PROGRAMME

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
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
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
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
*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, Chhattisgarh, 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
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
*Research & Development Centre for Iron & Steel, SAIL, Ranchi, Jharkhand, India, **Rourkela Steel Plant, SAIL, Rourkela, Orissa, India
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. Senthivelan
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
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
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
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
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.Lapalikar** 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
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
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
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
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
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
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
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
Chiranjan 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

**Oral Paper-5**
Development of condition monitoring system for rolling stands of Rail Mill, Bhilai Steel Plant
*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
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
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
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
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, Rabinbda 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
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

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

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

Wear control in hot rolling rolls through improved roll cooling technology in Hot Strip Mill, Bokaro Steel Plant
Research and Development Centre for Iron and Steel, SAIL, Ranchi, Jharkhand, India

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

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

Water: An eco friendly medium for fluid power systems
Saurabh B. Pandharikar and N. L. Soni
Bhabha Atomic Research Centre, Mumbai, Maharashtra, India

Field evaluation of heavy duty broaching oil
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 Vallabhbaai 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
December 02 and December 03, 2010 (Thursday and Friday)

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
*R&D Centre for Iron & Steel, SAIL, Bilai Centre, Bilai Steel Plant, Bilai-49000, **R&D Centre for Iron & Steel, SAIL, Ranchi-834002, ***Rail & Structural Mill, Bilai Steel Plant, SAIL, Bilai-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 Vallabhnbhai 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
Combat Vehicles Research & Development Establishment, DRDO, Chennai, India
December 02 and December 03, 2010 (Thursday and Friday)

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Tribology – Fundamental aspects of friction, wear and lubrication
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