SDG-14
LIFE BELOW WATER

Achieving SDG 14 requires collaboration among governments, businesses, civil society, and the international community, emphasizing the interconnectedness of ocean health with global sustainability. Efforts must focus on shared responsibility and innovative solutions to ensure the longevity of marine resources for future generations.

COMSATS University Islamabad's Environmental Science Department plays a vital role in promoting sustainable fishing practices through educational outreach activities. By raising awareness about critical issues like overfishing, illegal and unreported fishing, and destructive fishing methods, the department helps communities understand the importance of protecting marine ecosystems.

These outreach initiatives aim to:

1. **Educate Communities:** Inform local populations about the impacts of unsustainable fishing practices on marine biodiversity and livelihoods.
2. **Empower Local Stakeholders:** Engage community members in discussions and activities that encourage sustainable practices, fostering a sense of ownership and responsibility towards marine resources.
3. **Promote Best Practices:** Share knowledge on sustainable fishing techniques and the importance of adhering to regulations, highlighting the long-term benefits for both the environment and local economies.
4. **Encourage Participation:** Involve community members in conservation efforts, such as monitoring local fisheries or participating in clean-up campaigns, to build a culture of stewardship.

Through these efforts, COMSATS University not only raises awareness but also empowers communities to take proactive steps toward marine conservation and sustainability, ultimately contributing to the achievement of SDG 14.

Fifth China Pakistan Marine Information Workshop (CPMI 2023) at Sanya, China

The Director Campus Prof. Dr. Muhammad Abid,T.I., along with Assistant Professor, Dr. Barkat Ullah on the invitation of Harbin Engineering University (HEU) China attended the 5 th China - Pakistan Marine Information Workshop (CPMI 2023) at Sanya, China, held from December 8 – 11, 2023. Prof. Dr. Muhammad Abid delivered keynote on —A Framework Approach to Strengthen Higher Education in the Field of Marine Information and Engineering and Dr. Barkatullah delivered his talk on —Dynamic Modelling and Analysis of Steady State Spiraling Motion Control of an Underwater Glider. A detailed presentation regarding CUI and its way forward for continued joint research related to Marine Engineering and Sciences was given by Prof. M. Abid in the Round Table Discussion. During CPMI, several MoUs were also signed by HEU with NUCES, University of Karachi, NIMA. The workshop was very fruitful in exploring and strengthening the collaboration between HEU and Pakistani institutions, researchers in the field of Marine Information and Technology.

In recognition to his outstanding contribution for signing MoU with HEU, as a founding member of CPMI and organizing first four consecutive CPMI jointly with HEU, hosting HEU students under students exchange program at CUI Wah Campus for two semesters, development of MS curriculum on Underwater Acoustic Communication, Prof. M. Abid was also awarded —Special Contribution Award by HEU.

Water Informatics and Communication Technical Session offered in 20th International Conference on Frontiers of Information Technology (December 11– 12, 2023) at Islamabad, Pakistan

Water Informatics and Communication Technical Session was held on December 11, 2023 during 20th International Conference on Frontiers of Information Technology at COMSTECH Secretariat, Islamabad, Pakistan. This session was chaired by Assistant Professor, Dr. Shahzad Saleem from FAST, Islamabad. Three invited talks were presented 1. Key Technologies and Applications of Underwater Acoustic Communication and Networks delivered online by Liu Songzuo, College of Underwater Acoustic Engineering, HEU, China. 2. A Fully Connected Neural Network Driven UWA Channel Estimation for Reliable Communication by Muhammad Adil, Liu Songzuo, Suleman Mazhar, Mansoor Jan, Asfand Yar Khan and Muhammad Bilal. 3. Machine Learning – based Multi-Path Reliable and Energy -efficient Routine Protocol for Underwater Wireless Sensor Networks by Zahid |Ullah Khan, Muhammad Aman, Wazir ur Rehman, Faran Khan, Tooba Jamil and Rahat Hashim.

Ocean Connects the World

To promote the exploration and protection of the ocean and boost the development of marine engineering, jointly organized by Mechanical and Vehicle Engineering Division of Chinese Academy of Engineering, Science and Technology Committee of China State

Shipbuilding Corporation Limited, and jointly organized by Systems Engineering Institute of China State Shipbuilding Corporation Limited, China Ship Research and Development Academy, Pilot National Laboratory for Marine Science and Technology (Qingdao), and Harbin Engineering University, the International Conference on Marine Equipment & Technology and Sustainable Development (ICMETSD), was organized in Beijing, China on March 31 and April 1, 2023. During the conference, the Presidents' Forum was organized to discuss and exchange views on the cultivation of marine talents and the future development of ocean, innovation and international cooperation on ocean science and technology, and the development trend of cutting-edge marine science and technology, in order to strengthen exchange and cooperation among China and foreign universities in the field of shipbuilding and ocean, comprehensively improve the competency and level of universities in serving the global ocean governance, and provide intellectual and technological support for global ocean governance. During his talk he mentioned that Pakistan is located along the Arabian Sea and offers great potential for marine-based activities in Education and Technology for shipping, fisheries, aquaculture & tourism. Hence development of sustainable marine equipment and technology can play a significant role in unlocking the potential of Pakistan's marine sector while ensuring its long-term viability. Above mentioned developments can not be ensured to be sustainable without Capacity building in Marine Engineering and Sciences degrees at BS, MS and PhD levels and through Specialized Courses.

Keynote address on "Need of Computer Aided Engineering for Real World Engineering Problems" with focus on the integrated water and sediment flow simulations

The keynote on "Need of Computer Aided Engineering for Real World Engineering Problems" with focus on the integrated water and sediment flow simulations was delivered by the Director Campus/UNESCO Chair on Knowledge Systems for Integrated Water Resources Management in 1 st International Multidisciplinary Conference on Emerging Trends in Engineering Technology 2023 held from May 9 – 11, 2023. In his address he emphasized on energy efficient building designs to target the SDG 11 —Sustainable Cities and Communities for safe human settlements. He focused on the integrated water and sediment flow simulations through tunnels and reservoirs for life predictions, optimum renewable energy systems, industrial trusses and lightweight hybrid structure, flood and drought modeling using RS and GIS tools and others with respect to Big Data, AI and Machine Learning and others to enable the role of water management resources in interlinked SDG 6 and 13 for Clean Water and Sanitation and Climate Action

PUBLICATIONS

Publications Title	Author	Publisher	Impact Factor	Weblink
Robust Data Driven Analysis for Electricity Theft Attack-Resilient Power Grid	Inam Ullah Khan, Nadeem Javaid, C. James Taylor	IEEE Transactions on Power Systems	10	https://ieeexplore.ieee.org/document/9743316
SeAC: SDN-enabled Adaptive Clustering Technique for Social-Aware Internet of Vehicles	Aamir Akbar Muhammad Ibrar Mian Ahmad Jan	IEEE	9.551	NULL
Zinc oxide nanoparticles mediated biostimulant impact on cadmium detoxification and in silico analysis of zinc oxide-cadmium networks in Zea mays L. regulome	Yashfa Tanveer Saman Jahangir Zafar Abbas Shah	Environmental Pollution	9.988	NULL
Influence of the chronic groundwater fluoride consumption on cholinergic enzymes, ACHE and BCHE gene SNPs and pro-inflammatory cytokines: A study with Pakistani population groups.	Syed Ali Musstjab Akber Shah,Bibi S Habib R Khan S, Sania Shafiq, Syed Sayyam Abbas , Shaiza Khan, Eugenie Nepovimova, Mansoor Shaukat Khan , Kamil Kuca, Syed Muhammad Nurulain		10	https://pubmed.ncbi.nlm.nih.gov/37030382/
Toxic trespassers: Uncovering phthalates and organophosphate flame retardants in children's rooms and their health implications	Syed Ali Musstjab Akber Shah Nadeem Ali Sultan H. Alamri	Elsevier	10	https://www.sciencedirect.com/science/article/abs/pii/S0048969723052889?via%3Dihub

Total Publications:709, only high impact factor Publications are mentioned here.

In 2023 there were different project carried out among them a project titled **“Design and Development of low noise Transmitter / Receiver circuit for acoustic transducer of deep-water echo Souder”** of **2 million** worth is mentioned