

# Call for Papers

## International Conference on Gears 2025

Submit your abstract now!

### Hand in your abstract covering related topics such as:

- Design, analysis and simulation of gears and transmissions
- Industrial applications
- Manufacturing
- Materials and tribology
- Simulation and testing
- Sustainable gears: Resource efficiency, circular economy, efficiency
- Plastic gears: Possibilities and potential of polymer material for gears
- Smart gears: Sensor integration, condition monitoring, application of AI and NN

Deadline for abstract submission:

**November 22<sup>nd</sup>, 2024**  
[www.vdi-gears.eu](http://www.vdi-gears.eu)

+ Accompanying conferences  
 Gear Production 2025

High Performance  
 Plastic Gears 2025

+ Exhibition

### Associated organisations



## Purpose

The International Conference on Gears and Transmissions in Garching/Germany is an established platform for users and manufacturers of and researchers on gears and transmission systems. At the 11. issue of the conference in 2025 you can learn about the latest developments and solutions from international gear and powertrain industry and academic research.

State-of-the-art gears determine the performance of powertrains. They transmit power and convert torque and speed with high efficiency and power density at low noise. They have a small carbon footprint, are resource-efficient, and can be reused and/or recycled. Smart gears have integrated sensors and can assess the status of the powertrain and the remaining service life.

The presentations at the conference will show how gears can contribute to meeting increasing requirements regarding energy efficiency, resource consumption, and comfort requirements and how to exploit the potential of gears.

The exhibition accompanying the conference will offer the opportunity to look into state-of-the-art gear and powertrain solutions and to network with your peers.

We are looking forward to seeing you in Garching near Munich!  
With 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:

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**Dr.-Ing. Burkhard Pinnekamp**, former Head of Central Technology, RENK GmbH, Augsburg; President, Research Association for Drive Technology (FVA), Frankfurt, Germany

## Scientific Support

### VDI Society for Product and Process Design

The VDI Society Product and Process Design (VDI-GPP) and its technical divisions provide all sectors with verified knowledge on the design of products and processes and their optimization in terms of quality and the time and cost-benefit ratio.

[www.vdi.eu](http://www.vdi.eu)

## Call for submission of contributions

Are you an expert in one of the areas of our topics? Then we call on you to make an active contribution to the success of the congress with a presentation.

**Please submit a brief abstract of max. one A4 size sheet by November 22<sup>nd</sup>, 2024** summarizing your presentation.

You can submit your paper at [www.vdi-gears.eu](http://www.vdi-gears.eu).

## Topics

### 1. Sustainability

- 1.1 Efficiency
- 1.2 Ressource efficiency
- 1.3 Environment friendly materials and lubricants
- 1.4 Circular economy (repair, reuse, recycle)

### 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. gear boxes in the marine, aircraft, railway, automotive sectors and electric drivelines
- 2.3 Transmissions for production machinery, e.g. transportation in manufacturing lines
- 2.4 High speed applications
- 2.5 Gears in the context of digitalization
- 2.6 Transmissions for new applications, e.g. medical technology, electric bicycles (pedelecs) and robots

### 3. Design, analysis and simulation of gears and transmissions

- 3.1 Gears (cylindrical, bevel and worm gears, beveloids) with optimized endurance, efficiency and/or NVH behavior
- 3.2 Optimized tooth profiles (e.g. asymmetric, cycloid gears, W/N-gears)
- 3.3 New materials, material properties from heat treatment, lubrication and coatings for improved properties (e.g. endurance, NVH, efficiency)
- 3.4 Tailored materials, graded materials, composite materials
- 3.5 Improved methods and/or simulation tools for lifetime prediction, NVH and efficiency
- 3.6 Application and Development of Methods of Artificial Intelligence and Artificial Neural Networks

### 4. Gear production

- 4.1 Productivity increase by new concepts for machine and manufacturing processes with better simulation
- 4.2 Main time or throughput time – balancing of productivity and flexibility
- 4.3 Alternative, resource-efficient gear manufacturing chains (e.g. additive manufacturing, powder metallurgy, molding)
- 4.4 Gear Manufacturing in context of digitalization and artificial intelligence
- 4.5 New manufacturing methods for optimized gear and gearbox performance
- 4.6 New materials and heat treatment processes
- 4.7 Circular economy und sustainable gear production
- 4.8 Simulation of manufacturing processes
- 4.9 Innovative methods and measurement principles for quality inspection of gears

### 5. Testing and monitoring

- 5.1 New test methods and/or procedures for endurance, efficiency and NVH behavior
- 5.2 Correlation of system and component tests
- 5.3 Time-scaling strategies for fatigue tests (e.g. wind turbine transmissions)
- 5.4 Condition monitoring and predictive maintenance
- 5.5 Sensor integration

## 6. High performance plastic gears

- 6.1 Materials for plastic gears
- 6.2 Innovative plastic gear design
- 6.3 Testing of plastic gears
- 6.4 Calculation methods for plastic gears (life time, wear, temperature, TEHL, deflections)
- 6.5 Tribology of plastic gears
- 6.6 Advanced manufacturing methods for plastic gears

### 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](http://www.vdi-gears.eu)**

**Your abstract must be received by November 22<sup>nd</sup>, 2024.**

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 2025". 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 22<sup>nd</sup>, 2024**
- Notification of acceptance: **Mid-February 2025**
- Final program available in: **May 2025**
- Deadline for submission of manuscripts: **June 6<sup>th</sup>, 2025**
- Deadline for submission of final manuscripts for peer review and publication in the journal Research in Engineering: **March 21<sup>st</sup>, 2025** ([www.springer.com/journal/10010](http://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 2025". The publication must be open-access. In the event of rejection by the reviewers, the paper will be included 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 21<sup>st</sup>, 2025**

### 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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### Date and Venue

**September 10–12, 2025**

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



Source: Uli Benz/TUM



## Program Committee

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**Submit abstracts for the accompanying conferences as well through [www.vdi-gears.eu](http://www.vdi-gears.eu)**

- Gear Production 2025
- High Performance Plastic Gears 2025

## 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 20<sup>th</sup> to October 5<sup>th</sup>, 2025!

Each year, the largest public festival in the world, the Oktoberfest, takes place in Munich. The famous Oktoberfest starts on Saturday, September 20th and ends on Tuesday, October 5th, 2025. 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

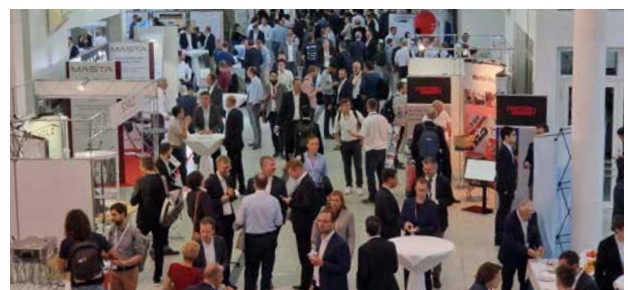
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Would you like to get face to face with the high-powered delegates attending this VDI congress and present your products and services to a specialist sector of your market? For an optimum presentation of your company, make use of the exhibition held in parallel with the conference. Here you can meet industry decisionmakers – make your target contacts neatly and without a great deal of organisational outlay. Secure your stand space right at the heart of this industry rendezvous and/or use a sponsorship package specially tailored to your requirements to enable you to stand out more clearly and effectively from your competitors. We can supply you with exclusive communication possibilities before, during and after the event.

Exhibitor and sponsor inquiries should be addressed to:



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VDI Wissensforum GmbH  
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Email: [ulbrich@vdi.de](mailto:ulbrich@vdi.de)



Call for Papers  
**International Conference on Gears 2025**

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

Europe invites the world!

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Would you like to take  
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Register now

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

<input type="checkbox"/> International Conference on Gears 2025 (02TA210025)	<input type="checkbox"/> International Conference on Gear Production 2025 (02TA411025)	<input type="checkbox"/> International Conference on High Performance Plastic Gears 2025 (02TA409025)
<b>September 10-12, 2025, Garching near Munich, Germany</b>		
EUR 1,690.-		

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**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](http://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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