

MESSAGE FROM PRESIDENT



Fellow members of TSI,

I deem it a privilege to have the opportunity to address this communication to you. I thank you for the confidence reposed in me, in electing me as the President of our Society. I cannot but feel humble when I see the illustrious

of eminent personalities who have held this position in the past.

My formal induction into TSI took place in 1996 at the instance of my friend and former colleague Dr J. Bhatia. This happened after a decision was taken by the then Executive Committee under the leadership of Mr Sudhir Singhal, President of the Society, to hold the first international conference (ICIT 1997) at Kolkata to commemorate the silver-jubilee of the commencement of the Tribology movement in India. My employers, Balmer Lawrie & Co Ltd., had, in principle, agreed to conduct the conference on behalf of TSI. Since Dr Bhatia had taken another assignment within our group and was based at Mumbai, he suggested that the responsibility for organising the conference be entrusted to me. I was thus nominated as the Organising Secretary of ICIT 97. It was baptism by fire.

Reflecting the multi-disciplinary character of Tribology, our society is quite unique as a professional body in the sense that it brings together people of diverse technical disciplines from every type of organisation- a variety of industrial organisations, research institutes, academic institutions, services sector, etc. While we benefit from the diversity, which also enriches the development of the science as such, it also poses a challenge to evolve activities of wide interest and progress the charter of the Society. We, the office bearers and other members of the new Executive Committee, propose to draw up a mission for the next two years along with a comprehensive action plan. We would share this with you shortly and with the feedback, support and guidance of our predecessors, the regional chapters and all members, we shall endeavour to implement the same. The mission would encompass

(Contd. on next page)

MESSAGE FROM SECRETARY Let us Hear you – The Tribologist

Dear Tribologist,



This is the first issue of TSI Newsletter since the new Executive Committee of Tribology Society of India took over for year 2005-2007. In a way, it has been an event similar to earlier events from the history pages of TSI. At the end of a biennial conference, a new EC is elected. Many old faces continue with induction of a few new ones. Yes! There are always winning combinations. Let us hope the new EC makes a winning team with you in the lead. There are challenges to be won over – Constitution is to be redrafted in tune with current needs; local chapters are to be revitalized; and overall rapid decline of Tribology education in even premier academic institutions like IITs need to be corrected. There are many more challenges in the minds of all those who call themselves students of Tribology. In 1972, just after six years of the Jost's report, IIT Delhi was host to a truly International conference on Tribology, and subsequently a center of Tribology (ITMMEC) came into existence. Many such activities started in 70s and in later years in the country with much fanfare. But did we reach anywhere near excellence in Tribology education and research? Or we all have learnt the art of politicizing even the science and finally end up like increasing poverty despite the best practices on paper. Then some where down the line, the scientists get together, make NGOs, Societies to support the government initiatives or to further the cause wherever governments fail, but then end up in the glory of their own portfolios. Like poverty gets lip service, Tribology too is in the same category. Failures of elected democracy to honour their deliverables has been quoted often to have roots in the indifferent attitudes of the elected and the electorates.

Can we in TSI escape the inevitable – the indifference of attitudes? Please write to me what you think TSI should do to further the education of Tribology in the country. I assure you that at the EC we are listening carefully to what members suggest and from this will emerge the TSI charter of activities for the year 2005-2007.

With best wishes,

(G K SHARMA)

(Contd. from page 1)

increasing the membership of the society, activating and supporting the regional chapters, increased number of workshops & training programmes, TSI-academia interaction, setting up of a permanent secretariat, regular and frequent communication through Newsletter/Journal etc. We request and welcome suggestions from members in formulating the mission and action plans.

Yours sincerely,

(V Narayan Sharma)

Best PhD Thesis Award

TSI Announces the **Best PhD Award** for the best Doctoral Thesis submitted during the past 5 years related to Tribology i.e. those leading to an award of the Ph D degree after 1st April 2000. Only those who have been awarded the degree may apply. Applications with a brief write up not exceeding 1000 words about the work may be submitted to the Secretary (TSI) by 30th June 2005.

4th International Conference on Industrial Tribology 15th to 18th December 2004 - A Round Up



Chief Guest Mr. MS Ramachandran flanked by Mr. C Mishra President TSI and Dr. NG Kannan Director (M) IOCL, releasing the Proceedings of ICIT-04

The Fourth International Conference on Industrial Tribology was off to flying start on 15th December 2004 at Hotel Hyatt Regency, Mumbai. As you all know the conference is held biennially under the aegis of Tribology Society of India. It is for the first time that the conference was organized by a consortium of four leading industrial faces of India, viz.; Indian Oil Corporation Limited, Bharat Petroleum Corporation Limited, Hindustan Petroleum Corporation Limited and Larsen and Toubro Limited. The conference was spread over four days from 15th December 2004 to 18th December 2004.



Mr. Ramachandran spends a moment with the Press.

The conference was inaugurated by Mr. M S Ramachandran, former Chairman, Indian Oil Corporation Ltd., in a glittering ceremony held in the Regency Ball Room of Hotel Hyatt Regency Mumbai. A number of dignitaries from major industrial organizations as well as Heads of Academic and Research Institutions along with a large number of delegates,

who have come from far and near places in India, and a significant number from abroad, were in attendance during the inaugural function. Mr. Ramachandran briefly touched upon the progress of Tribology globally, and in particular in the Indian scenario. He recalled the contribution made by Mr. Indu Vira, the Founder President of Tribology Society of India, who happened to be a member of IndianOil fraternity. He underlined the need for adoption of good tribological practices and reaping its benefits as envisaged in the Jost report of 1966.

In his Presidential address, Mr. C Mishra stressed the



A Daneuse renders the Saraswati Vandana



Mr. Mukesh Rohtagi, Director (Refineries), BPCL, delivers the Theme Lecture

need for a condition based maintenance programme for Equipment Reliability. He re-emphasized the need for a systematic programme for maintenance of plant equipment to get maximum output from them and their availability for increased production. Tribology has an important role to play in this. The effective maintenance programme will not only increase equipment life but also reduce the cost of production which is so vital in the present times of severe global competitive market.

Mr. Mukesh Rohtagi, Director (Refineries), Bharat Petroleum Corporation Ltd, presented a very informative and thought provoking theme lecture on the theme of "Tribology in Equipment Reliability" which was widely appreciated.

Proceedings of the conference both in CD and hard copy form and Souvenir were released for the delegates by the Chief Guest.

Mementos were given to the dignitaries present on the dais by Mr. C Mishra and Mr. VN Sharma, President and Secretary of the Tribology Society of India respectively.

The Inaugural Session came to an end with a Vote of Thanks from Mr. SK Swaminathan, Organising Secretary, ICIT 04.



Mr. SK Swaminathan, Organising Secretary ICIT-04 proposes Vote of Thanks

Education Courses

On the eve of the Conference on 15th of December 2004, two education courses were organized for the benefit of the members of Industry and educational institutions. The first course on "Basics of Tribology" was coordinated by Mr. A K Mehta, Dr A Sethramaiah, and Mr S J Inamdar. The second course "Automotive Lubrication" was coordinated by Dr GK Sharma and Mr. Mukesh Gupta. Each course had



Mr AK Mehta conducts Basics of Tribology course

about 20 participants. However, this was below the expectation of the organizers. The participants had indicated a high degree of satisfaction with the course content as well as the mode of presentations in their feedback. It is hoped that more and more members and other professionals will participate and benefit from such courses in future.



Dr GK Sharma conducts Automotive Lubrication course



A view of the participants

Enrolment as a Member of Tribology Society of India

You can become a member of Tribology Society of India if you are interested to know the activities of Tribology in India. For this please log into the society website www.tribologyindia.org and submit your application online. Follow the instructions as given thereafter to send your fee and membership regularization.

Appreciation

The Executive Committee of TSI would like to place on record special appreciation to the Organising Committee of ICIT – 04, specially to Mr. SK Swaminathan, the Organizing Secretary and Mr. TL Nanda, Mr. AB Pai, Dr G Vasudev & Dr Barun Chakrabarti, Deputy Organizing Secretaries for organizing the ICIT –04 very successfully in Mumbai.

Technical Sessions

Seven invited key note papers in three plenary sessions and about 60 technical papers in twelve technical sessions were

presented during the conference. In addition to these, 20 technical papers were slated for poster sessions.

Plenary Sessions



Dr Sethuramiah greets Mr. AG Plint of Phoenix Tribology, UK



Dr Sethuramiah greets Mr. MG Poduval of SKF VEC



Mr. Sudhir Singhal greets Dr Har Prashad (ex BHEL R&D)



Mr. C Mishra greets Prof SK Biswas of Indian Institute of Science, Bangalore

Plenary sessions were organised on all three days of the conference

On the first day three key note papers were presented. Dr AG Plint of Phoenix Tribology UK spoke on Recent Advances in Tribo-Testing. Dr Braham Prakash of University of Lulea, Sweden, made a presentation on "Tribology in Sweden". Mr. MG Poduval of VEC, SKF India spoke on the subject of Vibration Analysis Based Condition Monitoring.

On the second day Prof. SK Biswas of Indian Institute of Science, Bangalore spoke on the mechanism of Boundary Lubrication Additives. In his own inimitable manner, Prof Biswas touched upon the progress made so far to understand the complex mechanism of boundary lubrication additives. He specially touched upon the subject of lubrication of aluminum-based engines. Mr SK Wagh of Lubrizol India gave a detailed overview of global research in the area of new generation cost effective lubricating oil additives.

On the third day Dr Har Prashad made a presentation on the new design of high speed rolling element bearings for energy conservation and stability. Dr B Venkataraman of DMRL, Hyderabad gave a talk on new materials for tribological applications.

Advertisement in Indian Journal of Tribology

Indian Journal of Tribology is widely circulated amongst its members in various Indian Industries and Academic & Research Institutions. Industries & Organizations who wish to promote their products can insert advertisements in the journal. The advertisement rates are as given below

- (a) Back Cover Full page (multi Colour):
Rs 15,000/- or US \$ 1000
- (b) Back Inside Cover (multi Colour):
Rs 12500/- or US \$ 800
- (c) Front Inside full page (multi colour):
Rs 12500/- or US \$ 800
- (d) Full page inside (Multi Colour):
Rs 8,000/- or US \$ 500
- (e) Half Page (multi colour):
Rs 5,000/- or US \$ 300

Please contact Mr. V Martin for more details
E Mail: martin@iocrd.co.in ; martin17@yahoo.com

Tribology Society of India

Wish to thank all industry representatives who participated in the Exhibition and Business Meet during the ICIT 04. They also thank the organizations who have inserted their advertisements in the ICIT-04 souvenir.

Technical Papers

A total of eighty papers were presented in the conference during three days of the proceedings. Of these sixty papers were presented in the twelve parallel oral sessions, whereas another twenty were presented in the poster session. 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 three categories viz.: Basic Research, Applied Research and in Poster Session. Following is a brief of the award winning papers.



Prof. H. Hirani presents his paper

Dr H Hirani of Indian Institute of Technology, Bombay presented a paper entitled "Optimizing Groove Arrangement Using Genetic Algorithm". The paper provides a study on the groove geometry (circumferential and axial extent), the location of feeding groove and oil-feed pressure in the cylindrical journal bearing for optimum bearing performance (maximum load capacity, minimum side leakage, and minimum friction loss). Mass



Technical Session chaired by Mr. Ravimohan and Mr S J Inamdar

conserving algorithm is adopted to predict accurate bearing performance. Constraints on minimum film thickness, maximum pressure, and temperature rise are exercised. Multi-objective genetic algorithm, an optimization search method, is described in detail to locate the optimum configuration.



A Section of Delegates

Dr Barun Chakrabarti of L&T Mumbai presented a paper entitled "Role of Bearings in Rotating Machinery Diagnostics". This paper presents two practical examples where major problems in critical machines were traced



Technical Session chaired by Dr BK Prasad and Dr Rupa Dasgupta

to bearing-related causes. The first case study deals with a failure in the generator of a gas turbine-generator unit during commissioning of a power plant. The second case study discusses the vibration problems in a vertical cooling water pump of a power station. In both these examples, the diagnosis could be done using fundamental principles of bearing design



Ms Sitima Otta of IIT Bombay presents her paper.

and operation. As a result, both the machines were successfully put back into service, thus avoiding serious implications of downtime and costs. The paper concludes that bearings often hold the key to successful troubleshooting. Using a systematic approach

based on fundamental tribological principles, one can solve apparently serious machinery problems.

Mr. VK Sukhwani presented a paper in the poster session titled "Experimental evaluation of Torque Characteristics of MR Brake".



Dr Barun Chakrabarti of L&T receives the Best Paper Award from Dr. N. G. Kannan



A Section of Delegates

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, which were organized for the first time in the ICITs. Following companies participated in the business meet :



Dr Norm Gitis of Centre for Tribology greeted by Dr Har Prashad in the Business Meet



Mr. Ponnani of Labcon makes a presentation in the Business Meet

1. Optimol Instruments, Germany
2. Centre for Tribology, USA
3. Labcon , New Delhi, India
4. Phoenix Tribology, UK
5. Spareage, Mumbai, India
6. Unispec, Mumbai, India
7. Tribotech, New Delhi, India

Exhibition

A total of ten exhibitors put up their stalls and displayed their Tribology related products and services which evoked good interest among the delegates and visitors. Following is the list of exhibitors who participated in the conference

1. Centre for Tribology, USA
2. Labcon, New Delhi, India
3. Phoenix Tribology, UK

4. Spareage, Mumbai, India
5. Unispec, Mumbai, India
6. Tribotech , New Delhi, India
7. DUCOM , Bangalore, India
8. Indian Oil Corporation, Mumbai, India
9. Hindustan Petroleum, Mumbai, India
10. Optimol Instruments, Germany



Mr. SK Swaminathan (centre) flanked by Mr. TL Nanda and Mr. C Mishra (right) inaugurates the Exhibition



Dr Ponnani of Labcon receives the Best Exhibitor's Award from Dr. N. G. Kannan



Dr. Ponnani, Dr. T. Singh, Mr. Venkat and Mr. Mukesh Gupta at LABCON Stall



Mr SK Swaminathan visits IndianOil stall

ICIT Awards

1. Award for Best Paper in Applied Research to Dr Barun Chakrabarti of Larsen & Toubro, Mumbai for his technical paper entitled "Role of Bearings in Rotating Machinery Diagnostics".
2. Award for Best Paper in Basic Research to Dr Harish Hirani of IIT Mumbai for his technical paper entitled "Optimizing Goove Arrangement Using Genetic Algorithm".
3. Award for Best Paper in Poster Session to Dr VK Sukhwani of IIT Bombay for his technical paper presented in the Poster session in the conference entitled, "Experimental evaluation of Torque Characteristics of MR Brake".
4. Award for Best Exhibitor was given to M/s Labcon Mumbai for their stall in the exhibition organized during the conference.

Election and Annual General Body Meeting of the Society

Election for the new Executive Committee was held on 17th Dec 2004 by secret ballot. Mr. VP Deshmukh of Indian Oil Corporation was earlier appointed as returning officer for conducting the elections.



Returning officer Mr VP Deshmukh announces the results of the election

The biennial General Body Meeting of the Society was held on 17th December 2004 at 6:30 PM. The meeting was chaired by Mr. C Mishra, President TSI. Mr VN Sharma, Secretary, gave an overview of the activities of the society for the previous two years. He stressed the need for a greater interaction between the 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 NR Raje, Vice President TSI spoke about the need for a greater involvement of Tribologists from various fields of industry as well as academic institutions to enhance the activities of the society. Mr. V Martin, Treasurer, presented the income and expenditure account of the society for the previous two years, which was then passed by the General Body.

The General Body Meeting ended with a vote of thanks from Mr. V Martin, Treasurer, TSI. Mr. VP Deshmukh, the returning officer appointed for conducting the elections declared the results of the election. Following is the list of the office bearers and member of the new Executive Committee.



The new Executive Committee led by Mr. VN Sharma at the mike

New Executive Committee for the year 2005-06

1. Mr. V N Sharma, Balmer Lawrie & Co Ltd., **President**
2. Dr G Vasudev, Bharat Petroleum Corporation Ltd, **Vice President**
3. Dr G K Sharma, Indian Oil Corporation R&D, **Secretary**
4. Dr M R Tyagi, Indian Institute of Petroleum, **Joint Secretary**
5. Mr. Mukesh Gupta, Castrol India, **Joint Secretary**
6. Mr. V Martin, Indian Oil Corporation R&D, **Treasurer**
7. Mr. Ajay Kumar, Indian Oil Corporation R&D, **Joint Treasurer**
8. Prof S K Biswas, Indian Institute of Science, **Member**
9. Dr. R K Pandey, Indian Institute of Technology, Delhi, **Member**
10. Dr Harish Hirani, Indian Institute of Technology, Bombay, **Member**
11. Mr. N M Dube, DUCOM, Bangalore, **Member**
12. Dr Rupa Dasgupta, Regional Research Laboratory, Bhopal, **Member**
13. Dr. Mathew Abraham, Mahindra & Mahindra, Nashik, **Member**
14. Dr Barun Chakrabarti, Larsen & Toubro, Mumbai, **Member**
15. Dr Anand Prabhakaran, Tata Steel Jamshedpur, **Member**
16. Mr. T L Nanda, Indian Oil Corporation, Mumbai, **Member**
17. Mr. KK Chaturvedi, Bharat Heavy Electricals Ltd, R&D, Hyderabad, **Member**

The out going President introduced the new committee to the members present in the GBM.

Subsequently in the first EC meeting of the society, following have been co-opted in the committee as per provision of the constitution..

1. Dr T Singh, BPCL R&D, Mumbai, **Member**
2. Dr Pramod S Mehta, IIT Chennai, **Member**
3. Mr. A Sengupta, Balmer Lawrie, Kolkata, **Member**
4. Dr Sudhir Rashingkar, RCG Instruments, **Member**

Besides, following past two presidents of the society were also inducted into the EC as members.

1. Dr A K Bhatnagar, Hindustan Petroleum Corporation, **Member**
2. Mr. C Mishra, Tata Steel, **Member**

Venue for next ICIT

It was unanimously decided in the AGM that the next ICIT-06 will be held at Bangalore and will be hosted by Indian Institute of Science. Dr SK Biswas will be the organizing secretary. Our good wishes to Dr. Biswas and his team for organizing next ICIT in a wider scale and with larger participation.

Thanks giving

Tribology Society of India wishes to extend its sincere thanks to the following sponsors for supporting the cause of the ICIT- 04 at Mumbai.

- Indian Oil Corporation Limited
- Bharat Petroleum Corporation Limited
- Hindustan Petroleum Corporation Limited
- Standard Greases, Mumbai
- Afton Chemicals, Mumbai
- Lubrizol India Private Limited, Mumbai
- Gulf Oil Corporation , Mumbai
- Tata Steel, Jamshedpur
- L&T, Mumbai

Proceedings of ICIT – 04

A limited number of proceedings of the 4th International conference on Industrial Tribology are available on sale. Those interested to buy these may contact Mr. Ajay Kumar Joint treasurer, TSI. Each copy will cost Rs 1000/-.

Indian Journal of Tribology

Those interested in publishing their technical papers in **Indian Journal of Tribology** published by **Tribology Society of India** may send the full script of their paper in soft copy along with three hard copies to The Chief Editor at the following address

Mr Sudhir Singhal

Chief Editor

Indian Journal of Tribology

14/7, Tegh Bahadur Road, Lane No 4,

Dehradun-248001

Email : singhalsudhir@hotmail.com

Advertisements through TSI Website www.tribologyindia.org

Interested parties can advertise their products related to Tribology through the website of Tribology Society of India. For further details please send your enquiries to the following persons

V Martin, Treasurer or

Mr Ajay Kumar, Joint Treasurer

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At the Registration Desk



The evening show



Ek Rangeen Shaam



Main Shayar to Nahin