



PROGRAM GUIDE & SCHEDULE

# 80th STLE Annual Meeting & Exhibition: Innovating Through Tribology & Lubrication

**May 17-21, 2026**

Hyatt Regency New Orleans, New Orleans, Louisiana (USA)



For full program details including abstracts,  
scan the QR code to download the STLE Mobile  
App, sponsored by Palmer Holland.

# INDUSTRIAL

GEAR

# Future Ready, Present Perfect.



## Unlock future opportunities with Afton's Industrial Gear Oil solutions.

In an era where the industrial gear market is evolving in complexity, Afton remains at the forefront with Industrial Gear Solutions that are developed to enhance equipment productivity. Our next generation Industrial Gear additives have been developed to not only meet but exceed the ever-evolving demands of industrial gear specifications. Backed by extensive research, our industrial gear solutions offer the perfect balance for superior seal compatibility, unmatched wear protection and unrivalled thermal and oxidation stability.

When you choose Afton, you're not just selecting an unmatched solution for today, but also investing in the future of your operations. Stay ahead with Afton.

©2024 Afton Chemical Corporation is a wholly own subsidiary of NewMarket Corporation (NYSE: NEU). All rights are reserved and not to be copied, shared, or reproduced in any media without the express written permission of Afton Chemical Corporation.

 **Afton**  
CHEMICAL  
*Passion for Solutions®*



Society of Tribologists and Lubrication Engineers

# 80th STLE Annual Meeting & Exhibition: Innovating Through Tribology & Lubrication

The 2026 STLE Annual Meeting & Exhibition: Innovating Through Tribology & Lubrication is sponsored by the Society of Tribologists and Lubrication Engineers, an international organization. Telephone: (847) 825-5536. Email: [information@stle.org](mailto:information@stle.org). Web: [www.stle.org](http://www.stle.org). STLE is a not-for-profit professional society founded in 1944 to advance the science of tribology and best practices in lubrication engineering.



Dear Members, Presenters, Exhibitors, and Attendees,

On behalf of the entire STLE community, we are pleased to welcome you to the 80th STLE Annual Meeting & Exhibition: Innovating Through Tribology & Lubrication! Two key STLE committees, the Annual Meeting Program Committee and the Education Committee, have organized an exciting week of technical sessions, education courses, and professional development events here at the Hyatt Regency New Orleans.

The 2026 technical program includes more than 400 presentations in a 20- or 40-minute format that allows for shorter and fewer parallel sessions so there is more time to network with and learn from your peers. We also have 9 lubrication-specific education courses to prepare attendees for the future of the tribology and lubricants industry. Additionally, we have new special programming designed to enhance your experience; see page 16 to learn more about this year's events.

Please also allow time in your schedule to visit over 100 companies displaying their products and services in the trade show. The student posters are also on display in the Exhibit Hall.

We also encourage you to connect on STLE's social media platforms using the official hashtag **#STLE2026** to share your experiences throughout the week.

STLE's 2026 Annual Meeting & Exhibition is a singular opportunity for all of us to connect, learn, and achieve together. Have a great week and enjoy the Annual Meeting!



**Kevin Delaney,**  
Vanderbilt Chemical  
LLC  
2025-2026 STLE  
President



**Dr. Jun Qu,**  
Oak Ridge National  
Laboratory  
2026 STLE Annual  
Meeting Program  
Chair

## Contents

- 2** General Information and Policies
- 4** Program Schedule at a Glance
- 8** Hyatt Regency New Orleans Maps
- 12** Annual Meeting Exhibitors
- 13** Exhibit Hall Floor Plan
- 14** Annual Meeting Sponsors
- 16** Special Events
- 20** Education Courses
- 22** Award Recipients
- 24** **Monday Technical Session Time Grid**
- 28** **Tuesday Technical Session Time Grid**
- 32** **Wednesday Technical Session Time Grid**
- 36** **Thursday Technical Session Time Grid**
- 39** Technical Session Chairs and Vice Chairs
- 42** Student Posters
- 46** Acknowledgements

# STLE Annual Meeting & Exhibition: Innovating Through Tribology & Lubrication

## General Information and Policies



### Exhibition Hours

The exhibition is in the Hyatt Regency New Orleans – Elite Hall AB (see maps on pages 8-10).

**Monday, May 18:** 12:00 pm – 5:00 pm

**Exhibitor Appreciation Hour:** 3:00 pm – 4:00 pm

**Evonik Raffle:** 3:30 pm (Must be present to win at Booth #301)

**Tuesday, May 19:** 9:30 am – 12:00 pm & 2:00 pm – 5:30 pm  
(Closed for President's Luncheon – 12:00 pm – 2:00 pm)

**Exhibitor Appreciation Hour:** 3:00 pm – 4:00 pm

**Evonik Raffle:** 3:30 pm (Must be present to win at Booth #301)

**Wednesday, May 20:** 9:30 am – 12:00 pm

### Registration Information

Annual Meeting registration entitles you to attend the technical sessions, exhibition (Monday through Wednesday), Networking Reception on Monday evening, President's Luncheon on Tuesday afternoon\*, and most other sanctioned annual meeting events. President's Luncheon guest tickets are \$50 and can be purchased at the STLE registration desk in the Elite Hall Foyer of the Hyatt Regency New Orleans. Attendance of STLE technical committee meetings is open to all registered attendees. See page 24-38 for time and location of individual technical committee meetings.

*\*President's Luncheon is included in registration, but you must select a ticket when you register. If you do not have a ticket, please visit the STLE registration desk.*

**Registration Hours** (All times are in central time zone)

- |   |   |
|---|---|
| • <b>Saturday, May 16</b><br>12:00 pm – 6:00 pm | • <b>Tuesday, May 19</b><br>6:30 am – 6:00 pm   |
| • <b>Sunday, May 17</b><br>6:30 am – 6:00 pm    | • <b>Wednesday, May 20</b><br>6:30 am – 5:00 pm |
| • <b>Monday, May 18</b><br>6:30 am – 6:00 pm    | • <b>Thursday, May 21</b><br>6:30 am – 1:00 pm  |

### Annual Meeting & Education Course Policies

- All attendees must register.
- All attendees receive a badge with their registration materials. The badge must be worn at all times and is required for admittance to any technical session, education course, and the trade show.
- Badges may not be exchanged. Attendees who loan their badges to others will have their badges confiscated and their annual meeting privileges rescinded.
- Annual Meeting registration includes admittance to the exhibition, technical sessions, Commercial Marketing Forum, and all social events, including the Monday evening Networking Reception and Tuesday afternoon President's Luncheon.
- Distributing handouts at technical sessions is not permitted. Handouts will be given to education course attendees.
- Disseminating material or conducting business in the exhibit hall is not permitted if you are not an official exhibitor.

### Recording Policy

Audio or video recording is not permitted in any of the annual meeting technical sessions or Commercial Marketing Forum presentations. No video of any kind is permitted.

### Photo Policy

STLE's official photographer will take photos of select technical sessions, Commercial Marketing Forum presentations, and the exhibition on Monday and Tuesday. These photos will be used in print materials promoting the 2027 STLE Annual Meeting & Exhibition in Chicago, Illinois (USA). If you do not wish to have your photograph taken and published, please step out of the photo frame or notify the photographer afterward if your photo has been taken so the image can be deleted.



### STLE Mobile App – Download Today!

Full program details and important updates will be posted daily in the STLE Mobile App—available for Apple and Android.

Annual Meeting app sponsored by Palmer Holland, Inc.

### Cell Phone Policy

In order to not disturb speakers or fellow attendees, please keep cell phones on vibrate and leave the room to talk.

### Harassment Policy

STLE is committed to providing an atmosphere that encourages the free expression and exchange of scientific ideas. As part of that commitment, STLE is dedicated to promoting a safe and welcoming environment for all participants attending the STLE Annual Meeting & Exhibition. All participants are expected to abide by this policy in all venues at the STLE Annual Meeting, including ancillary events and official and unofficial social gatherings. Harassment of any kind is strictly prohibited, and the Society will not tolerate acts in violation of this policy. Any individual who believes that he or she has been the subject of, or has witnessed, harassment should immediately report the incident to STLE staff. All reports are confidential. A copy of the full policy is available at [www.stle.org](http://www.stle.org).

STLE welcomes and encourages participation by all individuals. We strive to cultivate a society built on mentorship, encouragement, tolerance, and mutual respect, thereby engendering a welcoming environment for all. STLE welcomes your ideas and observations. To send questions, issues, comments, suggestions, or feedback to STLE, email [community@stle.org](mailto:community@stle.org).

### Future Industry Meeting Dates



#### STLE/MPMA Fall Technical Meeting

**October 5-7, 2026**

Hilton Rosemont/Chicago O'Hare  
Rosemont, Illinois (USA)



#### 81st STLE Annual Meeting & Exhibition

**May 2-7, 2027**

Hyatt Regency Chicago  
Chicago, Illinois (USA)

### Connect with STLE

Stay up to date on the latest annual meeting announcements and connect with fellow attendees using the conference hashtag #STLE2026 on your favorite social media sites.

LinkedIn | [linkedin.com/company/society-of-tribologists-and-lubrication-engineers/](https://www.linkedin.com/company/society-of-tribologists-and-lubrication-engineers/)

X (formerly Twitter) | [x.com/STLE\\_Tribology](https://x.com/STLE_Tribology)

Facebook | [Facebook.com/stle.org](https://www.facebook.com/stle.org)

Instagram | [Instagram.com/STLE\\_Tribology](https://www.instagram.com/STLE_Tribology)

YouTube | [YouTube.com/STLEMedia](https://www.youtube.com/STLEMedia)



# STLE Annual Meeting & Exhibition: Innovating Through Tribology & Lubrication

## Program Schedule at a Glance



All Sessions and Events will take place in the Hyatt Regency New Orleans unless otherwise noted – preliminary as of April 22, 2026.

### Saturday, May 16, 2026

#### Registration

12:00 pm – 6:00 pm – **Elite Hall Foyer**

### Sunday, May 17, 2026

#### Registration

6:30 am – 6:00 pm – **Elite Hall Foyer**

#### Education Course Speakers Breakfast

7:00 am – 7:45 am – **Storyville Hall**

#### Education Courses (8:00 am – 5:00 pm) – *(registration required)*

- Advanced Lubrication 301 – **Celestin Ballroom B**
- Data Management for AI in Tribology – **Celestin Ballroom H**
- Basic Lubrication 103 – **Celestin Ballroom F**
- Electric Vehicles – **Strand 12**
- Hydraulics – **Celestin Ballroom C**
- Metalworking Fluids 125 – **Celestin Ballroom A**
- Synthetic Fluids – **Celestin Ballroom G**

#### Education Course Breaks – **Celestin Foyer**

#### Section Leader Training

4:30 pm – 5:45 pm – **Storyville Hall**

#### Student and New Member Networking Reception

*(ticketed event)* 6:00 pm – 7:30 pm – **Storyville Hall**

### Monday, May 18, 2026

#### Registration

6:30 am – 6:00 pm – **Elite Hall Foyer**

#### Monday Speakers Breakfast

7:00 am – 7:45 am – **Storyville Hall**

#### Technical Sessions (8:00 am – 10:00 am)

- 1B • Fluid Film Bearings/Seals I – **Celestin Ballroom B**
- 1C • Surface Engineering I – **Celestin Ballroom C**
- 1D • Electric Vehicles I: Physical Analysis & Testing Methods – **Celestin Ballroom F**
- 1E • Gears I – **Celestin Ballroom G**
- 1F • Tribochemistry I – **Celestin Ballroom H**

- 1G • Grease I – **Bolden 1**
- 1H • Power Generation I – **Bolden 2**
- 1I • Environmentally Friendly Fluids/Synthetic Lubrication I – **Bolden 5**
- 1J • Commercial Marketing Forum I – **Bolden 6**

**Networking/Refreshment Break**

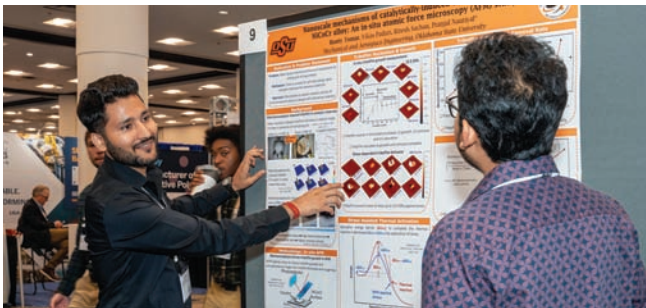
10:00 am – 10:30 am – **Celestin Foyer**

**Opening General Session: Keynote Address**

10:30 am – 12:00 pm – **Celestin Ballroom DE**

- Marine Engine Lubrication with Alternative Fuels, presented by Justin Van Tries, TotalEnergies Lubmarine, Market Liaison & Product Manager, Engine Oils Department

**Lunch** (on your own) 12:00 pm – 1:40 pm



**Commercial Exhibits and Student Posters**

12:00 pm – 5:00 pm – **Elite Hall AB**

**Technical Sessions** (1:40 pm – 5:00 pm)

- 2B • Fluid Film Bearings/Seals II – **Celestin Ballroom B**
- 2C • Surface Engineering II – **Celestin Ballroom C**
- 2D • Electric Vehicles II: Lubricants – **Celestin Ballroom F**
- 2E • Gears II – **Celestin Ballroom G**
- 2F • Tribochemistry II – **Celestin Ballroom H**
- 2G • Grease II – **Bolden 1**
- 2H • Power Generation II – **Bolden 2**
- 2I • Environmentally Friendly Fluids/Synthetic Lubrication II – **Bolden 5**
- 2J • Commercial Marketing Forum II – **Bolden 6**

**Exhibitor Appreciation Hour**

3:00 pm – 4:00 pm – **Elite Hall AB**

**Networking Reception**

5:00 pm – 6:30 pm – **Elite Hall AB**

**Tuesday, May 19, 2026**



**NextGen Fundraiser Event**

**Yoga Wellness Session** (*registration required*)

6:00 am – 7:00 am – **Elite Hall**

**Registration**

6:30 am – 6:00 pm – **Elite Hall Foyer**

**Tuesday Speakers Breakfast**

7:00 am – 7:45 am – **Storyville Hall**

**Technical Sessions** (8:00 am – 12:00 pm)

- 3A • AI & Machine Learning and Lubrication Fundamentals Joint Session I – **Celestin Ballroom A**
- 3B • Fluid Film Bearings/Seals III – **Celestin Ballroom B**
- 3C • Nanotribology I – **Celestin Ballroom C**
- 3D • Electric Vehicles III: Tribology, Wear & Surface Engineering – **Celestin Ballroom F**
- 3F • Tribotesting I – **Celestin Ballroom H**
- 3G • Grease III – **Bolden 1**
- 3H • Biotribology I – **Bolden 2**
- 3I • Environmentally Friendly Fluids/Synthetic Lubrication III – **Bolden 5**
- 3J • Commercial Marketing Forum III – **Bolden 6**

**Commercial Exhibits and Student Posters**

9:30 am – 5:30 pm – **Elite Hall AB**

**Networking/Refreshment Break**

10:00 am – 10:40 am – **Elite Hall AB**

**President's Awards Luncheon/STLE Business Meeting**

12:00 pm – 2:00 pm – **Celestin Ballroom DE**

**Technical Sessions** (2:00 pm – 5:00 pm)

- 4A • AI & Machine Learning and Materials Tribology Joint Session I – **Celestin Ballroom A**
- 4B • Fluid Film Bearings/Seals IV – **Celestin Ballroom B**
- 4C • Nanotribology II – **Celestin Ballroom C**
- 4D • Electric Vehicles IV: Cooling System and Thermal Management – **Celestin Ballroom F**
- 4F • Tribotesting II – **Celestin Ballroom H**
- 4G • Rheology I – **Bolden 1**
- 4J • Commercial Marketing Forum IV – **Bolden 6**

**Exhibitor Appreciation Hour**

3:00 pm – 4:00 pm – **Elite Hall AB**



**Special Event: Tribology Data Hub – Designing the Next Steps** – 5:15 pm – 6:00 pm – **Celestin Ballroom A**

## Wednesday, May 20, 2026



### NextGen Fundraising Event

**Pilates Wellness Session (registration required)**  
6:00 am – 7:00 am – **Elite Hall**

### Registration

6:30 am – 6:00 pm – **Elite Hall Foyer**

### Wednesday Speakers Breakfast

7:00 am – 7:45 am – **Storyville Hall**

### Education Courses (8:00 am – 5:00 pm) (registration required)

- Advanced Lubrication 302 – **Tulane University (offsite)**
- Metalworking Fluids 250 – **Strand 11**

### Technical Sessions (8:00 am – 12:00 pm)

- 5A • AI & Machine Learning I – **Celestin Ballroom A**
- 5B • Lubrication Fundamentals I – **Celestin Ballroom B**
- 5C • Sustainability I – **Celestin Ballroom C**
- 5D • Engine & Drivetrain I – Sustainable Powertrain: Engine Oils and Fuels – **Celestin Ballroom F**
- 5E • Materials Tribology I – **Strand 10**
- 5G • Tribology of Biomaterials I – **Bolden 1**
- 5I • Contact Mechanics I – **Bolden 5**
- 5J • Commercial Marketing Forum V – **Bolden 6**
- 5K • Rolling Element Bearings I – **Celestin Ballroom G**

### Commercial Exhibits and Student Posters

9:30 am – 12:00 pm – **Elite Hall AB**

### Networking/Refreshment Break

10:00 am – 10:40 am – **Elite Hall AB**

**Lunch (on your own)** 12:00 pm – 1:40 pm

**Special Event: Lubricant Supply Discussion Session**  
12:00 pm – **Celestin Ballroom D**

### Technical Sessions (2:00 pm – 5:00 pm)

- 6A • AI & Machine Learning II – **Celestin Ballroom A**
- 6B • Lubrication Fundamentals II – **Celestin Ballroom B**
- 6C • Sustainability II – **Celestin Ballroom C**
- 6D • Engine & Drivetrain II: Hydrogen ICE and EV Additives – **Celestin Ballroom F**
- 6E • Materials Tribology II – **Strand 10**
- 6G • Condition Monitoring I – **Bolden 1**
- 6I • Contact Mechanics II – **Bolden 5**
- 6K • Rolling Element Bearings II – **Celestin Ballroom G**

### Networking/Refreshment Break

3:00 pm – 3:40pm – **Elite Hall Foyer**

**Special Event: OEM Panel Discussion**  
5:15 pm – 6:30 pm – **Celestin Ballroom D**

## Thursday, May 21, 2026

### Registration

6:30 am – 1:00 pm – **Elite Hall Foyer**

### Thursday Speakers Breakfast

7:00 am – 7:45 am – **Celestin Ballroom D**

### Technical Sessions (8:00 am – 12:00 pm)

- 7B • Wear I – **Bolden 2**
- 7D • Metalworking Fluids I – **Bolden 6**
- 7E • Materials Tribology III – **Strand 10**
- 7F • Aerospace I – **Strand 11**
- 7G • Condition Monitoring III – **Bolden 1**
- 7I • Non-Ferrous Metals I – **Bolden 5**
- 7J • Lubrication Fundamentals III – **Celestin Ballroom A**
- 7K • Rolling Element Bearings III – **Strand 12**

### Networking/Refreshment Break

10:00 am – 10:40 am – **Elite Hall AB**

**Lunch (on your own)** 12:00 pm – 1:40 pm

### Technical Sessions (1:40 pm – 5:00 pm)

- 8D • Metalworking Fluids II – **Bolden 6**
- 8F • Aerospace II – **Strand 11**
- 8G • Condition Monitoring III – **Bolden 1**

### Networking/Refreshment Break

3:00 pm – 3:20 pm – **Bolden/Strand Foyer**



Meet  
with us  
at Booth  
#301!

# Inspired by Efficiency



Passenger cars, commercial vehicles, wind turbines, construction and manufacturing equipment ... no matter the landscape of your machinery, rely on Evonik to provide you with solutions to unleash the full potential of fuel efficiency, energy savings, durability and CO<sub>2</sub> reduction driven by sustainable lubricant design.

**The Oil Additives specialists at Evonik**—Creating possibilities for a sustainable world  
[www.evonik.com/oil-additives](http://www.evonik.com/oil-additives)



# STLE Annual Meeting & Exhibition: Innovating Through Tribology & Lubrication

## Hyatt Regency New Orleans Maps

### Floor Plan: Level 1



The exhibition is located in the Hyatt Regency New Orleans Elite Hall AB.

**Exhibit Dates: May 18-20, 2026**

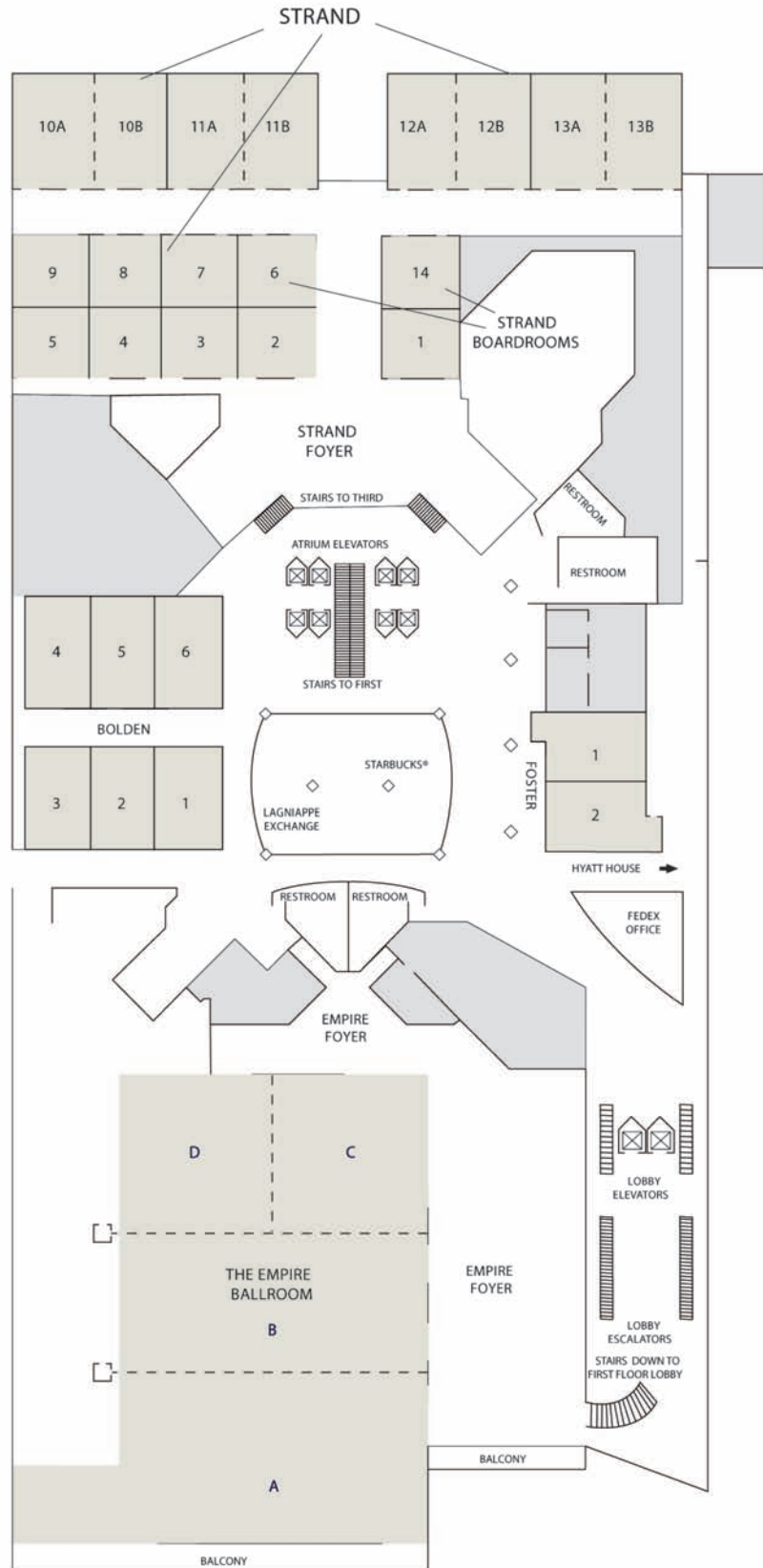
#### Exhibit Setup Hours:

- **Sunday, May 17:** 12:00 p.m. – 5:00 p.m.
- **Monday, May 18:** 6:30 a.m. – 11:00 a.m.

#### Exhibit Hours:

- **Monday, May 18:** 12:00 p.m. – 5:00 p.m.
- **Tuesday, May 19:** 9:00 a.m. – 12:00 p.m. and 2:00 p.m. – 5:30 p.m.
- **Wednesday, May 20:** 9:30 a.m. – 12:00 p.m.

**Level 2**



Floor Plan: Level 3



# We have your bases covered.

ExxonMobil is the leading supplier of base stocks, Group I through Group V.

Our advanced technology portfolio delivers the blending flexibility you need to formulate innovative lubricants, backed by ExxonMobil's commitment to quality and deep technical expertise.

## BASE STOCKS

### GROUP I

**CORE™** Broad blending coverage

### GROUP II / II+

**EHC™** Increased oxidation stability

### GROUP III

**ALTUM™** Controlled volatility and VI

## SYNTHETIC BASE STOCKS

### GROUP IV

**SpectraSyn™ MaX PAO** Low viscosity · low volatility · fuel economy

**SpectraSyn™ PAO** Full viscosity range · balanced performance

**SpectraSyn Elite™ mPAO** High vis · low traction · wide temp range

### GROUP V

**Synesstic™ AN** Thermal, oxidative, and hydrolytic stability

**Esterex™ Esters** High polarity · seal-swell · biodegradable options

Explore the full portfolio at [exxonmobil.com/basestocks](https://www.exxonmobil.com/basestocks)



**SCAN TO  
CONTACT  
AN EXPERT**

# STLE Annual Meeting & Exhibition: Innovating Through Tribology & Lubrication

## 2026 Annual Meeting Exhibitors

*These exhibitors are displaying the lubricant industry's latest products, services, and technologies – as of April 22, 2026.*

Company Name	Booth #	Company Name	Booth #	Company Name	Booth #
Acme-Hardesty Co.....	<b>314/316</b>	Evonik Oil Additives USA, Inc. ....	<b>SS 301</b>	Norac Additives.....	<b>407</b>
Adeka USA .....	<b>910</b>	ExxonMobil Product Solutions .....	<b>SS 101</b>	Optimol Instruments Prüftechnik GmbH .....	<b>704</b>
Advanced Chemical Concepts.....	<b>506</b>	Falex Corp.....	<b>702</b>	Palmer Holland.....	<b>210/212</b>
Agilent Technologies .....	<b>817</b>	FedChem .....	<b>616</b>	PCS Instruments.....	<b>414/416</b>
American Petroleum Institute .....	<b>515</b>	Functional Products, Inc.....	<b>606</b>	Phoenix Tribology .....	<b>110</b>
American Refining Group.....	<b>712</b>	Green Oleo S.p.A.....	<b>803</b>	Pilot Chemical Co. ....	<b>801</b>
AnalytiChem .....	<b>811</b>	Huntsman Petrochemical Corp.....	<b>614</b>	Polyrheo USA.....	<b>909</b>
Anton Paar .....	<b>812</b>	IMCD US .....	<b>612/610</b>	QLS Sulfonates .....	<b>904</b>
Applied Rigaku Technologies .....	<b>317</b>	Indo Amines Americas.....	<b>915</b>	Radom Corp. ....	<b>908</b>
Ashland.....	<b>807</b>	Industrial Química Lasem S.A.U. (IQL) .....	<b>111/113</b>	Ravago Chemicals North America.....	<b>SS 401</b>
Aalytical Instruments .....	<b>100/102</b>	INEOS Oligomers .....	<b>415/417</b>	Rierden Chemical & Trading .....	<b>810</b>
Barentz North America.....	<b>905</b>	Italmatch Chemicals .....	<b>611/613</b>	Rtec Instruments .....	<b>214</b>
BASF Corp.....	<b>211/213</b>	Ivanhoe Industries .....	<b>808</b>	Sasol Chemicals .....	<b>901</b>
Bruker Nano Surfaces .....	<b>903</b>	Kao Chemicals Europe.....	<b>312</b>	Savant Labs.....	<b>217</b>
Cannon Instrument Co.....	<b>507</b>	KH Neochem Americas, Inc.....	<b>517</b>	SBZ Corp. ....	<b>916</b>
Cargill.....	<b>412/410</b>	King Industries.....	<b>510/512</b>	Sea-Land Chemical Co.....	<b>310</b>
Carpenter Co. ....	<b>115/117</b>	KLK Temix.....	<b>615/617</b>	Soltex, Inc. ....	<b>206</b>
Chemformation.....	<b>914</b>	Koehler Instrument Co. ....	<b>307</b>	SONGWON.....	<b>315</b>
Chevron Phillips Chemical .....	<b>607</b>	Kuraray America, Inc.....	<b>806</b>	Sunshield Chemicals Ltd.....	<b>714/716</b>
Colonial Chemical.....	<b>900/902</b>	LANXESS Corp.....	<b>411/413</b>	Tannas Co. & King Refrigeration .....	<b>215</b>
Compass Instruments.....	<b>700</b>	Lubrizol.....	<b>511/513</b>	TotalEnergies .....	<b>907</b>
Connect Chemicals.....	<b>913</b>	LGC Standards .....	<b>816</b>	TriboDENS.....	<b>919</b>
CRS Reprocessing.....	<b>815</b>	Lumar Química.....	<b>706</b>	Tulstar Products, Inc.....	<b>906</b>
DC Scientific .....	<b>912</b>	MidContinental Chemical Co., Inc.....	<b>311/313</b>	United Protective Technologies .....	<b>809</b>
Dover Chemical Corp.....	<b>107</b>	Momentive .....	<b>814</b>	United Soybean Board .....	<b>911</b>
Dow Chemical Co.....	<b>106</b>	Münzing North America .....	<b>306</b>	Univar Solutions .....	<b>SS 201</b>
Ducom Instruments.....	<b>805</b>	Napoleon Engineering Service.....	<b>605</b>	Vanderbilt Chemicals, LLC .....	<b>406</b>
ECH America .....	<b>813</b>	Nelson Brothers .....	<b>710</b>	VBASE Oil Co. ....	<b>207</b>
Emery Oleochemicals .....	<b>514/516</b>	NexTec Group .....	<b>917</b>	Wincom Inc.....	<b>216</b>
EnginSoft USA .....	<b>114</b>			Zschimmer & Schwarz.....	<b>SS 501</b>
Ergon, Inc. ....	<b>603/601</b>				

# Trade Show Floor Plan

EnginSoft USA 114	Phoenix Tribology 110	Dow 106	Alytical Instruments 100/102
Carpenter Co. 115/117	Industrial Química Lasem S.A.U. (IQL) 111/113	Dover Chemical Corp. 107	ExxonMobil Product Solutions 101
Wincom Inc. 216	Rtec- Instruments 214	Palmer Holland 210/212	Soltex, Inc. 206
Savant Labs 217	Tannas Co. & King Refrigeration 215	BASF Corp. 211/213	VBASE Oil Co. 207
Acme-Hardesty 314/316	Kao Chemicals Europe 312	Sea-Land Chemical Co. 310	Münzing 306
Applied Rigalis Technologies 317	SONGWON 315	MidContinental Chemical Co., Inc. 311/313	Koehler Instrument Co. 307
PCS Instruments 416	414	Cargill 410/412	Vanderbilt Chemicals, LLC 406
INEOS Oligomers 415/417	LANXESS Corp. 411/413	Norac Additives 407	Ravago Chemicals North America 401
Emery Oleochemicals 514/516	King Industries 510/512	Advanced Chemical Concepts 506	
KH Neochem Americas, Inc. 517	Petroleum Institute 515	Lubrizol 511/513	Cannon Instrument Co. 507
FedChem 616	Huntsman 614	IMCD US 610/612	Functional Products, Inc. 606
Zschimmer & Schwarz 501			
KLK Temix 615/617	Italmatch Chemicals 611/613	Chevron Phillips Chemical 607	Napoleon Engineering Services 605
Sunshield Chemicals Ltd. 714/716	American Refining Group 712	Nelson Brothers 710	Ergon, Inc. 601/603
		Lumira Química 706	Optinol Instruments Protechnik 704
		Falex Corp. 702	Compass Instruments 700

## Exhibition Hours

The exhibition is in the Hyatt Regency New Orleans – **Elite Hall AB** (see maps on pages 8-10).

**Monday, May 18:** 12:00 pm – 5:00 pm

**Exhibitor Appreciation Hour:** 3:00 pm – 4:00 pm

**Evonik Raffle:** 3:30 pm (Must be present to win at Booth #301)

**Tuesday, May 19:** 9:30 am – 12:00 pm & 2:00 pm – 5:30 pm

*(Closed for President's Luncheon – 12:00 pm – 2:00 pm)*

**Exhibitor Appreciation Hour:** 3:00 pm – 4:00 pm

**Evonik Raffle:** 3:30 pm (Must be present to win at Booth #301)

**Wednesday, May 20:** 9:30 am – 12:00 pm

Sasol Chemicals 901	Colonial Chemical 900/902	Pilot Chemical Co. 801	
Bruker Nano Surfaces 903	Green Oleo S.p.A. 803	Ducom Instruments 805	
Barentz North America 905	QLS Sulfonates 904	Ashland 807	Kuraray America, Inc. 806
TotalEnergies 907	Tulstar Products, Inc. 906	United Protective Technologies 809	Ivanhoe Industries 808
Polyrheo USA 909	Radom Corp. 908	AnalytiChem 811	Rierden Chemical & Trading 810
United Soybean Board 911	Adeka USA. 910	ECH America 813	Anton Paar 812
Connect Chemicals 913	DC Scientific 912	CRS 815	Momentive 814
Indo Amines Americas 915	Chemformation 914	Agilent Technologies 817	LGC Standards 816
NexTec Group 917	SBZ Corp. 916		
TriboDENS 919			

# STLE Annual Meeting & Exhibition: Innovating Through Tribology & Lubrication

## 2026 Annual Meeting Sponsors *(As of April 22, 2026)*

### Rhodium Plus (\$5,000 +)

**Azelis L&MF US**

Registration Bags

**Cargill**

Keynote Session

**Ergon, Inc.**

Badge Lanyards

**Lubrizol**

Guestroom Keycards

**Zschimmer & Schwarz**

WiFi Service

### Rhodium (\$5,000)

**Palmer Holland**

Annual Meeting Mobile App

### Palladium Plus (\$4,000 +)

**Advancion**

Directional Signs/Floor Clings

**Ideas, Inc.**

Welcome Gift

**Shell**

Education Course Lunches

### Titanium Plus (\$3,000 +)

**Afton Chemical Corp.**

Relaxation/Recharging Lounge

**Evonik Oil Additives USA, Inc.**

Exhibitor Appreciation Hour Raffle

### Titanium (\$3,000)

**Dumarey**

Education Course Materials

**TRCC**

OEM Panel

**Vanderbilt Chemicals, LLC**

President's Luncheon

### Platinum (\$2,000)

**Chevron Oronite**

Speakers Breakfast Series (Tuesday)

**Daubert Chemical Co.**

Speakers Breakfast Series (Monday)

**Norac Additives**

Networking Reception

**Quaker Houghton**

Speakers Breakfast Series (Wednesday)

**Sea-Land Chemical Co.**

Networking Reception

**STLE Chicago Section**

Networking Reception

**STLE Pacific Northwest Section**

Networking Reception

### Gold (\$1,000)

**BASF Corp.**

Networking Reception

**Calumet Specialty Products**

Partners, L.P.

Networking Reception

**ChemPoint**

Networking Reception

**IMCD**

Networking Reception

**Novel Reliable Technologies**

Networking Reception

**PCS Instruments**

Networking Reception

**Soltex**

Networking Reception

**The Timken Co.**

Networking Reception

# High Performance

**Metalworking  
Fluid  
Solutions**

Engineered for  
Precision Machining  
and Metal Forming



## The Evolution of Metalworking Fluids

Advancing Tool Life, Surface Finish, and Process Stability



# STLE Annual Meeting & Exhibition: Innovating Through Tribology & Lubrication

## Annual Meeting Special Events



All annual meeting events are in the Hyatt Regency New Orleans, unless noted.

### Art of Tribology

**All week** | Elite Hall Foyer

This initiative highlights the unexpected beauty within the field of lubrication, friction, and wear, celebrating the artistic side of scientific discovery. We invited the STLE community to submit their most captivating tribology-related images for display at the conference. Images can be varied—from high quality SEM images to unusual lab instrumentation setups to 3D simulation models and more. This year, attendees can vote on their favorite submission through the STLE Mobile App.

### New Member and Student Networking Reception

**Sunday, May 17**

**6:00 – 7:30 p.m.** | Storyville

**Ticketed Event:** New STLE members and students are welcomed to an evening of trivia and networking to build friendships and expand professional connections. This event is for new members and students only.

### Opening General Session

**Monday, May 18**

**10:30 a.m. – 12:00 p.m.** | Celestin Ballroom DE



**Justin Van Tries**, TotalEnergies Lubmarine

STLE honors its esteemed journal publishing award recipients during the Monday General Session program. You'll also hear a keynote presentation from Justin Van Tries of TotalEnergies Lubmarine titled "Marine Engine Lubrication with Alternative Fuels." Large

marine engines play a key role in powering global trade. Today,

they are evolving as demands for greater efficiency and stricter environmental standards lead to a shift towards alternative fuels like LNG, methanol, and ammonia brings fresh lubrication challenges. Learn more from this seasoned marine lubrication and product management specialist with extensive international experience supporting the development, testing, and commercialization of engine oils for the marine and power sectors.

### Networking Reception

**Monday, May 18**

**5:00 – 6:30 p.m.** | Elite Hall AB

The annual meeting's central networking event, held in the Exhibit Hall, is a way for you to reconnect with old friends while making new ones. Since people come to STLE's Annual Meeting & Exhibition from around the world, this truly is an international event. Relax, socialize and add to your list of professional contacts through this outstanding networking event.

### Exhibitor Appreciation Hour

*Back by popular demand, two hours of dedicated exhibit time will occur at this year's show:*

**Monday, May 18 & Tuesday, May 19**

**3:00 – 4:00 p.m.** | Elite Hall AB

Refreshments will be served in the trade show. Technical sessions, education courses, Commercial Marketing Forum presentations and all other annual meeting activities will cease at this time. A raffle will take place at Evonik Booth #301 at 3:30 p.m. both days (must be present to win). Come support the meeting's exhibitors – and find solutions to your most pressing technical issues.

# Elevate performance with tailor-made esters for energy efficient engine oils

Z&S offers the world's broadest portfolio of synthetic esters, featuring the proprietary breakthrough technology of EsterTec® VSP.

Discover more at  
[zslubes.com](http://zslubes.com)



**ZSCHIMMER & SCHWARZ**

Chemistry tailor-made



## Yoga & Pilates Wellness Sessions

**Tuesday, May 19 & Wednesday, May 20**

**6:00 – 7:00 a.m.** | Elite Hall B

**Ticketed Event:** Tribology, the science of movement, and wellness share a common goal: enhancing performance. Like lubrication reduces friction, yoga and Pilates improve mobility, balance, and strength, creating smoother motion in both machines and bodies. This wellness event is an excellent opportunity to connect with fellow attendees and contribute to the STLE NextGen Fund. No previous yoga or Pilates experience is required—first-timers are welcome! No equipment is needed, and mats will be provided for all participants. Visit the registration desk to sign up for one (\$30) or both (\$50) days.

**Thank you to our corporate partners, Afton Chemical Corporation, Dilmar Oil, Novel Reliable Technologies, and Vanderbilt Chemicals, LLC.**

## President's Luncheon & 80th STLE Annual Meeting Business Meeting

**Tuesday, May 19**

**12:00 – 2:00 p.m.** | Celestin Ballroom DE



**Kevin Delaney**



**Steffen Bots**

**Ticketed Event:** The annual meeting's major business function draws virtually all attendees for a two-hour event honoring STLE's incoming and outgoing presidents, award winners and top volunteers. Come honor 2025-2026 President

Kevin Delaney with Vanderbilt Chemicals, LLC and 2026-2027 President Steffen Bots with ADDINOL Lube Oil GmbH. A ticket for the President's Luncheon is included in your meeting registration and free to STLE Corporate Member representatives (two tickets) and students. Additional tickets may be purchased for \$50 per person at the STLE registration desk in the Elite Hall Foyer.

## Tribology Data Hub – Designing the Next Steps

**Tuesday, May 19**

**5:15 – 6:00 p.m.** | Celestin Ballroom A

The town hall style session will present the key outcomes from the monthly meetings of the Tribology Data Hub volunteers, along with the newly assembled position paper. Participants will be invited to help shape the community's vision for developing commonly accepted data practices and will have space to ask questions or contribute their own perspectives. The discussion will then transition into grouping shared concerns and working through them systematically to outline potential objectives, deliverables, and milestones for the coming year.

## Lubricant Supply Discussion Session

**Wednesday, May 20**

**12:00 p.m.** | Celestin Ballroom D

In response to the ongoing global lubricant supply challenges affecting our industry, STLE is hosting a Lubricant Supply Discussion Session—a moderated panel open to all attendees. This is your opportunity to hear directly from industry experts, ask questions, and engage in an open conversation about the supply disruptions, root causes, and strategies our community is navigating in real time. Lunch will not be provided, but you may bring your own.

## OEM Panel Discussion

**Wednesday, May 20**

**5:15 – 6:30 p.m.** | Celestin Ballroom D

In this open Q&A session, OEM panelists share the lubrication hurdles they face in design and operations. Audience participation is encouraged—come ready with your questions about performance, sustainability, and innovation in OEM lubrication. **Thank you to our sponsor, TRCC!**

### Panelists:

**Allen Comfort**, Lubricant Technical Specialist; DEVCOM – Ground Vehicle System Center

**Rebecca Lauer**, Senior Tribology Engineer Fluids, Surface Texture, and Wear; Danfoss Power Solutions (US) Company

**Troy Muransky**, Lead Organic Materials Engineer; Dauch

**Christoph Rohbogner**, System Owner – Lubricants and Coolant; Jenbacher Gas Engines

**Moderator: Bill Anderson**, Afton Chemical



# Ingredients +Specialties

From **Univar**Solutions

## Keeping the world moving through lubricant and metalworking fluid formulations and solutions

The right lubricants and metalworking fluids are essential to ensuring seamless performance, protection, and efficiency. **Ingredients + Specialties from Univar Solutions** offers an extensive portfolio of base stocks, specialized additives, and high-performance lubricants from some of the most trusted brands in the industry, helping you keep your operations running smoothly and efficiently.

Our team of chemists and technical experts work proactively to anticipate market trends, evolving regulations, and innovative additive technologies to help you stay ahead of industry demands. Partner with us to develop your next product to help solve your next challenge.

**Together, let's shape the future of  
lubricants and metalworking fluids.**

**Explore our solutions.**



Scan the QR code  
to learn more.



[univarsolutions.com](https://univarsolutions.com)



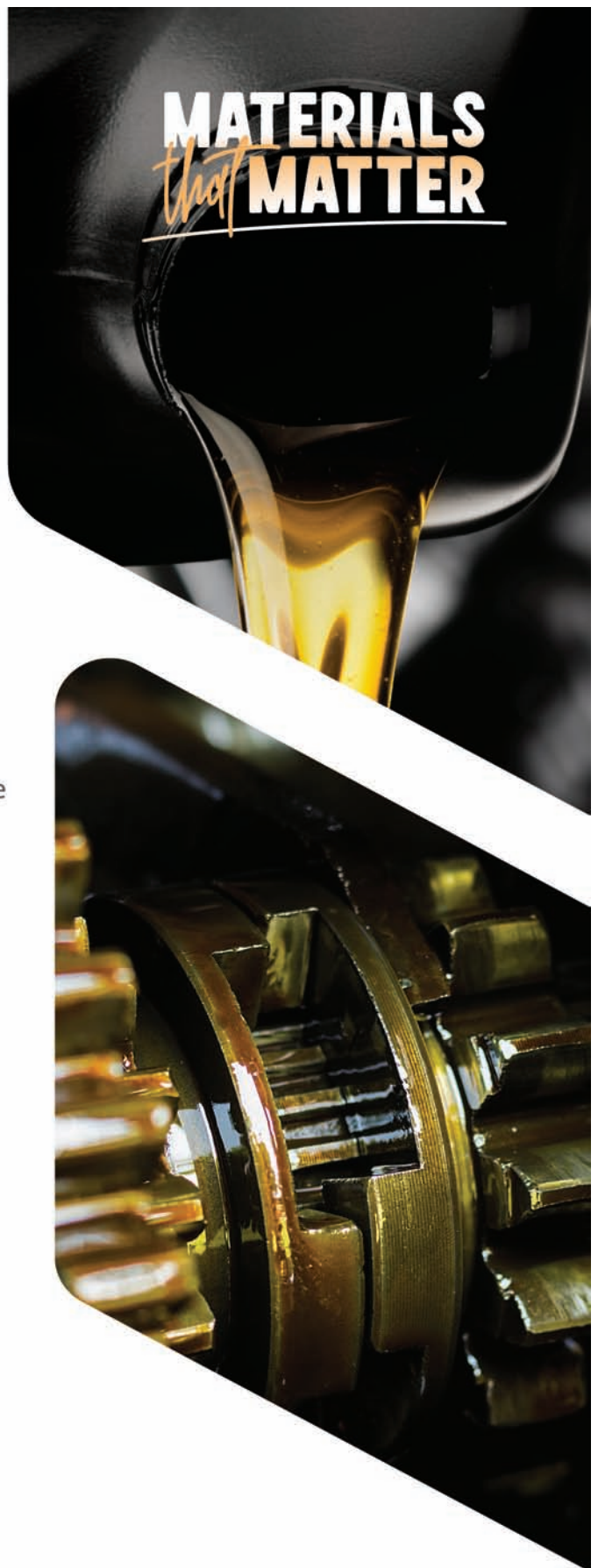
[Univar Solutions LMWF LinkedIn](#)



[getstarted@univarsolutions.com](mailto:getstarted@univarsolutions.com)



1-800-531-7106



# STLE Annual Meeting & Exhibition: Innovating Through Tribology & Lubrication

## Annual Meeting Education Courses



The 2026 STLE Annual Meeting features 9 industry-specific education courses offered on Sunday, May 17, and Wednesday, May 20. All full day courses will start at 8:00 a.m. and end by 5:00 p.m. Please note only digital books will be available for each course.

**Onsite registration is available.** If you have not signed up for a course but would like to, please go to the STLE Registration Desk in the Elite Hall Foyer of the Hyatt Regency New Orleans to check on availability. Individuals will not be admitted to a course without registration. **All education courses are in the Hyatt Regency New Orleans unless otherwise noted.**

### Sunday, May 17

#### Data Management for AI in Tribology

- Celestin Ballroom H

**Course Chair:** Nick Garabedian, Datin

**Co-Chair:** Prathima Nalam, SUNY at Buffalo

#### Advanced Lubrication 301

- Celestin Ballroom B

**Course Chair:** Farrukh Qureshi, Lubrizol

**Co-Chair:** Hyunsoo Kim, Lubrizol

#### Basic Lubrication 103

- Celestin Ballroom F

**Course Chair:** Monica Ford, Clariant Corporation

**Co-Chair:** Andy Yoder, Lubrizol

#### Electric Vehicles

- Strand 12

**Course Chair:** Carlos Sanchez, Southwest Research Institute

**Co-Chair:** Chris Cleveland, Afton Chemical Corporation

#### Hydraulics

- Celestin Ballroom C

**Course Chair:** David Racke, Lucas Oil Products Inc.

**Co-Chair:** Ethan Wood, Lucas Oil Products Inc.

#### Metalworking Fluids 125

- Celestin Ballroom A

**Course Chair:** Stephanie Cole, Münzing

**Co-Chair:** Jennifer Lunn, FUCHS Lubricants Company

#### Synthetics

- Celestin Ballroom G

**Course Chair:** Vasu Bala, TRCC

**Co-Chair:** Donna Mosher, BASF Corp.

### Wednesday, May 20

#### Advanced Lubrication 302

- Offsite at Tulane University

**Course Chair:** Michael Blumenfeld, ExxonMobil Technology & Engineering Company

**Co-Chair:** Noshir Pesika, Tulane University

#### Metalworking Fluids 240

- Strand 11

**Course Chair:** Kevin Saunderson, BP Lubricants USA, Inc.

**Co-Chair:** Jacob Hassing, Lube Tech

stle  
Mobile App

Manage your STLE Annual Meeting plans right from your phone.

## 80th STLE Annual Meeting & Exhibition: Innovating Through Tribology & Lubrication

Hyatt Regency New Orleans | New Orleans, Louisiana (USA)

STLE's Annual Meeting offers so much programming that keeping track of what's happening when and where can be a challenge. The STLE Mobile App lets you plan your itinerary and stay on top of fast-breaking meeting updates every minute of the day.

### The STLE Mobile App lets you track, schedule and connect during the STLE Annual Meeting with:

- ◆ Over 400 technical session abstracts—push a button and it's on your itinerary!
- ◆ Paper presenters—easily find your favorite speakers
- ◆ 9 lubrication-specific courses
- ◆ More than 100 exhibitors at the trade show
- ◆ Special events and networking opportunities
- ◆ Floor plans of the hotel and exhibition
- ◆ Meeting attendees
- ◆ Meeting sponsors
- ◆ Meeting updates—stay on top of late-breaking news



Download the app—  
and don't miss a thing!



Log in using your STLE member ID  
and password.

Once in the mobile app, go to the 2026  
STLE Annual Meeting & Exhibition.

For additional questions about the app,  
please contact Bruce Murgueitio at  
[bmurgueitio@stle.org](mailto:bmurgueitio@stle.org).

Sponsored by Palmer Holland.



• connect • learn • achieve

Society of Tribologists and Lubrication Engineers

840 Busse Highway, Park Ridge, Illinois 60068 (USA)

P: (847) 825-5536 | F: (847) 825-1456 | [www.stle.org](http://www.stle.org) | [information@stle.org](mailto:information@stle.org)

Follow us on:

# STLE Annual Meeting & Exhibition: Innovating Through Tribology & Lubrication

## 2026 Publishing Award Recipients

STLE would like to congratulate the following individuals who will be recognized for their outstanding technical achievements in the field of tribology and lubrication during the 2026 STLE Annual Meeting & Exhibition.

Publishing awards are given in recognition of outstanding achievement in the field of tribology and lubrication. All publishing awards are for papers printed in Tribology Transactions, STLE's peer-reviewed journal.

For more information on each award, visit [www.stle.org/awards](http://www.stle.org/awards).

### Edmond E. Bisson Award

- **Xun Huang**, Southeast University (P.R. China)
- **Ge Xu**, Southeast University (P.R. China)
- **Shuyun Jiang**, Southeast University (P.R. China)

*“Study on Rotor-Bearing Dynamic Performance of a Novel Motorized Spindle Supported by Water-Lubricated Hydrodynamic Spiral Grooved Bearings”*

### Frank P. Bussick Award

- **Enzhe Bi**, Beijing University of Chemical Technology (P.R. China)
- **Shuangxi Li**, Beijing University of Chemical Technology (P.R. China)
- **Zhixing Zhai**, Beijing University of Chemical Technology (P.R. China)
- **Baiqi Huang**, Beijing University of Chemical Technology (P.R. China)
- **Xinghua Liu**, China State Shipbuilding Co., Ltd (P.R. China)
- **Jiangteng Zhang**, Beijing University of Chemical Technology

*“Analysis of Wear Characteristics of Hydrodynamic Seals During Startup Using 3D Fractal Characterization and Study of Opening Performance Degradation Mechanism”*

### Walter D. Hodson Award

- **Xiaoman Wang**, Northwestern University (USA)
- **Q. Jane Wang**, Northwestern University (USA)
- **W. Wayne Chen**, Northwestern University (USA)
- **Yip-Wah Chung**, Northwestern University (USA)
- **Hiroataka Miwa**, Nissan Research Center (Japan)
- **Toshikazu Nanbu**, Nissan Research Center (Japan)
- **Yoshitaka Uehara**, Nissan Research Center (Japan)
- **Yuan Yuan**, Northwestern University (USA)
- **Shuangbiao Liu**, Northwestern University (USA)
- **Dong Zhu**, Tri-Tech Solutions (USA)

*“Surface Interaction and Wear Due to Sliding Electrical Contact of Materials”*

### Wilbur Deutsch Memorial Award

- **Markus Brummer**, Technical University of Munich (Germany)
- **Johannes Koenig**, ZF Friedrichshafen AG (Germany)
- **Thomas Tobie**, Technical University of Munich (Germany)
- **Karsten Stahl**, Technical University of Munich (Germany)

*“Investigations on the Influence of Synthetic Lubricants on the Pitting Load Carrying Capacity of Cylindrical Gears”*

### Captain Alfred E. Hunt Award

- **Pramod Shetty**, University of Twente (Netherlands)
- **Robert Jan Meijer**, University of Twente (Netherlands)
- **Jude A. Osara**, University of Twente (Netherlands)
- **Rihard Pasaribu**, Shell Downstream Services International BV (Netherlands)
- **Piet M. Lugt**, University of Twente (Netherlands)

*“Film Thickness in Grease-Lubricated Deep Groove Ball Bearings—A Master Curve”*

### Al Sonntag Award

- **Zhanmo Zheng**, Wuhan University of Technology (P.R. China)
- **Xiangjun Zhang**, China Classification Society Wuhan Branch (P.R. China)
- **Conglin Dong**, Wuhan University of Technology (P.R. China)
- **Xiuqin Bai**, Wuhan University of Technology (P.R. China)
- **Chengqing Yuan**, Wuhan University of Technology (P.R. China)
- **Yuhang Wu**, Wuhan University of Technology (P.R. China)

*“Effect of Molybdenum Bisulfide (MoS<sub>2</sub>) Particle Size on Tribological and Vibration Reduction Properties of Thermoplastic Polyurethane”*

# Industry Service Award Recipients

## STLE International Award



**Michael Khonsari**  
Louisiana State  
University (USA)

## Raymond L. Thibault Excellence in Education Award



**Neil Canter**  
Chemical Solutions  
(USA)

## Student Scholarships

### The Elmer E. Klaus Fellowship



**Mohammad Fuad  
Hassan**  
Georgia Southern  
University (USA)

## P.M. Ku Award



**Farrukh Qureshi**  
Lubrizol (USA)

## 2026 STLE Fellows



**Kathleen O'Leary  
Havelka**  
Advancion Corp. (USA)

### The E. Richard Booser Scholarship



**Moises Munoz  
Paredes**  
Auburn University  
(USA)

## Vic Joll Award



**Arup Gangopadhyay**  
Retired from Ford (USA)



**George Plint**  
Phoenix Tribology Ltd.

### The Jeanie S. McCoy Scholarship



**Doan Tran**  
University of California,  
Berkeley (USA)

## Outstanding STLE Local Section Awards

- STLE Houston Section
- STLE Philadelphia Section



**Bart Raeymaekers**  
Virginia Tech

## Early Career Awards

### Student

**Gugyeong Sung**, Texas A&M University

### Postdoctoral Researcher

**Song Wei**, University of Illinois Urbana-Champaign

### Academic Professional

**Wenbo Wang**, Oakland University

### Industry Professional

**Tomas Grejtak**, Oak Ridge National Laboratory

## CALL FOR VOLUNTEERS

### JOIN US IN SUPPORTING OUR COMMUNITY!



**Are you looking for a fun and rewarding way to contribute to the tribology and lubrication community?** STLE is looking for passionate individuals with diverse perspectives and expertise to help us take our professional and technical resources to the next level.

- Volunteer with STLE to advance your career and build new connections by contributing your time and skills.
- Attending a Technical Committee meeting during the annual meeting is a great way to get started.
- Explore our complete list of available volunteer opportunities at [www.stle.org/volunteer](http://www.stle.org/volunteer).

# Technical Sessions Time Grids – Monday, May 18, 2026

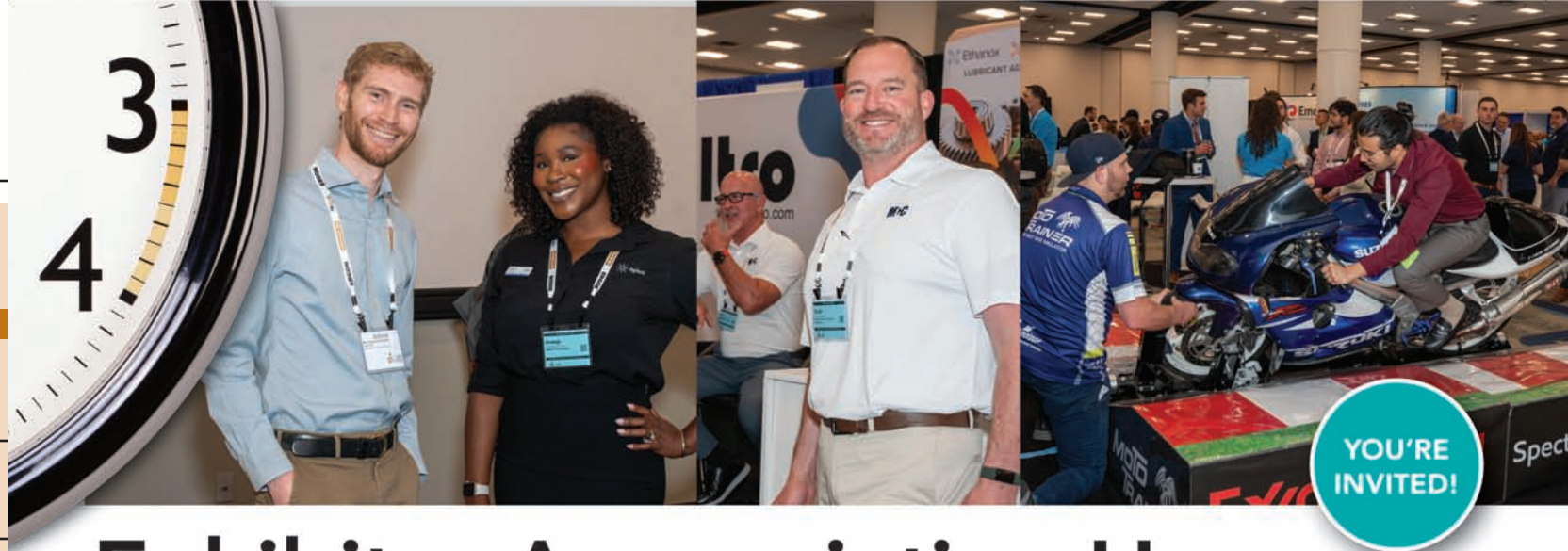
TIME	SESSION 1B Fluid Film Bearings/Seals I	SESSION 1C Surface Engineering I	SESSION 1D Electric Vehicles I: Analysis & Testing
	Celestin Ballroom B	Celestin Ballroom C	Celestin Ballroom F
8:00 am – 8:40 am	Effect of Runner Misalignment on Nonlinear Transient Behavior of Air Foil Thrust Bearings, H. Mohammad Al Hamim	Microscale Tribochemistry of Diamond-Like Carbon: Run-in and Shear Stress vs. Pressure, B. Borovsky	Correlating High-Shear Rig Tests with High Shear-Air Sparge Test for ICE and EV Lubricants, S. Peerzada
8:40 am – 9:00 am	Effect of Abrasive Particles in Lubricating Oil on the Performance of Hydrodynamic Journal Bearings Used in Aircraft Engine Power Transmission Systems, H. Bouajila		High Speed Aeration Test Development and Findings for e-Fluids, M. Ishikawa
9:00 am – 9:20 am	Evaluation of an EHD Modelling of Compliant Bearings Subjected to Dynamic Loads by Comparison with Experimental Measurements, A. Fatu	Understanding the Fretting Wear Behavior of Additively Manufactured Oxide Reinforced FeCrAl Alloy for Nuclear Reactors, S. Omarov	An Average Reynolds Equation Incorporating Electric-Field-Induced Lubricant Polarization, X. Wang
9:20 am – 9:40 am	Comparative Study of Two Inherent Orifice Models Against Computational Fluid Dynamic Simulations for Hydrostatic and Hybrid Air Bearings, L. Kancharla	Enhancing Mechanical Strength and Wear Resistance of AISI 304 Steel via Gradient Severe Shot Peening Technique, K. Shirvani	Viscosity Effects on Efficiency & Wear Performance of Transaxle Fluids for Electric Vehicles, P. Cawich
9:40 am – 10:00 am	Transient 3D CFD Simulation and Identification of Rotordynamic Coefficients of a High-Speed Multi-Recess Hydrostatic Journal Bearing for LN2, M. Müller	Ultrathin ZnO Coatings and 3D-Textured Surfaces for Dust-Resistant Materials in Extreme Environments, J. Hoskins	Oil Aeration: Who's to Blame, the Fluid, the Machine, or the Conditions?, R. Hein
10:00 am – 10:30 am	<b>Break</b>	<b>Break</b>	<b>Break</b>
	SESSION 2B Fluid Film Bearings/Seals II	SESSION 2C Surface Engineering II	SESSION 2D Electric Vehicles II: Lubricants
	Celestin Ballroom B	Celestin Ballroom C	Celestin Ballroom F
1:40 pm – 2:00 pm	Advanced Perturbation Method for Calculation of Stiffness and Damping Coefficients of Foil Bearings, R. Imam		Maximizing Electric Vehicle Efficiency: Matching Fluids to Drive Unit Design, H. Thaker
2:00 pm – 2:20 pm			
2:20 pm – 2:40 pm	A Numerical Model for an Aerostatic Thrust Bearing with Poro-elastic Resistor, T. Cicone	Advanced Surface Treatments for Harsh Operating Conditions, C. Lorenzo Martin	Enhancing Efficiency in Electric Drive Units (EDUs) through Lubricant Optimization, M. Hauschild
2:40 pm – 3:00 pm	A Brief History of the Tilting Pad Bearings with Flexible Pivots, T. Plantegetet	Engineered Nanocrystalline Coatings for Enhanced Steel Tribology via Tribocatalytic Interactions with Hydrocarbon Lubricants, Z. Al Hassan	
3:00 pm – 4:00 pm	<b>Exhibitor Appreciation Hour</b>	<b>Exhibitor Appreciation Hour</b>	<b>Exhibitor Appreciation Hour</b>
4:00 pm – 4:20 pm	Challenges of Bearings for Supercritical CO2 Turbomachinery, H. Xu	Accelerated Evaluation of Coating Performance Through Multistation Parallel Testing, L. Lopes	Pushing the Boundaries of Ultra-Low Viscosity EV Fluids: The Role of Esters, G. Moody
4:20 pm – 4:40 pm	Oil Whip Diagnostics and Elimination in a Generator with Fluid Film Bearings, J. Yu	Humidity-Driven Tribological Mechanisms of Ground Micro-Arc Oxidation Coatings on Aluminium Alloy, K. Delbé	Rolling Contact Fatigue Behavior of Water-Based Lubricants for Electric Vehicle Applications, E. Kotzalas
4:40 pm – 5:00 pm		High-velocity Laser Accelerated Deposition: Microstructure and Mechanical Properties of the Bonding Interface, A. Beheshti	Exploring Water-Based Lubricants for Enhanced Performance in Electric Vehicles, X. He
5:00 pm – 5:20 pm		Surface Engineering Technical Committee Meeting	

<b>SESSION 1E</b> <b>Gears I</b>	<b>SESSION 1F</b> <b>Tribochemistry I</b>	<b>SESSION 1G</b> <b>Grease I</b>	
<b>Celestin Ballroom G</b>	<b>Celestin Ballroom H</b>	<b>Bolden 1</b>	
Validation of Mesh-Free Simulation for Gearbox Lubrication and Loss Prediction Using OSU, FZG, and production EDU Cases, J. Li	Mechanochemical Reactivity of C <sub>2</sub> Hydrocarbons on Pt-Au, F. Mangolini	The Assessment of Alternative Greases Thickeners, G. Fish	<b>8:00 am – 8:40 am</b>
Influence of Dumbbell Base Oil Blends on Micropitting, M. Ueda	ZDDP Tribochemistry on Iron Oxide: From Molecular Decomposition to Polyphosphate Nucleation, T. Kuwahara	Heat Generation and Grease Life in Bearings, J. Osara	<b>8:40 am – 9:00 am</b>
Demonstration of Synthetic Industrial Gear Oil Performance Retention, J. Dickstein	Hybrid Kinetic Monte Carlo/Molecular Dynamics Algorithms for Tribological Simulations: Bridging Molecular Resolution and Experimental Timescales, S. Ntioudis	Calcium Sulfonate Complex Grease as a Next-Generation Lubricant: Formation of Tribo-film Governing Tribological Properties, Y. Hayashi	<b>9:00 am – 9:20 am</b>
Simulating Gear Micropitting Wear on a 3 Ring on Roller Rig, M. Ingram	Shear-induced Emergence of Superlubric Aromatic Interfaces in Amorphous Carbon, T. Reichenbach	Tribofilm Formation and Micropitting Behavior of Nanoparticle Enhanced Lubricating Grease, N. Demas	<b>9:20 am – 9:40 am</b>
Evaluating the Deposit Forming Tendencies of Industrial Lubricants, A. Johnson	Shear-Driven Tribochemistry of MXenes at Sliding Interfaces, V. Bhaskar	Applying the Extended Stribeck Curve to Lubricating Greases, B. Leonard	<b>9:40 am – 10:00 am</b>
<b>Break</b>	<b>Break</b>	<b>Break</b>	<b>10:00 am – 10:30 am</b>
<b>SESSION 2E</b> <b>Gears II</b>	<b>SESSION 2F</b> <b>Tribochemistry II</b>	<b>SESSION 2G</b> <b>Grease II</b>	
<b>Celestin Ballroom G</b>	<b>Celestin Ballroom H</b>	<b>Bolden 1</b>	
Recent Advancements in Pericyclic Gear Technology, J. McGovern		Effects of Hydrogen Bonding on Lubricant Grease Mechanical Properties, J. Bonta	<b>1:40 pm – 2:00 pm</b>
	Tribofilm and NVH Evaluation of Stearic Acid Under Variable Slide-to-Roll Ratios using a Force Controlled Pendulum Tribometer, V. Singh		<b>2:00 pm – 2:20 pm</b>
Industrial Gear Efficiency – The Impact of Moving to Lower Viscosity, P. Norris	CuO-GO Nanocomposites as Additives of Polyalphaolefin (PAO) Lubricants to Enhance the Tribological Performance under Environmental Conditions, R. Islam	Quantifying Tackiness and Its Relation to Consistency and Friction in Lubricating Greases, F. Islam Muna	<b>2:20 pm – 2:40 pm</b>
Investigating the Effects on Wear Performance of Plastic Gears, D. Zorko	Tribological Behavior and Tribosynthesis of LiC <sub>6</sub> : Insights into Lithium-Graphite Intercalation under Dry Contact, K. Delbé	Onsite Measurement of Grease Oil Content Decreases by Near-Infrared Spectroscopy and Machine Learning, K. Kojima	<b>2:40 pm – 3:00 pm</b>
<b>Exhibitor Appreciation Hour</b>	<b>Exhibitor Appreciation Hour</b>	<b>Exhibitor Appreciation Hour</b>	<b>3:00 pm – 4:00 pm</b>
Multi-objective Design Optimization of multi-stage Spur Gears with Integrated Geometric Refinement, C. Autore	Tribochemical Formation of Fluorinated Termination on ta-C/ta-C Interface Using Ionic Liquid for Achieving Super-Low Friction, K. Sato	Multiscale Simulation of Grease Based on Molecular Level, H. Washizu	<b>4:00 pm – 4:20 pm</b>
Gears Technical Committee Meeting	Influence of PMA on the Anti-Scuffing Properties of AW/EP Additives, M. Ueda	Rail Curve Grease: Oil Separation and Low-Temperature Pumpability, H. Qi	<b>4:20 pm – 4:40 pm</b>
	Unique Architectural Design of Organic Polymeric Friction Modifier (OPFM) to Optimize Lubricity and Synergy with Inorganic Friction Modifiers, M. Lee	Influence of Low Temperatures on Film Thickness in Grease Lubricated Deep Groove Ball Bearings, P. Shetty	<b>4:40 pm – 5:00 pm</b>
		Grease Technical Committee Meeting	<b>5:00 pm – 5:20 pm</b>

**MONDAY >>**

# Technical Sessions Time Grids – Monday, May 18, 2026

TIME	SESSION 1H Power Generation I	SESSION 1I EFF/Synthetic Lubrication I	SESSION 1J Commercial Marketing Forum I
	Golden 2	Golden 5	Golden 6
8:00 am – 8:20 am	Lubricant Varnish - What We've Learned, and What We Still Don't Know, G. Livingstone	A Tribological Comparison of Sustainable Lubricity Additives Affecting Metalworking Fluid Performance, S. McGee	ExxonMobil: Next Generation High Performance Synthetic Compressor Oil: Enabling Longer Life and Energy Efficiency, M. Patel
8:20 am – 8:40 am			Novel Reliable Technologies (NRTech): Low-Temperature Performance of Base Oils and the Evolution of Re-Refined Base Stocks in Wax Control, G. Duckworth
8:40 am – 9:00 am	Ionic Liquid-Enhanced Environmentally Acceptable Lubricants for Waterpower, J. Qu	Multifunctional Polymers Maximizing Performance & Applicability in Lubricant Formulations: Emerging Polymer Technologies Beyond Viscosity Modifiers in the Carbon Neutral Era, H. Kim	Kao Chemicals: Turning Formulation Pressure into Competitive Advantage and Lower Total Cost of Ownership – The Kao Toolbox Approach, S. Wohlfahrt
9:00 am – 9:20 am	Development of a Robust EHD Seal for Nuclear Supercritical Power Cycles, H. Xu	Environmentally Friendly Choline Amino Acid-Based Protic Ionic Liquids for Enhanced Tribological Performance as Neat Lubricants and Additives, B. Mahoney	Chevron Phillips Chemical: Elevate Your Formulations: Benefits of Synfluid® 1-Dodecene Based PAOs, T. Malinski
9:20 am – 9:40 am	Tribological Challenges of using Environmentally Acceptable Lubricants in Hydropower Systems, A. Greco	Fire Resistant Hydraulic Fluids to Meet Changing Market Needs, L. Huffman	Advancion Sciences: Designing Resilient Supply Chains for an Uncertain World, B. Griegel
9:40 am – 10:00 am			Colonial Chemical: A Highly-Effective Aluminum-Staining Inhibitor, S. Tang
10:00 am – 10:30 am	Break	Break	Break
	SESSION 2H Power Generation II: Ocean Tribology	SESSION 2I EFF/Synthetic Lubrication II	SESSION 2J Commercial Marketing Forum II
	Golden 2	Golden 5	Golden 6
1:40 pm – 2:00 pm	Wave Energy Converters – A Tribology Perspective, S. Glavatskih	Novel Insights into The Effect of Lubricants on Burr Formation in Metal Cutting, J. Schoop	VBASE: Secondary Polyol Ester (SPE®) Base Oils as a Lever for Finished Fluid Performance, A. Aleem
2:00 pm – 2:20 pm			Evonik Oil Additives: VISCOBASE Synthetic Base Oils and NUFLUX Technology – Your Toolbox for Upgrading Industrial Gear Oils, J. Langston
2:20 pm – 2:40 pm	Challenges in Making Greases Green: An Ocean Tribology Perspective, S. Moharana	Low Viscosity, High Impact: Advancing Sustainable Lubrication with Synthetic Esters, S. Basu	Zschimmer & Schwarz: ESTERTEC® VSP: Next Generation Synthetic Esters for Value, Sustainability and Performance, D. Placek
2:40 pm – 3:00 pm	Roman de la Presilla Talk	Ester Structure Property Relationships Impacting Friction and Wear Characteristics, A. Johnson	Functional Products: They're Right: Your High-VI Hydraulic Fluid *Is* Too Expensive, E. Willett
3:00 pm – 4:00 pm	Exhibitor Appreciation Hour	Exhibitor Appreciation Hour	Exhibitor Appreciation Hour
4:00 pm – 4:20 pm	Acoustic Emission-Based Detection of Tribological Faults in Drivetrains: A Laboratory Study with Marine Application Relevance, F. König	Enhancing Lubricant Functional Performance through Oxygen-Rich Synthetic Esters, M. Greaves	BASF Corporation: Emgard® Transportation Lubricants – Reducing Operating Costs with Advanced Lubricant Formulations, D. Mosher
4:20 pm – 4:40 pm		Development of a Shear-stable, Plant-based Axle Lubricant Compliant with USDA BioPreferred® Standard, A. Goyal	
4:40 pm – 5:00 pm	Power Generation, Hydraulics & Ocean Tribology Technical Committee Meeting	Environmentally Friendly Fluids/Synthetics Technical Committee Meeting	Eralytics: New Ways to Gain Insights into Lubricants and Base Oils using FTIR Analysis, T. Feischl
5:00 pm – 5:20 pm			



# Exhibitor Appreciation Hours

**Monday and Tuesday, May 18 & 19, 3-4 pm both days**

Hyatt Regency New Orleans | New Orleans, Louisiana (USA)

*Refreshments will be served!*

The trade show is a major component of STLE's Annual Meeting. STLE is making it even easier for you to fit a visit to the exhibition into your personal itinerary with two hours of dedicated exhibit time—no need to worry about missing a Commercial Marketing Forum presentation, education course or technical session!

Come view the newest products and services from the lubricant industry's leading companies. More than 100 companies from every corner of the industry will be represented and looking to do business with you.

Exhibitor Appreciation Hour Sponsor Evonik Oil Additives USA, Inc. is holding raffles on Monday and Tuesday, May 18 and 19, at 3:30 pm in the exhibit hall. You must be present at **Booth 301** at time of drawing to win. Evonik Oil Additives USA, Inc. is raffling two De'Longhi Classic Espresso Machines.

## Exhibit Schedule

**Monday:** Noon-5 pm (Exhibitor Appreciation Hour 3-4 pm)

**Tuesday:** 9:30 am-Noon & 2-5:30 pm (closed for President's Luncheon Noon-2 pm. Exhibitor Appreciation Hour 3-4 pm)

**Wednesday:** 9:30 am-Noon

**STLE Annual Meeting: Innovating Through Tribology & Lubrication**



## New Orleans

May 18 & 19, 2026



**Exhibitors:** To reserve a spot at the 2027 STLE exhibition at the Hyatt Regency Chicago in Chicago, Ill., contact Tracy Nicholas VanEe at (630) 632-1883, [emeraldcomminc@yahoo.com](mailto:emeraldcomminc@yahoo.com).



• connect • learn • achieve

Society of Tribologists and Lubrication Engineers

840 Busse Highway, Park Ridge, Illinois 60068 (USA)

P: (847) 825-5536 | [www.stle.org](http://www.stle.org) | [information@stle.org](mailto:information@stle.org)

Follow us on: [f](#) [X](#) [i](#) [v](#) [in](#)

## Technical Sessions Time Grids – Tuesday, May 19, 2026

TIME	SESSION 3A AI & Machine Learning/Lubrication Fundamentals	SESSION 3B Fluid Film Bearings/Seals III	SESSION 3C Nanotribology I
	Celestin Ballroom A	Celestin Ballroom B	Celestin Ballroom C
8:00 am – 8:20 am		Optimization of Radial-Shaft-Sealing Systems for the use at High Circumferential Speeds, D. Froelich	Nanoparticle Lubricant Additives for the Reduction of Friction, Wear and Electrical Discharge Damage, R. Jackson
8:20 am – 8:40 am	Hydrodynamic Modeling Using Physics Informed Neural Networks, L. Burky		
8:40 am – 9:00 am	Machine-Learning-Enabled Optimization of Gearbox Lubrication Using Experimental Flow Fields, E. Joseph Aju	Design, Development, and Validation of a High-Diameter Rotary Segmented Seal (RSS) Test Bench, L. Amami	Probing the Nanoscale Friction and Wear Behaviour of Graphite in n-Hexadecane, J. Soni
9:00 am – 9:20 am	Sensor-augmented Thermal Elastohydrodynamic Lubrication Model, F. Kaliafets	Surface Tension in Two-Phase Lubricated Mechanical Seals, N. Brunetiere	Effect of Molecular/Particle Geometry on Boundary Layer Slip Approaching an Asperity Contact, N. Dorcy
9:20 am – 9:40 am	Towards Faster EHL FEM Simulations Based on AI-Driven Initial Guesses: A Hybrid Approach, M. Marian	Numerical Analysis of Lift Evolution in a Hydrodynamic Segmented Seal Subjected to Axial Tilting: Application on a Rayleigh-Pocketed Seal, S. Dahite	Nano-scale Multimodal AFM System for Visualization of Friction and Solid-liquid Interfacial Structure, K. Sato
9:40 am – 10:00 am	From Physics to Learning: AI-Driven Prediction of Hydrodynamic Journal Bearing Performance, M. Marian	Novel Test Geometries for Evaluating Brake and Other Hydraulic Fluids and Associated Elastomeric Seal Materials, J. Morley	Using Air as the Lubricant: Achieving Extreme Wear Resistance in a Multi-Principal Component Alloy by Stress-Induced Catalysis, P. Nautiyal
10:00 am – 10:40 am	<b>Break</b>	<b>Break</b>	<b>Break</b>
10:40 am – 11:00 am	AI & Machine Learning in Tribology Technical Committee Meeting	Recent Advances in Experimental Techniques for Understanding Tribological Phenomena in Mechanical Face Seals, I. Ou	Structural Superlubricity: From Growth Selectivity to Defect Healing, O. Hod
11:00 am – 11:20 am		Analysis of Low Friction Radial Lip Seals using PTFE for Lunar Dust Mitigation, L. Stephens	
11:20 am – 11:40 am			Superlubricity-Assisted Auto-Kirigami in Graphene Studied by Atomic Force Microscopy Lithography, R. Carpick
11:40 am – 12:00 pm			
	SESSION 4A AI & Machine Learning/Materials Tribology	SESSION 4B Fluid Film Bearings/Seals IV	SESSION 4C Nanotribology II
	Celestin Ballroom A	Celestin Ballroom B	Celestin Ballroom C
2:00 pm – 2:40 pm	Optimizing Alloy Design using Machine Learning, D. Montes de Oca Zapaiain	Micro-mechanical Characterization of Tribological Stressed Elastomer Surfaces with Respect to Radial-Shaft-Seals, C. Wilbs	Repel or Attract? Switchable Stickiness Through Electric Fields, B. Weber
2:40 pm – 3:00 pm	Bayesian Optimization for Inverse Design of Pt-Au Films with Custom Friction Properties, N. Brown	Floating Ring Seals for Liquid Rocket Engine Turbopumps: An Experimental Investigation using Air, Water, and Liquid Nitrogen, K. Ryu	Tribooxidation of Etched Silicon Oxide-covered Surfaces, P. Egberts
3:00 pm – 4:00 pm	<b>Exhibitor Appreciation Hour</b>	<b>Exhibitor Appreciation Hour</b>	<b>Exhibitor Appreciation Hour</b>
4:00 pm – 4:20 pm	Automated Data Collection and Curation from High Throughput Testing for Applied ML, D. Vogel	Closed-Form Reynolds Equation for Gas Films with Convective Inertia Effects, C. Quan	Mechanochemically-driven Formation of Zero-friction and Zero-wear Lubricating Carbon Films, D. Berman
4:20 pm – 4:40 pm	Machine Learning-Driven Optimization and Scaled-Down Tribological Testing of Sustainable Brake Pad Materials Containing High Recycled Content, S. Krishna Kancharla		
4:40 pm – 5:00 pm		Fluid Film Bearings/Seals Technical Committee Meeting	Quantification of Boundary Layer Slip Approaching an Asperity Contact Modeled in Molecular Dynamics Simulations, N. Dorcy
5:00 pm – 5:20 pm			Nanotribology Technical Committee Meeting

<b>SESSION 3D Electric Vehicles III</b>	<b>SESSION 3F Tribotesting I</b>	<b>SESSION 3G Grease III</b>	
<b>Celestin Ballroom F</b>	<b>Celestin Ballroom H</b>	<b>Bolden 1</b>	
<b>FVA: Beyond the Bearing: The Role of Drivetrain Impedance on Parasitic Currents, V. Schneider</b>		Bleed, Oxidation and Mechanical Degradation in Grease Lubricated Ball Bearings, P. Lugt	<b>8:00 am – 8:20 am</b>
	Standardized Two-Body Abrasion Testing, K. Budinski		<b>8:20 am – 8:40 am</b>
Electrified Tribological Behavior of Bearing Balls: Effect of Carbides and Electrical Current in Four Ball Tests, A. Hernandez Peña	From Tribometer to Chain Drive: Transfer and Validation of Tribochemical Optimization Strategies, M. Rank-Isepp	New Approaches of Grease Operating Life by Validated Calculation Methods, D. Merk	<b>8:40 am – 9:00 am</b>
Numerical Simulation of Surface Material Removal Induced by Arcing in Lubricated Interfaces, C. Davies	Prediction or Inverse Determination of Surface Temperatures from Wear or Additive Manufacturing for Flat and Cylindrical Geometries, A. Segall	A Theoretical Study of Long-time Film Thickness Evolution in Grease-lubricated Bearings, V. Puthumana	<b>9:00 am – 9:20 am</b>
Engineering MXene Layers for Tunable Electrical and Frictional Performance, K. Arole	Evaluating Abrasion-Resistance During Stacking and Relocation of Printed Materials, H. Musgrove	The Grease Genome: Decoding the Hidden Signature of Lubrication Failures, M. Holloway	<b>9:20 am – 9:40 am</b>
Exploring the Electro-tribological Behavior of Laser Cladded High Entropy Alloys, D. Lee	Influence of Brake Rotor Graphite Morphology on Friction and Wear Properties, When Tested Under SAE J2522 Standard, S. Krishna Kancharla	An Investigation Into the Efficacy of Relubrication Cycles in Reducing Wear in Grease Lubricated Pitch Bearings, M. Bartram	<b>9:40 am – 10:00 am</b>
<b>Break</b>	<b>Break</b>	<b>Break</b>	<b>10:00 am – 10:40 am</b>
Tribological Analysis of EV Motor Disassembly for Application in Water-Based Lubricant Testing, E. Kotzalas	The Issue of Low Cost Imaging and Analysis Systems for Wear Visualizations, J. Morley	Effect of Inlet Distance on Rolling Resistance and Film Thickness in Rolling Bearings Lubricated with Greases, R. Ichimura	<b>10:40 am – 11:00 am</b>
Tribological Behavior of Carbon-Based Coatings via Multi-Modal Surface and Friction Analyses, G. Sung	Transmission Mode Synchrotron XRD for In-Situ Tribology, C. Lorenzo Martin	Performance of New Urea Greases in Rolling Bearings, M. Zuercher	<b>11:00 am – 11:20 am</b>
Catalytically Active Nanocomposite (CANC) VN-Cu Coatings for Electrohydraulic Pumps: Tribological Performance in Automotive Fluids, O. Eryilmaz	Exploring Methods for Simulating FZG Testing Using Benchtop Rigs, R. Hippman	Grease Behaviour in Hybrid Rolling Element Bearings, G. Calderon Salmeron	<b>11:20 am – 11:40 am</b>
Effect of Sliding Conditions and Oil Supply Methods on Micropitting, T. Kunii		Grease Tribological Performance in Electrified Conditions Evaluated Using Four-Ball Tests, A. Hartzler	<b>11:40 am – 12:00 pm</b>
<b>SESSION 4D Electric Vehicles IV</b>	<b>SESSION 4F Tribotesting II</b>	<b>SESSION 4G Rheology I</b>	
<b>Celestin Ballroom F</b>	<b>Celestin Ballroom H</b>	<b>Bolden 1</b>	
Framework for Evaluating Immersion Cooling Fluid Behavior in Electrified Applications, A. Khoraych	Electrotribological Characterization of Lubricants under Coupled Mechano-Electrical Stress, D. Yiyuan Khoo	Importance of Rheology in Lithium-Ion Battery Production – From Slurries to Powders, K. Pondicherry	<b>2:00 pm – 2:20 pm</b>
Liquid Cooling and Heat Reuse in Data Centers: How Fluid Choice and Cooling Mode Shape the Economics, T. Wellmann	Hydrogen Dum Facio Tribology, C. Micko	Structure and Thermorheological Properties of TAG-Estolide Lipid Macromolecules from Orychophragmus Violaceus Seeds, M. Eskandari	<b>2:40 pm – 3:00 pm</b>
<b>Exhibitor Appreciation Hour</b>	<b>Exhibitor Appreciation Hour</b>	<b>Exhibitor Appreciation Hour</b>	<b>3:00 pm – 4:00 pm</b>
A Study on Thermal Behavior of Dielectric Fluids in Immersion Cooling System for Pouch-type Battery, G. Lee	Characterizing Stick Slip Friction Behaviour in Crane Boom Lubrication on a Lab Scale, C. Dyson	Revealing the Role of Structure in Tribocolloid Lubricants to Achieve Superlubricity, A. Gupta	<b>4:00 pm – 4:20 pm</b>
Investigation of Gear Scuffing Indicators in a 2-Stage E-Axle, A. Clement Henry	Correlation and Evaluation of Friction and Wear Behaviors from Reciprocating Tribotests, T. Martin	Predictive and Model-Driven Control of Lubricant Oil Pipeline Flushing Operations, B. Gao	<b>4:20 pm – 4:40 pm</b>
EV, Engine & Drivetrain Technical Committee Meeting	Testing Fretting Protection Performance of Lubricating Oils, Greases, and Coatings – Standard Methods and Beyond, F. Zak	Catalytic Upgrading of Waste and Virgin Cooking Oils Via Friedel-Crafts Acylation: Toward Sustainable Bio-lubricants for Automotive and Industrial Applications, N. Fatima	<b>4:40 pm – 5:00 pm</b>
	Tribotesting Technical Committee Meeting		

**TUESDAY >>**

## Technical Sessions Time Grids – Tuesday, May 19, 2026

TIME	SESSION 3H Biotribology I	SESSION 3I EFF/Synthetic Lubrication III	SESSION 3J Commercial Marketing Forum III
	Bolden 2	Bolden 5	Bolden 6
8:00 am – 8:20 am	Deep Insertion of Needle-Induced Fracture and Friction in Soft Tissue-mimicking Solids, M. Mariappan	Tribology-Driven Fluid Selection: Hydraulic System Architecture and Duty Cycle Considerations, P. Michael	CRS Reprocessing Services: Sustainable Engineered Solutions, M. Beyerle
8:20 am – 8:40 am			Kuraray: High-Performance and Cost-Effective Additives for Lubricants and Grease, J. Takai
8:40 am – 9:00 am	Passive vs Reactive Nanoparticle Ligands in Sliding Hydrogel Interfaces, M. Elinski	Advancing EAL Formulations: Hydrolytic Stability and Biodegradability without Compromise, G. Moody	Cannon Instrument: One Platform, Multiple Capabilities – A New Approach to Viscosity Testing, T. Williams
9:00 am – 9:20 am	Quantifying the Depletion Behaviour and Properties of Lubricant-Infused Surfaces, P. Egberts	The Use of a Microalgae Derived Oil to Improve the Lubricity of a Diesel Fuel, A. García Tuero	Evonik Oil Additives: Deployment of Efficient Lubricants at Evonik, R. Gomes
9:20 am – 9:40 am	Influence of Synovial Fluid Constituents on the Boundary Lubrication of Hydrogel-Articular Cartilage Contacts, W. Li	Modified Bio-Oil From Microalgae as a Friction and Wear Additive for a Base Oil, A. García Tuero	Munzing: FOAM BAN® 400 series – MÜNZING's New MOSH/MOAH Free Antifoams for Non-Aqueous Lubricants, S. Peerzada
9:40 am – 10:00 am	Development of Biotribology Testing Techniques for Consumer Product Evaluation, M. Ingram	High Oleic Soybean, Sunflower, and Microalgae Oils as Lubricant Base Oils, B. Sharma	Cargill: Synthetic Esters and Thickeners for Sustainable Transportation Technology, A. Kurchan
10:00 am – 10:40 am	<b>Break</b>	<b>Break</b>	<b>Break</b>
10:40 am – 11:00 am	Exotic Tribology: From Snacks to Contact Lenses, K. Pondicherry	Improving the Performance-Cost-Carbon Footprint Balance of Environmentally Acceptable Lubricants Through Oleochemistry, S. Lucazeau	Lubrizol High Performance Open Gear Lubricant Packages, J. Clark
11:00 am – 11:20 am	Biotribology Technical Committee Meeting	Experimental Assessment of Machine Element Performance with Functional Water-Content Lubricants, M. Marian	BASF Corporation: A New Water Soluble PAG Base Stock Technology Optimized for Superior Natural Gas Compressor Fluids, M. Harhausen
11:20 am – 11:40 am		Uses of PFAS in Lubricant Products and Packaging, S. Parker	SEQENS: Sustainable Calcium Sulfonate Corrosion Protection Additives, M. Legatte
11:40 am – 12:00 pm			Lubrizol: Synthetic Forming Fluid Development: Addressing Multi Metal and Regulatory Challenges with an Oil Free Package Technology, A. Yoder
			<b>SESSION 4J Commercial Marketing Forum IV</b>
			<b>Bolden 6</b>
2:00 pm – 2:20 pm			Lubrizol: Industrial Gear Oil – Enabling Formulating Flexibility & Standout Performance, J. Cornett
2:20 pm – 2:40 pm			Biosynthetic Technologies
2:40 pm – 3:00 pm			LANXESS Makes Hydraulic Oil Formulation Simple, W. Rehbein
3:00 pm – 4:00 pm	<b>Exhibitor Appreciation Hour</b>	<b>Exhibitor Appreciation Hour</b>	<b>Exhibitor Appreciation Hour</b>
4:00 pm – 4:20 pm			LANXESS: Naugalube® APAN S – A Safer Liquid Antioxidant – Coming 2027!, T. Benanti
4:20 pm – 4:40 pm			LANXESS: Engineering Superior Lubricant Performance with Sulfcylates™: Breakthrough Multifunctional Additive Technology, W. Mackwood
4:40 pm – 5:00 pm			Afton Chemical: Zn-Free Antiwear Hydraulic Fluid: Performance Plus Environmental Protection, L. Hulton
5:00 pm – 5:20 pm			

# Technical Education. Career Development. International Networking.

Call for abstracts  
opening soon. Visit  
[www.stle.org/  
annualmeeting](http://www.stle.org/annualmeeting) for  
the latest updates.



## 81st STLE Annual Meeting & Exhibition: Innovating Through Tribology & Lubrication

May 2-6, 2027

Hyatt Regency Chicago  
Chicago, Illinois (USA)

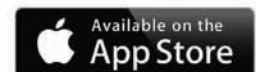


Whether you work in the field or lab—in industry, academia or government—STLE's Annual Meeting has programming designed specifically for you. Please join your peers from around the globe for five unique days of technical training and industry education that could change your career and save your company money.

## Program Highlights:

- Over 400 Technical Presentations and Posters
- Lubrication-Specific Education Courses
- Trade Show
- Commercial Marketing Forum
- Business Networking

Make sure to download the STLE Mobile App:



• connect • learn • achieve

Society of Tribologists and Lubrication Engineers  
840 Busse Highway, Park Ridge, Illinois 60068 (USA)

P: (847) 825-5536 | [www.stle.org](http://www.stle.org) | [information@stle.org](mailto:information@stle.org)

Follow us on: [f](#) [x](#) [i](#) [v](#) [in](#)

## Technical Sessions Time Grids – Wednesday, May 20, 2026

TIME	SESSION 5A AI & Machine Learning I	SESSION 5B Lubrication Fundamentals I	SESSION 5C Sustainability I
	Celestin Ballroom A	Celestin Ballroom B	Celestin Ballroom C
8:00 am – 8:40 am	Strong Foundation for AI, from the Perspective of a Facility and Data Manager, J. Lau	Surface Modification of Nanomaterials for Improved Oil Suspending and Lubricant Performances, C. Kumara	The Power of Precision: How Consistent Cradle-to-Gate PCF Enables Trust, Targets, and Transformation, E. Swanson-Parbäck
8:40 am – 9:00 am	Tribological Data Management for Faster R&D and AI, N. Garabedian	Urea-enabled Suspension of MoS <sub>2</sub> in Water-based Lubricants, H. Kabir	Expanding Cradle to Gate Life Cycle Assessments to Cradle to Grave to Include Product Carbon Handprint for Castor Derivatives and Estolide Base Oils, M. Kriech
9:00 am – 9:20 am	ATLAS: AI-Enabled Knowledge Extraction for Data-Driven Tribology, B. Delaney	Atomistic Insights Into the Friction Mechanisms of PTFE and PTFE/PEEK Solid Lubricants, T. Reichenbach	Differentiation of the Product Carbon Handprint and the Product Carbon Footprint and their use in Lubrication Technology and Tribology, M. Zuercher
9:20 am – 9:40 am	FAIR Data Publishing in the Modern Age, N. Garabedian	Convert PVC Waste into Sustainable Polyalphaolefin Lubricant, G. Liu	Driving Transparency and Impact: Advancing Automated PCF Calculations . . . , N. Weliwatte
9:40 am – 10:00 am	Remaining Useful Life Prediction of a Bent-Axis Axial Piston Pump Using Deep Learning Models, P. Panwar	Do Polymeric Phosphite Additives with Low Phosphorus Content Offer Benefits in Lubricant Oil Performance?, J. Wang	Full-circle Sustainability in Industrial Manufacturing Lubrication: The Role of Hydrotreated Re-refined Base Oils, C. Elling
10:00 am – 10:40 am	<b>Break</b>	<b>Break</b>	<b>Break</b>
10:40 am – 11:00 am	Multi-Constraint Physics-Guided Neural Network for AE-Based Friction and Wear Prediction, M. Victoria Granja Oramas	Panel Discussion	<b>Panel Discussion:</b> Sustainable by Design: From Impact to Handprint in Lubrication Innovation
11:00 am – 11:20 am	AI-Driven Digital Twin for Predicting Wear Evolution in Dry Sliding Contacts, T. Rice		<b>Panelists:</b> Elizabeth Grove, The Lubrizol Corporation, Manuel Zuercher, Schaeffler Technologies AG & Co. KG, Matt Kriech, Biosynthetic Technologies, and Daniel Liwicki, Clean Harbors
11:20 am – 11:40 am	Multimodal Generative AI and CNN-Based Approaches for Wear Particle Classification, P. Liu		<b>Moderator:</b> Elisa Swanson-Parbäck, Perstorp AB
11:40 am – 12:00 pm	Pattern Recognition in Wear Debris: Leveraging Computer Vision for Tribological Forensics, M. Holloway		
	SESSION 6A AI & Machine Learning II	SESSION 6B Lubrication Fundamentals II	SESSION 6C Sustainability II
	Celestin Ballroom A	Celestin Ballroom B	Celestin Ballroom C
1:40 pm – 2:00 pm	Machine Learning in Engine Tribology: Mechanism Discovery, Prediction, and Design Optimization, T. Tian	Wear Mechanism Evolution in Heavy-Duty Diesel Engines: The role of Lubricant Additives, K. Mistry	Extraordinary Tribological Performance of Novel Lubricants Derived from Discarded . . . , A. Erdemir
2:00 pm – 2:20 pm			Filling the Gaps: Practical Guidance for Lubricant LCA, PCF, and Sustainability Hot Spots, I. Herrmann
2:20 pm – 2:40 pm	Machine Learning-Based Optimization of Piston Ring Pack and Liner Finish for Enhanced . . . , Z. Shu	Comparative Insights into Tribofilm Chemistry: Linking Additives to Friction and Wear Performanc, Z. Al Hassan	Sustainability Reporting Requirements – A Chance for Tribology?, V. Bakolas
2:40 pm – 3:00 pm	AILA: Enabling Autonomous AFM Experiments via LLM-Based Agents, N. Gosvami	Under Raceway Air-Less-Lubrication – the Influence on Bearing Efficiency, B. Lehnhardt	Nothing Else Matters (But the Footprint), F. Paoloni
3:00 pm – 3:40 pm	<b>Break</b>	<b>Break</b>	<b>Break</b>
3:40 pm – 4:00 pm	Machine Learning-Driven Insights into Per- and polyfluoroalkyl substances (PFAS) . . . , P. Nalam	Evaluation of Stribeck Friction Using Different Speed Protocols in a Traction Tribometer, D. Patro	From Waste to Performance: Effect of Chemo-Mechanical Filtration on the Tribological . . . , M. Cortes Morales
4:00 pm – 4:20 pm		EHD Full-Film Friction Reduction Induced by Additive Adsorption onto Steel Surface, M. Polajnar	Multifunctional Sulfur-Based Additive for Industrial Lubricants – . . . , P. Saint-Louis-Augustin
4:20 pm – 4:40 pm		Correction of the Sliding Velocity in the Vicinity of the Singularities of the Thin Lubricant Film, M. Arghir	API Action Reviewing WBCSD Guidance on Avoided Emissions, Updated 2026, D. Bachelder
4:40 pm – 5:00 pm		Lubrication Fundamentals Technical Committee Meeting	Carbon Footprint Reduction Project – Case Study on Fluid Reclamation, D. Sackett
5:00 pm – 5:20 pm			

<b>SESSION 5D Engine &amp; Drivetrain I</b>	<b>SESSION 5E Materials Tribology I</b>	<b>SESSION 5G Tribology of Biomaterials I</b>	
<b>Celestin Ballroom F</b>	<b>Strand 10</b>	<b>Bolden 1</b>	
Linking Oxidative Stability to Dispersancy: bisPIBAA vs PIBSI Under CEC L48 Conditions, T. Coffy	Tribological Properties of High-Temperature Aged DLC, S. Lazarte	Structure and Dynamics of Surface Gel Layers from Neutron Reflectometry, K. Shaffer	<b>8:00 am – 8:40 am</b>
Influence of Ammonia as Carbon-free Fuel on Engine Oil Performance, N. Dörr	Exploring the Effect of Post-Processing on Friction Mechanisms in Cold-Sprayed Cu-Alumina-Ag Coatings, S. Jose	Criteria for Alternate Orthopedic Bearing Materials Based on Tribology of UHMWPE, A. Roy	<b>8:40 am – 9:00 am</b>
Development of a Fully Synthetic Gas Engine Oil Meeting the Requirements of High Transient Power Generation, C. Rohbogner	Friction and Wear of Graphite under Fluoride Salt-Cooled and Gas-Cooled Pebble-Bed Reactor Conditions, T. Grejtak	Laser Based Surface Engineering of Freeform Knee Implants for Enhanced Tribocorrosion Resistance, V. K E Ch	<b>9:00 am – 9:20 am</b>
Engine Tribology Under Synthetic Fuel Operation – A Comprehensive Investigation, N. Dörr	Improving the Durability of Graphite Solid Lubricant Coatings Using a Polydopamine Adhesion Layer, A. Abe	Laser-Textured CoCrMo Surfaces with Sub-10 µm Dimples for Improved Hip Joint Tribology, W. Bennett	<b>9:20 am – 9:40 am</b>
Optimizing Hydrogen Engine Oil Performance: A Study on Emulsion Handling and Corrosion Resistance, D. Bansal	Mechanical Torque and Power Investigation of a Novel Graphite Coating on a Slider Bed Conveyor System, R. Fleming	How Swelling Affects Microscale Creasing and Stick-slip Friction of Soft Elastomers, M. Sazzadul Alam Rahat	<b>9:40 am – 10:00 am</b>
<b>Break</b>	<b>Break</b>	<b>Break</b>	<b>10:00 am – 10:40 am</b>
Mitigating Pre-Ignition in Hydrogen Internal Combustion Engines: The Role of Lubricants, D. Bansal	The Effects of Shear-Induced Modifications on Hydrogen-Aged MoS <sub>2</sub> Coatings in Both Humid and Dry Nitrogen Environments, C. Barbour	Frictionally Enhanced and Biologically Activated Artificial Ligament via a Carrot-and-Stick and Microphase-Separation Strategy, S. Li	<b>10:40 am – 11:00 am</b>
Effects of Hydrogen Embrittlement on Tensile Fatigue, R. Jayasekaran	Tribological Performance of Solid Lubricants Under Electrified Conditions, M. Uysal Komurlu	Controlling Friction by Formulation in Slide-ring Hydrogels, A. Rhode	<b>11:00 am – 11:20 am</b>
Lubricant Research for Hydrogen Internal Combustion Engines (HICE), A. Kolekar	Development and Characterization of Hard Nitride Coatings for Electrified Interfaces, S. Lee		<b>11:20 am – 11:40 am</b>
Sustainable Electric Drivetrain Fluids, P. Ma	Improving the Durability and Efficiency . . . , T. Grejtak		<b>11:40 am – 12:00 pm</b>
	Materials Tribology Technical Committee Meeting		<b>12:00 pm</b>
<b>SESSION 6D Engine &amp; Drivetrain II</b>	<b>SESSION 6E Materials Tribology II</b>	<b>SESSION 6G Condition Monitoring I</b>	
<b>Celestin Ballroom F</b>	<b>Strand 10</b>	<b>Bolden 1</b>	
Lubricant Impacts on Stochastic Preignition in H2 ICES – It may Surprise you!, V. Kalaskar	High-Throughput Screening the Mechanocatalytic Properties of Nanocrystalline Alloy Coatings, F. DelRio	Hot Varnish in Turbomachinery Bearings – Early Detection Through Oil Analysis . . . , R. Krethe	<b>1:40 pm – 2:00 pm</b>
			<b>2:00 pm – 2:20 pm</b>
Low Temperature Challenges for Hybrid Vehicles, J. Langston	Exploring the Tribochemical Behavior of Nanocrystalline Alloy Coatings in CO <sub>2</sub> Environments, T. Babuska	Emergency Generator Fuel Condition Monitoring and Management, M. Yarlott	<b>2:20 pm – 2:40 pm</b>
Turbocharging Thermal Performance: Evaluating Fluids for Next-Gen Cooling Solutions . . . , V. Kalaskar	The Effect of Build Plate Location on As-Built Surface Topography of Laser Powder Bed . . . , P. Bhowmik	Using Air-coupled Ultrasound Method to Enable Non-contact Oil Film Thickness Measurement . . . , M. Yu	<b>2:40 pm – 3:00 pm</b>
<b>Break</b>	<b>Break</b>	<b>Break</b>	<b>3:00 pm – 3:40 pm</b>
Low Friction and Improved Fuel Efficiency with MoDTC and PCFM in Modern Engine Oil . . . , K. Marumo	Effects of Hydrogen Absorption and Embrittlement on Tribology of Refractory Metals, J. Long	Technological Advancements in Tribology of Heat Transfer Fluids, J. Simons	<b>3:40 pm – 4:00 pm</b>
Effects of Polar and Ionic Liquid Additives on the Electrical Conductivity of Lubricating Oils, S. Jang	Achieving Superlubric Surfaces and Mitigating Tribo-chemical Wear of Silica Glasses using 2D . . . , N. Gosvami	Assessment & Comparison of Dispersancy Properties in Fresh Lube Oils, G. Natarajan	<b>4:00 pm – 4:20 pm</b>
Comprehensive Evaluation of Graphene Nano-Platelets as Lubricating Additives for EV . . . , L. Farfan-Cabrera	Linking Process Parameters to Surface Topography and Density in Binder Jetting of SS 316L, E. Hossain Shopnil	Using AI and Prognostics to Optimize Condition-Based Oil Analysis, L. Williams	<b>4:20 pm – 4:40 pm</b>
Tribological Evaluation of Water-Based Lubricants in 440c Stainless Steel, H. Carfang		The Importance and Impact of Non-Shared Lubricant Standards in a Globalized Market, M. Holloway	<b>4:40 pm – 5:00 pm</b>
		Condition Monitoring Technical Committee Meeting	

Technical Sessions Time Grids – **Wednesday, May 20, 2026**

TIME	SESSION 5I Contact Mechanics I	SESSION 5J Commercial Marketing Forum V	SESSION 5K Rolling Element Bearings I
	Bolden 5	Bolden 6	Celestin Ballroom G
8:00 am – 8:20 am	Evaluation of the Compression of Metal Nanoparticles with an Elastic-plastic Sphere Flattening Model, R. Jackson		Characterization of Electric Discharge Events and Surface Damage at an Isolated Bearing Contact, S. Aamer
8:20 am – 8:40 am			
8:40 am – 9:00 am	Contact Mechanics, Plasticity and Fracture for Enabling High Throughput Material Characterization, N. Hackworth		<b>FVA:</b> Simulation of Electric Fields in Roller Bearings Using Combined Contact and Finite Element Analysis, T. Budde
9:00 am – 9:20 am	<b>FVA:</b> Automated Contact-Mechanical Simulation of Press-Fit Shaft-Hub Interfaces . . . , T. Budde	Advanced Chemical Concepts: Low Foam Lubricity Additives for Multi-Metal Machining, C. Monday	<b>FVA:</b> From Electrical Tribometer Tests to Electromechanical Bearing Simulation, S. Graf
9:20 am – 9:40 am	Impact of Roller Hollowness on Bearing Contact Stiffness, Load Distribution, and Dynamic Rating, N. Londhe		
9:40 am – 10:00 am	Contact Pressure Analysis for a Biomass Shredding System Using an Anisotropic Yield and Damage Material Model, L. Lin	Evonik's Full Additive Portfolio: From Foam Control to Surface Mastery, A. Rice	The Investigation of the Initiated Electric Induced Bearing Damage under Variable Operating Conditions, J. Park
10:00 am – 10:40 am	<b>Break</b>	<b>Break</b>	<b>Break</b>
10:40 am – 11:00 am	Contribution to the Tribological Analysis of Discontinuous Tightening, D. Limiti		Unveiling Hydrogen Re-Absorption in Ball Bearings: Implications for Hydrogen Embrittlement, K. Matsumoto
11:00 am – 11:20 am	Essential Theoretical Considerations in Contact-temperature Calculations and Models . . . , M. Kalin	Dumarey Engineering Services for OEMs, Fuel and Lubricant Suppliers, and Other Customers . . . , J. Marion	Grease EHL Films in CRBs: What the Measurements Show, J. Osara
11:20 am – 11:40 am	Nominally Flat Contact of and Transversely Isotropic Materials with Functional Enforcements, S. Liu		
11:40 am – 12:00 pm	Bridging Scales in Tribology: A CA-FFT Framework for Third-Body Modelling, M. Renouf		
	<b>SESSION 6I Contact Mechanics II</b>		<b>SESSION 6K Rolling Element Bearings II</b>
	<b>Bolden 5</b>		<b>Celestin Ballroom G</b>
1:40 pm – 2:00 pm	Boundary Element Methods for Soft Contact Mechanics: From Theory to Industrial Applications, C. Putignano		
2:00 pm – 2:20 pm			Investigation of Lubrication and Friction Behavior in a Ball-Cage Contact at High Speeds, J. Misener
2:20 pm – 2:40 pm	Friction-Driven Slip Control in a Bio-Inspired Spring-Latch System, N. Bastola		Experimental Insights Into Air Entrainment and Oil-Air-Flow in Bearing Lubrication, U. Arya
2:40 pm – 3:00 pm	Influence of Relative Humidity on Temperature-Driven Interfacial Adhesion, A. Ul Hosna Meem		Ultrasonic Measurement of Lubricant Films in Rolling Bearings – from Inlet Region to Contact, R. Dwyer-Joyce
3:00 pm – 3:40 pm	<b>Break</b>	<b>Break</b>	<b>Break</b>
3:40 pm – 4:00 pm	Roughness-dependent Scaling of Contact Area and Separation Gap with Pressure for Glassy Polymers, S. Kumar		<b>FVA:</b> High Speed Bearings Under Low-Viscosity & Low-Quantity-Lubrication, B. Lehnhardt
4:00 pm – 4:20 pm	Contact Mechanics Technical Committee Meeting		Inhibition of Corrosion and Common Failure Modes in Oil-Flooded Rotary Screw Sour Gas Compressors, J. Schultz
4:20 pm – 4:40 pm			Rolling Element Bearing Technical Committee Meeting

You work in a technical world.

You belong in a technical society.

stle Member Benefits

You belong in STLE.

STLE is the premier technical organization representing tribology researchers and lubrication professionals.

People in industry, academia and government join STLE because they know STLE provides the lubricant industry's highest level of technical training and professional development.

To learn more about STLE membership, visit [www.stle.org/joinnow](http://www.stle.org/joinnow) or email [membership@stle.org](mailto:membership@stle.org).

Benefits	Member	Nonmember
<b>Publications</b>		
TLT Magazine (Print & Digital)	✓	Digital Only
TLT Magazine Bonus Content	✓	
Special Reports	✓	
Tribology Letters	✓	
Tribology Transactions	✓	
<b>Conferences</b>		
Annual Meeting & Exhibition	Discounted Rate	Full Rate
E-Mobility Conference	Discounted Rate	Full Rate
Tribology Frontiers Conference	Discounted Rate	Full Rate
Virtual Symposium	Discounted Rate	Full Rate
<b>Education Opportunities</b>		
Industry Insights Discussion Series	✓	
Interactive Lubrication Training	Discounted Rate	Full Rate
MWF Management Course	Discounted Rate	Full Rate
Perfecting Motion Podcast	✓	✓
Short Courses	Discounted Rate	Full Rate
Webinars	Discounted Rate	Full Rate
<b>Additional Benefits</b>		
Participate in Technical Committees	✓	
Volunteer Leadership Positions	✓	
STLE Monthly Newsletter	✓	
STLE Certifications	Discounted Rate	Full Rate
Local Sections	✓	
Networking	✓	✓
Membership Directory	✓	
Receive STLE Awards	✓	
Mobile App	✓	✓
Receive Fellows Designation	✓	

Individual membership pricing: \$180



• connect • learn • achieve

Society of Tribologists and Lubrication Engineers

840 Busse Highway, Park Ridge, Illinois 60068 (USA)

P: (847) 825-5536 | [www.stle.org](http://www.stle.org) | [information@stle.org](mailto:information@stle.org)

Follow us on:

Technical Sessions Time Grids – Thursday, May 21, 2026

TIME	SESSION 7B Wear I	SESSION 7D Metalworking Fluids I	SESSION 7E Materials Tribology III
	Bolden 2	Bolden 6	Strand 10
8:00 am – 8:40 am	Comparing Tribological Behaviors Under Fretting and Reciprocating Sliding: Example of Inconel 718 Alloy Obtained by Additive Manufacturing, V. Fridrici	The Unseen Variable: Impact of Production Factors on Defoamer Performance in Metalworking Fluids, S. Velez	Thermal Processing Effects on the Tribological Behavior of PTFE-PEKK Polymer Blends, K. Van Meter
8:40 am – 9:00 am	Effect of Dilution With the Substrate on the Wear Resistance of Weld Overlays of Co-Base Superalloys, R. Krishnamurthy	Effects of Multiple Metalworking Fluids on Various Slideway Oils in a Linear Motion Guide System: An Early Look, A. Yoder	The Role of Countersurface Chemistry on the Tribology of PTFE Composites, C. Fidd
9:00 am – 9:20 am	Development of Fluorine Free Coatings, R. Khawarizmi	Advanced Emulsion Features of Metalworking Fluids for Finish Machining, Y. Philip Zhao	Tribological Performance of PEEK Composites Reinforced with Alumina Particles: Effect of Particle Size and Content, K. Delbé
9:20 am – 9:40 am	Experimental Analysis of Friction and Wear of Carbon Graphite Under Low Contact Pressures, M. Arghir	Advances in Poly(isobutylene) Succinic Anhydrides (PIBSAs) as Emulsifiers for Oil-in-Water Emulsions, R. Totsch	Vespe <sup>l</sup> ® Parts and Shapes: Pushing the Performance Limit of Polymers and Composites, L. Ampacher
9:40 am – 10:00 am	Macroscopic Friction Model with Implicit Consideration of the Evolution of the Third Body, L. de March	Bridging the Gap: Integrating Laboratory and Outdoor Testing for Corrosion Protection, J. Clark	Performance Evaluation of Polymer Plain Bearings on a Novel Test Bench: Metrics and Design Implications, D. Zorko
10:00 am – 10:40 am	<b>Break</b>	<b>Break</b>	<b>Break</b>
10:40 am – 11:00 am	Unveiling the Mesoscale Origin of Seizure: A Particle-Based Approach to Frictional Interface Dynamics – Using Smoothed Particle Hydrodynamics (SPH) for Mesoscale Modeling, N. Sugimura	Tapping Torque and Twist Compression (TCT) Performance of Polyalkylene glycol (PAG) – Phosphate Ester Combinations for Waterbased Synthetic MWF Systems, T. McClure	Bolted Joint Integrity: The Critical Role of Lubrication and the Effects of Reusing Fasteners, C. Dyson
11:00 am – 11:20 am	Further Development of Tribological Test Involving Real Time Degradation of Engine Lubricants with Alternative Fuels and Their Combustion Byproducts, J. Morley	Vinyl Pyrrolidone Containing Polymers for Enhanced Lubrication in Metalworking Fluids, D. Baumann	Wear Characteristics of Gray Irons in Pure Refrigerant Systems, W. Akram
11:20 am – 11:40 am	Wear Technical Committee Meeting	Generation 2 – A New Biobased Dicarboxylic Acid Replacement for Metalworking Applications, M. Kriech	Underlayer-Driven Nanotribological Performance of Ni-Cr Thin Films on Si Substrates, S. Ghosh
11:40 am – 12:00 pm		Performance Under Pressure: The Balancing Act of Active and Inactive Sulfur in Lubricants, J. Ziobro	Initial Evaluation of PFA-PAEK Polymer Blends for Tribological Applications, M. Sidebottom
12:00 pm – 12:20 pm		Metalworking Fluids Technical Committee Meeting	
		SESSION 8D Metalworking Fluids II	
		Bolden 6	
1:40 pm – 2:20 pm		Controlling Copper Staining in MWFs with Amino Alcohol Derivatives and High Renewable Content, R. Butler	
2:20 pm – 2:40 pm		HLD-Guided Design of Next-Generation Metalworking Fluids, J. Dixon	
2:40 pm – 3:00 pm		STLE Technical Forum 2026, Guerbet Alcohols in Neat Metalworking Fluids and Industrial Lubricants, S. Morton	
3:00 pm – 3:20 pm	<b>Break</b>	<b>Break</b>	<b>Break</b>
3:20 pm – 3:40 pm		Transformed Vegetable Oils and Their Use in Metalworking Fluids, D. Baumann	

<b>SESSION 7F Aerospace I</b>	<b>SESSION 7G Condition Monitoring II</b>	<b>SESSION 7I Non-Ferrous Metals I</b>	
<b>Strand 11</b>	<b>Bolden 1</b>	<b>Bolden 5</b>	
Rolling Contact Fatigue Performance of Aerospace Bearing steels with High Thermal Stability (HTS) Turbine Engine Oil at 218° C, H. Trivedi	Grease Monitoring for Reliability: Testing, Trends & RCA, D. Tingey	Phases and Surface Properties for Emulsions in Aluminum Hot Rolling in Relation to Surfactant Features, A. Viat	<b>8:00 am – 8:40 am</b>
Preliminary Development of Spark Plasma Sintered, Self-Lubricating Metal Matrix Composites for Aircraft Bush Joints, W. Gray	Rotating Karma: Bearing Failures and the Physics of Neglect, M. Holloway	From Casting to Drawing: How Chemistry Powers Non-Ferrous Wire Manufacturing, J. Brooks	<b>8:40 am – 9:00 am</b>
Characterization of Novel Bearing Materials in Miniaturized Bearings for Space Applications, J. Bosch Giner	Dynamic Correlation of Pitting Progression with Vibration Signals, A. Achilleos	Optimal Use of MTM Equipment (Mini-Traction-Machine), from PCS-Instruments in the Formulation Process of Rolling Oils and Emulsions, F. Espinoux	<b>9:00 am – 9:20 am</b>
Adaptive Lubrication in Thermal Cycling Regimes, M. Holloway	The Value of Integrating Fluid Analysis Data with Your CMMS, R. Clark	Fluid Intelligence for Next Generation Aluminum Hot Rolling Emulsion, R. Liedtke	<b>9:20 am – 9:40 am</b>
A Detailed Study of the Effects of Water on the Tribology of Molybdenum Disulfide, M. Chandross	Prediction Model for the Total Acid Number Using Chemometrics, T. Honda	A Sustainable Nitride-Free, Water-Soluble Lubricant for Copper Rod and Wire Hot Rolling, D. Benjamin	<b>9:40 am – 10:00 am</b>
<b>Break</b>	<b>Break</b>	<b>Break</b>	<b>10:00 am – 10:40 am</b>
High Throughput Vacuum Tribometer: Accelerated Evaluation of Dry Film Lubricants In Cryo-Vacuum Environments, A. DeLong	An Acoustic Emission/Machine Learning Approach to Lubricant Condition Monitoring, T. Reddyhoff	Challenges in the Production of Formed Containers for Food, J. Anglin	<b>10:40 am – 11:00 am</b>
Microstructural Characterization and Tribological Behaviour of Abradable Thermal Spray Coatings for Aero-Engine Applications, L. Lopes	Mapping Degradation Pathways in Turbine Oils Under Severe Thermal Stress, D. Purnell	Lubricant Selection for Enhancing Sustainability Profile in Copper Rod Mills, L. Cerqueira	<b>11:00 am – 11:20 am</b>
Stiction Mitigation Using Nanocomposite Coatings, P. Schmidt	Prediction of Insulating Properties of Cooling Oils Using Near-Infrared Absorption Spectroscopy and Machine Learning, K. Kojima	Enhancing Cold Rolling Performance Through Optimized Filtration and Rolling Fluid Properties, M. Polfliet	<b>11:20 am – 11:40 am</b>
	Optimizing Elemental Analysis of Oils and Organic Solvents by Smart ICP-OES, S. Singha	Incorporation of Temperature Dependent Viscosity into a Mixed Lubrication Model for Strip Rolling, H. ISSA	<b>11:40 am – 12:00 pm</b>
		Nonferrous Metals Technical Committee Meeting	<b>12:00 pm – 12:20 pm</b>
<b>SESSION 8F Aerospace II</b>	<b>SESSION 8G Condition Monitoring III</b>		
<b>Strand 11</b>	<b>Bolden 1</b>		
Electrostatic, Plasma, and Radiation Effects on Space Tribology: Mechanisms of Lubricant Degradation in Orbit, M. Holloway	Automated Chemical Concentration Control Delivers Significant Operational Benefits on the Plant Floor, S. McReynolds		<b>1:40 pm – 2:20 pm</b>
Evaluation of Candidate Low-Vapor-Pressure Lubricants for Aerospace Applications Through Machine Learning and Molecular Simulations, D. Miliate	Construction of Contamination Mode Diagram by Clustering Based on the Lubricating Oil Image Analysis(LIA), T. Honda		<b>2:20 pm – 2:40 pm</b>
Development of PFAS-free Fluid Lubricants for Space Mechanisms, R. de la Presilla	Leveraging Advanced Diagnostic Testing for Reliability and ROI, D. Tingey		<b>2:40 pm – 3:00 pm</b>
<b>Break</b>	<b>Break</b>	<b>Break</b>	<b>3:00 pm – 3:20 pm</b>

Technical Sessions Time Grids – Thursday, May 21, 2026

TIME		<b>SESSION 7J</b> <b>Lubrications Fundamentals III</b>	<b>SESSION 7K</b> <b>Rolling Element Bearings III</b>
		<b>Celestin Ballroom A</b>	<b>Strand 12</b>
8:00 am – 8:40 am		Plunger Surface Design to Improve the Lubrication Performance of a Radial Plunger Pump Based on Transient Thermal Mixed-EHL Analysis, H. Soewardiman	Bearings are More Than Load and Life Rating – Optimized Bearing Performance Can Only Be Achieved by Holistic Simulation, H. Grillenberger
8:40 am – 9:00 am		The Effects of Pressurized Ambient Gases on Surface Wetting and Lubrication of Reciprocating Compressors, H. Carfang	<b>FVA:</b> Holistic, Locally Resolved Friction Model for Rolling Bearings and Gears, S. Sylva
9:00 am – 9:20 am		Effects of Antifoam Additives on Bubble Mechanisms, T. Reddyhoff	Abrasive Wear Map Applied to Rolling Element Bearing, W. Dai
9:20 am – 9:40 am		Insights into Asphaltene Instability in Fuel Oils and Implications, D. Wall	Homogeneous Isotropic Linearization of Nonlinear Heterogenous Anisotropic DGBB Cage Materials, K. Monaghan
9:40 am – 10:00 am		Metal Containing Additives that Lower Friction, J. Tanuwidjaja	Study on the Evaporation of Liquid from Non-Contact Sealed Ball Bearings Under Stationary Conditions, K. Nakagawa
10:00 am – 10:40 am	<b>Break</b>	<b>Break</b>	<b>Break</b>
10:40 am – 11:00 am			Benchtop Method for Evaluating Wear Protection in Aviation Greases, D. Isaac
11:00 am – 11:20 am			Development of a Range of Novel Rolling Element Bearing Tests, Including Bearing Friction Torque, Electrical Discharge Machining, and Rolling Contact Fatigue, J. Morley
11:20 am – 11:40 am			Capabilities and Applications of a Flexible Lubrication Bearing Test Rig, A. Hatton
11:40 am – 12:00 pm			A Comparative Study of the Tribological Behavior of a MIL-PRF-23699 Oil in Ambient and Inert Conditions, E. Craft
12:00 pm – 12:20 pm			
1:40 pm – 2:20 pm			
2:20 pm – 2:40 pm			
2:40 pm – 3:00 pm			
3:00 pm – 3:20 pm	<b>Break</b>	<b>Break</b>	<b>Break</b>
3:20 pm – 3:40 pm			

## Technical Session Chairs and Vice Chairs

### Aerospace I

**Session Chair:** Daniel Miliate, UC Merced  
**Session Vice Chair:** Elizabeth Kotzalas, The University of Akron

### Aerospace II

**Session Chair:** Elizabeth Kotzalas, The University of Akron  
**Session Vice Chair:** Adam DeLong, Florida State University

### AI and Machine Learning and Lubrication Fundamentals – Joint Session I

**Session Chair:** Tianshi Fang, Shell Global Solutions

### AI and Machine Material Tribology – Joint Session II

**Session Chair:** Max Marian, Leibniz University Hannover

### AI and Machine Learning I

**Session Chair:** Shuangbiao Liu, Northwestern University  
**Session Vice Chair:** Prathima Nalam, SUNY at Buffalo

### AI and Machine Learning II

**Session Chair:** Nick Garabedian, Datin GmbH  
**Session Vice Chair:** Brian Delaney, Northwestern University

### Biotribology I

**Session Chair:** Kartik Pondicherry, Anton Paar GmbH

### Tribology of Biomaterials I

**Session Chair:** Santiago Lazarte, Florida State University  
**Session Chair:** Emily Lambeth, Biomedical University of Delaware

### Condition Monitoring I

**Session Chair:** Jacob Bonta, ProFluid, LLC  
**Session Vice Chair:** Alfredo Garcia, Luval SA

### Condition Monitoring II & III

**Session Chair:** Misty Bickerdyke, Empire Fluid Analysis  
**Session Vice Chair:** Alfredo Garcia, Luval SA

### Contact Mechanics I

**Session Chair:** Nikhil Londhe, Timken Company  
**Session Vice Chair:** Sitangshu Chatterjee, Afton Chemical Corporation

### Contact Mechanics II

**Session Chair:** Sitangshu Chatterjee, Afton Chemical Corporation  
**Session Vice Chair:** Nikhil Londhe, Timken Company

### Electric Vehicles I

**Session Chair:** Yungwan Kwak, Afton Chemical  
**Session Vice Chair:** Joshua Conner, Southwest Research Institute

### Electric Vehicles II

**Session Chair:** Christopher Cleveland, Afton Chemical Corporation  
**Session Vice Chair:** Jake Stroth, Eneos USA

### Electric Vehicles III

**Session Chair:** Greg Hansen, Southwest Research Institute  
**Session Vice Chair:** Joshua Conner, Southwest Research Institute

### Electric Vehicles IV

**Session Chair:** Dinesh Bansal, Chevron Oronite LLC

### Engine & Drivetrain I

**Session Chair:** Greg Hansen, Southwest Research Institute

### Engine & Drivetrain II

**Session Chair:** Andrew Velasquez, Southwest Research Institute

### Environmentally Friendly Fluids/Synthetic Lubricants I

**Session Chair:** Kathleen Havelka, Advancion  
**Session Vice Chair:** Brajendra Sharma, USDA/ARS/NEA/ERRC

### Environmentally Friendly Fluids/Synthetic Lubricants II

**Session Chair:** Shannon McGee, Quaker Houghton  
**Session Vice Chair:** Brajendra Sharma, USDA/ARS/NEA/ERRC

### Environmentally Friendly Fluids/Synthetic Lubricants III

**Session Chair:** Shannon McGee, Quaker Houghton  
**Session Vice Chair:** Kathleen Havelka, Advancion

### Fluid Film Bearings/Seals I, II, III & IV

**Session Chair:** Amruthkiran Hegde, Kingsbury, Inc.  
**Session Vice Chair:** Aaron Harcrow, Ultool

### Gears I

**Session Chair:** Paul Norris, Afton Chemical Ltd  
**Session Vice Chair:** Aaron Isaacson, Penn State University

### Gears II

**Session Chair:** Aaron Isaacson, Penn State University  
**Session Vice Chair:** Xue Han, Cummins, Inc.

### Grease I

**Session Chair:** Gareth Fish, Lubrizol

### Grease II

**Session Chair:** Benjamin Leonard, Quaker Houghton

### Grease III

**Session Chair:** Gareth Fish, Lubrizol

### Lubrication Fundamentals I

**Session Chair:** Chanaka Kumara, Oak Ridge National Laboratory  
**Session Vice Chair:** Humaun Kabir, Texas A&M University

### Lubrication Fundamentals II

**Session Chair:** Kuldeep Mistry, Chevron Oronite Company  
**Session Vice Chair:** Xin He, Syensqo

### Lubrication Fundamentals III

**Session Chair:** Ashish Jha, Chevron  
**Session Vice Chair:** Humaun Kabir, Texas A&M University

### Materials Tribology I

**Session Chair:** Santiago Lazarte, Florida State University  
**Session Vice Chair:** Catherine Fidd, Florida State University

### Materials Tribology II

**Session Chair:** Tomas Grejtek, Oak Ridge National Laboratory  
**Session Vice Chair:** Kylie Van Meter, Sandia National Laboratories

### Materials Tribology III

**Session Chair:** Tomas Babuska, Sandia National Laboratories  
**Session Vice Chair:** Julian Long, University of Florida

### Metalworking Fluids I

**Session Chair:** Stefanie Velez, Munzing North America, LP  
**Session Vice Chair:** Stephanie Cole, Munzing North America, LP  
**Session Vice Chair:** Safia Peerzada, Munzing North America, LP

### Metalworking Fluids II

**Session Chair:** Stephanie Cole, Munzing North America, LP  
**Session Vice Chair:** Stefanie Velez, Munzing North America, LP  
**Session Vice Chair:** Safia Peerzada, Munzing North America, LP

### Nanotribology I

**Session Chair:** Kaisei Sato, Tokyo University of Science  
**Session Vice Chair:** Cangyu Qu, University of Pennsylvania

### Nanotribology II

**Session Chair:** Seokhoon Jang, Oak Ridge National Laboratory  
**Session Vice Chair:** Wenbo Wang, Oakland University

### Non-Ferrous Metals I

**Session Chair:** Andrea Knopp, Constellium  
**Session Vice Chair:** Thomas Oleksiak, Quaker Houghton

### Power Generation I

**Session Chair:** Aaron Greco, Argonne National Laboratory  
**Session Vice Chair:** Sergei Glavatskih, KTH Royal Institute of Tribology

### Power Generation II: Ocean Tribology

**Session Chair:** Sergei Glavatskih, KTH Royal Institute of Tribology  
**Session Vice Chair:** Aaron Greco, Argonne National Laboratory

### Rheology I

**Session Chair:** Carlos Sanchez, Southwest Research Institute

### Rolling Element Bearings I

**Session Chair:** Travis Shive, SKF USA Inc.  
**Session Vice Chair:** Jason Brady, SKF

### Rolling Element Bearings II

**Session Chair:** Saeed Aamer, Purdue University  
**Session Vice Chair:** Travis Shive, SKF USA Inc.

### Rolling Element Bearings III

**Session Chair:** Ujjawal Arya, Purdue University  
**Session Vice Chair:** Jason Brady, SKF

### Surface Engineering I

**Session Chair:** Salikh Omarov, Iowa State University  
**Session Vice Chair:** Dongyun Lee, Iowa State University

### Surface Engineering II

**Session Chair:** Ali Beheshti, George Mason University  
**Session Vice Chair:** Rebecca Lauer, Danfoss

### Sustainability I & II

**Session Chair:** Shubhamita Basu, Perstorp Polyols, Inc.  
**Session Vice Chair:** Vasileios Bakolas, Schaeffler Technologies AG und Co KG

### Tribochemistry I

**Session Chair:** Cinta Lorenzo Martin, Argonne National Laboratory  
**Session Vice Chair:** Seokhoon Jang, Oak Ridge National Laboratory

### Tribochemistry II

**Session Chair:** Seokhoon Jang, Oak Ridge National Laboratory  
**Session Vice Chair:** Cinta Lorenzo Martin, Argonne National Laboratory

### Tribotesting I & II

**Session Chair:** Damien Yiyuan Khoo, Bruker Nano Inc.

### Wear I & II

**Session Chair:** Xue Han, Cummins, Inc.  
**Session Vice Chair:** Wenbo Wang, Oakland University

# Upcoming Events with STLE

YOU'RE INVITED!

## July 21-22

# 2026

### 2026 Virtual Symposium: Additives | Online

Explore cutting-edge additive technologies and emerging chemistries with leading researchers and formulators.



## October 5-7

# 2026

### STLE MPMA 2026 Fall Technical Meeting | Hilton Rosemont Chicago O'Hare

In addition to bearings and gears, attendees can expect presentations in alignment with the STLE trends report: AI and digitalization, manufacturing, thermal management, decarbonization, and megalibrary.



## February 23-25

# 2027

### 2027 Interactive Lubrication Training Experience | Southwest Research Institute, San Antonio, Texas

Build practical, job-ready lubrication skills through STLE's highly requested hands-on, immersive training format.



## May 2-6

# 2027

### 2027 STLE Annual Meeting: Innovating Through Tribology & Lubrication | Hyatt Regency Chicago

Immerse yourself in five days of technology training, professional development, and networking opportunities.



Check the STLE website for additional programming at [www.stle.org](http://www.stle.org).



• connect • learn • achieve

Society of Tribologists and Lubrication Engineers

840 Busse Highway, Park Ridge, Illinois 60068 (USA)

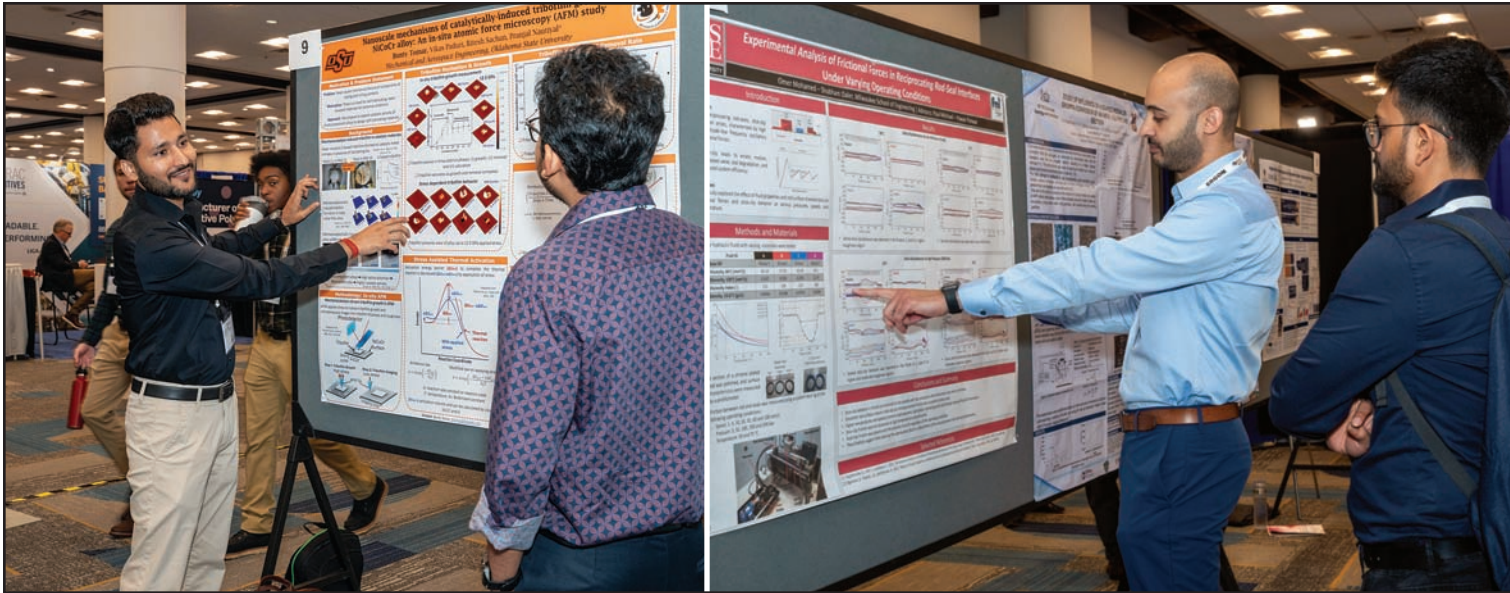
P: (847) 825-5536 | [www.stle.org](http://www.stle.org) | [information@stle.org](mailto:information@stle.org)

Follow us on: [f](#) [x](#) [i](#) [v](#) [in](#)



# STLE Annual Meeting & Exhibition: Innovating Through Tribology & Lubrication

## Student Posters



Student Posters are located in Elite Hall B

**4524356: Extension of a CFD Model of the EHD Line Contact Considering Non-Newtonian Fluid Behaviour, Thermal Effects, and Surface Irregularities**

Felix Zak, Technical University of Munich, Munich, Bavaria, Germany

**4525670: Concentration Dependent Lubrication of Sodium Hyaluronate on a Gelatin based Ocular Model**

Mary Goncharenko, Gabriela Whitmer, Alison Dunn, University of Florida, Gainesville, FL

**4525562: Interfacial Stiffness Analysis of Rough Surface Contact Using Digital Image Correlation**

Thomas Eggers, Yaroslava Izotova, Alexander Gordillo Jimenez, Alison Dunn, University of Florida, Gainesville, FL

**4525576: Slip Controls Motion in a Bio-Inspired Spring-Latch System**

Nabin Bastola, Jadon Reuben, Justin McMorro, Rajshibhu Pandey, Alison Dunn, University of Florida, Gainesville, FL

**4525672: Frictional Behavior of Needle Insertion with Soft Solids**

Yipeng Liu, Stephanie Baldwin, Justin McMorro, Alison Dunn, University of Florida, Gainesville, FL

**4525937: Mitigating Electrically Induced Wear in Lithium Grease Using MoS<sub>2</sub> Additives**

Humaun Kabir, Texas A&M University, Bryan, TX

**4524753: Self-sharpening Mechanism in Bird Beaks**

Catherine Fidd, Emily Duval, Gregory Erickson, Brandon Krick, Florida State University, Tallahassee, FL

**4522937: Sliding Speed-Dependent Nanoparticle Transport in Gradient Hydrogels under Reciprocating Shear Stress**

Nemea Courelli, Ahmed Al Kindi, Shawn Yeom, Angela Pitenis, University of California, Santa Barbara, Santa Barbara, CA; Michael Bryant, University of Birmingham, Birmingham, United Kingdom

**4523264: Evaluation of a Deep Learning Surrogate Model for a Textured Thrust Bearing**

Ryota Ishii, Norifumi Miyanaga, Kanto Gakuin University, Yokohama, Kanagawa, Japan

**4524542: Role of Surface Topography in Electrically Induced Bearing Damage Under Lubricated Contact**

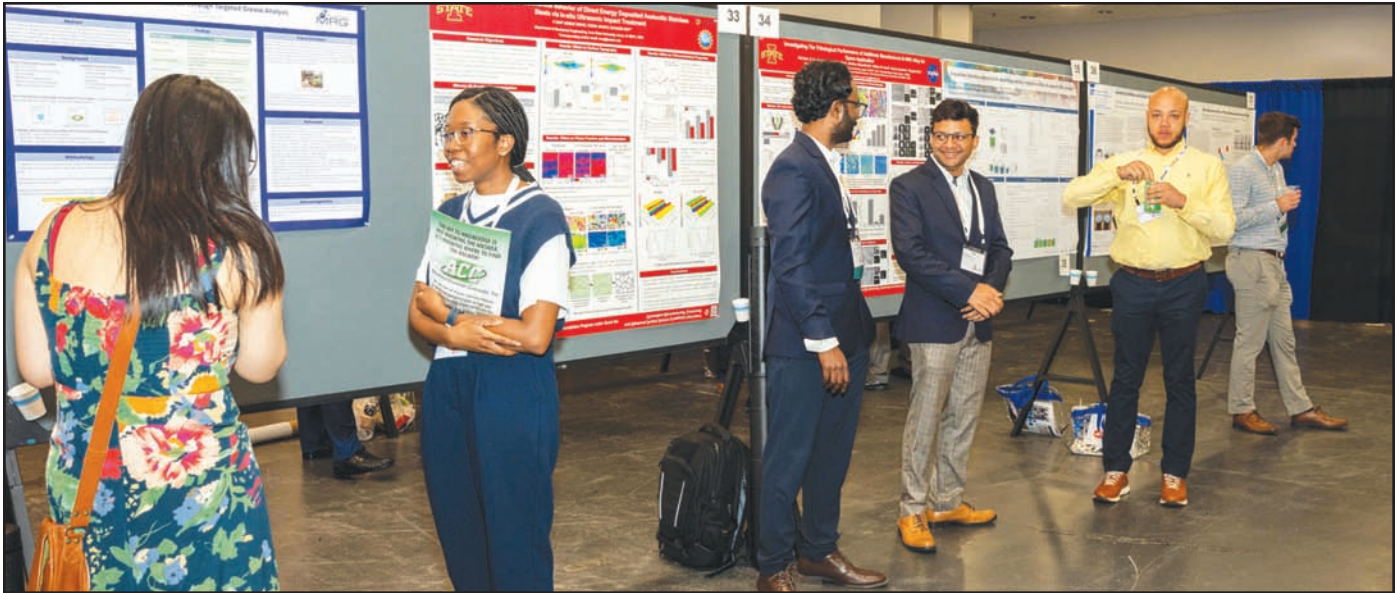
Sudip Saha, Moises Munoz Paredes, Robert Jackson, Auburn University, Auburn, AL

**4522642: Leveraging Recycled Polyurethane Foam for Real-world Applications**

Alexia Joachim, David Lancaster, Denis Makarov, Ethan Rouhani, Rahmah Naeem, Thanaphat Ronnachatchai, Kunal Gide, Shaghayegh Bagheri, George Mason University, Fairfax, VA

**4523861: Electrochemical Evaluation of the Tribocorrosion Resistance of 6061 Aluminium in Artificial Seawater**

Adam Escobar, Roman Perez, Ashlie Martini, University of California Merced, Merced, CA



**4524074: Molecular Dynamics Study of Halogen-Free and Fluorinated Ionic Liquids for Environmentally Safer Lubrication of Metallic Glass**

Nicole Barosa, Jaeho Lee, Binghamton University, Hopewell Junction, NY

**4511090: Effect of Applied DC Voltages on Wear Behavior of Rolling Sliding Steel Surface Under Lubrication with e-Axle Fluids**

Reon Furukawa, Graduate School of Tokyo University of Science, Tokyo, Japan; Takuto Kunii, Rtec-Instruments K.K., Kashiwa, Chiba, Japan; Kaisei Sato, National Institute of Technology, Tokyo College, Tokyo, Japan; Shinya Sasaki, Tokyo University of Science, Tokyo, Japan

**4523749: Mannich Base Derivative of Epicatechin Gallate (ECG) for Enhancing the Oxidative Stability of Biolubricants**

Noor Fatima, Auburn University, Auburn, AL

**4523753: Reactive Molecular Dynamics Simulation of Hydraulic Fluid Oxidation and Thermal Degradation**

Brandon Janes, Pawan Panwar, Paul Michael, Milwaukee School of Engineering, Milwaukee, WI

**4523756: Remaining Useful Life Prediction of a Bent-Axis Axial Piston Pump Using Accelerometer Signals and Deep Learning Models**

Mathew Karls, Pawan Panwar, Paul Michael, Milwaukee School of Engineering, Milwaukee, WI

**4523769: Experimental and Modeling Analysis of Frictional Forces in Reciprocating Rod-Seal Interfaces Under Varying Operating Conditions**

Omer Mohamed, Shubham Daler, Pawan Panwar, Paul Michael, Milwaukee School of Engineering, Milwaukee, WI

**4422518: Evaluation of the Tribological Behavior of High-Entropy Alloys Fabricated by Laser Directed Energy Deposition (LDED) Under Electrified Conditions**

Dongyun Lee, Mkpe Kekung, Sougata Roy, Iowa State University, Ames, IA

**4401579: How Swelling Affects Microscale Creasing and Stick-Slip Friction of Soft Elastomers**

Md Sazzadul Alam Rahat, Jonathan Pham, University of Cincinnati, Cincinnati, OH; Rong Long, University of Colorado Boulder, Boulder, CO

**4422427: Tribological Performance of Stainless Steel in Molten Chloride Salt Environments: Baseline Degradation and Surface Interaction Mechanisms**

Joshua Feast, Liuquan Yang, Frederick Pessu, University of Leeds, Leeds, West Yorkshire, United Kingdom

**4422633: Grounding Shaft Currents: Ethylene Glycol as a Conductive Lubricant for High-Speed Carbon-Steel Interfaces in EV Motors**

Lizvy Guzmán Tlahuel, Andys Hernandez Peña, Leonardo Farfan-Cabrera, Tecnológico de Monterrey, Monterrey, Nuevo Leon, Mexico

**4422701: Additively Manufactured Oxide-Strengthened FeCrAl: Fretting Wear Behavior for Nuclear Reactor Claddings**

Salikh Omarov, Kannan Ravi Ramkumar, Christopher Silligman, Mkpe Kekung, Pial Das, Sougata Roy, Iowa State University, Ames, IA

**4422647: Rotary vs. Oscillating Sliding: How Motion Mode Can Govern Elastomer Wear Mechanisms under Dry Conditions**

Ana Pérez Escobar, Andys Hernandez Peña, César David Reséndiz Calderón, Leonardo Farfan-Cabrera, Tecnológico de Monterrey, Monterrey, Nuevo Leon, Mexico

**4439660: Evaluation of Molybdenum Disulfide (MoS<sub>2</sub>) Lubrication Performance in Vacuum and Simulated Space Environments**

Joelle Lopez, The University of Akron Engineering Tribology Laboratory, Akron, OH

**4422795: Quantifying Tackiness and Its Relation to Consistency and Friction in Lubricating Greases**

Farhana Islam Muna, Molly McGuire, Jonathan Pham, University of Cincinnati, Cincinnati, OH; Jacob Bonta, ProFluid, LLC, Loveland, OH

**4429662: Evaluating Grease Degradation and Water Resistance Using Contact Angle Analysis**

Steven Alexandre, SUNY, Farmingdale, NY; Angelina Precilla, Raj Shah, Koehler Instrument Company, Holtsville, NY

**4429667: Modernizing ASTM D2265: Replacing Mercury Thermometers with Thermocouples**

Gerasimos Dimitratos, SUNY, Farmingdale, NY; Angelina Precilla, Raj Shah, Koehler Instrument Company, Holtsville, NY

**4435161: Redesign of a Movable Stage for a Vacuum Pin-on-Disk Tribometer to Improve Precision and Repeatability**

Miranda Boyd, The University of Akron, Medina, OH

**4436809: Comparative Study of Nanomaterials as Solid Lubricants for Steel-to-Steel Contact: Mechanistic Insights into Friction and Wear**

Rakibul Islam, Changdong Yeo, Texas Tech University, Lubbock, TX

**4437589: The Drag Losses Prediction of the Rolling Elements Bearing utilizing CFD-ANN model**

Jungsoo Park, Purdue METL, Lafayette, IN

**4547274: Roughness-dependent Scaling of Contact Area and Separation Gap with Pressure for Glassy Polymers**

Shubhendu Kumar, Utkarsh Patil, Stephen Merriman, Ali Dhinojwala, University of Akron, Akron, OH

**4464124: Comparative Analysis of Shot Peening and Laser Peening on the Microstructural, Mechanical, and Tribological Performance of Inconel 625**

Md Shaheen Mahmood, Ali Beheshti, George Mason University, Fairfax, VA; Nicholas Brooks, Noah Holtham, Russell Rowe, Keivan Davami, University of Alabama, Tuscaloosa, AL; Lloyd Hackel, Curtiss-Wright Surface Technologies, Livermore, CA

**4472713: Synergistic Silica-Copper Hybrids: Advancing Lubrication with Nanoparticle Additives**

Junaid Syed, Indian Institute of Technology Delhi, New Delhi, India

**4502884: Tribocorrosion Efficiency of Nanostructured SiO<sub>2</sub>-Coated TAV Alloy for Orthopaedic Applications**

Babra Abbas, Indian Institute of Technology Delhi, Delhi, India

**4520811: Tribological Assessment of Recycled Titanium Alloys as Alternative Railway Wheel Materials**

Forbes Gusha, Sam Lister, Martin Jackson, Katherine Tomlinson, Roger Lewis, University of Sheffield, Sheffield, United Kingdom

**4522131: Automated Detection and Quantification of Electrically Induced Bearing Damage in SEM Images**

Moises Munoz Paredes, Sudip Saha, Robert Jackson, Auburn University, Auburn, AL

**4523124: Microscale Tribochemistry of Diamond-Like Carbon: Run-in and Shear Stress vs. Pressure**

Aca Ajković, Maureen Bowen, Sonja Ebey, Peter Forseth, Sadie Smith, Maxwell Thomas, Brian Borovsky, St. Olaf College, Northfield, MN; Seokhoon Jang, Oak Ridge National Laboratory, Oak Ridge, TN; Zhenbin Gong, Junyan Zhang, Lanzhou Institute of Chemical Physics, Lanzhou, China; Seong Kim, Pennsylvania State University, University Park, PA

**4523459: Grease Tribological Performance in Electrified Conditions Evaluated Using Four-Ball Tests**

Alex Hartzler, University of California Merced, Canyon Lake, CA; Christina Cheung, Anoop Kumar, Chevron Lubricants, Richmond, CA; Ashlie Martini, University of California Merced, Merced, CA

**4524917: Development of Bio-inspired Metrics for Tactile Robotic Skin via Controlled Tribological and Rheological Characterization**

Michael Henry, FAMU-FSU College of Engineering, Tallahassee, FL; Brandon Krick, Florida State University, Tallahassee, FL; Cynthia Hipwell, Preksha Rao, Arushi Pradhan, Texas A&M, College Station, TX; Sylvia Tan, Northwestern University, Evanston, IL

**4545662: Deformation Field Assisted Laser Directed Energy Deposition to Tune Material States in Nitronic 60 Steel**

Uday Venkat Kiran Kommineni, Iowa State University, Ames, IA; Yan Chen, Oak Ridge National Laboratory, Oak Ridge, TN; Salikh Omarov, Sougata Roy, Iowa State University, Ames, IA

# STLE NextGen Fund

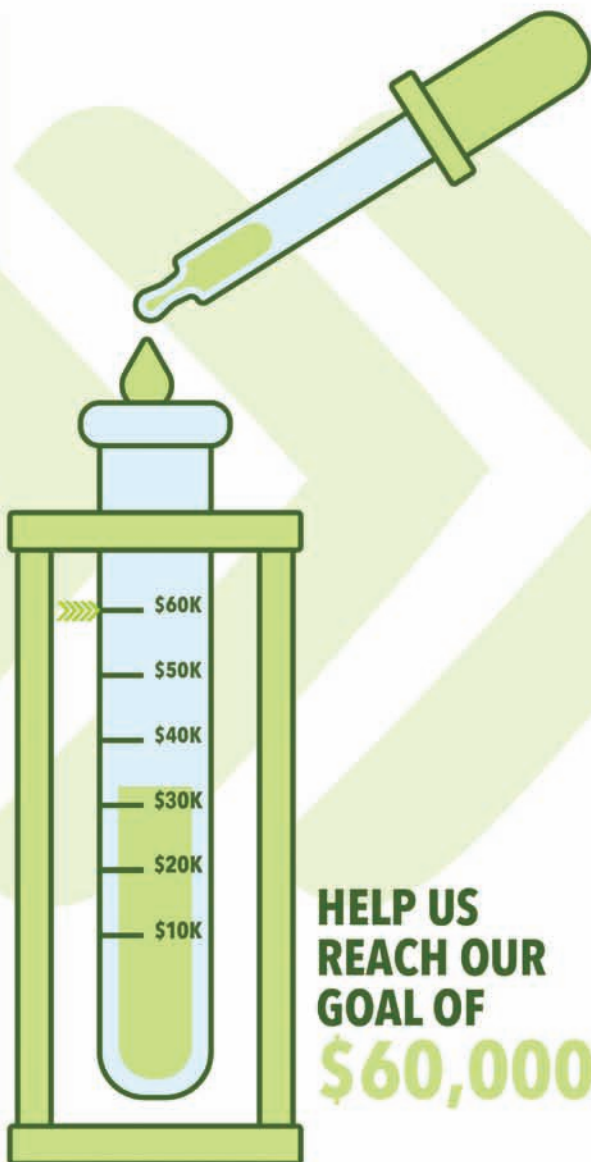


**Support the next generation of tribology and lubrication professionals.**

The STLE NextGen Fund invites members, industry partners and friends of tribology to help develop the next generation of tribologists and lubrication engineers. Your tax-deductible gift to the fund will support many programs and initiatives, including:

- ▶ STLE Early Career Awards
- ▶ Student Research Posters
- ▶ Local Section Support
- ▶ Presidential Awards Program
- ▶ Travel Grants for Conference Attendance

**For more information and to donate, visit [www.stle.org/donate](http://www.stle.org/donate) or scan the QR code:**



**HELP US  
REACH OUR  
GOAL OF  
\$60,000 by June 30**



• connect • learn • achieve

Society of Tribologists and Lubrication Engineers

840 Busse Highway, Park Ridge, Illinois 60068 (USA)

P: (847) 825-5536 | [www.stle.org](http://www.stle.org) | [information@stle.org](mailto:information@stle.org)

Follow us on:     

# STLE Annual Meeting & Exhibition: Innovating Through Tribology & Lubrication

## Acknowledgements

STLE would like to thank all the dedicated individuals who serve on technical and administrative committees. Their efforts throughout the year are invaluable to making the STLE Annual Meeting & Exhibition a success. For a full list of STLE committees and the members who serve on them, visit [www.stle.org](http://www.stle.org).

### Executive Committee

**Kevin Delaney (President)** – Vanderbilt Chemicals, LLC, Norwalk, CT

**Steffen Bots, CLS, OMA (Vice President)** – ADDINOL Lube Oil GmbH, Leuna, Germany

**William Anderson, FSTLE (Secretary)** – Afton Chemical Corporation, Richmond, VA

**Peter Lee, FSTLE (Treasurer)** – Southwest Research Institute, San Antonio, TX

**Douglas Sackett, CLS (Incoming Treasurer)** – Dilmar Oil Company, Florence, SC

**Jack McKenna (Immediate Past President & Presidential Council Chair)** – Sea-Land Chemical Company, Westlake, OH

**Rebecca Lintow, CAE (Executive Director)** – STLE Headquarters, Park Ridge, IL

### 2025-2026 STLE Board of Directors

**Vasu Bala**, TRCC

**Bridget Dubbert, CMFS (incoming)**, Engineered Lubricants Co.

**Hong Gao, FSTLE**, Shell Global Solutions

**Yutong Gao, CLS, OMA (incoming)**, Petro-Canada Lubricants Inc.

**Hannes Grillenberger**, Schaeffler Technologies AG & Co KG

**Mitjan Kalin**, University of Ljubljana

**Michael Kotzalas**, The Timken Co.

**Babak Lotfi (incoming)**, ExxonMobil Technology & Engineering

**Khalid Malik, CLS**, Ontario Power Generation

**Larisa Marmarstein**, The Elco Corp.

**Mandi McElwain (retiring)**, Univar Solutions

**Kuldeep Mistry**, Chevron Products Company, a division of Chevron U.S.A. Inc.

**Ramoun Mourhatch**, Chevron Oronite LLC

**Jason Papacek, CLS, OMA**, Calumet Specialty Products Partners, L.P.

**Jun Qu**, Oak Ridge National Laboratory

**Kevin Saunderson, CMFS**, BP Lubricants USA, Inc.

**Joseph Schultz**, Lubrizol

**Dairene Uy**, Shell Global Solutions (US) Inc.

**Wenyang Zhang**, Tesla, Inc.

### 2026 Annual Meeting Program Committee

**Jun Qu, FSTLE (Chair)**

Oak Ridge National Laboratory

**Alison Dunn (Vice Chair)**

University of Florida

**Hannes Grillenberger (Secretary)**

Schaeffler Technologies AG & Co KG

**Bruce Fabijonas**

Kingsbury Inc.

**Gordon G. Krauss**

Harvey Mudd College

**Prathima C. Nalam**

SUNY at Buffalo

**Carlos J. Sanchez**

Southwest Research Institute

### 2026 Annual Meeting Education Course Committee

**Michael Blumenfeld (Chair)**

ExxonMobil Technology & Engineering

**Vasu Bala**

TRCC

**Stephanie Cole**

Münzing

**Monica Ford**

Clariant

**Nick Garabedian**

Datin GmbH

**Farrukh S. Qureshi**

Lubrizol

**David Racke**

Lucas Oil

**Carlos J. Sanchez**

Southwest Research Institute

**Kevin A. Saunderson, CMFS**

BP Lubricants USA, Inc.

## Awards Committee

---

**Qian (Beth) Zou, FSTLE (Chair)**, Oakland University  
**Matthew Brouwer**, Williams International, Pontiac  
**Ashish Jha**, Chevron Oronite, LLC  
**Nikhil Dnyaneshwar Londhe**, The Timken Company  
**Pranjal Nautiyal**, Oklahoma State University  
**Carlos Sanchez**, Southwest Research Institute

## Education Committee

---

**Babak Lotfi (Chair)**, ExxonMobil Technology & Engineering  
**Chris Cleveland (Co-Chair)**, Afton Chemical Corporation  
**Michael Blumenfeld**, ExxonMobil Technology & Engineering  
**Greg Croce, CLS**, Chevron Products Company  
**JoRuetta R. Ellington**, Evonik Oil Additives USA, Inc.  
**Jake Finn**, HF Sinclair  
**Marc Ingram**, Ingram Tribology  
**Na Liu**, FUCHS Lubricants Company  
**Lawrence G. Ludwig, Jr., CLS, CMFS, OMA**, Schaeffler Manufacturing Company  
**Jennifer Lunn, CMFS**, FUCHS Lubricants Company  
**Tom Malinski**, Chevron Phillips Chemical Company  
**Daniel Merk**, Schaeffler Technologies AG & Co. KG  
**Alexes Morgan**, Sea-Land Chemical Company  
**Ramoun Mourhatch**, Chevron Oronite, LLC  
**Mihir K. Patel**, Chevron Oronite, LLC  
**Michael Staples**, Kao Chemicals

## Exhibitor Advisory Committee

---

**James Machac**, Indovinya/Indorama Ventures  
**Alexes Morgan**, Sea-Land Chemical Company  
**Avery Nicholas**, Ergon, Inc.  
**Daniel Niedzwiecki**, BASF Corporation  
**John Rastoka**, Acme-Hardesty Co.  
**John Russo**, Advanced Chemical Concepts, Inc.  
**Raj Shah, FSTLE**, Koehler Instrument Co., Inc.  
**Mark Susanek**, Lubrizol  
**Monica Traugott**, Soltex, Inc.  
**Leanne Trevelline**, LANXESS Corporation

## Fellows Committee

---

**Min Zou, FSTLE (Chair)**, University of Arkansas  
**Gareth Fish, CLS, FSTLE**, Lubrizol  
**Hong Gao, FSTLE**, Shell Global Solutions  
**Frederick J. Passman, FSTLE, CMFS**, BCA, Inc.  
**Jun Qu, FSTLE**, Oak Ridge National Laboratory  
**Qian (Beth) Zou, FSTLE**, Oakland University

## Technical Committees

---

### Aerospace Council

**Ashlie Martini, FSTLE (Chair)**, University of California, Merced  
**John Curry (Co-chair)**, Sandia National Laboratories

### AI and Machine Learning Symposium

**Max Marian (Chair)**, IMKT, Leibniz University Hannover  
**Nick Garabedian (Vice chair)**, Datin GmbH  
**Victoria Granja (Secretary)**, Rice University  
**Tianshi Fang (Co-PSC)**, Shell Global Solutions US Inc.  
**Shuangbiao Liu (Co-PSC)**, Northwestern University  
**Brian Delaney (Co-Vice PSC)**, Northwestern University  
**Prathima C. Nalam (Co-Vice PSC)**, SUNY at Buffalo

### Biotribology

**Marc Masen (Chair)**, Imperial College of London  
**Quentin Allen (Vice Chair)**, Brigham Young University  
**Emily Lambeth (Secretary/Vice PSC)**, University of Delaware  
**Kartik Pondicherry (PSC)**, Anton Paar GmbH

### Condition Monitoring/Predictive Maintenance

**Misty Bickerdyke (Chair)**, Empire Fluid Analysis Lab  
**Juan Restrepo (Vice Chair)**, Eurofins TestOil  
**Min Yu (Secretary)**, Imperial College London  
**Jacob Bonta (PSC)**, ProFluid, LLC  
**Thomas Reddyhoff (Vice PSC)**, Imperial College London

### Contact Mechanics

**Robert Jackson, FSTLE (Chair)**, Auburn University  
**Charchit Kumar (Vice Chair)**, University of Glasgow  
**Anna Morozova (Secretary)**, Oakland University  
**Nikhil Dnyaneshwar Londhe (PSC)**, The Timken Company  
**Sitangshu Chatterjee (Vice PSC)**, Afton Chemical Corporation

### Electric Vehicle/Engine and Drivetrain

**Thomas Wellmann (Chair)**, FEV North America, Inc.  
**Jeremy Styer (Vice Chair)**, Vanderbilt Chemicals, LLC  
**Greg Hansen (Secretary)**, Southwest Research Institute  
**Hyeok Hahn (PSC)**, Chevron Inc.  
**Carlos Sanchez (PSC)**, Southwest Research Institute

### Environmentally Friendly Fluids/Synthetic Lubricants

**Brajendra K. Sharma (Chair)**, USDA/ARS/ERRC  
**Kathleen Havelka (Vice Chair)**, Advancion Corporation  
**Daniel B. Garbark (Secretary)**, American Electric Power  
**Na Liu (PSC)**, FUCHS Lubricants Company  
**Shannon McGee (Co-PSC)**, Quaker Houghton

### Fluid Film Bearings/Seals

**Balint Pap (Chair)**, Safran Transmission Systems  
**Lassad Amami (Vice Chair/Secretary)**, CETIM  
**Aaron Harcrow (PSC)**, Ultool  
**Amruthkiran Hedge (PSC)**, Kingsbury Inc.

### Gears and Gear Lubrication

**Aaron Isaacson (Chair)**, Pennsylvania State University  
**Xue Han (Vice Chair)**, Cummins, Inc.  
**Paul Norris (PSC)**, Afton Chemical Corporation

### Grease

**Lu Fang (Chair)**, Marvell Technology  
**Femke Hogenberk (Vice Chair)**, University of Twente  
**Ben Leonard (PSC)**, Quaker Houghton  
**Gabriel Calderon Salmeron (Vice PSC)**, KTH  
**Taylor Hudson**, Axel Christiernsson  
**Rene Westbroek**, Axel Christiernsson International AB

### Lubrication Fundamentals

**Chanaka Kumara (Chair)**, Oak Ridge National Laboratory  
**Ashish Jha (Vice Chair)**, Chevron Oronite, LLC  
**Kuldeep Mistry (Advisor)**, Chevron Oronite, LLC  
**Jun Qu, FSTLE (Advisor)**, Oak Ridge National Laboratory  
**Xin He (Co-PSC)**, Syensqo  
**Mohammad Kabir (Co-PSC)**, Texas A&M University

### Materials Tribology

**Nikhil Murthy (Chair)**, U.S. Army Research Laboratory  
**Kylie Van Meter (Vice Chair)**, Sandia National Laboratories  
**Tomas Babuska (Secretary)**, Sandia National Laboratories  
**Tomas Grejtak (PSC)**, Oak Ridge National Laboratory  
**Santiago Lazarte (Vice PSC, Biomaterials)**, Florida State University  
**M. Cinta Lorenzo Martin (Vice PSC, Tribochemistry)**, Argonne National Laboratory

### Metalworking

**Stephanie Cole (Chair)**, Münzing  
**Stefanie Velez (Vice Chair)**, Münzing  
**Safia Peerzada (PSC)**, Münzing

### Nanotribology

**Pranjal Nautiyal (Chair)**, Oklahoma State University  
**Arnab Neogi (Vice Chair)**, University of Illinois at Chicago  
**Cangyu Qu (PSC)**, University of Pennsylvania  
**Seokhoon Jang (Vice PSC)**, Oak Ridge National Laboratory

### Nonferrous Metals Council

**Ariane Viat (Chair)**, Constellium  
**Carlie Clem (Secretary)**, Texarkana Aluminum  
**Andrea Knopp (Treasurer)**, Constellium  
**Steven Wheeler (PSC)**, TotalEnergies

### Power Generation, Hydraulics and Ocean Tribology

**Sergei Glavatskih (Chair)**, KTH Royal Institute of Technology

### Rheology

**Carlos Sanchez (Chair)**, Southwest Research Institute

### Rolling Element Bearings

**Travis Shive (Chair)**, SKF USA Inc.  
**Ujjawal Arya (Vice Chair)**, Purdue University  
**Thomas Russell (Secretary)**, Exponent Inc.  
**Saeed Aamer (PSC)**, Purdue University  
**Jason Brady (Vice PSC)**, SKF USA Inc.

### Surface Engineering

**Sougata Roy (Chair)**, Iowa State University  
**Kora Farokhzadeh (Vice Chair)**, Envalior Engineering Materials  
**Ali Beheshti (Secretary)**, George Mason University  
**Uday Venkat Kiran Kommineni (PSC)**, Iowa State University  
**Sarmistha Das (Vice PSC)**, Novelis Inc.  
**Tobias Martin (Vice PSC)**, Northwestern University  
**Auezhan Amanov**, Tampere University  
**Rebecca Lauer**, Danfoss Power Solutions

### Sustainability

**Shubhamita Basu (Chair)**, Perstorp

### Tribotesting

**Jun Xiao (Chair)**, RTEC-Instruments, Inc.  
**Tushar Khosla (Vice Chair)**, RTEC-Instruments, Inc.  
**Oluwaseyi Ogunsola (Advisor)**, Shell Global Solutions (US) Inc.  
**Damien Khoo (PSC)**, Bruker Nano Inc.  
**Adedoyin Abe (Vice PSC)**, University of Arkansas

### Wear

**Xue Han (Chair)**, Cummins, Inc  
**Wenbo Wang (Vice Chair)**, Oakland University  
**Sitangshu Chatterjee (Co-PSC)**, Afton Chemical Corporation  
**Wandong Wang (Co-PSC)**, University of Toronto

### Student Posters

**Nicholaos Demas (Chair)**, Argonne National Laboratory  
**John Curry**, Sandia National Laboratories



**CANNON**  
CONFIDENCE COUNTS.™



**WE  
DID  
IT.**

## Three generations. One perfect CAV.™

We have redefined Kinematic Viscosity testing with our all-new CAV 5 family. By giving labs complete control over how and where testing happens, any user can confidently run the full spectrum of samples.

- Total Control
- Industry-Trusted Accuracy & Performance
- Continuous Operation & Flexible Deployment
- Superior Automated Cleaning
- Next-Generation Intuitive Interface
- Sync Anywhere powered by FlowHub™

The CAV 5 is a system built on decades of Cannon expertise to deliver unmatched capability, reliability and freedom. See for yourself how it can make every inch of your lab exceptional.



**One Platform.  
Any Sample.  
Total Control.**



*Advanced Chemical Concepts, Inc.*

**ARE YOU LOOKING FOR ...  
SUPERIOR LUBRICITY ADDITIVES  
OIL OR WATER-BASED CORROSION INHIBITORS  
HIGH-PERFORMANCE EMULSIFIERS**

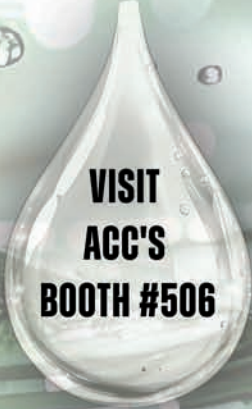
# **ADVANCED CHEMICAL CONCEPTS**

**PROVIDES UNIQUE CHEMISTRIES FOR:**

- *Lubricity improvement in Metalworking Fluids*
- *Rust and Corrosion Protection*
- *Stable emulsification for Synthetic & Semi-Synthetic Fluids*
- *Improved tool life and machining performance*

**ACC OFFERS SOLUTIONS FOR:**

- *Synthetic Fluids*
- *Semi-Synthetic Fluids*
- *Soluble Oils*
- *Metalworking Lubricants*

A graphic of a single water droplet, rendered in a realistic style with highlights and shadows, positioned on the right side of the advertisement.

**VISIT  
ACC'S  
BOOTH #506**

**LUBRICITY ADDITIVES | CORROSION INHIBITORS | EMULSIFIERS**

4675 Talon Court SE Kentwood, MI 49512 Ph: 216.221.3952 F: 216.221.4291  
[www.advancedchemicalconcepts.com](http://www.advancedchemicalconcepts.com)