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INTERNATIONAL CONFERENCE
ON
INDUSTRIAL TRIBOLOGY

New #22

April 8 - 11, 2002



ICIT - 01

Programme Directory

Organised by :

Tata Steel, Jamshedpur

Under the Aegis of Tribology Society of India

(www.tribologyindia.org)

IMPORTANT TELEPHONE NOS :

TATA Main Hospital : 0657-431035

Police Station Bistupur : 0657-431029

Railway Enquiry : 0657-290112

Banks : Major Banks have their branches and ATM's in Bistupur

Travel Agent : 436333, 431407 (Eastern Travels)

HELP DESK ICIT : 98351 - 95748

35782

16723

80144

JAMSHEDPUR:

This is the place where the foundation of Indian Steel Industry was laid in the beginning of the last century. This city is named after the founder of The Tata Iron and Steel Company, Late Jamshetji Tata and has two names Jamshedpur and Tatanagar.

Jamshedpur is situated in the Dalbhum sub-division of Singhbhum (E) district in the state of Jharkand. It stands on the main railway line connecting Kolkata and Mumbai and is situated at a distance of 251 km from Kolkata. The climate of Jamshedpur is generally dry and manifests heat and cold.

Area : 64 Sq. km

Population : 16.13 lakhs

Altitude : 159m above mean sea level at Tatanagar and 933m above mean sea level at Dalma.

Railway Station : Tatanagar

Aerodrome : Sonari

Temperature : 47.3°C Max. (96-97), 8°C Min. (96-97)

Rainfall : 1322mm (96-97)

Important Rivers : Subernrekha & Kharkai

Important Industries : Tata Steel, TELCO, Tinplate Co. of India, Tata Timken, TRF, Tata Electric Co., Tayo, Tata Cummins, BOC India, Usha Martin, Tata Pigment etc.

PLACES OF INTEREST :

1. **Jubilee Park** : Built on the lines of Vrindavan Gardens of Mysore, Jubilee Park is situated in the heart of city. Dotted with flowerbeds and illuminated fountains, entertainment park, Zoological park, Nursery and Lake this park is spread in some 225 acres.

2. **Sir Dorabji Tata Park:** Manicured lawns and flowerbeds and brilliantly lit fountains give a delightful dash of colour to the park.
 3. **Dimna Lake :** Surrounded by flora and fauna the Dimna Lake is 13 Kms from the city. This is situated at the foot of Dalma Hills and is an ideal picnic spot.
 4. **Hudco Lake :** Snuggled in the picturesque and hilly terrain of Telco Colony, the lake is an enchanting treat for those desirous of being in nature's lap within the city precincts.
 5. **Dalma Wild Life Sanctuary :** The best habitat for the elephants with thick forests spread in some 195 sq. km. It is the place where one can find elephants, barking deers, sloth bears etc.
 6. **J.R.D. Tata Sports Complex :** This magnificent complex has an international size football ground with an eight-lane monosynthetic track. This is one of the best sports complexes in India.
 7. **Keenan Stadium :** This is one of the best cricketing stadium in India. It is situated by the side of J.R.D sports complex.
 8. **Gliding And Flying Clubs :** Offering wide scope for 'extra terrestrial' sporting activities such as gliding and flying side of clubs.
 9. **Tribal Culture Centre :** The Centre showcase the ethos of our local people. Beside imparting vocational training, it also organises tribal festivals and cultural programmes.
- The other sites that attract the tourists are Tata Steel Zoological Park, Rivers meet, the confluence point of the Kharkai and Subernrekha rivers.
10. **Centre for Excellence :** An architectural masterpiece, the centre houses the country's first business archives, outlining the establishment and evolution of Tata Steel. Its three galleries are devoted to J N Tata, the Company's social responsiveness, and technological expertise. The centre also provides a home for numerous professional bodies.

TRANSPORT & COMMUNICATION :

- 1) **Rail :** Tatanagar is an important Railway Station on the South Eastern Railway and is connected directly to all major cities of India like Delhi, Mumbai, Kolkata, Chennai, Pune, Patna, Ranchi and Puri etc.
- 2) **Road :** Jamdhedpur is situated by the side of NH-33 and is connected with most major cities in India.
- 3) **Local Transport :** Mini buses, Taxies and Auto Rickshaws are available in all parts of the city.
- 4) **Communication :** Excellent communication facilities are available all over the city through BSNL & RELAINCE land and mobile telephony. Internet Kiosks are also available at a number of places in the city.

Date	Time	Function	Venue
April 08, 2002	1500 – 1800	Registration	Tata Auditorium, XLRI Campus
	1730 – 1930	Inaugural Function	Tata Auditorium, XLRI Campus
	2000 Onward	Dinner	Beldih Club
April 09, 2002	0730 Onward	Registration	Main Hall, Beldih Club, SNTI
	0800 – 0830	Inauguration of Exhibition	SNTI Lawn
	0900–1100	PLENARY SESSION – I 1. Lubricating Oils and Greases Used in Steel Mills Dr. Georg Lingg, Vice President (Technical), FuchsPetrolub AG, Mannheim, Germany 2. Tribological Behaviour of Detonation Sprayed Coatings Dr G Sundararajan, Director, International Advanced Research Centre for Powder Metallurgy and New Materials(ARCI), Balapur, Hyderabad-500005 3. Prelub Oil System for Auto-Body Panel Manufacturing Process Mr. F.Kubicki, Fuchs Petrolub Germany	Main Hall, Beldih Club
	1100–1130	Tea	SNTI Lawn
	1130–1300	SESSION A1 : Session Chairman : Prof. S. C. Jain Lubrication Studies in Journal Bearing 1. <i>Dynamic characteristics of finite hydro-dynamic porous oil journal bearings in turbulent regime with tangential velocity slip</i> Ashok Kumar, RIT, Jamshepdur 2. <i>Hydrodynamic Lubrication of Diesel Engine Journal Bearings –Practical Limits to Key Performance Factors</i> P S Virdi et al, TTTI, Chandigarh 3. <i>A Simplified inverse solution to the liquid head –disk interface</i> Dr. H Hirani, IIT, Mumbai 4. <i>Experimental Studies on Dynamically Loaded Journal Bearing</i> Dr. H Hirani, IIT, Mumbai	SNTI Auditorium
	1130–1300	SESSION A2 : Session Chairman : Mr. Sudhakar Jha Metal Working Fluids & Greases 1. <i>Evaluation of Boundary Friction in Metal Forming Process.</i> R S Prakash, BITS, Pilani	SNTI Room no-1
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Date	Time	Function	Venue
April 09, 2002		<p>2. <i>Development of Noise Resistant Grease for Various Applications.</i> P Senthivel et al, IOC, Faridabad</p> <p>3. <i>The Roll of ESCA in Understanding the Boundary Lubrication in Tribology</i> M C Jain et al, IOC Limited, Faridabad</p> <p>4. <i>Experimental Studies on Water Lubricated Journal Bearing for Different Groove Configurations.</i> A N Hari Rao et al, S J College of Engg., Mysore</p>	SNTI Room no-3
	1130-1300	<p>SESSION A3 :</p> <p>Session Chairman : Dr. O. N. Mohanty</p> <p>Wear Mechanism, Erosion & Wear of Machine Components</p> <p>1. <i>Mechanism of Material Removal in AL-SiC Composites During Two-Body Abrasive Wear.</i> Dr. S Das et al, RRL (CSIR), Bhopal</p> <p>2. <i>Running -in and Steady State Wear Studies on Cast Iron Cylinder Liner.</i> R Kumar et al, IIT, Delhi</p> <p>3. <i>Studies on Development of Running-in Procedure on Single Cylinder Engine.</i> V R K Sastry, IIP (CSIR), Deharadun</p> <p>4. <i>Effect of Contaminated Lubricant on Turbine Bearing Materials.</i> A Prabhakaran, ITMMEC, Delhi</p>	
	1300-1400	Lunch	SNTI Lawn
	1400-1530	<p>SESSION B1 :</p> <p>Session Chairman : Dr. G. K. Sarma</p> <p>Carbon and Polymer Tribology</p> <p>1. <i>Abrasive Wear Behaviour of Poly (aryl) Ether Ketone Composites.</i> Dr. U S Tiwary et al, IIT, Delhi</p> <p>2. <i>Parametric Studies Related to Static Stiffness of Elastomers to be Used as Dampers for Rotating Systems.</i> V A Kumar et al, NAL - Bangalore</p> <p>3. <i>Studies on Semi Solid Lubricant based on Silahydrocarbon for Space Applications</i> V K Kundra et al, Ministry of Defence, Kanpur</p> <p>4. <i>Design optimization, stress analysis and study of natural frequencies characteristics of carbon fibre epoxy high-speed shaft in aerostatic conical journal bearings.</i> R B. Ingle, GCE, Pune</p>	SNTI Auditorium

Date	Time	Function	Venue
April 09, 2002	1400-1530	SESSION B2 : Session Chairman : Dr. K. P. Naithani Synthetic Oil, Greases and Additives 1. <i>Tribological Characteristics of Certain Antimony Dithiocarbamates as EP and Anti Wear Additives</i> V K Verma et al, BHU, Varanasi 2. <i>Development of Aluminum Complex Grease.</i> S C Nagar et al, IOC, Faridabad 3. <i>Lithium Complex Grease with Extreme Pressure and Water Resistant Properties</i> Dr. T Singh, HPCL, Mumbai 4. <i>Improvement in Performance of Semi-Synthetic Rolling Oil for Cold Reversing Mill.</i> P Pathak, RDCIS, SAIL, Ranchi	SNTI Room no-1
	1400-1530	SESSION B3: Session Chairman : Dr. M. D. Maheswari Wear Mechanism, Erosion & Wear of Machine Components 1. <i>Effect of Experimental Parameters on the Mechanism of Material Removal Under High Stress Abrasive Wears Conditions.</i> R Dasgupta et al, RRL (CSIR), Bhopal 2. <i>A Regression Analysis of Factors Affecting the High Stress Abrasive Behavior of Steel.</i> 3. <i>Influence of Chromium Addition on Mechanical & Abrasive Wear Properties of a Hadfield Steel.</i> TSVC Rao et al, RRL, Bhopal 4. <i>Wear Analysis of Single Point Cutting Tool During Turning of Al-Si-SiC Composite Using Acoustic Emission and Vibration Measurement Techniques.</i> P. Prasad, JCE, Mysore	SNTI Room no-3
	1530-1600	Tea	SNTI Lawn
	1600-1730	SESSION C1: Session Chairman : Dr. M. R. Tyagi Surface Coatings & Tribology of Surface Films 1. <i>Effect of Burnishing on Titanium Alloys.</i> R R Rao et al, KITS, Warangal 2. <i>Coating Selection: A Case Study of Boron Impregnation.</i> S Basu et al, TATA STEEL, Jamshedpur 3. <i>Studies of Scuffing Performance of Surface Treated AISI 4340 Steels</i> Dr. M Mayuram, Dept. of Mechanical Engineering, IIT Madras 4. <i>Salt-Bath Nitro Carburising Process – An Experience to Improve the Performance of Hot Worked Tool Steel at Ring Plant</i> A K Verma, TATA STEEL, Jamshedpur	SNTI Auditorium

Date	Time	Function	Venue
April 09, 2002	1600-1730	SESSION C2 : Session Chairman : Dr. Har Prasad Vibration Diagnostics, Rotor Dynamics 1. <i>Combating Vibration with Mechanical couplings.</i> Dr. A K Mukhopadhyay, ISM, Dhanbad 2. <i>Vibration Diagnostics as Applied to Sugar Factory Machinery.</i> S P Chavan et al, Walchand College of Engg., Sangli, Maharastra 3. <i>Significance of Sensitive Parameters for Dynamical Analysis of Rotor-Bearing Systems</i> B B Maharathi, IGIT, Dhenkanal, Orissa 4. <i>A Calculated Method for the Dynamic Coefficients of Oil Lubricated Journal Bearings.</i> B B Maharathi, IGIT, Dhenkanal, Orissa	SNTI Room no-1
	1600-1730	SESSION C3 : Session Chairman : Dr. A. K. Das Wear Mechanism, Wear of Machine Components 1. <i>Fretting Wear Behavior of SIALON Ceramics.</i> B Basu et al, IIT, Kanpur 2. <i>Electrical Wear of MOP Thrust Bearing of Steam Turbine</i> S Dutta et al, TATA STEEL, Jamshedpur 3. <i>A Theoretical Model for Predicting Small Scale Wear.</i> SK Roy Chowdhury, IIT, Kharagpur 4. <i>Oil and Debris Analysis - A Tool for Condition Monitoring of Heavy Earth Moving Machines.</i> R. P. Sinha, CCL, Ranchi	SNTI Room no-3
	1730-1830	General Body Meeting of TSI	SNTI Auditorium
	1930 Onwards	Cultural Programme and Dinner	BOC Pavilion (Golf Course) Beldih Club
April 10, 2002	0900-1100	PLENARY SESSION – II 1. New Challenges in Tribology. Dr V Siddhartha, Advisor, Secretariat of Scientific Advisor to Raksha Mantri, New Delhi-110011 2. Nanotribology Prof John Pethica, F.R.S., SFI Research Professor, Dept. of Physics, Trinity College, Dublin 2, Ireland 3. The Effect of Fluid Inertia in Hydrodynamic Lubrication Prof B C Majumdar, Professor, Department of Mechanical Engineering, Indian Institute of Technology, Kharagpur	SNTI
	1100-1130	Tea	SNTI Lawn

Date	Time	Function	Venue
April 10, 2002	1130-1300	SESSION D1 : Session Chairman : Prof. B. C. Majumdar Lubrication in Machinery & Forming and EHD Lubrication 1. <i>Effect of Size of a Hole on The Performance of a Capillary Compensated Hole-Entry Hybrid Journal Bearing.</i> Dr. S C Sharma et al, University of Roorkee, Roorkee 2. <i>Modeling of the Effects of Surface Roughness & Polymer Additives on the Elasto Hydro-dynamic Lubrication of Rolling /Sliding Line Contact.</i> Dr. Subrata Ray, IIT, Roorkee 3. <i>Influence of Geometric Sshape of Recess on the Performance of Orifice Compensated Multi Recess Hydrostatic/ Hybrid Journal Bearing</i> Dr. S C Sharma, IIT, Roorkee 4. <i>Influence of Test Parameters on Wear Performance of Zinc-Al Alloys.</i> Dr.B.K.Prasad, RRL(CSIR), Bhopal	SNTI Auditorium
	1130-1300	SESSION D2 : Session Chairman : Prof. S. Ray Tribological Studies in Cutting Tools, Ceramic & Bearing Materials etc. 1. <i>Review on the Friction and Wear Resistance Properties of Metal Matrix Composites</i> S Charles, Kumaraguru College of Tech., Coimbatore 2. <i>Action of Sub Zero Chills on Wear Behavior of Aluminum Alloy-Calcium Particulate Composite.</i> Dr. J Hemanth, SIT, Karnataka 3. <i>Tribological Studies of Y-TZP and Ce-TZP Ceramic-Ceramic Composite.</i> T Sornakumar et al, Thiagarajan College of Engineering, Madurai 4. <i>Toughness and Wear Behaviour of Transformation Toughened Ceramics</i> B Basu, IIT, Kanpur	SNTI Room no-1
	1130-1300	SESSION D3 : Session Chairman : Dr. M. D. Maheshwari Wear Mechanism, Erosion & Wear of Machine Components 1. <i>Improving Abrasive Wear Properties Through Thermal Spraying</i> A K Jha et al, RRL, CSIR, Bhopal	SNTI Room no-3

Date	Time	Function	Venue
April 10, 2002		2. <i>Wear Control Strategy for Steel Plant Hydraulics.</i> P D Mundhra et al, TATA STEEL, Jamshedpur 3. <i>Abrasive Wear Behavior of GFRP Composites: A Microstructural Study.</i> Dr. N Chand, RRL (CSIR), Bhopal 4. <i>Wear Management in Cement Plant.</i> A N Singh et al, ACC, Thane	
	1300 –1400	Lunch	SNTI Lawn
	1400 –1530	SESSION E1 : Session Chairman : Dr. D. Bhattacharya Lubrication in Machinery & Forming and EHD Lubrication 1. <i>Performance of Constant Flow Valve Compensated Hole Entry Hybrid Journal Bearing Including Surface Roughness Effects</i> Dr. S C Sharma, IIT, Roorkee 2. <i>Mill Drive Gearbox- A Challenge for Tribologist.</i> Suresh Kumar et al, TATA STEEL, Jamshedpur 3. <i>Performance of Orifice Compensated Hole - Entry Hybrid Journal Bearing Including Thermal Effects.</i> Dr. S C Sharma, IIT, Roorkee 4. <i>EHD Film Forming Characteristics of Base Oils: Molecular Structure Activity Correlation Studies</i> A S Sarpal et al, IOC Limited, Faridabad	SNTI Auditorium
	1400 –1530	SESSION E2 : Session Chairman : Dr. Sanjay Chandra Wear Debris & Oil Analysis & Study of Wear on Composite Materials 1. <i>Wear Debris Analysis</i> Mong-Ching Lin, CSI, Asia-Pacific. 2. <i>Some Recent Developments in Lubricant Analysis Technology</i> A.S. Sarma, VSRA College of Engineering, Mysore 3. <i>Wear Studies on AL-Si-SiC Composites</i> K Chandrashekara et al, S J College of Engg., Mysore 4. <i>Study of Dry Sliding Wear of Aluminum Fly Ash Metal Matrix Composites.</i> K V Mahendra Adhiyamaan College of Engg., Hosur	SNTI Room no-1

Date	Time	Function	Venue
April 10, 2002	1400 –1530	SESSION E3 : Session Chairman : Prof. G. S. Yadava Predictive Maintenance, Failure Analysis 1. <i>Subcutaneous Asperity Induced Surface Distress in Hertz Contact Components – A Case Study.</i> Dr. M D Maheshwari, TATA STEEL, Jamshedpur 2. <i>Quality Evaluation of Rolling Element Bearings.</i> Dr. Ranjan Sen, CMERI, Durgapur 3. <i>Tribology in Steel Wire Rope.</i> M Mashiruddin, TATA STEEL, Jamshedpur 4. <i>Condition Monitoring Based Preventive Maintenance Programme</i> A. K. Chatterjee et al, TATA STEEL, Jamshedpur	SNTI Room no-3
	1530 –1600	Tea	SNTI Lawn
	1600 –1800	SESSION F1 : Session Chairman : Dr. A. L. Ravimohan Automotive and Power Transmission Lubricants 1. <i>Studies on Development of Running – in Procedure on Single Cylinder Engine.</i> Dr. M R Tyagi, IIP (CSIR), Deharadun 2. <i>Perspectives on Laboratory Evaluation Towards Retionalizing a Medium Speed Diesel Engine Oil for Severe Railroad Service</i> S K Mazumdar et al, IOC, Faridabad 3. <i>Development and Field Evaluation of 2 Stroke Gasoline Engine Oil Containing Fuel Additive and Lubricity Improver for Cleaner Environment.</i> Dr. A K Jain, HPL, Mumbai 4. <i>Tribo – Fatigue Studies of Gear Oil Under Rolling Contact Conditions</i> V R K Sastry, IIP, Dehradun 5. <i>Effect of Various Detergent Systems on the Asphalt Dispersion Characteristics of Trunk Piston Engine Oils.</i> S S V Ramakumar et al, IOC, Faridabad	SNTI Auditorium
	1600–1800	SESSION F2: Session Chairman : Mr. A. K. Mehta Environmental Pollution & Lub. System, Lub. Chemistry & Evaluation 1. <i>Coconut Oil as an Alternative Lubricant for Two Stroke SI Engine – A Performance Study</i> A Kalaiselvan, Pondicherry Engg. College, Pondicherry	SNTI Room no-1

Date	Time	Function	Venue
April 10, 2002	1600-1800	<p>2. <i>Study of Synthetic Esters as Eco Friendly Base Fluid for Steel Cold Rolling Oil.</i> B M Shukla et al, IIPCSI, Dehradun</p> <p>3. <i>Phosphites, Phosphates & Phosphorothionates: Chemistry & Tribology Relationship.</i> A Arora et al, IOC, Faridabad</p> <p>4. <i>Esters Base Stocks in Lubrication – An Overview</i> G Vasudev et al, BPCL, Mumbai</p> <p>5. <i>Technical, Commercial and Marketing Aspects of Environment Friendly Lubricants Emerging Asian & Indian Perspectives</i> J Bhatia et al, Envirotech (India), Delhi</p> <p>SESSION F3 : Session Chairman : Mr. O. B. Krishna Wear in Process Plant & Other Equipment</p> <p>1. <i>Industrially Simulated Experimental Rolling Mill – An Effective Tool for Evaluation of Steel Cold Rolling Oils.</i> S P Dubey, IOC, Faridabad</p> <p>2. <i>Role of Tribology to Improve Performance of HEMM vis-a-vis Energy Conservation – A Case Study from Open Cast Mine of Central Coal Fields Ltd.</i> K Mukerjee, TSI, Hazaribagh, Jharkhand</p> <p>3. <i>Understanding Relationships Between NMR Derived Compositional Parameters and Lubricity of Diesel Fuels</i> G S Kapur et al, IOC, Faridabad</p> <p>4. <i>Latest Solutions for Combating Wear.</i> S G Krishnann, Ador Fontech Ltd., Nagpur</p> <p>5. <i>Wear Resistant Inter –Metallic materials</i> C B Shankar, A F Limited, Bangalore</p>	SNTI Room no-3
	1930 onward	Cultural Programme and Dinner	Picnic Garden Zoo (Jubilee Park)
	0900-1100	<p>PLENARY SESSION - III</p> <p>1. Sliding Wear of Materials Dr. S K Biswas, Indian Inst. of Science, Bangalore</p> <p>2. New International Dimensions-Greases for Steel Mill Bearing Lubrication Mr. Najarain Viken, Total Fina Elf, France & Mr Ramesh Hullur, Total Fina Elf, Mumbai</p> <p>3. Topic To Be Announced Dr. A. K. Bhatnagar, Director, R&D, Indian Oil Corporation</p>	SNTI
April 11, 2002	1100-1130	Tea	SNTI Lawn

Date	Time	Function	Venue
April 11, 2002	1130-1300	SESSION G1 : Session Chairman : Dr. R. P. Sharma Recovery of Used Lubricants, Environment & Energy Aspects 1. <i>Energy Conservation Through Tribology in An Integrated Steel Plant</i> C Mishra, TATA STEEL, Jamshedpur 2. <i>Re-finig of Used Oil - Case Studies</i> Dr. S R Jayaram et al, Malnad College of Engg., Hassan 3. <i>Replacement of Chlorinated Parafins in Metal Working Fluids: Role of Complex Polymeric Esters as an Environmental Friendly Option</i> T S Ravikumar, Lubrizol India Ltd., Mumbai 4. <i>Effective Maintenance of Electrostatic Precipitator for Cleaner Environment</i> Rakesh Ambastha, TATA STEEL, Jamshedpur	SNTI Auditorium
	1130-1300	SESSION G2 : Session Chairman : Mr. V. N. Sarma Lubrication Basics & Lubrication of Mechanical Components 1. <i>Open Gear Lubrication in Cement Plants.</i> P S Natesh, Fuchs-India Ltd., Bangalore 2. <i>A Semi-Analytical Analysis of Static Dynamic Characteristics of Hydrodynamic Journal Bearing.</i> M. Malik, Brunswick, USA 3. <i>Chaotic Vibrations in High -Speed Rolling Elements Bearings</i> S P Harsh, BITS, Pilani 4. <i>Tilting -Pad -Thrust Bearings During Starting and Stopping.</i> Dr. T G Rajaswamy et al, Visakhapattanam	SNTI Room no-1
	1130-1300	SESSION G3 : Session Chairman : Prof. S. K. Biswas Condition Monitoring & Hot Disc Drive Air Bearings 1. <i>Static Analysis of the Hot Disk Drive Air Bearing Slider Using Slip Flow Theory.</i> Dr. T V V L N Rao, BITS, Pilani 2. <i>Analysis & Condition Monitoring of Critical Machines Related to Power Industry.</i> A. P. Pandey, MACT, Bhopal 3. <i>Modeling and Analysis of Circular Journal Bearing Using FE Technique</i> V. Balasubramaniam & A. N. Sinha, IIT, Delhi	SNTI Room no-3
	1300-1400	Lunch	SNTI Lawn
	1445-1600	Valedictory Session	SNTI Auditorium
	1600-1630	Tea	SNTI Lawn

