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# MONDAY, AUGUST 28, 2017

08:00 -  
10:00

## MONDAY PLENARY

Chairperson: Peter Siegel

COZUMEL  
ROOM

08:30

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MP.1

[Federico Capasso](#)

Harvard University, United States

09:15

THZ QCL FREQUENCY COMBS AND THEIR APPLICATIONS.....4

MP.2

[Qing Hu](#)

Massachusetts Institute Of Technology, United States

10:30 - 12:00

## COMMUNICATIONS SYSTEMS

COZUMEL  
ROOM

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10:30

300-GHZ-BAND CMOS WIRELESS TRANSCEIVER AND ITS FUTURE.....8

MA1.1

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Hiroshima University, Japan

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Christopher Grötsch<sup>1</sup>; Axel Tessmann<sup>2</sup>; Arnulf Leuther<sup>2</sup>; Ingmar Kallfass<sup>1</sup>  
<sup>1</sup>Institute of Robust Power Semiconductor Systems, University of Stuttgart, Germany; <sup>2</sup>Fraunhofer IAF, Germany

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Janusz Grzyb<sup>1</sup>; Pedro Rodriguez Vazquez<sup>1</sup>; Neelanjan Sarmah<sup>1</sup>; Bernd Heinemann<sup>2</sup>; Ullrich Pfeiffer<sup>1</sup>  
<sup>1</sup>University of Wuppertal, Germany; <sup>2</sup>Innovations for High Performance Microelectronics (IHP), Germany

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Qiuyu Wu; Changxing Lin; Bin Lu; Li Miao; Xin Hao; Zhaohui Wang; Yi Jiang; Wenqiang Lei; Xianjin Deng; Jun Yao; Jian Zhang  
Institute of Electronic Engineering, China Academy of Engineering Physics, China

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Kathirvel Nallappan; Hichem Guerboukha; Chahé Nerguizian; Maksim Skorobogatiy  
Ecole Polytechnique de Montreal, Canada

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Markus A. Huber<sup>1</sup>; Fabian Mooshammer<sup>1</sup>; Markus Plankl<sup>1</sup>; Leonardo Viti<sup>2</sup>; Fabian Sandner<sup>1</sup>; Lukas Z. Kastner<sup>1</sup>; Tobias Frank<sup>1</sup>; Jaroslav Fabian<sup>1</sup>; Miriam Vitiello<sup>2</sup>; Tyler L. Cocker<sup>1</sup>; Rupert Huber<sup>1</sup>

<sup>1</sup>University of Regensburg, Germany; <sup>2</sup>NEST CNR - Istituto Nanoscienze and Scuola Normale Superiore, Italy

10:30 - 12:00	TERAHERTZ RTDS	XCARET ROOM
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Tokyo Institute of Technology, Japan

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Kosuke Murano<sup>1</sup>; Shintaro Fukuma<sup>2</sup>; Safumi Suzuki<sup>2</sup>; Masahiro Asada<sup>2</sup>; Withawat Withayachumnankul<sup>3</sup>; Toshiyuki Tanaka<sup>1</sup>; Yasuaki Monnai<sup>1</sup>

<sup>1</sup>Keio University, Japan; <sup>2</sup>Tokyo Institute of Technology, Japan; <sup>3</sup>The University of Adelaide, Australia

11:00	PHASE LOCKING OF RESONANT-TUNNELING-DIODE TERAHERTZ OSCILLATORS.....30	MA3.3
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Kota Ogino; Safumi Suzuki; Masahiro Asada  
Tokyo Institute of Technology, Japan

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	<u>Mingming Bian</u> China Academy of Space Technology, China	
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	<u>Paul Goldsmith</u> NASA Jet Propulsion Laboratory, United States	

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Eric Bryerton; Jeffrey Hesler  
Virginia Diodes, Inc., United States

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STFC / RAL Space, United Kingdom

14:00 - 15:15	COMPONENTS FOR COMMUNICATIONS SYSTEMS	COZUMEL ROOM
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Jianjun Ma<sup>1</sup>; Nicholas Karl<sup>1</sup>; Sara Bretin<sup>2</sup>; Guillaume Ducournau<sup>2</sup>; Daniel Mittleman<sup>1</sup>  
<sup>1</sup>Brown University, United States; <sup>2</sup>IEMN (Institute of Electronics, Microelectronics and Nanotechnology) University of Lille, France

14:15	MULTIPLEXING OF TERAHERTZ WIRELESS COMMUNICATION CHANNELS USING VORTEX BEAMS.....50	MB1.2
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Kathirvel Nallappan<sup>1</sup>; Hichem Guerboukha<sup>1</sup>; Mohamed Seghilani<sup>2</sup>; Tian Ma<sup>1</sup>; José Azaña<sup>2</sup>; Chahé Nerguizian<sup>1</sup>; Maksim Skorobogatiy<sup>1</sup>  
<sup>1</sup>Ecole Polytechnique de Montreal, Canada; <sup>2</sup>Institut National de la Recherche Scientifique, Canada



14:30	LIQUID METALS FOR ACTIVE TERAHERTZ WAVEGUIDES.....51	MB1.3
	<p><u>Kimberly Reichel</u><sup>1</sup>; Ishan Joshipura<sup>2</sup>; Nicolas Lozada-Smith<sup>1</sup>; Rajind Mendis<sup>1</sup>; Michael Dickey<sup>2</sup>; Daniel Mittleman<sup>1</sup></p> <p><sup>1</sup>Brown University, United States; <sup>2</sup>North Carolina State University, United States</p>	
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	<p><u>Iulia Dan</u><sup>1</sup>; Benjamin Schoch<sup>1</sup>; Sandrine Wagner<sup>2</sup>; Arnulf Leuther<sup>2</sup>; Gülesin Eren<sup>1</sup>; Ingmar Kallfass<sup>1</sup></p> <p><sup>1</sup>University of Stuttgart, Institute for Robust Power Semiconductor Systems, Germany; <sup>2</sup>Fraunhofer IAF, Germany</p>	
14:00 - 15:30	NONLINEAR THZ MEASUREMENTS I	TULUM ROOM
	Chairperson: Richard Averitt	
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	<p><u>Jigang Wang</u></p> <p>Iowa State University and Ames lab, United States</p>	
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Institute of Applied Physics RAS, Russian Federation

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Ruhr-Universität Bochum, Germany

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Jessica Boland<sup>1</sup>; Alberto Casadei<sup>2</sup>; Gözde Tütüncouglu<sup>2</sup>; Federico Matteini<sup>2</sup>;  
Christopher Davies<sup>1</sup>; Francesca Amaduzzi<sup>2</sup>; Hannah Joyce<sup>3</sup>; Laura Herz<sup>1</sup>; Anna  
Fontcuberta i Morral<sup>2</sup>; Michael Johnston<sup>1</sup>  
<sup>1</sup>University of Oxford, United Kingdom; <sup>2</sup>École Polytechnique Fédérale de Lausanne,  
Switzerland; <sup>3</sup>University of Cambridge, United Kingdom

14:00 - 15:30	<b>NOVEL COMPONENTS I</b>	<b>XCARET ROOM</b>
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Juan Bueno<sup>1</sup>; Ozan Yurduseven<sup>2</sup>; Nuria Llobart<sup>2</sup>; Stephen Yates<sup>1</sup>; Andrea Neto<sup>2</sup>;  
Jochem Baselmans<sup>1</sup>  
<sup>1</sup>SRON Netherlands Institute for Space Research, Netherlands; <sup>2</sup>Delft University of  
Technology, Netherlands

**14:15**      **DYNAMIC ORGANIC LENS USING PHOTSENSITIVE SEMICONDUCTOR (P3HT:PCBM) FOR MILLIMETER-WAVE APPLICATIONS.....66**      **MB3.2**

Andre Sarker Andy; James William Ewart Kneller; Oleksandr Sushko; Rostyslav Dubrovka; Clive Parini; Theo Kreouzis; Robert Donnan  
Queen Mary University of London, United Kingdom

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Durham University, United Kingdom

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Delft University of Technology, Netherlands

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Gerhard Hamberger<sup>1</sup>; Stefan Trummer<sup>2</sup>; Uwe Siart<sup>3</sup>; Thomas Eibert<sup>3</sup>  
<sup>1</sup>Technische Universität München (Lehrstuhl für Hochfrequenztechnik), Germany; <sup>2</sup>Astyx GmbH, Germany; <sup>3</sup>Technical University of Munich, Germany

**14:00 - 15:30**      **ASTRONOMICAL & SPACE-BASED MEASUREMENT SYSTEMS II**      **ISLA MUJERES ROOM**

Chairperson: Paul Goldsmith

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NASA-JPL/Caltech, United States

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Wei Jun<sup>1</sup>; Xianqiang He<sup>2</sup>; Mingsen Lin<sup>3</sup>; Lei Ding<sup>4</sup>  
<sup>1</sup>Shanghai Institute of Technical Physics, China; <sup>2</sup>Second Institute of Oceanography, SOA, China; <sup>3</sup>National Satellite Ocean Application Service, SOA, China; <sup>4</sup>Shanghai Institute of Technical Physics, Chinese Academy of Sciences,, China

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David Naylor<sup>1</sup>; Ian Veenendaal<sup>1</sup>; Brad Gom<sup>1</sup>; Trevor Fulton<sup>1</sup>; Willem Jellema<sup>2</sup>; Peter Ade<sup>3</sup>; Martin Eggens<sup>4</sup>  
<sup>1</sup>University of Lethbridge, Canada; <sup>2</sup>University of Groningen, Netherlands; <sup>3</sup>Cardiff University, United Kingdom; <sup>4</sup>SRON, Netherlands

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Darren Hayton<sup>1</sup>; Jeanne Treuttel<sup>1</sup>; Erich Schlecht<sup>1</sup>; Choonsup Lee<sup>1</sup>; Jose Siles<sup>1</sup>; Robert Lin<sup>1</sup>; Imran Mehdi<sup>1</sup>; Alain Maestrini<sup>2</sup>; Bertrand Thomas<sup>3</sup>  
<sup>1</sup>JPL, United States; <sup>2</sup>LERMA, France; <sup>3</sup>Radiometer Physics GmbH, Germany

16:00 - 17:30	MANIPULATION OF THZ WAVES	COZUMEL ROOM
Chairperson: Masayoshi Tonouchi		

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 Bordeaux University, France

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Tian Ma; Kathirvel Nallappan; Hichem Guerboukha; Maksim Skorobogatiy  
 Ecole Polytechnique de Montreal, Canada

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<p>Jingwen Li; <u>Tian Ma</u>; Kathirvel Nallappan; Hichem Guerboukha; Maksim Skorobogatiy Ecole Polytechnique de Montreal, Canada</p>		
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<p><u>Fumiyoshi Kuwashima</u><sup>1</sup>; Takuya Shirao<sup>1</sup>; Yusuke Akamine<sup>1</sup>; Kazuyuki Iwao<sup>1</sup>; Manatsu Ooi<sup>1</sup>; Naoya Sakaue<sup>1</sup>; Takurou Sirasaki<sup>1</sup>; Siori Gouda<sup>1</sup>; Masahiko Tani<sup>2</sup>; Kazuyoshi Kurihara<sup>3</sup>; Kohji Yamamoto<sup>2</sup>; Osamu Morikawa<sup>4</sup>; Hideaki Kitahara<sup>2</sup>; Makoto Nakajima<sup>5</sup> <sup>1</sup>Fukui Univ. of Tech., Japan; <sup>2</sup>Research Center for Development of Far-Infrared Region, University of Fukui, Japan; <sup>3</sup>Faculty of Education and Regional Studies, University, Japan; <sup>4</sup>Chair of Liberal Arts, Japan Coast Guard Academy, Japan; <sup>5</sup>Institute of Laser Engineering, Osaka University, Japan</p>		
16:00 - 17:45	NONLINEAR THZ MEASUREMENTS II	TULUM ROOM
<p>Chairperson: Xi-Cheng Zhang</p>		
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Matthias Hoffmann  
Stanford University

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17:00	<b>HETERODYNE TERAHERTZ ELECTRO-OPTIC SAMPLING USING DAST CRYSTAL COUPLED WITH SI PRISM.....96</b>	MC2.4
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	<p><u>Hitoshi Ohta</u>; Susumu Okubo; Eiji Ohmichi; Takahiro Sakurai; Hideyuki Takahashi; Shigeo Hara            Kobe University, Molecular Photoscience Research Center, Japan</p>	
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	<p><u>Alexander Shkurinov</u>            Lomonosov Moscow State University, Russian Federation</p>	

**16:00 - 17:30 NOVEL COMPONENTS II****XCARET  
ROOM**

Chairperson: Francisco Javier Gonzalez Contreras

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<sup>1</sup>Brown University, United States; <sup>2</sup>Osaka University, Japan**17:00 MILLIMETER-WAVE NON-RECIPROCITY BASED ON CONDUCTIVITY MODULATION: PRINCIPLES, PROTOTYPES AND APPLICATIONS.....N/A MC3.5**Harish Krishnaswamy  
Columbia University, United States

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<sup>1</sup>Electronic Navigation Research Institute, Japan; <sup>2</sup>Hitachi Kokusai Electric Inc., Japan

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<sup>1</sup>Jet Propulsion Laboratory, California Institute of Technology, United States; <sup>2</sup>Rigetti Quantum Computing, United States; <sup>3</sup>Institut d'Électronique et de Télécommunications de Rennes - UMR, France

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<sup>1</sup>Tokyo Metropolitan Industrial Technology Institute, Japan; <sup>2</sup>National Institute of Information and Communications Technology, Japan



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<sup>1</sup>Faculty of Physics, Philipps-Universität Marburg, Germany; <sup>2</sup>Department of Biochemical & Chemical Engineering, Technical University of Dortmund, Germany

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<sup>1</sup>University of Cambridge, United Kingdom; <sup>2</sup>Omya International AG, Switzerland; <sup>3</sup>University of Eastern Finland, Finland; <sup>4</sup>Omya International AG, Finland

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<sup>1</sup>The university of Tokyo, Japan; <sup>2</sup>National Institute of Information and  
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<sup>1</sup>National Institute of Information and Communications Technology (NICT), Japan; <sup>2</sup>National Institute of Information and Communications Technology (NICT), Wasaeda University, Japan

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## TUESDAY, AUGUST 29, 2017

08:15 -  
10:00

### TUESDAY PLENARY

Chairperson: Gian Piero Gallerano

COZUMEL  
ROOM

08:30

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<sup>1</sup>IEMN, University of Lille, France; <sup>2</sup>INTEC-Ghent, Belgium

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<sup>1</sup>German Aerospace Center, Germany; <sup>2</sup>Humboldt Universität zu Berlin, Germany; <sup>3</sup>FELIX Laboratory, Radboud University Nijmegen, Netherlands; <sup>4</sup>CLIO/LCP, Université Paris Sud, France; <sup>5</sup>Institute for Physics of Microstructures, Russian Federation; <sup>6</sup>Leibniz Institute of Crystal Growth, Germany

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10:30 - 12:00 NOVEL COMPONENTS III

XCARET  
ROOM

Chairperson: Kiyomi Sakai

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<sup>1</sup>University of Washington, United States; <sup>2</sup>State University of New York, Stony Brook, United States

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<sup>1</sup>Shanghai Institute of Technical Physics CAS, China; <sup>2</sup>Institute of Monitoring of Climatic and Ecological Systems SB RAS, Russian Federation; <sup>3</sup>Institute of Geology and Mineralogy SB RAS, Russian Federation; <sup>4</sup>Siberian Physical-Technical Institute of Tomsk State University, Russian Federation; <sup>5</sup>High Current Electronics Institute SB RAS, Russian Federation

14:00 - 15:30	<b>METAMATERIALS I</b>	<b>COZUMEL ROOM</b>
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<sup>1</sup>Physikalisches Institut, Goethe University Frankfurt, Germany; <sup>2</sup>Ferdinand-Braun-Institut, Leibniz-Institut fur Hochstfrequenztechnik, Germany; <sup>3</sup>Department of Radiophysics, Vilnius University, Lithuania

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Universite Paris Diderot- Paris7, France

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14:00 - 15:30	<b>SPECTROSCOPY TECHNIQUES II</b>	<b>ISLA MUJERES ROOM</b>
Chairperson: Marc Scheffler		
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<sup>1</sup>Humboldt-Universität zu Berlin, Germany; <sup>2</sup>Helmholtz-Zentrum Berlin für Materialien und Energie, Germany; <sup>3</sup>Charité - Universitätsmedizin Berlin, Germany

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<sup>1</sup>Center for Advanced Meta-materials, Korea, Republic of; <sup>2</sup>Institute of Laser Engineering, Osaka University, Japan

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<b>16:00 - 17:30</b>	<b>SILICON THZ SYSTEMS</b>	<b>TULUM ROOM</b>
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Muhammad Ali; Matteo Perenzoni; Marco Zanoli  
Center for Materials and Microsystems - Fondazione Bruno Kessler (FBK), Trento, IT, Italy

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<sup>1</sup>German Aerospace Center (DLR), Germany; <sup>2</sup>IHP, Germany

**16:00 - 17:30**      **QCL II**      **XCARET ROOM**

Chairperson: Qing Hu

**16:00**      **MODELING AND DESIGN OF AL<sub>0.25</sub>GA<sub>0.75</sub>AS/GAAS TERAHERTZ QUANTUM CASCADE LASERS WITH A REALISTIC BAND STRUCTURE.....316**      **TC3.1**

Elodie Strupiechonski  
CINVESTAV CONACYT, Mexico

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<sup>1</sup>M.V. Lomonosov Moscow State University, Russian Federation; <sup>2</sup>Kursk Construction College, Russian Federation; <sup>3</sup>South-West State University, Russian Federation; <sup>4</sup>Belgorod National Research University, Russian Federation; <sup>5</sup>University of Regensburg, Germany

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<sup>1</sup>Physikalisches Institut, Goethe Universität Frankfurt, Germany; <sup>2</sup>Laboratory of Crystallography, University of Bayreuth, Germany

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<sup>1</sup>Pohang Accelerator Laboratory, Korea, Republic of; <sup>2</sup>Yonsei University, Korea, Republic of

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<sup>1</sup>Simon Fraser University, Canada; <sup>2</sup>Dalhousie University, Canada

17:30 -  
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<sup>1</sup>Third Military Medical University, China; <sup>2</sup>Tianjin University, China

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<sup>1</sup>Ioffe Institute, Russian Federation; <sup>2</sup>St Petersburg Academic University, Russian Federation; <sup>3</sup>St Petersburg Clinical hospital of RAS, Russian Federation

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<sup>1</sup>National Institute of Information and Communications Technology, Japan; <sup>2</sup>RIKEN Center for Advanced Photonics, Japan

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<sup>1</sup>ITMO University, Russian Federation; <sup>2</sup>Federal Almazov North-West Medical Research Center, Russian Federation; <sup>3</sup>Petrov Research Institute of Oncology, Russian Federation; <sup>4</sup>Saratov National Research State University, Russian Federation

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<sup>1</sup>Busker institute of nuclear physics, Russian Federation; <sup>2</sup>ITMO University, Russian Federation; <sup>3</sup>Institute for Physics of Microstructures, Russian Federation; <sup>4</sup>Institute of Laser Physics, Russian Federation

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<sup>1</sup>CEA Grenoble, France; <sup>2</sup>CEA, CNRS, Univ. Aix-Marseille, France

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<sup>1</sup>National Institute of Health Sciences, Japan; <sup>2</sup>Shizuoka University, Japan

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<sup>1</sup>University of Arkansas, United States; <sup>2</sup>Oklahoma State University, United States

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<sup>1</sup>Philipps-Universitaet Marburg, Germany; <sup>2</sup>University Aalen, Germany

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<sup>1</sup>IMS - University of Bordeaux, France; <sup>2</sup>CEATech Nouvelle-Aquitaine, France; <sup>3</sup>CEA-LETI, France

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Sadamoto<sup>2</sup>; Yoshitsugu Sawa<sup>2</sup>  
<sup>1</sup>Mitsubishi Electric Research Laboratories, United States; <sup>2</sup>Mitsubishi Electric Corporation  
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<sup>1</sup>Institute of Electronics Engineering, China Academy of Engineering Physics, China; <sup>2</sup>Institute of  
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<sup>1</sup>Instituto Tecnológico de San Luis Potosi, Mexico; <sup>2</sup>Universidad Autonoma de San Luis Potosi, Mexico

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<sup>1</sup>Universidad Carlos III de Madrid, Spain; <sup>2</sup>Luz WaveLabs, Leganés, Spain; <sup>3</sup>Physics Institute, Goethe University, Frankfurt am Main, Germany

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<sup>1</sup>General Dynamics IT, United States; <sup>2</sup>AFRL, United States

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<sup>1</sup>University of Electronic Science and Technology of China, China; <sup>2</sup>Hefei University of Technology, China

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<sup>1</sup>Center for Advanced Meta-Materials, Korea, Republic of; <sup>2</sup>Seoul National University, Korea, Republic of; <sup>3</sup>Max Planck Institute for the Structure and Dynamics of Matter, Germany

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<sup>1</sup>University of Electronic Science and Technology of China, China; <sup>2</sup>National Key Laboratory of Application Specific Integrated Circuit, Hebei Semiconductor Research Ins, China

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<sup>1</sup>CINVESTAV, Mexico; <sup>2</sup>Centre de Recherche sur l'Hétéro-Epitaxie et ses Applications (CRHEA-CNRS), France; <sup>3</sup>Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional, Mexico



## WEDNESDAY, AUGUST 30, 2017

08:15 -  
10:00

### WEDNESDAY PLENARY

Chairperson: Peter Uhd Jepsen

COZUMEL  
ROOM

08:30

TERAHERTZ NEAR-FIELD MICROSCOPY: SCIENCE, TECHNOLOGY AND  
INSIGHTS.....N/A

WP.1

Oleg Mitrofanov

University College London, London, United Kingdom.

09:15

THE LARGE MILLIMETER TELESCOPE: EARLY SCIENCE, NEW  
TECHNOLOGIES AND INSTRUMENTATION.....N/A

WP.2

David Hughes<sup>1</sup>; Itziar Arextaga<sup>1</sup>; Edgar Castillo<sup>1</sup>; Miguel Chavez<sup>1</sup>; Simon Doyle<sup>2</sup>; Neal Erickson<sup>3</sup>;  
Daniel Ferrusca<sup>1</sup>; David Gale<sup>1</sup>; Jose-Luis Hernandez Rebollar<sup>1</sup>; Alfredo Montana<sup>1</sup>; Gopal  
Narayanan<sup>3</sup>; Alexandra Pope<sup>3</sup>; Arturo Ruiz-Gomez<sup>1</sup>; David Sanchez<sup>1</sup>; F. Peter Schloerb<sup>3</sup>; Kamal  
Souccar<sup>3</sup>; Miguel Velázquez<sup>1</sup>; Grant Wilson<sup>3</sup>; Min Yun<sup>3</sup>

<sup>1</sup>Instituto Nacional de Astrofísica, Óptica y Electrónica, Mexico; <sup>2</sup>Cardiff University, United  
Kingdom; <sup>3</sup>University of Massachusetts Amherst, United States

<b>10:30 - 12:00</b>	<b>NEAR FIELD IMAGING AND SPECTROSCOPY I</b>	<b>COZUMEL ROOM</b>
Chairperson: Fritz Keilmann		
<b>10:30</b>	<b>ADVANCES IN IR AND THZ SPECTROSCOPIC NANOIMAGING.....N/A</b>	<b>WA1.1</b>
<p><u>Rainer Hillenbrand</u> CIC Nanogune, Spain</p>		
<b>11:00</b>	<b>IMAGING SINGLE NANOPARTICLES USING LASER TERAHERTZ EMISSION NANOSCOPY.....427</b>	<b>WA1.2</b>
<p><u>Pernille Klarskov</u>; Hyewon Kim; Vicki Colvin; Daniel Mittleman Brown University, United States</p>		
<b>11:15</b>	<b>SEMICONDUCTOR THZ NANOSCOPY OF SUBLIMINAL SURFACE DYNAMICS.....429</b>	<b>WA1.3</b>
<p><u>Geunchang Choi</u><sup>1</sup>; Young-Mi Bahk<sup>1</sup>; Taehee Kang<sup>1</sup>; Yoojin Lee<sup>1</sup>; Byung Hee Son<sup>2</sup>; Yeong Hwan Ahn<sup>2</sup>; Minah Seo<sup>3</sup>; Dai-Sik Kim<sup>1</sup> <sup>1</sup>Seoul National University, Korea, Republic of; <sup>2</sup>Ajou University, Korea, Republic of; <sup>3</sup>Korea Institute of Science and Technology, Korea, Republic of</p>		
<b>11:30</b>	<b>THZ NEAR-FIELD MICROSCOPES: OPTIMUM OPERATION CONDITIONS.....430</b>	<b>WA1.4</b>
<p><u>Haewook Han</u><sup>1</sup>; Youngwoong Do<sup>1</sup>; Soonsung Lee<sup>1</sup>; Jin-Woo Kim<sup>2</sup> <sup>1</sup>POSTECH, Korea, Republic of; <sup>2</sup>University of Arkansas, United States</p>		
<b>11:45</b>	<b>GUIDED TERAHERTZ PULSED REFLECTOMETRY SIMULATION WITH NEAR FIELD PROBE.....431</b>	<b>WA1.5</b>
<p>Mingming Pan; <u>Jean-Paul Guillet</u>; Frederic Fauquet; Patrick Mounaix; Dean Lewis Bordeaux University, IMS, UMR CNRS 5218, France</p>		

<b>10:30 - 12:00</b>	<b>NOVEL SOURCES I</b>	<b>TULUM ROOM</b>
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Chairperson: Roger Lewis

<b>10:30</b>	<b>HIGH-REPETITION-RATE, WIDELY TUNABLE INJECTION-SEEDED TERAHERTZ-WAVE PARAMETRIC GENERATOR.....433</b>	<b>WA2.1</b>
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Yoshikiyo Moriguchi<sup>1</sup>; Kouji Nawata<sup>2</sup>; Yuma Takida<sup>2</sup>; Yu Tokizane<sup>2</sup>; Shigenori Nagano<sup>1</sup>; Taizo Eno<sup>1</sup>; Kaoru Kumagai<sup>1</sup>; Hiroaki Minamide<sup>2</sup>

<sup>1</sup>Topcon Corporation, Japan; <sup>2</sup>Tera-Photonics Research Team, RIKEN Center for Advanced Photonics (RAP), RIKEN, Japan

<b>10:45</b>	<b>TERAHERTZ EMISSION FROM THIN METAL FILMS WITH POROUS NANOSTRUCTURES.....435</b>	<b>WA2.2</b>
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Liangliang Zhang<sup>1</sup>; Yuejin Zhao<sup>2</sup>; Xiaomei Yu<sup>3</sup>; Qun Hao<sup>2</sup>; Cunlin Zhang<sup>1</sup>; Xi-Cheng Zhang<sup>4</sup>

<sup>1</sup>Department of Physics, Capital Normal University, China; <sup>2</sup>Department of Optical Engineering, Beijing Institute of Technology, China; <sup>3</sup>Institute of Microelectronics, Peking University, China; <sup>4</sup>The Institute of Optics, University of Rochester, United States

<b>11:00</b>	<b>ROOM TEMPERATURE TUNEABLE THZ GENERATION BASED ON EXCITONIC OPTICAL NONLINEARITIES IN GAAS/ALGAAS MULTI-QUANTUM WELL STRUCTURES.....437</b>	<b>WA2.3</b>
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Avan Majeed

Sheffield university, United Kingdom

<b>11:30</b>	<b>ADVANCES IN 1550-NM DRIVEN THZ, GAAS PHOTOCONDUCTIVE SWITCHES.....438</b>	<b>WA2.4</b>
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Andrea Mingardi; Weidong Zhang; Elliott Brown

<sup>1</sup>Wright State University, United States

11:45	<b>THE ROLE OF BANDGAP ENERGY EXCESS IN SURFACE EMISSION OF TERAHERTZ RADIATION FROM SEMICONDUCTORS.....440</b>	<b>WA2.5</b>
<p><u>Mariana Alfaro-Gomez</u><sup>1</sup>; Enrique Castro-Camus<sup>2</sup>  <sup>1</sup>Universidad Autónoma de Aguascalientes, Mexico; <sup>2</sup>Centro de Investigaciones en Optica, Mexico</p>		
10:30 - 12:00	<b>GRAPHENE DEVICES I</b>	<b>XCARET ROOM</b>
<p>Chairperson: Jean Leotin</p>		
10:30	<b>RESONANT OF NON-RESONANT CONDUCTIVITY OF A COMMENSURATE TOPOLOGICAL INSULATOR-GRAPHENE HETEROSTRUCTURE IN TERAHERTZ REGIME.....442</b>	<b>WA3.1</b>
<p><u>Chao Zhang</u>; Matthew Sanderson  University of Wollongong, Australia</p>		
10:45	<b>MATERIAL-DEPENDENCIES OF THE THZ EMISSION FROM PLASMONIC GRAPHENE-BASED PHOTOCONDUCTIVE ANTENNA STRUCTURES.....444</b>	<b>WA3.2</b>
<p>Christoph Suessmeier<sup>1</sup>; Sergi Abadal<sup>2</sup>; Daniel Stock<sup>1</sup>; Stephan Schaeffer<sup>1</sup>; Eduard Alarcón<sup>2</sup>; Anna Katharina Wigger<sup>1</sup>; Seyan Ehsan Hosseinejad<sup>2</sup>; Stefan Wagner<sup>3</sup>; Albert Cabellos-Aparicio<sup>2</sup>; Max Lemme<sup>3</sup>; <u>Peter Haring Bolívar</u><sup>1</sup>  <sup>1</sup>University of Siegen, Germany; <sup>2</sup>NaNoNetworking Center in Catalunya (N3Cat), Spain; <sup>3</sup>RWTH Aachen University, Germany</p>		
11:00	<b>NONLINEAR SURFACE PLASMON POLARITON AND OPTICAL BISTABILITY OF GRAPHENE IN TERAHERTZ REGIME.....446</b>	<b>WA3.3</b>
<p>Chao Zhang; <u>Matthew Sanderson</u>  University of Wollongong, Australia</p>		
11:15	<b>TERAHERTZ CONDUCTIVITY AND SCATTERING IN FEW-LAYER STACKED GRAPHENE.....448</b>	<b>WA3.4</b>
<p><u>Ashish Chanana</u>; Prashanth R. Gopalan; Hugo Condori; Berardi Sensale-Rodriguez; Ajay Nahata  University of Utah, United States</p>		

<b>11:30</b>	<b>TERAHERTZ LIGHT-EMITTING TRANSISTOR BASED ON CURRENT INJECTION DUAL-GATE GRAPHENE-CHANNEL FET.....449</b>	<b>WA3.5</b>
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Deepika Yadav<sup>1</sup>; Youssef Tobah<sup>2</sup>; Kenta Sugawara<sup>1</sup>; Junki Mitsushio<sup>1</sup>; Gen Tamamushi<sup>1</sup>; Takayuki Watanabe<sup>1</sup>; Alexander Dubinov<sup>3</sup>; Maxim Ryzhii<sup>4</sup>; Victor Ryzhii<sup>5</sup>; Taiichi Otsuji<sup>1</sup>  
<sup>1</sup>Research Institute of Electrical Communication, Tohoku University, Sendai, Japan; <sup>2</sup>Department of Electrical and Computer Engineering, University of Texas at Austin, United States; <sup>3</sup>Institute for Physics of Microstructures, RAS, Lobachevsky State University of Nizhny Novgorod, Russian Federation; <sup>4</sup>Department of Computer Science and Engineering, University of Aizu, Japan; <sup>5</sup>Institute of Ultra-High-Frequency Semiconductor Electronics, Moscow, Russian Federation

<b>10:30 - 12:00</b>	<b>PRECISION MEASUREMENTS</b>	<b>ISLA MUJERES ROOM</b>
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Chairperson: Peiheng Wu

<b>10:30</b>	<b>ABSOLUTE CALIBRATION IN FIR RADIOMETRIC MEASUREMENTS.....451</b>	<b>WA4.1</b>
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Marco Zerbini; Giuseppe Galatola-Teka  
 ENEA Frascati, Italy

<b>10:45</b>	<b>ASYNCHRONOUS-OPTICAL-SAMPLING THZ TIME-DOMAIN SPECTROSCOPY WITH A FREE-RUNNING, DUAL-WAVELENGTH MODE-LOCKED FIBER LASER.....453</b>	<b>WA4.2</b>
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Takeshi Yasui<sup>1</sup>; Guoqing Hu<sup>2</sup>; Tatsuya Mizuguchi<sup>1</sup>; Xin Zhao<sup>2</sup>; Takeo Minamikawa<sup>1</sup>; Ting Li<sup>2</sup>; Zheng Zheng<sup>2</sup>  
<sup>1</sup>Tokushima University, Japan; <sup>2</sup>Beihang University, China

<b>11:00</b>	<b>ABSOLUTE-FREQUENCY HIGH-RESOLUTION REAL-TIME TERAHERTZ DUAL-COMB SPECTROMETER.....455</b>	<b>WA4.3</b>
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Frederik Walla; Borja Jerez; Pedro Martín-Mateos; Cristina de Dios; Pablo Acedo  
 Universidad Carlos III de Madrid, Spain



<b>11:15</b>	<b>A WAVEFRONT ANALYZER FOR TERAHERTZ TIME-DOMAIN SPECTROMETERS.....457</b>	<b>WA4.4</b>
<p><u>Emmanuel Abraham</u><sup>1</sup>; Mathilde Brossard<sup>2</sup>; Pierre Fauché<sup>3</sup>; Mathias Perrin<sup>1</sup>; Krzysztof Iwaszczuk<sup>4</sup>; Peter Uhd Jepsen<sup>4</sup>  <sup>1</sup>Bordeaux University, France; <sup>2</sup>Nethis, France; <sup>3</sup>SATT, France; <sup>4</sup>Technical University of Denmark, Denmark</p>		
<b>11:30</b>	<b>PHASE COHERENT TRANSFER AND RETRIEVAL OF TERAHERTZ FREQUENCY STANDARD VIA OPTICAL FIBER WITH <math>10^{-18}</math>-LEVEL ACCURACY AND STABILITY.....458</b>	<b>WA4.5</b>
<p><u>Shigeo Nagano</u>; Motohiro Kumagai; Hiroyuki Ito; Masatoshi Kajita; Yuko Hanado  National Institute of Information and Communications Technology, Japan</p>		
<b>11:45</b>	<b>METROLOGY OF TRANSMISSION AND REFLECTION MEASUREMENTS BY TDS.....460</b>	<b>WA4.6</b>
<p><u>Andreas Steiger</u><sup>1</sup>; Mathias Kehr<sup>1</sup>; Anselm Deninger<sup>2</sup>  <sup>1</sup>PTB, Germany; <sup>2</sup>OPTICA Photonics AG, Germany</p>		
<b>14:00 - 15:30</b>	<b>NANOSTRUCTURES</b>	<b>COZUMEL ROOM</b>
<p>Chairperson: Michael Johnston</p>		
<b>14:00</b>	<b>TERAHERTZ THERMOMETRY OF GOLD NANOSPHERES IN WATER.....462</b>	<b>WB1.1</b>
<p><u>Fabio Novelli</u>; James W. M. Chon; Jeffrey A. Davis  Swinburne University of Technology, Australia</p>		
<b>14:15</b>	<b>A TERAHERTZ DETECTOR WITH SINGLE WALLED CARBON NANOTUBE P-N JUNCTION.....464</b>	<b>WB1.2</b>
<p><u>Yuki Ochiai</u>; Daichi Suzuki; Yukio Kawano  Tokyo Institute of Technology, Japan</p>		

**14:30**                      **THZ EMISSION AND DETECTION BY QUANTUM FARADAY EFFECT IN SILICON NANOSANDWICH-STRUCTURES.....466**                      **WB1.3**

Andrew Chernev<sup>1</sup>; Nikolay Bagraev<sup>2</sup>; Vyacheslav Chromov<sup>2</sup>; Leonid Klyachkin<sup>2</sup>; Anna Malyarenko<sup>2</sup>; Nikolay Rul<sup>2</sup>; Anton Emelyanov<sup>1</sup>; Michael Dubina<sup>1</sup>  
<sup>1</sup>St Petersburg Academic University, Russian Federation; <sup>2</sup>Ioffe Institute, Russian Federation

**14:45**                      **FAST DYNAMICS OF PHOTOEXCITED ELECTRON-HOLE PLASMA IN GAAS NANOWIRES.....467**                      **WB1.4**

Valerii Trukhin<sup>1</sup>; Alexey Bouravleuv<sup>2</sup>; Iliia Mustafin<sup>1</sup>; Anton Eliseev<sup>1</sup>; George Cirlin<sup>2</sup>; Joono-Pekko Kakko<sup>3</sup>; Harri Lipsanen<sup>3</sup>  
<sup>1</sup>Ioffe Institute, ITMO University, Russian Federation; <sup>2</sup>St Petersburg Academic University, Russian Federation; <sup>3</sup>Aalto University, Finland

**15:00**                      **TRANSMITTANCE AND SHEET CONDUCTIVITY OF MONOLAYER MOS2 MEASURED BY TERAHERTZ TIME-DOMAIN SPECTROSCOPY.....469**                      **WB1.5**

Jiafu Wang; Junhong Tian; Tao Li; Jun Zhou; Sen Gong  
University of Electronic Science and Technology of China, China

**15:15**                      **TERAHERTZ SPECTROSCOPY STUDY IN GETE/SB2TE3 AND GE2SB2TE5 PHASE CHANGE MEMORY MATERIALS.....471**                      **WB1.6**

Kotaro Makino<sup>1</sup>; Kosaku Kato<sup>2</sup>; Keisuke Takano<sup>2</sup>; Shota Kuromiya<sup>2</sup>; Makoto Nakajima<sup>2</sup>; Yuta Saito<sup>1</sup>; Junji Tominaga<sup>1</sup>; Takashi Nakano<sup>1</sup>  
<sup>1</sup>National Institute of Advanced Industrial Science and Technology (AIST), Japan; <sup>2</sup>Institute of Laser Engineering, Osaka University, Japan

14:00 - 15:30	NOVEL SOURCES II	TULUM ROOM
Chairperson: Hani Sherry		
14:00	ONE PULSE SPECTROSCOPIC SYSTEM USING MULTIWAVELENGTH IS-TPG.....473	WB2.1
<p><u>Kosuke Murate</u><sup>1</sup>; Kazuki Maeda<sup>1</sup>; Shin'ichiro Hayashi<sup>2</sup>; Kodo Kawase<sup>1</sup>  <sup>1</sup>Nagoya University, Japan; <sup>2</sup>National Institute of Information and Communications Technology, Japan</p>		
14:15	SCALING UP COMPACT TERAHERTZ SOURCES: GENERATING MV/CM THZ FIELDS.....475	WB2.2
<p><u>Amrutha Gopal</u><sup>1</sup>; Abel Woldegeorgis<sup>1</sup>; Ronny Groesse<sup>2</sup>; Takayuki Kurihara<sup>3</sup>  <sup>1</sup>Helmholtz Institute Jena &amp; Fredrich-Schiller University, Jena, Germany; <sup>2</sup>Fredrich-Schiller University, Jena, Germany; <sup>3</sup>Department of Physics, University of Konstanz, Universitätsstr. 10 Konstanz, 78457 Germany, Germany</p>		
14:30	FREQUENCY-SELECTIVE MULTI-FREQUENCY THZ REFERENCE SOURCE USING MZM-BASED FLAT COMB GENERATOR FOR SIMULTANEOUS PHASE-LOCKING OF THZ-QCLS.....476	WB2.3
<p><u>Isao Morohashi</u>; Yoshihisa Irimajiri; Akira Kawakami; Takahide Sakamoto; Norihiko Sekine; Akifumi Kasamatsu; Iwao Hosako  National Institute of Information and Communications Technology, Japan</p>		
14:45	HIGH-POWER PHOTOCONDUCTIVE TERAHERTZ SOURCE ENABLED BY THREE-DIMENSIONAL LIGHT CONFINEMENT.....478	WB2.4
<p><u>Nezih Yardimci</u>; Semih Cakmakyapan; Soroosh Hemmati; Mona Jarrahi  University of California - Los Angeles, United States</p>		
15:00	PROGRESS IN CONTINUOUS WAVE THZ MOLECULAR LASER OPTICALLY PUMPED BY A QUANTUM CASCADE LASER.....480	WB2.5
<p>Antoine Pagies; Guillaume Ducournau; <u>Jean-Francois Lampin</u>  IEMN/CNRS, France</p>		

**15:15**      **A RADIAL DOUBLE-METAL BIAS-FREE THZ EMITTER FOR COAXIAL CABLE TRANSMISSION.....482**      **WB2.6**

Paul Gow; Sam Berry; Vasilis Apostolopoulos  
University of Southampton, United Kingdom

**14:00 - 15:30**      **GRAPHENE DEVICES II**      **XCARET ROOM**

Chairperson: Jigang Wang

**14:00**      **A HETERODYNE GRAPHENE FET DETECTOR AT 400 GHZ.....484**      **WB3.1**

Andrey Generalov; Michael Andersson; Xinxin Yang; Andrei Vorobiev; Jan Stake  
Chalmers University of Technology, Sweden

**14:15**      **ASYMMETRIC DUAL GRATING GATE BILAYER GRAPHENE FET FOR DETECTION OF TERAHERTZ RADIATION.....486**      **WB3.2**

Juan Antonio Delgado Notario<sup>1</sup>; Vito Clerico<sup>1</sup>; Yahya Meziani<sup>1</sup>; Enrique Diez<sup>1</sup>; Jesús Enrique Velázquez Pérez<sup>1</sup>; Deepika Yadav<sup>2</sup>; Taiichi Otsuji<sup>2</sup>; Takachi Taniguchi<sup>3</sup>; Kenji Watanabe<sup>3</sup>  
<sup>1</sup>University of Salamanca, Spain; <sup>2</sup>Research Institute of Electrical Communications, Japan; <sup>3</sup>National Institute of Material Sciences, Japan

**14:30**      **HYBRID GRAPHENE/SEMICONDUCTOR PLASMONIC TECHNOLOGY FOR ULTRA-BROADBAND TERAHERTZ COMMUNICATIONS.....488**      **WB3.3**

Josep Miquel Jornet  
University at Buffalo, United States

**15:00**      **SATURABLE ABSORPTION IN MULTILAYER EPITAXIAL GRAPHENE DRIVEN BY MID-INFRARED QUANTUM CASCADE LASERS.....490**      **WB3.4**

Panhui Huan<sup>1</sup>; Sarah Houver<sup>1</sup>; Claire Berger<sup>2</sup>; Walt A. de Heer<sup>2</sup>; Robson Ferreira<sup>1</sup>; Jerome Tignon<sup>1</sup>; Abdelkarim Ouerghi<sup>3</sup>; Sukhdeep Dhillon<sup>1</sup>; Juliette Mangeney<sup>1</sup>  
<sup>1</sup>Laboratoire Pierre Aigrain, Ecole normale supérieure, France; <sup>2</sup>Georgia Institute of Technology, Atlanta, United States; <sup>3</sup>CNRS- Laboratoire de Photonique et de Nanostructures, France

15:15	<b>TERAHERTZ ELECTROMAGNETIC RESPONSE OF THE SEMICONDUCTING POLYMER POLYFLUORENE MODIFIED WITH GRAPHENE OXIDE PARTICLES.....492</b>	<b>WB3.5</b>
<p><u>Alexander Andrianov</u>; Andrey Aleshin Ioffe Institute, Russian Federation</p>		
14:00 - 15:30	<b>SYNCHROTRONS AND ACCELERATORS</b>	<b>ISLA MUJERES ROOM</b>
<p>Chairperson: Neville Luhmann</p>		
14:00	<b>COMMITTING SINS IN THE IR AND THZ: BREAKING THE DIFFRACTION-LIMIT WITH SYNCHROTRON INFRARED NANO SPECTROSCOPY.....N/A</b>	<b>WB4.1</b>
<p><u>Michael Martin</u> Lawrence Berkeley National Laboratory, United States</p>		
14:30	<b>TERAHERMI: STATUS OF THE BEAMLINE AND PILOT EXPERIMENTS.....494</b>	<b>WB4.2</b>
<p><u>Paola Di Pietro</u><sup>1</sup>; Stefano Lupi<sup>2</sup>; Nidhi Adhlakha<sup>1</sup>; Luca Capasso<sup>1</sup>; Simone Di Mitri<sup>1</sup>; Simone Spampinati<sup>1</sup>; Cristian Svetina<sup>1</sup>; Giuseppe Penco<sup>1</sup>; Enrico Allaria<sup>1</sup>; Marco Veronese<sup>1</sup>; Eleonore Rousset<sup>1</sup>; Mauro Trovò<sup>1</sup>; Giulio Gaiò<sup>1</sup>; Luca Giannessi<sup>1</sup>; Andrea Perucchi<sup>1</sup> <sup>1</sup>Elettra Sincrotrone Trieste, Italy; <sup>2</sup>CNR-IOM and Dip. di Fisica, Università di Roma "La Sapienza", Italy</p>		
14:45	<b>DETERMINATION OF THE TIMING JITTER OF THZ-SYNCHROTRON RADIATION BY A CROSS-CORRELATION TECHNIQUE.....496</b>	<b>WB4.3</b>
<p><u>Andreas Pohl</u><sup>1</sup>; Nils Deßmann<sup>1</sup>; Arne Hoehl<sup>2</sup>; Markus Ries<sup>3</sup>; Godehard Wüstefeld<sup>3</sup>; Gerhard Ulm<sup>2</sup>; Heinz-Wilhelm Hübers<sup>1</sup> <sup>1</sup>HU Berlin / DLR Berlin, Germany; <sup>2</sup>PTB, Germany; <sup>3</sup>HZB, Germany</p>		
15:00	<b>EXPERIMENTAL RESULTS ON THE TUNABLE SUPERRADIATE THZ RADIATION FROM THE UNDULATOR IN TSINGHUA UNIVERSITY BEAMLINE.....498</b>	<b>WB4.4</b>
<p><u>Xiao Lu Su</u>; Dan Wang; Li Xin Yan; Chuan Xiang Tang Tsinghua University, China</p>		

<b>15:15</b>	<b>THZ LINEAR ACCELERATION FOR COMPACT ELECTRON AND X-RAY SOURCES.....500</b>	<b>WB4.5</b>
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Moein Fakhari; Dongfang Zhang; Arya Fallahi; Xiaojun Wu; Huseyin Cankaya; Anne-Laure Calendron; Frederike Ahr; Koustuban Ravi; Nicholas Matlis; Franz Kaertner  
DESY, Hamburg University, Germany

<b>16:00 - 17:30</b>	<b>NEAR FIELD IMAGING AND SPECTROSCOPY II</b>	<b>COZUMEL ROOM</b>
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Chairperson: Rainer Hillenbrand

<b>16:00</b>	<b>NEAR-FIELD NANOSCOPY OF CURRENT-INDUCED EXCESS NOISE IN GRAPHENE.....502</b>	<b>WC1.1</b>
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Kuan-Ting Lin<sup>1</sup>; Qianchun Weng<sup>1</sup>; Hirofumi Nema<sup>1</sup>; Sunmi Kim<sup>1</sup>; Kenta Sugawara<sup>2</sup>; Taiichi Otsuji<sup>2</sup>; Susumu Komiyama<sup>1</sup>; Yusuke Kajihara<sup>1</sup>  
<sup>1</sup>The University of Tokyo, Japan; <sup>2</sup>Tohoku University, Japan

<b>16:15</b>	<b>NEAR-FIELD MICROSCOPY WITH PHASE SENSITIVE COHERENT DETECTION EMPLOYING QUANTUM CASCADE LASERS.....504</b>	<b>WC1.2</b>
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Oleg Mitrofanov<sup>1</sup>; Leonardo Viti<sup>2</sup>; Maria Giordano<sup>2</sup>; Enrico Dardanis<sup>2</sup>; Daniele Ercolani<sup>2</sup>; Antonio Politano<sup>3</sup>; Lucia Sorba<sup>2</sup>; Miriam Vitiello<sup>2</sup>  
<sup>1</sup>University College London, United Kingdom; <sup>2</sup>NEST, Istituto Nanoscienze - CNR, Italy; <sup>3</sup>Università degli Studi della Calabria, Italy

<b>16:30</b>	<b>ANALYZING NANOSCALE OPTICAL AND THERMAL PROPERTIES IN NANOPOROUS GRAPHENE BY NEAR-FIELD INFRARED MICROSCOPY.....506</b>	<b>WC1.3</b>
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Takuya Okamoto<sup>1</sup>; Daichi Suzuki<sup>1</sup>; Yoshikazu Ito<sup>2</sup>; Takeshi Fujita<sup>3</sup>; Yukio Kawano<sup>1</sup>  
<sup>1</sup>Tokyo Institute of Technology, Japan; <sup>2</sup>University of Tsukuba, Japan; <sup>3</sup>Tohoku University, Japan

<b>16:45</b>	<b>INTEGRATED PROBES FOR NEAR FIELD THZ MICROSCOPY.....508</b>	<b>WC1.4</b>
<p><u>Naser Qureshi</u><sup>1</sup>; Angelica Yesenia Garcia Jomaso<sup>1</sup>; Joel Perez Urquizo<sup>1</sup>; Gaudencio Paz Martínez<sup>2</sup>; Jesus Garduño Mejía<sup>1</sup>; Carlos Treviño Palacios<sup>2</sup>  <sup>1</sup>Universidad Nacional Autonoma de Mexico, Mexico; <sup>2</sup>INAOE, Puebla, Mexico</p>		
<b>17:00</b>	<b>RESONANT SCATTERING PROBES IN THE TERAHERTZ RANGE.....509</b>	<b>WC1.5</b>
<p><u>Thomas Siday</u>; Michele Natrella; Jiang Wu; Huiyun Liu; Oleg Mitrofanov  University College London, United Kingdom</p>		
<b>16:00 - 17:30</b>	<b>GYROTRONS I</b>	<b>TULUM ROOM</b>
<p>Chairperson: Manfred Thumm</p>		
<b>16:00</b>	<b>DEVELOPMENT OF FUSION GYROTRONS FOR W7-X, ITER AND EU DEMO: ONGOING ACTIVITIES AND FUTURE PLANS OF KIT.....512</b>	<b>WC2.1</b>
<p><u>John Jelonnek</u><sup>1</sup>; Gaetano Aiello<sup>1</sup>; Konstantinos Avramidis<sup>1</sup>; Gerd Gantenbein<sup>1</sup>; Giovanni Grossetti<sup>1</sup>; Stefan Illy<sup>1</sup>; Zisis C. Ioannidis<sup>1</sup>; Jianbo Jin<sup>1</sup>; Parth Kalaria<sup>1</sup>; Alexander Marek<sup>1</sup>; Ioannis Pagonakis<sup>1</sup>; Tomasz Tzesnicki<sup>1</sup>; Sebastian Ruess<sup>1</sup>; Tobias Ruess<sup>1</sup>; Theo Scherer<sup>1</sup>; Martin Schmid<sup>1</sup>; Dirk Strauss<sup>1</sup>; Manfred Thumm<sup>1</sup>; Fabian Wilde<sup>2</sup>; Chuanren Wu<sup>1</sup>; Andy Zein<sup>1</sup>  <sup>1</sup>Karlsruhe Institute of Technology, Germany; <sup>2</sup>IPP Greifswald, Germany, Germany</p>		
<b>16:30</b>	<b>DEVELOPMENT OF MW GYROTRONS AND EQUATORIAL LAUNCHER FOR ITER.....515</b>	<b>WC2.2</b>
<p><u>Koji Takahashi</u>; Yasuhisa Oda; Ryosuke Ikeda; Takayuki Kobayashi; Shinichi Moriyama; Keishi Sakamoto; Masayuki Terakado; Ganji Abe; Masami Isozaki  National Institutes for Quantum and Radiological Science and Technology (QST), Japan</p>		
<b>16:45</b>	<b>STATUS OF TESTING ACTIVITIES ON GYROTRONS FOR MAGNETIC FUSION APPLICATIONS.....516</b>	<b>WC2.3</b>
<p><u>Kevin Felch</u>; Monica Blank; Steve Cauffman; Philipp Borchard  Communications and Power Industries, United States</p>		

**17:00**      **LOW POWER TESTS OF LINEAR AND CIRCULAR POLARIZERS AT 170 GHZ FOR EC HEATING IN ITER.....518**      **WC2.4**

Hannah Hoffmann<sup>1</sup>; Sudheer Jawa<sup>1</sup>; Michael Shapiro<sup>1</sup>; Richard Temkin<sup>1</sup>; Gregory Hanson<sup>2</sup>  
<sup>1</sup>Massachusetts Institute of Technology, United States; <sup>2</sup>Oak Ridge National Laboratory, United States

**17:15**      **EXPERIMENTAL STUDY ON FURTHER PERFORMANCE OPTIMIZATION OF THE EUROPEAN 1 MW, 170 GHZ GYROTRON PROTOTYPE FOR ITER.....520**      **WC2.5**

Tomasz Rzesnicki<sup>1</sup>; Zisis C. Ioannidis<sup>2</sup>; Konstantinos Avramidis<sup>1</sup>; Gerd Gantenbein<sup>1</sup>; Stefan Illy<sup>1</sup>; John Jelonnek<sup>1</sup>; Jianbo Jin<sup>1</sup>; Thorsten Kobarg<sup>1</sup>; Ioannis Pagonakis<sup>1</sup>; Martin Schmid<sup>1</sup>; Manfred Thumm<sup>1</sup>  
<sup>1</sup>Karlsruhe Institute of Technology, Germany; <sup>2</sup>IHM, Germany

**16:00 - 17:45**      **COMPUTATIONAL THZ IMAGING**      **XCARET ROOM**

Chairperson: Willie Padilla

**16:00**      **HIGH-SPEED INP-BASED DOUBLE HETEROJUNCTION BIPOLAR TRANSISTORS AND VARACTORS FOR THREE-DIMENSIONAL TERAHERTZ COMPUTED TOMOGRAPHY.....522**      **WC3.1**

Dominique Coquillat<sup>1</sup>; Virginie Nodjiadjim<sup>2</sup>; Meriam Triki<sup>3</sup>; Alexandre Duhant<sup>4</sup>; Olivier Strauss<sup>4</sup>; Agnieszka Konczykowska<sup>5</sup>; Muriel Riet<sup>5</sup>; Nina Dyakonova<sup>1</sup>; Wojciech Knap<sup>1</sup>  
<sup>1</sup>Laboratoire Charles Coulomb (L2C), UMR 5221 CNRS-Université de Montpellier, France; <sup>2</sup>III-V Lab, Campus de Polytechnique, 1 avenue Augustin Fresnel, Palaiseau,, France; <sup>3</sup>Department of Research and Development, T-Waves Technologies, Montpellier, France; <sup>4</sup>Laboratoire d'Informatique, de Robotique et de Microélectronique de Montpellier (LIRMM) UMR 5506 CNR, France; <sup>5</sup>III-V Lab, Campus de Polytechnique, France

**16:15**      **SUPER-RESOLUTION RECONSTRUCTION FOR TERAHERTZ PULSED IMAGING.....524**      **WC3.2**

Xuling Lin<sup>1</sup>; Zhi Zhang<sup>1</sup>; Jianbing Zhang<sup>2</sup>  
<sup>1</sup>Beijing Institute of Space Mechanics and Electricity, China; <sup>2</sup>Shanghai Institute of Applied Physics, Chinese Academy of Sciences, China



16:30	<b>SINGLE PIXEL THZ IMAGING USING NEAR FIELD PHOTOMODULATION.....526</b>	<b>WC3.3</b>
	<u>Euan Hendry</u> University of Exeter, United Kingdom	
17:00	<b>ENHANCED 3D CW TERAHERTZ IMAGING WITH ULTRA SPARSE ARRAYS USING A PHASE COHERENCE METHOD.....527</b>	<b>WC3.4</b>
	Bessem Baccouche <sup>1</sup> ; Wolfgang Sauer-Greff <sup>2</sup> ; Ralph Urbansky <sup>2</sup> ; <u>Fabian Friederich</u> <sup>1</sup> <sup>1</sup> Fraunhofer ITWM, Germany; <sup>2</sup> University of Kaiserslautern, Germany	
17:15	<b>THREE-DIMENSIONAL IMAGE RECONSTRUCTION FOR TERAHERTZ HOLOGRAPHIC WITH SPARSE RANDOM SAMPLING DATA.....529</b>	<b>WC3.5</b>
	<u>Ye Zhang</u> <sup>1</sup> ; Yujiao Zhao <sup>2</sup> ; Bin Deng <sup>1</sup> ; Yuliang Qin <sup>1</sup> ; Binbin Cheng <sup>2</sup> ; Jie Liu <sup>2</sup> ; Xianjin Deng <sup>2</sup> ; Hongqiang Wang <sup>1</sup> <sup>1</sup> National University of Defense Technology, China; <sup>2</sup> China Academy of Engineering Physics, China	
17:30	<b>FAST COMPRESSIONLESS RECONSTRUCTION FOR TERAHERTZ IMAGING.....531</b>	<b>WC3.6</b>
	<u>Hichem Guerboukha</u> ; Kathirvel Nallappan; Maksim Skorobogatiy Ecole Polytechnique de Montreal, Canada	
16:00 - 17:30	<b>TIME-DOMAIN MEASUREMENTS</b>	<b>ISLA MUJERES ROOM</b>
	Chairperson: Andrea Markelz	
16:00	<b>QUANTUM THEORY OF FAST ELECTRO-OPTIC CORRELATIONS.....533</b>	<b>WC4.1</b>
	<u>Ileana-Cristina Benea-Chelmu</u> <sup>1</sup> ; Curdin Maissen <sup>2</sup> ; Jerome Faist <sup>1</sup> <sup>1</sup> ETH Zurich, Switzerland; <sup>2</sup> CIC nanoGUNE, Spain	

**16:30**      **PHASE UNCERTAINTY IN DIFFERENT THZ TIME-DOMAIN SPECTROMETERS.....535**      **WC4.2**

Maxime Bernier<sup>1</sup>; Jean-Paul Guillet<sup>2</sup>; Jean-Louis Coutaz<sup>1</sup>; Patrick Mounaix<sup>2</sup>; Frédéric Garet<sup>1</sup>  
<sup>1</sup>IMEP-LAHC laboratory, UMR 5130 CNRS, France; <sup>2</sup>Laboratoire de l'Intégration du Matériau au Système, UMR 5218, France

**16:45**      **STRUCTURE DEPENDENCE OF THE WAVEFORMS OF THZ RADIATION FROM GAAS-BASED PHOTOVOLTAIC DEVICES.....537**      **WC4.3**

Keita Miyagawa<sup>1</sup>; Genki Yamashita<sup>1</sup>; Masaya Nagai<sup>1</sup>; Hidefumi Akiyama<sup>2</sup>; Changsu Kim<sup>2</sup>; Yoshihiko Kanemitsu<sup>3</sup>; Masaaki Ashida<sup>1</sup>  
<sup>1</sup>Osaka University, Japan; <sup>2</sup>The University of Tokyo, Japan; <sup>3</sup>Kyoto University, Japan

**17:00**      **A NOVEL METHOD FOR ACCURATE THZ ELLIPSOMETRY.....539**      **WC4.4**

Xuequan Chen<sup>1</sup>; Edward Parrott<sup>1</sup>; Patrick Tekavec<sup>2</sup>; Emma Pickwell-MacPherson<sup>1</sup>  
<sup>1</sup>The Chinese University of Hong Kong, Hong Kong; <sup>2</sup>Microtech Instruments Incorporated, United States

**17:15**      **TERAHERTZ TIME-DOMAIN POLARIMETRY (THZ-TDP) FOR MEASURING CHIRALITY.....541**      **WC4.5**

Elyas Bayati<sup>1</sup>; Kenichi Oguichi<sup>2</sup>; Shinichi Watanabe<sup>2</sup>; Dale Winebrenner<sup>1</sup>; M. Hassan Arbab<sup>3</sup>  
<sup>1</sup>University of Washington, United States; <sup>2</sup>Keio University, Japan; <sup>3</sup>State University of New York, Stony Brook, United States

**17:30 - 19:00**      **SPECIAL SESSION ON BIOMEDICAL SCIENCE AND APPLICATIONS**      **COZUMEL ROOM**

Chairperson: Enrique Castro Camus

**17:30**      **MILLIMETER- AND SUBMILLIMETER-WAVE APPLICATIONS IN BIOLOGY AND MEDICINE: POTENTIAL AND CHALLENGES.....N/A**      **WD.1**

Peter Siegel  
 CalTech, United States

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17:45	<b>THZ IMAGING AS AN ADJUNCT FOR T2 WEIGHTED MAGNETIC RESONANCE IMAGING.....542</b>	<b>WD.2</b>
	Yong Hu; Shijun Sung; Neha Bajwa; Daniel Ennis; <a href="#">Zachary Taylor</a> UCLA, United States	
18:00	<b>STATISTICAL SIGNAL PROCESSING FOR QUANTITATIVE ASSESSMENT OF PULSED TERAHERTZ IMAGING OF HUMAN BREAST TUMORS.....543</b>	<b>WD.3</b>
	<a href="#">Magda El-Shenawee</a> <sup>1</sup> ; Tyler Bowman <sup>1</sup> ; Tanny Chavez <sup>1</sup> ; Kamrul Khan <sup>1</sup> ; Jingxian Wu <sup>1</sup> ; Avishek Chakraborty <sup>1</sup> ; Keith Bailey <sup>2</sup> <sup>1</sup> University of Arkansas, United States; <sup>2</sup> Oklahoma State University, United States	
18:15	<b>ESTIMATION OF DEFORMABLE TRANSFORMATION BETWEEN MEDICAL IMAGES.....N/A</b>	<b>WD.4</b>
	<a href="#">Hassan Rivaz</a> Concordia University, Canada	
18:30	<b>DIFFUSION IMAGING OF THE BRAIN FOR MAPPING OF WHITE MATTER TRACTS: CORRELATION OF STRUCTURE AND FUNCTION.....N/A</b>	<b>WD.5</b>
	<a href="#">Lauren O'Donnell</a> Harvard University, United States	



## THURSDAY, AUGUST 31, 2017

08:15 -  
10:00

THURSDAY PLENARY

Chairperson: Martin Koch

COZUMEL  
ROOM

08:30

PROMISING NEW WIRELESS COMMUNICATION TECHNOLOGY - 100GBIT/S BY  
300 GHZ BAND.....545

RP.1

Iwao Hosako

National Institute for Communications Technology, Japan

09:15

LASER-FREE THZ PULSE SOURCES.....547

RP.2

Mahdi Assefzadeh; Aydin Babakhani

Rice University, United States

10:30 - 12:00	ULTRABROADBAND MEASUREMENTS	COZUMEL ROOM
Chairperson: Leonid Krivitskiy		
10:30	BRIDGING THE GAP BETWEEN THE THZ AND IR FREQUENCY REGIME.....551	RA1.1
<p><u>Korbinian J. Kaltenecker</u><sup>1</sup>; Binbin Zhou<sup>2</sup>; Nicolas Stenger<sup>2</sup>; Sebastian Engelbrecht<sup>3</sup>; Bernd M. Fischer<sup>3</sup>; Peter Uhd Jepsen<sup>2</sup></p> <p><sup>1</sup>French-German Research Institute of Saint-Louis/Technical University of Denmark, France; <sup>2</sup>Technical University of Denmark, Denmark; <sup>3</sup>French-German Research Institute of Saint-Louis, France</p>		
10:45	FREQUENCY DIVIDE-AND-CONQUER APPROACH TO CREATING ULTRA-BROADBAND FREQUENCY COMBS IN THE MID-IR-THZ REGION.....553	RA1.2
<p><u>Konstantin Vodopyanov</u></p> <p>CREOL - The College of Optics and Photonics, University of Central Florida, United States</p>		
11:00	ALL-INFRARED SPECTROSCOPY TOOLS.....555	RA1.3
<p><u>Fritz Keilmann</u></p> <p>Ludwig-Maximilians-Universität München, Germany</p>		
11:15	TERAHERTZ EMISSION FROM ULTRAFAST SPIN AND CHARGE CURRENT AT A RASHBA INTERFACE.....557	RA1.4
<p><u>Qi Zhang</u>; Matthias B. Jungfleisch; Wei Zhang; John Pearson; Haidan Wen; Axel Hoffmann</p> <p>Argonne National Lab, United States</p>		
11:30	MECHANISM FOR INTENSITY ENHANCEMENT OF ULTRABROADBAND COHERENT INFRARED PULSES FROM TWO-COLOR EXCITED AIR PLASMA.....558	RA1.5
<p><u>Eiichi Matsubara</u><sup>1</sup>; Masaya Nagai<sup>2</sup>; Masaaki Ashida<sup>2</sup></p> <p><sup>1</sup>Osaka Dental University, Japan; <sup>2</sup>Osaka University, Japan</p>		

<b>11:45</b>	<b>ULTRA-BROADBAND TERAHERTZ TIME DOMAIN SPECTROSCOPY BY SOLID STATE BIASED COHERENT DETECTION.....560</b>	<b>RA1.6</b>
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Alessandro Tomasino<sup>1</sup>; Riccardo Piccoli<sup>1</sup>; Diego Caraffini<sup>1</sup>; Andrey Markov<sup>1</sup>; Anna Mazhorova<sup>1</sup>; Rafik Naccache<sup>1</sup>; Fiorenzo Vetrone<sup>1</sup>; Yoann Jestin<sup>1</sup>; Alessandro Busacca<sup>2</sup>; Luca Razzari<sup>1</sup>; Roberto Morandotti<sup>1</sup>

<sup>1</sup>Institut National de la Recherche Scientifique, Canada; <sup>2</sup>University of Palermo, Italy

<b>10:30 - 12:00</b>	<b>GYROTRONS II</b>	<b>TULUM ROOM</b>
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Chairperson: Richard Temkin

<b>10:30</b>	<b>DESIGN CONSIDERATION AND OSCILLATION CHARACTERISTICS OF HIGH-POWER 300 GHZ GYROTRON.....562</b>	<b>RA2.1</b>
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Teruo Saito<sup>1</sup>; Yuusuke Yamaguchi<sup>1</sup>; Masafumi Fukunari<sup>1</sup>; Yoshinori Tatematsu<sup>1</sup>; Takumi Hirobe<sup>1</sup>; Ryuji Shinbayashi<sup>1</sup>; Shunsuke Tanaka<sup>1</sup>; Shin Kubo<sup>2</sup>; Takashi Shimosuma<sup>2</sup>; Kenji Tanaka<sup>2</sup>; Masaki Nishiura<sup>3</sup>

<sup>1</sup>University of Fukui, Japan; <sup>2</sup>National Institute for Fusion Science, Japan; <sup>3</sup>The University of Tokyo, Japan

<b>10:45</b>	<b>EXPERIMENTAL DEMONSTRATION OF MULTI-FREQUENCY-BAND FREQUENCY TUNABILITY WITH GYROTRON FU CW XA.....564</b>	<b>RA2.2</b>
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Yoshinori Tatematsu; Moe Iizawa; Yuto Maeda; Kyoya Takayama; Masafumi Fukunari; Yuusuke Yamaguchi; Teruo Saito  
University of Fukui, Japan

<b>11:00</b>	<b>STUDY OF HIGH POWER AND HIGH FREQUENCY GYROTRON FOR FUSION REACTOR.....566</b>	<b>RA2.3</b>
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Keishi Sakamoto<sup>1</sup>; Ryosuke Ikeda<sup>2</sup>; Tsuyoshi Kariya<sup>3</sup>; Yasuhisa Oda<sup>2</sup>; Takayuki Kobayashi<sup>2</sup>; Ken Kajiwara<sup>2</sup>; Kazuo Hayashi<sup>2</sup>; Ryutarō Minami<sup>3</sup>; Koji Takahashi<sup>2</sup>; Tsuyoshi Imai<sup>3</sup>; Shinichi Moriyama<sup>2</sup>

<sup>1</sup>Japan Agency for Quantum and Radiological Science and Technology, Japan; <sup>2</sup>National Institute for Quantum and Radiological and Technology, Japan; <sup>3</sup>University of Tsukuba, Japan

**11:30**                    **EFFICIENT APPROACHES IN SYNTHESIS AND DESIGN OF MULTI-MODE UNITS FOR MM AND THZ DEVICES.....569**                    **RA2.4**

Gregory Denisov; Alexey Chirkov; Dmitry Sobolev; Andrey Kuftin; Mikhail Glyavin; Alexander Tsvetkov; Anatoly Ereemeev; Michael Shmelev; Evgeny Tai; Elena Solyanova  
Institute of Applied /GYCOM Ltd, Russian Federation

**11:45**                    **POWERFUL NARROW-BAND RELATIVISTIC MASERS BASED ON ADVANCED BRAGG RESONATORS OPERATING AT MM AND SUB-MM WAVELENGTH BANDS.....571**                    **RA2.5**

Nikolai Peskov<sup>1</sup>; Naum Ginzburg<sup>1</sup>; Alim Kaminsky<sup>2</sup>; Sergei Sedykh<sup>2</sup>; Vladislav Zaslavsky<sup>1</sup>  
<sup>1</sup>Institute of Applied Physics RAS, Russian Federation; <sup>2</sup>Joint Institute for Nuclear Research, Russian Federation

**10:30 - 12:00**        **SPECTROSCOPY II**                    **XCARET ROOM**

Chairperson: Matthias Hoffmann

**10:30**                    **SPECTROSCOPY OF OPTICALLY PUMPED AMMONIA AND DEUTERIUM OXIDE NEAR 1 THZ.....572**                    **RA3.1**

Martin Micica<sup>1</sup>; Mathias Vanwolleghem<sup>2</sup>; Kamil Postava<sup>1</sup>; Jaromir Pistora<sup>1</sup>; Jean-Francois Lampin<sup>2</sup>  
<sup>1</sup>VSB - Technical University of Ostrava, Czech Republic; <sup>2</sup>Lille 1 University, France

**10:45**                    **IS FAST RELAXATION WATER REALLY A FREE WATER?.....574**                    **RA3.2**

Jin-Young Jeong; Jungmin Jang; Animesh Patra; Kihoon Eom; Inkyoung Park; Yuncheol Yang; Seonmyeong Kim; Gun-Sik Park  
Department of Physics and Astronomy, Seoul National University, Korea, Republic of

**11:00**                    **HYDRATION DYNAMICS IN CaCO<sub>3</sub> NUCLEATION BY THZ SPECTROSCOPY.....576**                    **RA3.3**

Federico Sebastiani<sup>1</sup>; Stefan L.P. Wolf<sup>2</sup>; Benjamin Born<sup>1</sup>; Trung Quan Luong<sup>1</sup>; Helmut Cölfen<sup>2</sup>; Denis Gebauer<sup>2</sup>; Martina Havenith<sup>1</sup>  
<sup>1</sup>Ruhr University of Bochum, Germany; <sup>2</sup>University of Konstanz, Germany

**11:15**                      **MONITORING THE CRYSTALLIZATION OF TARTARIC ACID WITH THZ SPECTROSCOPY.....578**                      **RA3.4**

Amin Soltani<sup>1</sup>; Denis Gebauer<sup>2</sup>; Bernd M. Fischer<sup>3</sup>; Helmut Cölfen<sup>2</sup>; Martin Koch<sup>3</sup>  
<sup>1</sup>Goethe University Frankfurt, Germany; <sup>2</sup>University of Konstanz, Germany; <sup>3</sup>Marburg University, Germany

**11:30**                      **CHARGE-CARRIER DYNAMICS IN HYBRID METAL HALIDE PEROVSKITES FOR PHOTOVOLTAICS AND LIGHT EMISSION.....580**                      **RA3.5**

Rebecca Milot; Michael Johnston; Laura Herz  
 University of Oxford, United Kingdom

**10:30 - 12:00**                      **TERAHERTZ IMAGING**                      **ISLA MUJERES ROOM**

Chairperson: Euan Hendry

**10:30**                      **REAL-SPACE NANO-IMAGING OF HOT ELECTRON DYNAMICS.....581**                      **RA4.1**

Qianchun Weng<sup>1</sup>; Susumu Komiyama<sup>1</sup>; Le Yang<sup>2</sup>; Zhenghua An<sup>2</sup>; Yusuke Kajihara<sup>1</sup>; Wei Lu<sup>3</sup>  
<sup>1</sup>University of Tokyo, Japan; <sup>2</sup>Fudan University, China; <sup>3</sup>Shanghai Institute of Technical Physics, China

**11:00**                      **AN OPTICALLY CONTROLLABLE 0.35 THZ SINGLE-PIXEL CAMERA FOR MILLIMETER RESOLUTION IMAGING.....584**                      **RA4.2**

Sven Augustin<sup>1</sup>; Sven Frohmann<sup>2</sup>; Peter Jung<sup>2</sup>; Heinz-Wilhelm Hübers<sup>1</sup>  
<sup>1</sup>Humboldt Universität zu Berlin, Germany; <sup>2</sup>Technische Universität Berlin, Germany



11:15	<b>AMPLITUDE VS. TIME-OF-FLIGHT CONTRAST IN THZ TOMOGRAPHY.....586</b>	<b>RA4.3</b>
	<p><u>Miguel Banuelos-Saucedo</u>  Centro de Ciencias Aplicadas y Desarrollo Tecnológico, Universidad Nacional Autónoma de México, Mexico</p>	
11:30	<b>CONTRIBUTION OF TERAHERTZ TIME-DOMAIN ANALYSIS TO ART HISTORY: THE CASE OF THE PAINTINGS OF THE SANTO ENTIERRO DE NUESTRO SEÑOR JESUCRISTO ALTARPIECE.....588</b>	<b>RA4.4</b>
	<p><u>Corinna Ludovica Koch Dandolo</u><sup>1</sup>; Alma Montserrat Gomez-Sepulveda<sup>2</sup>; Arturo Hernandez-Serrano<sup>1</sup>; Roxanne Radpour<sup>3</sup>; José Álvaro Zárate Ramírez<sup>2</sup>; Gerardo Hernandez<sup>2</sup>; Carolusa Gonzalez Tirado<sup>4</sup>; Mirta Insaurrealde<sup>5</sup>; Enrique Castro-Camus<sup>1</sup>  <sup>1</sup>Centro de Investigaciones en Optica, Mexico; <sup>2</sup>Escuela de Conservacion y Restauracion de Occidente, Mexico; <sup>3</sup>UCLA, United States; <sup>4</sup>Instituto Nacional de Antropologia e Historia, Mexico; <sup>5</sup>El Colegio de Michoacan, Mexico</p>	
11:45	<b>STRATIGRAPHIC DETAILS OF A 17TH CENTURY OIL PAINTING ON CANVAS REVEALED BY TERAHERTZ IMAGING.....590</b>	<b>RA4.5</b>
	<p><u>Junliang Dong</u><sup>1</sup>; Alexandre Locquet<sup>1</sup>; Anne Adrian<sup>2</sup>; Claire Meunier<sup>2</sup>; Kevin Kazek<sup>2</sup>; Philippe Brunella<sup>2</sup>; David S. Citrin<sup>1</sup>  <sup>1</sup>Georgia Institute of Technology, United States; <sup>2</sup>Musee de la Cour d'Or, France</p>	
14:00 - 15:15	<b>IMAGING AND SENSING APPLICATIONS</b>	<b>COZUMEL ROOM</b>
	<p>Chairperson: Masahiko Tani</p>	
14:00	<b>TERAHERTZ VOLATILE GAS SENSING AND SENSITIVITY ANALYSIS BASED ON MICROPOROUS POLYMER STRUCTURES.....591</b>	<b>RB1.1</b>
	<p><u>Borwen You</u><sup>1</sup>; Ja-Yu Lu<sup>2</sup>; Toshiaki Hattori<sup>1</sup>  <sup>1</sup>University of Tsukuba, Japan; <sup>2</sup>National Cheng Kung University, Taiwan</p>	

**14:15**                      **3D PRINTED TERAHERTZ Q-PLATE FOR VECTORIAL BEAM GENERATION.....593**                      **RB1.2**

Arturo Hernandez-Serrano<sup>1</sup>; Enrique Castro-Camus<sup>1</sup>; Dorilian Lopez<sup>2</sup>

<sup>1</sup>Centro de Investigaciones en Optica, Mexico; <sup>2</sup>Tecnologico de Monterrey, Mexico

**14:30**                      **THZ SPECTROSCOPIC IMAGING OF REAGENTS HIDDEN IN A 56 DB ATTENUATED CARDBOARD BOX USING IS-TPG.....595**                      **RB1.3**

Shin Yoneda; Mikiya Kato; Kosuke Murate; Kodo Kawase

Nagoya University, Japan

**15:00**                      **ULTRA-BROADBAND THZ TIME-DOMAIN SPECTROSCOPY OF ENERGETIC MATERIALS.....598**                      **RB1.4**

Korbinian J. Kaltenecker<sup>1</sup>; Binbin Zhou<sup>2</sup>; Sebastian Engelbrecht<sup>3</sup>; Bernd M. Fischer<sup>3</sup>; Peter Uhd Jepsen<sup>2</sup>

<sup>1</sup>French-German Research Institute of Saint-Louis/Technical University of Denmark, France; <sup>2</sup>Technical University of Denmark, Denmark; <sup>3</sup>French-German Research Institute of Saint-Louis, France

**14:00 - 15:30**                      **GYROTRONS III**                      **TULUM ROOM**

Chairperson: Yuri Gorelov

**14:00**                      **INITIAL EXPERIMENTAL RESULTS FOR A 400GHZ SECOND HARMONIC GYROTRON WITH QUASI-OPTICAL CONFOCAL CAVITY.....600**                      **RB2.1**

Wenjie Fu; Xiaotong Guan; Yang Yan

University of Electronic Science and Technology of China, China

<b>14:15</b>	<b>EXPERIMENTAL STUDY OF A THZ BAND DOUBLE-BEAM GYROTRON.....602</b>	<b>RB2.2</b>
<p><u>Toshitaka Idehara</u><sup>1</sup>; Mikhail Glyavin<sup>2</sup>; Alexei Kuleshov<sup>3</sup>; Svilen Sabchevski<sup>4</sup>; Vladimir Manuilov<sup>2</sup>; Vladislav Zaslavsky<sup>2</sup>; Irina Zotova<sup>2</sup>; Anton Sedov<sup>2</sup>  <sup>1</sup>University of Fukui, Japan; <sup>2</sup>Institute of Applied Physics, RAS, Russian Federation; <sup>3</sup>Usikov Institute of Radiophysics and Electronics, Ukraine; <sup>4</sup>Institute of Electronics, BAS, Bulgaria</p>		
<b>14:30</b>	<b>DEVELOPMENT OF ADVANCED OUTPUT COUPLING STRUCTURES FOR GYROTRONS.....604</b>	<b>RB2.3</b>
<p><u>Lawrence Ives</u><sup>1</sup>; Michael Read<sup>1</sup>; Thuc Bui<sup>1</sup>; David Marsden<sup>1</sup>; George Collins<sup>1</sup>; Samuel Schaub<sup>2</sup>; William Guss<sup>2</sup>; Richard Temkin<sup>2</sup>; Jeffrey Neilson<sup>3</sup>; Yuri Gorelov<sup>4</sup>; Mirela Cengher<sup>4</sup>; Charles Moeller<sup>4</sup>; Alexandra LeViness<sup>4</sup>; John Lohr<sup>4</sup>  <sup>1</sup>Calabazas Creek Research, Inc., United States; <sup>2</sup>Massachusetts Institute of Technology, United States; <sup>3</sup>Lexam Research, United States; <sup>4</sup>General Atomics, United States</p>		
<b>14:45</b>	<b>2 MW CW RF LOAD FOR ECH SYSTEMS.....606</b>	<b>RB2.4</b>
<p><u>Lawrence Ives</u><sup>1</sup>; David Marsden<sup>1</sup>; Jeffrey Neilson<sup>2</sup>; George Collins<sup>1</sup>  <sup>1</sup>Calabazas Creek Research, Inc., United States; <sup>2</sup>Lexam Research, United States</p>		
<b>15:00</b>	<b>REDUCTION OF THE OHMIC LOSS OF MITER BEND POLARIZER MIRRORS FOR HIGH-POWER LONG-PULSE ECRH SYSTEMS.....608</b>	<b>RB2.5</b>
<p><u>Dietmar Wagner</u><sup>1</sup>; Fritz Leuterer<sup>1</sup>; Joerg Stober<sup>1</sup>; Walter Kasperek<sup>2</sup>; Carsten Lechte<sup>2</sup>  <sup>1</sup>Max-Planck-Institut fuer Plasmaphysik, Germany; <sup>2</sup>University Stuttgart, Germany</p>		
<b>14:00 - 15:30</b>	<b>SPECTROSCOPY III</b>	<b>XCARET ROOM</b>
Chairperson: Michael Martin		
<b>14:00</b>	<b>GMR AT THZ FREQUENCIES IN COPLANAR WAVEGUIDES.....610</b>	<b>RB3.1</b>
<p><u>Nicolas Peters</u>; John Cunningham; Bryan Hickey; Lianhe Li; Edmund Linfield; Giles Davies; Christopher Wood  University of Leeds, United Kingdom</p>		

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<sup>1</sup>M.V. Lomonosov Moscow State University, Russian Federation; <sup>2</sup>Rzhanov Institute of Semiconductor Physics, Russian Federation; <sup>3</sup>Regensburg University, Germany

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<sup>1</sup>Brown University, United States; <sup>2</sup>Rice University, United States; <sup>3</sup>Institute of Physics, Chinese Academy of Sciences, China

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<sup>1</sup>L2C - UMR5221, France; <sup>2</sup>IES - UMR5214, France; <sup>3</sup>LNCMI, France; <sup>4</sup>NHMFL, United States; <sup>5</sup>IPM, Russian Federation; <sup>6</sup>ISP, Russian Federation

14:00 - 15:30 **BIOLOGY AND MEDICINE I****ISLA  
MUJERES  
ROOM**

Chairperson: Joo-Hiuk Son

**14:00 APPLICATIONS OF TERAHERTZ FREQUENCY TECHNOLOGIES IN BIOLOGY.....621 RB4.1**Robert Giles

University of Massachusetts Lowell, United States

**14:30 TERAHERTZ SPECTRAL IMAGING AND THERMAL SENSING FOR BIOMEDICAL APPLICATIONS.....623 RB4.2**Holger Breitenborn<sup>1</sup>; Rafik Naccache<sup>2</sup>; Anna Mazhorova<sup>1</sup>; Matteo Clerici<sup>3</sup>; Riccardo Piccoli<sup>1</sup>; Larousse K. Khorashad<sup>4</sup>; Alexander O. Govorov<sup>4</sup>; Luca Razzari<sup>1</sup>; Fiorenzo Vetrone<sup>5</sup>; Roberto Morandotti<sup>1</sup><sup>1</sup>Institut National de la Recherche Scientifique (INRS-EMT), Canada; <sup>2</sup>Concordia University, Canada; <sup>3</sup>University of Glasgow, United Kingdom; <sup>4</sup>Ohio University, United States; <sup>5</sup>Institut National de la Recherche Scientifique (INRS-EMT) and McGill University, Canada**14:45 TOWARDS THE ASSESSMENT OF BIOMECHANICAL INTERFACES: TOPOGRAPHY OF HIDDEN OBJECTS OBTAINED WITH THZ HOLOGRAPHY.....624 RB4.3**Lorenzo Valzania; Peter Zolliker; Erwin Hack

Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland

**15:00 NONDESTRUCTIVE DETERMINATION OF PROTEIN STRUCTURAL STABILITY.....626 RB4.4**Andrea Markelz<sup>1</sup>; Mengyang Xu<sup>1</sup>; Deepu George<sup>1</sup>; Ralph Jimenez<sup>2</sup><sup>1</sup>University at Buffalo, SUNY, United States; <sup>2</sup>University of Colorado, Boulder, CO, United States

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<sup>1</sup>Institute for High-Frequency & Communication Technology, University of Wuppertal, Germany; <sup>2</sup>University of Bordeaux, IMS UMR CNRS 5218, France; <sup>3</sup>Institut Bergonié, Centre Régional de Lutte Contre le Cancer, France

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<sup>1</sup>Fraunhofer HHI, Germany; <sup>2</sup>Xylophone Optics, Ireland; <sup>3</sup>Dublin City University, Ireland

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 Institut d'électronique de microélectronique et de nanotechnologies, France

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<sup>1</sup>California Institute of Technology & THz Global, United States; <sup>2</sup>UCLA and NASA Jet Propulsion Laboratory, United States; <sup>3</sup>UCLA, United States; <sup>4</sup>UCLA and National Chaio Tung University, United States; <sup>5</sup>Galvani Bioelectronics, United Kingdom

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<sup>1</sup>University of Bordeaux, IMS UMR CNRS 5218, France; <sup>2</sup>Institut Bergonié, Centre Régional de Lutte Contre le Cancer, France; <sup>3</sup>Institute for High-Frequency, and Communication Technology, University of Wuppertal, Germany

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Virginie Nodjiadjim<sup>2</sup>; Muriel Riet<sup>2</sup>; Agnieszka Konczykowska<sup>2</sup>; Philipp Faltermeier<sup>3</sup>; Peter  
Olbrich<sup>3</sup>; Sergey Ganichev<sup>3</sup>

<sup>1</sup>Laboratoire Charles Coulomb (L2C), UMR 5221 CNRS-Université de Montpellier, France; <sup>2</sup>III-V  
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<sup>1</sup>Universidad Autónoma de San Luis Potosí, Mexico; <sup>2</sup>Instituto de Estudios Superiores de  
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<sup>1</sup>DESY, Hamburg University, Germany; <sup>2</sup>DESY, Germany

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<sup>1</sup>TU Darmstadt, Germany; <sup>2</sup>UC Santa Barbara, United States; <sup>3</sup>Johann Wolfgang Goethe  
University Frankfurt, Germany

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<sup>1</sup>HAWK University of Applied Sciences and Arts, Germany; <sup>2</sup>Philipps-Universität Marburg, Department of Physics, Germany; <sup>3</sup>Centro de Investigaciones en Optica, Germany

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<sup>1</sup>Karlsruhe Institute Of Technology, Germany; <sup>2</sup>IPP Garching, Germany

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<sup>1</sup>Karlsruhe Institute of Technology, Germany; <sup>2</sup>Fraunhofer Institute for Applied Solid State Physics, Germany; <sup>3</sup>University of Stuttgart, Germany

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<sup>1</sup>University of Electronic Science and Technology of China, China; <sup>2</sup>Southwest China Research Institute of Electronic Equipment, China

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<sup>1</sup>Saratov State University, Russian Federation; <sup>2</sup>Belarusian State University of Informatics and Radioelectronics, Belarus; <sup>3</sup>Saratov State Technical University, Russian Federation

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<sup>1</sup>Technical University of Darmstadt, Germany; <sup>2</sup>Technische Hochschule Mittelhessen, Germany

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<sup>1</sup>Botswana International University of Science and Technology, Botswana; <sup>2</sup>University of Wollongong, Australia

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<sup>1</sup>Osaka University, Japan; <sup>2</sup>Utsunomiya University, Japan

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<sup>1</sup>National Key Laboratory of Science and Technology on Space Microwave, China; <sup>2</sup>University of Electronic Science and Technology of China, China

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<sup>1</sup>Institut für Mikrowellentechnik und Photonik, Technische Universität Darmstadt, Germany; <sup>2</sup>Department of High Frequency Electronics, Technische Universität Darmstadt, Germany

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<sup>1</sup>Department of Engineering Physics, Tsinghua University, China; <sup>2</sup>Institute of Applied Physics and Computational Mathematics, China; <sup>3</sup>School of Electronic and Electrical Engineering, University of Leeds, United Kingdom

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<sup>1</sup>Karlsruhe Institute of Technology, Germany; <sup>2</sup>EUROfusion Consortium and Max Planck Institut fuer Plasmaphysik, Germany; <sup>3</sup>Swiss Plasma Center, Switzerland

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<sup>1</sup>Ulsan National Institute of Science and Technology, Korea, Republic of; <sup>2</sup>Karlsruhe Institute of Technology (KIT), Germany

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<sup>1</sup>Institute of Applied Physics of Russian Academy of Sciences, Russian Federation; <sup>2</sup>KTH Royal Institute of Technology, Sweden; <sup>3</sup>Nizhny Novgorod State University, Russian Federation

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<sup>1</sup>Institute of Applied Physics RAS, Russian Federation; <sup>2</sup>Moscow Engineering Physics Institute, Russian Federation

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<sup>1</sup>Budker Institute of Nuclear Physics, Russian Federation; <sup>2</sup>Samara University, Russian  
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<sup>1</sup>Institute of Applied Physics RAS, Russian Federation; <sup>2</sup>Budker Institute of Nuclear Physics RAS,  
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<sup>1</sup>University of Oxford, United Kingdom; <sup>2</sup>KEK: High Energy Accelerator Research Organization,  
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<sup>1</sup>Philipps-Universität Marburg, Faculty of Physics, Germany; <sup>2</sup>Southern Illinois University,  
College of Agricultural Sciences, United States



## FRIDAY, SEPTEMBER 1, 2017

08:15 -  
10:00

**FRIDAY PLENARY**

Chairperson: Gun-Sik-Park

**COZUMEL  
ROOM**

08:30

**ONE KELVIN MEANS 21 GHZ: PROBING SUPERCONDUCTORS WITH LOW-FREQUENCY OPTICS.....758**

**FP.1**

Marc Scheffler; Markus Thiemann; Manfred Beutel; Uwe S. Pracht; Martin Dressel  
Universität Stuttgart, Germany

09:15

**TERAHERTZ CAVITY QUANTUM ELECTRODYNAMICS.....N/A**

**FP.2**

Junichiro Kono  
Rice University, United States

<b>10:30 - 12:00</b>	<b>PHOTOCONDUCTIVE DEVICES II</b>	<b>COZUMEL ROOM</b>
Chairperson: Haewook Han		
<b>10:30</b>	<b>BROADBAND TERAHERTZ SPECTROMETRY THROUGH PLASMONIC PHOTOMIXERS.....762</b>	<b>FA1.1</b>
<p><u>Mona Jarrahi</u> University of California Los Angeles, United States</p>		
<b>11:00</b>	<b>RESONANT FREQUENCY TUNING AND TRANSMISSION ENHANCEMENT OF TERAHERTZ PLASMONIC ANTENNA BY DIELECTRIC ENGINEERING.....763</b>	<b>FA1.2</b>
<p><u>Toshio Sugaya</u>; Takashi Iguchi; Yukio Kawano Tokyo Institute of Technology, Japan</p>		
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<p><u>David Bacon</u>; Andrew Burnett; Matthew Swithenbank; Christopher Russell; Lianhe Li; Christopher Wood; John Cunningham; Edmund Linfield; Giles Davies; Paul Dean; Joshua Freeman University of Leeds, United Kingdom</p>		
<b>11:30</b>	<b>NANOELECTRODE THZ PHOTOMIXER USING A MOCVD-GROWN INGAAS THIN LAYER.....767</b>	<b>FA1.4</b>
<p><u>Kiwon Moon</u>; Eui Su Lee; Il-Min Lee; Dong Woo Park; Hyun Soo Kim; Jeong-Woo Park; Sang-Pil Han; Kyeong Sun Choi; Kyung Hyun Park Electronics and Telecommunications Research Institute (ETRI), Korea, Republic of</p>		
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<p><u>Deniz Turan</u><sup>1</sup>; Sofia Carolina Corzo-Garcia<sup>2</sup>; Enrique Castro-Camus<sup>2</sup>; Mona Jarrahi<sup>1</sup> <sup>1</sup>University of California, Los Angeles, United States; <sup>2</sup>Centro de Investigaciones en Optica, Mexico</p>		

**10:30 - 12:00**                      **GYROTRONS V**                                              **TULUM ROOM**

Chairperson: John Jelonnek

**10:30**                      **DIII-D ELECTRON CYCLOTRON HEATING SYSTEM AND EXPERIMENTS.....771**                      **FA2.1**

Yuri Gorelov; John Lohr; Daniel Ponce; Antonio Torrezan; Mirela Cengher  
General Atomics, United States

**11:00**                      **INVESTIGATION OF MILLIMETER WAVE EXTENDED INTERACTION OSCILLATION USING IMPROVED PSEUDOSPARK-SOURCED ELECTRON BEAMS.....772**                      **FA2.2**

Huabi Yin<sup>1</sup>; Liang Zhang<sup>1</sup>; Wenlong He<sup>1</sup>; Guoxiang Shu<sup>1</sup>; Kevin Ronald<sup>1</sup>; Alan Phelps<sup>1</sup>; Junping Zhao<sup>2</sup>; Yong Yin<sup>3</sup>  
<sup>1</sup>University of Strathclyde, United Kingdom; <sup>2</sup>Xi'an Jiaotong University, China; <sup>3</sup>University of Electronic Science & Technology of China, China

**11:15**                      **GAS BREAKDOWN AND DYNAMICS OF THE DISCHARGE MAINTAINED BY A POWERFUL TERAHERTZ-BAND RADIATION.....774**                      **FA2.3**

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Institute of Applied Physics of Russian Academy of Sciences, Russian Federation

**11:30**                      **OVERVIEW OF RECENT THEORETICAL STUDIES ON E×B MULTISTAGE DEPRESSED COLLECTOR DESIGNS FOR GYROTRONS.....776**                      **FA2.4**

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Karlsruhe Institute of Technology, Germany

**11:45**                      **APPLICATION OF A MILLIMETER WAVE GYROTRON FOR THE PULSED ESR SPECTROSCOPY.....778**                      **FA2.5**

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University of Fukui, Japan

<b>10:30 - 12:00</b>	<b>SPECTROSCOPY V</b>	<b>XCARET ROOM</b>
Chairperson: Naser Qureshi		
<b>10:30</b>	<b>STUDY OF THE SLOW-WAVE INTERACTION IN A THREE VALLEY SEMICONDUCTOR IN HIGH ELECTRIC FIELDS.....779</b>	<b>FA3.1</b>
<p><u>Petr Makhalov</u>; Dmitri Lioubtchenko; Joachim Oberhammer KTH Royal Institute of Technology, Sweden</p>		
<b>10:45</b>	<b>ANHARMONIC TERAHERTZ DYNAMICS CHARACTERISED WITH FIRST-PRINCIPLES SIMULATIONS.....781</b>	<b>FA3.2</b>
<p><u>Michael Ruggiero</u><sup>1</sup>; Alessandro Erba<sup>2</sup>; Axel Zeitler<sup>1</sup> <sup>1</sup>University of Cambridge, United Kingdom; <sup>2</sup>University of Torino, Italy</p>		
<b>11:00</b>	<b>TERAHERTZ SPECTROSCOPY OF A SINGLE ATOM IN A FULLERENE CAGE.....783</b>	<b>FA3.3</b>
<p><u>Shaoping Du</u><sup>1</sup>; Ya Zhang<sup>1</sup>; Kenji Yoshida<sup>1</sup>; Kazuhiko Hirakawa<sup>2</sup> <sup>1</sup>Center for Photonics Electronics Convergence, Institute of Industrial Science, University of Tokyo, Japan; <sup>2</sup>Institute for Nano Quantum Information Electronics, University of Tokyo, Japan</p>		
<b>11:30</b>	<b>DYNAMICS OF PHOTO-INDUCED CARRIERS IN SILICON STUDIED BY RELATIVISTIC DOPPLER REFLECTION OF THZ LIGHT.....784</b>	<b>FA3.4</b>
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<b>11:45</b>	<b>TERAHERTZ SPECTRAL FINGERPRINTS DETECTION WITH HILBERT-HUANG TRANSFORM.....786</b>	<b>FA3.5</b>
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10:30 -  
12:00**BIOLOGY AND MEDICINE III****ISLA  
MUJERES  
ROOM**

Chairperson: Xomalin Peralta

**10:30****DEVELOPMENT OF A METHOD OF EVALUATION OF DIABETIC FOOT  
DETERIORATION BY TERAHERTZ SPECTROSCOPIC IMAGE.....788****FA4.1**

Goretti Hernandez-Cardoso<sup>1</sup>; S. Carolina Rojas-Landeros<sup>1</sup>; Mariana Alfaro-Gomez<sup>2</sup>; Arturo Hernandez-Serrano<sup>1</sup>; Enrique Castro-Camus<sup>1</sup>  
<sup>1</sup>Centro de Investigaciones en Optica, Mexico; <sup>2</sup>Universidad Autonoma de Aguascalientes, Mexico

**10:45****IN VIVO ESTIMATION OF THE WATER DIFFUSIVITY IN OCCLUDED  
HUMAN SKIN USING TERAHERTZ REFLECTION SPECTROSCOPY.....790****FA4.2**

Qiushuo Sun; Edward Parrott; Emma Pickwell-MacPherson  
 The Chinese University of Hong Kong, Hong Kong

**11:00****MONITORING THE EVOLUTION OF HYPERGLYCEMIA IN MICE USING  
MM-WAVE SPECTROSCOPY.....792****FA4.3**

Pedro Martín-Mateos<sup>1</sup>; Aldo Moreno<sup>1</sup>; Giacomo Ulisse<sup>2</sup>; Blanca Duarte<sup>3</sup>; Fabian Dornuf<sup>2</sup>;  
 Fernando Larcher<sup>3</sup>; Viktor Krozer<sup>2</sup>; Pablo Acedo<sup>1</sup>  
<sup>1</sup>Universidad Carlos III de Madrid, Spain; <sup>2</sup>Goethe University Frankfurt,  
 Germany; <sup>3</sup>CIEMAT, Spain

**11:15****EVALUATION OF BIOLOGICALLY RELEVANT LEVEL OF MMW  
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Sergii Romanenko<sup>1</sup>; Peter Siegel<sup>2</sup>; Livia Hool<sup>1</sup>; Alan Harvey<sup>1</sup>; Vincent Wallace<sup>1</sup>  
<sup>1</sup>The University of Western Australia, Australia; <sup>2</sup>California Institute of Technology,  
 Pasadena, United States



11:30

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Cameron Hough<sup>1</sup>; David Purschke<sup>1</sup>; Chenxi Huang<sup>1</sup>; Lyubov Titova<sup>2</sup>; Olga Kovalchuk<sup>3</sup>; Brad Warkentin<sup>1</sup>; Frank Hegmann<sup>1</sup>

<sup>1</sup>University of Alberta, Canada; <sup>2</sup>Worcester Polytechnic Institute, United States; <sup>3</sup>University of Lethbridge, Canada