

## 65th German Tribology Conference – 23 - 25 September 2024 in Göttingen

In 2024, the German Society for Tribology (GfT) was able to look back on its 65th anniversary. Because annual conferences were held regularly from the beginning, also the “Tribologie-Fachtagung” was able to celebrate its 65th anniversary in autumn 2024. On this occasion, after the opening of the conference by the Chairman of the Board Rolf Luther, greetings and congratulations were delivered from the Austrian Tribological Society (ÖTG) by Prof. Carsten Gachot and the Swiss Tribology by Dr. Emanuel Tack.

### Plenary Session

On the occasion of the anniversary, in the first plenary lecture Dr. Mathias Woydt (Matrilib, Berlin) looked back on the milestones of tribological research in Germany since the 16th century and also addressed the 65-year history of GfT. Following on from the review, Cornelia Haag (SKF, Schweinfurt) gave an outlook on future prospects and challenges of tribology. This topic was specifically addressed in the following lecture by Emil Elbæk (ETA-Solutions, Bensheim), in which he presented the project EE4InG 2 (Energy Efficiency in Industry and Commerce 2) funded by the Federal Ministry for Economic Affairs and Climate Action (BMWK), which also includes the research field “Tribology”.



### Plenary session

The other plenary lectures reflected important current trends in tribological research. The lecture by Prof. Carsten Gachot (TU Wien) dealt with the exceptionally low friction of 2D materials such as MXenes and transition metal carbo chalcogenides. The very current application of artificial intelligence for tribology was highlighted by Prof. Max Marian (University of Hannover and Pontificia Universidad Católica de Chile). The scientific program of the first day ended with a lecture by Prof. Martin Dienwiebel (Fraunhofer KIT) on the understanding of tribological mechanisms by combining multiscale experiments and simulation.



*Plenary lecture by Prof. Max Marian*

A novelty was that the third day also began with a plenary lecture: Prof. Matthias Scherge from Fraunhofer IWM captivated the audience with an extremely entertaining lecture on the tribology of bowling.



Prof. Matthias Scherge with a "model bowling ball"

### **Main Program - Parallel Sessions**

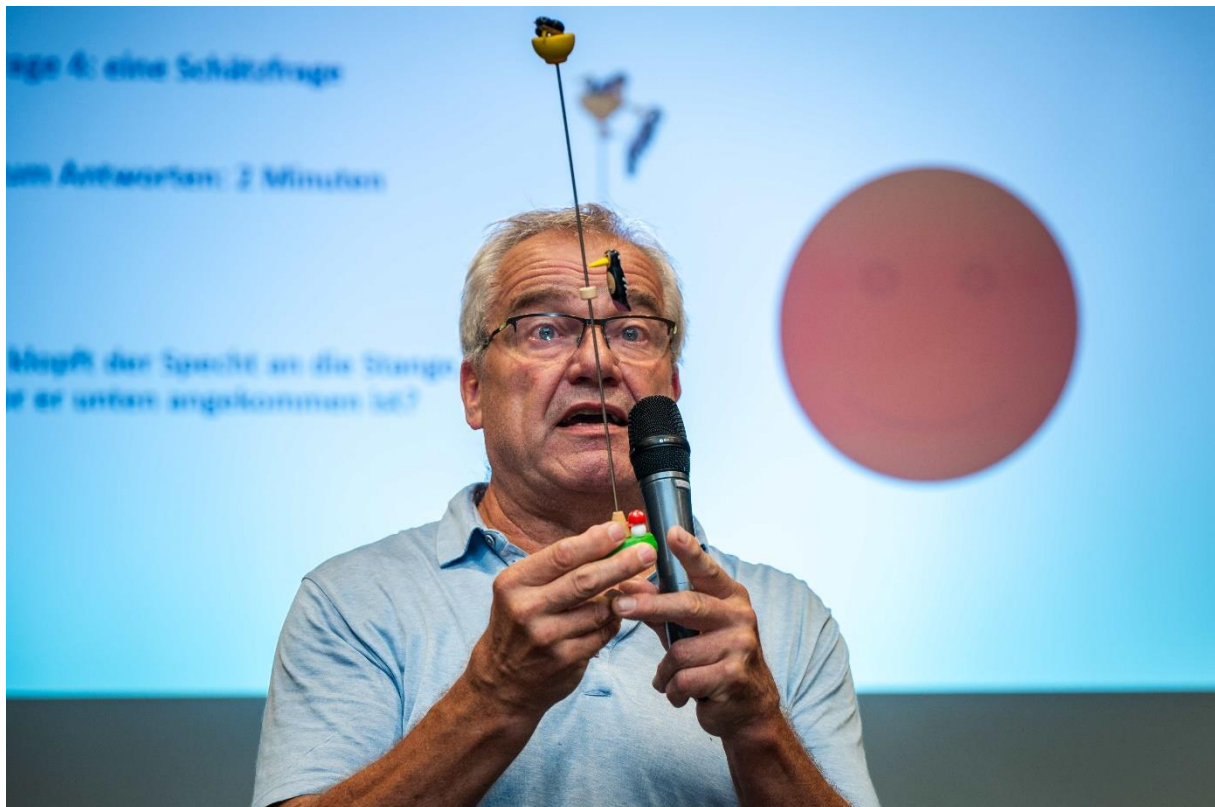
A broad overview of the current state of tribological research and development was provided by the more than 70 lectures in 5 parallel sessions of the conference main program.

As in the previous conferences, the topic "Tribological Systems" was the most strongly represented. The presentations offered a wide range of topics ranging from molecular dynamics simulations over the special features of polymer materials in friction systems to tribological effects in packaging machines. In the case of lubricants, electrical properties are becoming more important due to the growing importance of e-mobility, which was reflected in a separate session. For some years now, a thematic focus on databases has been established, which also covered contributions on machine learning and neural networks. Other sessions on vehicle technology, machine elements, sealing technology, materials, coatings, measurement, and testing technology as well as sustainability aspects reflected the breadth of tribological research.

The conference also included a poster and a technical exhibition. Due to the favourable location in the foyer of the conference hotel, which also serves as a meeting place during the breaks, the exhibitors were pleased with a great response.

### **Evening Event**

The conference dinner on Tuesday evening was livened up by a "pub quiz". Teams were put together by lot, which had to solve various questions together in two minutes each. In addition to knowledge questions, the teams were also asked to make a tribological estimation: how many stick-slip events a spring-supported woodpecker needs to move from top to bottom on a pole (see also photo below).



Evening event: Moderator Dr. Michael Gahr (FZ Jülich) at the pub quiz

## Special Sessions

In 2024, the progress in the DFG priority program "Fluid-free lubrication systems with high mechanical loads" was again presented in a full-day session. The 45-minute presentations from 8 projects each dealt with the dry lubrication of gears, rolling contacts, worm gears and screw machines.

The BMWK research field "Tribology" was also represented with its own session with 7 lectures from the areas of wear protection coatings, oil lubrication, additives and design measures to increase efficiency. The research field is funded as part of the energy research program of the Federal Ministry for Economic Affairs and Climate Action and thus contributes to the energy transition in Germany.

These sessions with lectures from funded programs give the participating scientists the opportunity for personal exchange beyond the boundaries of the individual projects and strengthen the character of the conference as an important working meeting of leading experts in the field of tribology.

## TriboSlam

A highlight on Monday evening was again the TriboSlam with 4 contributions, moderated by Victoria Schröder and Niklas Bauer. Four slammers took part with contributions of 360 seconds each. The winners were determined based on the volume of the audience applause. This year, the prize went to Jan Euler and Thomas Decker (RWTH Aachen) for their professionally and humorously performed song "Ich war noch niemals in Göttingen".



*The winners of the TriboSlam perform their song "Ich war noch niemals in Göttingen"*

## GfT-Förderpreise (Promotion Awards)

In 2024, Ms. Rica Baustert Baustert (Leibniz-IWT, Bremen) was awarded for her bachelor's thesis "Investigation of combined surface layer treatments and coatings to increase the wear behavior of 42CrMo4", Mr. Carsten Graeske (CWD, RWTH Aachen) for his master's thesis "Analysis of the

calculation uncertainty of a multiscale, elasto-hydrodynamic wear calculation method for plain bearings based on simulative and experimental studies" and Dr. Dennis Fischer (IMSE, RWTH Aachen) for his dissertation "Influences of base oil and thickener on the lubricating film formation in grease-lubricated rolling contacts". The awards were presented by Rolf Luther and Prof. Balázs Magyar as representatives of the selection committee. The work was presented together with the winning lecture of the "Young Tribological Researchers Symposium 2024" in a session on September 24. Abstracts of the prizewinners' work will be published in one of the next issues of "Tribologie und Schmierungstechnik".



*Ms. Baustert and Prof. Magyar at the award ceremony for the best bachelor's thesis*



*Mr. Graeske and Prof. Magyar at the award ceremony for the best master's thesis*



*Prof. Magyar congratulates Dr. Fischer on receiving the award for his dissertation*

## **Georg-Vogelpohl-Ehrenzeichen**

The Georg-Vogelpohl-Ehrenzeichen (Medal of Honour) for personalities who have rendered outstanding support to tribology was awarded this year to Prof. Dr.-Ing. Gerhard Poll. Until his retirement, he was Professor of Machine Elements and Design Technology and Head of the Institute of Machine Design and Tribology (IMKT) at Leibniz University Hannover. The laudatory speech was held by Cornelia Haag and will be published shortly under "Honors" on the GfT website and in "Tribologie und Schmierungstechnik".



*Prof. Gerhard Poll expresses his gratitude for the award of the Georg-Vogelpohl-Ehrenzeichen*

## **Göttinger Kreis**

6 members took part in the meeting of the Göttingen Circle, to which all bearers of the Georg-Vogelpohl-Ehrenzeichen belong. Prof. Gerhard Poll was also present as a new member. The invitation had been issued by Peter Weismann, the 2023 award winner, who also chaired the meeting.

A future GfT working paper on the definition of the term "wear part" was mainly discussed. Furthermore, it was mentioned that it would be desirable to combine criteria for oil exchange with limit values and deviations, but also test procedures in one set of rules. Other points were cooperation with foreign tribological associations, further training opportunities and the 5th edition of the booklet "The Development of Tribology in Germany", which is planned for 2026.

## **Closing event and presentation of the prize "Tribology is everywhere"**

The closing event began with a lecture by Andreas Krüger (Fuchs Lubricants Germany) on the diverse tribological possibilities in the interior of an automobile.

It continued with the traditional presentation of the prize "Tribology is everywhere", donated by the company Werner Stehr Tribologie, which went to Rolf Luther for his last year's TriboSlam contribution on the tribology of shoe lacing.



*Award-winning tribological everyday phenomenon: Rolf Luther explains the 'tribologically-informed' method of shoe lacing*

The closing remarks of the GfT chairman Rolf Luther ended the event with a reference to the next German Tribology Conference from September 29 to October 1, 2025, which will take place for the first time in Wernigerode in the Harz Mountains.

For reasons of sustainability, GfT does not publish printed conference proceedings. However, all contributions will be made available as pdf downloads as well as in a complete conference proceedings, which are available to interested non-participants at the office of the Gesellschaft für Tribologie e.V. (Adolf-Fischer-Str. 34, 52428 Jülich, Tel.: +49 (0)2461 340 79 38, E-Mail: [tribologie@gft-ev.de](mailto:tribologie@gft-ev.de), Internet: [www.gft-ev.de](http://www.gft-ev.de)) at a price of 50 € (plus VAT).