

Scientific Secretary IBCAST  
Dr. Muhammad Zafar-uz-Zaman, SI  
Executive Secretary IBCAST  
Dr. Sajid Raza Chaudhary, SI  
IEEE Publication Chair  
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## 2- AEROSTRUCTURES

- Aerospace structural design
- Static, Dynamic and thermal structural simulations
- Static and dynamic aeroelasticity
- Vibration, acoustics and modal analysis
- High strain Rate impact simulations
- Fracture and damage tolerance
- Fatigue life assessment
- Structural Optimization
- Biomechanics
- Advanced manufacturing techniques
- Advanced testing techniques

## 3- BIOSCIENCES

17<sup>th</sup> IBCAST Biosciences (BS) module aims to bring together leading academic scientists, researchers and research scholars to exchange and share their experiences and research results on all aspects of "Biosurveillance, Microbial Detection & Countermeasures". This may result in exploring collaborations and to spark new ideas, with the aim of developing new projects and exploiting new technologies.

The sub themes includes

## 4- CONTROL & SIGNAL PROCESSING

Control engineering is the science of manipulating engineering systems for optimal performance in real-operating environments. Control

## 5- CYBER SECURITY AND ASSURANCE

Digital information is revolutionizing all fields of technology and forming the backbone. Cyber Security is a rapidly growing field encompassing communications, cryptography and various other disciplines. The increasing dependence of economy and other public services on digital information and reliance demands reliability and security of the information. Cyber security is a direct threat to banking institutions, financial services, and other critical infrastructure. Cyber security and reliability has become a major concern for all organizations.

The aim of the track is to bring together researchers and practitioners from a particular body of knowledge and to discuss the latest research in this area. Areas involving latest topics include: Things (IoT), Cognitive Computing, Artificial Intelligence, Blockchain, Cryptography,

Computing science, the absence of physical security, using machine learning, Theoretical Computer Science,

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- GasDynamics
- Aerodynamics
- Hydrodynamics
- Industrial and Environmental Fluid Dynamics
- Fluid Structure interactions
- Turbulence Modeling
- Experimental Fluid Dynamics
- Multiphase flows
- Reactive flows
- Heat Transfer

## 7- MEDICAL SCIENCES <sup>e</sup>

Ongoing war on terror has proven the fact that the trauma victim need not only be a young soldier. Swift in onset and slow in recovery, trauma is the most common cause of death worldwide. Trauma response protocols are ever changing, as are the ways and mechanics of trauma causation. Enormous strides have been made in recent years in the initial treatment and stabilization of trauma patients. Technological advances alone are not enough rather it is the medical responder's training which ensure that the trauma victim gets managed within the golden hour and adequately leading to optimal outcomes.

A hand-on training for the management of trauma, from minor injury to catastrophic disaster situations, including care for women, children, and the elderly, with the principal goal of improving quality of care and patient safety, would be organized for the 17<sup>th</sup> IBCAST 2020. It is designed to equip frontline health providers with basic trauma, anesthesia, and surgical skills. This session would address both junior and senior doctors, nursing staff, paramedics and resuscitation officers.



## Sonar Signal/Image Processing and Sensors

- Array Signal Processing and Array Design
- Detection, Classification and Localization
- High Resolution Spectral Analysis
- Synthetic Aperture Sonar (Active and Passive)
- Sonar Imaging and Displays
- Transducer Arrays & Materials
- Suspension System for Sonar Buoys
- Sonobuoy Dynamics and Control
- Sonar Test and Calibration

## Ocean Vehicles

- Vehicle Design
- Vehicle Navigation and Positioning
- Unmanned Underwater Vehicles (UUVs)
- Remotely Operated Vehicles (ROVs)
- Naval Architecture
- Underwater Fittings and Installations

## Marine Environment and Oceanography

- Marine Surveys
- Marine Renewable Energy
- Marine Pollution
- Marine Geology and Mineral Resources
- Hydrography and Seafloor mapping
- Mineral Resources



### Radar Topics

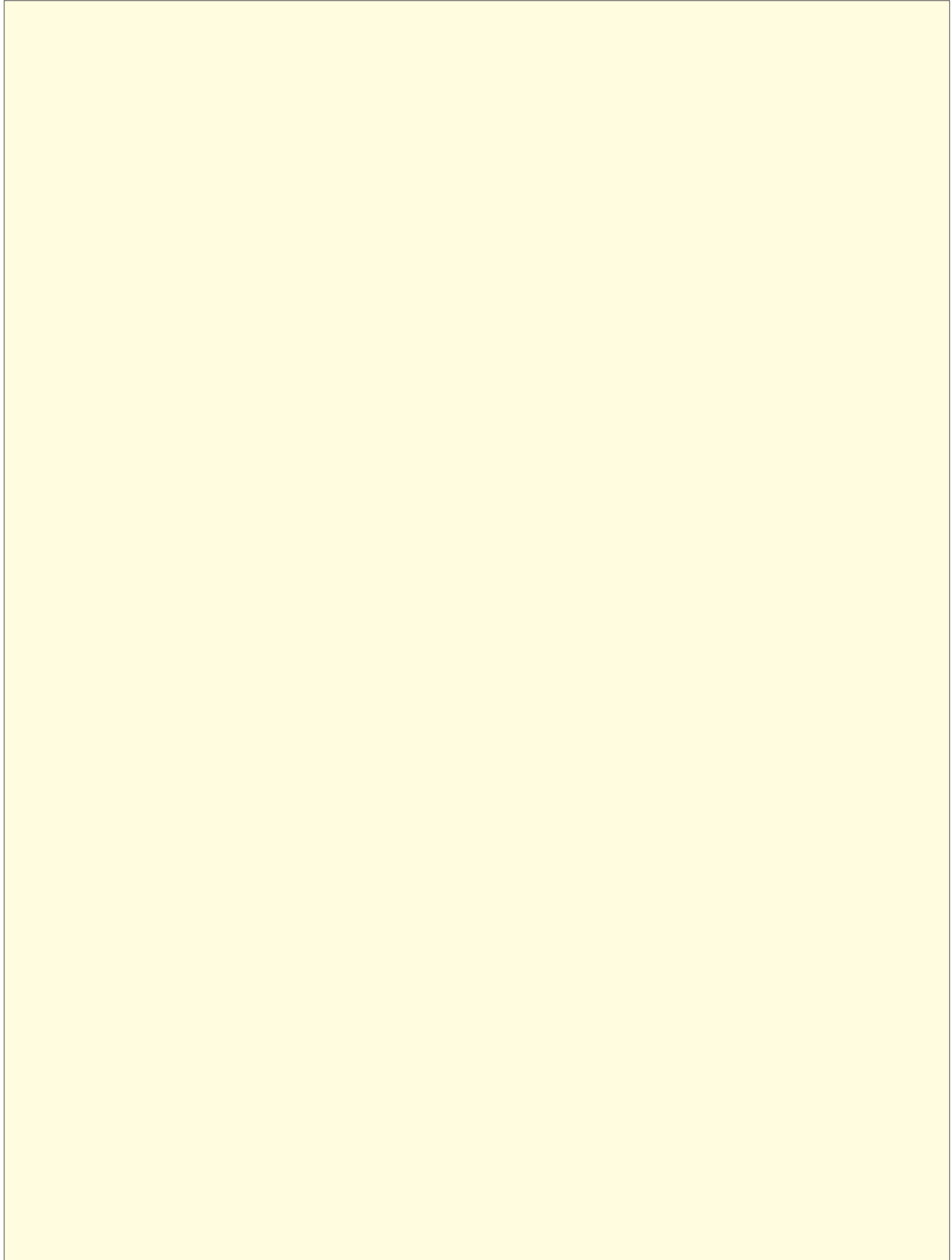
- Synthetic Aperture Radars, ISAR
- MIMO Radars
- Ultra Wide Band Radar, GPR
- Radar Performance Modeling/Measurement
- Bistatic/Multi-static Radars
- Analog/Digital Beam Forming
- Near Field & Far Field Antenna Characterization
- Radar Signal Processing
- Phased Array Radar Calibration
- Multifunction Phased Array Radar
- Space Time Adaptive Processing (STAP)
- Radar DSP Hardware
- RF/Microwave Circuit Design, RFICs & MMICs
- Reconfigurable Front-ends
- Active/Passive Device Modeling
- Computational Electromagnetics
- Radio Imaging including mm-wave and THz
- Imaging systems
- RCS Reduction/Stealth Design
- High Resolution Range Profile (HRRP)

### Wireless Communication Topics

- Software defined Radios
- Satellite & Space Communication
- Emerging Wireless Mobile Applications
- Network Centric Warfare
- Electromagnetic Scattering, Channel / Interference Modeling
- Adhoc Networks
- Wireless Technologies in Electro Medical Devices
- Metamaterials, FSSs and Electromagnetic Bandgap Structures
- Communication Systems Simulation
- Integrated Transceivers
- Wireless Power Transfer and Energy Harvesting
- Smart Antennas
- MIMO Systems
- Antenna Systems: Theory, Modeling and Measurement
- Internet of Things Near body communication







# *Notes*

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# IBCAST

\*\* IEEE members will be given 20% discount in Registration Fee.

\*\* Fee once deposited is non-refundable and non transferable.

Note: Application Form is available at: