

2019 Second International Workshop on Mobile Terahertz Systems (IWMTS 2019)

**Bad Neuenahr, Germany
1 – 3 July 2019**



**IEEE Catalog Number: CFP19N51-POD
ISBN: 978-1-7281-1272-5**

**Copyright © 2019 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP19N51-POD
ISBN (Print-On-Demand):	978-1-7281-1272-5
ISBN (Online):	978-1-7281-1271-8

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

TERA-HERTZ SUB-LAYER OBJECT IDENTIFICATION USING MCA AND DICTIONARY LEARNING.....	1
<i>Udaya Sampath K.P. Miriya Thanthrige ; Aydin Sezgin</i>	
A COMPACT MEASUREMENT SETUP FOR IN-SITU MATERIAL CHARACTERIZATION IN THE LOWER THZ RANGE.....	7
<i>Jan Barowski ; Jochen Jebrancik ; Isam Alawneh ; Fawad Sheikh ; Thomas Kaiser ; Ilona Rolfes</i>	
ENDFIRE TRANSITION FROM COPLANAR WAVEGUIDE-TO-WR3 RECTANGULAR WAVEGUIDE FOR MONOLITHIC INTEGRATION WITH THZ PHOTODIODES.....	12
<i>Sumer Makhlof ; Beshar Khani ; Thomas Haddad ; Matthias Steeg ; Andreas Stöhr</i>	
FLEXIBLE AND WEARABLE GRAPHENE-BASED TERAHERTZ ANTENNA FOR BODY-CENTRIC APPLICATIONS.....	15
<i>Abdoalbaset Abohmra ; Fizzah Jilani ; Hasan T. Abbas ; Akram Alomainy ; Masood Ur-Rehman ; Muhammad Ali Imran ; Qammer H. Abbasi</i>	
A COMPACT THZ QUASI TDS SYSTEM FOR MOBILE SCENARIOS.....	19
<i>Sebastian C. Tonder ; Kevin Kolpatzeck ; Xuan Liu ; Sebastian Rumpza ; Andreas Czylwik ; Jan C. Balzer</i>	
TERAHERTZ SENSING FOR FRUIT SPOILAGE MONITORING.....	24
<i>Aifeng Ren ; Adnan Zahid ; Muhammad Ali Imran ; Akram Alomainy ; Dou Fan ; Qammer H. Abbasi</i>	
MONITORING THE VARIABILITY OF WATER DYNAMICS IN PLANT LEAVES AT CELLULAR LEVEL USING TERAHERTZ SENSING.....	28
<i>Adnan Zahid ; Hasan Tahir Abbas ; Hadi Heidari ; Muhammad Imran ; Akram Alomainy ; Qammer. H. Abbasi</i>	
BROADBAND DETECTION CAPABILITY OF A TRIPLE BARRIER RESONANT TUNNELING DIODE.....	32
<i>Khaled Arzi ; Simone Clochiatti ; Enes Mutlu ; Alexander Kowaljow ; Benedikt Sievert ; Daniel Erni ; Nils Weimann ; Werner Prost</i>	
ANTENNA DESIGN FOR SUBHARMONIC INJECTION-LOCKED TRIPLE BARRIER RTD OSCILLATOR IN THE 300 GHZ BAND.....	36
<i>Meng Zhang ; Simone Clochiatti ; Andreas Rennings ; Khaled Arzi ; Werner Prost ; Nils Weimann ; Daniel Erni</i>	
MUTUALLY COUPLED DIELECTRIC RESONATORS FOR ON-CHIP ANTENNA EFFICIENCY ENHANCEMENT.....	40
<i>Benedikt Sievert ; Jan-Taro Svejda ; Daniel Erni ; Andreas Rennings</i>	
SUPER-RESOLUTION RESTORATION OF LOW-RESOLUTION THZ CAMERA IMAGES.....	44
<i>D. Damyanov ; B. Friederich ; J. Kohl ; X. Liu ; K. Kolpatzeck ; T. Schultze ; A. Czylwik ; J. C. Balzer ; I. Willms</i>	
REDUCING THE DIVERGENCE OF VORTEX WAVES WITH A LENS TAILORED TO THE UTILIZED CIRCULAR ANTENNA ARRAY.....	49
<i>M. Haj Hassan ; B. Sievert ; A. Rennings ; D. Erni</i>	
THZ PASSIVE RFID TAG BASED ON DIELECTRIC RESONATOR LINEAR ARRAY.....	53
<i>Ali Alhaj Abbas ; Mohammed El-Absi ; Ashraf Abuelhajjay ; Klaus Solbach ; Thomas Kaiser</i>	
WIDEBAND RADIATION PATTERN MEASUREMENT OF TERAHERTZ ANTENNA-INTEGRATED PHOTODIODES BY FREQUENCY-DOMAIN SPECTROSCOPY.....	58
<i>K. Kolpatzeck ; X. Liu ; B. Friederich ; D. Damyanov ; L. Häring ; T. Schultze ; J. C. Balzer ; A. Czylwik</i>	
WIDEBAND CHARACTERIZATION OF 3D PRINTED THZ RECTANGULAR DIELECTRIC WAVEGUIDES BY THZ FREQUENCY-DOMAIN SPECTROSCOPY.....	63
<i>X. Liu ; K. Kolpatzeck ; A. Öztürk ; B. Friederich ; D. Damyanov ; L. Häring ; T. Schultze ; J. C. Balzer ; A. Czylwik</i>	
2D METAMATERIAL LUNEBURG LENS FOR ENHANCING THE RCS OF CHIPLESS DIELECTRIC RESONATOR TAGS.....	69
<i>Y. Zhao ; J. Weidenmueller ; G. Vom Bögel ; A. Grabmaier ; A. Alhaj Abbas ; K. Solbach ; A. Jiménez-Sáez ; M. Schießler ; R. Jakob</i>	
GOLOMB RULER BASED DISCRETE FREQUENCY MULTIMODAL CONTINUOUS WAVE THZ SPECTROSCOPY SYSTEM.....	75
<i>Alexandra Gerling ; Lennart Becke ; Sebastian Tonder ; Martin R. Hofmann ; Jan C. Balzer ; Carsten Brenner</i>	
SAR SIGNAL PROCESSING ARCHITECTURE AND EFFECTS OF MOTION ERRORS FOR MMWAVE AND THZ FREQUENCIES.....	79
<i>Aman Batra ; Michael Wiemeler ; Theo Kreul ; Diana Goehringer ; Thomas Kaiser</i>	
PRELIMINARY ANALYSIS OF CANDLE FLAME IMPACT ON THZ ELECTROMAGNETIC WAVE PROPAGATION.....	85
<i>Abdulkader Ghwaji ; Fawad Sheikh ; Thorsten Schultze ; Ingolf Willms ; Thomas Kaiser</i>	

CHANNEL MEASUREMENTS IN LECTURE ROOM ENVIRONMENT AT 300 GHZ	90
<i>Yamen Zantah ; Fawad Sheikh ; Ali Alhaj Abbas ; Mai Alissa ; Thomas Kaiser</i>	
WAVE SCATTERING FROM NON-GAUSSIAN ROUGH SURFACES AT TERAHERTZ FREQUENCIES	95
<i>Mai Alissa ; Fawad Sheikh ; Ali Al-Haj Abbas ; Thomas Kaiser</i>	
ELECTROMAGNETIC IDENTIFICATION FROM UHF TO THZ: STATE OF THE ART, NOVEL APPROACHES AND OUTLOOK	100
<i>Maher Khaliel ; Thomas Kaiser</i>	
Author Index	