

PROGRAM

All times are given in Central European Time (CET)

Day 1 – Monday, July 4th

09:45 – 10:00

Welcome Speech by IWMTS General Chair Thomas Kaiser

Session 1 – Terahertz Measurements and Performance

Session Chair: Andreas Czyliwik

10:00 – 10:30

Measurements at 300 GHz in Eavesdropping Scenarios and First Results

Christoph Herold, Tobias Doeker, Thomas Kürner

10:30 – 11:00

Iteratively Reweighted Nuclear Norm Based Distortion Compensation for THz-TDS

Lukas Benedikt Schäfer, Udaya Sampath K. Perera
Miriya Thantrige, Aydin Sezgin

11:00 – 11:30

Optimization of the Trade-Off Between Spectral Efficiency and Energy Efficiency in the Sub-Terahertz Context

Mohamad Younes, Yves Louet

11:30 – 12:00

Accuracy Limits of Chipless RFID Based Indoor Localization System at THz Band

Deeb A. D. Tubail, Mohammed El-Absi, Salama Said Ikki, Thomas Kaiser

Session 2 – TUTORIAL: “On-Chip Antennas”

Session Chair: Daniel Erni

10:00 – 10:40

The Last Barrier to True RF System-on-Chip

Atif Shamim

10:40 – 11:20

On-chip antenna designs based on the metamaterial and metasurfaces for millimeter-waves and terahertz spectrum

Mohammad Alibakhshikenari

11:20 – 12:00

Understanding planar mm-wave antennas - from modeling to measurements

Benedikt Sievert

12:00 – 13:30

Lunch Break

Afternoon Session 1 – Keynote Talks

13:30 – 14:30

Terahertz Antennas for 6G and Beyond - Design, Prototyping, and Characterization

Speaker: Chi-Hou Chan

Moderator: Ilona Rolfes

14:30 – 14:45

Coffee Break

14:45 – 15:45

What do future THz Communications Systems perform: In Perspective of Implementation and Energy Efficiency

Speaker: Ho-Jin Song

Moderator: Aydin Sezgin

15:45 – 16:00

Coffee Break

16:00 – 17:00

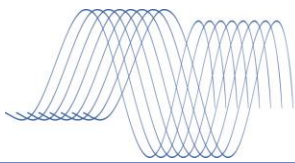
The journey towards 6G: The 6GEM Hub perspective

Speaker: Aydin Sezgin

Moderator: Thomas Kaiser

17:30 – 20:00

Dinner



Day 2 – Tuesday, July 5th
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Session 3 – Terahertz Electronics

Session Chair: Werner Prost

10:00 – 10:30

Epitaxial Structure Simulation Study of
 $\text{In}_{0.53}\text{Ga}_{0.47}\text{As}/\text{AlAs}$ Double-Barrier Resonant
Tunnelling Diodes
Davide Cimbri, Jue Wang, Edward Wasige

10:30 – 11:00

$\text{In}_{0.53}\text{Ga}_{0.47}\text{As}/\text{AlAs}$ Double-Barrier Resonant
Tunnelling Diodes with High-Power Performance in
the Low-Terahertz Band
Davide Cimbri, Razvan Morariu, Afesomah Ofiare,
Edward Wasige

11:00 – 11:30

Transfer-Substrate Process for InP RTD-Oscillator
Characterization
Robin Kress, Enes Mutlu, Tobias Kubiczek, Jonas
Kossmann, Christian Preuss, Thorsten Schultze, Jan C.
Balzer, Werner Prost, Nils Weimann

11:30 – 12:00

Monolithic N+-InGaAs Thin Film Resistor From DC Up
to 0.5 THz
Simone Clochiatti, Paraya Yavari, Robin Schmidt,
Patrick Haeuser, Enes Mutlu, Christian Preuss, Werner
Prost, Nils Weimann

**Session 4 – Terahertz Identification and
Classification**

Session Chair: Jan Balzer

The Identification of Spectral Signatures in
Randomized (Sub-) Surface Material Systems
Kevin Jerbic, Jan Taro Svejda, Benedikt Sievert, Xuan
Liu, Kevin Kolpatzcek, Marvin Degen, Andreas
Rennings, Andreas Czulwik, Jan C. Balzer, Daniel Erni

On Scattering of Finite-Size and Finite-Volume One-
Dimensional Photonic Crystal Resonator Tag for THz
Identification
Ali Alhaj Abbas, Yamen Zantah, Thomas Kaiser

Fusion of Optical and Millimeter Wave SAR Sensing
for Object Recognition in Indoor Environment
Aman Batra, Tobias Hark, Nils Pohl, Ilona Rolfes,
Michael Wiemeler, Diana Göhringer, Thomas Kaiser,
Jan Barowski

Through-Obstacle Readout of Chipless Sub-Terahertz
Frequency-Coded Indoor Landmarks
Jesús Sánchez-Pastor, Martin Schüßler, Rolf Jakoby,
Alejandro Jiménez-Sáez

12:00 – 13:30

Lunch Break

Afternoon Session 2 – Keynote Talks

13:30 – 14:30

Terahertz express analyser for rapid detection of SARS-CoV-2
Speaker: Nikhil Ponon
Moderator: Jan Balzer

14:30 – 14:45

Coffee Break

14:45 – 15:45

Using Terahertz Microspectroscopy to Measure Biomolecular Dynamics
Speaker: Andrea Markelz
Moderator: Daniel Erni

15:45 – 16:00

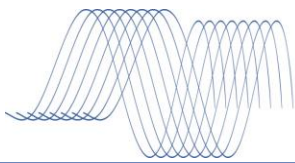
Coffee Break

16:00 – 17:00

Panel Session – “Will Mobile THz Systems Revolutionize Mobile Medical Diagnosis?”
Panelists: Andrea Markelz, Daniel Erni, Karsten Seidl, Nikhil Ponon
Moderator: Thomas Kaiser

17:30 – 21:00

Dinner (Barbeque)



Day 3 – Wednesday, July 6th
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Session 5 – Terahertz Imaging
Session Chair: Andreas Stöhr

- 08:30 – 09:00** **Fourier Imaging Based on Sub-Harmonic Detection at 600 GHz**
Hui Yuan, Alvydas Lisauskas, Meng Zhang, Qamar ul Islam, Daniel Erni, Hartmut G. Roskos
- 09:00 – 09:30** **Photonic Non-Invasive mmW and THz Imaging for Non-Melanoma Skin Cancer Detection**
Israa Mohammad, Vitaly Rymanov, Sumer Makhloof, Ingo Stoffels, Joachim Klode, Xiao Tang, Muhsin Ali, Andreas Stöhr
- 09:30 – 10:00** **Hardware/Software Co-Design of 2D THz SAR Imaging for FPGA-Based Systems-On-Chip**
Ahmed Kamaleldin, Ensieh Aliagha, Aman Batra, Michael Wiemeler, Thomas Kaiser, Diana Goehringer

Session 6 – Terahertz Components
Session Chair: Nils Weimann

- A 420 GHz Dual-Tone Phase-Detection-Based Thickness Sensor in 40 nm CMOS Technology**
Dragan Simic, Patrick Reynaert
- TCAD Simulation of InP DHBTs With an In53.2Ga46.8As Base and InGaAsP Collector Grading**
Konrad Mueller, Alexander Possberg, Nils Weimann, Hao Zhang, Malte Coers
- THz Phase Shifter Based on MEMS-Actuated Slot Waveguides**
Lisa Schmitt, Jan Barowski, Martin Hoffmann

10:00 – 10:15

Coffee Break

Session 7 – Invited Session
Microwaves and Millimeter Waves for Glucose Sensing
Session Chair: Victor Pikov

- 10:15 – 10:45** **Tissue absorption at MWs and MMWs**
Maxim Zhadobov
- 10:45 – 11:15** **THz spectroscopy of glucose-bound water**
Olga Cherkasova
- 11:15 – 11:45** **Water as biomarker of glucose concentration in blood**
Yuri Feldman
- 11:45 – 12:15** **The glucoWISE technology**
Helena Cano Garcia
- 12:15 – 12:45** **Device for noninvasive dielectric spectroscopy to measure multiple blood constituents**
John Hodges

Session 8 – Terahertz Beamforming
Session Chair: Andreas Czyliwik

- Beam Steering Leaky-Wave Antenna Based on Spoof Surface Plasmon Polaritons for W-Band Applications**
Ehsan Farokhipour, Peng-Yuan Wang, Nader Komjani, Daniel Erni
- An Electronically Beam Steering Array Based on Liquid Crystals Operating in W-Band**
Peng-Yuan Wang, Andreas Rennings, Daniel Erni
- Proposal for A Large Scale 1-D Subharmonic Coherent Detector Array in the 600 GHz Band**
Meng Zhang, Peng-Yuan Wang, Hui Yuan, Hartmut G. Roskos, Andreas Rennings, Daniel Erni
- Non-Overlapped Subarrays Based Wideband Delay-Phase Hybrid Beamforming**
Akram Najjar, Mohammed El-Absi, Thomas Kaiser
- Portable Device-Centric Human Postures for Modeling Reliable THz Channels**
Andreas Prokscha, Fawad Sheikh, Dien Lessy, Thomas Kaiser

End of IWMTS 2022