

World-Class Tribology Education: NOW IN INDIA!



TSI - STLE
Joint Education Course in
Tribology

17-19 February 2010

IndianOil Institute of Petroleum
Management (IIPM), Gurgaon (Haryana)



Tribology Society
of India

www.tribologyindia.org



Society of Tribologists
and Lubrication Engineers
www.stle.org

TSI – STLE Joint Tribology Education Program : 2010

Introduction

Tribology Society of India (TSI) has been serving the Indian Tribology community since its inception in 1989, by promoting the awareness and practice of Tribology through its various programs and activities. Leveraging on the strength and experience gained over the past two decades, TSI has now embarked on an ambitious program of accelerating the professional education and training in Tribology through international collaboration. TSI takes

pleasure in announcing the launch of a partnership with Society of Tribologists & Lubrication Engineers (STLE), USA in the area of professional training and education. As part of this pioneering initiative, a series of education courses are being organized during 17 – 19 February 2010 in Gurgaon (Haryana), India. This comes as a golden opportunity for practicing engineers, researchers, teachers and students to enhance their knowledge and understanding of Tribology.

The Program

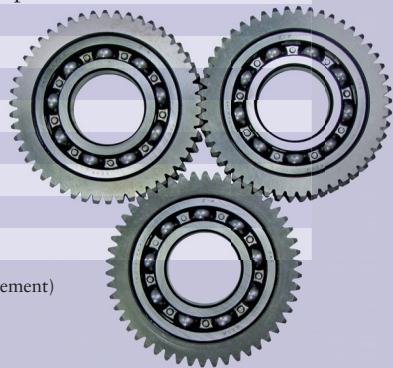
The first series of TSI – STLE Joint Tribology Education Program will offer the following three One-day Education Courses:

Sl. No.	Topic	Date	Timing (Hrs)
1.	Basic Lubrication	17th February 2010 (Wednesday)	09.00 – 18.30
2.	Advanced Lubrication	18th February 2010 (Thursday)	09.00 – 18.30
3.	Condition Monitoring	19th February 2010 (Friday)	09.00 – 18.30

Each Course will broadly have the following Schedule:

Timing (Hrs)	Session
09.00 – 09.30	Registration of participants
09.30 – 10.00	Inaugural Session
10.00 – 11.00	Technical Session -1
11.00 – 11.30	Refreshment Break and Group Photo
11.30 – 12.30	Technical Session – 2
12.30 – 13.30	Lunch
13.30 – 14.30	Technical Session - 3
14.30 – 15.30	Technical Session - 4
15.30 – 16.00	Refreshment Break
16.00 – 17.00	Technical Session - 5
17.00 – 18.00	Technical Session - 6
18.00 – 18.30	Discussion & Conclusion

(Minor changes in the schedule may be made based on course requirement)



Course Outline

Basic Lubrication

This course is primarily for those who require a broad introduction to lubricants, lubricant building blocks and lubricating materials. This course is also for persons not directly involved with lubrication but who wish to get an exposure to the latest developments. This course is designed for a wide spectrum of participants from technical, technical services, sales, marketing, manufacturing, maintenance and management, who in some way are involved with the industry. Topics covered in this course include: fundamentals of friction and lubrication theories; lubricating oils and additives; greases; synthetic lubricants; lubrication of machine elements such as bearings, gears and couplings; practical examples and case studies on lubricant selection and methods of application.

Advanced Lubrication

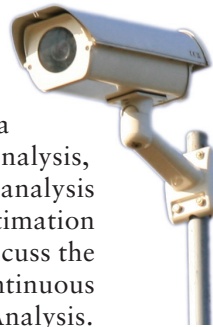
This course is intended for persons who have some exposure to the basics of lubrication and would like to move on to a more advanced level by acquiring in-depth knowledge. A major emphasis is placed in this course on the concepts of oil rheology, evolution and application of synthetic lubricants and the performance properties of lubricants. There will be discussion on the types of additives used in lubricants, the mechanism of how they work and how they are formulated into additive packages. Practical examples dealing with the analysis of performance properties for various lubricating oils and greases will be presented. The course will also discuss wear, wear mechanisms and how to diagnose wear problems from equipment failure.

Condition Monitoring

This course covers an overview of historically established maintenance strategies, providing understanding of the differences and benefits of each. The concepts of Condition Based Maintenance (CBM) and the steps to implement and execute a CBM program are discussed. The course provides a brief introduction to various monitoring techniques such as oil analysis, vibration analysis, thermography and other methods. The oil analysis technique is covered in detail, including evaluation of test data, estimation of savings, follow-up and accountability. The course will also discuss the latest technology trends in test methods and instrumentation, continuous on-site monitoring and concepts such as RCM and ROI in Oil Analysis.

The Instructors

The courses will be conducted by a team of leading Tribology experts and experienced professional instructors, who normally teach these courses during the STLE Annual Meetings.



Dr. Robert M. Gresham (Bob), Director of Professional Development (STLE)

Bob is a PhD in Organic Chemistry (1969) from Emory University in Atlanta (USA), with specialization in molecular photochemistry, emulsion polymerization, size reduction, and solids classification as well as the field of lubrication. He gained 12 years of practical experience with the DuPont Company in a broad range of functions including manufacturing, customer service, and polymer and dye research. He has 17 years experience in the field of lubrication as Vice-President of Technology with E/M Corporation a manufacturer and applicator of solid film lubricants. He was responsible for new product development, quality control, pilot plant production, and grease and oil manufacturing. He has been a member of STLE for 20+ years, serving as Chairman of the Solid Lubricants Technical Committee, Chairman of the Aerospace Industry Council, Industry Council Coordinator, the Handbook Committee, the Board of Directors, Treasurer and Secretary of the Society. He has also served on several ASTM and SAE committees concerned with standards and specification development. Bob is currently Director of Professional Development responsible for STLE's education and certification programs.

Mike Johnson (Mike), CLS, CMRP, MLT, Advanced Machine Reliability Resources

Mike has 22 years experience performing machine reliability improvement, lubrication engineering consulting, lubrication program development, public and private education. He has provided lectures and presented papers at conferences throughout the United States and in the UK. He currently is President of Advanced Machine Reliability Resources Incorporated (AMRRI), which provides training, educational curricula development, benchmarking, program development and plant reliability engineering support to a variety of industries. Mike has developed content and presented short courses on industrial machine lubrication for manufacturing concerns and public education. The content is in the form of one to four day lecture style presentations with problem analysis and case studies to support the content. His other credentials include five years as a senior executive and trainer for Noria Corporation, an internationally recognized machine reliability consulting and training company. Mike has edited or contributed to two highly regarded technical books dealing with tribology and lubrication, and has published or presented more than 50 case studies or articles on the same subject. He is a 1983 graduate of Auburn University in Alabama (USA) and holds an MBA from the Crummer Business School in Florida (USA).

Jack Poley (Jack), Managing General Partner (President/CEO), Condition Monitoring International (CMI)

Jack has a B.S., Chemistry and Management from University of California [Berkeley] and New York University School of Commerce, respectively (USA). With 45 years' experience, he is a dean in the oil analysis community, including the founding of a highly respected commercial laboratory group, Lubricon, which he sold to Cummins Engine Co. in 1988, continuing as president and CEO for another ten years. Thereafter he was managing vice president of another commercial lab before forming his own consulting company that offers services related to a variety of condition monitoring disciplines. Jack has presented more than 25 papers to industry as well as innumerable lectures and regional seminars, and has contributed several chapters to various standard reference books on Oil Analysis. He reviews peer papers on a technical level for STLE, the leading international organization regarding lubrication and lubricant testing. He is founder and chair of the Condition Monitoring Education Course, as well as founder and past chair of the Condition Monitoring Technical Committee, where papers of interest are presented annually. Jack has accomplished numbers of innovative developments in Oil Analysis and also developed interpretive algorithms for data evaluation, including development of the first high-throughput expert system in oil analysis.

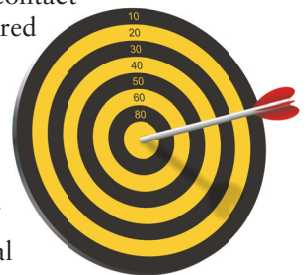
The Venue

All three courses will be organized at the following venue:
**IndianOil Institute of Petroleum Management (IIPM),
83, Institutional Area, Sector – 18, Gurgaon, Haryana (India)**

This 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 the latest facilities and audio-visual systems. The residential block is furnished with modern amenities and has in-house dining arrangements. The venue also offers recreational facilities for the participants. Further information, including contact details and location map, will be provided to registered participants upon enrollment.

Target Participants

The three education courses are primarily intended for practicing engineers in the areas of design, operation, maintenance, troubleshooting and failure analysis of plant and equipment. The courses, being of fundamental nature, are relevant for participants across various industry



sectors such as Oil & Gas, Power, Manufacturing, Steel, Cement, Automobile, Transportation and others. For young engineers joining the industries, these courses offer an excellent opportunity to learn about fundamental principles and practice of Tribology. Experienced engineers, having supervisory roles in their respective areas, will find these courses very useful in supplementing their practical experience with the underlying theories and concepts. These courses will also help senior industry executives in understanding the vast potential of Tribology in conserving energy, controlling wear and, in general, enhancing the availability, productivity and operating efficiency of plants. Such knowledge can be a strong enabler in shaping effective policies and practices. These courses will also be useful refresher program for those engaged in freelance consulting, research and teaching involving Tribology.

The Benefits

These education courses will bring world-class professional education in Tribology to the Indian Tribology community. The Tribology courses conducted by STLE have long been acclaimed as a global benchmark in professional education and training. Traditionally conducted during the STLE Annual Meetings in the USA, these courses were so far unaffordable for most aspiring Tribologists in India. With the initiative taken by TSI, these joint TSI – STLE education courses now offer the Indian engineers and researchers the opportunity of attending such courses in India, while paying the course fees in Indian Rupees. The courses being offered in India retain the same pattern and contents as the original STLE courses and will be conducted by the same panel of expert instructors. This will retain the high standard and quality of the courses for the benefit of Indian participants, while still making these financially affordable. TSI invites all interested engineers, researchers, consultants and teachers to enroll for these courses, thereby enhancing their knowledge and professional competence.

All registered participants will receive a **Certificate of Attendance** issued by TSI on completion of the courses.

In future TSI also intends to organize the STLE Certification Examinations in India in collaboration with STLE. The STLE certification programs such as Certified Lubrication Specialist (CLS), Oil Monitoring Analyst (OMA) and Certified Metalworking Fluids Specialist (CMFS) are globally recognized benchmarks of professional competence in Tribology. It is hoped that the TSI – STLE Tribology courses will serve as a first step for the participants to formally initiate their preparations for qualifying in such certification programs in future.

The Investments

TSI has made conscious efforts to keep these courses highly affordable for Indian participants, while retaining the high technical quality and professional value associated with the STLE education courses. The

following enrollment options are available to the participants and they can choose the best possible option while registering for these courses. Choices are given for attending the courses on both Residential (twin-sharing) and non-Residential basis, to suit the requirements of individuals. All charges are indicated in Indian Rupees (INR).

Option – 1 : Registration for one course out of three

Type of Registration	Course Fee (A)	Board & Lodging Charges (B)	Total Cost (C = A + B)
Residential (Twin-sharing)	17,000/-	2000/-	19,000/-
Non-Residential	17,000/-	500/-	17,500/-

Option – 2 : Registration for any two courses out of three

Type of Registration	Course Fee (A)	Board & Lodging Charges (B)	Total Cost (C = A + B)
Residential (Twin-sharing)	29,000/-	4000/-	33,000/-
Non-Residential	29,000/-	1000/-	30,000/-

Option – 3 : Registration for all three courses

Type of Registration	Course Fee (A)	Board & Lodging Charges (B)	Total Cost (C = A + B)
Residential (Twin-sharing)	41,000/-	6,000/-	47,000/-
Non-Residential	41,000/-	1500/-	42,500/-

Note :

- a. To-and-fro travel expenses are to be borne by participants in all cases
- b. Board & Lodging charges include accommodation and dining charges (for Residential candidates) and food & beverage charges during the course (for all candidates).
Participants opting for 2 or 3 courses, it is recommended that they opt for residential course so that they can interact with the faculty (who will also be staying at IIPM) as well as co participants during the evening hours. Also, as there are limited seats for each course (40 seats for each course), participants are requested to register at the earliest (preferably before 10 Feb 2010) as the registration will be done on first come first served basis.
- c. Participants registering with Residential option will be accommodated at IIPM (on twin-sharing basis) from 18.00 hrs on the previous day till 20.00 hrs on the course day. If accommodation beyond this timing is required by any participant, a formal request must be made to the Organizers well in advance. Additional Board & Lodging charges will be payable for any extended stay.

d. Non-residential candidates will make their own arrangements for board and lodging. However, organizers can provide information on suitable hotels around the venue on request.

As can be seen, the charges have been kept reasonable and the rates offered are very competitive when compared with other training courses currently available in India. Thus, the **TSI – STLE education courses** offer an excellent value proposition for aspiring Tribology professionals in India. TSI invites leading Indian Corporates, institutes and major industries in India’s public and private sector to derive the maximum benefit from this opportunity.

Method of Payment

Appropriate payments as per the selected registration category will have to be paid in advance either by Cheque / Demand Draft or by direct bank transfer. The Cheque / Demand Draft should be prepared in favour of “**Tribology Society of India**”, payable at New Delhi / Faridabad. Participants who opt for payment through bank transfer can do so using the following information:

Bank: State Bank of India, IOC Complex Branch,
Sector 13 Faridabad-121007

Account No: 11081539795

IFSC Code: SBI N 0010449

Registration & Contact Details

Advance registration for the courses is mandatory. No spot registration facility will be available at the venue. The candidates may complete the registration form attached with this brochure with correct particulars and forward to the following address along with payment. On-line registration can be done through TSI Website (www.tribologyindia.org). The registration form can also be downloaded from the website for further use. All valid registrations will be acknowledge and confirmed. All registration / payment related correspondence should be sent to the following address:

Mr. Ajay H. Kumar, Treasurer – TSI **Mr. A. K. Mehta**, Exec. Director – TSI

Phone: +91 129 2294264

Phone: +91 129 2294680

Mobile: +91 9873144340

Mobile: +91 9811162579

Fax: +91 129 2286221

Fax: +91 129 2286221

Email: kumarajay@iocl.co.in;
ajaykh23@gmail.com

Email: mehta.tsi@gmail.com

Address: Tribology Society of India
c/o Indian Oil R&D Centre, Sector – 13,
Faridabad – 121 007, Haryana, INDIA

About the Organizers

Tribology Society of India (TSI) is India's premier professional society in the field of Tribology, with affiliation to the International Tribology Council (U.K.). TSI was established in 1989 with its registered office at Hyderabad and it has its current Secretariat at IndianOil R&D Center, Faridabad. With six local chapters and a large base of Individual and Institutional Members spread across India, TSI is dedicated to promoting Tribology awareness, training and education covering industry sectors, research laboratories and the academia. It organizes a biennial International Tribology Conference and conducts education courses at various locations on relevant topics of national importance. TSI publishes the Indian Journal of Tribology and also brings out a Newsletter. Through its recent collaboration with STLE (USA), TSI aims to bring world-class Tribology education and training to the Indian professionals at affordable cost. TSI has also taken up a number of initiatives, such as developing curricula and text books for Tribology education in engineering, supporting Tribology research and providing consulting services to promote sound Tribological practices in the industry. TSI is also playing a key role in establishing the Asian Tribology Council (ATC) in association with national Tribology societies of other Asia – Pacific countries. (www.tribologyindia.org)



**Tribology Society
of India**

www.tribologyindia.org



IndianOil Institute of Petroleum Management, IIPM, Gurgaon – the Venue of the programme.

The Society of Tribologists & Lubrication Engineers (STLE), globally recognized as a leading professional body in the area of Tribology, is an individual membership society focusing on professional, technical and scientific issues and needs. It was founded on March 3, 1944, in Chicago as the American Society of Lubrication Engineers (ASLE), focusing primarily on lubrication and plant engineering aspects of major industries. Major activities during this period were technical conferences, peer-reviewed publishing and educational activities. The society was renamed as Society of Tribologists and Lubrication Engineers (STLE) in 1987, in response to the evolving market and audience needs as well as growing international participation. Today, STLE is the premier technical society serving the needs of more than 10,000 individuals and 150 companies and organizations that comprise the Tribology and lubrication engineering business sector, across leading corporations, academic institutions and governmental agencies. STLE's major activities include managing and disseminating knowledge, organizing conferences, conducting education courses and professional certification examinations as well as technical publications. Over the years, the STLE education courses and certification programs have emerged as benchmarks in professional skills and technical knowledge covering various aspects of Tribology. STLE membership represents both a symbol of technical expertise and access to a knowledge network that serves 3,500 individuals and 150 corporate members. As STLE marks its 65th anniversary in 2009, the organization is reaching out to members in 60 countries around the world with trusted technical information and education. STLE aspires to be a leader in the global network of individuals, institutions, societies and corporate entities with a common interest in advancing the science of Tribology and the practice of lubrication engineering. (www.stle.org)



Society of Tribologists
and Lubrication Engineers
www.stle.org



TSI – STLE Joint Education Course In Tribology - 2010

REGISTRATION FORM

(Please write in block capital letters / Use photocopy of this form for multiple participants)

1. Name of the Participant:
2. Organization:
3. Designation:
4. Contact Address:
.....
.....
5. Email ID:.....
6. Telephone No.:.....
7. Mobile No.:.....
8. Fax No.:.....
9. Selected Course for Registration (Please Tick all that apply)
 - Basic Lubrication (17th February 2010)
 - Advance Lubrication (18th February 2010)
 - Condition Monitoring (19th February 2010)
10. Accommodation Required: YES / NO (Please Tick)
If YES, Please indicate the number of Nights required: 1 / 2 / 3
11. Payment details: (Please tick the relevant payment option)
Total Amount Payable (Rs.):.....
 - a. Cheque / DD No : Date :
 - Name of Bank
 - b. Payment is being made by Bank Transfer
12. Signature of Sponsoring Authority:
(Name & Designation):

(Please send back by Fax or email a scanned copy as per contact details given in the Brochure)



Panoramic night view of IiPM, Gurgaon – the venue of the programme.



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@iocrd.co.in ajaykh23@gmail.com

Web www.tribologyindia.org