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## **Tribology Letters Keywords**

### **Additives, Chemistry and Performance**

- Additive Decomposition
- Additive Degradation
- Additive Depletion
- Additive Deposition
- Additive Interaction
- Additive Solubility
- Antifatigue Additives
- Antioxidants
- Antiwear Additives
- Biocides
- Corrosion/Rust Inhibitors
- Detergents
- Demulsifiers
- Dispersants
- Emulsifiers
- Extreme Pressure Additives
- Foam Control Additives
- Friction Modifiers
- Grease Thickeners
- Magnetic Particles
- Metal Passivators
- Pour Point Depressants
- Solid Lubricant Additives
- VI Improvers

### **Applied Tribology, by Type of Industry**

- Aviation
- Agriculture
- Aluminum Industry
- Automotive
- Biotribology
- Cement Industry
- Economics
- Food Processing
- Forestry
- History of Tribology
- Magnetic Data Storage
- Marine
- Mining
- Oil Production
- Paper Manufacturing
- Petrochemical Industry

- Power Generation
- Railroad
- Space
- Steel Industry
- Textile Manufacturing
- Tribology Education

### **Base Stocks, Chemistry and Performance**

- Biodegradable Base Stocks
- Cryogenic Fluids
- Fire-Resistant Base Stocks
- Fluorocarbons
- Food-Grade Base Stocks
- Liquid Crystals
- Mineral Base Stock Refining
- Mineral Base Stocks
- Organic Esters
- Phosphate Esters
- Phosphazenes
- Polyethers
- Polyglycols
- Silicate Esters
- Silicones
- Synthetic Base Stocks
- Synthetic Hydrocarbons
- Vegetable Oils

### **Boundary Lubrication and Nanotribology**

- Boundary Lubrication Friction (see also, Friction)
- Boundary Lubrication Chemistry
- Boundary Lubrication (General)
- Boundary Lubrication Test Methods
- Boundary Lubrication Thermal Effects
- Boundary Lubrication Wear (see also, Wear)
- Nanotribology

### **Component and Machine Tribology**

- Centrifugal Gas Compressors
- Centrifugal Hydraulic Pumps
- Compressors (General)
- Couplings - see Gears, Couplings, Etc.
- Electrical Equipment
- Engines - see Engine Tribology
- Gas Turbines - see Engine Tribology
- Gear Hydraulic Pumps
- Gears - see Gears, Couplings, etc.
- Human Joints, Replacements
- Hydraulic Drives
- Hydraulic Systems (General)
- Hydraulic Valves
- Hydrodynamic Bearings - See Hydrodynamic, etc.
- Machine Tools

- Magnetic Bearings
- Magnetic Data Disks (Hard, Floppy)
- Magnetic Data Tapes
- Magnetic Data Recording Heads
- MEMS Devices
- Paper Machines
- Piston Gas Compressors
- Piston Hydraulic Pumps
- Refrigerant Compressors
- Rolling Bearings - see Rolling Element Bearings
- Screw Gas Compressors
- Slideways
- Steam Turbines
- Torque Converters
- Valvetrains, Cams and Lifters
- Vane Pumps

### **Computational and Math Methods for Tribology**

- Data Acquisition
- Dynamic Modelling
- Expert Systems
- Fluid Mechanics Methods
- Statistical Analysis
- Tribology Databases

### **Contact Mechanics and Fatigue**

- Contact Mechanics
- Fatigue Analysis
- Fatigue Crack Propagation
- Non-Contact Fatigue
- Stress Analysis
- Thermal Analysis

### **Elastohydrodynamic Lubrication (EHL)**

- Compliant Surface EHL
- EHL Film Geometry
- EHL (General)
- EHL with Greases
- EHL with Non-Newtonian Lubricants
- Low Elastic Modulus EHL
- Micro-EHL
- Partial-EHL, Roughness Effects
- Starvation in EHL
- Thermal Effects in EHL
- Traction

### **Engine Tribology**

- Diesel Engines
- Gasoline Engines
- Gas/Jet Turbines
- Rocket Engines
- Marine Diesel Engines

Natural Gas Engines

### **Friction and Energy Conservation**

Adhesion, Stiction  
Brakes  
EHL Friction (Traction) - see EHL  
Energy Conservation  
Friction Mechanisms  
Friction Test Methods  
Hydrodynamic Friction  
Rolling Friction  
Self Lubrication Friction  
Solid Lubrication Friction  
Static Friction  
Stick-Slip  
Unlubricated Friction

### **Gears, Couplings, Transmissions**

Automatic Transmissions  
Belt Drives  
Bevel Gears  
Chain Drives  
Clutches  
Constant Velocity Joints  
Continuously Variable Transmissions (CVT)  
Epicyclic (Planetary) Gears  
Friction Drives  
Gear Couplings  
Gears (General)  
Helical Gears  
Hypoid Gears  
Open Gears  
Rack and Pinion Gears  
Splines  
Spur Gears  
Traction Drives (IVT)  
Worm Gears

### **Hydrodynamic and Hydrostatic Lubrication and Bearings**

Air Bearings  
Air, Gas and Vapor in Hydrodynamics  
Cavitation in Hydrodynamics  
Compliant Surface Bearings  
Compressibility in Hydrodynamics  
Film Geometry in Hydrodynamics  
Flow Rate in Hydrodynamics  
Foil Bearings  
Human Joint Hydrodynamics  
Hydrodynamic Bearings (General)  
Hydrodynamic Friction - see Friction  
Hydrodynamic Lubrication (General)  
Hydrostatic Bearings

- Hydrostatic Lubrication
- Inertia Effects in Hydrodynamics
- Journal Bearings
- Load-Carrying Capacity
- Multi-Lobe Bearings
- Non-Newtonian Effects in Hydrodynamics
- Porous Metal Bearings
- Roughness Effects in Hydrodynamics
- Slideway Bearings
- Squeeze-Film Dampers
- Squeeze-Film Lubrication
- Stability in Hydrodynamics
- Starvation in Hydrodynamics
- Thermal Effects in Hydrodynamics
- Tilting-Pad Bearings
- Turbulent Flow in Hydrodynamics
- Vapor Phase Lubrication
- Viscoelasticity in Hydrodynamics

#### **Lubricant Application and Disposal Methods**

- Aerosol Lubrication
- Grease Application
- Lubricant Circulation Systems
- Lubricant Cleanup, Solvents
- Lubricant Conservation
- Lubricant Disposal
- Lubricant Reclamation
- Lubricant Recycling
- Lubricant Rerefining
- Lubricant Storage
- Lubricant Waste
- Lubrication Scheduling
- Mist Lubrication
- Oil Bath Lubrication
- Pollution
- Splash Lubrication
- Spray Lubrication
- Vapor Phase Lubrication
- Wick, Ring, Disc Lubrication

#### **Lubricant and Grease Formulation and Performance**

- Automatic Transmission Fluids
- Biodegradable Oils
- Circulating Oils
- Compressor Oils
- Coupling Lubricants
- Cryogenic Lubricants
- Diesel Engine Oils
- Ferrofluids
- Fire-Resistant Fluids
- Food-Grade Lubricants
- Gas Turbine Oils

- Gasoline Engine Oils
- Gear Lubricants
- Greases
- Hydraulic Fluids
- Internal Combustion Engine Oils
- Jet Engine Oils
- Lubricant Blending and Manufacture
- Lubricant Marketing
- Metalworking Fluids - see Metalworking, etc.
- Natural Gas Engine Oils
- Paper Machine Oils
- Process Fluids
- Radiation Resistant Lubricants
- Refrigeration Oils
- Screw Thread Lubricants
- Spindle Oils
- Steam Turbine Oils
- Traction Fluids
- Vapor Phase Lubricants
- Water, Water-Based
- Way Oils

#### **Lubricant Properties, Chemical Analysis**

- Acidity
- Basicity
- DSC
- Ferrography
- Fluorescence
- Fuel Dilution
- Gas Chromatography
- Hydrolytic Stability
- Infra Red
- Liquid Chromatography
- NMR
- Oxidation Resistance
- Radiation Resistance
- Spectroscopy
- TGA
- Thermal Stability
- Voltametric

#### **Lubricant Properties, Physical Analysis**

- Air Release
- Bulk Modulus
- Demulsibility
- Density
- Electrical and Magnetic Properties
- Electrorheological Behavior
- Emulsivity
- Flash and Fire Point
- Foaming
- Gas Solubility

Heat Capacity  
Low Temperature  
Non-Newtonian Behavior  
Pour Point  
Rheology  
Surface Tension  
Thermal Conductivity  
Traction, Shear Strength  
Vapor Pressure, Volatility  
Viscoelasticity  
Viscosity  
Viscosity-Pressure  
Viscosity-Temperature

### **Maintenance, Monitoring and Lubricant Problems**

Chemical Contamination  
Cleanliness  
Computer Use in Maintenance  
Equipment Monitoring  
Failure Analysis  
Filtration  
Humidity  
Hydrolysis  
Incompatible Fluids  
Life Prediction Methods  
Lubricant Degradation  
Maintenance  
Oil Condition Monitoring  
Oxidative Degradation  
Particulates  
Water Contamination

### **Materials in Tribology (Solids)**

Aluminum  
Beryllium  
Borides  
Carbon, Graphite  
Carbides  
Ceramic Composite  
Ceramics  
Chromium  
Cobalt  
Copper  
Diamond  
Elastomers  
Ferrous Alloys, Steel  
Gallium  
Glass  
Gold  
Iron  
Lead  
Molybdenum

- Nickel
- Nitrides
- Non-Ferrous Alloys
- Oxides
- Polymers (solid)
- Powder Metals
- Self-Lubricating Composites
- Silicon
- Silver
- Tin
- Titanium
- Tungsten

### **Metalworking and Metalworking Fluids**

- Boring
- Casting
- Cutting
- Cutting Fluids
- Drawing Fluids
- Drawing, Extruding
- Finishing
- Forging
- Forging Fluids
- Forming
- Grinding
- Grinding Fluids
- Honing
- Jet Cutting
- Lapping
- Milling
- Polishing
- Quenching Fluids
- Rolling
- Rolling Fluids
- Tapping
- Turning

### **Rolling Element Bearings**

- Ball Bearings
- Ball Screw
- Cylindrical Roller Bearings
- Linear Rolling Bearings
- Needle Roller Bearings
- Precision Rolling Bearings
- Rolling Element Bearings, General
- Rolling Element Bearing Noise
- Spherical Roller Bearings
- Tapered Roller Bearings

### **Seals and Sealing Technology**

- Bellows
- Brush Seals



- Elastomeric Seals
- Elastomeric Static Seals
- Face Seals
- Gaskets
- Labyrinth Seals
- Lip Seals
- Magnetic Seals
- Mechanical Seals
- O-Rings
- Packing Seals
- Piston Rings
- Reciprocating Seals
- Rod Seals
- Rotary Seals
- Sealants
- Static Seals
- Two-Phase Seals
- Viscoseals

#### **Solid and Self Lubrication**

- Graphite
- Jewel Bearings
- Molybdenum Disulfide
- PTFE
- Self Lubrication
- Self Lubrication Friction - see Friction
- Self Lubricating Bearings
- Solid Lubricants
- Solid Lubricated Bearings
- Solid Lubrication
- Solid Lubrication Film Thickness
- Solid Lubrication Friction--see Friction
- Solid Lubrication Mechanisms
- Solid Lubrication Wear--see Wear
- Spherical (pivot) Bearings

#### **Surface Technology and Analysis**

- Additive-Deposited Films
- AES(Auger)
- AFM
- Annealing
- Barrier Films
- Carburizing
- Chemical Analytical Techniques
- Coatings, Friction-Reducing
- Coatings, Wear-Resistant
- Corrosion
- Dynamic Light Scattering
- EDS
- EDXRF
- EELS
- EPMA

- ESCA
- EXAFS
- FTIR
- Hardening
- Hardness
- Hydrodynamics, Roughness Effects - see Hydrodynamics
- Ion Implantation
- Metallurgical Analysis
- Mossbauer
- Nitriding
- Optical Microscopy
- Partial-EHL, Roughness Effects - see EHL
- Raman
- RBS
- Running-In
- SEM
- SIMS
- STM
- Surface Energy
- Surface Modification
- Surface Roughness
- Surface Roughness Analysis and Models
- Surface Roughness Measurement Methods
- TDS
- TEM
- XANES
- XPS
- XRD

### **Toxicology and Hygiene**

- Food Contact
- Hygiene
- Lubricant Microbial Degradation
- Safety
- Toxicology

### **Wear and Failure**

- Abrasive Wear
- Adhesive Wear
- Bench Wear Tests
- Cavitation Erosion
- Corrosive Wear
- Delamination Wear
- Electrical Erosive Wear
- Equipment Wear Tests
- Erosive Wear
- Fatigue
- Fretting
- Galling
- Impact Wear
- Oxidative Wear
- Rolling-Contact Fatigue

Scoring, Scuffing  
Self-Lubricated Wear  
Solid Lubricated Wear  
Triboemission  
Unlubricated Wear  
Wear Mechanisms  
Wear Particle Analysis  
Wear/Failure Testing Devices

**Other**

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