



TSI NEWS LETTER

A PUBLICATION OF TRIBOLOGY SOCIETY OF INDIA

JUNE 2012

From the desk of Secretary – TSI



Dear Colleagues,

I have pleasure in communicating with you through this latest issue of our Newsletter. It is heartening to see that this Newsletter has become a regular channel of our communication and has also been receiving very encouraging feedback, thanks to the untiring efforts of Dr. Har Prashad and Mr. A. K. Mehta. We are constantly trying to

enhance the quality and contents of this Newsletter, introducing new features and topics. I urge all of you to come forward with new ideas and suggestions to enrich this publication further.

As you are aware, subsequent to the publication of our last issue of Newsletter, our first National Tribology Conference (NTC-2011) was successfully organized at IIT Roorkee in December 2011. We are thankful to the organizing team at IIT Roorkee and all the participants, authors, sponsors and advertisers for their involvement and support. An Annual General Meeting of TSI was also held on the sideline of this Conference. The TSI Executive Committee met on 17th January 2012 at IOCL (R&D), Faridabad to take stock of our activities and progress. On the organizational front, you will be happy to learn that our Society has successfully obtained the registration under Sec. 12AA of the Income Tax Act in October 2011 and under Sec. 80G of the Income Tax Act in January 2012. These registrations will enable us to obtain significant benefits in the long run. Thanks are due to our TSI Headquarters Team of Mr. A. K. Mehta, Mr. Ajay Kumar and Dr. Pankaj Bhatnagar for this achievement.

In continuation of our on-going collaboration with STLE - USA, we have just organized the first TSI - STLE Certification Training and Examination at IIPM, Gurgaon during 23 - 26 April, 2012. Mr. Raymond Thibault, a renowned Tribology trainer recommended by STLE, conducted the course while Mr. A. K. Mehta conducted the examination as STLE-appointed Proctor. The response to this event has been very encouraging and we hope to make this an annual event. As you know, the 67th STLE Annual Meeting will be held during 6 - 10 May 2012 at St. Luis, Missouri. TSI will also be represented in this event, as in the previous years. We are approaching the summer months and preparations are in full swing for the popular TSI event, the 4th Summer School in Tribology (SST), which will be held during 25 - 29 June 2012 at IIPM, Gurgaon.

I would also like to remind you of an important upcoming event, the 8th International Conference in Industrial Tribology (ICIT-2012), which will be held during 7 - 9 December 2012 at Pune. The first Brochure has just been brought out and all of us need to participate whole-heartedly to make this a grand success. This will also be the precursor of one more mega event of TSI, the prestigious ASIATRIB-2014 at New Delhi, which is being planned during early 2014.

I invite all of you to come forward and join hands with other TSI Members to realize our exciting dreams about TSI. I take this opportunity to convey my greetings to you and your family members for a very relaxing and enjoyable summer vacation.

With best wishes,

Dr. Barun Chakrabarti
Secretary - TSI

HIGHLIGHT OF NATIONAL TRIBOLOGY CONFERENCE (NTC-2011)

The National Tribology Conference (NTC-2011) was held at Department of Mechanical & Industrial Engineering IIT Roorkee, from December 08-10, 2011. The conference provided a forum for exchange of ideas among the Tribologists of India as well as abroad. Besides this the conference gave an opportunity to the practicing engineers, researchers, R&D persons and students to keep abreast of latest tribological developments. The conference was attended by 95 delegates. The deliberations that took place during the course of conference are expected to be quit useful to the tribology community.



Inaugural Session of NTC 2011.

Seated on the Dais (from L to R) : Dr Barun Chakrabarti , Head R&D, L&T Ltd. and Secretary, TSI; Mr. Bradely D Faye ,Leader Advanced Products, NEI Jaipur; Prof D K Paul ,Prof Earthquake Engg. , IIT Roorkee and Prof Satish C. Sharma, HOD, Mechanical Engg. IIT Roorkee and Chairman NTC 2011.



Delegates in Inaugural Session of NTC 2011 at IIT Roorkee.

The salient highlights of NTC-2011 are as follows:

1. NTC-2011 was sponsored by IOCL, NBC, L & T, DST, CSIR, DUCOM etc.
2. State of art lectures delivered by a galaxy of invited experts from the academia, research establishments and industries are:
 - I. Prof. Michel Fillon, Director of Research, HDR, CNRS, FRANCE
Topic: "Influences of Scratches on Journal Bearing Performance: parametric & case study"
 - II. Prof. D. Dane Quinn, Dept. of Mechanical Engg. University of Akron, USA.
Topic: "Friction damping in Large Scale Structural System arising from Joints and Interfaces"
 - III. Prof. D. V. Singh, Ex. Vice Chancellor of University of Roorkee; Ex-Director. of CRRI & IIT Roorkee.
Topic: "Spreading Tribology Education and Research: Why is Important"
 - IV. Mr. Bradely D. Faye. Leader Advanced Products, National Engineering Industrial Ltd.
Topic: "Tribology Improvement for better Productivity"
 - V. Dr. S.V. Joshi, Dy. Director- ARCI.
Topic: "Advances in Surface Engineering to Combat Component Wear"
 - VI. Dr. R. T. Mookken, GM (LT), IOC R&D
Topic: " Lubricants & Additives – Current Status and Future Trends"

Best Paper Award

There were about 60 contributed research papers including interactive papers in poster

Session on various themes within the broad area of Tribology.

In this Conference two Best Paper Awards and one Best Poster Paper Award were given to the authors

Authors, who presented:

Award 1: "Prediction of Wear Coefficient of Al6063-Tib2 in Situ Composites" By C. S. Ramesh and Abrar Ahamed (Oral paper)

Award 2: "Hydraulic & Lube oil Condition Monitoring and Preventive Maintenance" by Anand Yesekar (Oral paper)

Award 3: "Experimental Analysis and Modelling of erosive wear in typically un lubricated area of Excavator bucket using wear-bars instead of wear plates (poster paper)

Life Time Achievement Award

Prof. D. V. Singh was felicitated by Life Time Achievement Award in the field of triology for his invaluable contribution in this area.



Life Time Achievement Award to Professor D.V Singh by TSI. Standing from (Left to Right): Professor S. P. Harsha, IIT Roorkee; Mr. Ajay Kumar, Joint Secretary TSI; Dr. Har Prashad, Vice President TSI; Mr. Kamal Mukherjee, EC member TSI; Mr. A.K. Mehta, ED TSI; Professor Satish C. Sharma, Chairman NTC-2011, IIT Roorkee.

Cultural Programme and Hardwar Visit

Gazal cultural programme and Hardwar visit was organised on 8th & 9th December, 2011.

Prof. Satish C. Sharma,
Chairman NTC-2011, Professor & Head,
Mechanical & Industrial Engineering Department
Indian Institute of Technology Roorkee, ROORKEE - 247 667
(Uttarakhand)
Tel. No. +91-1332-285242/285603 (O);
E-mail : NTC2011iitr@gmail.com



Seating From Left: Mr.S.S.V. Rama Kumar, Ms.Smriti Sahu, Dr.M.R. Tyagi, Mr.Kamal Mukherjee, Mr.K.Ravi, Dr.Pardeep Kumar, Dr.Michel Fillon, Dr.S.P.Harsha, Dr.D. Quinn, Dr.Barun Chakrabarti, Dr.D.K.Paul, Dr.S.C.Sharma, Mr.Bradley D.Faye, Mr.A.K.Mehta, Dr.Har Prashad, Dr.S.H.Updhyay, Mr.S.Singhai, Dr.D.V.Bhatt, Dr.R.K.Pandey, Dr.S.K.Acharya, Dr.C.S.Ramesh, Ms.Swati Kathnani **Row-1stFrom Left:** Dr. Andallib Tariq, Dr.A.K.Dwivedi, Mr.Mayukh Sarkar, Mr.Pankaj, Mr.Alok Mishra, Mr.Jayant Purohit, Mr.Navneet Nirala, Mr.Akash Shukla, Mr. Tarun Bansal, Mr.S.R.Durugkar, Mr.B.Chaterjee, Mr.Lijesh Kumar, Mr.Sudip U, Mr.Pankaj Tomar, Mr.Y.M.Shashidhara, Mr.S.R.Jayram, Mr.Aghosh Hazra, Mr.Jagadesh Kumar, Mr.Satwik Shatra K.R., Mr.Ashok Raj **Row-2ndFrom Left:** Dr.I.V.Singh, Dr.Jitendera Madan, Mr. Kishor Debnath, Mr.Sarabjit Singh, Mr. Pramedra K. Bajpai, Mr.C.K.Bisha, Mr.Anand Yesekar, Dr.Ashok Kumar, Mr.Jishan, Mr.Arvind Rajput, Dr.Pravin Patil, Mr.Nathi Ram, Mr.B.M.Sutaria, Mr.Rishikesh Rathi, Mr. Priyank Kare, Mr.N.Mondal, Mr.J.P.Patel, Mr.H.K.Mohanti, Prof.S.K.Nath, Mr.G.D.Thakre

Row-3rdCenter Mr.Ankit, Mr.Divyang, Mr.Prashant, Dr.Sethuraman Tennan, Mr.Ramanathan, Mr.Shankar Bhadavath

Recent Ph.D. Awarded

Ph .D. Degree Awarded

“Influence of Wear on the Performance of Multirecess Fluid Film Journal Bearing”

Supervisors : Dr. Satish C. Sharma, Professor and Head,
and

Dr. S.C. Jain, Professor
Department of Mechanical and Industrial Engineering,
Indian Institute of Technology, Roorkee, Uttarakhand, INDIA

Year: Dec. 2011



Name of Candidate:
Mr. Vikas M. Phalle

The special qualities of hydrostatic bearings frequently afford a simple and convenient solution to solve problems experienced with particular machines. The revolutionary changes have taken place in the field of hydrostatic and hybrid journal bearing with increase in its applications in many new areas such as micro and nanotechnology, bio-systems, aerospace etc. and from very slow speed telescope to very high speed turbo machinery. The growing demands from industries for higher speed applications and ability of hydrostatic/hybrid journal bearing to support heavy loads have necessitated study of the performance of bearings in detail under more realistic conditions.

For such conditions, a theoretical model has been used to analyze the individual and/or combined influence of wear and journal misalignment on the performance of bearing. Also, the generalized Reynolds equation governing the flow of lubricant between the bearing surfaces has been used. The influence of wear has been studied by considering different values of non-dimensional wear depth parameter $\bar{\delta}_w$. Furthermore, a non-dimensional factor known as offset factor $(\delta)w$ has been defined and used to account for the change in geometry of the circular bearing and semi cone angle (γ) in case of multi-recess conical journal bearing. The static performance characteristics and dynamic performance characteristics have been computed for the generally used values of bearing operating and geometric parameters. The results presented in this study indicates that bearing performance parameters like minimum fluid-film thickness, stiffness coefficient and stability margin, which are influenced due to the influence of wear, journal misalignment, offset factor and semi cone angle for the chosen bearing configurations. The results presented in the thesis are expected to be quite useful to the bearing designer.

Ph .D. Degree Awarded

“Experimental Evaluation of Piston Ring Assembly Friction Using Various Operating Parameters under Motorized Condition”

Supervisors : Dr. D. V. Bhatt, Associate Professor and Dean AL&RG,
S.V. National Institute of Technology, Surat, Gujarat
and

Dr. K. N. Mistry, Ex. Professor, SVNIT, and Principal,
Sarvajani College of Engineering and Technology, Surat, Gujarat

Year: November, 2011



Name of Candidate:
Mr. Bharatkumar Mohanbhai Sutaria

Abstract: Since the beginning of development of internal combustion engine, it is continuous process of improving performance of engine to get rid of energy crisis and frictional losses. The major application of I. C. engines are in transportation sectors and present work is focused on the automobile sector particularly single cylinder S.I. engines. Majority of researchers have carried out experimental investigations on motorized systems at laboratory scale having variables, i.e., speed (100 rpm -5000 rpm), lubricants (SAE 30, SAE 40 and multi grade oils) and load (10 N-200 N) while few scientist have experimented on real engine under firing condition. To study the effect of temperature as a tribological parameter work is very less published.

In the research work, efforts are made to measure PRA friction at laboratory scale on different volume capacity of single cylinder PRA systems, i.e., 150 CC, 100 CC and 75 CC at different operating parameters (i.e., speed, lubricant, load, ring geometry and temperature) by developing segmented PRA systems and liner of actual engine as attachments, suitable to available standard reciprocating friction measurement test rig having stroke length of 10 mm and the speed in the range of 300 rpm to 1800 rpm. In all the experiments, the piston dimension, piston rings groove dimension and piston ring segments are as per the original systems. The develop segmented PRA systems (150 CC, 100 CC and 75 CC) are validated through the comparison of simulated theoretical models result and experimental results at various operating speed (300 rpm -1800 rpm) with different lubricants. The results are found in good agreement with theoretical results.

Investigations of friction coefficient were obtained under temperature variation from 40°C to 90°C at constant load 40 N and three different lubricants for all three PRA systems capacities. Friction coefficients were compared for different ring geometries of said PRA systems at room and elevated temperatures. The modified ring geometry has reduced the friction coefficient between the interface of segmented ring and liner pair at different speed and at constant load for SAE 20W40 oil. The ring geometry plays a vital role on friction coefficient when test rig run till 1500 rpm at elevated temperature. However, among the compared different ring geometries, i.e., Conventional ring, 18°, 25° and 40° chamfer angle of ring, the 18° chamfered angle rings offered better performance on reduction of friction coefficient as compared to other rings performance.

Glorious Activity of TSI

FIRST CERTIFICATION PROGRAMME IN TRIBOLOGY IN INDIA & 1st TSI - STLE Certification Program in Tribology, 23-25 April 2012 at IIPM, Gurgaon

Tribology Society of India (TSI) has been serving the Indian Tribology community since its inception by promoting the awareness and practice of Tribology through various technical programmes, tribological activities, courses, National and International conferences etc. Leveraging on the strength and experience gained over the past three decades, TSI entered into a pioneering collaboration with Society of Tribologists & Lubrication Engineers (STLE), USA, in 2009 to promote professional education and training in Tribology in India.

In continuation of our past successful ventures with STLE, TSI organized 1st TSI-STLE Certification Program in Tribology, during 23-26 April 2012 in Gurgaon (Haryana), India. This proved to be a

The 1st and 2nd TSI & STLE Joint Tribology Education Programmes were organized in India in February 2010 and February 2011 respectively, which received overwhelming response.

golden opportunity for Lubricant End Users, Equipment OEMs, Oil Analysis Personnel, Consultants, Lubricant Suppliers and R&D personnel to enhance their knowledge and understanding of Tribology through close interaction with renowned experienced Tribologist Mr. Ray Thibault and pass the recognized "Certified Lubrication Specialist (CLS)" examination of STLE.

There were 27 participants for the CLS Class taken by Mr. Ray Thibault. The STLE Certification Examination was taken by 28 participants including 27 for CLS and 1 for CMFS. The participants represented almost all

segments of lube industry, including Lube Additive, Industrial R&D, Bearing Industry, Lube Manufacturers, Oil PSU Technical Services and user industry. ■



Sitting Row (L to R) S/Shri:
Dr. S. K. Mazumdar, Dr. P. Chakraborty, Rai Sahab, Manoj Khemka, Ajay K. Harinarain, Harish Doshi, Ray Thibault, A. K. Mehta, Dr. P. Bhatnagar, P. Duraisamy, Rajesh Patil, Deepak Kotnala

Standing 1st Row (L to R) S/Shri:
Navneet, Sanjiv Wazir, Harshad S. Pandit, Abhijit Sarkar, S. Venkatesan, P. K. Gandhi, Anand Yesekar, Philip Mathew, Priyank Khare, Anand Bapat, Pravin Shivankar, Rajesh Chauhan, Lokesh Kaulaskar, Varun Bansal

Standing 2nd Row (L to R) S/Shri:
Amit Kumar, C. S. Dutta, Vivek Srivastava, Abhijit Sen Roy, M. Panda, Manish Keswani, Dheeraj Shyam Prasad



A K Mehta, ED TSI welcoming Mr. Ray Thibault, Mr. Harish Doshi CLS (Lubrication Consultant), and Dr P Bhatnagar during the inaugural function of the CLS Class program.



Mr. Ray speaking during the inaugural function of the CLS Class program at IIPM, Gurgaon.

LM # NO	NAME	ORGANISATION	CITY/ STATE
4274	SUKUMAR PUHAN	GKM COLLEGE OF ENGG. & TECH.	CHENNAI
4275	GOPINATH A	ASHOK LEYLAND LTD	CHENNAI
S-4276	SUSHEEL SINGH BHANDARI	IIT, KANPUR	KANPUR
4277	G GURUMURTHY	DYNASPEDE INTEGRATED SYSTEMS (P) LTD.	HOSUR
S-4278	ARVIND KUMAR RAJPUT	IIT, ROORKEE	ROORKEE
S-4279	PATIL KIRAN SHIVAJI	IIT, ROORKEE	ROORKEE
S-4280	J SARAVANAN	IIT, ROORKEE	ROORKEE
S-4281	RAJA P	IIT, ROORKEE	ROORKEE
S-4282	AMIT KUMAR	IIT, ROORKEE	ROORKEE
4283	SANDEEP SONI	SVNIT	SURAT
4284	SYED ABRARUDDIN HASAN	DECCAN COLLEGE OF ENGG. & TECH	HYDERABAD
4285	S SUGUMAR	CVRDE	CHENNAI
4286	GOPAKUMAR P	3M INDIA LIMITED	BANGALORE
5055	RAGHAVENDRA KUMAR KHEDLE	RGPV	BHOPAL
5056	MANMOHAN DAS GOEL	CSIR-AMPRI	BHOPAL
5057	SHYAM BIRLA	SAGAR INST. TECH. & ENG	BHOPAL
5058	PANKAJ KUMAR	SAGAR INST. TECH. & ENG	PATNA
5059	GAURAV KUMAR GUPTA	CSIR-AMPRI	BHOPAL
5060	ANURAG KULSHRESTHA	SCOPE COLLEGE OF ENGG.	BHOPAL
5061	NIDHI JHA	CSIR-AMPRI	BINA
5062	ANSHUL BADKUL	CSIR-AMPRI	BHOPAL
5063	SUKHLAL AHIRWAR	ORIENTAL INST. SCI. & TECH.	BHOPAL
5064	DUSHYANT SINGH DR.	CENTRAL INST. OF AGRICULTURE ENGG.	BHOPAL
5065	PRABHASH JAIN	UIT, BARKHATULLAH UNIVERSITY	BHOPAL
5066	B. G. SHUKLA	SAGAR INST. SCI. & TECH.	BHOPAL
5067	RAHUL THAKUR	ORIENTAL INST. SCI. & TECH.	ITARSI
5068	MERAJ AHMED	CSIR-AMPRI	BHOPAL
5069	SHASHI BHUSHAN ARYA	NIT KARNATAKA	MANGALORE
5070	ANUJ BHANDARI	JCB INDIA LTD	HARYANA
5071	PRADEEP KUMAR AGRAWAL	JINDAL STEEL & POWER LTD.	RAIGARH

Tribology Laboratory at Indian Oil Corporation R&D Centre, Faridabad

An important step in the development of Lubricating oils and greases is the determination of tribological properties of lubricating oils, greases and specially oils. This is achieved using various standard test rigs as per the latest ASTM, IP, DIN, ISO, JIS and BIS methods as well as innovative special research test rigs designed and developed in house to take care of additional requirements of new generation lubricating oils and greases being developed by the Centre. This laboratory is engaged in the following tasks

- Tribotesting: Mechanico -dynamical testing carried out to simulate the effects of load, speed, media and temperature etc on the friction and wear behaviour of a tribo-system.

- Simulated mapping of regimes of lubrication in contacts to assess friction and wear properties of lubricants

These tests are conducted on lubricants to develop confidence about their performance before these are introduced in the intended applications. The laboratory is equipped with over 40 test rigs for the tribo-testing as well as performance evaluation of lubricating oils, greases and fuels as per the standard or the in-house developed methodologies. With these test equipment, the evaluation requirements for a variety of oils and greases used in automotive, industrial and metalworking applications can be met. This supports the development of the wide range of lubricants offered by Indian Oil Corporation offered in the Indian market.

This laboratory is also equipped with a Ferrography system for wear debris analysis of used oils to assess the health of the equipment from which the samples are drawn.

An innovative feature of the tribological investigations currently being carried out in this laboratory is the increasing use of Nano-Tribology techniques for characterization of the film forming tendency of the lubricating oils and greases at the molecular level. ■

4 ball Wear tester for Anti-wear characteristics of lubricants

Facilities

A. Short Duration Screening tests

- 4 ball EP tester
- 4 ball wear tester
- Timken machine
- Falex Pin on V Block machine
- SOD viscometer for apparent viscosity of greases
- Tapping torque test rig
- FZG Gear Tester
- SRV apparatus
- Amsler machine
- High Frequency friction machine
- Quenching oil test rig
- Stick Slip machine for slideway oils
- Journal Bearing test rig
- FZG Micropitting test rig
- Ball on Cylinder Lubricity Evaluator (BOCLE) for Aviation Turbine Fuels
- High Frequency Reciprocatory Rig(HFRR) for Diesel Fuels

B. Long Duration test rigs

- High temperature Grease test rig
- Simulated Stroking test rig for brake fluids
- Wheel bearing Grease test rig
- Vickers vane pump test rig
- SKF R2F test machine
- SKF V2 F test machine
- FAG FE8 & FE9 Test rig
- SKF ROF Test rig
- Circulatory corrosion coolant test rig
- L42, L37 L-33 & L-60 test stands for Automotive Gear Oils
- Grease Churning test rig
- Experimental cold rolling mill





EHD Apparatus for film thickness of lubricants



SKF ROF+ Test rig



FZG Gear tester for Load Carrying capacity of Gear lubricants / Anti- Micropitting characteristics of gear oils



FAG FE8 Test Rig for Assessment of L10 Life of Greases at Elevated Temperatures



Atomic Force Microscope

International Conference on Industrial Tribology (ICIT-2012)

Forthcoming

In order to disseminate the recent advances in the field of Tribology and the benefits accrued to the industry at large out of its best practices, the Tribology Society of India (TSI) has been organising International Conferences on Industrial Tribology (ICIT) biennially in different parts of the country. In this series, the 8th International Conference on Industrial Tribology (ICIT-2012) is being organized by leading industries from the Public and Private Sectors in India, under the aegis of TSI. The event will be held during 7 - 9 December 2012 at Pune, India.

"Sustainability" has emerged as the subject of global concern at present, due to its impact on the survival of not only our future generations but the Earth itself. Leading Scientific, Political and Social organizations across the world have realized that the processes involved in creation of industrial and economic wealth are not relevant unless these are sustainable. Tribology has a key role to play in sustainable development because of its inherent potential for conserving energy, material, resources and the environment. Therefore, the Theme of the forthcoming Conference has been chosen as "*Tribology for Sustainable Development*"

Envisaged technical programme of ICIT-2012 is designed to cover the following broad areas:

- Bearing & Gear
- Lubricants & Additives
- Contact Mechanics, Wear Mechanisms & Friction
- Surface Treatment & Coatings
- Tribo-Testing
- Condition Based Maintenance System
- Tribology in Design & Manufacturing
- Tribology in Metalworking
- Bio, Nano, Nuclear, Space, Automotive and Marine Tribology
- Wind Power Tribology
- Tribology in Renewable Energy

Call for Papers

Engineers, scientists, academicians and practitioners in Tribology are invited to present technical papers in line with the theme of the Conference. Prospective contributors are requested to submit abstract of their paper in about 250 words latest by 30 June 2012 for review and selection. Abstracts of the papers should be submitted online through the TSI website www.tribologyindia.org. Contributors of the selected papers would be required to submit manuscript of the extended abstract (up to 4 pages) latest by 31 August 2012. The guidelines for authors and the template for the extended abstract will be available for download from the TSI website.

ICIT-2012 will endeavour to give preference to papers which deal with new advancements, applications and developments in the aforesaid areas. All papers submitted for presentation in the Conference must be original and should not have been presented, published, or under consideration for publication / presentation in identical or substantially similar format. All papers will be subjected to review by a Technical Committee and the decisions will be conveyed to the authors accordingly. Authors of selected papers will be required to execute a Copyright Agreement in favour of TSI.

Important Deadlines for Technical papers

- Receipt of abstract : 30 June 2012
- Acceptance of abstract : 15 July 2012
- Submission of Extended Abstract : 31 August 2012

Education Courses

Following two educational courses have been planned as Pre-Conference Event, to be held on 6th December 2012 at the Venue of the Conference:

- 1) Basics of Tribology
- 2) Automotive Tribology

Details of these courses and fees payable will be announced at a later date and will be made available on TSI website.

The details of the 8th ICIT can also be viewed at the following link on TSI Web site:

<http://www.tribologyindia.org/pdf/icit-12-first-ann.pdf>

For any further details, you may contact:

Dr. S.S.V Ramakumar, Organising Secretary (ICIT-2012),

Dy. General Manager (Coordination),

Indian Oil R&D Centre, Sector - 13 Faridabad - 121007, Haryana, INDIA.

Phone +91 129 4005409, Mobile +91 9899701256, Fax +91 129 2286221

Email 2012icit@gmail.com, info@tribologyindia.org

SAD DEMISE



Mr. Chaturan Mishra (7 April 1945 - 23 November 2011)

Tribology Society of India expresses profound grief at the untimely demise of Mr. Chaturan Mishra, who left for his heavenly abode in the early hours of 23 November 2011 at Jamshedpur. Considered as a doyen of Tribology and its industrial applications, Mr. Mishra, fondly called "*Mishraji*" by all, was a much respected and loved member of the Tribology community in India.

Mr. Mishra was born in his ancestral village in Bhagalpur on 7th April 1945. Starting his education from the village primary school, Mr. Mishra completed his High School and Intermediate studies from Bhagalpur and Ranchi, always excelling in his studies and securing University rank at the Intermediate level. Mr. Mishra studied Engineering from BIT - Sindri and graduated as the Topper in Mechanical Engineering in 1966. After a brief stint in teaching at the Bhagalpur Engineering College, he joined TATA Steel as a Graduate Trainee, thus starting an illustrious association of over 35 years with the Company that showcased his pioneering contribution towards the industrial application of Tribology. During this period Mr. Mishra also enriched

his professional expertise through a number of specialized training programs in India and abroad.

At TATA Steel, Mr. Mishra served with distinction in various capacities in diverse departments such as Maintenance, Tribology, Manufacturing, Operations, Projects, Procurement and Technology Management. After his superannuation from Tata Steel, Mr. Mishra continued to contribute to the field of Tribology as a Trainer and Consultant. He founded the Maintenance Engineering & Tribology Consultants, Jamshedpur and led the organization as its CEO.

Through his immense contributions, Mr. Mishra became an authority on Steel Plant Tribology in India and was regarded as a highly respected speaker and trainer in the areas of Tribology, Maintenance Technology and Energy Conservation. He was instrumental in developing many innovative systems and processes in maintenance technology, materials development, energy management and technology management.

Mr. Mishra was President of TSI during 2003-2004 and organized the 3rd ICIT in April 2002 at Jamshedpur. The event is regarded as one of the most successful conferences organized by TSI. He had been a key Member of TSI Executive Committee.

Apart from TSI, Mr. Mishra was actively associated with a large number of professional societies, committees and corporate houses in different capacities. These included Matrix Speciality Lubricants, Balmer Lawrie, Reine Chemie, Indian Oil and the Institution of Standards Engineers, among others.

During his illustrious career, Mr. Mishra published over 30 technical papers, organized one national and two international conferences, edited two conference proceedings and brought out three handbooks for TATA Steel, namely, "Handbook of Tribology", "Handbook of Engineering Polymer" and "Handbook of Welding Application". He also guided five M. Tech and Ph.D students. In recognition of his rich contributions, he was awarded the prestigious Visvesvaraya Gold Medal by the Institution of Engineers (India) in 1992.

The untimely demise of Mr. C. Mishra has created a void in the Indian Tribology movement that will be hard to fill in coming years. In his death TSI has lost a dedicated Life Member, a true Mentor and a visionary Tribologist. The Executive Committee and all Members of TSI join together in expressing their heart-felt condolences to the bereaved family. May the departed soul rest in eternal bliss.

SAD DEMISE



Mr. Sudhaker Jha

It is sad to learn that one of our eminent Tribologists, Mr Sudhaker Jha, former Executive Director I/c (RDCIS), left for the heavenly abode on April 4, 2012, after a brief illness at Kolkata. He has left behind his wife Mrs Sumitra Jha and four daughters.

Mr Jha has been one of the pillars of the Tribology Society of India (TSI). He was a life member of TSI and was solely responsible for creation of its Ranchi Chapter. He was a graduate in Mechanical Engineering from BIT, Sindri. After graduating in 1966, Mr Jha served Hindustan Steel Ltd, Alloy Steel Plant (ASP), Durgapur, before joining R&D Centre for Iron and Steel (RDCIS) at Ranchi in 1979. He superannuated from SAIL as Executive Director I/c (RDCIS) in 2005.

Although, at RDCIS, Mr Jha contributed in all the major areas of iron and steel making, his core expertise lied in the areas of Rolling Technology, Tribology and Product Development. In the field of Tribology, his pioneer work included development of various grades of wear resistant steels, wear resistant rails, condition based maintenance system and improvement in processing of steel through tribological approach.

He was instrumental in installation of various sophisticated laboratory facilities at RDCIS including fully instrumented hot and cold Experimental Rolling Mill, Stress Measurement Lab, Thermo-mechanical simulator, hot dip galvanising simulator, etc. Development of various indigenous hot and cold rolling oils for steel mills also goes to his credit. He also played significant role in development of several new grades of steel in SAIL plants.

Mr Jha's research works culminated in large number of internationally acclaimed technical papers and patents. He had more than 100 publications and 25 patents to his credit. A book on Flat Rolling Lubrication co-authored by Mr Jha was also published by RDCIS. He was a widely travelled technocrat. He was a visiting scientist to prestigious Colorado School of Mines, USA. Mr Jha was life fellow of Indian Institute of Metals (IIM), Council Member of IIM and Chairman of its Ranchi Chapter in 2000-2002. He was member of the senate of NIT, Rourkela, as well as of Central Board of Railway Research (CBRR). In his career, Mr Jha received 3 Gold Medals and several other awards including National Metallurgist Award (1982) and OP Jindal Gold Medal Award (1999). During his leadership only, RDCIS received highly prestigious Golden Peacock Innovation Award in 2004.

On behalf of the fraternity of Tribologists, the TSI Newsletter prays to God for giving strength to the bereaved family to bear the loss, May the departed soul rest in peace.

Book Published



A System Approach to Mechanical Engineering Problems

Solving Problems of Mechanical Engineering

This book brings out the solution of various complex technical problems of mechanical engineering in 19 chapters concerning design, system, quality, malfunctioning, maltreatment, operational and various unforeseen causes of the

machines. The various chapters of this book deal with the unique problems and their solutions including time bound increase in machine vibrations, whistling intermittent noise of vertical pump-motor sets, premature failure in the alternators & synchronous condenser, wind-mills problems apart from technique of axial force measurement on rotor, reliability assessment of rolling element, hydrodynamic and spherical seated bearings in operation, effect of cage and roller slip, functional performance tests, concept and analysis of double decker high precision bearing besides magnetic suspension system of energy meters.

About the Author

Dr. Har Prashad is consultant of Centre for Tribology Incorporated (CTRI) USA. He is retired Senior Deputy General Manager from Bharat Heavy Electricals Limited, Research and Development Division, Hyderabad. He published more than 125 papers in both national and intern. journals. He is the author of five technical books & two non technical books.

To Contemplate

The mind is comprehended to the laws of statics and body to the laws of dynamics. The key of success in any activity is governed by dynamics of the body and when the self is at rest and in silence.

You do not love a person for his own sake instead you love your own self in him, and nothing else. If difference arises, love ceases and happiness disappears.

Sum of angles of triangle drawn on the surface of a sphere is always larger than one hundred and eighty degrees (for positive curve), and less than one hundred and eighty degrees for negative curve, and it is one hundred and eighty degree for flat surface.

Things are being done because man as producer cannot afford "the luxury of not acting economically" and therefore can not produce the very necessary "luxuries" like health, beauty and permanence, which man of consumer desires more than any thing else. It would cost too much; richer we become; the less we can afford.

From the book on "Spikes of Deep Silence in Silence and by Silence", by Dr. Har Prashad, published by Low Price Publications, New Delhi (India), (2012).

Edited by Dr. H. Prashad, Vice President (TSI)
on behalf of Tribology Society of India

Please send your suggestions/contributions/feed back for
further News Letter to Dr. H. Prashad, Vice President (TSI),
har.prashad@gmail.com