



Workshop on: Enabling Technologies for Terahertz Communications (ETTCOM)

IEEE PIMRC 2020 conference, London, UK.

Workshop Organizers



Faouzi Bader
ISEP -France



Catherine Douillard
IMT-Atlantique,
France



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IMEC, Belgium



Yoann Corre
Siradel-France



Kostas Berberidis
UoP- Greece

Monday 31st August 2020

W02: Workshop on Enabling Technologies for Terahertz Communications (ETTCOM)

Starting time 9:00

Session 1

Session 1.1/ 9:00 -9:40 Invited Talk



Titled "**Reconfigurable Meta-Surfaces as an Enabler for THz Beamforming**"

Presented by Prof. Maziar Nekovee, School of Engineering and Informatics, University of Sussex, UK. (30 min talk and 10 min Q&A)

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Session S1.2 /9:40 -10:30 (18 min per paper)

Paper 1: "**Low-complexity Computational Units for the Local-SOVA Decoding Algorithm**" by Stefan Weithoffer; Rami Klaimi; Charbel Abdel Nour; Norbert Wehn; and Catherine Douillard,

Paper 2: “**A 506 Gbit/s Polar Successive Cancellation List Decoder with CRC**”, by Claus Kestel; Lucas Johannsen; Oliver Griebel; Jhon Jimenez; Timo Vogt; Timo Lehnigk-Emden; and Norbert Wehn,

10:30-11:00\ Coffee Break

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Session S2 / (18 min per paper)

11:00 – 12:30

Paper 3: “**Outage Probability Analysis of THz Relaying Systems**” by Alexandros-Apostolos A Boulogeorgos; and Angeliki Alexiou

Paper 4: “**Dual-Polarized Generalized Spatial Modulation for Wireless Terabit System**”, by Nizar Bouhlel; Majed Saad; Faouzi Bader; and Jacques Palicot

Paper 5: “**Comparing MAC Protocols for Industrial IoT Using Terahertz Communications**”, by Chiara Buratti; Leonardo Mesini; and Roberto Verdone

Paper 6: “**Simulated Propagation Properties for Future Outdoor sub-THz Networks**”, by Mohammed Zahid Aslam; and Yoann Corre

Paper 7: “**A Flexible Power Model for mm-Wave and THz High-Throughput Communication Systems**”, by Claude Desset; Piet Wambacq; Yang Zhang; Mark Ingels; and Andre Bourdoux

12:30 -14:00\ Lunch time

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Session 3: / 14:00- 15:30.



Panel Title: **THz Communications: Opportunities, Challenges, and Preliminary Developments**

Moderated by Prof. M. Slim Alouini

King Abdullah University of Science and Technology (KAUST)

Motivation and Background: Terahertz (THz)-band communications are a key enabler for future-generation wireless communication systems that promise to integrate a wide range of data-demanding and delay-sensitive applications. Recent advancements in electronic, photonic, and plasmonic technologies are closing the gap in THz transceiver design. Consequently, prospect THz signal generation, modulation, and radiation methods are converging, and the corresponding channel model, noise, and hardware-impairment notions are emerging. These advancements pave the way to well-grounded research directions on THz-specific signal processing and communication techniques for wireless communications. In this context, this panel aims to go over the opportunities and challenges of communication systems operating in the THz band. It further motivates novel signal processing and communication techniques for MIMO-enabled THz sensing, as well as THz indoor localization.

(3 opening statements followed by a Q&A session)

Participants:

1- Prof. Tetsuya Kawanishi (IEEE Fellow)



Prof. Waseda University, Japan

<http://www.f.waseda.jp/kawanishi/index-e.html>



2- Prof. Angeliki Alexiou
 University of Piraeus, Greece
<https://www.ds.unipi.gr/en/faculty/alexiou-en/>



3- Dr. Wolfgang Templ
 Nokia Bell Labs, Germany
<https://www.bell-labs.com/usr/wolfgang.templ>

15:30-16:00 \ Coffee break

Session 3:

Session 3.1/ 16:00 -16:45 Invited Talk



Titled: “**Wireless 2.0: Wireless Networks Empowered by Reconfigurable Intelligent Surfaces**”. (35 min talk and 10 min Q&A)
 Presented by: Dr. Marco Di Renzo, CNRS, Laboratoire L2S-CentraleSupélec. Paris-France;

Session 3.2/ 16:45 -17:30 Invited Talk



Titled: “« **BRAVE advances in Sub-THz wireless Communications**”. (35 min talk and 10 min Q&A)
 Presented by: Yoann Corre- SIRADEL, France.

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