.	Stability of Submerged Breakwater of 1:1.75 Sloe with Concrete Cube Armour	Ananth Krishnan	2011-12
	8.	Stability of Conventional Breakwater of 1:1.75 Slope with Concrete Cube Armour	Sneha S.	
	9.	Design of Intake Structure for a Thermal Power Plant	Hemanth J.	
	10.	Delay Analysis in Construction with a Case Study using MSP	Kiran Baby	
M.Tech	11.	An Experimental Investigation of Submerged Breakwater of 1:1.5 Slope	Subrahmanyam K.	2012-13
	12.	Stability of Conventional Breakwater of 1:1.5 Slope with Concrete Cube Armour	Naveen J. Therattil	
	13.	Experimental Study of Submerged Breakwater made of Concrete Cubes	Balu R.	
	14.	Arbitration and Conciliation Act of India and United Kingdom (1996) – A Comparision	Bestin C. Joseph	
	15.	Causes of Cost Overrun in Construction Projects	Deepak B.	
	16.	Time – Cost- Risk Optimisation in Construction Using ANT Colony Algoritham	Paul Shaji	
	17.	Sediment Trend Matrix Analysis in the vicinity of Sasihithlu and Padubidri Estuaries, Karnataka	Shwetha B. Patil	
M.Tech	18.	Fatigue analysis of fixed offshore platforms	B. Abhilash Reddy	2013-14
	19.	Tsunami travel time and maximum wave height prediction using ANN and SVM	Ranjith N.P.	
	20.	Development of new technique for the estimation of excavator productivity	Vishnu Raj K.	
	21.	Feasibility study of alternatives to sand in plastering	Arjun V.R.	
	22.	Sediment transport along open coast – A case study of Pondicherry	Sruthi G.S.	
M.Tech	23.	Planning of oil terminal for proposed oil refinery in outer harbor at Cochin port	Abhijith R.	2014-15
	24.	Experimental study on submerged breakwater made of concrete cubes	Inthikab K.	
	25.	Planning of proposed container terminal at Vizhinjam international sea port	Saneesh Pannian	
	26.	Design and analysis of equipment skids on offshore platform	Subodh Vijay Kusare	
M.Tech	27.	Simulation and Validation of Local Scour Using Open Source CFD Tool: REEF3D	Sanooj A.	2015-16

	28.	Prediction of Transmitted Wave Height and Damage Level of Tandem Breakwater Using SVM	Jithin J.S.	
	29.	Experimental Investigation on Submerged Breakwater of Slope 1:1.75	Chavan Akash S.	
	30.	Analysis and Design of Offshore Met Mast Supported on Jacket Substructure*	Pardha Saradhi J.	
	31.	Modeling of Wave Transmission Co-efficient for Submerged Reef Breakwater.	Sindhu S.	
M.Tech	32.	Design of Substructure for an Offshore Wind Turbine in Remote Islands of Lakshdweep	Srilakshmi K.	2016-17
	33.	Physical Model Studies on Caisson Breakwater	Surya Teja Reddy	
	34.	Study of Beach Parameters and Sediment Trend Matrix along Dakshina Kannada and Udupi Coast	Runku Kranthi	
M.Tech	35.	Protective Measure to Storm Surge Prone Areas along the East Coast of India	Shailesh K.	2017-18
	36.	Study on the Ductile Behaviour of Fixed Based Offshore Jacket Platforms under Seismic Conditions using Non-Linear Static Analysis	Sanal C.D.	
	37.	Physical Model Studies on Caisson Breakwater with and without Toe Protection	Shakeel Ahammed	
M.Tech	38.	Siltation and Tranquility Studies for a Harbour Breakwater using Delf T 3D	Therese Kurian	2018-19
	39.	Numerical Modelling of Wave Attenuation Along NMP Approach Channel	Niveditha Mohan	
	40.	Stability of Toe Armour Unit of Vertical Caisson Breakwater – A Physical Model Approach	Vinay Kumar B.	
	41.	Prediction of Transmitted Wave Height over the Submerged Reef of Tandem Breakwater Using MIKE21-BW	Minosh Mohan K.R.	
M.Tech	42.	Wave Energy Dissipation by Porous Breakwaters	Praveen Kumar Kola	2019-20
	43.	Study on Vertical Caisson Breakwater With Toe Protection-A Physical Model Approach	D.L.V. Ravi Teja	
	44.	Experimental Investigations on Performance Characteristics of Caisson Type Breakwater	Kiran R.	

Ph.D Supervision :

Sl.No.	Area of Research	Name of the Student	Year of Joining	Status
1.	Prediction of Wave Transmission and Damage Level of Tandem Breakwater using Soft Computing Techniques	Geetha Kuntoji	2012	Completed [2018]
2.	Studies on Simulation of Local Scour around the Bridge Pier using Soft Computing Techniques and CFD Tool	Sreedhara B.M.	2013	Completed [2019]
3.	Prediction of Design Wave height along Karnataka Coast considering Climate Change Effects	Sandesh Upadhyaya K.	2017	Synopsis Submitted
4.	Studies on caisson Type Breakwater- A Physical Model Approach.	Kumaran V.	2017	On Going
5.	Investigation on wave attenuating characteristics of floating seaweed farm	Surakshitha	2019	On Going

ANNEXURE - I

International Journal [12]

1. Kiran G Shirlal, Subba Rao and Manu, (2006), "Stability of Breakwater Defenced by a Seaward Submerged Reef", in **Ocean Engineering, an International Journal of Research and Development, Pergamon, Elsevier Science Ltd.** New York, N.Y., U.S.A. Vol. 33, issues 5 - 6 April, 2006, Page 829 – 846.
2. Kiran G. Shirlal, Subba Rao, and Manu, (2007), "Ocean Wave Transmission by Submerged Reef – A Physical Model Study", in **Ocean Engineering, an International Journal of Research and Development, Pergamon, Elsevier Science Ltd.** New York, N.Y., U.S.A. Vol. 34, issues, 14-15, October, 2007, Page 2093-2099.
3. Kiran G Shirlal, Subba Rao and Manu (2008), "Performance of a Submerged Reef – A Physical Model Study" in **International Journal of Ecology and Development**, Vol. 11, No. F08, Fall 2008, pp 90 - 98.
4. Kiran G. Shirlal, Subba Rao and Manu (2009). "Design of Sheltered Breakwater", in **International Journal of Earth Sciences and Engineering**, Vol. 02, No. 02, June, 2009, pp 95 -103.
5. Manu, Kiran G. Shirlal and Subba Rao (2011). "Development of Concrete Armoured Protected Breakwater Structure", in **International Journal of Earth Sciences and Engineering**, Vol. 04, No. 05, September, 2011, pp 253-260.
6. Manu, Kiran G. Shirlal and Subba Rao (2013). "Performance of Submerged Reef of Concrete Cubes", in **International Journal on Chemical, Environmental and Biological Sciences, ISAET**, Vol. 01, Issue 04, 2013, ISSN 2320-4079, pp 651-654.
7. Sindhu S., Kiran G. Shirlal and Manu (2015). "A semi empirical approach to model the wave transmission characteristics for submerged reef breakwater" in **International Journal of Earth Sciences and Engineering**, April, 2015, Vol. 08 No 02 ISSN 0974-5904.
8. Geetha Kantoji, Subba Rao, Manu and S. Mandal (2017). "Performance Evaluation of ANFIS and SVM Model in Prediction of Wave Transmission over Submerged Reef of Tandem Breakwater" in **International Journal of Ecology and Development**, Vol. 32, Issue No. 2, Int. J. Ecol. Dev. ISSN-0972-9984 (print), ISSN-0973-7308 (online), pp141–155.
9. Geetha Kantoji, Subba Rao, Manu and Mandal S. (2017). "Application of Support Vector Machine Technique for damage level prediction of Tandem Breakwater" in **International**

Journal of Earth Sciences and Engineering, ISSN-0974-5904, Vol. 10, No. 03, pp 633-638, DOI: 10.21276/ijee.2017.10.0322.

10. Sreedhara B.M., Manu and S Mandal (2018) "Estimation of live bed scour depth around different shapes of bridge piers using ANFIS and SVMR approach" in **International Journal of Ecology and Development**, Vol. 33, Issue No. 3, Int. J. Ecol. Dev. ISSN-0972-9984 (print), ISSN-0973-7308 (online), pp 31–46.
11. Sreedhara B.M., Manu and S Mandal (2018), "Application of an Evolutionary Technique (PSO-SVM) and ANFIS in clear water scour depth prediction around bridge piers" in **Neural Computing and Applications**, <https://doi.org/10.1007/s00521-018-3570-6>, Published online: 07 June, 2018, Springer.
12. Sreedhara B.M., Geetha Kuntoji, Manu and S Mandal (2019) "Application of Particle Swarm based Neural Network to Predict Scour Depth around the Bridge Pier" in **International Journal Intelligent Systems and Applications**, Published Online November 2019 in MECS (<http://www.mecs-press.org/>) DOI: 10.5815/ijisa.2019.11.04, pp 11, 38 - 47.

Book Chapter [06]

1. Geetha Kuntoji, Subba Rao, Manu and Eluru Nava Bharath Reddy (2018), "Prediction of Damage Level of Inner Conventional Rubble Mound Breakwater of Tandem Breakwater Using Swarm Intelligence-Based Neural Network (PSO-ANN) Approach" in **Springer Nature Singapore Pte Ltd. 2019., J.C. Bansal et al. (eds.), Book title 'Soft Computing for Problem Solving', Advances in Intelligent Systems and Computing 817**, https://doi.org/10.1007/978-981-13-1595-4_35.
2. Sreedhara B.M., Manu and S Mandal (2018), "Swarm intelligence based Support Vector Machine (PSO-SVM) approach in the prediction of scour depth around the Bridge pier" in **Springer Nature Singapore Pte Ltd. 2019., J.C. Bansal et al. (eds.), Book title 'Soft Computing for Problem Solving', Advances in Intelligent Systems and Computing 817**, https://doi.org/10.1007/978-981-13-1595-4_36.
3. Sreedhara B.M., Geetha Kuntoji, Manu and S Mandal (2018), "PSO-SVM Approach in the Prediction of Scour Depth Around Different Shapes of Bridge Pier in Live Bed Scour Condition" in **Springer Nature Singapore Pte Ltd. 2019, Book title 'Harmony Search and Nature Inspired Optimization Algorithms', Advances in Intelligent Systems and Computing 741**, https://doi.org/10.1007/978-981-13-0761-4_37
4. Geetha Kuntoji, Subba Rao, Manu (2018), "Prediction of Wave transmission over an outer submerged reef of Tandem breakwater using RBF based Support Vector Regression

technique” in **Springer, Singapore, Vol. 23, Book titled ‘Lecture notes in Civil Engineering’** https://doi.org/10.1007/978-981-13-3134-3_42, Online ISBN 978-981-13-3134-3, Print ISBN 978-981-13-3133-6.

5. K. Sri Lakshmi, Satya Kiran Raju Alluri, Manu (2018), “Offshore energy for the remote Islands of Lakshadweep” in **Springer, Singapore, Vol. 23, Book titled ‘Lecture notes in Civil Engineering’** https://doi.org/10.1007/978-981-13-3134-3_51, Online ISBN 978-981-13-3134-3, Print ISBN 978-981-13-3133-6.
6. Ajay Bhargav Gedda, Manu and Subba Rao (2018). “ A Review on Stability of Caisson Breakwater” in **Springer Nature Singapore Pte Ltd. 2019., M. Rathinasamy et al. (eds.), Book title ‘Water Resources and Environmental Engineering I,** https://doi.org/10.1007/978-981-13-2044-6_8.

International Conference [27]

1. Manu, Kiran G. Shirlal and Subba Rao (2008). “Hydraulic Performance of Tandem Breakwater with Concrete cubes as Armour units”, in **2nd KU-NITK Joint Seminar** on Recent Advances in Engineering and Technology, held at Kagoshima University, Japan, during 27th and 28th, November, 2008, pp153-160.
2. Subba Rao, Kiran G. Shirlal and Manu (2008). “Experimental Investigation of Reef Protected Breakwater with Concrete Armour” in 3rd International Conference on Ocean Engineering (**ICOE-09**) held at I.I.T., Madras during 1st to 5th February, 2009, pp 564-573.
3. Manu, Kiran G. Shirlal and Subba Rao (2009). “Performance of Tandem Breakwater with Concrete cubes”, in the 5th International conference on Asian Pacific Coast (**APAC-2009**) held at NTU, Singapore, from 13th to 16th October, 2009.
4. Manu, Kiran G. Shirlal and Subba Rao (2010). “Physical Model Study on Tandem Breakwater with Concrete Cube Armour”, in the 9th International Conference on Hydro-Science and Engineering (**ICHE-2010**) held at IIT, Madras, from 2nd to 5th August, 2010 pp 31 -40.
5. Manu, Subba Rao and Kiran G. Shirlal (2011). “Development of Concrete Armoured Protected Breakwater Structure” in International Engineering Symposium-**IES-2011**, held at Kumamoto University, Japan, during March 3-5, 201, pp C5-2-1 to C5-2-8.
6. Manu, Kiran G. Shirlal and Subba Rao (2013). “Performance of Submerged Reef of Concrete Cubes”, in **International Journal Conference on Civil and Transport Engineering**, held at Holiday-Inn, Dubai, during 4th and 5th October, 2013, pp 94-97.

7. Manu, "Stability studies on Tandem breakwater with concrete cube armour" in 11th International Conference on Hydro-Science and Engineering - **ICHE-2014** held at Hamburg University, Hamburg, Germany, during 28th Sept to 2nd Oct, 2014, ISBN 978-3-939230-32-8, pp 445-452.
8. Sindhu S., Kiran G. Shirlal and Manu (2015). "Prediction of wave transmission characteristics at submerged reef breakwater", in Science Direct, Elsevier, 8th International conference on Asian and Pacific Coasts (**APAC-2015**) held at IIT, Madras, Chennai during 7th to 10th September, 2015, Procedia Engineering 116 (2015) 262-267.
9. Sreedhara B M. Manu and Pruthviraj U. (2015) "Comparative Study on Different Bridge Scour Monitoring Techniques" in Conference proceedings of **HYDRO 2015 - INTERNATIONAL** held at IIT Roorkee during 17th -19th December, 2015.
10. Geetha Kuntoji, Subba Rao and Manu (2015) "Stability Analysis of Submerged Reef using Soft Computing Techniques" in Conference proceedings of **HYDRO 2015 - INTERNATIONAL** held at IIT Roorkee during 17th -19th December, 2015.
11. Inthikab K. and Manu (2015) "Experimental Study of Submerged Breakwater made of Concrete Cubes" in Conference proceedings of **HYDRO 2015 - INTERNATIONAL** held at IIT Roorkee during 17th -19th December, 2015.
12. Abhijith R, Manu (2015), "Planning of Oil Terminal for proposed Oil Refinery in Outer Harbour at Cochin Port" in Conference proceedings of **HYDRO 2015 - INTERNATIONAL** held at IIT Roorkee during 17th -19th December, 2015.
13. Geetha K., Jithin, Subba Rao, Manu, S. Mandal (2016), "Prediction of Wave Transmission using ANN for Submerged Reef of Tandem Breakwater" in International Conference on Emerging Trends in Engineering – **ICETE-2016** held during 12th &13th May, 2016 at NMAM Institute of Technology, Nitte, IJRSET, Volume 5, Special Issue 9, May, 2016, ISSN (print) 2347-6710, ISSN (online) 2319-8753.
14. Sreedhar B.M, Sanooj, Manu, S. Mondal (2016), "Simulation of Local Scour around Circular and Round Nosed Bridge Pier using REFF3D" in International Conference on Emerging Trends in Engineering – **ICETE-2016** held during 12th &13th May, 2016 at NMAM Institute of Technology, Nitte, IJRSET, Volume 5, Special Issue 9, May, 2016, ISSN (print) 2347-6710, ISSN (online) 2319-8753.
15. Sreedhar B.M, Manu, S. Mandal (2016), "CFD-3D Modeling of Local Scour around Circular Pier with REFF3D" in International Symposium on Lowland Technology – **ISLT-2016** held during 15th &17th September, 2016 at Mangalore, India, pp 459-463.
16. Jithin J.S., Geetha K., Manu, Subba Rao, S. Mandal (2016), "Study of Submerged Reef

- using SVM Technique”, in International Symposium on Lowland Technology – **ISLT-2016** held during 15th & 17th September, 2016 at Mangalore, India, pp 404-408.
17. Sreedhar B.M, Manu, S. Mandal (2016), “CFD Modeling of Local Scour around Round Nosed Bridge Pier with REFF3D” in Conference proceedings of **HYDRO 2016 - INTERNATIONAL** held at CWPRS, Pune during 8th -10th December, 2016, pp 1572-1578.
 18. Geetha Kantoji, Subba Rao, Manu, S. Mandal (2016), “Prediction of Wave Transmission over Submerged Reef of Tandem Breakwater using SVM Technique” in Conference proceedings of **HYDRO 2016 - INTERNATIONAL** held at CWPRS, Pune during 8th -10th December, 2016, pp 1528-1534.
 19. Manu, Pardha Saradhi J. and Ramanamurthy M.V. (2016), “Analysis and Design of Offshore Met Mast Supported on Jacket Substructure”, in 19th International Conference on Coastal and Ocean Engineering – **ICCOE-2017**, organized by World Academy of Science, Engineering and Technology (WASET.org) held at Zurich, Switzerland, during 13th -14th January, 2017, pp 718.
 20. Sandesh Upadhyaya K., Subba Rao, and Manu (2018), “A Review of Computational Studies on Indian Coast Considering Climate Change Effects” in Conference Souvenir of **HYDRO 2018 – INTERNATIONAL, Hydraulics, Water Resources and Coastal Engineering**, held at NIT Patna, during 19th – 21st December, 2018, pp 263.
 21. Sandesh Upadhyaya K., Subba Rao, and Manu (2019), “Historical data analysis of wind speeds from ERA-interim dataset and CMIP5 models for Arabian Sea”, in Book of Abstract of International Conference on Climate Change Impacts, Vulnerabilities, and Adaptation: Emphasis on India and Neighbourhood – **CCIVA-2019**, organized by Centre for Ocean, Rivers, Atmosphere and Land Sciences (CORAL) of Indian Institute of Technology, Kharagpur during 26th February – 2nd March, 2019, pp 38.
 22. Vinay Kumar B., Sadhik K., Kumaran V., Manu & Subba Rao (2019), “An Experimental Investigation on Toe Stability for Vertical Caisson Breakwater”, in 9th International Conference on Emerging Trends in Engineering (**ICETE-2019**) held at NMAMIT, Nitte during 23rd May, 2019.
 23. Sandesh Upadhyaya K., Subba Rao and Manu (2019), “Simulation of Design Wave Height along Karnataka Coast using MIKE 21 Numerical Model” in International Symposium on Advances in Coastal Research with special reference to Indo Pacific [**AdCoRe IP-2019**] held at NCCR, NIOT Campus, Chennai, during 17th-19th December, 2019, pp - 90.
 24. Kumaran V., Manu and Subba Rao (2019), “Experimental Investigation on the Performance of Vertical-Caisson Type Breakwater” in International Symposium on Advances in Coastal

Research with special reference to Indo Pacific [AdCoRe IP-2019] held at NCCR, NIOT Campus, Chennai, during 17th-19th December, 2019, pp - 161.

25. Sandesh Upadhyaya K., Subba Rao and Manu (2019), "Evaluating Wind Speed Datasets for Indian Domain" in **HYDRO 2019 – INTERNATIONAL, Hydraulics, Water Resources and Coastal Engineering**, organized by Dept. of Civil Engg., Osmania University at Hotel Marriote Hyderabad, during 18th – 20st December, 2019, pp – 3220-3226.
26. Kumaran V., Manu and Subba Rao (2019), "Experimental Investigation on the Performance of Vertical-Caisson Type Breakwater" in **HYDRO 2019 – INTERNATIONAL, Hydraulics, Water Resources and Coastal Engineering**, organized by Dept. of Civil Engg., Osmania University at Hotel Marriote Hyderabad, during 18th – 20st December, 2019, pp – 526-534.
27. Sandesh Upadhyaya K., Subba Rao and Manu (2019), "Assessment of Wind and Wave Energy Potential along the Indian Coast" in International Conference on Recent Advances on Renewable Energy [RARE-2020] held at NITK, Surathkal, during 7th-9th February 2020, pp – 130-135.

National Journal [05]

1. Kiran G. Shirlal, Subba Rao, and Manu, (2007), "Stability Equation for Breakwater sheltered by Seaward Submerged Reef", in **Journal of Indian Society for Hydraulics (ISH)**, Pune. Vol.13 No.1 –March, 2007, pp 18 -31.
2. Manu Kiran G. Shirlal and Subba Rao Pathanjali Bharadwaj (2009). "Hydraulics Performance of Tandem Breakwater with Concrete Cubes as Armour Units", in **Journal of Institution of Engineers, India**, Vol.90, November 18, 2009, pp 7-12.
3. Manu, Subba Rao, Kiran G. Shirlal, Prashanth J. and Balakrishna Rao K. (2011), "Physical Model Studies on Stability of Concrete Armoured Breakwater", in **Indian Society for Hydraulics (ISH) Journal of Hydraulic Engineering**, Pune, Vol. 17, No. 3, October, pp 51-60.
4. Geetha Kuntoji, Subba Rao and Manu (2018), "Prediction of Wave Transmission over Submerged Reef of a Tandem Breakwater using Hybrid PSO-ANN and PSO-SVM Techniques", in **Indian Society for Hydraulics (ISH) Journal of Hydraulic Engineering**, Pune, <https://doi.org/10.1080/09715010.2018.1482796>, ISSN: 0971-5010 (Print) 2164-3040 (Online), Published online: 18 Jun 2018.
5. Sandesh Upadhyaya K., Subba Rao, and Manu (2020), "Long-term Analysis of Wave off Mangaluru Coast" in Indian Journal of Geo-Marine Sciences (IJMS), Vol.49 (05), May 2020,

pp 717-723.

National Conference [13]

1. Kiran G Shirlal, Subba Rao, Sreekar Reddy, Manu, (2005), "Defenced Breakwater – Can it be a solution for Tsunami", in National Conference on Hydraulics and Water Resources with special emphasis on Tsunami, **HYDRO-2005**, held at SIT, Tumkur, during 8th and 9th, December, 2005, pp 61-67.
2. Kiran G Shirlal, Subba Rao, Manu, (2006), "Performance of a submerged Reef – A Physical Model Study", in National Conference on Hydraulics and Water Resources with special emphasis on Interlinking of Rivers, **HYDRO-2006**, held at Pune during 8th and 9th of December, 2006, pp 540-548.
3. Subba Rao, Kiran G Shirlal, Manu and Pathanjali Bharadwaj (2007), "Laboratory Investigation on Tandem Breakwater with concrete cubes as Armour Units" in Fourth Indian National Conference on Harbour and Ocean Engineering (**INCHOE-07**) held at N.I.T.K., Surathkal during 12th to 14th December, 2007, Vol. 1, pp 352-360.
4. Subba Rao, Kiran G Shirlal and Manu, (2008), "Physical Model Study on Reef Protected Breakwater with Concrete Armour" in National Conference on Advances in Civil Engineering, **ACE-2008**, held at AEC-Bhatkal, during 9th and 10th of March, 2008, pp 65 - 68.
5. Kiran G Shirlal, Subba Rao and Manu, (2008), "Physical Modeling as a Methodology in Furthering Research in Civil Engineering" in National Conference on Advances in Civil Engineering, **ACE-2008**, held at AEC-Bhatkal, during 9th and 10th of March, 2008, pp 14 - 17.
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8. Manu, Kiran G. Shirlal and Subba Rao, "Physical Model Study on Submerged Reef of Concrete Cubes", in National Conference on Hydraulics, Water Resources, Coastal and Environmental Engineering, **HYDRO-2011**, held at SVNIT, Surat, Gujarath during 29th and

30th of December, 2011, pp 509-516.

9. Manu, Kiran G. Shirlal and Subba Rao, "Stability of Breakwater Defenced by Seaward Submerged Reef of Concrete Cube Armour", in National Conference on Contemporary Civil Engineering Research and Practices – **CCERP 2012**, held during 20th and 21st April, at M.I.T., Manipal, pp 1441-1450.
10. Manu, Kiran G. Shirlal and Subba Rao, "An Experimental Study on Stability of Concrete Cube Armoured Tandem Breakwater", in National Conference on Hydraulics, Water Resources, Coastal and Environmental Engineering, **HYDRO-2012**, held at IIT Bombay, Mumbai, during 7th and 8th of December, 2012, pp 1525-1534.
11. Abhilash Reddy, Manu (2014) "Fatigue analysis of fixed offshore platform" in 1st Annual Conference on Innovative and Developments in Civil Engineering, **ACIDIC – 2014** held at NITK, Surathkal during 19th to 20th May, 2014. Pp 701-706.
12. Sandesh Upadhyaya K., Subba Rao and Manu (2018), "Evolution of geosynthetics in coastal engineering – A review" in 6th Indian National Conference on Harbour and Ocean Engineering (**INCHOE-2018**) to be held at CWPRS, Pune during 26th to 28th September, 2018, pp 1006-1016.
13. Geetha Kuntoji, Subba Rao and Manu (2018), "Levenberg-Marquardt based Neural Network approach for stability parameters prediction of submerged reef of tandem breakwater" accepted in 6th Indian National Conference on Harbour and Ocean Engineering (**INCHOE-2018**) held at CWPRS, Pune during 26th to 28th September, 2018, pp 469-482.

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1. Kiran G Shirlal, Subba Rao, Manu (2005). "Influence of Crest Width on Transmission at Submerged Reef", N.I.T.K., Surathkal Bulletin, June, Vol 14 (1) pp 38 – 42.
2. Subba Rao, Kiran G Shirlal, Manu and Shrikant Lamani (2008). "An Experimental Investigation on Tandem Breakwater", N.I.T.K., Surathkal Bulletin, June, Vol 17 (1), pp13-20.

ANNEXURE – II

International Conference

1. 4 Days 15th Congress of the Asian and Pacific Regional Division of the International Association for Hydraulic Research (**IAHR-2006**), An International symposium on Maritime Hydraulics, held during August 7th to 10th, 2006 at IIT-Madras.
2. **2nd KU-NITK Joint Seminar** on Recent Advances in Engineering and Technology, held at **Kagoshima University, Japan**, during 27th and 28th, November, 2008.
3. 5 Days 3rd International Conference on Ocean Engineering - **ICOE-2009** held at I.I.T., Madras, during 1st to 5th February, 2009.
4. 4 Days 5th International Conference on Asian Pacific Coast (**APAC-2009**) held at **NTU, Singapore**, from 13th to 16th October, 2009.
5. 4 Days 9th International Conference on Hydro-Science and Engineering - **ICHE-2010** held at I.I.T., Madras, during 2nd to 5th August, 2010.
6. 3 Days International Engineering Symposium - **IES-2011** held at **Kumamoto University, Japan**, during 3rd to 5th March, 2011.
7. 5 Days 12th International Coastal Symposium-ICS 2013 held at **Plymouth University, United Kingdom**, during 8th to 12th April, 2013.
8. 2 Days **International Journal Conference on Civil and Transport Engineering**, held at Holiday-Inn, Dubai, during 4th and 5th October, 2013.
9. 2 Days 11th International Conference on Hydro-Science and Engineering – **ICHE- 2014**, held at **Hamburg University**, Hamburg, Germany during 28th September to 2nd October, 2014.
10. 3 Days International Conference on Water Resources, Coastal and Ocean Engineering, **ICWRCOE'15**, held at NITK Surathkal, during 12th and 14th March, 2015.
11. 4 Days 8th International conference on Asian Pacific Coast (**APAC-2015**) held at IIT,

- Madras, Chennai during 7th to 10th September, 2015.
12. 3 Days International Conference on Hydraulics, Water Resources, Coastal and Environmental Engineering **HYDRO 2015 - INTERNATIONAL** held at IIT Roorkee during 17th -19th December, 2015.
 13. International Conference on Emerging Trends in Engineering – **ICETE-2016** held during 12th – 13th May, 2016 at NMAMIT, Nitte, Karnataka.
 14. 2 Days 19th International Conference on Coastal and Ocean Engineering – **ICCOE-2017** held at Zurich, Switzerland during 13th to 14th January, 2017.
 15. 4th International Conference in Ocean Engineering (**ICOE-2018**) held during 18th-21st February, 2018 at IIT Madras, Chennai.
 16. International Conference on Civil Engineering Trends and Challenges for Sustainability – **CTCS-2019** held during 23rd – 24th May, 2019 at NMAMIT, Nitte, Karnataka.
 17. International Symposium on Advances in Coastal Research with special reference to Indo Pacific [**AdCoRe IP-2019**] held at NCCR, NIOT Campus, Chennai, during 17th-19th December, 2019.
 18. 3 Days International Conference on Hydraulics, Water Resources, Coastal and Environmental Engineering **HYDRO 2019 - INTERNATIONAL** organized by Dept. of Civil Engg., Osmania University held at Hotel Marriote Hyderabad, during 18th – 20st December, 2019.

National Conference

1. Two Days National Conference on Hydraulics and Water Resources with special emphasis on Tsunami, **HYDRO-2005**, held at SIT, Tumkur, organized by Indian Society for Hydraulics held during 8th – 9th , Dec, 2005.
2. 3 days Fourth Indian National Conference on Harbour and Ocean Engineering (**INCHOE-07**) held at N.I.T.K., Surathkal during 12th to 14th December, 2007.

3. 3 days National Conference on Sustainable Water Resources Management **SWaRM - 2010** held during 7th – 9th January, 2010 at NITK, Surathkal.
4. 3 Days National Conference on Hydraulics, Water Resources, Coastal and Environmental Wngineering, **HYDRO-2010**, held at M.M. University, Mullana, Haryana during 16th and 18th of December, 2010.
5. 2 Days National Conference on Contemporary Civil Engineering Research And Practices – **CCERP 2012**, held during 20th and 21st April, at M.I.T., Manipal.
6. 2 Days National Conference on Hydraulics, Water Resources, Coastal and Environmental Engineering, **HYDRO-2012**, held at IIT Bombay, Mumbai, during 7th and 8th of December, 2012.
7. 2 Days National Annual Conference on Innovations and Developments in Civil Engineering, **ACIDIC-2014**, held at NITK Surathkal, during 19th and 20th May, 2014.
8. 2 Days National Conference on “Emerging Trends in Science and Engineering” - NCETSE-2017, held at SMVITM, Bantkal, Udupi, during 23rd & 24th February, 2017.
9. 3 days 6th Indian National Conference on Harbour and Ocean Engineering (**INCHOE-18**) held at CWPRS, Pune during 26th to 28th September, 2018.

Workshop / Seminar / STTP Organized

1. One Day Workshop on “Recent Trends in System Applications as Applied to Civil Engineering” held on 9th January, 2015 at NITK, Surathkal.
2. One Day Workshop on “Innovative Concepts in Ocean Engineering” held on 27th April, 2019 at NITK, Surathkal.

Workshop / Seminar / STTP Attended

1. Two days Workshop on “Coastal Erosion and Protection Management” held at KREC during 8th and 9th September, 2001.

2. Two days Workshop on “Earthquake Resistance Structure” held at KREC during September, 2003.
3. One Day Workshop on “Wetland Monitoring and Management” held at N.I.T.K, Surathkal, during February 02, 2005.
4. Two week's AICTE/ISTE sponsored Short Term Training Programme- STTP (Winter school) on “ Planning, Development and Management of Modern Urban Core Infrastructure Solutions for India ” conducted during 20th – 31st December 2004, in the Applied Mechanics Dept., NITK Surathkal.
5. One Day Indo Japan Workshop on “Recent Advances in Geotechnical Engineering” held at N.I.T.K, Surathkal, on 4th March, 2008.
6. Two days Workshop on “Mastering the Arts and Science of Teaching Engineering & Research” held at NITK during 13th to 14th March, 2008.
7. Two week's AICTE/MHARD sponsored Summer School on “Water Resources Development and Management” held during 28th July – 8th August 2008, in the Dept of Applied Mechanics., NITK Surathkal.
8. 3 Days Faculty Training Programme on “Instructional Design and Delivery” organized by N.I.T.T.R., Chennai held during 22nd – 24th August, 2008, at NITK Surathkal.
9. 5 Days Short term course on “Offshore structures – Materials, Analysis, Design and Construction” held during 14th – 18th December, 2009 at I.I.T., Madras, Chennai.
10. 3 Days Training Programme on “Hydrological Conservation and Management of Lakes” held during 26th – 28th March, 2012 at N.I.H., Roorkee, Uttarakhand.
11. 2 Days National Workshop on “Conservation of Water Resources of West flowing Rivers in Coastal Karnataka” held during 14th – 15th December, 2012 at NITK Surathkal.
12. 2 Days International Workshop on “Geosynthetic and Modern Materials in Coastal Protection and Related Applications”, held at Indian Institute of Technology, Madras, Chennai, during 4th - 5th March, 2013.

13. One Day Workshop on “Recent Trends in System Applications as Applied to Civil Engineering” held on 9th January, 2015 at NITK, Surathkal.
14. 2 Days DFI-NITK Workshop on “Recent Trends in Piling and Ground Improvement” held during 31st July and 1st August, 2015 at NITK Surathkal.
15. One Day Workshop on “Tsunami Threat and its Mitigation along Indian Coast” held on 2nd November, 2015 at NITK, Surathkal.
16. One Day Workshop on “Coastal Hydrodynamics and Modelling” held on 7th October, 2016 at NITK, Surathkal.
17. 2 Days Workshop on “Computational Marine Hydrodynamics” held during 19th – 20th January, 2017 at NITK Surathkal.
18. One Day Workshop on “Past, Present & Future Scenario of Marine Structures” held on 20th February, 2017 at NITK, Surathkal.