

# Conference Program

## The 2<sup>nd</sup> International Conference on Marine Engineering & Technology (ICMET 2025)

3<sup>rd</sup> - 6<sup>th</sup> November 2025

Military Technological College (MTC)

Muscat, Sultanate of Oman

Conference Chair

Dr. Majid Mubarak Fadhil Al Jahdhami

Head of Marine Engineering Department

Military Technological College (MTC), Muscat



**ICMET  
OMAN 2025**

المؤتمر الدولي للهندسة  
البحرية والتكنولوجيا  
International Conference on  
Marine Engineering and Technology

3-6 NOVEMBER 2025

MUSCAT, OMAN

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**Organizers:**



**Publisher:**

**IOP Publishing**  
**Scopus®**

# **The International Conference on Marine Engineering & Technology (ICMET 2025)**

[https://iceast.mtc.edu.om/?page\\_id=379](https://iceast.mtc.edu.om/?page_id=379)

The second International Conference on Marine Engineering & Technology, Oman 2025 (ICMET Oman 2025) is organized by the Marine Engineering Department of the Military Technological College (MTC), Oman under the umbrella of ‘International Conferences on Engineering Advancements, Science and Technology (ICEAST 2025)’. Building on the success of the inaugural conference held in 2019, ICMET 2025 will provide a unique platform for high-level interactions and discussions on a diverse array of marine engineering, science, and technology topics relevant to the international community. The ICMET will focus on the latest innovations, challenges, and opportunities in marine engineering, with a special emphasis on Oman Vision 2040 and its alignment with global trends. The industry leaders, policymakers, researchers, and maritime professionals will gather to discuss themes such as economic diversification through green and sustainable marine technologies, naval ships and shipbuilding, digital transformation in marine technologies, education, training, and workforce development, safety and risk management in marine environment, smart logistic support and infrastructure. The event will highlight Oman’s strategic role in shaping the future of the maritime industry while addressing global challenges like climate change, ocean and marine life conservation and maritime traffic safety. Taking place at the innovative and forward-thinking Military Technological College (MTC) in Muscat, Sultanate of Oman, this is an excellent opportunity to attend a high level technical international conference located in the strikingly beautiful Gulf of Oman with its rich maritime history dating back more than a millennium.

## **Key Themes:**

1. Economic Diversification through Green and Sustainable Marine Technologies
2. Naval Ships and Shipbuilding Solutions
3. Digital Transformation in Marine technologies
4. Safety and Risk Management in Marine Environment
5. Smart Logistic Support and Infrastructure

**Program for the International Conferences on Engineering Advancements, Science and Technology  
(ICEAST2025)**

Monday 3-11-2025		
Hall Name	Morning	Evening
Auditorium	Registration	Free Tourist Tour in MUSCAT

[illegible]

DAY TWO      Wednesday 5-11-2025																						
Hall Name	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:30		14:00	15:00	15:30	16:00	16:30	17:00	19:00	21:00	
Auditorium	WS (IOP)				Keynote 1 (ICSETS)	Keynote 2 (ICSETS)	Keynote 2 (ICASET)	Keynote 2 (ICMET)	ICSETS	Inv. Spk ICSETS	Inv.Sp.k ICASET	Inv.Sp.k ICASET	Lunch	Inv.Sp.k ICASET	Inv.Sp.k ICASET	Inv.Sp.k ICASET	Inv.Sp.k ICASET					
ROOM B (Auditorium)	WS ICMET											WS ICMET		WS ICSETS			WS ICSETS		WS ICSETS		Inv. Sp. ICSETS	Inv. Sp. ICSETS
S1 (TB3-B2 R5/R6)	ICSETS 1.1.2											WS ICSETS (RHODES)		ICSETS 1.2.1			ICSETS 1.2.2		Inv. Sp. ICMET	Inv. Sp. ICMET		
S2 (TB3-B2 R1)	ICSETS 2.2.1														ICSETS 2.2.2			ICSETS 2.3.1				
S3 (TB3-B2 R2)	ICSETS 3.1.2															ICSETS 3.4.3			ICSETS 3.2.2			
S4 (TB3-B2 R3)	ICSETS 4.1.2															ICSETS 4.2.1			ICSETS 4.2.2			
S5 (TB3-B2 R4)	ICSETS 5.1.2															ICSETS 5.2.1			ICSETS 5.3.1			
A1 (TB3-A1 R4/5)	ICASET 1.2.1		ICASET 1.3.2											ICASET 1.4.1								
A2 (TB3-A1 R6/7)	ICASET 2.3.1		ICASET 1.1.2											ICASET 2.1.1								
A3 (TB3-A2 R4/5)	ICASET 3.1.1		ICASET 4.5.2											ICASET 3.3.1								
A4 (TB3-B1 R3/4)	ICASET 4.1.1		ICASET 4.2.2											ICASET 4.4.1								
M1 (TB3-B3 R3/4)	ICMET 3.1.1													ICMET 3.1.2		ICMET 3.2.1			ICMET 3.3.1	ICMET 4.1.2		
F1 (TB3-B3 R5/6)	ICMET 4.1.1													ICSELL 2.3.1		ICSELL 1.2.1			ICSELL 2.1.2	Keynote Speaker		
C1 (TB4-A2R7/R8/R9)	ICSBC 2								ICSBC 3		ICSBC 4			ICSBC 5					ICSBC 6			

[illegible]

**Program for the second International Conference on Marine Engineering & Technology, Oman 2025  
(ICMET Oman 2025)**

## Day Zero

Monday 3-11-2025		
Hall Name	Morning	Evening
Auditorium	Registration	Free Tourist Tour in MUSCAT

### Registration Link for Free Tourist Tour in Muscat:

[https://docs.google.com/forms/d/e/1FAIpQLSe5EzWWCsDt5OjSts\\_dX3yaNF0DdBnCbqoR9Hk\\_wWlcGvD2eQ/viewform?pli=1](https://docs.google.com/forms/d/e/1FAIpQLSe5EzWWCsDt5OjSts_dX3yaNF0DdBnCbqoR9Hk_wWlcGvD2eQ/viewform?pli=1)

## Day 1

Tuesday 4-11-2025																
Hall Name	7:30	8:00	8:15	8:45	9:15	9:45	10:15	10:45	11:30	12:30	13:30	14:00	15:00	16:00	16:30 17:00	
ROOM B (Auditorium)	Registration	Soft opening ceremony				ICMET Keynote 1		BREAKFAST BREAK	Opening Session	Opening talk	Exhibition Opening	Break		ICMET Workshop 1 (Co-ordinator: Dr. Shahzad)		
S1 (TB3-B2 R5/R6)														ICMET Invited Speaker 1 (Co-ordinator: Dr. Haq)	ICMET Invited Speaker 2 (Co-ordinator: Dr. Haq)	
M1 (TB3-B3 R3/4)			ICMET Technical Session 1.1.1 (Session Chair: MQM Ahmed Salim)										ICMET Technical Session 2.1.1 (Session Chair: Dr. Shameem)			ICMET Technical Session 2.1.2 (Session Chair: Dr. M. Raisuddin)
F1 (TB3-B3 R5/6)			ICMET Workshop (EFA industry) (Co-ordinator: Dr. Shahzad)													

## Day 2:

Wednesday 5-11-2025																				
Hall Name	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00	15:00	15:30	16:00	16:30	17:00	19:00	21:00
Auditorium			Workshop (IOP) (Co-ordinator: Dr. M. Misbah)				ICMET Keynote 2						Lunch						Banquet	
ROOM B (Auditorium)	ICMET Workshop 2 (Co-ordinator: Dr. Shahzad)								ICMET Workshop 3 (Co-ordinator: Dr. Shahzad)											
S1 (TB3-B2 R5/R6)																		ICMET Invited Speaker 3 (Co-ordinator: Dr. Haq)		ICMET Invited Speaker 4 (Co-ordinator: Dr. Haq)
M1 (TB3-B3 R3/4)	ICMET Technical Session 3.1.1 (Session Chair: Dr. Faisal)								ICMET Technical Session 3.1.2 (Session Chair: Dr. Ishthyaq)					ICMET Technical Session 3.2.1 (Session Chair: Dr. Kamran)		ICMET Technical Session 3.3.1 (Session Chair: Dr. Georgios)		ICMET Technical Session 4.1.2 (Session Chair: Dr. Shahzad)		
F1 (TB3-B3 R5/6)	ICMET Technical Session 4.1.1 (Session Chair: Dr. Yousuf)																			

**Registration Link for Conference Banquet:**

<https://docs.google.com/forms/d/e/1FAIpQLSdRs4A1-UPehWKcsMaWv-UughbZm9fs6vVIdccndfxliGfiCg/viewform>

### Day 3:

Thursday 6-11-2025													
Hall Name	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00 14:30
ROOM B (Auditorium)	ICMET Workshop 4 (Co-ordinator: Dr. Shahzad)				ICMET Workshop 5 (Co-ordinator: Dr. Shahzad)							ICMET Keynote 3	Closing Ceremony
M1 (TB3-B3 R3/4)	ICMET Technical Session 5.1.1 (Session Chair: Dr. Jorge )		ICMET Technical Session 5.1.2 (Session Chair: Engr. Asim)		ICMET Technical Session 1.3.1 (Session Chair: Dr. Noshewan)		ICMET Technical Session 5.1.3 (Session Chair: Dr. Haq)						
F1 (TB3-B3 R5/6)							ICMET Technical Session 1.2.1 (Session Chair: Dr. Yahya )						

## **ICMET 2025 Keynote Speakers**

## Keynote Speaker-1

Name: Mr. Chris Goldsworthy

Affiliation:

CEO Institute of Marine Engineering, Science and Technology (IMarEST)

Country: UK



Title: Futureproofing the sector means making marine careers work

Time: 09:45 to 10:15

Date: 4<sup>th</sup> November 2025

Venue: MTC Auditorium

Abstract:

The talk will focus on cross-profession collaboration, future technology, safety, training, future fuels, criminalisation, etc. The IMarEST Chief Executive Chris Goldsworthy will introduce the work of the Institute and how it is supporting member career progression and industry innovation in the following areas:

- Future Technology
- Future Fuels
- Training
- Safety

## Keynote Speaker-2

Name: Mr. Khalil Al Hooti

Affiliation:

Ship Management-Vice President Marine, Asyad Shipping

Country: Oman



Title: Navigating Change: Charting Oman's Course for a Sustainable Maritime Future

Time: 11:30 -12:00

Date: 5<sup>th</sup> November 2025

Venue: MTC Auditorium

Abstract:

The maritime industry is entering an era of unprecedented transformation, driven by regulatory, technological, and environmental imperatives. This keynote presentation explores how the Sultanate of Oman is navigating these global shifts by advancing sustainable maritime innovation in alignment with Vision 2040 and the International Maritime Organization's (IMO) decarbonization agenda.

The address highlights Oman's evolving role as a strategic logistics and maritime hub, showcasing its investments in green shipping, digital integration, and academic-industry collaboration. It emphasizes the urgent need to address the global shortage of qualified maritime professionals and outlines how Oman is responding through education, micro-credentials, and applied research partnerships with institutions such as the Military Technological College (MTC).

The presentation further discusses the implications of the IMO's revised greenhouse gas (GHG) strategy and the FuelEU Maritime and EU ETS frameworks, providing a practical overview of compliance mechanisms and efficiency opportunities. A featured case study — Sohar Max Rotor Sails — demonstrates Oman's leadership in adopting wind-assist propulsion to reduce emissions and improve vessel efficiency, achieving over 6.5% fuel savings and a verified reduction of nearly 4,000 tons of CO<sub>2</sub>.

Through data, innovation, and human capital development, Oman is positioning itself as a regional leader in maritime sustainability. This session argues that by turning regulatory challenges into innovation opportunities, Oman is not only contributing to global decarbonization but also charting a resilient and prosperous maritime future.



### Keynote Speaker-3

Name: Prof. Dr. Junaid Qadir

Affiliation: Professor of Computer Engineering  
Qatar University, Qatar

Country: Qatar



Title: Promise and Opportunities of Digital Twins

Time: 13:30-14:00

Date: 6<sup>th</sup> November 2025

Venue: MTC Auditorium

Abstract:

Digital Twins are redefining how engineers and scientists understand and manage complex systems. By linking physical assets with their digital counterparts through continuous data exchange, they enable real-time monitoring, prediction, and improvement. Yet, as we build ever more intelligent models, Digital Twins also challenge us to reflect on deeper questions of trust, control, and human oversight. This keynote will explore both the conceptual foundations and practical frontiers of Digital Twin technology, focusing on its expanding role in maritime innovation—from ship design and port operations to sustainable ocean governance. Attendees will gain a forward-looking perspective on how AI-driven twins can enhance efficiency, resilience, and environmental stewardship, while revealing the broader implications of this technology for the future of engineering and society.



## **ICMET 2025 Invited Speakers**

## Invited Speaker-1

Name: Prof. Dr. Noshewan Shoaib

Affiliation: Professor and Head of Department of RF & Microwave (RF&M-EE), School of Electrical Engineering and Computer Science, National University of Sciences and Technology (NUST), Islamabad, Pakistan

Country: Pakistan



Title: Energy Harvesting for Internet of Things (IoT) Applications

Time: 15:00-15:30

Date: 4<sup>th</sup> November 2025

Venue: S1 (TB3-B2 R5/R6)

### Abstract:

The RF energy harvesting is a “Green” self-sustainable operation which can potentially provide unlimited energy supply that can be used to remotely power up low power devices. In particular, it helps to eliminate the need for a battery, which not only increases the cost, weight, and size of the device but the battery replacement is also costly and time-consuming especially when a lot of devices are spread over wide or inaccessible areas. Furthermore, it improves the reliability, portability, and user and environment friendliness and reduces the size and cost of the device. In addition, the finite lifetime of the electrical batteries is encouraging the researchers to explore further solutions in the field of RF energy harvesting, as acknowledged by Nikola Tesla, who described the freedom to transfer energy between two points without the need for a physical connection to a power source as an “all-surpassing importance to man”. This talk will present an introduction to wireless power transfer (WPT) followed by a comparison between ambient energy sources and an overview of different components of rectennas that are used for RF energy harvesting. Being less costly and environment friendly, rectennas are used to provide potentially inexhaustible energy for powering up low IoT power sensors and portable devices that are installed in inaccessible areas where frequent battery replacement is difficult, if not impossible. The talk will also describe various stages of rectenna system including multiband/broadband antenna, matching network and rectifier. The current challenges in rectenna design & development and output power limitations will also be presented.

## Invited Speaker-2

Name: Prof. Dr. Eng. Abdulnasir Hossen

Affiliation:

Professor, Department of Electrical and Computer Engineering  
Sultan Qaboos University, Muscat, Sultanate of Oman

Country: Oman



Title:

AI-Based Engineering Systems in Medical Diagnosis

Time: 15:30-16:00

Date: 4<sup>th</sup> November 2025

Venue: S1 (TB3-B2 R5/R6)

Abstract:

To streamline the medical diagnostic process in daily routine and avoid misdiagnosis, artificial intelligence methods (especially computer aided diagnosis and artificial neural networks (ANN)) can be employed. These adaptive learning algorithms can handle diverse types of medical data and integrate them into categorized outputs.

Sleep apnea (SA) which is defined as a complete or partial stop of breath during sleep, is one of the most common types of respiratory-related sleep disorders.


Heart failure (HF) is a common condition that usually develops slowly as the heart muscle weakens and needs to work harder to keep blood flowing through the body.

Different ANNs and Machine learning (ML) algorithms such as KNN and SVM are to be used in the identification of SA from normal subjects and HF from normal subjects using spectral analysis of heart rate variability signals.

Essential tremor (ET) and the tremor in Parkinson's disease (PD) are the two most common pathological tremors with a certain overlap in the clinical presentation. The main purpose is to use AI to select the best features and to discriminate between the two types of tremors using spectral analysis of tremor time-series recorded by accelerometer and surface EMG signals.

Dysarthria is a speech disorder that is often associated with PD. It can cause reduced intelligibility, making it difficult for people with PD to communicate. Here, an automated system is proposed for classifying the severity of dysarthria in PD patients using a combination of speech signal analysis, machine-learning algorithms, and voting techniques.

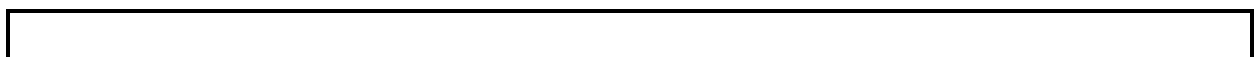
## Invited Speaker-3

Name: Prof. Dr. Capt. A. Tugsan Isiacik Colak		
Affiliation: Head of Maritime Department International Maritime College Oman		
Country: Oman		
Title: Navigating Sustainable Growth: Integrated Marine Spatial Planning for the Blue Economy		
Time: 16:00-16:30		Date: 5 <sup>th</sup> November 2025
Venue: S1 (TB3-B2 R5/R6)		
<p><b>Abstract:</b></p> <p>Marine Spatial Planning (MSP) is a strategic process vital for balancing the growth of Oman’s Blue Economy with the imperative of marine conservation. For Oman, a nation with diverse marine ecosystems spanning its Arabian Sea coast, the Sea of Oman, and the Musandam peninsula, successful MSP requires identifying and managing specific, high-stakes areas where economic potential and ecological sensitivity intersect. This talk outlines the priority zones for this integrated approach.</p> <p>Key areas demanding rigorous assessment include the coastal interface, where port expansion, tourism, and aquaculture must be carefully sited to avoid critical habitats like mangrove forests, seagrass meadows, and sea turtle nesting beaches, particularly in the Daymaniyat and Hallaniyat island reserves. The Arabian Sea upwelling zone, a globally significant productive region, presents a major opportunity for offshore wind energy. However, its development must be guided by oceanographic data to avoid disrupting this delicate food web, which supports fisheries and marine megafauna. Furthermore, the unique fjord-like ecosystems of the Musandam Peninsula require zoning to mitigate conflicts between intensive shipping, tourism, and sensitive deep-water coral communities.</p> <p>The core of an effective Omani MSP framework lies in its ability to move beyond single-sector management to cumulative impact assessment. An AI-enabled, data-driven approach is essential to model the combined effects of multiple sectors shipping, renewables, fisheries, and tourism on the marine environment. By turning spatial data into scenario-tested plans, Oman can de-risk investments, safeguard the natural capital underpinning its prosperity, and strategically zone its waters for sustainable co-location. This ensures that MSP becomes a practical engine for delivering a resilient Blue Economy, directly advancing SDGs 7, 8, 13, and 14.</p>		

**Invited Speaker-4**

Name: Prof. Dr. Nourhan Ghoneim		
Affiliation: Associate Professor at International Maritime College Oman, National University of Science and Technology		
Country: Oman		
Title: From Coastline to Cashflow: Green Marine Technologies as Drivers of Economic Transformation		
Time: 16:30-17:00		Date: 5 <sup>th</sup> November 2025
Venue: S1 (TB3-B2 R5/R6)		
<p>Abstract:</p> <p>As nations pivot toward sustainable growth, green and sustainable marine technologies are emerging as key pillars of economic diversification. This talk explores how Oman can leverage green hydrogen—a zero-emission fuel produced via renewable-powered electrolysis—as a transformative force in its maritime sector. Aligned with Oman Vision 2040 and the United Nations Sustainable Development Goals (SDGs), the adoption of hydrogen-powered vessels supports clean energy (SDG 7), climate action (SDG 13), and marine conservation (SDG 14). By integrating green hydrogen into maritime operations, Oman not only reduces its carbon footprint but also catalyzes innovation, attracts investment, and enhances its role as a global energy hub. The presentation will examine the technical feasibility, economic potential, and environmental impact of green hydrogen in shipping, offering policy recommendations to accelerate its implementation and support a resilient, diversified economy from coastline to cashflow.</p>		


## **ICMET 2025 Technical Workshops**



Technical Workshop 0 (EFA Industry)	
Name: Mr. Giannis Kakavas	
Affiliation: Commodore (ret.) Hellenic Navy & Senior Technical Advisor, EFA VENTURES	
Country: Greece	
Title: A Cutting-Edge Naval Sensors Suite for OPV/Gunboat Class Ships	
Time: 08:15-09:15	Date: 4 <sup>th</sup> November 2025
Venue: F1 (TB3-B3 R5/6)	
<p>Abstract:</p> <p>This project outlines a proposal for the development and operational integration of a Naval Sensors Suite (NSS). The NSS is tailored specifically for Offshore Patrol Vessel (OPV) and Gunboat class ships suitable for both new builds, as well as retrofit projects. This initiative is the result of a collaborative effort between the EFA GROUP of companies and several other Greek enterprises. The primary objective is to establish a comprehensive Naval Combat Management System (NCMS) as part of a broader development programme.</p> <p>The main aim of the project is to enhance the operational effectiveness of mid-sized naval vessels by integrating advanced sensor technologies within a unified software and hardware framework—referred to as the “core”. The integration of the NSS by the NCMS is expected to significantly improve situational awareness and decision-making capabilities aboard the targeted classes of ships. To achieve the desired capabilities, the programme will facilitate the transfer of critical, state-of-the-art technologies. These technologies will encompass key domains of the electromagnetic spectrum with operational applications such as radars, electro-optical &amp; infrared (EO/IR) and electronic warfare (EW) systems. By leveraging these advanced systems, the NCMS will offer a robust and future-proof solution for naval operations. The initial phase of the programme is executed on a testbed basis, focusing on upgrading the operational capabilities of a warship comparable in size to those operated by the Hellenic Navy. The successful operational demonstration and completion of this solution could serve as a foundation for its subsequent expansion to additional surface units within fleets around the world.</p>	

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Technical Workshop 1	
Name: Professor Hussein A Kazem	
Affiliation: Sohar University	
Country: Oman	
Title: Advanced Photovoltaic (PV) Systems	
Time: 16:00-17:00	Date: 4-11-2025
Venue: ROOM B (Auditorium)	
<p>Abstract:</p> <p>This workshop provides a thorough examination of the current state and future prospects of solar photovoltaic (PV) technologies. It explores the evolving market dynamics, industry opportunities, and technological advancements in these fields. The discussion highlights the critical role of both policy and technological investments in shaping the future competitiveness and market potential of solar PV systems.</p> <p>Emphasizing the technological aspects, the workshop offers a detailed overview of the technical innovations, policy frameworks, market trends, and industry investments necessary to elevate PV technologies to a new level of impact as a major clean-energy contributor in the global energy landscape.</p> <p>Participants will gain insights into the strategic shifts required to transition from incremental improvements to disruptive and revolutionary technologies. The workshop argues for a shift in focus from near-term, evolutionary strategies to more transformative approaches that address our needs over the next 10–15 years and beyond. This forward-looking perspective aims to position PV technologies as central players in achieving long-term energy sustainability and innovation.</p>	

## Technical Workshop 2

Name: Prof. Dr. Noshewan Shoaib

Affiliation: National University of Sciences and Technology (NUST)

Country: Pakistan



Title: Unlocking Opportunities with IEEE: For Students and Young Professionals

Time: 08:00-09:00

Date: 5-11-2025

Venue: ROOM B (Auditorium)

Abstract: In this talk, we will explore how the IEEE (Institute of Electrical and Electronics Engineers) serves as a powerful platform for professional growth. Focused on students and young professionals, the session will highlight the various resources and opportunities available, including access to cutting-edge research, networking with global experts, and involvement in industry-leading projects. Attendees will learn how IEEE membership can enhance their skills, boost career prospects, and open doors to international collaborations. Additionally, we will delve into the benefits of IEEE's local chapters, technical societies, and special programs designed to empower the next generation of engineers and innovators.

### Technical Workshop 3

Name: Dr. Haq Nawaz

Affiliation: MTC

Country: Oman



Title: In-band full-duplex antennas for Modern Wireless Applications

Time: 12:00-13:00

Date: 5-11-2025

Venue: ROOM B (Auditorium)

**Abstract:** The in-band full duplex (IBFD) or single channel full duplex (SCFD) scheme is considered as one of the emerging technologies for the 5th generation (5G) wireless communication systems due to its inherent potential of doubling the spectral efficiency or throughput of the wireless systems. Compared to the conventional time and frequency based duplexing schemes, the IBFD is based on simultaneous transmission and reception (STAR) of radio signals across overlapped bandwidth. Such IBFD operation results in very high levels of in-band coupling or self-interference (SI) at receiver resulting from its own co-located transmitter. The performance of the IBFD operation is highly relied on the effectiveness of self-interference cancellation (SIC) schemes. Such SIC schemes enable the receiver to retrieve the signal of interest which will otherwise be overpowered by strongest SI signals. The effectiveness of SIC levels define the intended isolation between the receiver and its co-located transmitter. These SIC levels or amount of isolation between transmit and receive chains of IBFD transceiver are particularly defined by the transmit power, and bandwidth of transceiver in addition to the sensitivity of the receiver. The intended isolation levels for effective realization of IBFD wireless operation can be established through SIC techniques employed at various stages across the receive chain.

However, very high levels of isolation between transmit and receive chains should be maintained through SIC techniques employed at front end of receiver (antenna stage) to safeguard the dynamic range of receiver for intended receive signal or signal of interest. This requires high SIC levels acquired at antenna stage or antennas with high isolation levels between transmit and receive ports. Moreover, the real gain of IBFD technology can be achieved when single or shared antenna (monostatic antenna) is used for IBFD operation. This session will focus on various configurations of monostatic antennas (single or shared apertures) which offer very high levels of interport isolation for IBFD applications.

## Technical Workshop 4

Name: Dr. Norhan Ibrahim Abdelyazid

Affiliation: Associate Professor at International Maritime College Oman, National University of Science and Technology



Country: Oman

Title: Autohydro Software

Time: 08:00-09:00

Date: 6-11-2025

Venue: ROOM B (Auditorium)

### Abstract:

Autohydro is a complete hydrostatics and stability calculations program for naval architects, ship designers and marine engineers. A true 'floating simulator', Autohydro reports the reaction of the model to various conditions such as a loading configuration, a damage situation, conditions involving outside forces, wind or high speed turning momentum or some combination of these. Autohydro can also be used to obtain hull form characteristics and capacities. Vessel attitude is displayed graphically and in text on the screen. Report information, text and graphs, can be shown on the screen, edited, printed, saved or exported to other Windows applications. Vessel Model - Entire vessel models may be generated in Autohydro or the user can import hull shapes from Autoship and then add geometry such as tanks, compartments and superstructure.

## Technical Workshop 5

Name: Mr. Asim Murtaza and Dr. Kamran

Affiliation: MTC Oman

Country: Oman



Title: From Classrooms To Cloud: The Digital Transformation Of Higher Education

Time: 10:00-11:00

Date: 6-11-2025

Venue: ROOM B (Auditorium)

This one-hour workshop introduces participants to the main technologies that are changing higher education. New tools such as Artificial Intelligence (AI), Extended Reality (XR), cloud-based learning systems, and learning analytics are transforming how teachers teach and how students learn. The session will explain why it is essential to use these technologies for HEIs and what benefits and challenges they bring for teaching and learning.

Participants will learn how digital tools can make education more flexible, engaging, and inclusive. Examples will show how cloud labs, virtual classrooms, and AI tutors are improving access and learning outcomes. The workshop will also discuss what universities need to prepare for the future, including digital skills, staff training, and strong systems to maintain quality and support students effectively.

By the end of the session, participants will have a clearer understanding of how technology is reshaping higher education and how their institutions can plan and adapt for this change. The workshop aims to build awareness, encourage teamwork, and inspire practical steps toward creating modern, technology-ready universities.

## **ICMET 2025 Technical Sessions**

Track No.	Main Track	Sub track	Session No.	Session Chair	Paper ID	Title	Authors
1	Economic Diversification through Green and Sustainable Marine Technologies	1.1 Renewable Energy Technologies and Applications	ICMET 1.1.1	MQM Ahmed Salim Hamood Al Siyabi	6	Photo Voltaic Solar Panel Efficiency Enhancement Using Phase Change Material for Solar Powered Ships	Liaquat Khan, Haider Ali,Kamran Nazir, Faisal Masood, Wahaj Nasir, Huzaifa Liaquat, Ishtiyag shafi Rafiqi, Yousuf Pasha Shaik
					30	SolEco Wheels	Abdul Rauf Bhatti, Muhammad Arsalan, Moeez Qureshi,Akhtar RASOOL, Abuzar Ghaffari, Ghulam Muhammad Rabani,
					44	Experimental Performance Investigation of Rack and Pinion based Speed Bump Power Generation System	TAWSEEF AHMAD BHAT, Faisal Masood, Liaquat Khan, Saleh Babaa, JAVED AKHTER, Ishtiyag shafi Rafiqi
					48	Smart Solar Powered Thermoelectric Cabin Preconditioning System	Omar Al mashaikhi, Yahya Al Balushi, Shekhar Mahmud
		1.2 Integration of multiple renewable energy systems	ICMET 1.2.1	Dr. Yahya Yaqoob Obaid Al Balushi	8	Renewable Energy Integration OF Distribution Grid. A case study.	Yaqoob alnasiri
					33	Techno-Economic Design and Analysis of a PV Electrolyser Fuel Cell System with Metal Hydride Hydrogen Storage for Rural Electrification	Prajyot Fadte, Mubbashar Mehmood, Akhtar RASOOL
					62	Review of two SRF-PLL controllers on the performance of a solar water pumping system: Case of Khoemacau copper mining	Tebogo Sugape, Ditiro Sethalo,
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