

## 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), Petrotech Society and Indian Oil Corporation Limited take a step so as to bring together academicians, managers 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 1000 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.

**Petrotech Society** is a registered non-profit organization founded by distinguished members representing the entire spectrum of the hydrocarbon industry. The Society is engaged in a number of activities. Under the aegis of Ministry of Petroleum & Natural Gas, Government of India it organizes International Conference and Exhibition biennially in January. The Society also organizes a number of conferences/seminars on various topics of interest to the Hydrocarbon industry, increasing interaction and bridging technology gaps, by bringing scientists and practising managers together.

## Speakers

- Mr Anand Kumar, President, TSI and Director (R&D), IOCL R&D, Faridabad
- Prof D V Singh, Former V C, Roorkee University and Former Vice Chairman, AICTE, New Delhi.
- Dr. RK Malhotra, Executive Director(R&D), IOCL R&D New Delhi
- Prof S K Biswas, Professor, Indian Institute of Science, Bangalore.
- Dr. GK Sharma, NATRiP, New Delhi
- 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
- Prof. S C Jain, Professor, IIT, Roorkee
- Prof Harish Hirani, Associate Professor, IIT, Delhi
- Dr. Barun Chakrabarti, L&T, Mumbai & Secretary, Tribology Society of India
- Dr Navin Chand, AMPRI Bhopal
- Dr Joshi, ARCI, Hyderabad
- Dr AS Sarpal, GM, IOCL R&D, Faridabad
- Mr. Ajay Kumar, SRM, IOCL, R&D, Faridabad
- Mr. AK Mehta, ED TSI and Former GM, IOCL R&D Faridabad

**G Sarpal**

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# Summer School in Tribology

**10-13 June 2009**

**at IndianOil 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 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 Petrotech Society and IndianOil Corporation Limited are jointly organising a “Summer School in Tribology” from June 10-13, 2009 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 Tribology practising managers from Indian industry as participants.

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

## 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,*
- *Advanced Materials for Tribology,*
- *Coatings for Wear Protection,*
- *Tribotesting,*
- *Analytical Techniques in Modern Tribology,*
- *Lubricating Oils and Additives,*
- *Lubricating Greases,*
- *Oil Condition Monitoring,*
- *Environmental Aspects of Lubrication*
- *Tribology in 21st Century & Beyond*
- *TSI initiative on “Mission Tribology - Spreading Tribology Awareness Across India”*

**Evening Guest Lectures** are planned on “Energy Conservation and Tribology” and “TSI- Its Educational Programmes and Consulting Service Initiative”

**Panel Discussion:** During the Valedictory Session there will be a panel discussion where leading Tribologists from Industry and academia will answer queries for the participants.

## Important information

**Venue** IndianOil Institute of Petroleum Management

83, Institutional Area, Sector-18, Gurgaon

**Date** 10th – 13th June 2009

**Fees** **For participants from Academia:** No delegate fee, lodging and boarding would be provided free of cost including to and fro travel expenses upto AC 2 Tier

**For participants from Industry:**

(a) Residential

(i) Rs.20,000/- per delegate

(ii) Rs.18,500/- per delegate for TSI Members

(b) Non-residential\*

(i) Rs. 10,000/- per delegate

(ii) Rs. 8,500/- per delegate for TSI Members

\*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 with payment to either of the following:

**Mr G Sarpal**, Secretary, Petrotech Society  
SCOPE Complex, Core 8, 3rd floor  
Institutional Area, Lodhi Road, New Delhi 110003  
[info@petrotechsociety.org](mailto:info@petrotechsociety.org) [petrotechsociety@vsnl.net](mailto:petrotechsociety@vsnl.net)

**Mr Ajay Kumar Harinarain**, Treasurer, TSI  
c/o IOCL, R&D Centre, Sector 13, Faridabad 121007  
[kumarajay@iocrd.co.in](mailto:kumarajay@iocrd.co.in) [ajaykh23@gmail.com](mailto:ajaykh23@gmail.com)

## Who should attend?

- Faculty in Mechanical Engineering / Tribology from Academia
- Practicing Managers/HODs 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.