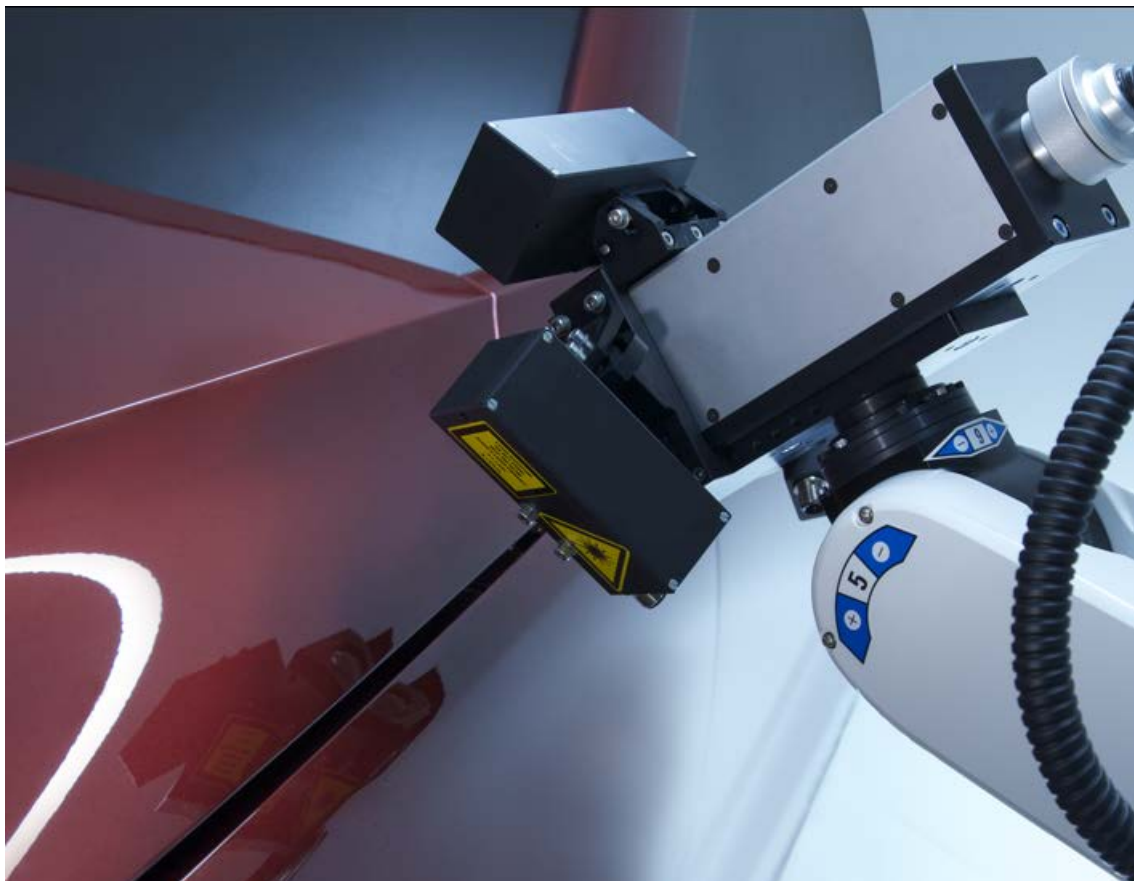


Invitation/Program

## 8<sup>th</sup> International Workshop on Terahertz Technology and Applications

March 20<sup>th</sup>/21<sup>st</sup>, 2018

Fraunhofer-Zentrum  
Fraunhofer-Platz 1, Kaiserslautern (Germany)



jointly organized by

Fraunhofer Institute for Industrial Mathematics (ITWM) and the  
Division Optical Technologies of the  
VDI/VDE Society Measurement and Automatic Control (GMA)

## Background and Motivation

Nowadays terahertz technology has proven to be a valuable tool for applications in diagnostics, measurement and testing. The industrial use of this technology, however, raises a lot of challenging questions. The “International Workshop on Terahertz Technology and Applications” especially fosters the exchange of knowledge and experience between academia and industry in this exciting and rapidly developing field.

## Scope

The workshop refers to users, developers and manufacturers of terahertz measurement systems and will address primarily the topics

1. Non-destructive measurements and materials testing
2. Technology for homeland security
3. Communications
4. Health and social aspects of terahertz technology
5. New terahertz system technologies

## Chairman

Prof. Dr. Georg von Freymann      Fraunhofer ITWM, Germany

## Program Committee

Dr. Bernd M. Fischer	French-German Research Institute Saint-Louis ISL, France
Prof. Dr. Georg von Freymann	University of Kaiserslautern, Germany
Dr. Peter de Maagt	European Space Agency ESA, The Netherlands
Prof. Dr. Hartmut Roskos	Johann Wolfgang Goethe University, Germany
Prof. Dr. Koichiro Tanaka	Kyoto University, Japan
Dr. Joachim Jonuscheit	Fraunhofer ITWM, Germany

## Program

March 20 <sup>th</sup> , 2018	
<b>11:00 – 13:00</b>	<b>Laboratory tour</b> Fraunhofer ITWM, Germany
<b>13:00</b>	<b>Welcome and opening remarks</b> Georg von Freymann, Fraunhofer ITWM, Germany
<b>Session 1: Sources &amp; Detectors</b>	
<b>13:10</b>	<b>Terahertz resonant-tunnelling diodes (invited)</b> Michael Feiginov, Vienna University of Technology, Austria
<b>13:40</b>	<b>Large bandwidth TDS system using ErAs:InGaAs photoconductor with highest recorded resistivity and breakdown voltage</b> Uttam Nandi, TU Darmstadt, Germany
<b>14:00</b>	<b>Unmodified commercial GaAs HEMTs as terahertz detector</b> Hartmut G. Roskos, Johann Wolfgang Goethe University, Germany
<b>14:20</b>	<b>Compact high-power 300GHz Tx-module for imaging applications</b> Oleg Cojocari, ACST GmbH, Germany
<b>14:40</b>	<b>High-power gyrotron development at KIT: towards multi-megawatt power levels at THz frequencies</b> John Jelonnek, Karlsruhe Institute of Technology KIT, Germany
<b>15:00</b>	<b>Coffee Break</b>
<b>Session 2: Imaging</b>	
<b>15:30</b>	<b>Highly coherent THz sources for imaging and molecular spectroscopy (invited)</b> Paolo De Natale, Istituto Nazionale di Ottica-CNR, Italy
<b>16:00</b>	<b>Imaging array designs and algorithms (invited)</b> Alexander Yarovoy, Delft University of Technology, The Netherlands

<b>16:30</b>	<b>Terahertz microprobe-enabled near-field imaging for non-destructive testing applications</b> Michael Nagel, protemics GmbH, Germany	<b>11:00</b>	<b>Gas spectroscopy with THz quantum-cascade lasers</b> Heinz-Wilhelm Hübers, DLR, Germany
<b>16:50</b>	<b>Femtosecond switching of interface polaritons using multi-THz near-field microscopy</b> Fabian Sandner, University of Regensburg, Germany	<b>11:20</b>	<b>Fano resonances for advanced biosensing in the terahertz range</b> Anna K. Wigger, University Siegen, Germany
<b>17:10</b>	<b>Poster Session</b>	<b>Session 5: General Regulation information</b>	
<b>19:00</b>	<b>Bus Transfer to Hotels</b>	<b>11:40</b>	<b>Accessing the European market using harmonized standards under the Radio Equipment Directive (invited)</b> Michael Sharpe, ETSI, France
<b>20:00</b>	<b>Evening Reception</b>	<b>12:10</b>	<b>Lunch</b>
<b>March 21<sup>st</sup>, 2018</b>			
<b>Session 3: Millimeter Wave Testing</b>			
<b>08:30</b>	<b>Stand-off non-destructive material testing using passive MMW/THz radiation</b> Markus Peichl, DLR, Germany	<b>13:20</b>	<b>Photonics-enabled terahertz wireless communications (invited)</b> Alwyn J. Seeds, University College London, UK
<b>08:50</b>	<b>Terahertz Synthetic Aperture Radar Imaging of Thermal Barrier Coatings on Metal Substrates</b> Ingrid Ullmann, Friedrich-Alexander University, Germany	<b>13:50</b>	<b>Electronic steerable 4-channel phased-array transmit-receive frontend for 300 GHz wireless personal area networks</b> Ingmar Kallfass, University Stuttgart, Germany
<b>09:10</b>	<b>Low THz frequency extenders for portable automotive radar applications</b> David R. Vizard, VivaTech Consulting, France	<b>Session 7: Coatings</b>	
<b>09:30</b>	<b>Non-destructive radome inspection</b> Fabian Friedrich, Fraunhofer ITWM, Germany	<b>14:10</b>	<b>Vibration compensation for layer thickness measurements in industrial environments</b> Daniel Molter, Fraunhofer ITWM, Germany
<b>09:50</b>	<b>Non-destructive testing of corundum grinding wheels</b> Stefan Becker, Becker Photonik GmbH, Germany	<b>14:30</b>	<b>Global mapping of the paint-layer stratigraphy of a 17th century oil painting</b> David S. Citrin, Georgia Institute of Technology, USA
<b>10:10</b>	<b>Coffee Break</b>	<b>14:50</b>	<b>Non-destructive testing of coatings for the wind, aerospace and naval industry</b> David Etayo, das-Nano, Spain
<b>Session 4: Spectroscopy</b>			
<b>10:30</b>	<b>High-resolution gas phase THz/FIR spectroscopy using electronic, optoelectronic and synchrotron sources (invited)</b> Arnaud Cuisset, Université du Littoral Côte d'Opale, France	<b>15:10</b>	<b>Closing Remarks</b> Georg von Freyermann, Fraunhofer ITWM, Germany
		<b>15:15</b>	<b>Coffee Break</b>
		<b>16:10</b>	<b>Laboratory tour</b> Fraunhofer ITWM, Germany

## Poster Session

A poster session will be held during the workshop. If you want to contribute to the poster session, please fill the corresponding fields in the registration form. You will then receive further instructions for the preparation of the poster (size: A0 format, landscape or portrait). **Post-deadline posters can be submitted until January 30<sup>th</sup>, 2018.**

## Lab Tours

As indicated in the program, there are two possibilities for a tour through the labs of Fraunhofer ITWM. Please fill the corresponding fields in the registration form if you want to participate in the lab tour.

## Registration

Please register at the following link:  
<http://www.vdi.de/terahertz2018>

The workshop fee will be **€ 395.00** and includes proceedings, refreshments (lunch on Wednesday only), lab tours, conference dinner and bus shuttle service as well as access to the exhibition.

## Payment

Participants from Germany, Austria and Switzerland are required to pay by invoice. Participants from other countries can choose to pay by invoice or credit card.

## Organisation

VDI – The Association of German Engineers  
Division Optical Technologies  
P.O. Box 10 11 39, 40002 Düsseldorf, Germany

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## General Information

### Exhibition

The workshop will be accompanied by a table top exhibition. Authors from industry are encouraged to contribute to the exhibition, too.

Please contact Dr. J. Jonuscheit (phone and e-mail address see above) for further information.

### Location

Fraunhofer-Zentrum Kaiserslautern  
Fraunhofer-Platz 1  
67663 Kaiserslautern, Germany

### Registration Desk

Opening Times: 11:00-19:00 h on March 20<sup>th</sup>, 2018,  
08:00-16:00 h on March 21<sup>th</sup>, 2018.

Phone during workshop: +49 (0) 211 6214-268

### Accommodation:

A certain number of rooms are reserved in hotels in Kaiserslautern. Their names are found on [www.vdi.de/terahertz2018](http://www.vdi.de/terahertz2018). The key word for reservation is "Terahertz".

Please contact the hotels at your earliest convenience to book your accommodation.

There will be a bus shuttle between the recommended hotels and the conference place after the poster session on Tuesday evening and before the first session on Wednesday morning.

### Evening reception:

The conference dinner will take place in the "Fruchthalle" in the city centre of Kaiserslautern.

Address: Fruchthallstraße 10, 67655 Kaiserslautern, Germany

<http://www.kaiserslautern.de/fruchthalle>

### Cancellation:

Refunding of cost share is possible only if participation is canceled at least 14 days before the workshop. The cost share will be refunded minus a processing fee of €50.00 plus 19% VAT. In case of later cancellation the full cost share is due. Participation can be transferred to another person.

## Travel Information

Directions can be found on the website on the website <http://www.itwm.fraunhofer.de/en/how-to-reach-us.html>