

ORGANIZING COMMITTEE

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Mirza Kashif Begg
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Engr. Amir Najam

CALL FOR PAPERS

Researchers, scientists, engineers, academicians, private and public industry professionals, entrepreneurs and students are invited to present their latest unpublished research findings relevant to ICASE 2021 themes and topics at www.ncgsa.org.pk/icase

IMPORTANT DEADLINES



CONFERENCE PUBLICATION

Selected papers will be published in IEEE Xplore and remaining papers will be published in ICASE 2021 proceedings.

CONFERENCE HIGHLIGHTS

Technical Session
Poster Session
Panel Discussions
Webinars
GSA Forum
Workshop / Trainings / Tutorials
Technology Marketing Seminar
Plenary Sessions
Forum 360
STEM /STEAM / STEP Session
Policy Making Session

VENUE

The Seventh International Conference on Aerospace Science and Engineering will be held at Institute of Space Technology, Islamabad, Pakistan. However, in case of severe COVID-19 restrictions, the conference will be planned hybrid / online.

REGISTRATION FEE

National Professional	PKR 10,000/-
National Student	PKR 5,000/-
International Professional	USD 400/-
International Student	USD 200/-

CONFERENCE SECRETARIAT

NATIONAL CENTER OF GIS & SPACE APPLICATIONS

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SEVENTH INTERNATIONAL CONFERENCE ON AEROSPACE SCIENCE & ENGINEERING

Institute of Space Technology, Islamabad, Pakistan

14TH - 16TH December, 2021

THEME ICASE 2021

EMERGING TECHNOLOGIES IN AEROSPACE
ENGINEERING AND GEOGRAPHIC INFORMATION SCIENCE

ORGANIZED BY

National Center of GIS & Space Applications (NCGSA)
Institute of Space Technology, Islamabad

ICASE 2021 TRACKS AND THEMES

I. AERONAUTICS & ASTRONAUTICS

1. Aero and Astro-dynamics
2. Aerospace Structures
3. Flight Mechanics
4. Aero vehicle Design & Operations
5. Aeroacoustics
6. Avionics Systems
7. Guidance, Navigation & Controls
8. Propulsion and Power Systems
9. Electric Aircrafts and Electric Engines
10. Rocket Engines and Rocket Propulsion
11. Thermo-physics and Thermodynamics
12. Aviation Management
13. Space Missions, Systems and Architecture
14. Aerospace Design Optimization
15. Unmanned Aerial Vehicle Systems and Technologies
16. Autonomous Aerospace Vehicles
17. Lighter Than Air Aerospace Systems
18. Space Exploration and Future Space Mission

2. SATELLITE TECHNOLOGY

1. Satellites Technology and Applications
2. Electrical and Electronic Systems for Space Applications
3. Peripheral Electronics, Data Handling and Signal Processing
4. Communication Systems and Technologies
5. Antennas, RF/Microwave Systems, and Propagation
6. Space Missions, Systems and Architecture
7. Systems Engineering and Subsystem Design
8. Systems and Technologies for Cube-Sats
9. Satellite Development and Manufacturing
10. Assembly and Integration Technologies
11. Space Operations and Ground Support
12. Satellite Software and Autonomy
13. Satellite Constellation Design and Management
14. Emerging concepts in Electrical and Electronics Engineering
15. Cybersecurity for Space Systems
16. Frequency Spectrum Allocation Management
17. Satellite Technology Regulations

3. INFORMATION & COMMUNICATION TECHNOLOGIES

1. Computer Theory and Algorithms
2. Networking theory & Technologies
3. Wireless Communications
4. Knowledge Management & Decision Making
5. Big Data and Cloud Computing
6. Data Mining and Data Fusion
7. Parallel and Distributed Computing
8. Information & Data Security
9. Cryptography
10. Artificial Intelligence
11. Machine Learning
12. Computer and Mission Vision
13. Neural Networks
14. Robotics and Automation
15. Internet of Things (IoT)
16. Smart and Safe Cities
17. Virtual and Augmented Reality
18. Systems & Software Engineering
19. E-Commerce and E-Governance
20. Information and Communication Technologies for Sustainable Development

4. POSITIONING, NAVIGATION & TIMING

1. Navigation, Estimation and Tracking Methods
2. Ranging and Positioning Techniques
3. Aircraft and Spacecraft Navigation systems
4. Interplanetary Missions and Navigation
5. Navigation in Urban Environment

6. Guidance, Navigation and Controls
7. Control Theory, Analysis and Design
8. Control System Design and Implementation
9. Command and Control Systems for Space
10. Sensors and Embedded System Design
11. Autonomous Control and Unmanned Systems
12. Global Navigation Satellite Systems (GNSS)
13. Position Determination Using GNSS
14. Software and Hardware GNSS Receivers
15. GNSS Performance and Integrity Measures
16. GNSS Augmentation Systems
17. Applications of GNSS (Space Weather, Aviation etc.)
18. Interference and Spoofing Technologies and Countermeasures
19. Inertial and Integrated Navigation Systems
20. Navigation Sensors Fusion
21. Precision Agriculture
22. Smart Transportation Systems
23. Applications of Precise Timing
24. Aerospace Robotics and Unmanned/Autonomous Systems

5. GEOGRAPHIC INFORMATION SCIENCE

1. Earth Observation, Atmosphere and Environment
2. Cartography & Geo-visualization
3. Topography, Geology & Geomorphology
4. Spatial & Spatiotemporal Modeling and Surveying
5. Spatial Data Structures & Algorithms
6. Spatial Decision Support System
7. Image Processing and Information Extraction
8. GIS Innovations for Sustainable Development
9. Web GIS, Open-Source GIS and Geospatial Web Services
10. Climate Changes and Global Environment
11. Urban Analytics & Smart Cities
12. Big Data, IOT and Machine Learning in Geoinformatics
13. Advances in geoinformatics
14. Geostatistics
15. Applications of geoinformatics

6. REMOTE SENSING AND PHOTOGRAMMETRY

1. Remote Sensing Instruments, Sensors and Systems
2. Image and Signal Processing for Remote Sensing
3. Data Acquisition and Information Extraction
4. Optical and Radar Remote Sensing
5. Multispectral / Hyperspectral Remote Sensing
6. Geometric Enhancement and Spatial Filtering and Masking Techniques
7. Airborne Sensors and Systems for Remote Sensing
8. Advancements in Remote Sensing
9. Remote Sensing of Clouds, Atmosphere and Oceans
10. Photogrammetry and Its Applications
11. Photogrammetric Procedures, Instruments and Sensors
12. Applications and Advancements in Photogrammetry
13. Coordinate Systems in Photogrammetry

7. ENVIRONMENT & CLIMATE SCIENCE

1. Environmental Chemistry
2. Biodiversity, Conservation & Management
3. Biomass & Carbon Cycle
4. Pollution Monitoring and Management
5. Climate Change Monitoring and Mitigation
6. Disaster Risk Reduction
7. Waste Management
8. Water Resource Dynamics
9. Meteorology, Precipitation & Clouds
10. Alternate Energy Methods
11. Green Initiative and Products
12. Consumption, Human Needs, and Climate Change
13. Climate Change and Sustainable Development

8. APPLIED PHYSICS AND MATHEMATICS

1. Applied Physics (Modeling, Analysis and Computation)
2. General Physics and Physics of Matter
3. Applied Solid State Physics
4. Condensed Matter and Statistical Physics
5. Computational Physics
6. Applied Nuclear Physics
7. Modern physics
8. Nano-sciences and Technologies
9. Biophysics and Biophysical Chemistry
10. Materials Science & Engineering
11. Nanotechnologies, Components and Instrumentation
12. Algebra, Number theory and Analysis
13. Applied Computing and Information Systems
14. Applied Modeling and Simulation
15. Numerical Analysis
16. Mathematical and Applied Statistics
17. Probability and Stochastic Applications
18. Quantitative Methods, and Statistical Modeling
19. Differential and Partial Differential Equations
20. Fluid Mechanics
21. Heat Transfer
22. Solid and Structural Mechanics

9. ASTRONOMY, ASTROPHYSICS & ASTROBIOLOGY

1. Galaxies and Star Clusters
2. Variable Stars & Exoplanets
3. Black holes, White Dwarfs & Neutron Stars
4. Planets, Ionospheres, and Magnetospheres
5. Solar System
6. Cosmology
7. Celestial Mechanics
8. Gravitational, Computational, Observational and Theoretical Astrophysics
9. Solar and Stellar Physics
10. Plasma Astrophysics
11. Cosmic Rays and High Energy Astronomy
12. Dark Matter and Dark Energy
13. Interstellar matter
14. Artificial Intelligence and Data Mining in Astronomy
15. Scientific Instruments to Astronomical Instruments: Tools & Techniques
16. Astrostatistics
17. Microgravity Science & Applications
18. Astrogeology
19. Origin and Evolution of Life in Universe
20. Space Life and Habitability
21. Life Beyond Earth
22. New Technologies for Life Detection
23. Future of life
24. Bioinformatics and Biomedical Engineering

10. SPACE LAW, MANAGEMENT & OUTREACH

1. International Space Laws, Policies and Treaties
2. National Space Laws and Regulatory Issues
3. Space Policy Conflicts and Challenges
4. International Cooperation for Space
5. Space Security, Stability and Sustainability
6. Peaceful Uses of Space
7. Space for All: Space Education and Awareness
8. Space Technology Planning, Management and Infusion
9. Space Governance and Project Management
10. Space Technology Applications and Economic Benefits
11. STEAM (Science, Technology, Engineering, Arts & Mathematics) for Space
12. Technology Transfer and Spinoffs
13. Industry and Academia Collaborations
14. Space Commercialization: Space Tourism and Recreation
15. Enabling the Future: Space Capacity Building
16. Space Culture: Innovative Approaches for Public Engagement in Space