

UT15
INTERNATIONAL SYMPOSIUM ON UNDERWATER TECHNOLOGY 2015
23-25 February, 2015

PROGRAMME SCHEDULE

Day 0	Sunday, 22nd February, 2015	Venue: DakshinaChitra
19.00 - 22.00	<i>Ice Breaker</i>	
Day 1	Monday, 23rd February, 2015	Venue: Panikkar Hall
08.30 - 09.30	<i>Registration</i>	
09.30 - 10.30	<i>Inaugural Function</i>	
10.30 - 11.30	<i>Inauguration of Exhibition</i>	
11.30 - 12.00	<i>High Tea</i>	
12.00 - 12.30	Plenary Session 1: "The Evolution of Underwater Vehicles" by Dr. James R. McFarlane, International Submarine Engineering Ltd., Canada	
12.30 - 13.00	Plenary Session 2: "Submarine Cabled Real-time Seafloor Observation" by Dr. Katsuyoshi Kawaguchi, JAMSTEC, Japan	
13.00 - 13.30	Plenary Session 3: "Recent Advances & Future Challenges in Underwater Technologies – India's perspective" by Dr. V. BhujangaRao, DRDO, India	
13.30 - 14.30	<i>Lunch</i>	<i>Venue: Manthan Hall</i>
14.30 - 14.55	Keynote Session 1: "Underwater Acoustics – Challenges and Opportunities" by Shri S Anantha Narayanan, NPOL, India	

14.55 - 15.20 **Keynote Session 2:** "Ocean Observation Systems: Developments in autonomous measurement techniques and their advantages" by Dr. S S C Shenoj, ESSO-INCOIS, India

15.20 - 15.45 **Keynote Session 3:** "Exploration beyond the EEZ: Some (naive?) thoughts on Underwater Technology" by Dr. S Rajan, ESSO-NCAOR, India

15.45 - 16.00 Tea Break

Day 1

Monday, 23rd February, 2015

Technical Sessions

Parallel Session - 1

Underwater Vehicles-1 (UWV1)

Venue: Panikkar Hall

Session Chair: Dr. Sergey Ya. Sukonkin, EDBOE RAS, Russia

Session Co-Chair: Prof. Toshihiro Maki, The University of Tokyo, Japan

16.00 - 16.20 Development of an Underwater Glider for Virtual Mooring and its Buoyancy Engine (UWV 1-UT15-095)

Kenichi Asakawa, Tadahiro Hyakudome, Yasuhisa Ishihara, Masahiko Nakamura

16.20 - 16.40 Design and Analysis of an Underwater Quadrotor – AQUAD (UWV 1-UT15-152)

Thiyagarajan Ranganathan, Asokan Thondiyath, Silla Pavan Santosh Kumar

16.40 - 17.00 From manned to autonomous and hybrid underwater systems A review of existing operational systems, development trends and IFREMER/DCNS cooperative projects (UWV 1-UT15-103)

Vincent Rigaud, Beatrice Nicolas-Meunier

17.00 - 17.20 New Concepts for Smart ROV to Increase Efficiency and Productivity (UWV 1-UT15-088)

Hyun-Taek Choi, Jinwoo Choi, Yeongjun Lee, Young Seon Moon, Do Hyung Kim

17.20 - 17.40 A Preliminary Study on Development of Haptic Interface for Underwater Vehicles (UWV 1-UT15-161)

Jinwoo Choi, Youngjun Lee, Hyun-Taek Choi, Jeon-Jin Kang, Jee-Hwan Ryu

17.40 - 18.00 Design and Development of Non- rotary Propulsion for Autonomous Underwater Vehicles (UWV 1-UT15-082)

C Thangavel, P.Muthuvel, Sarojani Maurya, Tata Sudhakar

Parallel Session -2

Ocean Observations-1 (OBS1)

Venue: RajendraChola Hall

Session Chair: Dr. Eiichiro Araki, JAMSTEC, Japan

SessionCo-Chair: Dr. M V Ramana Murthy, ESSO-NIOT, India

- 16.00 - 16.20** Development of Cabled OBS for Vertical Array Seismic Observation at the C0002G Borehole Observatory in the Nankai Trough, Japan (OBS 1-UT15-069)
Toshinori Kimura, Eiichiro Araki, Katsuyoshi Kawaguchi
- 16.20 - 16.40** Installation method of the Caisson in the seafloor for high-quality seismic observation (OBS 1-UT15-111)
Shuhei Nishida, Hiroyuki Matsumoto, Eiichiro Araki, Katsuyoshi Kawaguchi
- 16.40 - 17.00** Seismic structure monitoring beneath the seafloor using ocean waves (OBS 1-UT15-146)
Eiichiro Araki, Toshinori Kimura, Katsuyoshi Kawaguchi
- 17.00 - 17.20** Ocean-Bottom Pressure and Seismic Signals at Tsunamigenic Earthquake (OBS 1-UT15-154)
Hiroyuki Matsumoto, Yoshiyuki Kaneda , Mikhail A. Nosov ,Sergey V. Kolesov
- 17.20 - 17.40** The new caisson installation technique using hydraulic vibration hammer (OBS 1-UT15-155)
Takashi Yokobiki, Eiichiro Araki, Katsuyoshi Kawaguchi
- 17.40 - 18.00** Development of Autonomous Ocean Observation Systems (AOS) (OBS 1-UT15-104)
Jagadeesh Kadiyam, Prasad Punna, D.Gowthaman, R Venkatesan

Parallel Session -3

Special Session on In-situ Sensors (SS MS)

Venue: Varuna Hall

Session Chair: Dr. Shuhei Nishida, The University of Tokyo, Japan

SessionCo-Chair: Dr. William Kirkwood, MBARI, USA

- 16.00 - 16.20** FOCE: The Evolution of In Situ Free Ocean CO2 Enrichment Experiments (SS MS-UT15-196)
William J Kirkwood
- 16.20 - 16.40** Underwater Atomic Force Microscopy for in situ Observation of Microorganisms in the Deep Sea (SS MS-UT15-171)
Shuhei Nishida, N. Matsubara, T. Fujii, T. Fukuba, M.Kyo, K. Okamura, K. Shitashima

- 16.40 - 17.00** Development and application of chemical sensors mounting on underwater vehicles to detect hydrothermal plumes (SS MS-UT15-077)
Kanae Komaki, Kei Okamura, Mayumi Hatta, Takuroh Noguchi
- 17.00 - 17.20** Optical Sensing of Salinity of Water using Magnetic Nanoemulsions (SS MS-UT15-029)
V.Mahendran, John Philip
- 17.20 - 17.40** Development of in situ microbial ATP analyzer and internal standard calibration method (SS MS-UT15-120)
Kohei Hanatani, Teruo Fujii, Tatsuhiro Fukuba
- 17.40 - 18.00** Real-time 3D Visualization of Deep sea In-situ soil tester (SS MS-UT15-114)
D. Dineshkumar, V. Chandran, V. Muthuswamy, K. Jayanthi, P. Muthuvel, Nidhi Varshney, G.A. Ramadass, Atmanand M.A

Parallel Session -4

Ocean Acoustics-1 (OA1)

Venue: Qasim Hall

Session Chair: Dr. D. D. Ebenezer, NPOL, India

Session Co-Chair: Dr. Katsunori Mizuno, The University of Tokyo, Japan

- 16.00 - 16.20** Acoustic communication for Maya Autonomous Underwater Vehicle - performance evaluation of acoustic modem (OA 1-UT15-202)
Sanjeev Afzulpurkar, P. Maurya, G. Navelkar, E. Desa, A. Mascarenhas, N. Dabholkar, R. Madhan, S. Prabhudesai
- 16.20 - 16.40** Developments in subsea wireless communications (OA 1-UT15-063)
Stephen Fasham, Shaun Dunn
- 16.40 - 17.00** Genetic Algorithm Based technique for Underwater Sensor Network Positioning and Deployment (OA 1-UT15-037)
Sidharth Iyer, D. Vijay Rao
- 17.00 - 17.20** Design and Analysis of Cable-Connected Metallic Bellows as Variable Buoyancy Modules (OA 1-UT15-151)
Thiyagarajan Ranganathan, John Pattery, Asokan Thondiyath
- 17.20 - 17.40** Tracking control of a planar underwater vehicle manipulator system in the task space (OA 1-UT15-172)
Santhakumar Mohan, Jayant Kumar Mohanta
- 17.40 - 18.00** Detection of Buried Objects Using Active Sonar (OA 2-UT15-201)
Sayanti Bardhan, Dhilsha Rajapan, Shijo Zacharia, Mahimol Eldhose, P.M. Rajeshwari, D.S. Sreedev, Kannan C, Shibu Jacob, M.A. Atmanand

18.00 - 19.00 Cultural Programme

Venue: Panikkar Hall

19.00 - 22.00 Dinner

Venue: NIOT Lawns

Day 2

Tuesday, 24th February, 2015

Venue: Panikkar Hall

09.30 - 10.00 **Keynote Session 4:** "Development of Technologies in India for utilization of Ocean resources" by Dr. M.A. Atmanand, ESSO-NIOT, India

10.00 - 10.30 **Keynote Session 5:** "Multilateral efforts for underwater acoustic monitoring of Ganges river dolphin, India's national aquatic animal" by Prof. Rajendar Bahl, IIT Delhi, India

10.30 - 11.00 **Keynote Session 6:** "Synthetic Aperture Sonar, a mature discipline" by Prof. Manell E. Zakharia, Indo-French Collaboration with IIT Jodhpur, India

11.00 - 11.30 Tea Break

Day 2

Tuesday, 24th February, 2015

Technical Sessions

Parallel Session - 1

Observations-2 (OBS2)

Session Chair: Prof. Son-Cheol Yu, POSTECH, Korea

Session Co-Chair: Dr. R Venkatesan, ESSO-NIOT, India

Venue: Panikkar Hall

11.30 - 11.50 The power of estuarine collaboratories. Can lessons learned in the Columbia River inform a global vision? (OBS 2-UT15-068)
António M. Baptista

11.50 - 12.10 Experimental results of rapid underwater object search based on forward-looking imaging sonar (OBS 2-UT15-052)
Hyeonwoo Cho, Juhyun Pyo, Jeonghwe Gu, Hangil Joe, Son-Cheol Yu

- 12.10 - 12.30** Data Server Management Framework for Coastal Radar WERA to support Ocean Observation Systems (OBS 2-UT15-054)
Roberto Gomez, Thomas Helzel, Leif Petersen, Matthias Kniephoff, RangaRajan
- 12.30 - 12.50** Towards a Low Cost Observing System Based on Low Logistic SeaExplorer Glider (OBS 2-UT15-131)
Patrice Pla, Romain Tricarico
- 12.50 - 13.10** High-resolution radar wave and current measurements in highly inhomogeneous coastal areas (OBS 2-UT15-034)
Konstanz Reichert, Katrin Hessner
- 13.10 - 13.30** Detailed 3D Seafloor Imaging of Kagoshima Bay by AUV Tri-TON2 (OBS 2-UT15-182)
Yoshiki Sato, Toshihiro Maki, Takumi Matsuda, Takashi Sakamaki

Parallel Session -2

Ocean Acoustics-2 (OA2)

Venue: RajendraChola Hall

Session Chair: Prof. Arun Kumar, IIT Delhi, India

Session Co-Chair: Dr. G Latha, ESSO-NIOT, India

- 11.30 - 11.50** Fine scale analyses of a coralline bank mapped using multi-beam backscatter data (OA 2-UT15-121)
Andrew Menezes, Milind Naik, William Fernandes, K. Haris, Bishwajit Chakraborty, Shelton Estiberio, R.B. Lohani
- 11.50 - 12.10** Acoustic Toning of Marine Species vocalization by Empirical mode decomposition (OA 2-UT15-197)
Kannan R, Latha G
- 12.10 - 12.30** Acoustic Mode Observations in the Philippine Sea (OA 2 -UT15-110)
Tarun K. Chandrayadula, John A. Colosi, Peter F. Worcester, Matthew A. Dzieciuch
- 12.30 - 12.50** Finite Element Analysis of Underwater Acoustic Vector Sensor (OA 2 -UT15-163)
Harikrishnan C, Kiran K, Malarkodi A
- 12.50 - 13.10** Modelling and Validation of Basic Characteristics in Underwater Acoustic Sweep-Spread Spectrum-Communication (OA 2-UT15-180)
Konstantin G. Kebkal, Anzhelika K. Kebkal, Oleksiy G. Kebkal, Rudolf Bannasch

- 13.10 - 13.30** Inter-sensor Time Delay Estimation using Cepstrum of Sum and Difference Signals in Underwater Multipath Environment (OA 1-UT15-174)
Hemlata Choudhary, Rajendar Bahl, Arun Kumar

Parallel Session -3

Ocean Resources & Mining (ORM)

Venue: Varuna Hall

Session Chair: Prof. Anthony Lewis, Beaufort Research, University College Cork, Ireland
SessionCo-Chair: Dr. Purnima Jalihal, ESSO-NIOT, India

- 11.30 - 11.50** Removing the Barriers to Ocean Energy Development: The European Experience (ORM-UT15-175)
Anthony Lewis
- 11.50 - 12.10** Carbon dioxide Fixation: Waste Material Utilization for Under Water Applications (ORM-UT15-159)
N. Thulasi Prasad, Sucheta Sadhu, K.N.V.V. Murthy, G. Dharani, S.V.S. Phani Kumar, S. Ramesh, M.A. Atmanand, M. B. VenkataRao, T. K. Dey, P. Balachandra Rao, A. Syamsundar
- 12.10 - 12.30** Standardization of deep sea cold water pipe configuration for desalination plants in Lakshadweep Islands (ORM-UT15-156)
G. Dhinesh, Sridhar M., Jyothi Prakash A., Phani Kumar S.V.S., Ramana Murthy M.V
- 12.30 - 12.50** BLUE MINING-Breakthrough Solutions for the Sustainable Exploration and Extraction of Deep Sea Mineral Resources (ORM-UT15-158)
Wiebe Boomsma, Jan Warnaars
- 12.50 - 13.10** Considering Methods of Executing Work in Undersea Resources Development (ORM-UT15-076)
Taketsugu Hirabayashi, Koji Takahashi, Muneo Yoshie, Kazuhiro Shirai
- 13.10 - 13.30** Traction and drawbar pull experimental study for development of Deep Sea Mining Machine (ORM-UT15-087)
C. Janarthanan, K.V. Reshma, S. Rajesh, N.R. Ramesh, T. Rethna Raj, V.Sundaramoorthi, P.Muthuvel, K.Gopakumar, G.A.Ramadass, M.A.Atmanand

Parallel Session -4

Underwater Vehicles-2 (UWV2)

Venue: Qasim Hall

Session Chair: Dr. Kenichi Asakawa, JAMSTEC, Japan
SessionCo-Chair: Dr. Preetam Kumar, IIT Patna, India

- 11.30 - 11.50** Experience in application of finite elements method to calculate welding deformations of submarine hull sections(UWV 2-UT15-060)
Viktor S. Mikhailov, Mikhail N. Zelenin, Roman P. Zhivotovsky

- 11.50 - 12.10** Design and development of Remotely Operated Vehicle for shallow waters and polar research (UWV 2-UT15-189)
N. Vedachalam, S. Ramesh, A.N. Subramanian, D. Sathianarayanan, R. Ramesh, G. Harikrishnan, S. B. Pranesh, V. Doss Prakash, V. Bala Naga Jyothi, Tamshuk Chowdhury, G.A. Ramadass, M.A. Atmanand
- 12.10 - 12.30** Behavior-Based Control Applied to Underwater Vehicles to Achieve Local Goals (UWV 2-UT15-173)
Dhrubajit Chowdhury, S. Nandy, R. Ray, S.N. Shome
- 12.30 - 12.50** Discussions on locomotion and Excavation Systems of 'SROSD II'0 (UWV 2-UT15-018)
Mridul K Sarkar, Sritama Sarkar, Neil Bose, Shuhong Chai, Kim Dowling
- 12.50 - 13.10** Design and Motion Control of Autonomous Underwater Vehicle, Amogh (UWV 2-UT15-149)
V. Upadhyay, S. Gupta, A.C. Dubey, M.J. Rao, P. Siddhartha, V. Gupta, S. George, R. Bobba, R. Sirikonda, A. Maloo, V.G. Idichandy
- 13.10 - 13.30** Numerical analysis of Goldschmied geometry with boundary-layer suction (UWV 2-UT15-169)
Sudipta Ray, Soumen Sen, Dipankar Chatterjee

13.30 - 14.30 Lunch Venue: Manthan Hall

14.30 - 15.00 *Keynote Session 7: "New Project of Japan for Enhancement of Development of Marine Mineral Resources" by Prof. Tamaki Ura, The University of Tokyo, Japan*

15.00 - 15.30 *Keynote Session 8: "Development of a system for deep-sea mineral exploration" by Prof. Akira Asada, The University of Tokyo, Japan*

15.30 - 16.00 Tea Break

Parallel Session -1**Ambient Noise, Localization and Tracking-1 (ALT1)****Venue: Panikkar Hall**

Session Chair: Prof. Manell E. Zakharia, Indo-French Collaboration with IIT Jodhpur, India
SessionCo-Chair: Mr. Junichi Kojima, KDDI R&D Laboratories Inc.

- 16.00 - 16.20** Bearings-only tracking of non-maneuvering target with missing bearings data (ALT 1-UT15-085)
Rinki Gupta, Arun Kumar, I. N. Kar, Rajendar Bahl
- 16.20 - 16.40** Selection and Parameter Optimization of SVM Kernel Function for Underwater Target Classification (ALT 1-UT15-091)
Sherin B.M, Supriya M. H
- 16.40 - 17.00** Segmentation of Underwater Video Objects using Extended Markov Random Field Model (ALT 1-UT15-086)
Susmita Panda, Pradipta Kumar Nanda
- 17.00 - 17.20** Tracking the underwater acoustic channel using two-dimensional frequency sampling (ALT 1-UT15-118)
AnanyaSen Gupta, Naushad Ansari, Anubha Gupta
- 17.20 - 17.40** How biological (fish) noise affects the performance of shallow water passive array system (ALT 1-UT15-122)
William Fernandes, Chakraborty, K. Haris, K. Vijaykumar, D. Sundar, R.A.A. Luis, M. M. Mahanty, G. Latha
- 17.40 - 18.00** Disturbance Observer based Tracking Controller for Autonomous Underwater Vehicle (ALT 1-UT15-073)
Koena Mukherjee, I. N. Kar, R.K.P. Bhatt

Parallel Session -2**Ocean Acoustics-3 (OA3)****Venue: RajendraChola Hall**

Session Chair: Prof. P R S Pillai, CUSAT, India
SessionCo-Chair: Prof. Venugopalan Pallayil, NUS, Singapore

- 16.00 - 16.20** Application of a high-resolution acoustic video camera to fish classification: an experimental study (OA 3-UT15-080)
Katsunori Mizuno, Xiaofei Liu, Akira Asada, Jun Ashizawa, Yasufumi Fujimoto, Tetsuo Shimada

- 16.20 - 16.40** Underwater Image/Video Enhancement Using Wavelet Based Color Correction (WBCC) Method (OA 3-UT15-167)
Gajraj Singh, Neena Jaggi , Srikanth Vasamsetti, H. K. Sardana, Satish Kumar, Neerja Mittal
- 16.40 - 17.00** Multi-Detect for SeaBatMultibeam Sonars (OA 3-UT15-147)
Pim Kuus, Thomas Meurling
- 17.00 - 17.20** Underwater imaging using acoustic lens (OA 3-UT15-011)
G. Suresh, V. Natarajan , A. Shanavas
- 17.20 - 17.40** Multiple Signal Classification (MUSIC) based Underwater Acoustic Localization Module (UALM) for AUV (OA 3-UT15-150)
Radhakrishnan Vivek, Prahlad Vadakkepat
- 17.40 - 18.00** Performance Evaluation of DQPSK OFDM for Underwater Acoustic Communications (OA 3-UT15-021)
Prashant Kumar, Vinay Kumar Trivedi, Preetam Kumar

Parallel Session -3

Underwater Vehicles-3 (UWV3)

Venue: Varuna Hall

Session Chair: Dr. Katsuyoshi Kawaguchi, JAMSTEC, Japan

Session Co-Chair: Dr. Hiroshi Yoshida, JAMSTEC, Japan

- 16.00 - 16.20** Modern technologies for submarine hull production and repair (UWV 3 -UT15-045)
Valeriy Levshakov, Aleksei Vasiliev, Olga Fedorova
- 16.20 - 16.40** Deep ocean mineral exploration in Indian Ocean using Remotely Operated Vehicle (ROSUB 6000) (UWV 3 -UT15-190)
G.A. Ramadass, S. Ramesh, AN. Subramanian, D. Sathianarayanan, R. Ramesh, G.Harikrishnan, S.B. Pranesh, V.Doss Prakash, M.A. Atmanand
- 16.40 - 17.00** Technology development in India for gas hydrates exploration and extraction feasibility studies (UWV 3 -UT15-188)
S.Ramesh, N.Vedachalam, AN. Subramanian, D. Sathianarayanan, R.Ramesh, G.Harikrishnan, S.B.Pranesh, V.DossPrakash, G.A.Ramadass, M.A.Atmanand
- 17.00 - 17.20** Glider operations in the Bay of Bengal (UWV 3 -UT15-125)
Shijo Zacharia, R. Seshasayanan, Tata Sudhakar, V. Gowthaman, S. Muthukumaravel, G. Suresh, Sarojani Maurya, N. Sireesha, A Thathyesh, R. Suresh Kumar, P. Thangarasu ,M.A. Atmanand

17.20 - 17.40 On Cooperation between Autonomous Underwater Floating Manipulation Systems (UWV 3 -UT15-177)
Ninad Manerikar, Giuseppe Casalino, Enrico Simetti, Sandro Torelli, Alessandro Sperinde

17.40 - 18.00 Numerical Study of a Twin Sphere Pressure Hull and Outer Fairing for Manned Submersible (UWV 3 -UT15-040)
Kannappa Palaniappan, Yogang Singh, V.G Idichandy

Day 3

Wednesday, 25th February, 2015

Venue: Panikkar Hall

09.30 - 10.00 *Keynote Session 9: "Mobile Environmental monitoring system for potentially dangerous objects" by Dr. Sergey Ya. Sukonkin, EDBOE RAS, Russia*

10.00 - 10.30 *Keynote Session 10: "Underwater Noise: A Curse or Blessing" by Prof. Gopu Potty, The University of Rhode Island, USA*

10.30 - 11.00 *Tea Break*

Day 3

Wednesday, 25th February, 2015

Technical Sessions

Parallel Session - 1

Ambient Noise, Localization and Tracking-2 (ALT2)

Venue: Panikkar Hall

Session Chair: Prof. Rajendar Bahl, IIT Delhi, India

Session Co-Chair: Ms. Harumi Sugimatsu, The University of Tokyo, Japan

11.00 - 11.20 Using Underwater Ambient Sound to Localize Swarms of Underwater Vehicles (ALT 2-UT15-145)
Jules S. Jaffe, Paul L. D. Roberts, Philippe Roux

11.20 - 11.40 Long duration real-time acoustic monitoring of Irrawaddy dolphins (*Orcaella brevirostris*) in Mahakam river in Borneo (ALT 2-UT15-058)
Harumi Sugimatsu, Junichi Kojima, Tamaki Ura, Sabro Tomuro, Rajendar Bahl

- 11.40 - 12.00** Transiting Ship's Slant Range Estimation using Single Hydrophone in Shallow Waters (ALT 2-UT15-198)
G V KrishnaKumar, C Pavani, Padmanabham M, B Sudhakar, Mehul Naik
- 12.00 - 12.20** Source Ranging and Direction of Arrival Estimation using Accelerometer based Implementation of Prototype Acoustic Vector Sensor (ALT 2-UT15-176)
Arjun Kalgan, Rajendar Bahl, Arun Kumar
- 12.20 - 12.40** Evaluation of passive target Tracking algorithms (ALT 2-UT15-049)
SaiSowjanya Cherukuri, KoteswaraRao S, MallikarjunaRao P
- 12.40 - 13.00** Simulation of Radiated Noise Signature of a Marine Vessel (ALT 2-UT15-065)
GV. Krishna Kumar, M. Padhmanabam, M. BhagyaSree, M.V.S. Sairam

Parallel Session -2

Marine Systems Technologies (MST)

Venue: RajendraChola Hall

Session Chair: Prof. Jen-Hwa Guo, National Taiwan University, Taiwan

SessionCo-Chair: Prof. S A Sannasiraj, IITMadras, India

- 11.00 - 11.20** Biomimetic Underwater Vehicle Phase Following to a Periodically Oscillating Source (MST 1-UT15-043)
Wei-Kuo Yen, Daniel Martinez S., JenhwaGuo
- 11.20 - 11.40** Underwater Applications of Light-Emitting Diodes (MST 1-UT15-090)
Frank H. Fan, Shojiro Ishibashi
- 11.40 - 12.00** Modern technologies of ship power plants assembling (MST 1-UT15-061)
Aleksandr Mikhailov, Konstantin N. Morozov
- 12.00 - 12.20** Glass Flotation and Instrument Housings for Deep Ocean Exploration and Research (MST 1 – UT15-025)
Steffen Pausch, Kevin Hardy
- 12.20 - 12.40** Physical Model Testing of Moored Surface Buoy (MST 1-UT15-205)
S.A. Sannasiraj, R. Venkatesan , M.V. Ramana Murthy
- 12.40 - 13.00** A Visually Guided Spherical Underwater Robot (MST 1-UT15-162)
Bhuneshwar Prasad, Alok Agrawal, Vinothkumar Viswanathan, Abhra Roy Chowdhury, Rajesh Kumar, S. K. Panda

13.00 - 13.20 An Integrated Approach to Study Mud Banks of Alleppey Kerala using the Autonomous Vertical Profiler (AVP) (MST 1-UT15-199)
Antonio Mascarenhas, Sanjeev Afzulpurkar, Gajanan Navelkar, R. Madhan, Pramod Maurya, Elgar Desa, Shivanand Prabhudesai, Nitin Dabholkar, Vijaykumar Lamani, Vignesh Manoharan, Nikhil Naik, Abhijit Mahalunkar, Onkarnaik, Tony Thottam, Dinesh Kumar P. K., Ben Alain de Araujo

Parallel Session -3

Marine Sensors (MS)

Venue: Varuna Hall

Session Chair: Dr. Bishwajit Chakraborty, NIO, India

Session Co-Chair: Dr. Dhilsha Rajapan, NIOT, India

11.00 - 11.20 Piezoelectric Ceramic Stacks for Underwater Transducers (MS -UT15-013)
P. A. Nishamol, D. D. Ebenezer

11.20 - 11.40 Inspection Methods for Underwater Structures of Ports and Harbors (MS -UT15-097)
Norihito Kishi, Asada A, Abukawa K, Fujisawa K

11.40 - 12.00 Initial Characteristics of Pressure Sensors – Comparison of Experimental and In-situ Measurements (MS -UT15-116)
Hiroyuki Matsumoto, Eiichiro Araki, Katsuyoshi Kawaguchi

12.00 - 12.20 Frequency Spectra of Free flooded ring Transducers (MS -UT15-042)
Rithul Mohan T.R., R. Ramesh

12.20 - 12.40 Development of Automated Laboratory Based Soil Tester for Qualification of Deep sea In-situ Soil Tester (MS -UT15-142)
B.O. Vishwanath, A.A. Gnanaraj, Shreeram Pandit, P. Prabu, V. Sundarmoorthy, P. Muthuvel, N.R.Ramesh, G.A.Ramadass, M.A Atmanand

12.40 - 13.00 Swarm intelligence based segmentation for Buried Object Scanning SONAR images (MS -UT15-126)
P.M. Rajeshwari, G. Kavitha, C.M. Sujatha, Dhilsha Rajapan

13.30 - 14.30 Lunch **Venue: Manthan Hall**

14.30 - 15.00 **Keynote Session 11: "Marine Robotics at NIO, Goa – Design, Implementation and Discovery aspects" by Dr. Elgar Desa, CSIR-NIO, India**

15.00 - 15.45 Panel Discussion

15.45 - 16.45 Valedictory Function

16.45 - 17.00 Tea Break

POSTERS

- PP 1 Heat Dissipation Studies on Sub- sea Cables Wound on Winches (PP1 UT15 – 089)
Ramesh Ravichandran, A.Umapathy, S.MuthukrishnaBabu, N.Vedhachalam, K.Venkatesan,G. Harikrishnan, A.N.Subramanium, G.A. Ramadass, M.A. Atmanand
- PP 2 Shape Optimization of Vertical Profiler using Computational Fluid Dynamics (PP2 UT15-081)
AnandKishor, C.Thangavel, P.Muthuvel, Tata Sudhakar
- PP 3 Measurements of Underwater Electromagnetic Wave Propagation (PP3 UT15-117)
Hiroshi Yoshida, NaohikoIwakiri, Tatsuya Fukuda, MitsuyasuDeguchi, SatohiroOnogi
- PP 4 Damage tolerance design of a manned submersible spherical pressure hull (PP4 UT15-187)
D. Sathia Narayanan, S.B. Pranesh, S. Ramesh, G. A. Ramadass,M.A.Atmanand
- PP 5 Advances in Underwater Acoustic Video Camera Technology (PP5 UT15-084)
SayuriMatsumoto,Taketsugu Hirabayashi, Kazuhiro Shirai,Kageyoshi Katakura Muneo Yoshie, Toshinari Tanaka,Koji Takahashi
- PP 6 Radius and Thickness Estimation of Cylindrical Objects using Shockwave-scattering Analysis in water (PP6 UT15-026)
B. K. Choi, M. S. Sim, D. W. Lee, B. N. Kim
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- SP 2 An Optimization model incorporating clash free mechanism for design of AUVs
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- SP 3 Structural Responses of Laminated Composite Underwater Gliders (SP3 UT15-165)
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- SP 4 Genetic Algorithm Based Intelligent Station-keeping for Spherical Underwater Robot
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*Bhuneshwar Prasad, Alok Agrawal, Vinothkumar Viswanathan, Abhra Roy Chowdhury,
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- SP 5 On Control of Jet angle and Heading Stabilization of a Spheroidal Underwater Vehicle
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- SP 6 Embedded Wireless Data Acquisition System for Unmanned Vehicle in Underwater
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- SP 7 Applications of Sea Gliders In Ocean Observation Systems (SP7 UT15-096)
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- SP 10 Novel Class Detection of Underwater Targets using Self-Organizing Neural Networks
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- SP 11 Theoretical Investigations on Performance Factors of UWOC Link (SP11 UT15-057)
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- SP 12 Cumulants Based Processing of Acoustic Vector Sensor Data (SP12 UT15-185)
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- SP 13 Adaptive Beam forming Using Improved Decision Tree Model for BPSK Communication System (SP13 UT15-102)
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- SP 14 Effect Of Ambient Noise On OFDM Signals (SP14 UT15-153)
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- SP 15 Habitat Impact on Acoustic Bio-sonar Characteristics of Irrawaddy Dolphins across two distinct habit (SP15 UT15-092)
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- SP 16 Key Frame Extraction Algorithm for Video Abstraction Applications in Underwater videos (SP16 UT15-070)
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- SP 19 Evaluation of image compression algorithms (SP19 UT15-071)
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- SP 20 Enhanced dynamic fuzzy sliding mode controller for autonomous underwater vehicles (SP20 UT15-134)
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- SP 21 Visual Servoing of a 2-link Underwater Robot Manipulator (SP21 UT15-030)
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