

## 23<sup>rd</sup> Congress of the IAHR APD 2022



Departments of Ocean/Civil Engineering, IIT Madras

### Preconference transfer Geotextile workshop

Venue: Seminar Hall, 2<sup>nd</sup> Floor, Department of Ocean Engineering, IIT Madras

13<sup>th</sup> December 2022

#### Concept Note

Geosynthetic fabrics are artificial materials made up of polymers used for stabilizing terrains. Because of their reliability and cost-effective solutions, these materials find applications in civil, hydraulic, environmental, marine, and coastal engineering. The functions performed by the geosynthetics are filtration, drainage, separation, lining, reinforcement, provision of a fluid barrier, and environmental protection. They are widely used for dewatering, flood control, sediment transport control, and coastal protection. Geo-Textiles are increasingly being recognized as an alternative to conventional construction materials in many applications. If their applications are properly designed and implemented, they effectively achieve continuity and longevity of the structure as they are flexible in nature. Energy dissipation is another basic feature of such structures. Locally available material can frequently be used in conjunction with geosynthetic material as an alternative to conventional rock and concrete structures. In deepening navigation channels, dredging the subsequent encapsulation of dredged material in geosynthetic containers offers protection for channel banks. Presently in India polymer products are being used in various coastal protection works and in beach reclamation structures such as sea walls, bulkheads, breakwaters, and groins. As Geo-synthetic products further prove their utility, river training structures can also adopt these materials. Geo-synthetic products have many more advantages over traditional elements; with the field efficacy of these materials being proven worldwide. The following are some of the topics which will be covered during workshop

1. Fundamental Principles, properties of Geo-synthetics, and international testing standards
2. Durability with reference to UV resistance and performance
3. Filtration, Drainage, and Erosion Control
4. Design Approaches
5. Role of Geo-synthetics in Engineering Measures for Natural Disasters
6. Geo-systems (Geo-tubes, Geo-containers, Etc)
7. Geosynthetics for sustainable coastal infrastructure
8. Case studies for coastal protection and other near-shore structure applications
9. Bio-shields-vegetation for stability and green fencing
10. Construction techniques
11. Geo-synthetic applications for multi-functional artificial reefs.

The invited talks will be delivered by eminent researchers and scientists from academic and research institutes and industries worldwide.

#### Technical Schedule

08.30 - 09.00	<b>Registration</b>
09.00 - 09.30	<b>Inauguration</b> <ol style="list-style-type: none"><li>1. Ms. Roop Rashi Mahapatra (IA &amp; AS), Regional Office of the Textile Commissioner, Kendriya Sadan, Near RBI Bank, CBD Belapur, Navi Mumbai 400614. – <b>Chief Guest</b></li><li>2. Prof K Murali, Dean (Faculty) and Professor, Department of Ocean Engineering, IIT Madras – <b>Guest of Honor</b></li><li>3. Prof. V. Sundar, Professor Emeritus, Department of Ocean Engineering, IIT Madras - Organizer</li><li>4. Prof S.A. Sannasiraj, Professor, Department of Ocean Engineering, IIT Madras - Organizer</li><li>5. Prof S Nallayarasu, Professor and Head, Department of Ocean Engineering, IIT Madras – Patron &amp; Host</li></ol>

09.30 – 10.00	Prof V Sundar, IIT Madras	Geosynthetic application in Coastal protection using hard & soft structures and measures.
10.00 – 10.30	Ms. Minimol Korulla, Vice President, Maccaferri	Use of Geosynthetic containers for Coastal protection with ecological recovery and sustainability.
10.30 – 10.50	<b>Break</b>	
10.50 – 11.15	Prof R Sundaravadivelu, IIT Madras	Experience and in-field implementation of geosynthetic systems at Pentha, Orissa
11.15 – 11.40	Prof Tetsuya Hiraishi, Professor, DPRI, Kyoto University	Stability of the anti-scouring unit in wave and current
11.40 – 12.00	Prof K Murali, IIT Madras	Geosynthetics and its application in ports and harbours
12.00 – 12.20	Prof Thomas Gries, RWTH Aachen, Germany	The Future of Geotextiles - Digital and Sustainable
12.20 – 12.40	Mr. Rohit Chaturvedi, Flexituff International	Innovative Geo-systems for Hydraulic Applications
12.40 – 13.00	Dr. Mohit Raina, Managing Director, Raina Industries Pvt Ltd	Fibre and Textile applications for marine application
13.00– 14.00	<b>Lunch</b>	
14.00 – 14.25	Prof S A Sannasiraj, IIT Madras	Lessons to learn for successful Geosynthetic applications in Coastal regions
14.25 – 14.50	Dr. Vijaya Ravichandran, Scientist G, Group Head, Seafront Development, NIOT	Deployment of geosynthetic tubes in nearshore waters - concepts, challenges, adaptability
14.50 – 15.10	Mr. Shantanu Bhat, Research Associate, ITA, RWTH Aachen	Advancements of Textiles and Composites in Building and Infrastructure
15.10 – 15.30	Ahmed A S Kunda, Business development head – Technical, M/s.Rohhri Enterprises LLP	Strengthening and Retrofitting of Infrastructure by carbon fibre Composite
15.30 – 16.00	<b>Break</b>	
16.00 – 17.15	Moderator – Prof V Sundar, IIT Madras Rapporteur – Mr Shantanu Bhat, RWTH Aachen Panelist: 1. Prof Thomas Gries 2. Prof Sundaravadivelu, IIT Madras 3. Dr. Vijaya Ravichandran, NIOT 4. Dr. Sherlin, Jacobs 5. Ms. Minimol Korulla, Maccaferri	Panel Discussion (3 rounds of discussion - Each Round 20 mins [5 panelists each 4 mins] + 5 Mins [Discussion – each 1 min])
17.30 – 18.00	Prof Atilla Incecik, Editor in Chief, Ocean Engineering	How to publish a Journal paper in Ocean Engineering