

# TISI NEWS LETTER

A Quarterly Newsletter from Tribology Society of India

JULY 2006

## Message from President



Dear members,

**At the outset I would like to wish you all on the 40 Year Anniversary of Tribology.** It was on 9th March 1966 that the UK Government Report, now known as the "Jost Report" was published and the word "TRIBOLOGY" - the interdisciplinary Science and Technology of Interacting Surfaces in Relative Motion - was, for the first time, enunciated. Since then the area of Tribology has never looked back and today the industry is reaping the benefits of effective use of Tribological means as foresaw by Sir Peter Jost to its full advantage. Indeed we are fortunate that the 5th International conference is coinciding with the 40th year of the celebrations of launching of Jost's report in the area of Tribology. I would request all local chapters to have some kind of workshop or get together to commemorate this great occasion. Local chapters are invited to submit information about commemoration events to the Central TSI for inclusion in this newsletter. As you all know the preparations

for organizing the 5th ICIT at IISc Bangalore is in full swing. Efforts are being made to get an ensemble of world renowned Tribologists to grace this great event. I would request all members to participate in this conference with full enthusiasm as this is the only conference of its kind in India. As you all know today our strength stands at about 750. Efforts have been made by the central body to increase the membership by reaching to various educational institutions. The results have been good. It is now planned to reach the industries to increase our member strength. I would request each member to help enrolling at least one new member from their side this year so that the family of Tribologists in India grows to double its size. The July issue of Indian Journal of Tribology will soon be out. Member comments are welcome as this would help in improving the quality of the journal. I would request members to contribute their technical papers for publication in the journal.

Hoping to meet you all at ICLT-06 Bangalore.

- V. N. Sharma

## From desk of Secretary



Dear members,

It must be emphasized that tribology has outgrown its scientifically right but rather old-fashioned definition of being science and technology of interacting surfaces in relative motion. Through its multi-disciplinary approach, it has become a key 'enabling technology' towards a sustainable growth of our industrial society. Better tribology results in the conservation of scarce earth resources, higher energy efficiency and prolonged component life. You might have noticed how the regulations at global level are emphasizing the need for recycling and re-use of waste materials to conserve our resources. But re-cycling is only an end of pipe solution, the least problematic of the material resource stream while tribology can encompass the whole product life cycle from "cradle to grave".

A rule of thumb says that for each ton of waste produced by the end-consumer, five tons of waste are produced in the production process and twenty tons during the extraction of raw materials. The best way of reducing waste is thus improvement of production efficiency, the prolongation of component and product life time and the reduction of the consumption of earth resources. This is exactly what tribology research aims at. Tribology also has a major impact on environment by enabling the environmentally friendly processes and products.

Tribological losses have been estimated to the tune of 1.3 to 1.6% of the GNP of an industrialized country. It is estimated that in India, the tribological loss are of the order of 500 billion rupees plus. This data reflect that tribology has a significant impact on our economy and calls for deeper research and greater application of tribology in our Industries.

TSI is focused on bringing together the representatives from industry, research institutions and academia with various competencies in the field of tribology and to establish an integrated approach for developing and applying techniques of tribology for a sustainable, societal and environmentally responsible economy.

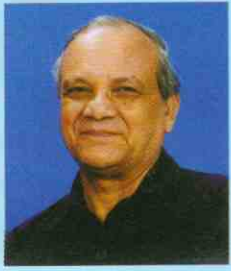
A tremendous amount of know-how is available within the industry and academia and new exciting developments are underway. The dissemination of information is a real problem which results in missed opportunities for the exploitation of tribology research into industrial applications. TSI is seized of these issues and therefore wishes to revitalize through local chapters.

Let us plan at each local chapter the inventorization of the state-of-art Tribology knowhow, facilities and panel of experts. Grouped together, we will create a compendium at TSI headquarter and hope to create a vibrant network. I solicit your suggestions and opinions on the proposal of inventorization and any other issue which you may like TSI to address on priority.

- Dr. G.K. SHARMA



## Eminent Tribologist - Dr. R. Chattopadhyay



Dr.R.Chattopadhyay, B.Sc (Eng) Met,Hons(London), PhD(London), FIM (UK),C Eng (UK), member. AWS, ASM Intl, life memb.IIM, IIW, TSI, PMAI had initial training in Sweden and Germany.

Dr. Chattopadhyaya played a leading role in making very first commercial heat of microalloyed HSLA steel in India at RSP, based on research works at NML.

He did failure investigation work at TI research laboratories in Madras, India and Hinxton Hall, Cambridge, UK, based on which TI (India) won the first ever product liability case in India. He established & worked as head in a world-class premier research centre on wear control technology at L & T Ltd, Mumbai, India. In association with Eutectic & Castolin, Switzerland & USA, he worked to find solutions to critical wear problems faced by almost all the major industries., such as, steel, power, cement, mining, automotive, railways, aerospace, petrochemical, chemical etc..

He developed a large number of application-oriented wear resistant products/processes, studied their tribological properties and finally field tested them before offering a complete package to the customers. Some of the major projects successfully completed by him include *Rail-Wheel Contact Wear of Crossings*, *High Temperature Wear of Superalloys Coatings by PTA* and *high silt erosion of hydroturbine runners*.

Dr. Chattopadhyay has conducted courses organized by professional bodies (ASM-International, UNDP, NPC), and industries; Steel (SAIL, Ranchi in 1999), Railway (Advanced Training

Institute, Pune in 1991), Petrochemical (Grasim, Nagda in 1992). He introduced surface engineering course for Met.Eng. pre-final year students and has been an examiner of doctoral thesis at IIT,Mumbai. He has been member of expert panels for various committees constituted by different agencies of Govt. of India.

He has been *nominated as a member of prestigious Handbook Committee*, ASM International, OH, USA & New York Academy of Science, NY, USA

He is the *author* of two books: "Surface Wear - Analysis, Treatment, and Prevention", ASM Intl, Materials Park, OH, USA, 2001 and "Advanced Thermally Assisted Surface Engineering Processes", Kluwer Academic Publishers (now Springer Verlag), MA, USA, 2004. Amongst the appreciation letters received include a number of them from leaders of Indian Industries, such as Mr. A.M.Naik,MD & CEO, L&T; Dr.Subir Bhattacharyya ,MD,DSP, Mr. B.Muthuraman,MD, Tata Steel.and above all the most valued comment from His Excellency, Dr. A. P. J. Abdul Kalam, President of India: quote:"*They (2 books) are indeed very useful contribution for surface engineering*". unquote

Recently (May, 2006) Dr. Chattopadhyay has been conferred the title of *Honorary Professor in the Center for Surface Engineering*, Simon Bolivar University, Caracas, Venezuela, "for his selfless support and collaboration to the research and academic training" to students doing doctoral work on tribology of biomedical materials.

Dr. Chattopadhyay as a guest speaker at International Conference on Diamond tools,Chennai, delivered two-key talks on 'Diamond Tools - Emerging Technologies' and 'Performance Evaluation Techniques'

He also delivered a keynote address on 'Wear Management Techniques' at VBS Maintech-2005'Mumbai.

## BHU- IT organizes TSI/ AICTE sponsored Staff Development Programme on "Fundamentals of Tribology and Materials for Tribological Applications"

The Staff Development Programme entitled "Fundamentals of Tribology and Materials for Tribological Applications" was organized at Department of Mechanical Engineering, Institute of Technology, Banaras Hindu University during 27th February - 11th March 2006. The course was sponsored by All India Council for Technical Education (AICTE) and co-sponsored by Tribology Society of India, Magnum Engineers, Bangalore and Dantech Engineers Pvt. Ltd., New Delhi. Participants were mainly from Engineering Colleges and R & D organizations. Prof. S.N.Upadhyay, Director, Institute of Technology-BHU inaugurated the course on 27th February 2006 and Prof. J.N.Sinha, Dean, Faculty of Engineering and Technology presided over the function. Dr. A.P.Harsha, Reader and Course co-ordinator of the programme gave brief introduction and importance of the course for the present Industries and R & D organizations. Prof. S.N.Upadhyay, appreciated timely initiative taken by the Department of Mechanical Engineering for conducting the course on Tribology. He also requested the participants to get benefitted from the programme and initiate a course on Tribology at undergraduate level in their institutions. Earlier Prof. S.K.Sharma, Head, Department of Mechanical Engineering welcomed the participants and gave a brief background about the Department and Institute and summarised some of the major achievements of the Department. Dr. M. K. Ghosh, Senior Professor and former Head of Mechanical Engineering Department was felicitated by Prof. S. N. Upadhyay, for his outstanding academic achievements and contribution to Tribology. Dr.Rajnish Tyagi, delivered vote of thanks on behalf of the Department of Mechanical Engineering and organizing committee.



Group Photo of The Participants of The TSI Sponsored Staff Development Programme Held at BHU IT Varanasi

The course was intended to impart the participants the knowledge about fundamentals and current status of tribology and newer materials for tribological applications. About 42 Lectures were delivered from the expertise available at IT-BHU, IITs and various R & D organizations to cover the various aspects of Tribology. One industrial visit to Diesel Locomotive Works, Varanasi was also arranged. The course was successfully conducted for two weeks and participants were happy with course contents. Valedictory function of the course was held on 11th March 2006.



## Local Chapter Activities

### Pune Chapter



*Dr Sudhir Rashingkar, Charman Pune Chapter, TSI Welcomes the Chief Guest Dr GK Sharma, Director CIRT Pune and Secretary TSI*

(India) limited delivered the Key Note Address. Prof SK Biswas of IISc Bangalore and Organising Secretary ICIT-06 gave valedictory address on Nano Tribology.

Dr Sudhir Rashingkar, Chairman, Pune Chapter of Tribology Society of India, while welcoming the Chief Guest briefed the activities of the Local Chapter and invited the delegates to join the Pune Chapter to strengthen it.



*The Valedictory Session . On the dais from left Mr RT kulkarni, Prof SK Biswas , Dr Sudhir Rashingkar and Mr. AR Jamenis*

Over 75 delegates from various industries and technical institutions participated in this event. Fourteen papers and product presentations were made. Mr Jamenis, Chairman, technical papers committee for seminar expressed his satisfaction over the technical contents and proceedings of the seminar.

Mr RT Kulkarni, Director, Arkey Conference Service Cell proposed Vote of thanks.

### Delhi Chapter

#### General Body meeting of Delhi Chapter of Tribology Society of India



*Dr VK Chauhan Founder President Amity Schools and Educational Institutions being welcomed by Mr V Martin, Treasurer, TSI*

Delhi Chapter held its General Body Meeting at the Amity University Premises , New Delhi on 27th May 2006. The meeting started with the welcome speech by Prof. SK Gupta and was chaired by Dr DV Singh Former VC Roorkee university and Former Vice Chairman AICTE. In his speech Prof DV Singh took the

members down the memory lane through the 1st International Tribology Conference, the formation of the then Indian Society of Tribology and then to the present Tribology Society of India. He expressed his happiness in initiatives taken to reactivate the Delhi Chapter. After this the Executive committee of the TSI Delhi Chapter was reconstituted and following are the new office bearers

Chairman	- Prof. SK Gupta Amity School and Educational Institutions, New Delhi
Co- Chairman	- Mr BS Rawat, Former GM, IOC (R&D) Faridabad
Secretary	- Dr RK Pandey, ITMMEC, IIT, Delhi
Treasurer	- Dr Faiz Waris, IOC (R&D) Faridabad
Members	- Dr DV Singh, Former VC IIT Roorkee - Dr KP Naithani, GM, IOCR&D Faridabad - Mr AK Mehta, Former GM, IOCR&D Faridabad - Mr Satwinder Singh, Tribotech, New Delhi

Dr VK Chauhan Founder President, Amity Schools and educational institutions took time off from his busy schedule and attended the meeting. He was welcomed by Mr V Martin, Treasurer, TSI. Dr Chauhan promised to extend all help and cooperation to make the Delhi Chapter a vibrant one. He offered to open a TSI Amity Centre of Tribology at Amity School campus for higher education in Tribology. Treasurer ,TSI promised to discuss this at next TSI EC meeting and convey the decision thereafter to him.

It was proposed in the meeting that Delhi Chapter will interact with the nearby industries and understand their problems related to Tribology and extend all possible help to solve them. To start with the members felt that a series of workshops on the subject of Power Plant Lubrication , Maintenance and Condition Monitoring of Hydraulic and Pneumatic Equipment , Steel Plant Lubrication and Predictive Maintenance in Industrial Tribology can be organized for the benefit of the industries. It was also proposed to publish Booklets on Special Topics in Tribology. The Delhi Chapter EC will soon meet and will come out with a comprehensive programme for implemetation.



*TSI members who attended the General Body meeting of Delhi Chapter. Sitting from left - Mr BS Rawat , Dr DV Singh , Prof SK Gupta. Standing From left - Mr S Bhadavath, Mr S Mohapatra, Mr V martin, Dr RK Pandey, Mr S P Singh, Mr R Kapoor, Dr KP Naithani, Mr AK Mehta, Dr Faiz waris*

The meeting ended with a vote of thanks from Mr BS Rawat, Co-Chairman, Delhi Chapter, TSI.

