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# NATIONAL CONFERENCE ON INDUSTRIAL TRIBOLOGY

HOTEL OBEROI GRAND, CALCUTTA

7-8, September 1981



## PROCEEDINGS

Organised by:

- INDIAN OIL CORPORATION LIMITED

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#### TECHNICAL SESSION—IV : BEARING DESIGN AND PERFORMANCE

- Papers
1. Role of oil in the reliable operation of cylindrical Bearing  
—Harprasad & Laxmi Ramnathan
  2. Limiting speeds for rigid and flexible rotors supported on three-Lobe journal bearings  
—B.K. Gupta & Ajeet Singh
  3. Static and Dynamic performance characteristics of compliant shell Journal Bearing  
—S.C. Jain, R. Sinhasan & D.V. Singh
  4. Computer aided design of Precision Machine tool Bearings  
—R.C. Ghai
  5. Analysis of Hydrodynamic Journal Bearings having Non-Newtonian Lubricants (Eyring Model) by a finite element method  
—S.P. Tayal, R. Sinhasan & D.V. Singh
  6. Elastohydrodynamic Lubrication of Journal Bearing  
—C. Mishra, B.C. Majumdar & N.S. Rao

#### TECHNICAL SESSION—V : SPECIAL INSTRUMENTAL TECHNIQUES

- Papers
1. Contributions of Instrumental analytical techniques towards understanding and solving Tribological Problems  
—N.C. Saha
  2. Nuclear Activation Methods in Wear Analysis  
—S. Gangadharan
  3. Criteria for change of Lubricating oils based on Ferrography  
N. Santanam, K.K. Chaturvedi & S. Biswas
  4. Condition Monitoring of Antifriction bearings  
—S.K. Verma & K. Ganapathi
  5. Prediction of Journal Bearing failures using non-Contact Eddy Current Probes—Experimental investigation on Journal Bearing Test Rig  
—S.K. Verma & K. Dargaiah
  6. Evaluation of Antioxidants in Lubricating oils by Differential Thermal Analysis and Infrared Spectroscopy  
—A.K. Biswas, B.D. Chattaraj, I. Suryanarayanan & V.S.B. Rao
  7. Identification of metal soaps in grease by Infrared absorption analysis  
—D.K. Singh, R.N. Das & K.K. Patidar

#### TECHNICAL SESSION—VI : CASE STUDIES

- Papers
1. Engine Oil drain period for Aircraft Engines  
—A.K. Biswas, B. Subrahmanyam & S.A.A. Rizvi
  2. Heat Resistance of Turbine Oils  
—V.S. Metha, D.K. Singh & A.K. Govila
  3. Effect of mixing of sodium soap base and Lithium soap base greases  
—D.K. Singh, A.K. Govila & S.B. Srivastava
  4. Improvement of Tribological practices in wet process cement plant  
—S. Ghosh & D.V. Kalra
  5. Case Studies from Durgapur Steel Plant

### TECHNICAL SESSION—I : INDUSTRIAL OILS

- Papers
1. New Developments in Antiwear Hydraulic Oils—R.J. Perej
  2. Lubrication of Railway Axle Box—B. Basu, (Mrs) M. Malathi, S.P. Srivastava & G. Jayarama Rao
  3. Conservation of Lubricating oil with special reference to Bokaro Steel Plant—A. K. Misra
  4. Tribological studies of some Extreme Pressure Additives—A. Mammen, V.K. Verma & C.V. Agarwal
  5. Effect of  $\gamma$  irradiation on viscosity changes in some oils Containing Viscosity Index Improvers LZ 3140 & LZ 7409—S.B. Srivastava & V.G. Thomas
  6. Some Aspects of Gear Tribology—R. Krishnamurthy
  7. A note on shear behaviour of oil films in lubrication of concentrated contacts.—L. Nayak

### TECHNICAL SESSION—II : AUTOMOTIVE OILS

- Papers
1. Optimisation of Diesel ring pack through factorial testing—R.P. Sharma
  2. A study of lubricant degradation in Automotive Diesel Engines—S.K. Jain & S. Singhal
  3. Tribological aspects in the use of Ethanol Gasoline blends in Indian Cars—N.R. Raje, R.K. Malhotra & P.K. Goel
  4. Ash and Wear—R.D. Srivastava & A.K. Mehrotra
  5. Study of frictional characteristics of two stroke engine oils and its relevance to Energy Conservation—V.K. Jain, R.P.S. Bist, M. Ram & A. Sethuramiah
  6. Some studies on development of Test procedure for oxidation stability of crankcase oils using Villiers Engine—S. Singhal & S.K. Jain

### TECHNICAL SESSION—III : SOLID LUBRICANTS AND METAL WORKING OILS

- Papers
1. On Tribological Reactions during machining with Cemented Titanium Carbide Tools—B.J. Ranganath & V.C. Venkatesh
  2. An Experimental Investigation of Frictional Properties of Graphite and MoS<sub>2</sub> on Amsler Disc Machine—V.R.K. Shastri, S.D. Phatak & A. Sethuramiah
  3. Investigations into the tool behaviour during accelerated Machining Tests—A.S. Jheeta & V.K. Jain
  4. A Laboratory test method for selection of Quenching Oils—A.K. Mehta, S.P. Dubey & P.K. Goel
  5. Role of Graphite in Tribological Applications—K.K. Datta