

About the organizers

Tribology is the interdisciplinary science and technology of interacting surfaces in relative motion involving studies in the area of friction, wear and lubrication. Tribology Society of India, (TSI), IndianOil Institute of Petroleum Management (IIPM), Gurgaon and Indian Oil Corporation, R&D Centre, Faridabad have joined hands together To organize the Summer School in Tribology. Over past five years, the Summer Schools have been providing a platform to academicians, practicing engineers and R&D professionals for sharing their knowledge and experiences in this field.

Tribology Society of India (TSI) has its secretariat at IndianOil R&D Centre, Faridabad and 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.

Indian Oil Corporation Limited (IndianOil)

Indian Oil Corporation Ltd. is India's largest company by sales with a turnover of Rs. 4,09,957 Crore (US\$ 85,550 million) and profit of Rs. 3,955 crore (\$ 825 million) for the year 2011-12.

IndianOil is the highest ranked Indian company in the latest Fortune 'Global 500' listings, ranked at the 83rd position. IndianOil's vision is driven by a group of dynamic leaders who have made it a name to reckon with.

Its world-class R&D Centre has won recognition for its pioneering work in lubricant formulations, refinery processes, pipeline transportation and alternative fuels. To seek growth beyond traditional areas of competence, Indian Oil's business development efforts are now focused on vertical integration – both upwards into Oil exploration & production and downward into petrochemicals – besides diversification into gas marketing and globalization of downstream operations.

Indian Oil Institute of Petroleum Management (IIPM)

is a fully integrated residential campus for education and training, developed by Indian Oil Corporation Limited (IOCL) as a state-of-the-art resource for in-house programs. The academic block is equipped with classrooms and lecture halls, having latest facilities including audio-visual systems as well as a state of the art Reference Library with more than 15000 Books and Journals. The residential block is furnished with modern amenities and has in-house dining arrangement. The venue also offers recreational facilities for the participants including Swimming Pool [Please carry formal Swimming Costume], Gym. and Walking Track etc.

Key Speakers for Technical Sessions

- Prof. A Sethuramiah, Formerly at IIT, Delhi
- Prof. Satish V Kailas, IISc, Bangalore
- Prof. S C Sharma, IIT Roorkee
- Mr. Reji Mathai , IOCL (R&D)
- Prof. Krishnan Bala , IIT Madras
- Mr. S Dampur, NEL, Jaipur
- Dr Samik Hait, IOCL (R&D)
- Mr. Deepak Sharma, Kittiwake Proactive Tech. P Ltd.
- Dr. Barun Chakrabarti, L&T, Mumbai
- Dr. SSV Ramakumar , IOCL (R&D)
- Mr. Ajay Kumar, IOCL (R&D)
- Dr. A K Jaiswal, IOCL (R&D)
- Dr. N K Pokhriyal, IOCL (R&D)
- Prof. V S Raja , IIT Bombay
- Mr. R Mahapatra, IOCL (R&D)

For further information, please contact

Mr. A.K. Mehta

Executive Director -TSI

C/o IOCL, R&D Centre, Sector 13

Faridabad – 121007 (Haryana)

Phone +91 129 2294680

Mobile +91 9811162579

Email: - mehta.tsi@gmail.com

info@tribologyindia.org

5th Summer School in Tribology



24-28 June 2013

at Indian Oil Institute of Petroleum Management, Gurgaon

Organizers



Objectives

Importance of Tribology for sustainable reliability cannot be over emphasized. It is reported that loss due to improper understanding and application of Tribology is over 1.5 % of GDP of the developed countries like the USA. We can well imagine the state of affairs in our country, where, awareness about importance, understanding and application of Tribology is rather low. Tribological failures are responsible for over 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 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), the Indian Oil Institute of Petroleum Management, Gurgaon, and IndianOil R&D Centre are jointly organizing the “5th Summer School in Tribology” during June 24 - 28, 2013 at IIPM, Gurgaon, to reinforce the need for continued education in Tribology - an interdisciplinary science and technology of friction, wear and lubrication.

The program is intended to provide a National Platform for interaction between renowned Tribologists of the country and the Participants, comprising senior teaching professionals and practising engineers from Indian industry. The program will include a one-day visit to IOCL R&D Centre, Faridabad.

There will be an Objective Type (multiple choice questions) Test on the last day based on the topics covered during the program. 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 (limited to maximum 10 research scholars)

- Practicing 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 & Tribology.

There will be a visit to Tribology-related laboratories at IndianOil R&D Centre, Faridabad.

Important information

Venue: IndianOil Institute of Petroleum Management (IIPM)
83, Institutional Area, Sector-18, Gurgaon

Date: 24th – 28th June 2013

Fees For participants from Academia:

- No delegate fee. Lodging and boarding will be provided free of cost. Academia participants will also be reimbursed to and fro travel cost, limited to IIAC fare.
- Academia participants selected for the program will be required to submit a refundable cheque of Rs 2500/-, which will be returned when they report for the program. In case of non-participation without notice, this amount will be encashed by TSI to cover administrative expenses incurred
- For academia candidates, preference will be given to those who have not attended earlier Summer Schools in Tribology.

For participants from Industry (Non- IOCL / Non Sponsor):

- Residential: Rs. 27,000/- per delegate
- Non-residential: Rs 19,500/- per delegate

Please make cheque / DD favoring 'Tribology Society of India' payable at Faridabad.

Registration form

Name of Participant.....

Date of Birth.....

Organization.....

Designation.....

Contact Address.....

.....

Email ID.....

Mobile No.....

Brief Bio Data (Please attach file):

Signature of Sponsoring Authority / HOD.....

Name.....

Designation.....

Make cheque / DD favouring **'Tribology Society of India'** payable at Faridabad.

(Please see details under “Important Information” on left hand side fold)

Mail this form along with the payment at the address given below.

Dr. Pankaj Bhatnagar

Chief Manager – Indian Oil (R&D) & Treasurer - TSI

C/o IndianOil R&D Centre, Sector-13

Faridabad – 121007 (Haryana)

Phone +91 129 2299110 /2294442

Mobile +91 98685 18189

Fax +91 1292286221

bhatnagarp@indianoil.in

info@tribologyindia.org