

## 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 Limited take a step so as to bring together academicians, Tribologists, practicing engineers in design, operation and R&D professionals to share their knowledge and experiences in this field.

**Tribology Society of India (TSI)** came into existence in 1989. The society has its secretariat at IndianOil R&D Centre, Faridabad and is engaged in a variety of Training & Educational programmes. It has recently started providing consulting services to the industry. The society has around 1150 Life Members from Oil & Gas, power, steel, cement, industrial R&Ds and academia all over the country. Besides it has about 25 members from abroad.

**Indian Oil Corporation Limited (IndianOil)** is India's largest commercial enterprise and the country's #1 company in Fortune's 'Global 500' listing. As India's flagship national oil company, it accounts for 47% petroleum products market share, 40.4% national refining capacity and 67% petroleum product pipeline capacity in India and a countrywide marketing network. 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, IndianOil'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.

**IndianOil 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 living 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, Walking Track etc.

## Speakers for Technical Sessions\*

- Prof S K Biswas, Professor, Indian Institute of Science, Bangalore.
- Dr. GK Sharma, SWRI India Business Centre,
- Prof A Sethuramiah, Formerly at IIT, Delhi.
- Dr J Bhatia, Envirotech, Mumbai & formerly at Balmer Lawrie & Co.
- Mr. C Mishra, Former Chief of Mechanical Technology, Tata Steel, Jamshedpur
- Dr A Prabhakaran, Tribology, Sec Head, Tata Steel
- Prof. BS Prabhu Formerly at IIT, Madras
- Prof Harish Hirani, Associate Professor, IIT, Delhi
- Dr. Barun Chakrabarti, L&T, Mumbai & Secretary, Tribology Society of India
- Dr K P Naithani, Executive Director, IOC R&D
- Dr Ram Avtar, GM (RDCIS), Ranchi
- Dr R T Mookken , GM (IOC R&D)
- Dr S V Joshi, ARCI, Hyderabad
- Dr AS Sarpal, GM, IOCL R&D, Faridabad
- Mr. Ajay Kumar, SRM, IOCL, R&D, Faridabad
- Mr. AK Mehta, ED-TSI

*\*Subject to confirmation*

AK Harinarain  
**Tribology Society of India**  
c/o Indian Oil Corporation Ltd  
R&D Centre, Sector 13  
Faridabad 121007

**Phone** +91 129 2294264 **Mobile** +91 98731 44340

**Fax** +91 129 2281221

**Email** kumarajay@iocl.co.in ajaykh23@gmail.com

**Web** www.tribologyindia.org

# 2<sup>nd</sup> Summer School in Tribology



**21-24 June 2010**

**at IndianOil Institute of Petroleum  
Management, Gurgaon**

## Organizers



\* Sponsor

## 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 3% of GDP of the developed countries like USA. We can well imagine the state of affairs in our country, where, awareness about importance, understanding and application of science and technology of tribology is rather low. The engineers coming out of the colleges will be responsible for improving and maintaining the reliability of plants and their equipment. In industry, however, maximum emphasis is given to preventing and breakdown maintenance and tribology is neglected, even though, it is responsible for over 40% of the breakdowns.

It has also been noticed that this important subject Tribology does not get appropriate coverage in the engineering curriculum in our country. Inappropriate understanding on application of Tribology is one of the major reasons of failures in the industry.

It is with this background that the Tribology Society of India (TSI), the IndianOil Institute of Petroleum Management, Gurgaon and IndianOil R&D Centre are jointly organising the “2nd Summer School in Tribology” from June 21-24, 2010 at IIPM, Gurgaon, to reinforce the need for continued education in Tribology - an interdisciplinary science and technology of friction, wear and lubrication.

The programme is intended to provide a National Platform for interaction between renowned tribologists of the country and senior academia and practising engineers from Indian industry as participants.

The programme will include a one day visit to IOCL R&D Centre, Faridabad.

### Who should attend?

- Faculty in Mechanical Engineering / Tribology from Academia
- Practicing Engineers/Managers from Industry working in Plant Maintenance, Tech Services, Marketers of Lubricants/Additives and Industrial R&D from sectors like Automotive, Railroad, Oil, Steel, Power, Cement, Engineering and Heavy equipment etc.

## Topics to be covered

- *Introduction to Tribology,*
- *Importance & Economic Impact of Tribology,*
- *Friction, Wear and Lubrication,*
- *Hydrodynamic Bearings,*
- *Rolling Element bearing,*
- *Gear Lubrication,*
- *Automotive Lubrication,*
- *Industrial Lubrication Practices,*
- *Case Studies on Advanced Materials for Steel Industry,*
- *Coatings for Wear Protection,*
- *Tribotesting,*
- *Analytical Techniques in Modern Tribology,*
- *Industrial Lubricants and Additives,*
- *Lubricating Greases,*
- *Condition Monitoring through Oil Analysis,*
- *Environmental Aspects of Lubrication*
- *Emerging Trends in Tribology*
- *“Mission Tribology - Spreading Tribology Awareness Across India”*

**Evening Guest Lectures** are planned on “Energy Conservation and Tribology” and “TSI and its New Initiatives”

**Project Work on the topic** “Tribology Education in India” by 10 groups of Academia - Industry formed among the programme participants.

## Important information

**Venue** IndianOil Institute of Petroleum Management  
83, Institutional Area, Sector-18, Gurgaon

**Date** 21st – 24th June 2010

**Fees** **For participants from Academia:** No delegate fee, lodging and boarding would be provided free of cost. However, to and for travel arrangement & expenses upto IIPM Gurgaon has to be arranged by the participants themselves / through their organisations.

**For participants from Industry:**

(a) Residential

(i) Rs.25,000/- per delegate

(b) Non-residential\*

(i) Rs. 19,000/- per delegate

\*It is recommended that participants from Industry opt for Residential Participation, so that they do not miss late evening activities during the programme

## Registration form

>>>**Delegate 1**

Name .....

Designation .....

Mobile no .....

Email .....

>>>**Delegate 2**

Name .....

Designation .....

Mobile no .....

Email .....

**Provide details separately for additional delegates**

Company/Institution name .....

Address .....

City..... Pin code .....

Country .....

Fax..... Phone.....

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

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

**Mr Ajay Kumar Harinarain**

Sr Mgr & Treasurer, TSI  
c/o IOCL, R&D Centre, Sector 13, Faridabad 121007

**Phone** +91 129 2294264

**Mobile** +91 98731 44340

**Fax** + 91 1292286221

kumarajay@iocl.co.in ajaykh23@gmail.com