

CALL FOR ABSTRACTS

Gears and Gear Lubrication

81st STLE Annual Meeting & Exhibition

May 2-6, 2027

Hyatt Regency Chicago

Chicago, Illinois, USA

The Gears and Gear Lubrication Technical Committee invites abstracts for technical presentations and papers at the 81st STLE Annual Meeting & Exhibition.

We welcome work that advances gear tribology, lubrication, durability, efficiency, reliability, and next-generation drivetrain performance.

Technical Scope

Submissions may include fundamental research, applied engineering studies, modeling and simulation, experimental investigations, testing methods, field experience, failure analysis, and industrial case studies. Contributions from industry, academia, research institutions, OEMs, suppliers, lubricant developers, and end users are encouraged.

Priority Topics

Lubrication & Tribology • Gear lubrication fundamentals • Lubricant formulation and additives • Tribochemistry and lubricant-material interactions	Electrification & Applications • E-drive and hybrid drivetrain systems • High-speed and high-load gear operation • Emerging powertrain and industrial applications	Materials & Surfaces • Advanced gear materials • Coatings, surface engineering, and texturing • Heat treatment and surface modification
Damage & Reliability • Pitting, micropitting, scuffing, and wear • Rolling contact fatigue • Failure analysis and life prediction	Modeling & Digital Tools • Gear contact mechanics and EHL • Multi-physics simulation • Digital twins, AI, and machine learning	Testing & Standards • Gear and gearbox test methods • Laboratory and field validation • Benchmarking and standards development
Diagnostics & Monitoring • Sensor-based condition monitoring • Oil analysis and wear debris monitoring • Predictive maintenance	Efficiency & Sustainability • Power loss and efficiency improvement • Friction reduction technologies • Sustainable gear lubricants and systems	Open Gear-Related Topics • Papers and presentations in all gear-related areas are welcome

Special emphasis is encouraged on electrification, sustainability, advanced manufacturing, data-driven diagnostics, and technologies that improve gear durability and efficiency.

Submission Invitation

Join leading researchers and industry experts in Chicago to share innovations that advance gear design, lubrication, testing, reliability, and predictive maintenance. Presentations and papers in all gear-related areas are welcome.

Meeting information verified from STLE Future Annual Meeting Conference Dates. Please add the official abstract deadline and submission URL when available.