

About Indian Institute of Technology Madras (IIT Madras)

IIT Madras is India's renowned premier institution for its excellence in education, research, and innovation, located in Chennai. With a history of over six decades, IIT Madras has consistently ranked among the top engineering institutes in India and globally. The institute offers undergraduate, postgraduate, and doctoral programs in various disciplines, attracting talented students from India and abroad. The faculty members are distinguished scholars and researchers who foster a culture of academic and intellectual curiosity.

About the Department of Ocean Engineering

The Ocean Engineering Department at IIT Madras is a thriving hub of research and education dedicated to studying ocean energy and allied research. Through rigorous academic programs, ground-breaking research activities, and collaborations with national and international institutions, the ocean engineering department fosters a comprehensive understanding of the oceans and their crucial role in India's overall growth.



Where focus goes, energy flows

Workshop Objectives

The workshop on Wave energy converters (WEC) aims to provide a forum for UG/PG students to learn and explore mathematical and experimental aspects in the design and development. The topics covered during the workshop are:

- ❖ Wave Energy Converters and their types
- ❖ Numerical modelling of WECs
- ❖ Experimental studies on WECs
- ❖ Hands-on experience in the state-of-the-art facility



SERB Sponsored One-day Workshop **on** **Wave Energy Converters (WEC)**

August 16, 2025

Venue:
Department of Ocean Engineering
Indian Institute of Technology Madras
Chennai- 600 036

Organized by
Department of Ocean Engineering

Workshop coordinator: Dr. Vijay K G
Maximum number of participants: 25
No registration fee

For any clarification,
Appandairaj R: 9092778751
Murugan N: 9566424949

Overview

The course will describe the nature of ocean waves and their conversion to electrical energy. It will highlight the technical, economic, and environmental reality of installing and operating devices in the ocean. It will also describe the challenges involved and international progress in deployment.

The objectives of the course are to create and stimulate knowledge and understanding in ocean wave energy and its conversion, specifically of;

- ❖ The origins of the Wave Energy
- ❖ The theory that describes its power and energy content
- ❖ Numerical modelling of WECs
- ❖ Experimental study of WECs
- ❖ Current Research and Future Scope
- ❖ Technology status and international progress

Practical Sessions will motivate the participants’ interest in the understanding of the subject.

Note:

Accommodation and Transport will be borne by the attendee.

Time	Theme
9:30–9:45	Opening Remarks
9:45–11:00	Introduction to WECs and their Types
11:00–11:30	Tea Break
11:30–12:30	Numerical Modelling of WECs
12:30– 2:00	Lunch Break
2:00 – 3:30	Laboratory session: Demonstration of Wave Energy Converters
3:30 – 4:00	Tea Break
4:00 – 5:00	Certificate distribution and Closing Remarks

Key Takeaways from Workshop

- ❖ Understand the basics of wave energy
- ❖ Introduction to wave energy converters
- ❖ Benefits of wave energy technology
- ❖ Key challenges in implementation
- ❖ Future trends in wave energy systems

Registration :

For registration, please click the following link

<https://forms.gle/KEiLhP7tmF5GRuEMA>



Dr. Vijay K G is an Assistant Professor in the Department of Ocean Engineering at IIT Madras. Before joining, Dr Vijay worked in the subsea flexibles industry (Oceaneering and Technip) for 4.5 years. Dr. Vijay primarily works on the numerical and experimental modeling of fluid-structure interaction problems. His research interests are coupled dynamics of risers, wave energy converters, floating offshore wind turbines, Subsea Umbilicals, Flowlines, and Risers (SURF), etc. He obtained his M.Tech and PhD from IIT Madras and IIT Kharagpur, respectively. Presently, Dr Vijay handles three sponsored projects as principal investigator in the DST-SERB Startup Research Grant, DRDO-Naval Research Board, and the MOES-National Institute of Ocean Technology.