

## Day 1 – Monday, July 1<sup>st</sup>

10.00 – 10.45 **Welcome Coffee at Steigenberger Hotel**

10.45 – 11.00 **Thomas Kaiser**  
*Welcome Speech*

### Keynote

11.00 – 12.00 **Masahiro Asada**  
*Recent Progress of RTD THz Oscillators and Applications*  
*Chair: Werner Probst*

12.00 – 13.00 **Lunch Break**

### Afternoon Sessions

**Session 1: Terahertz Measurements & Models**  
*Chair: Niels Benson*

13.00 – 13.25 *A Compact Measurement Setup for In-Situ Material Characterization in the Lower Terahertz Range*  
J. Barowski, J. Jebramcik, I. Alawneh, F. Sheikh, T. Kaiser, I. Rolfes

13.25 – 13.50 *Ceramic Additive Manufacturing Using LCM Technology Status, Strategies and Current Limits*  
N. Benson

13.50 – 14.15 *Wave Scattering from Non-Gaussian Rough Surfaces at Terahertz Frequencies*  
M. Alissa, F. Sheikh, A.A. Abbas, T. Kaiser

14.15 – 14.40 *SAR Signal Processing Architecture and Effects of Motion Errors for mmWave and Terahertz Frequencies*  
A. Batra, M. Wiemeler, T. Kreul, D. Goehring, T. Kaiser

14.40 – 15.05 *Channel Measurements in Lecture Room Environment at 300 GHz*  
Y. Zantah, F. Sheikh, A.A. Abbas, M. Alissa, T. Kaiser

15.05 – 15.30 *Preliminary Analysis of Candle Flame Impact on Terahertz Electromagnetic Wave Propagation*  
A. Ghwaji, F. Sheikh, T. Schultze, I. Willms, T. Kaiser

15.30 – 15.50 **Coffee Break**

### Session 2: Terahertz Systems

*Chair: Jan Balzer*

15.50 – 16.15 *A Compact Terahertz Quasi TDS System for Mobile Scenarios*  
S.C. Tonder, K. Kolpatzeck, X. Liu, Sebastian R., A. Czyliwlik, J. Balzer

16.15 – 16.40 *Super-Resolution Restoration of Low-Resolution Terahertz Camera Images*  
D. Damyanov, B. Friederich, J. Kohl, X. Liu, K. Kolpatzeck, T. Schultze, A. Czyliwlik, J. Balzer, I. Willms

16.40 – 17.05 *Terahertz Sub-Layer Object Identification Using MCA and Dictionary Learning*  
U.S. Miriya Thanthrige, A. Sezgin

17.05 – 17.30 *Terahertz Passive RFID Tag Based on Dielectric Resonator Linear Array*  
A.A. Abbas, M. El-Absi, A. Abuelhaija, K. Solbach, T. Kaiser

17.30 – 17.55 *2D Metamaterial Luneburg Lens for Chipless Dielectric Resonator Tags in the Indoor Localization Application*  
Y. Zhao, J. Weidenmueller, G.v. Bögel, A. Grabmaier, A.A. Abbas, K. Solbach, A. Jiménez-Sáez, M. Schüßler, R. Jakoby

19.00 – ... **Barbeque @ Steigenberger Hotel**

## Day 2 – Tuesday, July 2<sup>nd</sup>

### Keynote

09.00 – 10.00 **Fabian Friederich**  
*Terahertz Inspection Systems: From Stationary to Mobile Devices*  
*Chair: Thomas Kaiser*

10.00– 10.15 **Coffee Break**

### Morning Session

**Session 3: Terahertz Antennas**  
*Chair: Klaus Solbach*

10.15 – 10.40 *Mutually Coupled Dielectric Resonators for On-Chip Antenna Efficiency Enhancement*  
B. Sievert, J.T. Svejda, D. Erni, A. Rennings

10.40 – 11.05 *Reducing the Divergence of Vortex Waves with a Lens Tailored to the Utilized Circular Antenna Array*  
M. Haj Hassan, D. Erni, A. Rennings, B. Sievert

11.05 – 11.30 *Flexible and Wearable Graphene Based Terahertz Antenna for Body Centric Applications*  
A. Abohmra, S.F. Jilani, H. Abbas, A. Alomainy, M.A. Imran, Q.H. Abbasi

11.30 – 11.55 *Electromagnetic Identification from UHF to THz: State of the Art, Novel Approaches and Outlook*  
M. Khaliel, T. Kaiser

12.00 – 13.00 **Lunch Break**

### Afternoon Session

**Session 4: Terahertz Sensing & Spectroscopy**  
*Chair: Andreas Czyliwlik*

13.00 – 13.25 *Terahertz Sensing for Fruit Spoilage Monitoring*  
A. Ren, A. Zahid, M.A. Imran, A. Alomainy, Q.H. Abbasi, D. Fan

13.25 – 13.50 *Monitoring the Variability of Water Dynamics in Plant Leaves at Cellular Level Using Terahertz Sensing*  
A. Zahid, H. Abbas, M.A. Imran, A. Alomainy, Q.H. Abbasi

13.50 – 14.15 *Wideband Characterization of 3D Printed THz Rectangular Dielectric Waveguides by THz Frequency-Domain Spectroscopy*  
X. Liu, K. Kolpatzeck, A. Öztürk, B. Friederich, D. Damyanov, L. Haering, T. Schultze, J. Balzer, A. Czyliwlik

14.15 – 14.40 *Golomb Ruler Based Discrete Frequency Multimodal Continuous Wave THz Spectroscopy System*  
A. Gerling, L. Becke, S.C. Tonder, M. Hofmann, J. Balzer, C. Brenner

14.40 – 15.10 **Coffee Break**  
*followed by [Social Event](#) (turn page)*

## Social Event

15.45 – 23.00

### Wine Tasting, Hiking, Dinner

For details see leaflet or contact organizing staff.

Please be on time at Bad Neuenahr Train Station (train leaves 15:52)!



## Day 3, Wednesday, July 3<sup>rd</sup>

### Morning Session

#### Session 5: Terahertz Electronics & Photonics

Chair: Nils Weimann

09.00 – 09.25

Endfire Transition from Coplanar Waveguide-to-WR3 Rectangular Waveguide for Monolithic Integration with Terahertz Photodiodes

S. Makhlof, B. Khani, T. Haddad, M. Steeg, A. Stöhr

09.25 – 09.50

Broadband Detection Capability of a Triple Barrier Resonant Tunneling Diode

K. Arzi, S. Clochiatti, E. Mutlu, A. Kowaljow, B. Sievert, D. Erni, N. Weimann, W. Prost

09.50 – 10.15

Antenna Design for Subharmonic Injection-Locked Triple Barrier RTD Oscillator in the 300 GHz Band

M. Zhang, A. Rennings, S. Clochiatti, K. Arzi, W. Prost, N. Weimann, D. Erni

10.15 – 10.40

Wideband Radiation Pattern Measurement of Terahertz Antenna-Integrated Photodiodes by Frequency-Domain Spectroscopy

K. Kolpatzeck, X. Liu, B. Friederich, D. Damyanov, L. Haering, T. Schultze, J. Balzer, A. Czylwik

10.40 – 11.00

Coffee Break

## Key Note (open for all MARIE members)

11.00 – 12.00

### Tadao Nagatsuma

Terahertz Systems Inspired and Accelerated by Photonics

Chair: Andreas Stöhr

12.00 – 13.00

Lunch Break

## Key Note (open for all MARIE members)

13.00 – 14.00

### Hartmut Roskos

Coherent and Incoherent Detection of Terahertz Radiation with Field-Effect Transistors

Chair: Thomas Kaiser

- End of IWMTS -

### Conference organizer

University of Duisburg-Essen  
Institute of Digital Signal Processing  
Prof. Dr.-Ing. Thomas Kaiser  
Bismarckstraße 81  
47057 Duisburg | Germany

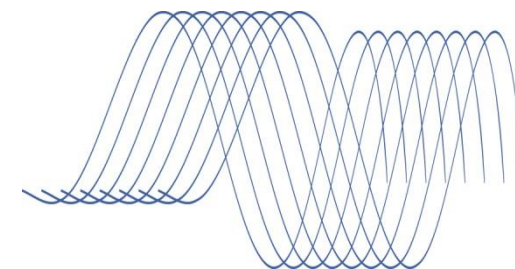


UNIVERSITÄT  
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Open-Minded

# IWMTS

INTERNATIONAL WORKSHOP ON  
MOBILE THZ SYSTEMS



July 1<sup>st</sup> – 3<sup>rd</sup>, 2019

Steigenberger Hotel  
Bad Neuenahr, Germany



# PROGRAM