

Inside:
Condensed schedule for 2018 STLE Tribology Frontiers Conference!



Society of Tribologists and Lubrication Engineers
840 Busse Highway
Park Ridge, IL 60068-2376

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#tribofrontiers18

Early Bird
Savings!
Register before Sept. 19
and save **\$100!**

Register online and see the complete
technical program at www.stle.org.



STLE
Tribology
Frontiers
Conference

(CO-SPONSORED BY ASME TRIBOLOGY DIVISION)

Oct. 28-31, 2018
Drake Hotel
140 E. Walton Place
Chicago, IL 60611
312-787-2200

Reserve
your room at
[https://aws.
passkey.com/go/
STLE2018](https://aws.passkey.com/go/STLE2018)

Dear Industry Professional,

Please join your research peers from around the world for STLE's fourth annual Tribology Frontiers Conference. As an industry, we'll explore how tribology will continue to help solve future technical and societal problems. Our tracks include plenary speakers and focus on:

- | | |
|---------------------------------|------------------------------|
| 1. Surfaces and Interfaces | 7. Lubricants |
| 2. In Situ Tribometry | 8. Tribochemistry |
| 3. Fluid Lubrication | 9. Biotribology |
| 4. Polymers Tribology | 10. Experiment and Theory |
| 5. Materials Tribology | 11. Beyond the Cutting Edge. |
| 6. Machine Elements and Systems | |



The fastest way to register is online at **www.stle.org**. You also can mail or fax the attached registration form.

Looking forward to seeing you
in Chicago!

Dr. David Burris
2018 Conference Chair
University of Delaware

2018 STLE Tribology Frontiers Conference Registration Form

Oct. 28-31, 2018 | Drake Hotel | 140 East Walton Place, Chicago, IL 60611 | 312.787.2200

The 2018 Tribology Frontiers Conference continues STLE's tradition of exploring the role tribology research will play in solving future scientific and societal challenges. Join your peers for an international conference open to industry, academic and government researchers.



IN A HURRY? Register online at www.stle.org

MAIL OR FAX THIS FORM TO: STLE, 840 Busse Highway, Park Ridge, IL (USA) 60068. Fax: 847-825-1456.

Title: ____ Dr. ____ Prof. ____ Mr. ____ Mrs. ____ Ms.

First Name: _____ Last Name: _____

Company/Institution Name: _____

Address: _____

City: _____ State/Province: _____ Zip/Mail Code: _____

Country: _____ Email: _____

Phone: _____ Fax: _____

Registration Fees

- ☐ Registration: \$650 Early Bird rate / \$750 after **Sept. 19, 2018**
- ☐ Students (including post-doctoral)/\$30
- *Qualified students includes any individual majoring in physics, chemistry, engineering, or other related technical or scientific disciplines and regularly matriculated in a full-time undergraduate or graduate program in an accredited academic institution.

Payment Information

☐ Payment Enclosed

Payment Type: ____ Visa ____ Mastercard ____ Amex ____ Discover

Credit Card #: _____ Security Code _____ Exp. Date: _____

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QUESTIONS? CALL STLE HEADQUARTERS AT 847-825-5536.

Program-At-A-Glance

2018 STLE Tribology Frontiers Conference, Oct. 28-31, 2018 • Drake Hotel, Chicago, Illinois (USA)

Chicago’s Magnificent Mile – STLE’s 2018 Tribology Frontiers Conference lies in the 13-block district known as Chicago’s Magnificent Mile. Home to some of the world’s most exciting, shopping, dining and entertainment, the Mag Mile includes the John Hancock Center, Wrigley Building, Water Tower Place and Tribune Tower. The TFC’s downtown Chicago location also puts you a cab ride away from the Museum of Science and Industry, the Art Institute, the Adler Planetarium and the Shedd Aquarium.

Sunday, October 28, 2018

Noon – 12:45 pm
Speaker Luncheon

1 – 1:15 pm
Welcome and Introductions

1:15 – 2:15 pm
Plenary Session: Professor W. Gregory Sawyer, Ph.D., University of Florida
Tribology in Biomedicine

2:15 – 3 pm
Networking Break

3 – 6 pm
Technical Sessions

1A – Surfaces & Interfaces I
1B – In Situ Tribometry I
1D – Fluid Lubrication I
1F – Polymers Tribology I

6 – 7 pm
Meet & Greet Reception

7 – 8:30 pm
Student Networking Event

Monday, October 29, 2018

8 – 8:45 am
Speaker/General Attendee Breakfast

9 – 10 am
Plenary Session: Professor Stanislav Gorb, Ph.D., University of Kiel

Snake Skin Tribology for Mechanisms of Friction and Wear Reduction Systems

10 – 10:20 am
Networking Break (Exhibits & Posters)

10:20 am – Noon
Technical Sessions

2A – Surfaces & Interfaces II
2B – In Situ Tribometry II
2D – Fluid Lubrication II
2F – Polymers Tribology II

Noon – 1:20 pm
Lunch on Your Own

1:20 – 3:40 pm
Technical Sessions

3B – Materials Tribology I
3C – Machine Elements & Systems I
3D – Fluid Lubrication III
3E – Lubricants I

3:40 – 4:20 pm
Networking Break (Exhibits & Posters)

4:20 – 6 pm
Technical Sessions (Continued)

3B – Materials Tribology I
3C – Machine Elements & Systems I
3D – Fluid Lubrication III
3E – Lubricants I

6 – 8 pm
Principal Investigator Poster Session I

Networking Reception/ASME Tribology Award Presentations

Tuesday, October 30, 2018

8 – 8:45 am
Speaker/General Attendee Breakfast

9 – 9:40 am
Plenary Session: Dr. Nicole E. Zander, Army Research Laboratory

Additive Manufacturing Materials and Technologies

9:40 – 10:20 am
Networking Break (Exhibits & Posters)

10:20 am – Noon
Technical Sessions

4A – Machine Elements & Systems II
4B – Materials Tribology II
4D – Tribochemistry I
4E – Biotribology I

Noon – 1:20 pm
Lunch on Your Own

1:20 – 3:40 pm
Technical Sessions

5A – Experiment and Theory I
5B – Materials Tribology III
5D – Tribochemistry II
5E – Lubricants II
5F – Biotribology II

3:40 – 4 pm
Networking Break (Exhibits & Posters)

4 – 5:20 pm
Technical Sessions (Continued)

5A – Experiment and Theory II
5B – Materials Tribology III
5D – Tribochemistry II
5E – Lubricants II
5F – Biotribology II

5:20 – 7 pm
Principal Investigator Poster Session II/ Networking Reception

Wednesday, October 31, 2018

8 – 8:45 am
General Attendee Breakfast

9 am – 12:30 pm
Special Plenary Symposium – Beyond the Cutting Edge: Highlights from Tribology Letters

Featured Speakers:

Ashlie Martini, University of California, Merced
Coils in Oils: Molecular-Scale Mechanisms of Viscosity Modifier Function

Ali Erdemir, Argonne National Laboratory
Making and Breaking of Superslick Surfaces

Maartin P. de Boer, Carnegie Mellon University
Full Assessment of Micromachine Friction Within the Rate-State Framework

Martin Dienwiebel, Karlsruhe Institute of Technology and Fraunhofer IWM
The Mechanisms of Folding and Wear Particle Generation in Metallic Tribosystems

Roland Bennewitz, INM Leibniz Institute of New Materials
Fingertip Friction of a Braille Display and Neural Correlates

Ulf Olofsson, KTH Royal Institute of Technology
Blowing in the Wind: On the Formation and Physical Properties of Wear Particles We Breathe

10 – 10:20 am
Networking Break

PLUS:
Exhibits and a student poster competition.

Plenary Speakers



Professor W. Gregory Sawyer, Ph.D.

N.C. Ebaugh Chair and Professor in the Departments of Mechanical and Aerospace Engineering, and Materials Science and Engineering, and Biomedical Engineering at the University of Florida.

Dr. Sawyer has published over 150 journal papers, and has over 700 citations. His research interests have led to many adventures from operating experiments (remotely) in space on the International Space Station to conducting experiments *in vivo* on a cornea.



Professor Stanislav Gorb, Ph.D.

Professor of Zoology and Chair in Functional Morphology and Biomechanics at the Zoological Institute of Kiel University and member of the Faculties of Mathematics and Natural Sciences and Engineering.

Dr. Gorb’s research interests include biological attachment, functional morphology and biomechanics, evolution of structure and functions, behavior of arthropods (e.g., problems of communication systems), and animal-plant interactions.



Dr. Nicole E. Zander

Research Chemist, Polymers Branch, US Army Research Laboratory (ARL).

Dr. Zander’s research interests include polymer processing, additive manufacturing, and nanofiber research in tissue engineering, antimicrobial materials and filtration. Her major focus is on the recycling of waste plastics and other materials into additive manufacturing basestocks. She is part of a winning Marine Innovation Challenge team working on building a mobile laboratory that recycles plastics into filament for 3D printing.

Special Sessions

“Meet the PI” Poster Session

A new poster presentation initiative to promote scientific interaction and networking. This year, more than 20 Principal Investigators and group leaders have been invited to be part of a special “Meet the PI” poster session where researchers will have the opportunity to engage with conference participants to discuss their latest research, passion projects, and technical needs.

Beyond the Cutting Edge: Highlights from Tribology Letters

Back by popular demand, Drs. Nicholas D. Spencer and Wilfred T. Tysoe have invited six of tribology’s top researchers to present papers that originally appeared in the peer-reviewed journal *Tribology Letters*. Nic and Eddy also write Cutting Edge, a column for tribology researchers appearing monthly in STLE’s TLT magazine.



Dr. Nicholas D. Spencer



Dr. Wilfred T. Tysoe

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