



TSI NEWS LETTER

ICIT-08 SPECIAL ISSUE



A Quarterly News Letter from Tribology Society of India

June, 2009

MESSAGE FROM PRESIDENT - TSI

Dear TSI Members,

Tribology, the science and technology involving the study of interacting surfaces in relative motion, is a major enabler for progress of industrialized economies. The term “**Tribology**” is relatively new, having been coined by Prof. H. Peter Jost in 1966 from the Greek word “*Tribos*” (meaning “rubbing”). However, the understanding and practice of the underlying concepts are as old as human civilization. In modern times, scientists and engineers across the world have realized the far-reaching influence of this subject at macro level as well as micro and nano level of technology. This has resulted in numerous research projects, formal academic programs and creation of several important professional societies – all dedicated to promoting the cause of Tribology.



In India, the **Tribology Society of India (TSI)**, the premier professional society committed to spreading the awareness and practice of Tribology in the country, started its formal journey in 1989. Over the past two decades, TSI has made an impact in terms of creating an active group of Tribology professionals and researchers, organizing education courses and Tribology Conferences as well as publishing Tribology-related journal and newsletter. However, given the size of India’s economy, the diversity and complexity of its industry and the large pool of talented manpower, the level of awareness about Tribology and its potential benefits is rather low. This leads to low productivity, low efficiency, higher breakdowns and adverse impact on environment and bottom line. We at TSI are fully conscious of this fact and made it as our mission to improve the standards of Tribology in India.

Keeping this in mind, the current Executive Committee of TSI has decided to launch a nation-wide campaign to promote the knowledge, education and industrial application of Tribology at an accelerated pace. We are gearing up to start a series of new initiatives, such as: organizing summer school for professionals from industry and academia; review starting Tribology courses at undergraduate and post-graduate levels; supporting research projects in Tribology; implementing industry-specific programs and training to promote appropriate Tribology practices; providing of consulting services to industry and collaborating with other similar professional Societies. Through all these, TSI hopes to enhance awareness and create a pool of talented Tribologists, who will lead the research and install best practice of Tribology in all spheres of activities and create greater wealth through improved reliability.

It is a tough task, but I am confident that TSI can achieve these goals with whole-hearted support from Indian academia, industry and research community. As we at TSI rededicate ourselves towards this Vision, I call upon all teachers, students, engineers and researchers to join us in this noble cause and help TSI attain great heights.

With best wishes,

Anand Kumar, *President*
Tribology Society of India

6th INTERNATIONAL CONFERENCE ON INDUSTRIAL TRIBOLOGY 6-8 NOV. '08 : A ROUND-UP



Chief Guest Shri Sarthak Behuria flanked by Dr RK Malhotra, Dr GK Sharma and Shri Anand Kumar inaugurates ICIT-08 by lighting the ceremonial lamp.

The 6th International Conference on Industrial Tribology (ICIT-08) was organized at SCOPE Convention Centre, New Delhi from 6th November to 8th November 2008. This was organized by Indian Oil R&D Centre. This conference is held biennially under the aegis of Tribology Society of India. The conference was inaugurated by Shri Sarthak Behuria, Chairman, Indian Oil, in a glittering ceremony attended by eminent Tribologists, industry professionals and researchers. The highlight of this Conference was the presence of an ensemble of overseas delegates from the UK, Sweden, Switzerland, France and Australia. A book entitled “Advances in Lubricant Additives and Tribology”, authored by Dr S P Srivastava, was released during the inaugural function of the Conference.

A large number of dignitaries from major industrial organizations as well as Heads of academic and research Institutions, along with a large number of delegates were in attendance during the Inauguration. Shri Sarthak Behuria, the Chief Guest, elaborated the high potential of tribological approaches, based on multi-disciplinary sciences, to promote material and energy conservation in industry. He also briefly touched upon the topic of energy efficiency in Railways and Steel Plants through conserving fuel, lubricants and energy. Lastly, he gave emphasis on more innovative tribological approaches for reduction in unit cost of production in booming Indian Automobile Sector and narrated the benefit of energy efficient lubricants developed by Team Indian Oil.



From Left - Dr RK Malhotra, Chief Guest Shri Sarthak Behuria, Shri Anand Kumar and Dr GK Sharma on dais during ICIT-08 inaugural function.



Prof SK Biswas addressing the Plenary Session-I

During the Inaugural Session a theme lecture was delivered by Dr Luis Bastardo Zambrano, Sweden. The topic of his talk was "Benefits of hydro-processed naphthenic base oils especially in the metal working applications." He discussed methodology for emulsion characterization. In this Inaugural Session Prof SK Biswas, IISc – Bangalore, also delivered a talk on the subject of Tribology of oil-in-water emulsions. During his lecture, he presented results on model emulsifier optimizations towards friction reduction and proposed “Hydrocentric-Lipocentric” mechanism for explaining boundary lubrication. Both lectures received high appreciation from the audience.

TSI - AIMS AND OBJECTIVES

1. To promote the science of Tribology.
2. To provide a common forum for Industrialists, engineers, technologists, scientists and others to meet and to foster the advancement of Tribology.
3. To organize and conduct activities of interest of the members such as holding of meetings, arranging of lectures etc.
4. To disseminate scientific and technical information of interest to the members through publication of periodicals, reports etc., and proceedings of conference.
5. To collaborate with other national and international bodies pursuing similar aims and objectives.

TECHNICAL SESSIONS



The technical sessions were divided in three categories namely; Plenary Sessions, Oral Sessions and Poster Sessions. In all about 230 delegates from India and other 9 countries attended ICIT-08 and 102 papers were presented in the technical sessions. Sixteen Key Note papers were presented by the eminent Tribologists, both from India and abroad, in the five Plenary Sessions. About Fifty Seven technical papers were presented in seventeen Oral Sessions and about 17 papers were presented in the Poster Session. The above sessions were organized in the different halls in SCOPE Complex, New Delhi.

KEY NOTE SPEAKERS

There were five Plenary Sessions and in each session two Key Note Papers were presented by world renowned eminent Tribologists. The highlight of the Plenary Sessions was that these were packed with some of the most impressive lectures in the area of Tribology which touched upon the latest research areas in the field of Nano Technology perused by various research institutions. The sessions were very much appreciated by the delegates and they were witness to presentations on some of the recent research work being conducted world over.



Enrolment as a Member of Tribology Society of India

If you are interested in knowing about the activities of TSI, please log on to the society website

www.tribologyindia.org

You can become a member of Tribology Society of India by submitting your application online. Follow the instructions as given in the site to send your fee and membership registration form.



TECHNICAL PAPERS

A total of one hundred and two papers were presented in the conference during three days of the proceedings. Of these, one hundred papers were presented in the ten parallel oral sessions, whereas the remaining papers were presented in the poster session. These sessions were organized at *Main Auditorium, Tagore and Ghalib Halls*. The sessions attracted great interest from the audience and the delegates particularly liked the ambience. Out of the papers presented in the conference, three papers were selected by a technical jury of three eminent Tribologists for Best Paper Award in Basic Research and Applied Research. Similarly, two best Poster Awards were selected from Poster papers.



A view of the Poster Session

VALEDICTORY FUNCTION

The valedictory function was held on 8th November 2008, the last day of the conference. Outgoing President of TSI, Dr. G K Sharma addressed the Conference and briefed about current scenario of TSI activities and the processes of implementation of TSI Consultancy Services.

It was declared that the next conference (ICIT-2010) would be organized in Eastern India. RDCIS-SAIL has offered to host the conference in the month of Nov-Dec 2010 in Ranchi. We all wish the SAIL - RDCIS team great success in their endeavour.



BUSINESS MEET

One of the important features of this Conference was organizing a Business Meet for Tribological Equipment Suppliers / Service providers. The Meet gave a unique opportunity to interact with the delegates in specially moderated sessions. Delegates as well as the Equipment Suppliers have appreciated these Business Meet Sessions. Following companies participated in the Business Meet.

1. PCS Instruments, UK (Dr. Rich Baker): The applications and details of recently developed equipment.
2. CETR, USA (Mr. Vishal Khosala): UTM with modular design tools for different tribo configurations under varied conditions.
3. Hysitron Inc. (Dr. Syed Asif): Triboscopes and Nano DMA

The Business Meet Session was moderated by Dr. Barun Chakrabarti, Joint Secretary – TSI.



Please send your suggestions / feedback about this issue of "TSI NEWS LETTER" to bc@LNTENC.com, so that necessary improvements can be taken up in future. Thanks.

EXHIBITION

A total of ten exhibitors put up their stalls and displayed their Tribology related products and services during the 3-day Conference. The exhibition evoked good interest among the delegates and visitors. Following is the list of exhibitors who participated in the exhibition:

1. PARK
2. Predict Technologies
3. CSM Instruments
4. Indian Oil Corp. Ltd.
5. PCS Instruments
6. Blue Star Co. Ltd.
7. TBI
8. DUCOM Ltd.
9. AVL Co. Ltd.
10. SKF Ltd.



ICIT – 2008 AWARDS

❖ *Best Papers, Oral Session:*

1. Reduction in Wear Rate of Rolls Using Roll Bite Lubrication in Hot Strip Mill. – P Pathak, N Mondal, B Krishna and B. Roy, AK Singh, KK Dubey and KN Chandgder (SAIL – RDCIS)
2. Friction during Friction Stir Welding. – Prof Satish V. Kailash, (IISc Bangalore)

❖ *Best Papers, Poster Session:*

1. Constant Flow Valve Compensated Hole-Entry Hybrid Journal Bearing Lubricated with ER Fluid – J. Sharana Basavaraja, SC Jain and Satish C Sharma (BMS College of Engg. Bangalore)
2. Friction and Wear Performance of Long and Short Fiber Reinforced Polypropylene. By – S Senthilvelan (IIT, Guwahati)

❖ *Best Exhibit:* Predict Technologies

ELECTION AND ANNUAL GENERAL BODY MEETING OF THE SOCIETY

Election for the new Executive Committee was held on 7th November 2008 by secret ballot. Dr K P Naithani (IOCL – R&D) officiated as the Returning Officer for conducting the elections.

The biennial General Body Meeting of the Society was also held on 7th November 2008 at 6:30 PM. The meeting was chaired by Dr GK Sharma, President TSI. Secretary Mr. V Martin gave an overview of the activities of the society for the previous two years. He stressed the need for a greater interaction between members through the Member Zone of the website of the society (www.tribologyindia.org). He also requested the members to update their respective Bio-Data in the website by logging into the Website Member Zone. He expressed the need for quality technical papers for publication in the Indian Journal of Tribology.

Mr Ajay Kumar Harinarain, Treasurer, presented the Income and Expenditure account of the society for the previous two years which was then passed by the General Body. During the GBM many members felt that Indian Journal of Tribology should be made available through website in the soft copy form. President TSI explained that efforts will be made in this direction to achieve this goal in a phased manner.

At the end of the General Body Meeting, Dr. K. P. Naithani, the Returning Officer appointed for conducting the elections, declared the results of the election. Following is the list of the new Office Bearers and Member of the EC for the two-year period 2009 and 2010.

NEW EXECUTIVE COMMITTEE FOR THE YEAR 2008-10

- | | |
|-----------------------------|-----------------|
| 1. Mr. Anand Kumar | President |
| 2. Dr. R. K. Malhotra | Vice President |
| 3. Prof. S. K. Biswas | Vice President |
| 4. Dr. Barun Chakrabarti | Secretary |
| 5. Mr. Kamal Mukherjee | Joint Secretary |
| 6. Mr Ajay Kumar Harinarain | Treasurer |
| 7. Mr. G.K. Sharma | Member |
| 8. Prof. Harish Hirani | Member |
| 9. Dr. Har Prashad | Member |
| 10. Mr. T.L. Nanda | Member |
| 11. Mr. K. Ravi | Member |
| 12. Mr. Surendra Pratap | Member |
| 13. Mr. Anil Kumar | Member |
| 14. Mr. U.D. Bhangale | Member |
| 15. Mr. V. Martin | Member |
| 16. Dr. Anand Prabhakaran | Member |
| 17. Dr. Rakesh Sehgal | Member |
| 18. Mr. S. Dampur | Member |
| 19. Mr. S.R. Durugkar | Member |
| 20. Mr. Mukesh Gupta | Member |
| 21. Mr. N.M. Dube | Member |
| 22. Mr. J. Rajendran | Member |
| 23. Mr. P. Pathak | Member |
| 24. Dr. S.C. Sharma | Member |
| 25. Dr. Mayank Tiwari | Member |



Mr Anand Kumar



Dr RK Malhotra



Prof SK Biswas



Dr B Chakrabarti



Mr K Mukharjee



Mr Ajay Kumar



EDUCATION COURSES



In keeping with the TSI Objective of promoting Tribology Education and Training, two Education Courses were conducted before the Conference, on 5th November 2008. One course was on “**Gear Tribology**” and other one was on “**Advances in Lubricating Greases**” (in association with NLGI, India Chapter). Mr. Anand Kumar, Chief Guest at the Inaugural Session of Education Courses, emphasized the need for increasing the frequency and coverage of such education and training activities.

Thirty five participants attended these courses. Both the courses were conducted by industry experts in respective fields. The courses focused on fundamental principles, applied knowledge and case studies. Comprehensive course materials were given to the participants. Both the courses received encouraging feedback from the participants.



CULTURAL FUNCTIONS AT ICIT- 08



VOTE OF THANKS

- ❖ Tribology Society of India sinerely thanks the following sponsors for supporting the cause of the society as well as sponsoring the ICIT- 08 in New Delhi
 - ✚ Bharat Petroleum Corporation Limited
 - ✚ Hindustan Petroleum Corporation Limited
 - ✚ Indian Oil Corporation Limited
 - ✚ ICAT- International Centre for Automotive Technology
 - ✚ NYNAS
 - ✚ Afton Chemicals Ltd.
 - ✚ PCS Instruments Ltd.
 - ✚ Lubrizol Company Ltd.
 - ✚ Tata Steel Company Ltd.
 - ✚ SAIL - Steel Authority of India Ltd.

- ❖ The Executive Committee of TSI would like to place on record special appreciation to the Organising Committee of ICIT - 08, specially, to Dr. R. K. Malhotra, Chairman Organizing and Technical Committee, Mr. K. P. Naithani, Technical Secretary and Mr. V. Martin, Organizing Secretary for organizing the ICIT - 08 very successfully in New Delhi.

- ❖ Tribology Society of India wishes to thank all delegates who participated in the Exhibition and Business meet during the ICIT 08. TSI also thanks the organizations who have inserted their advertisements in the ICIT-08 Souvenir.

ICIT- 08 – THRUST AREAS IDENTIFIED

- New class of nano particles
- DLC compatible lubricants.
- Eco-friendly rubber processing oils
- New techniques like MTM for exploring boundary tribology
- Concept of atomic friction and wear
- Tribologically robust solid lubricants for space applications
- Engineering polymers
- ANN based predictive models for residual life assessment.



Edited by Dr. Barun Chakrabarti, on behalf of Tribology Society of India

