



TSI NEWS LETTER

ICIT-2010 SPECIAL ISSUE

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Message from President – Tribology Society of India



Dear TSI Member,

First of all, I would like to take this opportunity to express my sincere thanks for electing me as the President of your society. I hope that I would be able to bring the same impetus to the activities and initiatives of the society that my predecessors have brought about diligently. I would, in particular, like to express my gratitude to the immediate past president, Shri Anand Kumar, for taking several new initiatives which have helped generating more interest of all stakeholders in our society.

The past year saw some major events being organized under the aegis of the society. The “7th International Conference on Industrial Tribology” was hosted by R&D Centre for Iron & Steel of Steel Authority of India Limited (RDCIS - SAIL) on the theme of “Tribology in Steel & Mining Industry”. It was an extremely successful event as the technical contents and the interactions between the participants highlighted abundant natural resources in this part of the country and also emphasized the potential benefits that can be achieved through the application of Tribology.

The Second in the series of the “Summer School on Tribology” was organized during the year. This event has become a regular annual feature in the Tribology Calendar of the country and has been quite help in the development of faculty engaged in Tribology education in India. The Joint TSI-STLE Education courses organized on various topics related to the needs of the industry have also become an annual feature and the second course in this series was organized in February 2011. It is heartening to learn that industry has begun to use these courses for training their engineers.

In my view, there is an urgent need to have more events on the Tribology Society Calendar to enhance interactions between the academia and industry. The benefits derived from the application of Tribology need to be increased to a greater extent for all stakeholders. I would urge you all to suggest organizing some programmes on certain aspect of Tribology you may be working in. You may contact various local chapters in your area (details available on the Tribology Society Website www.tribologyindia.org) or Shri A K Mehta, Executive Director, TSI in this regard.

I look forward to cooperation of all so that together we take the Tribology Society of India to still greater heights.

Dr R K Malhotra

President - TSI

From the desk of Secretary – TSI



Dear Colleagues,

I have pleasure in conveying my greetings to you on behalf of the new Executive Committee (2011-2012) of Tribology Society of India. As you are aware, our Society has made significant progress during the tenure of the last EC (2009-2010) in promoting the awareness and practice of Tribology in India, conducting training and educational programs as well as forging international collaborations.

The TSI Summer Schools and our joint Education Programs in collaboration with the Society of Tribologists and Lubrication Engineers (STLE), USA have received enthusiastic response from the academia and industry in India. These have now become eagerly awaited annual events for the Tribology Community in India. We have scored a major victory in our international collaborative efforts by managing to bring the ASIATRIB-2014 event to India under the aegis of TSI. During the ICIT-2010 event at RDCIS - Ranchi, we have launched the prestigious TSI Lifetime Achievement Awards. The newly-designed TSI Website, which is our main platform for public interactions, has been given a vibrant look with many new features and on-line functions. We have also revamped our Headquarters in Faridabad with improved office facilities and administrative supports and have streamlined the membership administration processes.

As you are aware, we recently achieved a major milestone by registering our Society in Faridabad. We are also working on completing other formalities with relevant authorities in respect of the new entity. The auditing process of our accounts and consolidation of our past records for assessing tax liabilities have also been streamlined substantially. However, as TSI begins a new chapter in its life as a professional society, we also need to focus on some areas that need our urgent attention. We need to make serious efforts in regularizing the publication of our Indian Journal of Tribology, eventually converting it into a fully electronic publication of international standards. We have much work to do in making our Local Chapters very active in their respective locations. Our efforts towards consulting services also require a major boost, so as to enable the Indian Industry to reap the full benefits from sound Tribological practices. Establishing Tribology curricula in engineering colleges and bringing out affordable Tribology text books for Indian students should also be our priority areas in coming years.

I call upon all of you to come forward and contribute your best efforts in making our collective dreams a grand success.

With best wishes,

Dr. Barun Chakrabarti

Secretary - TSI

NEW EXECUTIVE COMMITTEE FOR THE YEAR 2010-12



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For kind attention of all TSI members

“For All Active TSI Life Members- TSI Membership Certificate”

“If you do not possess your TSI Life Membership Certificate for display in your office, please write to us at info@tribologyindia.org with your life membership number and contact e-mail, and we shall be in touch with you for doing the needful”. You can do this on line as well under the following link:

http://tribologyindia.org/contact_us.htm

If you do not have your TSI LM #, please mail your name, organization and Mobile no. and we shall be in touch with you for doing the needful.

Please spread this message to all your colleagues who are members of TSI

7th International Conference on Industrial Tribology (ICIT 2010) — A ROUND UP

The 7th International Conference on Industrial Tribology (ICIT 2010) was organised under the aegis of Tribology Society of India by Research & Development Centre for Iron and Steel (RDCIS), the corporate R&D Centre of Steel Authority of India Ltd. (SAIL), during December 2-4, 2010, at Ispat Bhawan, Ranchi (Jharkhand), India. Theme of the Conference was "Tribology for Steel and Mining Industries". Central Coalfields Ltd. (a unit of Coal India Ltd.) and Centre for Engineering & Technology (the design & consultancy unit of SAIL) were the co-organisers of the Conference. It was sponsored by reputed industries namely SAIL, IOCL, CCL, BPCL, HPCL, Lubrizol, ExxonMobil, Raj Petro, Tata Steel and Balmer Lawrie.

The Conference was inaugurated on December 2, 2010, by Mr R.K. Saha, CMD (CCL) and Chief Guest, in the august presence of Mr S.S. Mohanty, MD (Bokaro Steel Plant) and Guest of Honour. Mr Saha advocated the need of joining hands by various industries like steel and coal to fight against huge loss being made by ineffective tribological practices in these industries. Mr Mohanty emphasised the importance of maintenance in improving reliability of continuously running equipments in heavy industries. The function was addressed by Mr Anand Kumar, former Director (IOC R&D) and the then President (TSI). Mr Kumar highlighted the good work being carried out by TSI and invited practitioners of Tribology to use the platform for advancing the science of friction, wear and lubrication. During the inauguration, the august gathering was welcomed by Mr A.S. Mathur, ED I/c (RDCIS) and Chairman (Organising Committee). In his welcome address, Mr Mathur said that the theme of the Conference, i.e. Tribology in Steel and Mining Industries, was selected keeping in view the fast paced economic growth of India driven by phenomenal demand in infrastructure sector of the country. He further added that innovative solutions to tribological issues in steel and mining industries would play a pivotal role in maintaining the minimal input cost and uninterrupted production schedules in these sectors. The theme lecture of the Conference was presented by Dr Irwin Singer, Physicist of Naval Research Academy, USA. Dr Singer amply discussed the role of third bodies in protective coatings. The inaugural function ended very successfully with vote of thanks presented by Dr D Mukerjee, ED (RDCIS) and Co-Chairman (Organising Committee).

Followed by the inaugural function, a plenary session was organised wherein three eminent tribologists of India delivered their lecture on pertinent topics. Prof. S.K. Biswas of Indian Institute of Science, Bangalore, talked about tribology of a light weight engine alloy. Mr. C Mishra, CEO (ME&TC) & Former GM (Tata Steel), Jamshedpur, delivered his plenary lecture on tribological practices in steel industry. In the third lecture, Dr. G. Sundararajan, Director (ARCI), Hyderabad, spoke on tribological behaviour of engineered coatings. The plenary session was chaired by Mr Anand Kumar, former Director (IOC R&D) and the then President of TSI.

The Conference received excellent response from authors of technical papers. Altogether 117 papers were selected for presentation in the Conference. Full texts of all the papers were included in proceeding which was released on CD. Abstracts of all the papers were printed in a booklet form and distributed along with proceeding CD to all the delegates. Among these, around 100 papers were presented in 15 oral sessions and two poster sessions were organised. The oral technical sessions were divided into three parallel sessions having papers on the following topics: Tribology in steel processing; Tribology in mining; Engine tribology; Tribology in metalworking; Contact mechanics & friction; Design & manufacturing related to tribology; Bearing & gear tribology; Surface treatment & coatings; Tribo testing; Wear mechanism; Bio tribology; Condition based maintenance system; Lubricants & additives; and Computational techniques in tribology. Each session was designed to have one keynote paper followed by 4-5 oral papers. These sessions were chaired by senior members of the tribology fraternity present in the Conference.

In addition to the technical papers, the Conference also provided opportunity to 6 companies for highlighting their business and products in the specially designed two sessions on Manufacturer's Presentation. During these full-house sessions, presentations were made by Shell (India), CSM Instruments (Switzerland), Welding Alloys Asia (India), Raj Petro Specialities (India), PCS Instruments (UK), and IOCL (India). Beside this, technical exhibitions were organised in the Conference wherein the following 17 organisations showcased their products or services: CA Polytech Pvt. Ltd.; Cenlub Systems; Ducom; Ferrocure Machines Pvt. Ltd.; Indian Oil Corporation Ltd.; JK Surface Coatings Pvt. Ltd.; Jyoti Cero Rubber; Labindia Instruments Pvt. Ltd.; Lincoln Helios (India) Ltd.; Mangalam Lubricants Pvt. Ltd.; National Engineering Industries Ltd.; NB Instrument Pvt. Ltd.; NTN Bearing; PCS Instruments; Steel Authority of India Ltd.; Wear resist Technologies Pvt. Ltd.; and Welding Alloys South Asia Pvt. Ltd.

To mark the occasion, a colourful Souvenir was also released in the Conference. It published messages from highly eminent personalities of the country. Profile of sponsoring companies and advertisements from 48 reputed Indian and multinational organisations were also included in the Souvenir.

The ICIT 2010 was attended by around 300 delegates, exhibitors and guests from 7 countries. In addition to this around 100 committee members and volunteers also participated in organising the Conference. Hospitality services were extended to all the participants on all three days during the course of the Conference. After the tiresome technical sessions, cultural programmes were organised in the evening to provide relaxing ambience to the delegates. It included a Kathak dance called "Ghungroo", which was performed by the famous Upasana Centre for Dance, Kolkata. The dance, which was a harmonious amalgamation of grace and vigour of the Jaipur and Lucknow gharanas, was presented by Shri Asimbandhu Bhattacharjee and his team. Participants of the Conference were also entertained by the artists of "Jhankar", a musical group formed by SAIL employees at Ranchi.



Mr R K Saha, CMD (CCL) and Chief Guest lighting the inaugural lamp



Mr. Anand Kumar, President TSI and former Dir. (R&D), IOCL, addressing the participants



Mr R K Saha, CMD (CC) and Chief Guest of the function delivering the inaugural address.



Release of Souvenir, from the left Dr. D Mukherjee, ED (RDCIS); Mr Anand Kumar, President TSI and former Dir (R&D), IOCL; Mr R K Saha, CMD (CCL) and Chief Guest; Mr SS Mohanty, MD (Bokaro Steel Plant) and Guest of Honour; Mr A S Mathur, ED I/C (RDCIS) and Chairman Org. Committee and Dr. Irwin Singer, Physicist Naval research Academy, USA



Theme lecture by I L Singer US Naval Research Laboratory Washitong, USA. On Role of Third Bodies in Protective Coatings



Eminent gathering



Dr Ram Avtar , Org Secy. , honouring Mr A S Mathur , ED I/C RDCIS and Chairman Org Committee

The ICIT 2010 was concluded by a valedictory session which was chaired by Chief Guest, Mr S.N. Singh, Managing Director (Rourkela Steel Plant) and compeered by Mr AK Mehta, ED (TSI). At the outset of this session, Mr A.S. Mathur, ED I/c (RDCIS) & Chairman (Organising Committee), welcomed the chief guest and the august gathering. In his welcome address Mr Mathur exhibited happiness over the excellent deliberations made on various challenging issues in the Conference. Subsequently, Mr R.R. Prasad, DGM (RDCIS) & Technical Secretary (ICIT 2010), summarised the deliberations made in the Conference and also presented the salient scientific outcome of the ICIT 2010. A panel discussion was held in this session wherein three eminent Tribologists, namely Dr Irwin Singer (Naval Research, USA), Dr K.P. Naithani (Indian Oil) and Mr B.K. Das (Tata Steel), presented their view points on three selected topics. During this session awards were also distributed for the best technical papers and the best technical exhibition. The TSI-Indian Oil awards were conferred by the Chief Guest to the following persons in different categories:

- Best oral paper (Basic Research):
 - SM Muzakkir, "Study of lubrication aspects of journal bearing failure in a sugar mill"
- Best oral paper (Applied Research):
 - KK Singh, "A conceptual framework for developing an expert system for selection of tribological materials for steel plant applications"
 - Pradip Subramaniyam, "Lubrication system design of a wind turbine gearbox using system level simulation to improve performance"
 - S Rath, "Estimation of coefficient of friction of cold rolling oil emulsion using mill data and DEFORM software"
- Best poster paper (Basic Research):
 - SK Jha, "Wear characterisation of vanadium micro-alloyed rail"
- Best poster paper (Applied Research):
 - Kamal Mukherjee, "Condition Monitoring of Hydraulic Systems for Heavy Earth Moving Machines (HEMM) used in Open Cast Mines"
- Best exhibitor:
 - NTN Bearing - Shyam Sales Service

The most emotional moment of the concluding session was when TSI announced to honour some of the leading tribologists of India by Life Time Achievement Awards. These awards were conferred for the first time to Dr A Sethuramiah, Former Professor (IIT Delhi), and Dr Har Prashad, Former Sr. Dy.GM (BHEL Corporate R and D), for their enumerable outstanding contributions in the field of Tribology. TSI President greeted Prof Sethuramiah and Dr Prashad in traditional way and handed over them the award plaques.

Finally, valedictory address was delivered by the Chief Guest Mr S.N Singh, MD (RSP). Mr Singh expressed happiness over the deliberations made in the Conference and urged representatives of each participating companies to implement the new knowledge gained by them suitably at their work place. He was confident that implementing the new tribological practices discussed in the Conference will help in improving techno-economic performance of industries as a whole. At the end, Dr Ram Avtar, GM (RDCIS) & Organising Secretary (ICIT 2010), thanked all the persons and organisations who directly or indirectly helped making the Conference a grand success.

Education Course

A one day Education Course on 1st December, 2010 was organised at RDCIS, SAIL, Ranchi prior to 7th International Conference of Industrial Tribology which was held between 2-4 December 2010. Three course namely Basics of Tribology, Condition Based Maintenance System and Wear Resistant Materials and Coatings were organised at three different locations in SAIL office complex and was running parallelly. As many as 49 participants attended these courses. Of which 36 were from industries and 13 students attended from reputed institutions. Six topics in each of the three course were covered by faculties from various educational & research institutes and industries.

In the inaugural session, Dr. D. Mukerjee, ED, RDCIS welcomed the participants, Shri A.K. Mehta, ED, TSI outlined the importance of the education course and threw lights on various facets of the functioning of Tribology Society of India in propagating the cause of tribology education in inviting Indian and foreign experts by regularly holding such courses jointly with STLE of United States of America. Shri A.S. Mathur, ED I/c RDCIS inaugurated the course by lighting the lamp. In his address Shri Mathur outlined the role of tribology in maintenance engineering with special reference to steel industry. Dr A K Mishra, DGM, RDCIS proposed the vote of thanks. Valediction session of all these courses was chaired by Professor B.C. Majumdar, an eminent Tribologist. He addressed to the participants and the recent development in tribological research in Europe. Certificate of participation in the course were handed over to all the participants.



Shri A S Mathur, ED & In-charge, RDCIS inaugurating the educational course



Interactions of participants in Wear Resistant Material & Coatings



Dr.Barun Chakrabarti in Education Programme at ICIT 2010

Your suggestions and short technical notes are invited for the next issue of "TSI News Letter" to har.prashad@gmail.com

TSI LIFE TIME ACHIEVEMENT AWARDS

TSI Executive committee has decided to honor the eminent tribologists in ICIT 2010 based on their outstanding achievement and contribution, international recognition, specific academic credentials, with long professional and research experience besides being a TSI member for a minimum period of five years.

Based on the above criterion, TSI Awards Committee has decided to honor the following Tribologists:

Professor D.V.Singh (in Academia & Research category)
Dr.A.Sethuramiah (in Academia & Research Category)
Dr. Har Prashad (in Industry Category)

Professor D.V. Singh could not come to receive award, he will be honored with award in forthcoming National Conference in Tribology to be held at IIT Roorkee during 8-10 December 2011.

TSI News Letter is proud to congratulate distinguished Indian Tribologists for the commendable contributions in the area of tribology and getting Life Time Achievement Award.

RESUME OF PROF. D. V. SINGH

Education: B.Sc., Allahabad University; B.E. (Mechanical) and B.E. (Civil), University of Roorkee; M.S. and Ph.D., University of Wisconsin, USA.



Employment:

- On Faculty of the University of Roorkee (1958-1990)
- Became Professor in 1967. Held positions of the Head of Department, Dean (Academic) and Dean (Research) in the University.
- Director, Central Road Research Institute (1990-1996).
- Vice Chairman, All India Council for Technical Education.
- Vice Chancellor, University of Roorkee and later the Director of IIT Roorkee (2000-01).

He has published 160 research papers. His research has been recognized by several awards, which include IMDA Silver Jubilee Award, Corps of Engineers, Railway Board Prizes and Mechanical Engineering Design Award of the Institution of Engineers (India), and **Shanti Swarup Bhatnagar Prize**. In December 2003 the Institution of Engineers, in its Engineering Congress, projected Dr. Singh as an Eminent Engineering Personality. He received Jaikrishna Memorial Award of INAE in 2007 and in the same year he also received Distinguished Alumnus Award from IIT Roorkee.

With various distinguish assignments during his professional career, he is an elected Fellow of the Indian Academy of Sciences, the Indian National Science Academy, National Academy of Sciences and Indian National Academy of Engineering (INAE) of which he was the Vice President until Dec.2004. Presently he is a Life Member and an Honorary Member of the Tribology Society of India of which he was the President during 1998-2000.

Work in the Area of Tribology:

Major achievements of Prof. D V Singh in the area of Tribology include his analytical work in solving the involved problems of the flow-fields in the clearance spaces of hydrodynamic and hydrostatic journal and thrust bearings and fluid seals with complexities of the constitutive behavior of lubricants (elastothermopiezo viscous effects and non-Newtonian behavior), geometric features of the confining surfaces (steps, pockets and grooves), superlaminar flow and fluid particle inertia, surface roughness, contaminating particles (micropolar fluids) and elastic deformation of confining surfaces. His studies include wear modeling, study of surface phenomena, Tribological behavior of friction surfaces in brakes, stability of bearings with compressible (air) and incompressible fluids. He strengthened the graduate courses in bearing and lubrication at the University of Roorkee, established a laboratory facility for Tribological testing and wrote a Monograph on Bearing, Lubricants and Lubrication. His innovative work of design of hydrodynamic seals with helix dams with zero leakage of Hydrogen coolant in Turbogenerators received many enquiries from companies in India and abroad. The academic group built by him at Roorkee in the area of Tribology was well known among the peers.

Most of the published papers of Prof. D V Singh are in the refereed journals abroad. His research has been recognized by several national level awards including the Shanti Swarup Bhatnagar Prize in Engineering Sciences. He has delivered several invited learned lectures at national and international forums.

Prof. A. SETHURAMIAH

Dr. **Abhuri Sethuramiah** was born on 21 st Nov 1938. He completed his B.Sc. (Chemical Engineering) Banaras Hindu University, 1958., M.Tech. (Combustion Engineering & Fuel Economy) IIT, Kharagpur, 1959 and D. Eng. (Doctorate in Engineering), Tokyo Institute of Technology, Tokyo, 1973. Starting his career in Indian Institute of Petroleum in 1963, and after working in Hindustan Petroleum and other organisation for short duration, he was retired as a Professor in Tribology from ITMMEC, IIT, New Delhi in June 2001, where he worked from 1984 onwards.

His contribution to tribology was extraordinary. A few significant contributions are:

A book for researchers as well as practitioners in the field of tribology : **Lubricated Wear: Science and Technology under Tribology Series**, Elsevier Publications, U.K in 2003.

- Member Editorial Board of LUBRICATION SCIENCE, Leaf Coppins, U.K till 2007
- An excellent work was done during his headship in ITMMEC, IIT Delhi and as President of Tribology Society of India, he promoted the importance of tribology in general and TSI in particular by his key note address and sponsored projects.



TSI Life Time Achievement Award (TSI- LTAA) being conferred on Prof A Sethuramiah. Seen in the picture are, from left ..Dr Ram Aytar, Org Secy., Mr S N Singh, MD (RSP) and Chief Guest Valedictory Function, Mr. Anand Kumar Pres TSI , Prof A Sethuramiah and Mr. A S Mathur , ED I/C RDCIS.

- Supervised 8 Ph.D thesis. His significant research contributions are in the area of boundary lubrication, mixed lubrication, fatigue wear modeling and engine tribology. He has published many papers in reputed international journals.

Some of his contributions include :

- (i) New technology development for used oil re-refining.
 - (ii) Tribological study of polymers to develop guide lines for Industry, and development polymer pad thrust bearings.
 - (iii) Investigation of different types of friction modifiers.
 - (iv) Investigation of IC engine wear problems.
 - (v) Lubricant condition monitoring, residual life of turbine oils, application of Acoustic Emission to Tribology.
- He has completed 41 reports on industrial investigations.
 - A patent on Jojoba 2-stroke oil and filed a patent for hot rolling oil.

Tribology Society of India is proud to confer hereby , the life Time Achievement Award-2010 in Academia / R&D Category on Prof A Sethuramiah.

DR HAR PRASHAD

Har Prashad was born on 5th July 1944. He joined IISc Bangalore for Engg. but later on getting Govt. of India Scholar ship from ministry of Education, he left for USSR Moscow for M.S. in Power Engineering in 1965 from People Friendship university. He did his PhD while in service in Tribology from Osmania university in 1993 in Tribology.

After working in Indian Institute of Petroleum and Bokaro Steel limited, he joined BHEL Corporate R and D Division at Hyderabad, where he worked for 30 years in the field of Tribology till his retirement in 2004 as a Senior Deputy General Manager Tribology with a short period in Technical Services Division of BHEL, Bhopal. After retirement, he has taken assignment with Centre of Tribology Incorporated USA, as a consultant.

He has immense contribution to the field of Tribology. Some of his significant contributions are:

1. He has set up Tribology Laboratory at the Corporate R&D Division, Hyderabad, particularly design and development of various bearing test rigs for hydrodynamic and rolling-element bearings.
2. He developed energy saving double decker high-precision rolling-element bearings, and established the performance of these bearings both theoretically and experimentally. Taken a patent for the same.
3. He has done significant original work to establish the behaviour of different bearings and lubricants under the influence of electrical current. He has solved various crucial site problems of BHEL
4. He has published 132 technical papers in reputed journal and proceedings. He is in panel of review team of reputed International journals. Life member of various professional bodies.
5. Technical Books :

Three Technical books published by International Publishers namely:

1. Tribology in Electrical Environments by Elsevier, U.K. (2005)
2. Solving Tribology Problems in Rotating Machines by Wood head, U.K. (2006)
3. Integral Approaches to Tribo-testing in Rotating Machines by CRC USA (2009)

Other Books :

- Book on “ Solution of Problems and Remedies of Human Life—A Path of Peace and Enlightenment”, Published in 2010 by Lpp , DK’s Books for all, New Delhi
- “ Japu Ji Sahib and Srimad Bhagavad Gita—A Spark of Enlightenment”, by Lpp NewDelhi. In 2011
- “Queries of Sadhaka/Spiritual Aspirant —In the Path of Spiritual Realization.” (Completed)
- “Spikes of Silence in Silence and by Silence” (In Process).

Contribution to Tribology Society of India :

6. Played active role in establishing Tribology Society of India with register office at BHEL Corporate R and D at Hyderabad.
7. Organising Secretary 2nd ICIT from 1st to 4th Dec 1999, held at BHEL R and D Hyderabad.
8. Joint secretary of TSI, and executive committee EC Member from time to time
9. Delivered Keynote addresses in conferences. Reviewed number of Ph.D. Thesis
10. Editor of TSI News letter for the period 1997-1999.

Tribology Society of India is proud to confer hereby , the life Time Achievement Award-2010 in Industry category on Dr Har Prashad



TSI Life Time Achievement Award (TSI- LTAA) being conferred on Dr. Har Prashad. Seen in the picture are , from left ..Dr. Ram Avtar, Org. Secy. ICIT 2010 , Mr. S N Singh , MD (RSP) and Chief Guest Vaedictory Function , Mr. Anand Kumar Pres TSI , Dr. Har Prashad, Former Sr. DGM (BHEL) and Mr. A S Mathur, ED I/C RDCIS.

Welcome Address by ED I/c (RDCIS) during Vaedictory Session on 04.12.10

Salient points which emerged from the Conference:

1. Solution to tribological problems in heavy industry like steel and mining were discussed in great details. Solutions to such problems were shared for amongst the participants mainly in the area of lubrication application, condition based maintenance system, material selection and coating of high wear prone parts.
2. There were good number of papers from academic institutions and research organizations. These papers dealt with fundamental aspects of Tribology, which also indicates awareness amongst students and researchers.
3. Latest state of the art products and services were showcased during manufacturer’s presentation and exhibition. There was good response between manufacturers and users attending the Conference. The knowledge acquired shall be used in carrying out future research work in the area of Tribology.
4. Some of the emerging areas, like Bio-tribology, was amply discussed during the Conference.

2nd Summer School in Tribology

The 2nd Summer School in Tribology organised by TSI was held during 21-24 June 2010 at IndianOil Institute of Petroleum Management (IIPM), Gurgaon. This was a fully residential programme.

There were 19 participants from Academia and 30 participants from Industry. This was a chargeable programme for industry delegates while members of academia were exempted from paying any registration fees or board-&-lodging charges.

The 4- day program included 20 technical sessions and a 1-day field trip to IndianOil R&D centre at Faridabad.

The Chief Guest of the program was Dr A Sethuramiah, former Prof ITMMEC, IIT Delhi. He delivered an inaugural lecture on the theme "Tribology Education in India-way Forward".



Group photograph of the participants for 2nd Summer School in Tribology



Dr K P Naithani, ED (R&D), delivering Valedictory Lecture "Mission Tribology-Spreading Tribology Awareness Across India"



Karnataka State Award for "Scientists and Engineers" for the year 2008-09 being conferred on Dr. C. S. Ramesh



The Chief Guest of the program was Dr A Sethuramiah, former Prof ITMMEC, IIT Delhi. He delivered an inaugural lecture on the theme "Tribology Education in India-way Forward". Seated on the dais are

Sh K K Gupta, ED IIPM, Dr G K Sharma, Former President TSI, Prof A Sethuramiah and Dr B Chakrabarti, Secy TSI.



Participants being entertained by Gazzal Singers Zamir Ahmad and Ishu Sharma and their team on 22nd June 2010



Dr K P Naithani, giving 'participation certificate' to Mr. Manoj Jareth of NBC during Valedictory session.

CONGRATULATIONS

Dr.C.S. Ramesh, Professor and Key Resource Person, Department of Mechanical Engineering PESIT has been honored with State Awards for Scientists and Engineers for the year 2008 and 2009. TSI News Letter Congratulate our eminent tribologist for this commendable achievement.

As a regular Scholar, he received his PhD in the area of composite coatings from Metallurgical Engineering Department, Indian Institute of Technology, Madras in 1992. He was awarded Sudarshan Bhat Award for the best PhD thesis in that year. With constant efforts in building state of art facilities to promote research coupled with dedicated teaching he was conferred "Best Teacher" for year 2004-05. In the year 2006, he moved to PESIT, Bangalore and currently holds the position of Professor and Key Resource Person in the Department of Mechanical Engineering.

He has been an active researcher in the area of Tribology, Processing and Characterization of Metal Matrix Composites and has contributed significantly in the form of publications in reputed international, national journals and conferences over 75 papers.

He has guided 5 PhDs and is currently executing research projects funded by several government agencies at PESIT, Bangalore. He is the Chairman, Tribology Society of India, Karnataka Chapter.

Mr. Ajay Kumar's Acceptance Speech for Hosting ASIA TRIB-2014 in India

Good Evening Friends

I on behalf of Tribology Society of India would like to thank Prof. Gwidon Stachowiak & all the Asiatrib committee members for accepting our request for hosting the next ASIATRIB International Tribology Congress in our country in 2014.

Just like tribology is a multidisciplinary science uniting people from diverse fields coming together under a single umbrella, India is a country united in diversity of a multitude of cultures, influences and religions. I need not emphasize that Indian tribology continues the country's old, rich historical traditions with multifarious activities in form of active research & organizing Tribology conferences and events right from the year 1972.

Our Traditional Indian hospitality believes in the old Sanskrit phrase "Attithi Devo Bhava", which translates to "Our Guests are comparable to God", so we look forward to heartily welcoming you all with your families and colleagues to enjoy the hospitality of our country. We hope to give you a glimpse of the old, rich and diverse history and architecture of our country, so I would like to personally request you to take some time off from your busy schedule to be able to do this before or after the Congress.

We are excited with this responsibility and plan to organize the next edition in a grand style.

Thank you, once again.

Ajay Kumar
Treasurer, TSI

Delhi TSI Chapter

TSI Delhi Chapter celebrated Tribology Day function on 21st June, 2010. The celebration function was graced by Dr. R.K. Malhotra, Director(R&D), Indian Oil Corporation Limited and President TSI, Dr. Barun Chakrabarti Secretary TSI along with them members from academic institutes and industry. To make the Tribology Day function memorable a foundation day lecture on "Advances in Surface Engineering for Tribological Applications" was delivered by Dr. S.V. Joshi, Associate Director at the International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), Hyderabad - a premier research organization under the Government of India's Department of Science & Technology.

Dr R K Malhotra, while complementing all the TSI members on the occasion spoke on the importance of Tribology. He emphasized upon the need for close linkages between industry, academia and R&D institutions to bring adequate awareness about best tribology practices to reduce avoidable non-productive industry losses. He suggested that Tribology Day programs should be conducted in Industries or academic institutes which would be more informative and beneficial to them. Dr. Malhotra appreciated efforts put in by the Secretary TSI and other members of TSI executive body for spreading awareness of Tribology through Summer School and STLE. The efforts put in for conducting joint program with STLE in India was widely appreciated.



Dr SV Joshi , Associate Director , ARCI , Hyderabad delivering the "Tribology-Day" lecture at a function organised by TSI-DC

The foundation day talk on "Advances in Surface Engineering for Tribological Applications" delivered by Dr. S.V. Joshi, Associate Director, ARCI, Hyderabad evoked immense interest amongst audience. He touched upon various aspects of Surface engineering of different metallurgies suitable for a variety of industrial applications. He also shared information about various coating techniques.

Tribology Research References Quarterly Update an initiative of TSI-DC, which publishes references of important Tribology journals like Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology, Tribology International, Tribology Transactions, Tribology Letters, Wear, Journal Lubrication Science and India Journal of Tribology. These research references were uploaded on the web site of TSI.

Activities of the chapter concluded with the organization of GBM and elections of new executive body on 8th February 2011. The newly elect body of TSI-DC is as follows : Chairman- Dr. K.P. Naithani, Co-Chairman- Dr. R.T. Mookken, Secretary- Dr. S.K. Mazumdar, Joint Secretary - Dr. J. Bijwe, Treasurer- Mr. R. Mahapatra.



DR R K Malhotra ,President TSI and Dir (R&D) , IOCL addressing the "Tribology -Day" function organised by TSI-DC. Seated on the dais from left.. Mr B S Rawat , Chairman TSI-DC, Dr S V Joshi ,Associate Director ARCI , Hyderabad , DR K P Naithani , ED

TSI MAIN NEWS

STATUS OF TRIBOLOGY SOCIETY OF INDIA

The New Society has been registered under Regd.No 197 of 2010-11 dt 8th Dec.2010. Number of Pan Card for New Society is AACAT3031 B, dt.8th Dec.2010.

Registration of TSI is under section 12 A of Income Tax Act as a "Charitable Society" for exemption from payment of Income Tax is being applied for.

8th ICIT 2012

It has been decided that 8th ICIT 2012 will be organized in Western India at Mumbai / Poona Jointly by IOCL, HPCL and BPCL

National Tribology Conference (NTC) 2011

It has been decided that first NTC 2011 will be organized at Indian Institute of Technology Roorkee (IITR) from 8th to 10 December 2011.



Cultural program at ICIT 2010 "Ghungroo"- Kathak Dance by Upasana Centre , Kolkata.