

# Program

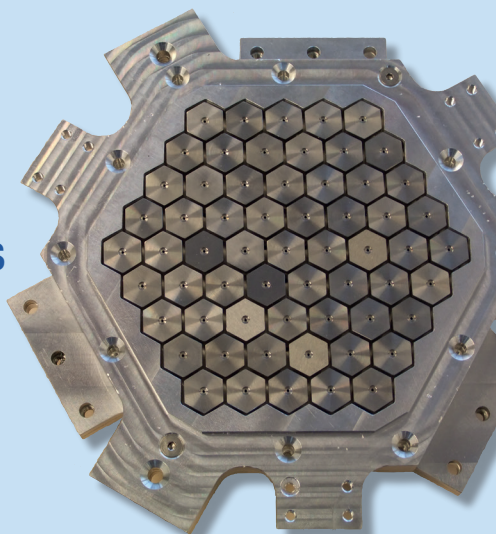
[www.gas-bearing-workshop.com](http://www.gas-bearing-workshop.com)

## 3<sup>RD</sup> GAS BEARING WORKSHOP

March 25, 2019

COURTYARD HOTEL  
DÜSSELDORF


- › LECTURES
- › POSTERS
- › TABLE TOPS



ORGANIZING INSTITUTIONS

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**VDE** **VDI** GMM

  
Bond voor Materialenkennis

**DSPE**  
YOUR PRECISION PORTAL

  
Consulate-General  
of the Netherlands  
Düsseldorf

## ORGANIZER

For detailed information please contact:

VDE/VDI-Society Microelectronics Microsystems and  
Precision Engineering (GMM)  
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60596 Frankfurt am Main, Germany

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E-Mail: gmm@vde.com

During the workshop:  
Phone: +49 171 4695 118

## IN COOPERATION WITH

Dutch Society for Precision Engineering (DSPE)  
High Tech Campus 1  
5656 AE Eindhoven  
PO Box 80036  
5600 JW Eindhoven  
info@dspe.nl

## POSTERS AND EXHIBITION

All attendees are invited to show a poster representing their field of competence.

We invite companies to join the workshop with a table-top exhibition. The fee of 500 Euro (plus VAT) for the table-top exhibition includes one ticket for workshop admittance.

For further information please contact the organizer.

## GET-TOGETHER MARCH 24

Informal get-together on March 24 at 7 p.m. in the hotel bar of Courtyard hotel (at own expense).

## FOREWORD OF THE CHAIRMAN

The third Gas Bearing Workshop is aimed at creating a platform for the gas bearing community. Experts, scientists, research engineers, users and manufacturers/vendors in this field are invited. Experts in gas bearings are going to present new applications and leading edge R&D - there will be space and time for discussion and personal contacts.

*Here a glance at the history and a brief outlook on the future:*

While the 2015 Gas Bearing Workshop was mainly an industry/manufacturer forum, the 2017 workshop discussed the issue of standardization. The 2019 GBW is going to present latest R&D results that expand the range of applications in classical precision engineering applications as well as in new applications which so far have not yet been presented. While classical precision engineering based on gas bearings turned out to be a routine business within the last decades, innovative applications of gas bearings have been emerging.

Amongst them are intelligent transportation systems for flat objects or gas bearings for small spindles with high rotational speeds.

The program committee also wishes to geographically expand the view on gas bearing technology from Netherlands, Belgium and Germany (GBW 2015) and from the United States (GBW 2017) to the neighbouring European countries France, Italy and the United Kingdom.

In addition to the lectures - which will initiate discussions - there is time and opportunity for personal contacts. Attendees are encouraged to present own R&D results on posters that will be on display during the workshop. There we offer companies a unique opportunity to book table top exhibitions, opening up the debate by examples of gas bearing components and devices.

I am looking forward to meeting you at the 3rd GBW 2019 in Düsseldorf. We are confident that this workshop will consolidate existing contacts and generate new personal, scientific and business relations.

*Wolfram Runge  
Chairman of the 2019 Gas Bearing Workshop*

**PROGRAM COMMITTEE AND CHAIRMEN**

Wolfram Runge (General Chair)  
Beuth Hochschule für Technik Berlin

Jos Gunsing (Chairman Program Committee)  
MaromeTech/Dutch Society for Precision Engineering

Farid Al-Bender  
KU Leuven

Ron A.J. van Ostayen  
Delft University of Technology

Ronald Schnabel  
VDE/VDI-GMM, Frankfurt am Main

**PROGRAM**

Venue day before, March 24 in the hotel bar

09.30	Welcome reception/poster exhibition; table top exposition
10.00	<b>Opening word</b> Wolfram Runge, Chairman, Beuth Hochschule für Technik Berlin, Germany
10.05	<b>Welcome</b> Hans van den Heuvel, Consul, Kingdom of the Netherlands

10.15	<b>Keynotes</b> <b>Gas Bearing Research and Applications in the UK, Italy and France; both in the Academic and the Industrial Field</b> <b>Research on Gas Bearings in Italy</b> Terenziano Raparelli, Politecnico di Torino, DIMEAS, Department of Mechanical and Aerospace Engineering, Turin, Italy <b>Overview of Gas Bearings Advances in France</b> Mihai Arghir, Université de Poitiers, France <b>Research on Gas Bearings in the UK</b> Duc Ha, Omega Dot Ltd., Worcester Park, UK
11.00	<b>Air Bearings: Theory, Design and Applications</b> Farid Al-Bender, KU Leuven, Belgium
11.30	<b>Simulation driven Design and Rotordynamic Stability Analysis of Aerostatic Spindles</b> Andreas Lange, Technische Universität Kaiserslautern, Germany
12.00	Lunch/Poster and Table top exhibition
13.30	<b>Lumped Parameters Models for Gas Bearings</b> Federico Colombo, Terenziano Raparelli, Politecnico di Torino, DIMEAS, Department of Mechanical and Aerospace Engineering, Turin, Italy
14.00	<b>Contributions to the Gas-Bearing Technology: Aerostatic Hybrid Bearings and Aerodynamic Foil Bearings</b> Mihai Arghir, Université de Poitiers, France
14.30	Break
15.15	<b>Gas Bearing Designs with a Difference...</b> Ron van Ostayen, Delft University of Technology, Department of Precision and Microsystems Engineering, Delft, the Netherlands
15.45	<b>Review of latest Air Foil Bearings Design</b> Duc Ha, Omega Dot Ltd., Worcester Park, UK
16.15	<b>Closing remarks</b> Wolfram Runge, Chairman, Beuth Hochschule für Technik Berlin, Germany
16:30	<b>Informal Discussion and Networking</b>
18:00	<b>End of the Workshop</b>

**WORKSHOP REGISTRATION**

To register for the Gas Bearing Workshop 2019, please visit the homepage under [www.gas-bearing-workshop.com](http://www.gas-bearing-workshop.com). You can either fill in the registration sheet and register via fax or e-mail or make use of the online registration.

**REGISTRATION FEE**

workshop attendance	290 €
table top exhibition (Including one ticket)	500 € + VAT

Payment for registration, including bank charges and processing fees, must be made in Euro. The workshop fee has to be fully paid in advance by credit card. Your registration can only be confirmed if VDE-Conference Services has recorded receipt of your full payment.

In case of cancellation, provided that written notice has been given to VDE-Conference Services before February 25, 2019, the registration fee will be refunded less a handling fee of € 80.00. After February 25, 2019, no refund will be made.

**WORKSHOP VENUE**

Courtyard by Marriot  
 Am Seestern 16  
 40547 Düsseldorf  
 Phone: +49 211/595 959  
 Fax : +49 211/593 569

A contingent of rooms has been reserved at a price of € 104.00 per night. Please book your room not later than February 22<sup>nd</sup> referring to the gas bearing workshop.

**TRANSPORT SERVICES CLOSE TO THE HOTEL**

*Parking on-site*  
 18 € daily

*Subway Station*  
 Seestern or Prinzenallee

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## SPEAKERS LIST

- *Duc Ha, Omega Dot Ltd., Worcester Park, UK*
- *Federico Colombo and Terenziano Raparelli, Politecnico di Torino, DIMEAS, Department of Mechanical and Aerospace Engineering, Turin, Italy*
- *Mihai Arghir, Université de Poitiers, France*
- *Farid Al-Bender, KU Leuven, Belgium*
- *Andreas Lange, Technische Universität Kaiserslautern, Germany*
- *Ron van Ostayen, Delft University of Technology, Department of Precision and Microsystems Engineering, Delft, the Netherlands*

