

Call for Papers

International Conference on Gears 2021

Submit your
abstract now!

Hand in your abstract covering related topics to:

- Design, analysis and simulation of gears and transmissions
- Gear applications
- Gear production
- Possibilities and potential of plastic gears
- Materials and lubrication
- Testing and monitoring

Deadline for abstract
submission:

November 13th, 2020

www.vdi-gears.eu

+ Accompanying conferences

Gear Production 2021

High Performance
Plastic Gears 2021

+ Exhibition

Associated Organisations



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

September 15–17, 2021, Garching (near Munich), Germany

Purpose

The International Conference on Gears and Transmissions in Garching/Germany is an established platform for manufacturers of and researchers on gears and transmission systems. At the ninth issue of the conference in 2021 you can learn about the latest developments and research results from the powertrain industry and academia.

State-of-the-art gears transmit power and convert torque and speed with high efficiency and power density at low noise and therefore determine the performance of mechanical powertrains. The obligation, to adapt gears to new demands due to changed conditions, such as the evolution of mobility and the energy revolution, continues to challenge the powertrain industry and requires further improvements of gears. The presentations at the conference will show that gears do have potential to be exploited and how gears can contribute to meet increasing requirements regarding energy efficiency, resource consumption and comfort requirements.

The exhibition accompanying the conference will offer the opportunity to monitor the state-of-the-art of powertrain applications and to network with your peers.

We are looking forward to seeing you in Garching/Munich!

With best regards

Presidency


Conference Board/President:

 **Prof. Dr.-Ing. Karsten Stahl**, Full Professor, Institute of Machine Elements, Director, Gear Research Centre (FZG), Technische Universität München (TUM), Garching, Germany


Conference Board/Vice President:

 **Dr.-Ing. Bernhard Bouché**, Director of Research and Development Mechanics, Getriebbau NORD GmbH & Co. KG, Bargteheide, Germany

Conference Board/Vice President:

 **Prof. i. R. Dr.-Ing. Bernd-Robert Höhn**, TUM emeritus of excellence, Gear Research Centre (FZG), Technische Universität München (TUM), Garching, Germany

Conference Board/Vice President:

 **Dr.-Ing. Burkhard Pinnekamp**, Head of Central Technology, Renk AG, Augsburg; Board of Research Association for Drive Technology (FVA), Frankfurt, Germany

VDI Society for Product and Process Design Location

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

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 13th, 2020 summarizing your presentation.

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

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:
The posters will be on view for discussion in the exhibition area.

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, e-mail, 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's website: www.vdi-gears.eu

All submissions must be either Microsoft WORD (DOC or DOCX) or PDF files. **Your abstract must be received by November 13th, 2020.**

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.

At present we are planning an onsite set-up, but we also keep an eye on the actual developments and will prepare alternative digital solutions if necessary.

Submit your
abstract now!

Topics

1. Gear applications

- 1.1 Transmissions for energy systems, e.g. power plants, wind turbines, water turbines etc.
- 1.2 Transmissions for mobility systems, e.g. gear boxes in the marine, aircraft, railway, automotive sectors and electric drivelines
- 1.3 Transmissions for production machinery, e.g. transportation in manufacturing lines
- 1.4 High speed applications of gears in the context of digitalization
- 1.5 Transmissions for new applications, e.g. medical technology, electric bicycles (pedelecs) and robots

2. Design, analysis and simulation of gears and transmissions

- 2.1 Gears (cylindrical, bevel and worm gears, beveloids) with optimized endurance, efficiency and/or NVH behavior
- 2.2 Optimized tooth profiles (e.g. asymmetric, cycloid gears, W/N-gears)
- 2.3 New materials, material properties from heat treatment, lubrication and coatings for improved properties (e.g. endurance, NVH, efficiency)
- 2.4 Tailored materials, graded materials, composite materials
- 2.5 Improved methods and/or simulation tools for lifetime prediction, NVH and efficiency

3. Gear production

- 3.1 Productivity increase by new concepts for machine and manufacturing processes
- 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 context of digitalization and industry 4.0
- 3.5 New manufacturing methods for optimized gear and gearbox performance
- 3.6 New materials and heat treatment processes
- 3.7 Simulation of manufacturing processes
- 3.8 Innovative Methods and Measurement Principles for Quality Inspection of Gears

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 Condition monitoring and predictive maintenance
- 4.5 Sensorintegration

5. High performance plastic gears

- 5.1 New materials for plastic gears
- 5.2 Innovative plastic gear design
- 5.3 Testing of plastic gears
- 5.4 Calculation methods for plastic gears (life time, wear, temperature, TEHL, deflections)
- 5.5 Lubrication of plastic gears

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

- Gear Production 2021
- High Performance Plastic Gears 2021

Participants can visit the accompanying conferences free of charge!

Find more details here:

www.vdi-wissensforum.de/gearproduction

www.vdi-wissensforum.de/plasticgears

Possibility to publish research results in a scientific journal

The conference will be accompanied by a special issue **“Best of Gears 2021” of the Springer-Nature Journal “Engineering Research”** (“Forschung im Ingenieurwesen” www.springer.com/journal/10010). Provided that your abstract is accepted by the program committee and if your full paper is novel and of good scientific quality, you are invited to submit an extended version of your conference publication. This allows you to expand your conference contribution by going into detail about the underlying theories, used methodology and the results of your study. Please submit your full manuscript online via www.editorialmanager.com/fiin, taking the formal submission requirements into account. If your contribution passes the initial publisher’s assessment, it will be reviewed by independent experts in a double-blind peer review process. **Manuscripts for peer review have to be submitted by March 26th, 2021, the latest.**

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.

Schedule


- Deadline for submission of abstracts: **November 13th, 2020**
- Notification of acceptance: **End of February 2021**
- Final program available in: **May 2021**
- Deadline for submission of manuscripts: **June 9th, 2021**
- Deadline for submission of manuscripts for peer review and publication in the journal *Forschung im Ingenieurwesen*: **March 26th, 2021** (www.springer.com/journal/10010)

Contact

Concerning the content:

 Caroline Koerber
Phone: +49 211 6214-504
Fax: +49 211 6214-97504
Email: koerber@vdi.de

Concerning the organisation:

 Pia Hofmann-Malcher
Phone: +49 211 6214-363
Fax: +49 211 6214-97363
Email: hofmann@vdi.de

Date and Venue

September 15–17, 2021

Technische Universität München
(Technical University of Munich)
Institute of Machine Elements
Gear Research Centre (FZG)
Boltzmannstr. 15
85748 Garching
Germany



Source: Uli Benz/TUM

Program Committee

NATIONAL MEMBERS

Prof. Dr.-Ing. Dr. h.c. Albert Albers, Full Professor and Head of IPEK – Institute of Product Engineering, Department of Mechanical Engineering, Karlsruhe Institute of Technology (KIT)

Dr.-Ing. Heinz-Uwe Arnscheidt, Head of Dynamic and Duty Cycle Simulation, Volkswagen AG, Wolfsburg

Dr.-Ing. Jörg Börner, Gear Fundamentals & Programs, MechaTronics Engineering & Technologies, ZF Friedrichshafen AG, Friedrichshafen

Prof. Dr.-Ing. Christian Brecher, Full Professor, Chair of Machine Tools, Laboratory for Machine Tools and Production Engineering, Faculty for Mechanical Engineering, RWTH Aachen University

Dr.-Ing. Rolf Döbereiner, Product Line Manager Commercial Vehicles, AVL List GmbH, Graz, Austria

Dr.-Ing. Hartmut Faust, Head of R&D Competence, Schaeffler Automotive Buehl GmbH & Co. KG, Bühl

Dipl.-Ing. (FH) Hans-Peter Fleischmann, Manager Technical Development Dual-Clutch Transmissions and Advanced Development Transmission, AUDI AG, Ingolstadt

Dr.-Ing. Carsten Gitt, Senior Manager, Simulation/ Mechatronics/Advanced Engineering (Drivetrain/ Transmission), Mercedes-Benz AG, Stuttgart

Dipl.-Ing. Norbert Haefke, Managing Director, Research Association for Drive Technology (FVA), Frankfurt/Main

Dr.-Ing. Jörg Hermes, Managing Director, Innovation Mechanics, SEW-EURODRIVE GmbH & Co. KG, Bruchsal

Dr.-Ing. Ralf Hess, Senior Key Expert, Flender GmbH, Bocholt

Prof. Dr.-Ing. Georg Jacobs, Head of Institute for Machine Elements and Systems Engineering, RWTH Aachen University

Dr.-Ing. Andreas Klein, Vice President Engineering, Flender GmbH – Winergy

Dr. Ulrich Knödel, Director Hybrid & eDRIVE Development, Magna Powertrain, Magna PT B.V. & Co. KG, Untergruppenbach

Dr.-Ing. Kai Lubenow, Director Engineering, Eickhoff Antriebstechnik GmbH, Bochum

Prof. Dr.-Ing. Gerhard Poll, Director, Institute for Machine Design and Tribology, Leibniz University Hannover

Dipl.-Ing. Zsolt Roth, Development Engineer - Tothing, J. M. Voith SE & Co. KG | VTA, Heidenheim

Prof. Dr.-Ing. Bernd Sauer, Full Professor, Head of MEGT – Institute of Machine Elements, Gears and Transmission, Department of Mechanical and Process Engineering, University of Kaiserslautern

Prof. Dr.-Ing. Berthold Schlecht, Full Professor, Institute of Machine Elements and Machine Design, Faculty of Mechanical Science and Engineering, Technical University of Dresden

Prof. Dr.-Ing. Peter Tenberge, Full Professor, Chair of Industrial and Automotive Drivetrains, Ruhr-University Bochum

Dr.-Ing. Joachim Thomas, Managing Director, ZG Hypoid GmbH, Aschheim

Dr.-Ing. Franz Völkel, Sr. Vice President R&D, Business Division Transmission Systems, Schaeffler Technologies AG & Co. KG, Herzogenaurach

Dr.-Ing. Reiner Vonderschmidt, Shareholder, Georgii Kobold GmbH & Co. KG, Horb

INTERNATIONAL MEMBERS

Eng. Amir Aboutaleb, Vice President, Technical Division, American Gear Manufacturers Association, Alexandria, USA

Luc Amar, Ph. D., Research Engineer, Power Transmissions (TDP), CETIM (Technical Center for Mechanical Engineering Industries), Senlis Cedex, France

Prof. Bingkui Chen, The State Key Lab of Mechanical Transmissions, Chongqing University, China

Prof. Ing. Carlo Gorla, Associate Professor, Department of Mechanical Engineering, Politecnico di Milano, Italy

Prof. Ahmet Kahraman, Howard D. Winbigler Professor and Director, Gear and Power Transmission Research Laboratory, Department of Mechanical and Aerospace Engineering, The Ohio State University, Columbus, USA

Dr. Alex Kapelevich, Consultant, AKGears, LLC, Shoreview, Minnesota, USA

Prof. Dr. Geng Liu, Full Professor, School of Mechanical Engineering, Northwestern Polytechnical University; Director, Shaanxi Engineering Laboratory for Transmissions and Controls, Xi'an, China

Prof. Dr.-Ing. Athanassios Mihailidis, Full Professor, Head of the Laboratory of Machine Elements and Machine Design, Mechanical Engineering, Aristotle University of Thessaloniki, Greece

Dr.-Ing. Aleksandar Miltenović, Assistant Professor, Department for mechanical design, development and engineering, Faculty of Mechanical Engineering, University of Niš, Serbia

Prof. Dr. Eng. Ichiro Moriwaki, Professor, Faculty of Mechanical Engineering, Kyoto Institute of Technology, Kyoto, Japan

Robin Olson, M. Sc., Director of Applications Engineering, Material Handling Vertical, Rexnord Industries, LLC, Milwaukee, Wisconsin, USA

Prof. Dr.-Ing. José I. Pedrero, Full Professor, Department of Mechanics, Faculty of Engineering, Universidad Nacional de Educación a Distancia (UNED), Madrid, Spain

Prof. Dr. Datong Qin, Full Professor of the State Key Lab of Mechanical Transmission, Distinguished Professor of Cheung Kong Scholars appointed by Ministry of Education of China, Director of the Institute of Power Transmission and control, Chongqing University, China

Prof. Dr.-Ing. Philippe Velez, Full Professor, LaMCoS, INSA – Institut National des Sciences Appliquées de Lyon, Villeurbanne Cédex, France

Prof. Dr.-Ing. Michael Weigand, Full Professor and Head of Research Unit – Institute for Engineering Design and Product Development (IKP), Research Unit Machine Elements and Transmissions for Aviation, TU Wien, Vienna, Austria

Prof. Wang Wenzhong, School of Mechanical Engineering, Beijing Institute of Technology, China

Be part of the Community –
submit your abstract to
www.vdi-gears.eu!

Submit your
abstract now!

BOARD OF GEAR EXCELLENCE

Prof. Dr.-Ing. Kiril Arnaudov, Emeritus Professor, Institute of Mechanics, Bulgarian Academy of Sciences, Sofia, Bulgaria

Ir. J.J. Bos, Technical Consultant, Bos Gear Solutions, Middelburg, The Netherlands

Prof. Dr. Eng. Jože Duhovnik, Full Professor, former Dean and Head of LECAD Group, Laboratory, Faculty for Mechanical, Engineering, University of Ljubljana, Slovenia

Prof. Dr.-Ing. Manfred Hirt, Past President, Research Association for Drive Technology (FVA), Frankfurt/Main; former board of Renk AG, Augsburg, Germany

Prof. Haruo Houjoh, Emeritus Professor, Tokyo Institute of Technology, Japan

Prof. h.c. Dr.-Ing. Aizoh Kubo, General Manager, Research Institute for Applied Sciences, Kyoto, Japan

Prof. Dr.-Ing. habil. Heinz Linke, Emeritus Professor, Institute of Machine Elements and Machine Design, Faculty of Mechanical Science and Engineering, Technical University of Dresden, Germany

Dr. Michel Octrue, former Senior Gear Expert Mechanical Power Transmissions, CETIM (Technical Center for Mechanical Engineering Industries), Senlis, France

Prof. Ray Snidle, Emeritus Professor of Mechanical Engineering, Cardiff University, United Kingdom

Dr.-Ing. Toni Weiss, Gear Consultant, ret. from Renk AG Augsburg, now GanaCon – Gear Analysis and Consulting, Inning, Germany

Exhibition/sponsorship opportunities

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 decision-makers – 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:



Vanessa Ulbrich
VDI Wissensforum GmbH
VDI-Platz 1
40468 Duesseldorf, Germany
Phone: +49 211 6214-918
Fax: +49 211 6214-97918
Email: ulbrich@vdi.de

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.



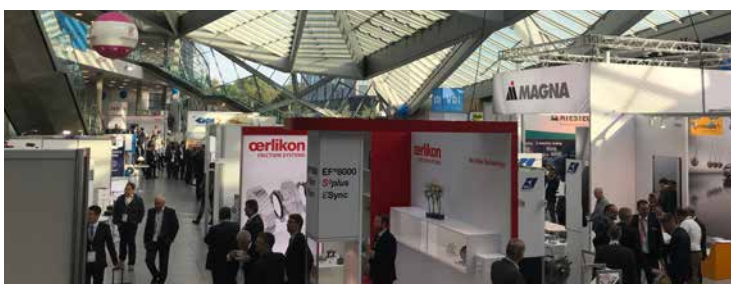
Source: München Tourismus, Jörg Lutz

The Munich Oktoberfest from September 18th to October 3rd, 2021!

Each year, the largest public festival in the world, the Oktoberfest, takes place in Munich. Due to the corona pandemic the Oktoberfest 2020 couldn't be carried out as planned. All the more everybody's anticipation is great that it'll be an excellent event in 2021 again. Submit your paper now, visit the Oktoberfest after the conference and make your trip to Munich unforgettable!



Source: München Tourismus, Tommy Loesch



VDI Wissensforum GmbH | VDI-Platz 1 | 40468 Düsseldorf | Deutschland

Europe invites the world!

You need help?
Please contact us!

VDI Wissensforum GmbH
P.O. Box 10 11 39
40002 Düsseldorf, Germany
Phone: +49 211 6214-201
Fax: +49 211 6214-154
Email: wissensforum@vdi.de
www.vdi-international.com

Would you like to take part as a participant? – Register now as an early bird!

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

International Conference on Gears 2021 September 15-17, 2021, Garching near Munich, Germany (02TA210021)	
<input type="checkbox"/> Early Bird until May 31st, 2021	<input type="checkbox"/> From June 1st, 2021
EUR 1.440,-	EUR 1.590,-

www

Participation Fee VDI-Members **save 50 € for each Conference Day**. VDI membership no.*: _____

* For the price category 2, please state your VDI membership number

I'm interested in Sponsoring and/or Exhibition

First Name _____ Last Name (Family Name) _____

Title _____ VAT-ID _____

Company/Institute _____ Job Title _____ Department _____

Street _____

ZIP Code, City, Country _____

Phone _____ Email _____ Fax _____

Deviating bill address _____

Participants with an invoice address outside of Austria, Germany and Switzerland are kindly requested to pay by credit card. Please don't send your credit card details via email, fax or post. Please book your ticket at www.vdi-wissensforum.de. Transferring your credit card details via our website ensures your details are encrypted and security of your data is guaranteed.

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

Conference Venue:

Technische Universität München (Technical University of Munich), Institute of Machine Elements, Gear Research Centre (FZG), Boltzmannstr. 15, 85748 Garching, Germany, www.fzg.mw.tum.de/en/fzg/contact/

Hotel Reservation: Hotels close to the conference venue may be found via our HRS service. For booking please visit www.vdi-gears.eu where you will find a link for hotels in Munich.



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.)

Data protection: VDI Wissensforum GmbH uses the email address you have provided to regularly inform you about similar VDI Wissensforum GmbH events. If you would no longer like to receive any information or offers, you can object to your data being used for this purpose at any time. To do so, use the following email address wissensforum@vdi.de or one of the other contact possibilities mentioned above.

We would like to make you aware of general information about the usage of your data here: <https://www.vdi-wissensforum.de/en/privacy-policy/>

I hereby agree to VDI's terms and conditions and confirm that the data I have provided to register above is correct.

Your contact data was obtained based on article 6, paragraph, sentence 1 (lit. f) DSGVO (legitimate interest).

Our legitimate interest is to select a precise selection of possible interested parties for our events. You can get more information about the source and usage of your data here:

www.vdi-wissensforum.de/en/source-of-address/

