

# Report

on the

**4<sup>th</sup> National Conference of  
Ocean Society of India**

**OSICON-15**

**Oceanic Processes along the Coasts of India**



**March 22-24, 2015**

**Venue**

**National Institute of Oceanography (CSIR-NIO)  
Dona Paula, Goa 403004**

*Organised by*

**Ocean Society of India  
(Reg. No. ER 360/06, Kochi)  
([www.oceansociety.in](http://www.oceansociety.in))**

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**CSIR-National Institute of Oceanography**

## Summary

The OSICON-2015, the IV National Conference of the Ocean Society of India, was held between 22nd and 24th March 2015 at the CSIR-National Institute of Oceanography, Dona Paula, Goa. The Conference was organized by Ocean Society of India (OSI) and CSIR-National Institute of Oceanography, Goa. The main theme of the Conference was “Oceanic Processes along the Coasts of India”. Over 250 delegates from 26 Research Institutes and Universities from all over India attended this conference. More than 225 papers were received and after peer review 81 were selected for oral presentation and 148 for poster presentations. The Conference has two Plenary Sessions and six Parallel Sessions, covering the fields of Coastal Processes, Indian Ocean Variability and Monsoon, Ocean Biogeochemistry, Marine Geosciences, Marine Biology and Ocean Technology and Acoustics, and chaired by eminent scholars and science communicators. Seven eminent oceanographers have been invited for giving plenary talks. scientist, Prof. B.N. Goswami Former-Director of IITM and now Pisharoty Chair of MoES in IISER, Pune inaugurated the conference. The keynote address was given by Prof. R. Ramesh, a leading Earth Scientist and Climatologist of the Physical Research Laboratory, Ahmedabad who spoke about the importance of environmental controls on new and primary production in the Arabian Sea and Bay of Bengal. The Inaugural Address was delivered by Prof. B.N. Goswami Former-Director of IITM and now Pisharoty Chair of MoES in IISER, Pune. This was followed by the Keynote Address delivered by Prof. R. Ramesh, Outstanding Scientist, PRL, Ahmedabad. He gave a talk on “Environmental Controls on New and Primary Production in the Northern Indian Ocean”.

Dr. Dileep Kumar and eminent scientist from NIO was felicitated for his contribution to oceanography. He gave a talk on Life, the Keeling’s curve and the oceans". In addition to the above addresses there were four more invited Plenary Talks given by eminent ocean scientists. Dr. R. Krishnan, Executive Director, Centre for Climate Change Research (CCCR). Indian Institute of Tropical Meteorology will give a talk on Indian Ocean and Monsoon Coupled Interactions in a Warming Environment. Dr. S. Rajan, Director of NCAOR Goa gave a talk on Continental Shelves and Law of the Sea. Dr. M. Sudhakar, Director of CMLRE, Kochi presented a talk on “Progressive trends in the new Millennium: mineral resources beyond National Jurisdictions. Dr. A.S. Unnikrishnan gave a talk on “Sea-level Rise in the North Indian Ocean”

Indian students and young researchers were provided travel support and free or subsidized accommodation in hotels so that they have an opportunity to attend this conference and get an opportunity for extended interactions with the nation’s leading oceanographers. This conference was supported by financial grants from the Ministry of Earth Sciences (MoES) New Delhi, Department of

Science Technology and Environment (DSTE), Govt. of Goa, Naval Research Board (NRB) Ministry of Defence, Department of Science and Technology (DST) New Delhi, National Center for Antarctic and Ocean Research (NCAOR) among others.

## Background

Ocean Society of India (OSI) is a registered professional society registered in Kochi, launched on March 19, 2006, with primary objective to strive for the advancement and dissemination of knowledge in science, technology, engineering and allied fields related to oceans. OSI endeavors to provide a forum for sharing the knowledge and experience of individuals, scientific institutions and industrial organization for promoting the said objectives and act as a link among academic and R&D institutions, national policy making bodies, operational organizations and ocean industries by organizing programs such as courses, lectures, workshops, symposia and topical reviews. OSI is a non-profit organization devoted to excellence in science, engineering, technology and allied fields related to Oceans. The registered office of OSI is at Kochi and now functions from the CSIR-National Institute of Oceanography, Goa. OSI has a total of 450 members with its 325 Life Members, 120 student members and about 5 annual members. The OSI holds **Biennial conference** for bringing professionals and students together and exchange of latest information in ocean sciences. So far three conferences i.e., OSICON-09; OSICON-11 and OSICON-13 have been held in Visakhapatnam, Chennai and Pune respectively.

The OSI is managed by its Governing Council comprising of the following members:

Dr. SWA Naqvi	Director, CSIR-NIO	President
Dr. M Baba	Former Director, CESS	Vice-President
Dr. C. Gnanaseelan	Scientist IITM, Pune	Vice-President
Dr. V. Ramaswamy	Scientist CSIR-NIO, Goa	General Secretary
Dr. KVS R Prasad	Professor Andhra Univ.	Joint Secretary
Dr. BK Jena	Scientist NIOT, Chennai	Joint Secretary
Dr. AS Unnikrishnan	Scientist CSIR-NIO, Goa	Treasurer
Dr. CVK. Prasada Rao	Former Scientist, NPOL	Member
Dr. P. Anand	Scientist, NPOL, Kochi	Member
Dr. MR Ramesh Kumar	Scientist, CSIR-NIO, Goa	Member
Dr. AD Rao	Professor, CAS, IIT-Delhi	Member
Dr. Jaya kumar Seelam	Scientist CSIR-NIO, Goa	Member
Dr. KV Jayachandran	Director, KUFOS, Kochi	Member
Dr. Milind Mujumdar	Scientist IITM, Pune	Member
Dr. Roxy Mathew Koll	Scientist IITM, Pune	Member
Dr. PV Joseph	Former Director IMD	Ex-officio Member
Dr. C Revichandran	Scientist, NIO, RC, Kochi	Ex-officio Member

## OSICON-2015

The 4<sup>th</sup> national conference of the OSI (OSICON-15) was held at National Institute of Oceanography, Goa during 22-24 March 2015. The main thrust for this conference was “Oceanic Processes along the Coasts of India”. As it was done in the case of previous OSICONs, research contributions were solicited for presentations as abstracts for OSICON-15 through e-mail. The abstracts were screened by a technical committee and shortlisted papers were invited for oral or poster presentations. OSICON-15 invited active participation from all branches of marine sciences, engineering and technologies and received overwhelming response.

The OSICON-2015 was steered by the National Advisory committee comprising of the following members:

Dr Shailesh R Nayak	Secretary, MoES Chairman
Mr S Anantha Narayanan	Director, NPOL Member
Mr KS Kiran Kumar	Director, SAC Member
Dr SR Shetye	Vice-Chancellor, Goa Uni. Member
Dr YVN Krishnamurthy	Director, IIRS Member
Dr VK Dhadwal	Director, NRSC Member
Dr SC Shenoi	Director, INCOIS Member
Dr S Rajan	Director, NCAOR Member
Dr NP Kurian	Director, NCESS, Member
Dr M Atmanand	Director, NIOT Member
Dr LS Rathore	Director General, IMD Member
Dr JN Goswami	Director, PRL Member
Dr Y Bhaskara Rao	Director, NGRI Member
Dr M Sudhakar	Director, CMLRE Member
Dr R Krishnan	Director, IITM Member
Dr M Baba	Vice-President, OSI Co-Convener
Dr SWA Naqvi	President, OSI Convener

The technical committee for the OSICON-2015 was constituted as comprises of the following members

### Technical Committee of OSICON 15

Dr. S.W.A .Naqvi	CSIR-NIO
Dr. M. Baba Former	Director CESS
Dr.C. Gnanaseelan	IITM
Dr. V. Ramaswamy	CSIR-NIO
Dr. K.V.S.R. Prasad	
Dr.Basanta Kumar Jena,	NIOT
Dr. A.S. Unnikrishnan	CSIR-NIO

Dr. C.V.K. Prasada Rao      Former Scientist, NPOL  
 Shri. P. Anand  
 Dr. M.R. Ramesh Kumar      CSIR-NIO  
 Dr. A.D. Rao                      IIT Delhi  
 Dr. Jaya Kumar Seelam      CSIR-NIO  
 Dr KV Jayachandran, KUFOS, Kochi  
 Dr.Milind Mujumdar              IITM  
 Dr. Roxy Mathew Koll          IITM  
 Dr. VVSS Sarma                  CSIR-NIO  
 Dr. TM Balakrishnan Nair      INCOIS  
 Dr. PV Hareesh Kumar,        NPOL  
 Dr. MR Ramesh Kumar,        CSIR-NIO  
 Mr. R. Madhan,                  CSIR-NIO  
 Mr. P. Maurya                    CSIR-NIO  
 Dr. R. Venkatesan,              NIOT  
 Dr. B. Nagendernath, CSIR-NIO  
 Dr. A Mazumdar                  CSIR-NIO  
 Dr. AK Chaubey,                  CSIR-NIO  
 Dr Kamesh Raju,                  CSIR-NIO  
 Dr. N Ramaiah,                  CSIR-NIO  
 Dr. AC Anil,                      CSIR-NIO

A total of 225 abstracts were selected from about 230+ abstracts received and out of these select abstracts were considered for oral presentation and remaining for Poster presentation. About 140 poster and 85 oral presentations are scheduled during this OSICON-15. The technical committee recommended that all the papers be organised in six parallel sessions spread over two days with 6 Parallel sessions and a plenary session (given below).

### Sessions Oral and poster

S. No	Session Theme	Conveners
1	Biogeochemistry	Dr. VVSS Sarma CSIR-NIO Dr. TM Balakrishnan Nair, INCOIS
2	Indian Ocean Variability and Indian Monsoon	Dr. Gnanaseelan, IITM Dr. Milind Mujumdar, IITM Dr. PV Hareesh Kumar, NPOL Dr. MR Ramesh Kumar, CSIR-NIO
3	Ocean Technology and Acoustics	Mr. R Madhan, CSIR -NIO Mr. P Maurya CSIR -NIO

		Dr. R Venkatesan, NIOT Dr. CVK Prasada Rao, Former Scientist, NPOL
4	Marine Geosciences	Dr. B Nagendernath, CSIR -NIO Dr. A Mazumdar CSIR-NIO Dr. AK Chaubey, CSIR-NIO Dr Kamesh Raju, CSIR-NIO
5	Coastal Processes	Dr. M Baba, Former Director CESS Dr. AS Unnikrishnan CSIR-NIO Dr. BK Jena, NIOT Dr. Jaya Kumar Seelam, CSIR-NIO
6	Marine Biology	Dr. N Ramaiah, CSIR-NIO Dr. AC Anil, CSIR-NIO Dr KV Jayachandran, KUFOS, Kochi

The program for the OSICON-2015 was as follows and the schedule was followed strictly.

### Programme

<b>22<sup>nd</sup> March 2015 Sunday</b>				<b>Registration</b>	
<b>TIME</b>		<b>PROGRAMME</b>		<b>VENUE</b>	
14:30	18:00	Registration for OSICON 15		Cardium	
16:00	17:00	AGB meeting of OSI (only for members)		Cardium	
17:00	18:00	High Tea		Cardium	
<b>23<sup>rd</sup> March 2015 Monday 09:00 am to 10:30 hrs Inaugural function.</b>					
Welcome Address		Director Dr. SWA Naqvi, CSIR-NIO, Goa			
Conveners report		Dr. V Ramaswamy, CSIR-NIO, Goa			
Inaugural Address		Prof. B.N. Goswami, IISER, Pune			
Keynote Talk		Prof. R. Ramesh, PRL, Ahmedabad			
Vote of thanks:		Dr. A.S. Unnikrishnan, CSIR-NIO, Goa			
10:30 to 10:40 Group Photograph in Front of Cardium.					
10:40 to 11:00 hrs High Tea: Venue Cardium					
<b>REGULAR SESSIONS</b>					
<b>TIME</b>		<b>PROGRAMME</b>		<b>VENUE</b>	
11:05	13:15:	Regular Sessions 1 Biogeochemistry		Cardium	
		Regular Session 5 Coastal Processes		Seminar Hall	
13:15	14:00	Lunch		Cardium	
14:00	15:30	Poster Session 1, Poster Session 2 and Poster Session 5		Cardium	
15:10	15:30	Tea		Cardium	
15: 30	18:00	Regular Session 2 Indian Ocean Variability and Indian Monsoon		Cardium	

		Regular Session 6 Marine Biology	Seminar Hall
19:30	21:30	Conference Dinner – Mandovi Riviera Panjim	
<b>24<sup>th</sup> March: 2015 Tuesday Plenary invited talks Regular and Poster Sessions Concluding Session</b>			
TIME		PROGRAMME	VENUE
09:00	11:00	Plenary Invited Talks	Cardium
11:00	11:15	Tea	
11:15	13:15	Regular Sessions 4 - Marine Geosciences	Cardium
		Regular Session 3 Ocean Technology and Acoustic	Seminar Hall
13:15	14:00	Lunch	
14:00	15:15	Poster Session 3 Poster Session 4 Poster Session 6	Cardium
15: 15	16: 15	Regular Session 1 Biogeochemistry (continued)	Cardium
		Regular Session 2 Indian Ocean Variability and Indian Monsoon (continued).	Seminar Hall
16:00	16:30	Tea	
16: 15	17: 15	Regular Session 5 Coastal Processes (continued) Regular Session 3 Ocean Technology and Acoustic (continued)	Seminar Hall Cardium
17:15	18:00	Concluding Session	Cardium



The inaugural address was delivered by eminent climate scientist, Prof. B.N. Goswami Former-Director of IITM and now Pisharoty Chair of MoES in IISER, Pune. He stressed the need to understand the linkages between atmosphere and oceans which will help us predict the monsoons



better. He suggested that the various scientific societies should get together to understand and solve the problems faced by the country. He also stressed that young researchers, college and even school students must be encouraged to take up earth science studies so that they can better understand and help mitigate the problems related to climate change. The keynote address was given by Prof. R. Ramesh, a leading Earth Scientist and Climatologist of the Physical Research Laboratory, Ahmedabad who spoke about the importance of environmental controls on new and primary production in the Arabian Sea and Bay of Bengal. Dr. M. Dileep Kumar and eminent oceanographer from CSRI-NIO was felicitated for his contributions to oceanography.

Other invited talks are as follows:

Dr. R. Krishnan, Executive Director, Centre for Climate Change Research (CCCR).

Indian Institute of Tropical Meteorology gave a talk on "Indian Ocean and monsoon coupled interactions in a warming environment".

Dr. Rajan Director NCAOR Goa gave a talk on "Continental Shelves and law of the sea".

Dr. M. Sudhakar Director CMLRE, Kochi delivered a talk on "Progressive trends in the new Millennium: mineral resources beyond National Jurisdictions".

Dr. A.S. Unnikrishnan gave a talk on "Sea-level rise in the north Indian Ocean".

Prizes were given for the best student oral and poster presentations. The best prize for oral presentation was chosen by the respective session Chariman and Co-Chariman. For the poster session Dr. R. Ramesh (PRL) and Dr. Prasanna Kumar (CSIR-NIO) were the judges.

### **Best student oral presentation**

Session 1. BIOGEOCHEMISTRY

**Paper 107: Kamana Yadav\***, V.V.S.S. Sarma, M. Dileep Kumar.

\*CSIR-National Institute of Oceanography, Regional Centre, Visakhapatnam-530017 India  
Estimation of aerosol and nutrient deposition in the coastal Bay of Bengal off Visakhapatnam

Session 2 INDIAN OCEAN VARIABILITY & INDIAN MONSOON

**Paper 227: Lekshmi Mudra. B\*** and H. N. Singh

\*Academy of Climate Change Education & Research, Thrissur, Kerala

## NORTH-SOUTH HEMISPHERIC THERMAL CONTRAST AND INDIAN SUMMER MONSOON RAINFALL VARIABILITY

### Session 3 MARINE TECHNOLOGY & MARINE ACOUSTICS

Paper 309: **M. M. Mahanty\***, G. Latha and A.Thirunavukkarasu

\*<sup>1</sup>National Institute of Ocean Technology, Pallikaranai, Chennai-600100, India

FISH CHORUS RECORDED IN THE SOUTHEASTERN ARABIAN SEA: A COMPARISON  
STUDY WITH OTHER SHALLOW WATER ENVIRONMENTS

### Session 5 COASTAL PROCESSES

Paper No: 514: **M. Jishad\***, Jaya Kumar Seelam

\*CSIR-National Institute of Oceanography; AcSIR, School of Oceanography, Goa; jishadm@nio.org

TIDE MODULATION OF SURFZONE WAVES OFF MAHARASHTRA COAST ON THE  
CENTRAL WEST COAST OF INDIA

### Session 6 MARINE BIOLOGY

Paper 607: **Albertina Dias\***, T. Suresh, Manguesh Gauns, Arvind Sahay, Prakash Chauhan<sup>2</sup>

\*Marine Instrumentation Division, CSIR-National Institute of Oceanography, Goa, India

Spatial and temporal variations of colored dissolved organic matter in the estuarine and coastal  
waters of Goa

### Three Best Student Poster Awards

Paper No: 421: **Simontini Sensarma\***, Ranadip Banerjee and Subir Mukhopadhyay

\*Geological Oceanography Division, CSIR, National Institute of Oceanography, Dona Paula, Goa  
403004,

Depositional environment of the surface sediments in Central Indian Basin (CIB), Indian Ocean  
based on their major element composition

Paper No 509: **Vijay Kumar**

Indian Institute of Technology Delhi

Modelling the biological active layer circulation in the South-eastern Arabian Sea

Paper No 237: **Aniket Barphe\***, C. Gnanaseelan and P. Pradeep Kumar

\*Indian Institute of Tropical Meteorology, Pune- 411 008

\*Savitribai Phule Pune University, Pune-411007

PROCESSES ASSOCIATED WITH THE ARABIAN SEA MINI WARM POOL FORMATION  
AND THEIR EPOCHAL CHANGES

### Support to delegates and students:





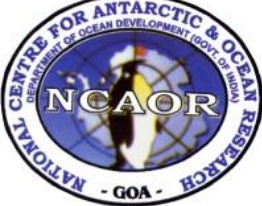


Apart from a chance to participate in a national conference and win prizes student were supported by providing them travel grants and subsidized accommodation by paying their entire or half the hotel charges. All delegates were provided tea, coffe snacks and working lunches. Student delegates were provided the following support

1. Travel grant: Those student delegates presenting an oral or poster presentation were provided travel grant (as per entitlement) provided they did not have any other source of funding.
2. Hotel charges: All student delegates were given the following options for their stay in Goa for the conference from 22nd to 24th March 2015 (i) accommodation paid in full by OSI if they opted to stay in dormitory accommodation in CSIR-NIO or Goa University and (ii) 50% of the hotel charges if they stay in recommended hotels like Solmar Hotel.

**Press coverage:** The event was widely covered in local and national media.

**Funding:**

This Conference has been supported by grants from funding agencies from MoES, DSTE, NRB, DST, NCAOR, INCOIS, Adani and NIOT. We are thankful for their generous support.

 <p>सत्यमेव जयते</p> <p><b>Ministry of Earth Sciences Government of India</b></p>	<p><b>Ministry of Earth Sciences</b> Prithvi Bhavan, Lodhi Road, New Delhi - 110003</p>
 <p>MINISTRY OF DEFENCE DEFENCE RESEARCH &amp; DEVELOPMENT ORGANISATION अनसूय मूलं विकल्पम्</p>	<p><b>Naval Research Board</b> Defense R&amp;D Organization Ministry of Defense Government of India Rajaji marg, New Delhi 110011</p>
 <p>Government of Goa Department of Science, Technology &amp; Environment</p>	<p><b>Department of Science, Technology &amp; Environment,</b> Opp. Saligao Seminary, Saligao, Bardez, Goa - 403511.</p>
 <p>सत्यमेव जयते</p> <p><b>Science and Engineering Research Board (SERB) Department of Science and Technology (DST) Government of India</b></p>	<p><b>Science and Engineering Research Board</b> 5 &amp; 5A, Lower Ground Floor Vasant Square Mall Sector-B, Pocket-5 Vasant Kunj New Delhi – 110 070</p>
 <p>NATIONAL CENTRE FOR ANTARCTIC &amp; OCEAN RESEARCH DEPARTMENT OF OCEAN DEVELOPMENT (GOVT OF INDIA) NCAOR - GOA -</p>	<p><b>NATIONAL CENTRE FOR ANTARCTIC AND OCEAN RESEARCH</b> Ministry of Earth Sciences, Government of India Headland Sada, Vasco-da-Gama, Goa 403 804,</p>
 <p>INCOIS</p>	<p><b>Indian National Centre for Ocean Information Services ,</b> "Ocean Valley", Pragathi Nagar (BO), Nizampet (SO) Hyderabad-500090</p>
 <p>adani</p>	<p><b>Adani Ports and Special Economic Zone Limited.</b> 1st floor, APSEZL house, Navrangpura , Ahmedabad 380 009, Gujarat</p>