



THE INDIAN SOCIETY OF THEORETICAL AND APPLIED MECHANICS (ISTAM)

INDIAN INSTITUTE OF TECHNOLOGY

KHARAGPUR -721 302, INDIA

**63rd CONGRESS OF
THE INDIAN SOCIETY OF THEORETICAL AND
APPLIED MECHANICS**

(An International Conference)

DECEMBER 20-23, 2018

To be held at

DAYANANDA SAGAR UNIVERSITY, BANGALORE



In collaboration with
DAYANANDA SAGAR UNIVERSITY



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About ISTAM

The Indian Society of Theoretical and Applied Mechanics was established in 1955, with its headquarters at Indian Institute of Technology, Kharagpur. ISTAM was formed by the think tanks of the post independent India for providing a common platform to Scientists, Technologists and Engineers to share and discuss current research work conducted by them individually or in groups and seek solutions to emerging problems of the society. During the congress, five memorial lectures in honor of B.R. Seth , P.L Bhatnagar, B. Karunesh, A.S. Gupta and G.I Taylor are given by eminent researchers from across the world and also several invited lectures are arranged to cover the current trends of various topics of Mechanics. The Annual Congress of the Society have been held at various IITs, Universities, RECs, NITs, Engineering colleges and other reputed research establishments in different parts of the country. It has been attracting a large number of research workers not only from our country but also from abroad. The society has gone a long way in promoting inter-disciplinary research in Basic Sciences and Applied Mechanics. The Society has specific philosophy to encourage young scientists in the form of awards. Papers submitted are peer reviewed and are published in the form of e-proceedings. Abstracts of papers that are presented in the Congress are published in our Souvenir volume. The 63rd Congress of ISTAM (An international conference) as per the recognition by International Union of Theoretical and Applied Mechanics (IUTAM) will be held at the School of Engineering, Dayananda Sagar University, Bangalore. More details about the 63rd Congress of ISTAM can be obtained from the website:

<http://istam.iitkgp.ac.in>

ISTAM Office Contact: istam@iitkgp.ernet.in



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Dr. K.C. Deshmukh
Department of Mathematics
RTM Nagpur University



Secretary
Dr. Damodar Maity
Department of Civil Engineering
IIT Kharagpur



Treasurer
Dr. T. Raja Sekhar
Department of Mathematics
IIT Kharagpur

Membership Fees

Life Membership Fee:

Inland ₹5,000

Foreign £ 60 or US \$ 100

Corporate Membership Fee:

Inland ₹40,000

Foreign US \$1000

About Bangalore City

Due to its high elevation, Bangalore usually enjoys a more moderate climate throughout the year. Bangalore is known as the "Garden City of India" because of its greenery, broad streets and the presence of many public parks, such as Lal Bagh and Cubbon Park. Bangalore is sometimes referred to as the "Silicon Valley of India" because of its role as the nation's leading information technology (IT) exporter. Indian technological organisations ISRO, Infosys, Wipro and HAL are headquartered in the city. It is home to many educational and research institutions in India, such as Indian Institute of Science (IISc), Indian Institute of Management (Bangalore) (IIMB) and National Institute of Mental Health and Neurosciences (NIMHANS). Numerous state-owned aerospace and defense organizations, such as Bharat Electronics, Hindustan Aeronautics and National Aerospace Laboratories are located in the city.



Bangalore Attractions:

Lal Bagh, Cubbon Park, Bannerghata National Park, Tipu Sultan's summer palace, Bangalore palace, Vidhana Soudha, Visvesvaraya Industrial and Technological Museum, Wonderla, Iskon Temple, Nandi Hills, Innovative Film City.

About the Host University

Dayananda Sagar University (DSU) is a premier multi-disciplinary private university launched by Dayananda Sagar Institutions (DSI) in year 2015 in the state of Karnataka. DSU inherits the great legacy of DSI. It offers courses in Engineering, Computer Applications, Sciences, Arts and Management at the Bachelors, Masters and PhD levels. It houses world-class labs spread over 25,000 sq.ft supporting Research & Innovation. Incubation center in newer areas of technology supporting the ICT domains and health care, energy, life science and other developing fields of study is also housed on campus.

School of Engineering

The School of Engineering was established in 2015 with the objective to provide outstanding engineering education directed at enriching the quality of life in an emerging knowledge-based society. The mission of the faculty is to graduate morally conscious and highly competent engineers, conduct globally recognized research, and provide quality professional and community services.

Undergraduate program leading to B. Tech. are offered in Mechanical, Electronics and Communication, Computer engineering and Computer Technology. DSU also offers postgraduate programs – M. Tech. (Cloud Computing), M. Tech. (Big Data), M. Tech. (Embedded Systems), M. Tech. (Mechanical Design). The School of Engineering is proud to have faculty that care about students and their success. Many of the faculty members hold PhD degree from reputed institutes in India (IIT, IISc, NIT) and abroad. Many faculty members are actively involved in research projects of national importance with funding from DST, ISRO, and Government of Karnataka. Its faculty have a deep sense of belonging to the institution and are devoted to maximizing the opportunities available to students across the campus and beyond.

Department of Mathematics

The Department of Mathematics, School of Engineering, DSU is hosting the conference at DSU, Bengaluru, India. The Department of Mathematics, takes pride in serving our students with high quality courses in Applicable Mathematics for the various engineering and computer applications programs. The faculty members of the Department are actively involved in academic research in the areas of Fluid Dynamics, Machine Learning etc. They are working with industry partners on development projects and consultancy. The department hopes to grow into a Center of Excellence in Applied Mathematics in the next few years.

Department of Physics

The Department of Physics have excellent educators and researchers as faculty members who have been trained in some of the finest universities in India and abroad. The department is empowered with modern laboratories. It has very good research environment to cater to the high quality programs at all levels. The department encourages various interdisciplinary collaborations with universities and industries. There is ongoing Ph.D. program in the areas of computational physics, complex systems, bioinformatics, nanotechnology, materials science, sensors and instrumentation. The department plans to start undergraduate and postgraduate programs in physics in the near future.

Department of Mechanical Engineering

The Department strives to achieve the highest quality in education and make a distinctive contribution to society. The department offers undergraduate and Post Graduate courses in Mechanical Engineering. The Department has dedicated and experienced faculty team, driving the department towards excellence in academics as well as R & D activities.

Paper/ Abstract Submission

Participants intending to present a paper in the Congress should upload (electronically) a three page, extended abstract consisting of the research aim, brief literature survey, problem formulation, solution methodology and significant conclusions in the format specified below. Based on the reviewer's recommendation, a communication will be sent to the participant. Once the extended abstract is accepted for presentation, the participant is required to submit electronically either the brief abstract (limited to 300 words) or the full paper (limited to eight pages) in case the participant wishes to publish it in the e-proceedings of the Congress, which is subject to the peer review process.

Abstract Format

The extended abstract should be neatly typed in MS Word and in 12 point, Times New Roman font, and prepare as per the format given below:

Heading: 63rd CONGRESS OF ISTAM

Section Code:

Title of the Paper:

Author 1, Author 2*

1 Affiliation, 2 Affiliation (*: Corresponding author);

E-mail: mandatory for the Corresponding Author.

Paper Presentation Sections

Section 1: Fluid Mechanics

FM1 Aerospace Dynamics
FM2 Aerospace Propulsion
FM3 Atmospheric Sciences and Oceanography
FM4 Biomechanics
FM5 Boundary Layers
FM6 Compressible Flow
FM7 Computational Fluid Dynamics
FM8 Drops, Bubbles and Multiphase Flows
FM9 Experimental Methods in Fluid Dynamics
FM10 Flow Through Porous Media
FM11 Geophysical & Environmental Fluid Dynamics
FM12 Low-Reynolds number Flow
FM13 Mathematical Modeling
FM14 Statistical Mechanics

Section 2: Solid Mechanics

S 1 Aerospace Structures
SM2 Computational Solid Mechanics
SM3 Control Structures
SM4 Elasticity
SM5 Experimental Methods in Solid Mechanics
SM6 Fracture and Crack
SM7 Mechanics of Composites
SM8 Viscoelasticity and Creep
SM9 Wave Propagation

Paper Format

The manuscript should be submitted in MS Word in 12 point, Times New Roman font and in one and half line spacing with single column only. The paper should contain title, author(s) name, affiliation and address, abstract (limited to 300 words), Introduction, Formulation, Methodology (Theory of experiment), Results, Conclusions and References. Author [xx] format is to be used for citations and the following format for the references: P. T. Brady, M. Hermann and J. M. Lopez, "Confined Thermo capillary Motion of a Three- Dimensional Deformable Drop, Physics of Fluids", 23, 1-12, (2018). Tables and figures must be imported into the text while preparing the manuscript. Authors are requested to follow the format in details available in the ISTAM website in the authors' instruction section. The paper should not exceed eight pages including figures, tables and references. In case of multiple authors, all the authors will be given the participation certificate only if all of them register and attend the Congress. Otherwise, only the presenting author will be given the certificate.

Young Scientist Awards

Three medals, one each, in the sections: 1. Fluid Mechanics, 2. Solid Mechanics, and 3. Experimental Techniques or Computational Methods will be awarded to researchers of age 30 years or below for presenting outstanding research work at the Congress. The work should be done independently by the researcher with no co-author(s).

The author who would like to be considered for the "Young Scientist" award is requested to mention it on the top of the Abstract by writing "PAPER FOR THE YOUNG SCIENTIST AWARD" and check tick mark on "YOUNG SCIENTIST AWARD" at the paper submission time in the website. The award paper must be presented personally by the author in the Award Session of the Congress. The Award Session for medals will be held only if a sufficient number of papers in each category are received. Apart from the medal, the registration fees of the awardees will be waived off in the following Congress.

Registration Procedure

Those participants whose extended abstracts are recommended for presentation will go for online registration. The registration must be done online at <http://istam.iitkgp.ac.in>. The registration is open from April 25, 2018 to September 30, 2018. Registration is complete only when the registration fee details are filled in the online registration form and the soft copy of the abstract is uploaded. A signed copy of the online registration form should be sent by post or e-mail. The registration Fee can be paid either by DD or Bank Transfer, please see the next page for bank details. Those participant s who are willing to submit their work for publication in the ISTAM proceedings must also upload the full paper. A paper will be published in the proceedings only if it is approved by the referees. The Abstract or Paper will be considered for presentation on realizing the registration fee.

Important Dates

- ☐ Last Date of abstract submission: : 30-09-2018
- ☐ Last date for full length paper submission : 20-10-2018
- ☐ Last date for payment of registration fee : 20-10-2018

Any change in the last date will be indicated in the website.

Registration Fee

A. Delegate from Educational Institutes and R&D Organizations:	₹4,000.00
(For Life Members)	₹3,000.00
B. Delegate from Industry	₹5,000.00
C. Student Delegates	₹2,000.00
(For Life Members)	₹2,000.00
D. Academic Institution in Group (Up to three delegates)	₹10,000.00
E. Industries in Group (Up to three delegates)	₹13,000.00
F. Delegates from Abroad	US \$ 350 or UK £ 200
SAARC & BRICS countries	Indian ₹5,000 / US \$ 250

Registration fee can be paid through online fund transfer/ Demand Draft drawn in favor of ISTAM payable at State Bank of India (SBI), Kharagpur (Branch 0202). One may transfer the money through online into the ISTAM account as per the following details:

Account Name: ISTAM; **Account Number:** 10224336294; **Bank:** State Bank of India (SBI), IIT Kharagpur, Kharagpur- 721302, India. **Bank Codes:** MICR code – 721002103-002135-10; **Swift Code:** SBININBB339; **NEFT (IFSC) code:** SBIN0000202.

Please note that DELEGATE NAME MUST BE INCORPORATED IN THE BANK TRANSACTION. Those who intend to participate in the Congress are requested to upload the completed Registration form along with the full paper/abstract to: <http://istam.iitkgp.ac.in>

Lodging and Boarding

Lodging and boarding arrangements for the participants of the Congress will be made by the organizing institution in Guest houses/Hotels on payment basis. For assistance to hotel accommodation and other lodging arrangements, the organizing Secretary may please be contacted.

Local Organizing Committee

Chief Patrons:

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Chancellor, Dayananda Sagar University
Dr. Premachandra Sagar
Pro- Chancellor, Dayananda Sagar University

Advisory Committee:

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and Services Pvt. Ltd.

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Convener:

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Dept. of Maths, SOE, DSU

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Dr. Yogesh Kalegowda
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