

About the organizers

Major organizations and academic institutions in the country have realized the importance of Industrial Tribology and its relevance to modern design and efficient plant maintenance. Therefore, they come forward to organize National and International Tribology Conferences in different parts of the country.

To provide a common umbrella to work further in this area, Tribology society of India (TSI) was set up as a professional, nonprofit body bringing together academicians, industry as well as research organizations as its members.

Tribology Society of India (TSI) organises the Summer School in Tribology to provide a platform to academicians, practising engineers and R&D professionals for sharing their knowledge and experiences in this field. It enables Tribology faculty and research scholars to expand the Tribology curriculum at their organisations. Tribology Society of India (TSI) is engaged in a variety of initiatives to promote Tribology in India.

The Society has Members from Oil & Gas, Power, Steel, Cement, Industrial R&Ds and academia from all over the country. For more information please visit our website www.tribologyindia.org

Some of the likely Speakers for Technical Sessions are listed below

- ❑ Prof. Satish V Kailas, Indian Institute of Science, Bangalore
- ❑ Dr Har Prashad, formerly Bharat Heavy Electricals Ltd
- ❑ Dr. B Venkatramanan, Defence Metallurgical Research Labs, Hyderabad
- ❑ Prof. Ram Turaga, Indian Institute of Science, Bangalore
- ❑ Prof. Satish C Sharma, Indian Institute of Technology Roorkee
- ❑ Prof Sujeet Kumar Sinha, Indian Institute of Technology, New Delhi
- ❑ Prof. M S Bobji, Indian Institute of Science, Bangalore
- ❑ Prof. A P Harsha, Indian Institute of Technology, BHU, Varanasi
- ❑ Prof. Mayank Tiwari, IIT Patna
- ❑ Mr. S R Durugkar, L&T Hydrocarbon Engg, Mumbai
- ❑ Dr. Barun Chakrabarti, L&T Hydrocarbon Engg, Mumbai
- ❑ Dr. Reji Mathai, Indian Oil Corporation (R&D), Faridabad

- ❑ Dr. C Kannan, Indian Oil Corporation (R&D), Faridabad
- ❑ Dr Sarita Garg, Indian Oil Corporation (R&D), Faridabad
- ❑ Mr. Ajay Kumar Harinarain, Indian Oil Corporation (R&D), Faridabad
- ❑ Dr. N K Pokhriyal, Indian Oil Corporation (R&D), Faridabad
- ❑ Mr. R Mahapatra, Indian Oil Corporation (R&D), Faridabad
- ❑ Mr. Kamal Mukherjee, Former GM , SECL, Bilaspur
- ❑ Prof Krishnan Balasubramanian, Indian Institute of Technology, Chennai
- ❑ Mr. P Pathak, RDCIS Steel Authority of India Ltd, Ranchi
- ❑ Dr T Singh, Bharat Petroleum Corporation Ltd, Mumbai
- ❑ Mr Anjeeve George, Eaton Hydraulics, Pune
- ❑ Dr Nityanand Gosvami, Indian Institute of Technology , Delhi
- ❑ Mr SPRS Negi, Schaeffler India, Vadodara

(For any information please contact)

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www.tribologyindia.org

12th Summer School in Tribology



21-25 July, 2020
(through Webinar)

Organizer



Tribology Society of India

(Affiliated to the International Tribology Council, UK)

**Exclusive
Marketing
Partner**



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Objectives

Importance of Tribology for sustainable reliability cannot be over-emphasized. It has been reported that losses due to improper understanding and application of Tribology is estimated at over 1.4 % of GDP of the world and 8.7% of the total cost of energy production.

Tribological failures have been estimated to be responsible for about 40% of breakdowns in industries. Therefore, engineers working in the field need to have a thorough understanding of Tribological practices, so that proactive measures can be implemented in place of traditional corrective and breakdown maintenance practices. The potential of savings has been estimated to be about 15% in the short term and 40% in the long term of the losses due to friction and wear. This required sustained and focused efforts on part of everyone working in Academia and Industries.

The important subject of Tribology does not get appropriate coverage in the engineering curriculum in our country. Inadequate understanding about the principles and application of Tribology is one of the major reasons of failures in the industry, leading to poor productivity and higher material and energy losses. There is a strong need to promote the awareness of Tribology among our industries and academia. It is with this background that the Tribology Society of India (TSI) is organizing the “12th Summer School in Tribology” on a virtual online platform during July 21-25, 2020 to reinforce the need for continued education in Tribology - an interdisciplinary science and technology of friction, wear and lubrication. Some of the programmes of Summer School in Tribology (SST) have been financially supported by SERB, Department of Science and Technology (DST), Govt. of India and various industries.

A programme was planned to be organized at Indian Oil Institute of Petroleum Management from 12-16 May 2020, but this could not go ahead owing to the ongoing Covid-19 pandemic.

The programme is intended to provide a platform for interaction between reputed tribologists of the country and the participants, comprising senior teaching professionals and practising engineers/ professionals from Indian industry. The curriculum has a balanced combination of theoretical and applied aspects of Tribology and includes a session on assessment of learning (based on multiple choice questions) on the last day. To enable the participants to carry forward their learning beyond the program, each participant will be required to submit a mini project, within three months from the completion of the programme, detailing the application of the learnings in some aspect of their own areas of work. Details will be provided during the programme.

Who should attend?

Faculty in Mechanical Engineering/Tribology from Academia, Research Scholars pursuing PhD / M. Tech in Tribology,

Practising Engineers/Managers from Industry working in Plant Maintenance, Technical Services, Marketers of Lubricants/additives and Industrial R&D from sectors like Automotive, Railroad, Oil, Steel, Power, Cement, Engineering and Heavy Machinery etc.

Topics to be covered

Basics of Tribology: Basics of Friction, Wear and Lubrication; Wear of Materials and Wear Modeling; Wear Mechanisms and Mitigation of Wear by Tribology based Designs.

Lubrication: Fluid Film Lubrication & Hydrodynamic Bearings; Lubricants-different types and their production; Chemistry of Lubricants and Additives; Automotive Tribology and Grease Rheology.

Tribology of Machine Components: Rolling Element Bearings; Gears; Failure Analysis of Tribo Components.

Applied Tribology : Tribo-testing of Material & Lubricants; Analytical Techniques for Tribology and Surface Characterization; Condition Monitoring through Oil Analysis.

Special Topics in Tribology : Nano-mechanics/properties of materials at small scales; Bio Tribology; Application of NDT in Tribology; Tribology of Manufacturing Operations; Corrosion.

Case studies by industry experts will also be presented during the programme.

IMPORTANT INFORMATION

Venue: Online VC platform

Date: 21-25 July, 2020

For participants from Academia:

IMPORTANT: Many of the academic candidates had submitted an online application for the summer school planned in Feb/March 2020. Those Academia Candidates who had applied for the scheduled programme in May 2020 need not apply again. They will be automatically considered for this programme .

(a) Institute ID Card copy / Bonafide certificate from Head of Institution/ Department is required to be submitted along with application for the course.

(b) No delegate fee for the program is required to be paid by the Academia Participants.

Fresh Applications

(c) Faculty in Mechanical Engineering /Tribology and / or Research Scholars pursuing PhD/ M.Tech in Tribology can apply on line through the link given below by 2nd July, 2020: <https://www.tribologyindia.org/online-academia-participants.html>

(d) The selected /short listed candidates will be informed by 7th July 2020. Other things being equal, preference will be given to TSI Members.

(e) **Academia candidates who have attended earlier SST programmes need not apply.**

For participants from Industry:

1. Indian Participants: A Course Fee of Rs 5000/- plus applicable GST 18%

2. Foreign Participants: A course fee of USD 100 plus applicable GST 18%.

For Industry and foreign delegates, please make programme fee payment by cheque / DD / online bank transfer favoring 'Tribology Society of India' payable at Faridabad for the fee payment.

Format of Registration Form for Industry Participants

Name of Participant.....
Organization.....
Designation.....
Contact Address.....
Email ID.....
Mobile No.....
Signature of Sponsoring Authority
Name.....
Designation.....

Payment of Registration fee for Industry Participation is to be made along with the Registration form at the address given below.

Mr. Rajendra Mahapatra
Deputy General Manager (Tribology) and Treasurer TSI
C/o Indian Oil Corporation Limited,
Research & Development Centre,
Sector -13, Faridabad -121 007, Haryana, India.
Phone: 0129 2294322, 2294680
Email: info@tribologyindia.org

Rosefield Energy Tech Pvt. Ltd, Mumbai has been appointed the Exclusive Marketing partners for this programme and may also be contacted for programme registration at the following address:

Rosefield Energy Tech Pvt. Ltd,
B-201, B-Wing, PRAMUKH PLAZA,
CARDINAL GRACIOUS ROAD, ANDHERI (E), MUMBAI 400 099
Email: shailendra@rosefield-daa.com

Payments can also be deposited directly in the Account of TSI as per details given below:

A/c Name: **Tribology Society of India**
Current Account Number No.: **31710524711**
IFSC / NEFT Code: **SBI N 0010449**
MICR No.: **110002466**
SWIFT CODE : **SBI NIN BB381**
Bank's Name & Address: **State Bank of India, IOC Complex Branch, Sector 13, Faridabad - 121007, Haryana, India**