

**Mission Statement:**

To advance the science of tribology and the practice of lubrication engineering in order to foster innovation, improve the performance of equipment and products, conserve resources, and protect the environment.

STLE membership supports and expands your professional abilities through:

Education: Top-rated and affordable courses are offered live at a variety of locations or through the Members Only section of the STLE website. (See LubeLearn courses.)

Certification: Earn recognition and valuable credentials through STLE-sponsored programs: Certified Lubrication Specialist (CLS), Oil Monitoring Analyst (OMA) and Certified Metalworking Fluids Specialist (CMFS).

Professional Networking: Offered at two major international conferences, local section meetings or one of 23 technical committees and industry councils.

Upcoming 2006 Exam Dates & Locations
CLS, OMA I/II and CMFS exams

July 21
Hampton Inn
502 N. Sam Houston Pkwy.
East
Houston, Texas
(281) 820-2101

July 28
Crowne Plaza Market Center
7050 Stemmons Freeway
Dallas, Texas

July 2006

[2006 International Joint Tribology Conference includes a private tour of the Southwest Research Institute \(SwRI\) for the first 50 people who sign up. Register now to be included.](#)

[Just for fun, which of the chapters in the recently published Metalworking Fluids book do you think has the most references cited?](#)

[Do you know more than you did 23 years ago? So does the 2nd edition of the Handbook of Lubrication and Tribology. \(Which chapter has the most references?\)](#)

[Congratulations to those who recently passed the certification exams and earned their CLS, OMA or CMFS certifications. \(View the list of certified professionals.\)](#)

[Welcome to the 232 new members of STLE since January of this year. Who are the new members?](#)

[July 2006 Tribology and Lubrication Technology magazine Table of Contents](#)

[Tribology Transactions Table of Contents July-September 2006](#)

[Tribology Letters Table of Contents - first published online](#)

[Join or renew or correct contact information](#)

2006 International Joint Tribology Conference includes a private tour of the Southwest Research Institute (SwRI) for the first 50 people who sign up.

The tour of Southwest Research Institute will be available on a space available basis. You must register for IJTC to sign up to attend this tour. There is no additional charge and transportation will be included for this visit to SwRI, headquartered in San Antonio, Texas.

[Southwest Research Institute](#) is one of the oldest and largest independent, nonprofit, applied research and development (R&D) organizations in the United States. SwRI consists of 11 technical divisions that offer multidisciplinary, problem-solving services in a variety of areas in engineering and the physical sciences. Historically, nearly 2,000 projects are open at the Institute at any one time.

Housing and registration forms for [2006 International Joint Tribology Conference](#) are online now.

Oct. 23-25, 2006
Hyatt Regency San Antonio
San Antonio, Texas

- > [Conference Overview](#)
- > [Hotel Information/Registration](#)
- > [Conference Registration](#)

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Just for fun, which of the chapters in the recently published Metalworking Fluids book do you think has the most references cited? Then verify your guess.

(214) 259-0513

Aug. 4

Doubletree Guest Suites
Esplanade Conference Center
2111 Butterfield Road
Downers Grove, Ill.
(630) 971-2000

Aug. 18

Singapore Marriott Hotel
320 Orchard Road
Singapore
+65-6735-5800

Aug. 25

Embassy Suites Hotel
4800 S. Tyron Street
Charlotte, N.C.
(704) 527-8400

www.stle.org or
brapacz@stle.org
for more information

Test Your Knowledge (from the July 2006 issue of Tribology and Lubrication Technology Magazine)

Questions:

1. During a milling operation, how will the tool diameter affect misting?
2. Filling a bearing cavity completely full of grease can cause the bearing to overheat and force grease into the motor windings. (True or False)
3. Airborne debris can cause a measurable change to the cleanliness test results if the sample container lid is left off. (True or False)
4. Specialized non-contact, rubbing seal rings that utilize a series of controlled clearance rotating and stationary components to minimize leakage are called what?
5. Name the three fundamental types of lubrication systems that are used in industry.

Answers:

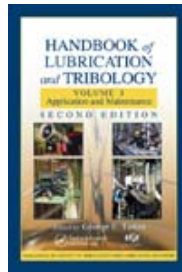
1. Increase.

Introduction: Tracing the Historical Development of Metalworking Fluids; Jeanie S. McCoy
Metallurgy for the Nonmetallurgist with an Introduction to Surface Finish Measurement; James E. Denton
Metal Cutting Processes; Stuart C. Salmon
Performance of Metalworking Fluids in a Grinding System; Cornelis A. Smits
Metalforming Applications; Kevin H. Tucker
The Chemistry of Metalworking Fluids; Jean C. Childers
Laboratory Evaluation of Metalworking Fluids; Jerry P. Byers
Corrosion: Causes and Cures; Giles J.P. Becket
Microbiology of Metalworking Fluids; Frederick J. Passman
Filtration Systems for Metalworking Fluids; Robert H. Brandt
Metalworking Fluid Management and Trouble Shooting; Gregory J. Foltz
Recycling of Metalworking Fluids; Raymond M. Dick
Waste Treatment; John M. Burke and William A. Gaines
Contact Dermatitis and Metalworking Fluids; C.G. Toby Mathias
Health and Safety Aspects in the Use of Metalworking Fluids; John K. Howell, William E. Lucke, and Eugene M. White
Generation and Control of Mist from Metal Removal Fluids; Jean M. Dasch, Carolina C. Ang, and James B. D'Arcy
Regulatory Aspects of Metalworking Fluids; Eugene M. White
Costs Associated with the Use of Metalworking Fluids; Lloyd J. Lazarus
Glossary

When you purchase this one book, you have the benefit of over 500 references in one place. There is an average of just over 30 references per chapter, plus the expertise of the author(s) who wrote about their specialty. The Metalworking Fluids book, second edition, offers what you need all in one place.

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Are you using an outdated resource with your expensive newer equipment? Which of the chapters in the recently published Handbook of Lubrication and Tribology do you think has the most references cited? [Check the number of references here.](#)

Through August 31st only, STLE members will save \$60 on tribology's most valued resource, The Handbook of Lubrication and Tribology, which is now fully updated and reorganized. The member only price is \$190. If you are using the first edition, the body of knowledge has changed dramatically since 1983 when the first edition came out.

SECTION I Applications

Automotive Engine Oil; S. C. Tung, M. L. McMillan, E. P. Becker, and S. E. Schwartz
Automatic Transmission Fluids; C.D. Tipton
Rear Axle Lubrication ; A. Gangopadhyay and F. Qureshi
Automotive Chassis and Driveline Lubrication; D. M. Jahn and S. C. Tung
Diesel, Dual-Fuel, and Gas Engines; D.J.W Barrell and M. Priest
Aircraft Gas Turbines; A. Hall
Principles of Gas Turbine Bearing Lubrication and Design; H. Heshmat and J.F. Walton II
Steam Turbines; B.C. Pettinato
Compressors and Vacuum Pumps; T. Kazama and G.E. Totten
Basic Hydraulic Pump and Circuit Design; R. K. Tessmann, H.M. Melief, and R.J. Bishop
Hydraulic Fluids; H. Murrenhoff, O.-C. Göhler, and T. Meindorf
Coolants and Lubricants in Metal Cutting; S.C. Veldhuis, G.S. Fox-Rabinovich, and L.S. Shuster
Lubricating Industrial Electric Motors; D.D. Troyer
Effects of Radiation on Lubricants; R.O. Bolt
Wire Rope and Chain; P. Conley
Tribology of Hard Disk Drives - Magnetic Data Storage Technology; J. Castillo and B. Bhushan

2. *True.*

Biotribology:Material Design, Lubrication, and Wear in Artificial Hip Joints; Z.M. Jin, J. Fisher, and E. Ingham

3. *True.*

SECTION II Industrial Lubrication Practices

4. *Labyrinth seals.*

Steel Industry; R. Schrama
Aluminum Metalworking Lubricants; J. R. Anglin
Mining Industry; W. Scott
Farm and Construction Equipment; R.L. Kushwaha and J. Liu
Industrial Lubrication Practice - Wheel/Rail Tribology; R. Lewis and R. Dwyer-Joyce

5. *Progressive, dual line and single line.*

Lubrication in the Timber and Paper Industries; P.W. Michael
Textile Fibers/Fabrics; P.D. Seemuth
Food-Grade Lubricants and the Food Processing Industry; J.C. Fitch, S. Gebarin, and M. Williamson
Aviation Industry; H.A. Poitz and R.E. Yungk
Lubrication for Space Applications; W.R. Jones and M.J. Jansen
Friction and Wear in Lubricated Sheet Metal Forming Processes; E. van der Heide and D.J. Schipper

Quotation:

"I am in the lubrication training and consulting business. I have been an STLE member for 10 + years which has been invaluable in my profession. STLE through their website and the Tribology and Lubrication Technology magazine allows me to keep up to date on new developments in my field. Local STLE meetings are very informative by providing networking and educational opportunities. I find the STLE annual meeting, which I have attended the past eight years, to provide excellent opportunity to learn from experts in the lubrication field. The education courses are some of the best I have ever attended and have increased my knowledge in lubrication. One of the major reasons I attend STLE meetings are the excellent networking opportunities. I have developed more business contacts at STLE meetings than any other conference. Everyone in the lubrication field should be STLE members. The cost is minimal compared to the large benefits."

Ray Thibault, CLS, OMA I & II
Lubrication Training & Consulting
Houston, Texas

SECTION III Maintenance

The Degradation of Lubricants in Service Use; M.F. Fox
Lubricant Properties and Test Methods; L.A. Toms and A.M. Toms
Contamination Control and Failure Analysis; J. Stecki
Environmental Implications and Sustainability Concepts for Lubricants; M.F. Fox
Lubrication Program Development and Scheduling; M. Johnson
Lubricant Storage, Handling, and Dispensing; M. Barnes
Conservation of Lubricants and Energy; R.L. Johnson and J.C. Fitch
Centralized Lubrication Systems - Theory and Practice; P. Conley and A. Grach
Used Oil Recycling and Environmental Considerations; D.W. Brinkman and B.J. Parry
Appendices
Index

When you purchase this one book, you have the benefit of over 1440 references in one place. There is an average of almost 40 references per chapter, plus the expertise of the author(s) who wrote about their specialty. The Handbook, second edition, offers what you need all in one place.

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Congratulations to those who recently verified their expertise by earning their [CLS](#), [OMA](#) or [CMFS](#) certifications.

The number of current CLS certifications is now at an all time high of 801 people. The new CMFS program for Certified Metalworking Fluids Specialist has grown in less than a year to 65 people. See the names and companies on the STLE website of those who are certified as a current [CMFS](#), [CLS](#) or [OMA](#) professional.

For information on taking a certification examination or education course contact info@stle.org or visit http://www.stle.org/professional_dev/index.cfm

Welcome to all the new STLE members since January of this year.

There were 232 new members of STLE since January 1, 2006. Of these new members,

- 22 countries were represented including: Australia, Belgium, Canada, China, England, France, Germany, Guyana, India, Japan, Mexico, P.R. of China, Serbia and Montenegro, Singapore, South Korea, Spain, Switzerland, Taiwan, Taiwan (R.O.C), Trinidad and Tobago, United Kingdom and Venezuela.
- 36 states of the U.S. were represented, including: AL, AR, AZ, CA, CT, DC,

DE, FL, GA, IA, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, NC, NH, NJ, NY, OH, OK, PA, RI, SC, TX, VA, WA, WI and WV.

- 57 new members go by the title of Dr.
- 16 new members are corporate members and 20 are students.
- Members come from up to 171 companies. (Companies that are listed as XYZ Co. and XYZ Ltd., for example, are counted twice.)
- 10 new members are subscribers to Tribology Transactions and 8 are subscribers to Tribology Letters.
- 27 new members signed up to take the CLS exam, and 3 renewed their CLS certification. 4 new members signed up to take the OMA exam, and 2 renewed their OMA certification. (Membership is suggested but not required for certification.)

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STLE membership includes the monthly magazine, Tribology and Lubrication Technology. The Table of Contents from the upcoming July 2006 magazine is included.

[Order this magazine by joining STLE.](#)

Oh, Canada! Relive the highlights of STLE's 61st Annual Meeting & Exhibition in Calgary in this six-page photo montage.

Getting the 'Drop' on your customers
How do you make those you sell to feel like royalty? Treat them with Dignity, Respect, Optimism and Professionalism. (Second of a four-part series)
By Jerry L. Kennedy.

MWF Certification: A coat of arms for individuals & industry
While fluid specialists have much to gain from STLE's newest certification, industry leaders see benefits for suppliers and end-users, as well.
By Michael J. McGinty

PEER-REVIEWED PAPER (Editor's Choice) The Adsorption of Zinc Dialkyldithiophosphates on Partially Stabilized Zirconia from Hydrocarbon Solution
By L. Margielewski, R. Stanecka, S. Partyka and S. Plaza.

DEPARTMENTS

Tech Beat - Diminished molecular friction in solution; continuous online monitoring of viscosity; dual catalyst system could produce lubricant basestocks. By Dr. Neil Canter

Around the Industry - including ExxonMobil, Chemtura, CITGO and more.

Sounding Board - Readers discuss the ideas they gathered from STLE's Annual Meeting & Exhibition in Calgary.

New Products - Automatic distillation analyzer; steel-disk seals; corrosion inhibitor; vertical honing machine; food grade lubricants.

Advertisers Index

Test Your Knowledge - see side bar

Resources

President's Report - Strength through diversity.

From the Editor - Cover to cover? The only way to read TLT!

Headquarters Report - TLT content comes to the STLE Web site.

On Condition Monitoring - Consider trends as well as range limits.

Worldwide - Research uses for active magnetic bearings.

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Tribology Transactions Table of Contents July-September 2006

Tribology Transactions is a scholarly quarterly publication of STLE, edited by Andrew Jackson and published by Taylor & Francis. This publication is available to members at a discounted annual price of \$125 for the US and \$145 for annual international subscriptions.

STLE members can click here to [subscribe to Transactions](#). Non member subscriptions are not available from STLE - [click here](#) for more info. For membership information, [click here](#).

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By F. K. Choy, H. Chen, J. Zhou

Test Results Comparing the Effect of Reverse Rotation on Offset Pivot Journal Bearing Pad Temperatures
By Scan De Camillo, Keith Brockwell, Waldemar Dmochowski

A Model for Wear and Friction in Cylinder Liners and Piston Rings
By Zheng Ma, Naeim A. Henein, Walter Bryzik

Rotordynamics of Impeller Eye Seals with Wear-Damaged Teeth in Centrifugal Compressors
By Jinxiang Xi And David L. Rhode

Effect of Water and Serum Absorption on Wear of Unirradiated and Crosslinked UHMWPE Orthopedic Bearing Materials
By Kathryn Laraia, Nicholas Leone, Rebecca Macdonald, Thierry A. Blanchet

Effects of Different Magnetic Tapes and Operating Parameters on Lateral Tape Motion in a Linear Tape Drive
By Andrew E. Wright and Bharat Bhushan

Clearance Regulation of Mechanical Gas Face Seals: Part I—Modeling
By Sachin S. Yelma, Brad A. Miller, Robert G. Landers

Clearance Regulation of Mechanical Gas Face Seals: Part II—Analysis and Control
By Sachin S. Yelma, Brad A. Miller, Robert G. Landers

An Engineering Model for Three-Dimensional Elastic-Plastic Rolling Contact Analyses
By Gabriel Popescu, Guillermo E. Morales-Espejel, Benny Wemekamp, Antonio Gabelli

Tribology Letters Table of Contents - First Published Online

Tribology Letters is a second scholarly publication supported by STLE. This is edited by Nicholas Spencer and Wilfred Tysoe, and published by Springer. This publication is available to members at a discounted annual price of \$105 annually. For a preview of Tribology Letters, visit the [TL website](#)

[Order Tribology Letters](#) by completing the appropriate portions of the membership application and checking off Tribology Letters.

Influence of weave of carbon fabric on abrasive wear performance of polyetherimide composites
By R. Rattan and J. Bijwe

Simultaneous measurement of film thickness and coverage of loaded boundary films with complex impedance analysis

By K. Nakano and Y. Akiyama

Surface behaviour of as-Cast Al–Fe intermetallic composites

By S. Mohan and S. Srivastava

A rational human joint friction test using a human cartilage-on-cartilage arrangement

By Y. Merkher, S. Sivan, I. Etsion, A. Maroudas, G. Halperin, A. Yosef

The effect of emulsifier concentration on the lubricating properties of oil-in-water emulsions

By A. Cambiella, J. M. Benito, C. Pazos, J. Coca, M. Ratoi, H. A. Spikes

Viscosity–temperature correlation for liquids

By Christopher J. Seeton

Microstructure, chemical and tribological investigations of MoxW1-xSy co-sputtered composite films

By G. L. Yin, P. H. Huang, Z. Yu, D. N. He, J. P. Tu

A Hydrostatic Laser Surface Textured Gas Seal

By Y. Feldman, Y. Kligerman, I. Etsion

The contact behavior of elastic/plastic non-Gaussian rough surfaces

By T.W. Kim, B. Bhushan, Y.J. Cho

Adsorption of fatty acids from alkane solution studied with quartz crystal microbalance

By S.M. Lundgren, K. Persson, B. Kronberg, P.M. Claesson

Tribochemistry and antiwear mechanism of organic–inorganic nanoparticles as lubricant additives

By B. Li, X. Wang, W. Liu, Q. Xue

Structures and high temperature frictional behaviors of carbonaceous mesophases doped with metallic element nickel (Ni) through mechanical alloying

By Zhang Ruijun and Su Zhibin

A study of the nanotribological fatigue of ultra-high molecular weight polyethylene

By C. Gibbs and J.W. Bender

Synthesis and microtribological studies of new silica–triazine hybrids

By Z. Kaminski, M. Mizerski, J. Kolesinska, M. Psarski, S. Kuberski, S. Plaza

A multi-scale model for friction in cold rolling of aluminum alloy

By H.R. Le and M.P.F. Sutcliffe

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