

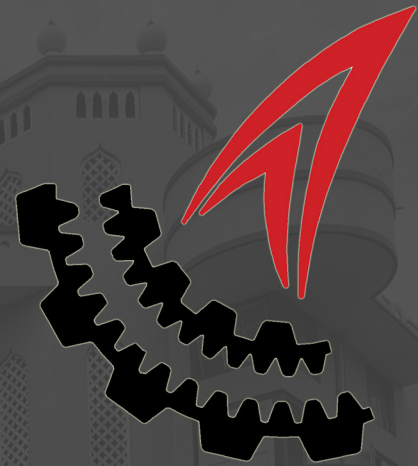
ICAME '21

ICAME '21

16TH - 18TH

DECEMBER

2021



INTERNATIONAL CONFERENCE ON AEROSPACE AND MECHANICAL ENGINEERING

'FACING THE FUTURE - GROWTH THROUGH SUSTAINABILITY'

Co-Sponsored by

Vikram Sarabhai Space Centre (VSSC),
Indian Space Research Organization (ISRO),
Thiruvananthapuram, Kerala, India

Organised by

Department of Mechanical Engineering,
Thangal Kunju Musaliar College of Engineering,
Kollam, Kerala, India

Sponsored by

Technical Education Quality
Improvement Programme (TEQIP-II)



INTRODUCTION

ICAME'21 is a notable event which brings together academia, researchers, engineers and students in the field of Aerospace and Mechanical Engineering. This makes the conference a perfect platform to share experience, foster collaborations across industry and academia, and evaluate emerging technologies across the globe. The conference will provide an opportunity for participants to exchange ideas so as to mutually benefit and also to get exposed to current research happening globally. The theme of the conference is 'Facing the Future - Growth through Sustainability'. We invite high quality, state-of-the-art, original research papers, not published elsewhere. Paper may be submitted according to the topics given. Papers will be listed for poster/oral presentation in sessions based on the number of papers received in each category. An expert panel for each specific field will evaluate the papers and recommend suitable ones for inclusion in the conference. The authors may limit their papers to a maximum of 6 pages. The template provided in the conference website should be used for the preparation of the paper.

Papers should be submitted to the conference through the EasyChair conference management system

(<https://easychair.org/conferences/?conf=icame210>). Accepted papers should be resubmitted in camera-ready form incorporating the recommendations of the reviewers.

WORKSHOP

There will be a special workshop showcasing the latest developments in space technology by scientists from ISRO.

DATES TO REMEMBER

| | |
|---|--------------------|
| Abstract Submission | : 05 October 2021 |
| Submission of full paper | : 20 October 2021 |
| Notification of acceptance of paper | : 15 November 2021 |
| Submission of camera ready paper and registration | : 30 November 2021 |

REGISTRATION

| Registration Details | Early Bird until 30 November 2021 | After 30 November 2021 |
|--|--------------------------------------|---------------------------|
| Participants: International | 250 USD | NA |
| Participants : National (Academia) | 3500 INR | 4500 INR |
| Participants : National (R & D Organisation & Industries) | 4000 INR | 5000 INR |
| Student Delegates (International) | 150 USD | NA |
| Student Delegates (National) | 2000 INR | 2500 INR |
| Accompanying person/listener | 2000 INR | 2000 INR |

Bank Account Details : State Bank of India, Karicode, Kollam

A/C No. : 67314852668
IFSC : SBIN0070870
SWIFT Code : SBININBB
MICR Code : 691002923

DD may be drawn in favour of "ICAME - TKMCE", payable at Kollam.

TOPICS

- Advances in Aerospace Technology - Advances in Space Propulsion and Power, Propulsion Engineering, Ballistics, Astrophysics /Particle Physics, Aerodynamics.
- Advanced Manufacturing - CAD/CAM/CIM, Manufacturing and Production Processes, Mechatronics, Robotics and Automation.
- Thermal and Fluids Engineering - Heat Transfer and Fluid Flow, Compressible flows, Refrigeration and HVAC, Thermal Management of Electronic Systems, Computational Fluid Dynamics.
- Nanotechnology - Engineering Materials, Composite and Smart Materials, Surface Science and Engineering, Nanomaterials, Nanocomposites, Biomaterials, Biomechanics and Bio Medical Engineering.
- Engineering Design - Applied Mechanics, Solid Mechanics, Tribology, Machinery and Machine Design, Dynamics and Vibration.
- Cryogenics - Space Cryogenics, Food Preservation, Cryocoolers, Cryogenic Heat Transfer, Superconductivity.
- Energy Conservation and Management - Energy Engineering, Non Conventional Energy Sources, Environmental Engineering, IC Engines and Gas Turbines, Fuel Cells, Combustion Science, Green Building.
- Artificial Intelligence.
- Engineering Management - Entrepreneurship and Strategic Management, Production, Logistics and Supply Chain Management, Investment and Project Management, Organizational Culture, Innovation and Knowledge Management, Business Ethics and HR Management, Intellectual Property.

Publications - All accepted papers will be published in SCOPUS INDEXED publication that will be communicated in due course. Papers should be submitted to the conference through EasyChair conference management system. Kindly visit the conference website: www.icame.in

ABOUT US

Institution - The Thangal Kunju Musaliar College of Engineering (TKMCE) was established in the year 1958 in the state of Kerala by the late Janab A. Thangal Kunju Musaliar, a leading industrialist and philanthropist. TKMCE, the very first Government-aided Engineering College in Kerala, is situated in the cashew hub of Kerala, Kollam. The foundation stone of the college was laid in 1956 by Dr. Rajendra Prasad, the first President of Independent India. The college was formally inaugurated by Prof. Humayun Kabir, the then Minister for Scientific and Cultural Affairs, Govt. of India, on 3 July, 1958. Spanning over an area of more than 25 acres, it is ideally located in Karicode, on the Kollam - Madurai road, about 6 kilometers from the heart of the Kollam city. The campus, a distinctive landmark that cuts above the rest is built in the aesthetic Mughal architectural style. The college is the major institution for technical education, run by the TKM educational trust, headed by Janab Shahal Hassan Musaliar. The college is affiliated to the APJ Abdul Kalam Technological University and has eleven academic departments offering undergraduate and postgraduate programmes. The college is accredited by NAAC with A Grade and all B.Tech programmes are accredited by NBA.

Department of Mechanical Engineering - The Department of Mechanical Engineering is one of the pioneering departments of Thangal Kunju Musaliar (TKM) College of Engineering, started in 1958. The department is one of the oldest departments that offer a degree in Mechanical Engineering in the state. With the vision of 'Excellence in Mechanical Engineering with a perspective of sustainable development', the Department of Mechanical Engineering has carved a niche for itself by offering the most competent instructional programmes to the students. The department offers Undergraduate (B.Tech), Postgraduate (M.Tech.) and Doctoral (Ph.D.) programmes in Mechanical Engineering. Currently, there are over 800 B.Tech., 70 MTech. and more than 30 Ph.D. students on roll. The department has over 15 instructional laboratories and 5 research laboratories, equipped with the state-of-the-art experimental facilities, scientific instruments and systems. The National Board of Accreditation (NBA) had accredited the undergraduate programme in Mechanical Engineering for 6 years for the period 2016-2022. The Department is an approved research centre of University of Kerala, APJ Abdul Kalam Technological University and is a QIP (Quality Improvement Programme) and ADF/NDF (AICTE Doctoral Fellowship) centre approved by AICTE for PhD programme. Some of the broad research areas include Cryogenics, Advanced Materials, Manufacturing and Machining Techniques, Nanomaterials and Nanofluids, Superconductivity, Fracture Mechanics, Biomechanics, Solar energy systems, Air Conditioning and Refrigeration etc. Some research projects are conducted in collaboration with other reputed Universities, Research organisations and laboratories within the country and abroad. The Department receives research funding from national agencies such as the Ministry of Human Resource Development (MHRD), Department of Atomic Energy (DAE), Indian Space Research Organisation (ISRO), Aeronautical Research and Development Board (ARDB) and also from the different funding bodies at the state level. The Department carries out its mission without losing its focus on excellence in Mechanical Engineering through multiple programmes. The Department conducts National and International Conferences, Faculty Development Programmes, quality improvement activities for faculty and staff, invited talks, lecture series, workshops, Industrial visits, etc. continuously to enhance and disseminate knowledge. The Department has signed MoUs with Internationally rated Universities. We are collaborating with Kookmin University, Chosun University & Pohang Technopark (Republic of Korea), International Islamic University Malaysia, Universiti Teknologi Malaysia, University of Twente (Netherlands), University of Wisconsin - Parkside, USA, IIT Guwahati and Siemens Centre for Excellence in Manufacturing at NIT Tiruchirappalli, India through MoUs. The Department also offers international internships for the postgraduate students in renowned universities like University of Twente, Netherlands, Karlsruhe Institute of Technology, Germany, Mahidol University, Thailand etc.

LOCATION OF THE INSTITUTION

The Institution is situated at Karicode by the side of the Kollam - Madurai road (NH744), 6 km from Kollam city.

Nearest airport :

Thiruvananthapuram (Trivandrum) - TRV

(71 km from TKMCE),

Kochi (Cochin) - COK

(171 km from TKMCE)

Nearest main railway station :

Kollam (6 km from TKMCE)

Nearest main bus station :

Kollam (7 km from TKMCE)

Ferry services :

The ferry station is adjacent to the central bus station
(3 km from the railway station).

ADVISORY COMMITTEE

| | |
|--------------------------|--|
| Dr. Luigi Serio | CERN, Switzerland |
| Dr. Arend Nijhuis | University of Twente, Netherlands |
| Dr. Chua Kian Jon Ernest | University of Singapore |
| Dr. Aditi Oza | Air Liquide, USA |
| Sri. S. Somanath | Director, Vikram Sarabhai Space Centre (VSSC), ISRO |
| Dr. Salem Algharni | Dean, College of Engineering, King Khalid University, KSA |

| | |
|---------------------------|--|
| Dr. Mohamed Thariq | |
| Bin Hameed Sultan | UPM Malaysia |
| Dr. Sunil C. Joshi | Nanyang Technological University, Singapore |
| Dr. Vijaya Rangari | Tuskegee University, Alabama, USA |
| Dr. Niyaz Ahmad Madhar | King Saud University, Riyadh |
| Dr. Sher Afghan Khan | International Islamic University, Malaysia |
| Dr. Shugen M. A. | Professor, Ritsumeikan University, Japan |
| Dr. Normah B. T. | |
| Mohd. Ghazali | Professor, Universiti Teknologi Malaysia |
| Dr. Jackrit Suthakorn | Dean of Engineering, Mahidol University, Thailand |
| Dr. Branesh M. Pillai | Faculty Member, Mahidol University, Thailand |
| Dr. A. M. Harsha S. | |
| Abeykoon | Asian Institute of Technology (AIT), Thailand |
| Dr. Aswin T. R. | University of Warwick, England |
| Dr. V. Narayanan | Director, Liquid Propulsion Systems Centre (LPSC), ISRO |
| Prof. Pradip Dutta | Indian Institute of Science Bangalore (IISc) |
| Prof. A. Sameen | Indian Institute of Technology Madras (IITM) |
| Prof. S. Sarangi | Indian Institute of Technology Kharagpur (IITKGP) |
| Prof. Kasturi Rangan | Indian Institute of Science, Bangalore (IISc) |
| Dr. Kanchan Chowdhury | Indian Institute of Technology Kharagpur (IITKGP) |
| Dr. Milind V. Rane | Institute Chair Professor, Indian Institute of Technology Bombay (IITB) |
| Prof. S. Srinivasa Murthy | Interdisciplinary Centre for Engg. Research (ICER), Indian Institute of Science, Bangalore (IISc) |
| Dr. G. Venkitarathnam | Indian Institute of Technology Madras (IITM) |
| Dr. P. S. Robi | Indian Institute of Technology Guwahati (IITG) |
| Dr. C. Balaji | Indian Institute of Technology Madras (IITM) |
| Dr. P. Muthukumar | Indian Institute of Technology Guwahati (IITG) |
| Dr. Sarith P. Sathian | Indian Institute of Technology Madras (IITM) |
| Prof. Parthasarathi Ghosh | Indian Institute of Technology Kharagpur (IITKGP) |
| Prof. Prathiba Sharma | Indian Institute of Technology Bombay (IITB) |
| Dr. S. Pradeepkumar | Member Secretary, Kerala State Council for Science, Technology and Environment (KSCSTE), Trivandrum |
| Dr. S. R. Devadasan | Professor, PSG College of Technology, Coimbatore |
| Dr. Tide P. S. | Cochin University of Science and Technology (CUSAT), Kochi |

STEERING COMMITTEE

| | |
|---------------|---|
| Chief Patron: | Sri. T. K. Shahal Hassan Musaliar President, TKM Trust & Chairman, BoG, TEQIP II, TKMCE, Kollam |
| Patrons: | Sri. T. K. Jalaluddin Musaliar Treasurer, TKM Trust Sri. T. K. Abdul Karim Musaliar Member, TKM Trust Dr. M. Haroon Member, TKM Trust |
| Chairman: | Dr. Shahul Hameed T. A. Principal, TKMCE, Kollam |

ORGANISING COMMITTEE

| | |
|-----------------------|--|
| Chair: | Dr. N. K. Mohammed Sajid , Professor & Head, Department of Mechanical Engineering |
| Co-chairs: | Dr. C. A. Shajahan , Professor, Department of Mechanical Engineering Dr. Mohammed Sadhikh , Professor, Department of Mechanical Engineering Dr. Ashfaq A. , Professor, Department of Mechanical Engineering Dr. K. A. Shafi , Professor, Department of Mechanical Engineering |
| Organizing Secretary: | Dr. Jesna Mohammed , Associate Professor, Department of Mechanical Engineering |
| Joint Secretaries: | Prof. Syed Muhammed Fahd , Associate Professor, Department of Mechanical Engineering Dr. T. S. Krishna Kumar , Associate Professor, Department of Mechanical Engineering |

CONTACT US

Dr. K. A. Shafi
Mob : +91 9447462274,
e-mail: shafika@tkmce.ac.in

Dr. Jesna Mohammed
Mob: +91 9895010550,
e-mail: jesnamohammed@tkmce.ac.in

Dr. T. S. Krishna Kumar
Mob: +91 9447645887,
e-mail: krishnakumarts@gmail.com

Conference website: www.icame.in
Conference e-mail: icame@tkmce.ac.in

The completed registration forms
should be sent to:
icame@tkmce.ac.in