MONDAY 08:30 – 17:50

Photonic Technologies and Systems for RF Applications

WM01
EuMC

Chair: Andreas Stöhr[1]
Co-Chair: Guillaume Ducournau[2]
[1]University Duisburg-Essen, [2]Univ of LILLE

Room: Juliana 1

Today, most devices and technologies rely on electronics to process, transmit, and analyze information. This workshop will address photonic RF technologies aiming to transform these electronic connections into photonic ones, increasing transmission speeds and improving responsiveness while consuming substantially lower levels of power. The key advantage of photonic RF technology is the potential to provide a continuous and interference-free coverage of multi-octave frequency bands up to the THz regime with only a single technological solution paving the way for a plethora of future applications, measurement technologies and metrology. Potential applications include high-capacity fixed wireless access, mobile mm-wave/THz communications, satellite communications, earth observation and techniques for ultrawideband signal processing. Generic functions include multi-octave bandwidth high output power RF sources and receivers, optically pumped mm-wave/THz receiver, phase-stable transport of RF signals over optical fiber, optical beamforming technology.

The workshop will provide an insight into the state-of-the-art of photonic RF technologies, and it aims to discuss whether maturity, performance and cost of photonic RF technology is ready to compete with existing solutions.

PROGRAMME

Photonic Terahertz Vector Network Analyzer for High-Frequency Test and Measurement Applications
Taro Eichler[1]
[1]Rohde & Schwarz

THz photodiodes
Tom Neerfeld[1]
[1]UDE

Broadband RF photonics systems enabled by dielectric waveguide technology
Guillermo Carpintero[1]
[1]UC3M

Antenna-coupled terahertz optical modulators using electro-optic polymer waveguides
Takahiro Kaji [1]
[1]NICT

Photonic Terahertz Systems and their Use as High Frequency Measurement Equipment.
Nico Vieweg [1]
[1]TOPTICA

RF over Fiber for Satellite Communications and Earth Observation
Yilmaz Uçar[1]
[1]MWP

THz photonics for system-level testing
Guillaume Ducournau[1]
[1]Univ of LILLE

Ultra-high stable laser source for microwave photonics and THz
Samir Kassi [1]
[1]Univ Grenoble Alpes & KAPAH Company

Antennas and Packaging for Multiuser Sub-THz Wireless Communication
Thomas Zwick [1]
[1]KIT

V-Band Optoelectronic Oscillator for Earth Observation Applications
Dimitrios Kastritsis [1]
[1]University of Cyprus

Laser Sources Architectures for Classical and Quantum RF and Optical Sensing”
Daniel Dolfi[1]
[1]THALES

THz transistors
Peter Huggard [1]
[1]Rutherford Appleton Labs