

7th International Conference on Industrial Tribology (ICIT 2010)

December 2-4, 2010

Ispat Bhawan, RDCIS, SAIL, Ranchi

PROGRAMME

Registration

Auditorium Foyer

December 1, 2010 1500 – 1800 Hrs

December 2, 2010 0800 – 0900 Hrs & 1100 Hrs onwards

December 02, 2010 (Thursday)

INAUGURAL SESSION

Main Auditorium, 0900 – 1100 Hrs

Welcome Address

Chairman (Organizing Committee)

Invocation Song

Children of Delhi Public School, Ranchi

Lighting of lamp

Chief Guest with other dignitaries on dais

Address

President (TSI)

Address

Guest of Honour

Inaugural Address

Chief Guest

Release of Proceedings & Souvenir

Chief Guest

Theme Lecture: Role of third bodies in protective coatings

Dr Irwin L Singer, Physicist, Naval Research Lab, USA

Vote of Thanks

Co-Chairman (Organizing Committee)

Inauguration of Exhibition & Poster Session

Chief Guest

HI-TEA

Auditorium Foyer, 1100 – 1130 Hrs

December 02, 2010 (Thursday)

PLENARY SESSION

Main Auditorium, 1130 – 1300 Hrs

Paper-1

Tribology of a light weight engine alloy

Prof. SK Biswas

Indian Institute of Science, Bangalore, India

Paper-2

Tribology Practices in Steel Industry

C Mishra

CEO (ME&TC) & Former GM (Tata Steel), Jamshedpur, India

Paper-3

Tribological Behaviour of Engineered Coatings

Dr. G. Sundararajan

Director (ARCI), Hyderabad, India

LUNCH

Ground Floor, RDCIS, 1300 – 1400 Hrs

December 02, 2010 (Thursday)

TECHNICAL SESSION – IA

Venue: Main Auditorium, 1400 – 1545 Hrs

TRIBOLOGY IN STEEL PROCESSING

Keynote Paper

Increasing Efficiency & Productivity of Steel Plants Through Proper Lubrication

Naveen Shukla

Exxon Mobil (STLE, USA, Representative)

Oral Paper-1

Root cause failure analysis of spiral bevel gear box of NTM stand #18 of Wire Rod Mill at Tata Steel

Rajesh Mishra, H S Mandal, Dr. Anand Prabhakaran, Vivek Kudva and G.R.P. Singh
TATA STEEL, Jamshedpur, Jharkhand, India

Oral Paper-2

Key Performance Index of Emulsion System at Tandem Cold Mill

AK Marik, N Mondal, P Pathak, AP Singh, DS Gupta, Ram Avatar and D Mukerjee
Research & Development Centre of Iron & Steel, SAIL, Ranchi, Jharkhand, India

Oral Paper-3

An insight into selection of material for improving wear resisting performance of steel plant mechanical equipments

P.K.Swain, S. R.Mohapatra, P.K.Mohanty and Anil Barik
Rourkela Steel Plant, SAIL, Orissa, India

Oral Paper-4

A conceptual framework for developing an expert system for selection of tribological materials for steel plant applications

K.K. Singh, R.R. Prasad, Dr. Ram Avtar and Dr. D. Mukerjee
Research & Development Centre for Iron and Steel, SAIL, Ranchi, Jharkhand, India

December 02, 2010 (Thursday)

TECHNICAL SESSION – IB
Committee Room, 1400 – 1545 Hrs

TRIBOLOGY IN MINING

Keynote Paper

Improvement in availability of underground loading machines by use of advanced fire resistant hydraulic fluid – a case study from coal mines

R K Saha, and M I Alam

CCMC, CCL, Ranchi, Jharkhand, India

Oral Paper-1

Typical un-lubricated wear in HEMM & techno-economic solutions through its surface conditioning - a case study from South Eastern Coalfields Ltd.

A.K.Mishra, I.R.Suryawanshi, Kamal Mukherjee, S.Kumar and P. Kumar

CEWS, Gevra, South Eastern Coalfields Ltd., Bilaspur, Chhatisgarh, India

Oral Paper-2

Reliability assessment of tribological failures helps to suggest better maintenance policy for HEMM – a case study of 85 t dumpers from an open cast mine

Kamal Mukherjee*, R.K.Darad** and D.Kabiraj***

*CEWS, Gevra, SECL, Bilaspur, Chhatisgarh, India, ** CRS,Barkakana, CCL, Ranchi, Jharkhand, India, *** Rajrappa OCP, CCL, Ranchi, Jharkhand, India

Oral Paper-3

Effect of temperature on dynamic characteristics of MR fluid squeeze film dampers

H.P.Jagadish, L.Ravikumar and G.Saravanakumar

BMS Evening College of Engineering, Bangalore, Karnataka, India

Oral Paper-4

Terocote protection on wear prone components utilized in Mining Industry

P.Sasi Anand

EWAC Institute, Larsen & Toubro, Mumbai, Maharashtra, India

December 02, 2010 (Thursday)

TECHNICAL SESSION – IC
Seminar Room, 1400 – 1545 Hrs

ENGINE TRIBOLOGY

Keynote Paper

Automotive Engine oils – trends, issues and significance

R Suresh

Indian Oil Corporation Limited, Mumbai, Maharashtra, India

Oral Paper-1

Study of friction characteristics of a diesel engine running on different viscosity grade engine oils using conventional and acoustic emissions technique

D.Singh*, F.Elamin*, F.Gu*, O.Gilkes*, J.D.Fieldhouse*, A.K.Jain**, Nishan Singh** and S.K.Singal**

*University of Huddersfield, School of Computing and Engineering, UK and **Indian Institute of Petroleum, Dehradun, CSIR, India

Oral Paper-2

Interpretation & analysis of 15W40 grade engine oil viscosity – a case study of 85 ton dumper applications in open cast mine

D.Kabiraj* and Kamal Mukherjee**

*Central Coalfields Limited, Ranchi, Jharkhand, India, **South Eastern Coalfields Limited, Bilaspur, Chhatisgarh, India

Oral Paper-3

Studies for the development of energy efficient top compression piston ring for IC engines

R.K.Pandey, N.Tandon and T.K.Sambharwal

IIT, Delhi, New Delhi, India

Oral Paper-4

Variation in lubrication regime for changes in ring geometry in a multi cylinder IC engine test rig

Ganesh B. Aware, B. M. Sutaria and D. V. Bhatt

S.V.National Institute of Technology, Surat, Gujarat, India

TEA BREAK

Auditorium Foyer, 1545 – 1600 Hrs

December 02, 2010 (Thursday)

TECHNICAL SESSION – IIA
Main Auditorium, 1600 – 1745 Hrs

TRIBOLOGY IN METAL WORKING

Keynote Paper

Tribological investigations during precision forging of hollow polygonal disc

Dr. Surender Kumar and Vikas Kumar

GLA Institute of Technology & Management, Mathura, U.P., India

Oral Paper-1

Roll bite lubrication, benefits and future direction

Peter Gandy

Quaker Chemicals, Australia

Oral Paper-2

Improvement in lubrication system in backup roll bearings in System- A of Tandem Mill - 2 of Bokaro Steel Plant

K.K. Ojha*, Rakesh*, D Kumar* and A K Mishra **

* Bokaro Steel Plant, SAIL, Bokaro, Jharkhand, ** Research and Development Centre for Iron & Steel, SAIL, Ranchi, Jharkhand, India

Oral Paper-3

Managing roll life in hot rolling

Rajeev Baskiyar, Binod Krishna, Daya Shanker Gupta and Ram Avtar

R&D Centre for Iron and Steel, SAIL, Ranchi, Jharkhand, India

Oral Paper-4

Optimization of roll cooling parameters using finite difference method at Plate Mill, RSP

S. K. Thakur*, S. Rath*, A. K. Marik*, P. K. Prusty*, A. P. Singh*, N. K. Khuntia** and P. K. Mishra**

*Research & Development Centre for Iron & Steel, SAIL, Ranchi, Jharkhand, India,

**Rourkela Steel Plant, SAIL, Rourkela, Orissa, India

December 02, 2010 (Thursday)

TECHNICAL SESSION – IIB
Committee Room, 1600 – 1745 Hrs

CONTACT MECHANISM AND FRICTION

Keynote Paper

Aluminium fly ash and SiC metal matrix composite and its wear behavior

K. V. Mahendra *, M. Ramachandra ** and K. Radhakrishna **

*RR Institute of Technology, Chikkabanavara, Bangalore, Karnataka, India and ** B.M.S. College of Engineering, Bangalore, Karnataka, India

Oral Paper-1

A study on the potential of bagasse fiber reinforced polymer composite for tribological applications

Punyapriya Mishra, S.K.Acharya

National Institute of Technology, Rourkela, Orissa, India

Oral Paper-2

Friction wear performance of injection molded asymmetric gears

Ratna Kumar Kommogi, M.S.S. Santosh Kumar, Prateek Kumar and S. Senthilvelan

Indian Institute of Technology, Guwahati, Assam, India

Oral Paper-3

Transient thermo elastic analysis of volvo disk brake

Chiranjit Sarkar* and Harish Hirani**

* Machine Dynamics & Maintenance Engineering Centre, IIT Delhi, New Delhi, India, ** Mechanical Engineering Department, IIT Delhi, New Delhi, India

Oral Paper-4

Debottlenecking of coil yard operation

L. Sreenivas Rao and Vishnu Raj Kharche

JSW Steels, Bellary, Karnataka, India

December 02, 2010 (Thursday)

TECHNICAL SESSION – IIC
Seminar Room, 1600 – 1745 Hrs

DESIGN AND MANUFACTURING

Keynote Paper

Tribology aspects in design and manufacturing specific to nuclear facilities

N.L.Soni

Fluid Power & Tribology, BARC, Trombay, Mumbai, India

Oral Paper-1

Study of wear characteristics of Lechler roll cooling nozzle

Sudhaker Jha, Suresh Vasani and Santosh Chacko

Lechler (India) Pvt. Ltd., Thane, Maharashtra, India

Oral Paper-2

Influence of Rim Thickness on the Tooth Bending Stress of Girth Gear used in Rotary Kiln

Srikant Inje, Gajanan Nirwal, Dr. Barun Chakrabarti and S.V. Herwadkar

Larsen & Toubro Limited, Mumbai, Maharashtra, India

Oral Paper-3

Lubrication system design of a wind turbine gearbox using system level simulation to improve performance

Pradip Subramaniam and Mayank Tiwari

GE India Technology Centre, GRC, Bangalore, Karnataka, India

Oral Paper-4

Temperature-displacement coupled modeling for disc brakes

Ramkumar.E and Mayuram.M.M

IIT Madras, Tamilnadu, India

POSTER SESSION

Auditorium Foyer, 1030 – 1730 Hrs

(List of papers given at the end)

CULTURAL PROGRAMME & DINNER

Auditorium & Community Hall, 1900 – 2300 Hrs

December 03, 2010 (Friday)

TECHNICAL SESSION – IIIA
Main Auditorium, 0900 – 1045 Hrs

BEARING AND GEAR LUBRICATION- I

Keynote Paper

Anand N Bapat
National Engineering Industries Ltd., Jaipur, India

Oral Paper-1

Endurance life testing of indigenously developed high precision M50 Steel bearings

S. Madhu Kiran, M. Solai Raju, N. Rajaram, M. Tamilmani, S. Ganesan and C. Chandrasekaran
Combat Vehicles Research and Development Establishment, DRDO, Chennai, India

Oral Paper-2

Torsional stiffness analysis of a vertical hydro generator tilting pad thrust bearing

Duriseti.V. Srikanth
Bhaskar Engineering College, Moinabad, Hyderabad, Andhra Pradesh, India

Oral Paper-3

Study of lubrication aspects of journal bearing failure in a sugar mill

S. M. Muzakkir*, Harish Hirani*, G. D. Thakre** and M. R. Tyagi**
*Indian Institute of Technology, Delhi, India and **Indian Institute of Petroleum, Dehradun, Uttarakhand, India

Oral Paper-4

Tribological Studies on Aluminium-Tin-Silicon Based Plain Bearing Material

T Rameshkumar*, Dr I Rajendran** and A D Latha***
*Bannari Amman Institute of Technology, Sathyamangalam, Tamilnadu, ** Dr Mahalingam College of Engineering & Technology, Pollachi, Tamilnadu, ***Nandha Engineering College, Perundurai, Tamilnadu

December 03, 2010 (Friday)

TECHNICAL SESSION – IIIB
Committee Room, 0900 – 1045 Hrs

SURFACE TREATMENT AND COATINGS

Keynote Paper

Application of high performance abrasion resistant materials in hammers and screens for coal and coke preparation units of integrated steel plant

Ram Avtar, R.K.Tiwary and A.S.Mathur

Research & Development Center for Iron & Steel, SAIL, Ranchi, Jharkhand, India

Oral Paper-1

High Temperature Abrasion and Erosion of Hard Faced Surfaces

Manish Roy

Defence Metallurgical Research Laboratory, Hyderabad, Andhra Pradesh, India

Oral Paper-2

Genesis of furnace roll pick up and functional requirements for roll coating

S K Mohapatra, A P Singh, D S Gupta and Ram Avtar

R & D Centre for Iron & Steel, SAIL, Ranchi, Jharkhand, India

Oral Paper-3

Tribological performance optimization of electroless Ni-B coating using grey based taguchi method

Suman Kalyan Das*, Prasanta Sahoo

Jadavpur University, Kolkata, West Bengal, India

Oral Paper-4

Improving Wear Performance of Primary Zone Equipments of Steel Plant through Surface Engineering

B.S.Sahu, Gopichand, S.C. Sabat, Anil Barik

Rourkela Steel Plant, SAIL, Orissa, India

December 03, 2010 (Friday)

TECHNICAL SESSION – IIIC
Seminar Room, 0900 – 1045 Hrs

TRIBO TESTING

Keynote Paper

Simulating aluminium cold rolling mill conditions on a standard bench-top instrument

Richard Baker

PCS Instruments, London, UK

Oral Paper-1

Performance study of a shock absorber on a inhouse developed test rig

Satish Purohit*, S.R.Lapalika** and R.K.Porwal*

*SG Institute of Technology and science, Indore, M.P, India and **Indore Institute of Technology and science, Indore, M.P., India

Oral Paper-2

Experimental determination of traction coefficient under starved lightly loaded rolling non-conformal line contact conditions

N. Anandan* and R.K. Pandey**

*Pondicherry Engineering College, Puducherry, India and **Indian Institute of Technology, New Delhi, India

Oral Paper-3

A Rig Test and Novel Approach to Predict Friction and Wear of Piston Ring and Cylinder Liner Tribo Pair

M.M.Mayuram, A. Hemasundararao and A.Ramanaiah

Department of Mechanical Engineering, IIT Madras, Chennai, India

Oral Paper-4

Measurement of interfacial frictional forces during compressive deformation of Al-MMC foam

J. Ghose*, V. Sharma* and S. Kumar**

*Birla Institute of Technology, Mesra, Ranchi, Jharkhand, India and **G.L.A. Institute of Technology & Management, Mathura, U.P., India

VISIT TO EXHIBITION & TEA
Auditorium Foyer, 1045 – 1130 Hrs

December 03, 2010 (Friday)

MANUFACTURER'S PRESENTATION SESSION – I
Main Auditorium, 1130 – 1300 Hrs

Presentation-1

Shell India Marketing

Jason Cao, Shell Global Solutions, China

Presentation-2

CSM Instruments

Gregory Favaro, CSM Instruments, France

Presentation-3

Welding Alloys Asia

S Ghosh, Welding Alloys South Asia Pvt. Ltd., Navi Mumbai, India

LUNCH

Ground Floor, RDCIS, 1300 – 1400 Hrs

December 03, 2010 (Friday)

MANUFACTURER'S PRESENTATION SESSION – II
Main Auditorium, 1400 – 1530 Hrs

Presentation-1

Raj Petro Specialities

Amit Nanavati, Raj Petro Specialities Pvt. Ltd., Chennai, India

Presentation-2

PCS Instruments

Richard Baker, PCS Instruments, London, UK

Presentation-3

Indian Oil Corporation Ltd.

TEA BREAK

Auditorium Foyer, 1530 – 1545 Hrs

December 03, 2010 (Friday)

TECHNICAL SESSION – IVA
Main Auditorium, 1545 – 1730 Hrs

WEAR MECHANISM

Keynote Paper

Sub-surface strain hardening during sliding wear of Ni-Cr-Mo-V steel with respect to different microstructures

Dr D. Rai

RDCIS, SAIL, Bhadrabati Centre, Bhadrabati, Karnataka, India

Oral Paper-1

Tribological behaviors of Leaded Phosphor Bronze under dry and water lubricated conditions

Neelima Khare, P.K.Limaye, N.L.Soni, M.K.Mishra and D.N.Badodkar

BARC, Trombay, Mumbai, Maharashtra, India

Oral Paper-2

Friction and wear performance of dry lubricants under boundary lubrication regime

Aravind Vadiraj*, M. Kamaraj** and Sreenivasan V. S.*,

*Ashok Leyland Technical Center, Vellivoyalchvadi, Chennai, Tamilnadu, India

**IIT Madras, Chennai, Tamilnadu, India

Oral Paper-3

Study of wear of EN-31 steel under unlubricated conditions

M.R. Tyagi*, G.D. Thakre*, Navdeep S. Chahal** and Kulwant S. Dhanoa**

* Indian Institute of Petroleum (CSIR), Dehradun, Uttarakhand, India, ** National institute of Technology, Jalandhar, Punjab, India

Oral Paper-4

Wear characterization of austempered ductile iron

P.K. Bandyopadhyay, S.K. Sen and D. Mukherjee

Research and Development Centre for Iron and Steel, SAIL, Ranchi, Jharkhand, India

Oral Paper-5

Improved life of conveyer idler

Manoj Kumar

Jyoti Cerro Rubber, Jamshedpur, Jharkhand, India

December 03, 2010 (Friday)

TECHNICAL SESSION –IVB
Committee Room, 1545 – 1730 Hrs

BEARING AND GEAR LUBRICATION - II

Keynote Paper

A “systems approach” for performance evaluation of open gear lubricants

Dr. Barun Chakrabarti and S. V. Herwadkar

R&D – E&C Division, Larsen & Toubro Limited, Mumbai, Maharashtra, India

Oral Paper-1

Experimental determination of traction coefficient under starved lightly loaded rolling non-conformal line contact conditions

Vikas M. Phalle, Satish C. Sharma and C. Jain

Indian Institute of Technology, Roorkee, Uttarakhand, India

Oral Paper-2

Increase in life expectancy of work roll bearings in Tandem Mill II of Bokaro Steel Plant

A.K. Mishra*, G Bhattacharya** and KK Ojha**

* Research and Development Centre for Iron & Steel, SAIL, Ranchi, Jharkhand, India,

** Bokaro Steel Plant, SAIL, Bokaro, Jharkhand, India

Oral Paper-3

Influence of journal misalignment and wear on the performance of constant flow valve compensated non-recessed hybrid journal bearing operating in turbulent regime

Nathi Ram, Satish C. Sharma and S.C. Jain

Indian Institute of Technology, Roorkee, Uttarakhand, India

Oral Paper-4

“Planetary Gear Drives” – Overview of Energy Efficient Drives for Sugar Mill Application

S. R. Durugkar

R&D – E&C Division, Larsen & Toubro Limited, Mumbai, Maharashtra, India

December 03, 2010 (Friday)

TECHNICAL SESSION –IVC
Seminar Room, 1545 – 1730 Hrs

BIO TRIBOLOGY

Keynote Paper

Recent advancements in development of biodegradable greases

Ranjit Panesar*, Dr. J. Bhatia** and Sukumar Mahanti**

*Proventus (UK) Ltd., Leeds, United Kingdom, **Raj Petro Specialities Pvt. Ltd. Chennai

Oral Paper-1

Tribocorrosion assessment of biomedical alloys: influence of chemical and electrochemical parameters

Stefano Mischler, C. Stähli, J. Stojadinovic,
EPFL, Station 12, CH-1015 Lausanne, Switzerland

Oral Paper-2

Study of lubricity characteristics of non-edible vegetable based bio-lubricant and low SAP engine lubricants

Devendra Singh, A.K.Singh, Nishan Singh and S.K.Singal
Indian Institute of Petroleum, Dehradun, CSIR, Uttarakhand, India

Oral Paper-3

Comparison of sliding tribocorrosion and fretting corrosion behavior of Ti-13Nb-13Zr in physiological solution

N.S. More*, S.N. Paul**, N. Diomidis***, S. Mischler*** and Manish. Roy****

*RC Patel Institute of Technology, Shirpur: 425 005, Maharashtra, India, **Visvesvaraya National Institute of Technology, Nagpur, Maharashtra, India, *** EPFL, Station 12, CH-1015 Lausanne, Switzerland, ****Defence Metallurgical Research Laboratory, Hyderabad, Andhra Pradesh, India

Oral Paper-4

Studies on Cup Profile Thickness variation of Deep Drawn 304L Sheets using Green Lubricants

S.R.Jayaram and Y.M.Shashidhara
Malnad College of Engineering, Hassan, Karnataka, India

POSTER SESSION

Auditorium Foyer, 1030 – 1730 Hrs
(List of papers given at the end)

CULTURAL PROGRAMME & DINNER
Community Hall, 1900 – 2300 Hrs

December 04, 2010 (Saturday)

TECHNICAL SESSION – VA
Main Auditorium, 0900 – 1100 Hrs

CONDITION BASED MAINTENANCE SYSTEM (CBMS)

Keynote Paper

Condition monitoring and reliability analysis of rolling-element bearings

Dr. Harprasad

Consultant, Centre for Tribology (CETR), USA

Oral Paper-1

Detection of bearing fault for equipment running at slow speed

Chiranján Mandal*, Ravi Ranjan Prasad*, Arun Kumar Samantaray** and Ranjan Bhattachayya**

*R & D Centre for Iron & Steel, SAIL, Ranchi, Jharkhand, India, **IIT Kharagpur, West Bengal, India

Oral Paper-2

Oil analysis program as a tool for continued airworthiness assurance of aeroengines

Amarnath Kosgi and S K Jha

Centre for Military Airworthiness and Certification, Ministry of Defence (R&D), Bangalore, Karnataka, India

Oral Paper-3

An improved bearing condition monitoring technique for online fault stimulation

Amandine Bernier and S. Swarnamani

IIT Madras, Tamilnadu, India

Oral Paper-4

Integration of Acoustic Emission technique and Oil analysis for condition monitoring of super slow rotating machineries

Alok Kumar Mukherjee, Nitesh Ranjan and Banibrata Mukherjee

Bokaro Steel Plant, Steel Authority of India Limited, Bokaro, Jharkhand, India

Development of condition monitoring system for rolling stands of Rail Mill, Bhilai Steel Plant

Oral Paper-5

Deepak Kumar*, Anup Prasad*, Vikas Kumar*, Archana Sharan*, R Pawar, Prashant Lakhe**, Usha Rani*, S Majumdar* and S R Singh****

*R& D Centre for Iron & Steel, Steel Authority of India Limited, Ranchi, Jharkhand, India

**Bhilai Steel Plant, Steel Authority of India Limited, Bhilai, Chhattisgarh, India

December 04, 2010 (Saturday)

TECHNICAL SESSION – VB
Committee Room, 0900 – 1100 Hrs

LUBRICANTS AND ADDITIVES

Keynote Paper

Molecular engineering of a high performance synthetic base stocks by spectroscopic techniques

A. S. Sarpal

IOCL, Research & Development Centre, Sector-13, Faridabad, Haryana, India

Oral Paper-1

Steel plant lubrication trends - experiences at Tata Steel

G.R.P. Singh and B.K. Das

Tata Steel, Jamshedpur, Jharkhand, India

Oral Paper-2

Studies on the effect of cerium oxide nanoparticle as an anti-wear lubricant additive using Taguchi Technique

Shyam K Sharma, Arun K Nirala and S. Kanagaraj

Indian Institute of Technology, Guwahati, Assam, India

Oral Paper-3

Attempts towards addressing the customer demands in drawing lubricants

P.V. Joseph, Deepak Saxena, Pankaj Bhatnagar, R.T. Mookken, K.P. Naithani and R.K. Malhotra

IOCL, Research & Development Centre, Sector-13, Faridabad, Haryana, India

Oral Paper-4

Performance study of an eco-friendly roll pass lubricant

Dr. M.L.Das*, M.C.Dash*, Dr. B.Ghosh*, K.Gopinathan*, D.S.Gupta** and Kundan Prakash**

*Balmer Lawrie & Co. Ltd, Kolkata, West Bengal, India and ** R&D Centre for Iron & Steel, SAIL, Ranchi, Jharkhand, India

Oral Paper-5

Disposal of Lubricating Oil Sludge by Bioremediation at Bokaro Steel Plant

Darshan Keshari*, Subrat Kumar Panda**, H.K. Ganguly***, Dr. M.P. Singh**** and Dr. Manoj Upreti*****

*IOCL, Bokaro, Jharkhand, India, **IOCL, Bihar State Office, Bihar, India, ***IOCL, CTSM, Mumbai, Maharashtra, India, ****IOCL, R&D Centre, Faridabad, Haryana, India

December 04, 2010 (Saturday)

TECHNICAL SESSION – VC
Seminar Room, 0900 – 1100 Hrs

COMPUTATIONAL TECHNIQUES IN TRIBOLOGY

Keynote Paper

Dang-van fatigue life model for porous steels

N. Govindarajan

TATA Consultancy Services Ltd., SIPCOT IT Park, SEZ, Siruseri, India

Oral Paper-1

Artificial Neural Network modeling of fractal dimension in CNC milling of mild steel material and comparison with RSM

T. K. Barman and P. Sahoo

Jadavpur University, Kolkata, West Bengal, India

Oral Paper-2

Estimation of coefficient of friction of cold rolling oil emulsion using mill data and DEFORM software

S.Rath, A.K.Marik, P.Pathak, A.P.Singh, D.S.Gupta and Ram Avtar

Research & Development Centre for Iron & Steel, SAIL, Ranchi, Jharkhand, India

Oral Paper-3

Optimization of friction performance of Al-5%SiC metal matrix composite using Taguchi Method

Shouvik Ghosh, Rabindra Behera, Goutam Sutradhar and Prasanta Sahoo

Jadavpur University, Kolkata, West Bengal, India

Oral Paper-4

Finite element based unloading of a deformable sphere loaded against a rigid flat – effect of varying material properties

Biplab Chatterjee and Prasanta Sahoo

Jadavpur University, Kolkata, West Bengal, India

Oral Paper-5

Fault diagnosis of rolling element bearings using artificial neural networks and self organizing maps using complex morlet wavelet

P. K. Kankar, Satish C. Sharma and S. P. Harsha

Indian Institute of technology, Roorkee, Uttarakhand, India

TEA BREAK

Auditorium Foyer, 1100 – 1115 Hrs

December 04, 2010 (Saturday)

CONCLUDING SESSION
Main Auditorium, 1115 – 1245 Hrs

Welcome address

Brief of ICIT 2010

Panel Discussion

ICIT Awards

TSI Life Time Achievement Awards

Valedictory Address

Vote of thanks

LUNCH
Ground Floor, RDCIS, 1300 – 1400 Hrs

December 02 and December 03, 2010 (Thursday and Friday)

POSTER SESSION
Auditorium Foyer, 1030 – 1730 Hrs

P01

A capillary compensated hole-entry hybrid misaligned journal bearing operating in turbulent regime

Nathi Ram, Satish C. Sharma and S.C. Jain
Indian Institute of Technology, Roorkee, Uttarakhand, India

P02

Comparative study of wear behavior of AISI 1040 and AA 6061 with boric acid as solid lubricant

S.L. Dinesh and S.R. Jayaram
Malnad College of Engineering, HASSAN, Karnataka India

P03

Wear characterization of lantana-camara fiber reinforced epoxy composites in multi-pass abrasive wear applications

Chittaranjan Deo*, S.K.Acharya* and Chandrakanta Mishra**
*NIT, Rourkela, Orissa, India, **SIET, Dhenkanal, Orissa, India

P04

Wear control in hot rolling rolls through improved roll cooling technology in Hot Strip Mill, Bokaro Steel Plant

N. Mondal, P. Pathak, A. K. Marik, A.P.Singh, D.S. Gupta , A.K.P. Singh and Ram Avtar
Research and Development Centre for Iron and Steel, SAIL, Ranchi, Jharkhand, india

P05

Mechanism of roll pass wear in shape rolling and measures to improve roll pass life in SAIL long product mills

S.Dutta, R.Topno, S.K.Jha, S.Kumar, B.Krishna and D.S.Gupta
R & D Centre for iron & Steel, SAIL, Ranchi , Jharkhand, India

P06

Multicylinder IC engine performance studies under different lubricants- a case study

Ganesh B. Aware, Atul S. Shah, B. M. Sutaria and D. V. Bhatt
S.V.National Institute of Technology, Surat, Gujarat, India

P07

Water: An eco friendly medium for fluid power systems

Saurabh B. Pandharikar and N. L. Soni
Bhabha Atomic Research Centre, Mumbai, Maharashtra, India

P08

Field evaluation of heavy duty broaching oil

S. Paul, S. Arunagirisamy, J.N. Pandey, D. Saxena, R.T.Mookken , K.P. Naithani and R.K. Malhotra
IOCL, Research & Development Centre, Faridabad, Haryana., India

P09

Vibration signature analysis of rolling element bearing due to defects

S. H. Upadhyay^{*}, S. C. Jain^{**} and S. P. Harsha^{**}

^{*}Sardar Vallbhbhai Patel Institute of Technology, Vasad, Uttarakhand, India and ^{**}Indian Institute of Technology, Roorkee, Uttarakhand, India

P10

Integrated monitoring system for reliability improvement of HEMM with indigenously developed software – a case study on 120t, rear dump truck of south eastern coalfields limited

K K Varma and G K Dwivedi

Gevra, Korba, Chattishgarh, India

P11

Oil condition monitoring techniques for extending life of lubricant and critical machines in steel plant

R.B.Choudhary, A.K.Mishra and R.R.Prasad

Research and Development Centre for Iron and Steel, SAIL, Ranchi, Jharkhand, India

P12

Study on effect of roll bite lubrication on rolling parameters of hot strip mill

P Pathak^{*}, N Mondal^{*}, AK Singh^{**}, SK Jha^{***}, AP Singh^{*}, DS Gupta^{*} and R Avtar^{*}

^{*}RDCIS, SAIL, Ranchi, Jharkhand India, ^{**}Bokaro Steel Plant, SAIL, Bokaro, Jharkhand, India, ^{***}Birla Institute of Technology, Ranchi, Jharkhand, India

P13

Life enhancement of roll bending and balancing cylinders in Tandem Mill-II of Bokaro Steel Plant

Rakesh^{*}, P.Pathak^{**}, K.K.Ojha^{*} and N.Mondal^{**}

Bokaro steel Plant, SAIL, Bokaro, Jharkhand, India, Research & Development Centre for iron & Steel, SAIL, Ranchi, Jharkhand, India

P14

Experimental investigation of lives of ball bearings at higher level of reliabilities

N. C. Murmu

Central Mechanical Engineering Research Institute, Durgapur, West Bengal, India

P15

Production and quality control of rim quenched and tempered wear resistant wheels at Durgapur Steel Plant

D. K. Jain, S. K. Jha and D S Gupta

Research & Development Centre for Iron & Steel, SAIL, Ranchi, Jharkhand, India

P16

Condition Monitoring of Hydraulic Systems for Heavy Earth Moving Machines (HEMM) used in Open Cast Mines

Kamal Mukherjee

CEWS, Gevra, South Eastern Coalfields Ltd., Bilaspur, Chhattisgarh, India

P17

Tribological and radiation evaluation of natural PEEK

Neelima Khare, P.K.Limaye and N.L.Soni

BARC, Trombay, Mumbai, Maharashtra, India

P19

A multi asperity model for contact between a smooth sphere and a rough flat in presence of adhesion

Anirban Mitra, Prasanta Sahoo and Kashinath Saha
Jadavpur University, Kolkata, West Bengal, India

P20

Effect of stacking sequence on the erosive wear behaviour of jute and jute-glass fabric reinforced epoxy composite

S.K.Acharya*, B.C.Patel** and D.Mishra***
*National Institute of Technology, Rourkela, Orissa, India, **SEC, Sundargarh, Orissa, India, ***VSSUT, Burla, Sambalpur, Orissa, India

P21

Prevention of wear by surface modification

Dr. Surender Kumar
GLA Institute of Technology, Mathura, U.P., India

P22

Enhancing efficiency of Circular Hot Saw in Rail and Structural Mill

Kundan Prakash*, D.S. Gupta**, Sanjeev Kumar**, S.K. Jha** and A.V. Kamlakar***
*R&D Centre for Iron & Steel, SAIL, Bhilai Centre, Bhilai Steel Plant, Bhilai-49000,
R&D Centre for Iron & Steel, SAIL, Ranchi-834002, *Rail & Structural Mill, Bhilai Steel Plant, SAIL, Bhilai-490001

P23

Numerical studies for the combined use of oils and emulsions in the cold rolling of metallic strips

R.K.Pandey
IIT Delhi, New Delhi, India

P24

Characterization of self-assembled monolayers (SAMS) of lubricant additive systems on steel surfaces – VT grazing angle IR studies

M. I. S. Sastry, Gaurav Kala, V. Kagdiyal and A. S. Sarpal
IOCL, Research & Development Centre, Faridabad, Haryana, India

P25

Tribological conceptual ranking of automotive engine oil

M.T.Patel, B. M. Sutaria and D. V. Bhatt
Sardar Vallabhbhai National Institute of Technology, Ichchhanath, Surat, Gujarat, India

P26

Wear characterisation of vanadium micro-alloyed rail

S K Jha, S Kumar, K Prakash, Dr. A K Mishra and D S Gupta
Research & Development Centre for Iron & Steel, SAIL, Ranchi, Jharkhand, India

P27

Experimentation for finding the frictional torque of high precision deep groove ball bearings

N.Rajaram, S.Madhu Kiran, M.Solai Raju, M.Tamilmani, S.Ganeshan and C.Chandrasekharan
Combat Vehicles Research & Development Establishment, DRDO, Chennai, India

P28

Tribology – Fundamental aspects of friction, wear and lubrication

A.N.Jha and S.C.Vishwakarma
CCL, Ranchi, Jharkhand, India

P29

Accelerated life testing of high speed deep groove ball bearings

M.Solai Raju, N.Rajaram, S.Madhu Kiran, M.Tamilmani, S.Ganesan and
C. Chandrasekaran
Combat Vehicles Research and Development Establishment, DRDO, Chennai,
Tamilnadu, India

P30

Evaluation of Deep drawing Oil Using a Four Ball Tribo-tester

B. D. Bachchhav*, Dr. H. Bagchi* and Dr. (Mrs.) Geeta Lathkar**
*Sinhgad College of Engineering, Pune, Maharashtra, india and **MGM's College of
Engineering, Nanded Maharashtra, india

P31

Conceptual Design of MR Brake

Chiranjit Sarkar, Dr. Harish Hirani,
IIT Delhi, New Delhi, India

P32

Performance evaluation of a hydrodynamic tilting pad thrust bearing used in a coal pulverizer

Srikant Inje, Naveen Kurandwad, Dr. Barun Chakrabarti and S.V. Herwadkar
Larsen & Toubro Limited, Mumbai, Maharashtra, India

P33

Tribological Performance Analysis of Polymer Composite Bearing Materials

Prasad M Patare
SRES College of Engineering, Kopergaon, India

P34

Global Challenges Related to the Use of Biofuels and Tribological Issues

Pinaki Mondal*, U. D. Bhanagale* and Dinesh Tyagi**
*International Center for Automotive technology, IMT, Manesar, Gurgaon, U.P, India

P35

Erosion pattern of materials in rotating slurry pot testing machine: a critical study

Meraj Ahmed, A.K.Majumder, A.K.Jha and Ranjana Batham
Advanced Materials and Processes Research Institute (CSIR), Bhopal, India

P36

Improved design of tilting - pad thrust bearing for the operation of reversibility in large motors

B. Ravi*, T.G. Rajaswamy**, B. Balu Naik and G. SuryaprakashRao*
*SBIT, Khammam, Andhra Pradesh, India; **Maheswara Engineering College,
Hyderabad, Andhra Pradesh, India ***JNTUH, Hyderabad, Andhra Pradesh, India

December 02 and December 03, 2010 (Thursday and Friday)

P37

Wear Behaviour of Nitrided 316LN Grade Austenitic Stainless Steels

T. Kumar^{*}, M. Gopal^{**}, S. Venugopal^{***} and A. Rajadurai^{****}

^{*}SRM University, Chennai, Tamilnadu, India, ^{**}DMI College of Engineering, Chennai, Tamilnadu, India, ^{***}Indira Gandhi Center for Atomic Research, Kalpakkam, Tamilnadu, India, ^{****} ANNA University, Chennai, Tamilnadu, India

P38

Friction and wear behaviour of rice husk (RH) ceramic reinforced epoxy composite

S.P.Samantarai, S.K.Acharya and G.Raghavendra
NIT, Rourkela, Orissa, India