

Call for Papers

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International Conference on Gears 2027

International Conference on Gear Production 2027

International Conference on High Performance Plastic Gears 2027

Submit your abstract now!

Hand in your abstract covering related topics such as:

- **Design of gears and transmissions**
- **Applications e.g. industrial, automotive, robotics**
- **Manufacturing and production**
- **Materials and tribology**
- **Analysis, simulation and testing**
- **Efficiency and sustainability of gears**
- **Plastic gears: Methods, innovation, applications**
- **Sensor integration, condition monitoring und predictive maintenance**
- **Artificial Intelligence and Digital Engineering**

Deadline for abstract submission:

November 20th, 2026

www.vdi-gears.eu

**+ One Ticket. Three Conferences.
Full Access:**

Gears, Gear Production,
Plastic Gears

+ Exhibition

Associated organisations



An event organized by VDI Wissensforum
www.vdi-gears.eu | #vdi_gears
 Phone +49 211 6214-201 | Fax +49 211 6214-154

September 08–10, 2027, Garching (near Munich), Germany

Purpose

The International Conference on Gears and Transmissions in Garching, Germany, is an established platform for users, manufacturers, and researchers. At its 12th edition in 2027, participants will gain insights into the latest developments and solutions from the international gear and powertrain industry and academic research.

State-of-the-art gears are key enablers of high-performance powertrains. They transmit power and convert torque and speed with high efficiency and power density, while ensuring low noise emissions. At the same time, they contribute to sustainability through reduced carbon footprint, efficient use of resources, and the potential for reuse and recycling. Smart gears with integrated sensors enable condition monitoring and allow for the assessment of system status and remaining service life. Artificial intelligence and digital engineering are increasingly transforming the entire engineering process – from design, simulation and manufacturing to testing, condition monitoring and predictive maintenance. Physics-informed AI, digital twins and autonomous engineering approaches offer new opportunities to accelerate development processes and improve the performance and reliability of gears and transmission systems. In emerging application fields, such as robotics and automation, these capabilities are becoming increasingly important.

The conference presentations will show how gears can meet growing demands for energy efficiency, resource conservation, and comfort, and how digital engineering and AI can help unlock their full potential.

The accompanying exhibition offers participants direct access to innovative gear and powertrain solutions and valuable exchange with experts from industry and academia.

Looking forward to welcoming you to Garching.
Best regards,

Your presidency

Conference President:

 **Prof. Dr.-Ing. Karsten Stahl**, Full Professor, Institute of Machine Elements, Director, Gear Research Center (FZG), TUM School of Engineering and Design, Technical University of Munich, Garching, Germany

Conference Board/Vice Presidents:

 **Prof. i.R. Dr.-Ing. Dr. h.c. Bernd-Robert Höhn**, TUM emeritus of excellence, Gear Research Center (FZG), TUM School of Engineering and Design, Technical University of Munich, Garching, Germany

 **Prof. Dr.-Ing. Burkhard Pinnekamp**, former Head of Central Technology, RENK GmbH, Augsburg, Germany; President, Research Association for Drive Technology (FVA), Frankfurt, Germany; Honorary Professor, Gear Research Center (FZG), TUM School of Engineering and Design, Technical University of Munich, Garching, Germany

Call for submission of contributions

Are you an expert in one of our topics? Share your expertise and contribute to the conference.

Please submit a brief abstract of max. one A4 size sheet by November 20th, 2026 summarizing your presentation.

You can submit your paper at www.vdi-gears.eu.

Topics

1. **Design, analysis and simulation of gears and transmissions**
 - 1.1 Gears (cylindrical, bevel and worm gears, beveloids) with optimized endurance, efficiency and/or NVH behavior
 - 1.2 Optimized tooth profiles (e.g. asymmetric, cycloid gears, W/N-gears)
 - 1.3 New materials, material properties from heat treatment, lubrication and coatings for improved properties (e.g. endurance, NVH, efficiency)
 - 1.4 Tailored materials, graded materials, composite materials
 - 1.5 Improved methods and/or simulation tools for lifetime prediction, NVH and efficiency
2. **Gear applications**
 - 2.1 Transmissions for energy systems, e.g. power plants, wind turbines, water turbines etc.
 - 2.2 Transmissions for mobility systems, e.g. gearboxes in the marine, aircraft, railway, automotive sectors and electric drivelines
 - 2.3 Transmissions for production machinery, e.g. transportation in manufacturing lines
 - 2.4 Robot drives, e.g., planetary gears, cycloidal gears, strain wave gears
 - 2.5 High speed applications
 - 2.6 Transmissions for new applications, e.g. medical technology, electric bicycles (pedelecs) and robots
3. **Gear production**
 - 3.1 Productivity increase by new concepts for machine and manufacturing processes with better simulation
 - 3.2 Main time or throughput time – balancing of productivity and flexibility
 - 3.3 Alternative, resource-efficient gear manufacturing chains (e.g. additive manufacturing, powder metallurgy, molding)
 - 3.4 Gear manufacturing in the context of digitalization and AI
 - 3.5 New manufacturing methods for optimized performance
 - 3.6 New materials and heat treatment processes
 - 3.7 Circular economy and sustainable gear production
 - 3.8 Simulation of manufacturing processes
 - 3.9 Innovative methods and measurement principles for quality inspection
4. **Testing and monitoring**
 - 4.1 New test methods and/or procedures for endurance, efficiency and NVH behavior
 - 4.2 Correlation of system and component tests
 - 4.3 Time-scaling strategies for fatigue tests (e.g. wind turbine transmissions)
 - 4.4 Sensor integration
5. **High performance plastic gears**
 - 5.1 Materials for plastic gears
 - 5.2 Innovative plastic gear design
 - 5.3 Testing of plastic gears
 - 5.4 Calculation methods for plastic gears (lifetime, wear, temperature, TEHL, deflections)
 - 5.5 Tribology of plastic gears
 - 5.6 Advanced manufacturing methods for plastic gears

6. Sustainability

- 6.1 Efficiency
- 6.2 Resource efficiency
- 6.3 Environmentally friendly materials and lubricants
- 6.4 Circular economy (repair, reuse, recycle)

7. Artificial Intelligence (AI) and Digital Engineering

- 7.1 AI-assisted engineering design
- 7.2 Physics-informed AI
- 7.3 Engineering foundation models
- 7.4 Digital twins
- 7.5 AI-assisted testing and validation
- 7.6 AI-supported manufacturing
- 7.7 Predictive maintenance and remaining useful life
- 7.8 Autonomous engineering

Types of contribution

Your contribution can take the form of:

1. A full presentation:
If your paper is accepted you will be allowed to speak 20 minutes, with additional 5 minutes for discussion and the opportunity to respond to questions and comments from the audience.
2. A poster presentation:
Posters will be on view for discussion in the exhibition area.
5 minutes presentation time at the poster.

Submission of abstracts

- Title of the paper and/or poster
- An abstract summarizing your paper
- Information about the lecturer and co-authors: name, title(s), company address, department, affiliation, email, telephone and fax number
- In which topic area(s) your presentation should be listed
- A statement specifying what is new in your presentation
- A bibliography of your previous publications about this subject
- How you would like to present your paper upon acceptance (full or poster presentation)

Please note that abstracts and final papers will be only **accepted if they are uploaded to the conference website: www.vdi-gears.eu**

Your abstract must be received by November 20th, 2026.

Based on the abstract, the program committee will decide on the acceptance and order of presentation in the conference program. If you receive notification of acceptance, you will also receive instructions concerning manuscripts and a question form to be returned to the VDI Wissensforum. The accepted papers (full papers and posters) will be printed in the conference proceedings provided to the conference participants.

Best Presentation Award for Young Engineers

The best lecture of a Young Engineer (up to 30 years old) will be honored with the Best Presentation Award for Young Engineers "Gears 2027". Speakers, who would like to participate in this contest, are requested to state their date of birth with their contact details.

Schedule

- Deadline for submission of abstracts: **November 20th, 2026**
- Notification of acceptance: **Mid-February 2027**
- Final program available in: **May 2027**
- Deadline for submission of manuscripts: **June 4th, 2027**
- Deadline for submission of final manuscripts for peer review and publication in the journal Engineering Research: **March 22nd, 2027** (www.springer.com/journal/10010)

Voluntary possibility to publish research results in a scientific journal

Publish your research results in a scientific journal

If your full paper meets all the requirements for publication in a scientific journal, you can voluntarily submit it to the Springer Nature Journal "Engineering Research" (Q2, <http://www.springer.com/journal/10010>).

The paper is then reviewed by international experts and, if successful, invited for publication within the collection "Best of Gears 2027". The publication must be open-access. In the event of rejection by the reviewers, the paper will be included in the conference proceedings eBook (VDI-Bericht). If the authors wish to submit their full paper to the journal "Engineering Research", this must be indicated in the abstract. The final submission deadline for the journal "Engineering Research" is: **March 22nd, 2027**

Conference fee

Speakers (one person per paper) will receive a 30 % discount on the regular conference fee. Discounts cannot be accumulated. Travel expenses will not be paid. Participants can visit the accompanying conferences free of charge.

Contact person – your team of the VDI Wissensforum

concerning the content:



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concerning the organization:



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Date and Venue

September 8th–10th, 2027
Technical University of Munich
TUM School of Engineering and Design
Department of Mechanical Engineering
Gear Research Center (FZG)
Boltzmannstr. 15
85748 Garching, Germany



Scientific Support

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Dr.-Ing. Toni Weiss, Gear Consultant, ret. from RENK GmbH, Augsburg, now GanaCon – Gear analysis and Consulting, Inning, Germany

Submit abstracts for the accompanying conferences as well through www.vdi-gears.eu

- Gear Production 2027
- High Performance Plastic Gears 2027

Extend your visit to the famous city of Munich and its surroundings for a couple of days!

Munich offers a lot of places of interest such as the Marienplatz in the city center, Old and New Town Hall, Frauenkirche, Viktualienmarkt and Odeonsplatz. Other attractions include the English Garden, the Deutsches Museum, the Königsplatz, the Pinakothek I, II and III and the site of the 1972 Olympics. Visitors should not miss a trip to the points of interest outside of Munich such as the Castle Neuschwanstein, Castle Linderhof, Lake Starnberg, Lake Ammersee, Lake Chiemsee and the Isar Valley.

The Munich Oktoberfest from September 18th to October 3rd, 2027!

Each year, the largest public festival in the world, the Oktoberfest, takes place in Munich. The famous Oktoberfest starts on Saturday, September 18th and ends on Sunday, October 3rd, 2027. Participants will have the opportunity to extend their visit to the famous city and its surroundings for a couple of days.



Source: München Tourismus, Tommy Loesch



Source: München Tourismus, Jörg Lutz



Source: München Tourismus, Dietmar Dengler

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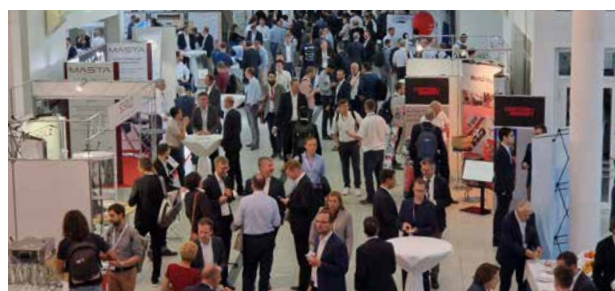
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For exhibition and sponsorship inquiries, please contact:



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Email: slominski@vdi.de



Call for Papers International Conference on Gears 2027

VDI Wissensforum GmbH | VDI-Platz 1 | 40468 Duesseldorf | Germany

Europe invites the world!

You need help?
Please contact us!

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Fax: +49 211 6214-154
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www.vdi-gears.eu

Would you like to take
part as a participant? –
Register now

✓ Please register for (Price per Person plus VAT):

☐ International Conference on Gears 2027 (02TA210027)	☐ International Conference on Gear Production 2027 (02TA411027)	☐ International Conference on High Performance Plastic Gears 2027 (02TA409027)
September 08-10, 2027, Garching near Munich, Germany		
EUR 1,690.–		

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General terms and conditions of VDI Wissensforum can be found online at:
www.vdi-wissensforum.de/en/terms-and-conditions/

Conference Venue:

Gear Research Centre, Chair of Machine Elements, TUM School of Engineering and Design, Technical University of Munich,
Garching, Boltzmannstr. 15, 85748 Garching, Germany, <https://www.mec.ed.tum.de/en/fzg/home/>

Hotel Reservation: Hotels close to the conference venue may be found via our HRS service
www.vdi-wissensforum.de/hrs

Services: The price includes beverages during breaks, lunch as well as the evening function. Participants will have
online access to the congress documents (E-Book).

Exclusive offer: All participants at this event are entitled to a free three-month trial VDI membership.
(Offer applies exclusively to new members.)



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