

13th Summer School in Tribology



August 31-September 4, 2021
(In Virtual mode)

Organizer



Exclusive
Marketing
Partner



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 "13th Summer School in Tribology" (SST) on a virtual online platform during August 31-September 4, 2021 (Tuesday-Saturday) to reinforce the need for continued education in Tribology - an interdisciplinary science and technology of friction, wear and lubrication. Some of the programs of Summer School in Tribology (SST) have been financially supported by SERB, Department of Science and Technology (DST), Govt. of India and various industries.

In view of continued COVID pandemic, like 12 Summer School in Tribology, the 13th Summer School in Tribology is also being organized in Virtual mode from August 31-September 4, 2021 (Tuesday-Saturday).

Like earlier programs, 13th SST is intended to provide a platform for interaction between reputed tribologists of the country and the participants, comprising senior teaching professionals and practicing 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 program, detailing the application of the leanings in some aspect of their own areas of work. Details will be provided during the program.

Who should attend?

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

Practicing Engineers/Managers from Industry working in Plant Design, Operation & Maintenance, Technical Services, Marketing personnel of Lubricants/additives companies, 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 program. We also propose to include guest lectures from eminent tribologists from international academia & research institutions(details will be updated shortly on TSI website).

IMPORTANT INFORMATION

Venue: Online VC platform

Date: August 31-September 4, 2021 (Tuesday-Saturday)

For participants from Academia:

- (a) For academia participants desirous of participation in 13th SST, TSI membership is mandatory. Accordingly all existing TSI members can apply for participation in 13th SST. However, those academia participants who are not members of TSI, will be required to take TSI membership on line at the link given below while applying for the registration of 13th SST.

https://www.tribologyindia.org/become_a_member.

(b) Academia participants need to apply at the link given below. **Last date for applying on line for academia persons is 25th August 2021:** <https://www.tribologyindia.org/online-application-form.html>

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 program 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: 0129-2294 322, / 264/ 680
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

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: **SBIN0010449**
MICR No.: **110002466**
SWIFT CODE: **SBININBB383**
Bank's Name & Address: **State Bank of India, IOC Complex Branch, Sector 13, Faridabad - 121007, Haryana, India**

About the organizers

To provide a common umbrella to work further in this important area of Tribology, Tribology society of India (TSI) was set up as a professional, non profit body bringing together academicians, industry as well as research organizations as its members. It was set up in its present form in June 1989, with its headquarters at Bharat Heavy Electricals Limited, Corporate R&D at Hyderabad.

International Tribology Conferences in different parts of the

Subsequently the headquarters was shifted to its current one at Indian Oil R&D Centre, Faridabad. This society is affiliated to the International Tribology Council, UK which has 39 other national societies as members across the world.

Tribology Society of India (TSI) organizes the Summer School in Tribology to provide a platform to academicians, practicing 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 organizations. TSI is engaged in a variety of initiatives such as IndiaTrib and TRIBOINDIA conferences to promote Tribology in India. The Society has Members from Oil & Gas, Power, Steel, Cement, R&Ds and academia from all over the country. For more information please visit our website www.tribologyindia.org

The likely Speakers for Technical Sessions are listed below

- Prof. Satish V Kailas, Indian Institute of Science, Bangalore
- Mr Anjeeve George, Eaton Technologies Ltd
- Dr. B Venkataramanan, 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, Indian Institute of Technology Patna
- Dr. Barun Chakrabarti, L&T Hydrocarbon Engg, Mumbai
- Dr. C Kannan, 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. 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
- Dr Nityanand Gosvami, Indian Institute of Technology , Delhi

(For any information please contact)

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