

9th THz-Bio International Workshop - online meeting - April 19-23, 2021

all times in the schedule are referred to the current Day Light Saving - Central Europe Time zone (Rome, Paris, Berlin)

Day 1: Monday, April 19th

<i>CET</i>	Welcome & Introduction	School Directors and Workshop Co-chairs
12:30	THz-Bio 2020 Introduction	Gian Piero Gallerano, <i>ENEA-Frascati, Italy</i> Olga Zeni, <i>CNR-IREA, Napoli, Italy</i> .
12:45	EISBem Introduction	Maria Rosaria Scarfi, <i>CNR-IREA, Napoli, Italy</i> .
	Session 1.1: Medical Applications I	Chair: Vincent Wallace
13:00	Cell demethylation using resonant terahertz radiation for potential cancer treatment	Joo-Hiuk Son, <i>University of Seoul, Seoul, Republic of Korea</i> .
13:30	Terahertz in vivo imaging for improved skin diagnosis and treatment	Emma Mc Pherson, <i>Physics Department, Warwick University, Coventry, UK</i> .
14:00	Applications of THz spectroscopy and holographic approach for diagnostics of dry pellet of human blood plasma	Olga Smolyanskaya, <i>ITMO University, Saint-Petersburg, Russia</i> .
14:30	Remote Diagnostics of Human Psychoemotional States by the Infrared – Terahertz Image from Face Areas	Olga Cherkasova, <i>Institute of Laser Physics of SB RAS, Russia</i> .
14:50 - 15:20	<i>Break</i>	
	Session 1.2: 5G Technology	Chair: Patrick Mounaix
15:20	This is your Brain on 5G	Peter Siegel, <i>THz Global, La Canada, CA, USA</i> .
15:50	What do we know about 5G Wireless Communication and Health Effects?	Myrtill Simko, <i>Strömstad Akademi, Strömstad, Sweden; SciProof International AB</i> .
16:20 - 16:30	<i>Break</i>	
	Poster session 01: Spectroscopy, Tech-Med, Technology	
16:30 - 17:00	THz Sources and Activities at the ENEA Center of Frascati	Emilio Giovenale, <i>ENEA - Frascati, Italy</i> .
16:30 - 17:00	Terahertz filter-gratings	Martin Koch, <i>Philipps University of Marburg, Germany</i> .

Day 2: Tuesday, April 20th

<i>CET</i>	Session 2.1 - Attract Project I	Chair: Patrizia Lamberti
12:30	ATTRACT PROJECT - Breakthrough detection and imaging technologies from idea to real world application	Pablo Garcia Tello, <i>CERN, Geneva, Switzerland.</i>
13:00	Development of an active Terahertz spectro-imaging system	Pedro Martin-Mateos, <i>Univ. Carlos III de Madrid, Madrid, Spain.</i>
13:20	Nonlinear THz studies at the TeraFERMI beamline	Andrea Perucchi, <i>INSTM and Elettra -Sincrotrone Trieste.</i>
13:40 - 14:00	<i>Break</i>	
	Session 2.2 - Attract Project II	Chair: Patrizia Lamberti
14:00	Between photonics and electronics: 2D materials for THz technologies	Alessandro Tredicucci, <i>Dept. of Physics, University of Pisa, Italy.</i>
14:20	Tunable superconducting GHz-THz radiation sensors	Federico Paolucci, <i>INFN – Section of Pisa, Italy.</i>
14:40	Graphene based THz detectors: focus to bio-applications	Polina Kuzhir, <i>Institute of Photonics, University of Eastern Finland, Finland.</i>
15:00 - 15:10	<i>Break</i>	
	Session 2.3 - Technical	Chair: Myrtill Simko
15:10	Lytid solutions for THz technologies and applications	Anna Golinelli, <i>Lytid SAS, Orsay, France.</i>
15:40	Exploring Terahertz Applications in Emerging Sciences and Technology	Cliff Rowland, <i>Electron-Mec/Virginia Diodes – Italy/Usa.</i>
16:10	Highly sensitive broadband terahertz cameras for biology laboratories	Clément Jany, <i>TiHive Technologies, Grenoble, France.</i>
16:40 - 17:00	<i>Break</i>	
	Poster session 02: Attract Project	
17:00 - 17:30	Graphene Golay micro-cell arrays for a color-sensitive terahertz imaging sensor	Erik Betz-Guttner, <i>University of Trieste, Italy.</i>
17:00 – 17:30	Phase-contrast THz-CT for non-destructive testing	Peter Fosoderer, <i>RECENDT, Linz, Austria.</i>
17:00 - 17:30	Taking Hyperspectral Terahertz Imaging to the Industry	Farid Ullah Kahn, <i>Universidad Carlos III de Madrid, Spain.</i>

Day 3: Wednesday, April 21st

<i>CET</i>	Session 3.1: Spectroscopy I	Chair: Alexander Shkurinov
12:30	Confined Water Molecules: THz spectroscopy of ortho- to para-water conversion	Martin Dressel, <i>University of Stuttgart, Germany.</i>
13:00	Acceleration of collective orientation in nano-confined water of DMPC	Gun-Sik Park, <i>Seoul National University, Korea.</i>
13:30	Study of THz optical properties of albumin dry pellets with varying glucose concentration	Anastasiya Lykina, <i>ITMO University, Saint-Petersburg, Russia.</i>
13:50 - 14:10	<i>Break</i>	
	Session 3.2: Medical applications II	Chair: Emma MacPherson
14:10	Intraoperative diagnosis of human brain gliomas using THz spectroscopy and imaging	Olga Cherkasova, <i>Institute of Laser Physics of SB RAS, Russia.</i>
14:40	Early screening of diabetic foot syndrome by terahertz imaging	Goretti Hernandez-Cardoso, <i>Centro de Investigaciones en Óptica, León, Mexico.</i>
15:00	Diagnosing diabetic foot with THz imaging: A progress report	Enrique Castro Camus, <i>Centro de Investigaciones en Óptica, León, Mexico.</i>
15:30	Breast Carcinoma Segmentation Based on Terahertz Refractive Index Thresholding	Quentin Cassar, <i>University of Bordeaux, IMS UMR CNRS, Talence, France</i>
15:50	Field exposure and dosimetry in search of genotoxic effects of THz radiation in vitro	Thomas Kleine-Ostmann, <i>Physikalisch-Technische Bundesanstalt (PTB), Braunschweig, Germany.</i>
16:20 – 16:30	<i>Break</i>	
	Poster session 03: Spectroscopy, Imaging, Technology	
16:30 - 17:00	Investigation of the influence of the stomatal activity on the water content of plant leaves under drought stress using THz spectroscopy	Jochen Taiber, <i>Philipps University of Marburg, Germany.</i>
16:30 - 17:00	THz imaging activities at IREA – CNR	Sonia Zappia, <i>CNR IREA, Napoli, Italy.</i>
16:30 - 17:00	Humidity and temperature can affect wire-bound THz communications	Martin Koch, <i>Philipps University of Marburg, Germany.</i>

Day 4: Thursday, April 22nd

<i>CET</i>	Session 4.1: Mechanisms of interaction	Chair: Thomas Kleine-Ostmann
12:30	Terahertz Spectroscopy of Biological Molecules and Tissues	Masahiko Tani, <i>Research Center for Development of Far-Infrared Region, University of Fukui, Fukui, Japan.</i>
13:00	Genome-wide mRNA-seq analysis in Human Fibroblasts exposed to 25 GHz	Valeria Franchini, <i>Scientific Department of Army Medical Center of Rome, Roma, Italy.</i>
13:20	Comparison between effective medium theory models for the dielectric response of biological tissues to terahertz radiation	Goretti Hernandez-Cardoso, <i>Centro de Investigaciones en Óptica, León, Mexico.</i>
13:40	Terahertz perturbation of the nanoscale biomembrane landscape	P. Thomas Vernier, <i>Old Dominion University, Norfolk, VA, USA.</i>
14:10 - 14:40	<i>Break</i>	
	Session 4.2: Spectroscopy II	Chair: Gun-Sik Park
14:40	Water status measurements of plants using THz spectroscopy	Martin Koch, <i>Philipps University of Marburg, Germany</i>
15:10	Monitoring the Porosity of Pharmaceutical Tablets Using THz Frequency Domain Spectroscopy	Anis MoradiKouchi, <i>Chalmers University of Technology, Gothenburg, Sweden.</i>
15:30	On chip Frequency Domain Terahertz Spectroscopy of Liquids	Juan Cabello-Sanchez, <i>Chalmers University of Technology, Gothenburg, Sweden.</i>
15:50	Terahertz radiation emission of liquid metal droplets	Alexander Shkurinov, <i>M.V.Lomonosov Moscow State Univ., Russia.</i>
16:20	Self-Assembling of Lysozyme: Structural and Elastic Investigations	Sara Catalini, <i>European Laboratory for Non-Linear Spectroscopy (LENS), Sesto Fiorentino, Italy.</i>
16:40 - 17:00	<i>Break</i>	
	Poster session 04: Imaging, Technology, Tech-Med	
17:00 - 17:30	THz Near-field Nano-imaging of Streptococcus mutans UA159	Min Hu, <i>Terahertz Research Center, UESTC Chengdu, China.</i>
17:00 - 17:30	Wide Band Compact FELs for Applications in the THz Region	Andrea Doria, <i>ENEA - Frascati, Italy.</i>
17:00 - 17:30	Comparing Techniques for in vivo Skin Hydration Measurement	Hannah Lindley-Hatcher, <i>Warwick University, UK.</i>

Day 5: Friday, April 23rd

<i>CET</i>	Session 5.1: Biological Effects and Biomedical Imaging I	Chair: Olga Smolyanskaya
12:30	Biological effects of millimeter waves on neurons and related cells	Vincent Wallace, <i>Uni Western Australia, Perth Australia.</i>
13:00	Terahertz diffractive structures for compact skin cancer detection setup	Pawel Komorowski, <i>Warsaw University of Technology, Warsaw, Poland.</i>
13:20	Analysis of diffusion and effects of substances applied over stratum corneum samples using THz imaging	Mariana Alfaro, <i>Universidad Autónoma de Aguascalientes, México.</i>
13:40	Development of a 0.6 THz Reflection Microscope for Dermatology	Michele Ortolani, <i>Sapienza Università Roma, Italy.</i>
14:00 - 14:20	<i>Break</i>	
	Session 5.2: Biological Effects and Biomedical Imaging II	Chair: Peter Siegel
14:20	Millimeter waves in bioelectromagnetics and body-centric applications	Maxim Zhadobov, <i>Institut d'Électronique et de Télécommunications de Rennes (IETR). France.</i>
14:50	The sub-THz frequency behavior of human sweat ducts	Yuri Feldman, <i>Department of Applied Physics, Hebrew University of Jerusalem, Jerusalem, Israel.</i>
15:20	Signatures of H ₅ O ₂ ⁺ cation formation in vibrational spectra of pigment melanin call for reinterpretation of previously published DC conductivity, EPR and μSR data	Konstantin Motovilov, <i>Moscow Institute of Physics and Technology, Moscow, Russia.</i>
15:40	Ferroelectric and quantum phenomena in the electric dipole lattice of water molecules.	Boris Gorshunov, <i>Moscow Institute of Physics and Technology, Moscow, Russia.</i>
16:00 - 16:10	<i>Break</i>	
16:10 - 16:40	Final Discussion & Concluding Remarks	
16:40 – 17:30	Breakout session with Technical Exhibitors	Room-1 Lytid - Room-2 TiHive