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# MONDAY, AUGUST 28, 2017

| 08:00 - 10:00 | MONDAY PLENARY<br>Chairperson: Peter Siegel | COZUMEL ROOM |
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Massachusetts Institute Of Technology, United States

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[1]University of Regensburg, Germany; [2]NEST CNR - Istituto Nanoscienze and Scuola Normale Superiore, Italy

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[1]Keio University, Japan; [2]Tokyo Institute of Technology, Japan; [3]The University of Adelaide, Australia

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[1]Kitasato University, Japan; [2]NTT Electronics Corporation, Japan

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STFC / RAL Space, United Kingdom

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[1]Brown University, United States; [2]IEMN (Institute of Electronics, Microelectronics and Nanotechnology) University of Lille, France

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[1]Ecole Polytechnique de Montreal, Canada; [2]Institut National de la Recherche Scientifique, Canada

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[1]Brown University, United States; [2]North Carolina State University, United States

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[1]University of Stuttgart, Institute for Robust Power Semiconductor Systems, Germany; [2]Fraunhofer IAF, Germany

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[1]University of Oxford, United Kingdom; [2]École Polytechnique Fédérale de Lausanne, Switzerland; [3]University of Cambridge, United Kingdom

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[1]SRON Netherlands Institute for Space Research, Netherlands; [2]Delft University of Technology, Netherlands

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[1]Technische Universität München (Lehrstuhl für Hochfrequenztechnik), Germany; [2]Astyx GmbH, Germany; [3]Technical University of Munich, Germany

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[1]Shanghai Institute of Technical Physics, China; [2]Second Institute of Oceanography, SOA, China; [3]National Satellite Ocean Application Service, SOA, China; [4]Shanghai Institute of Technical Physics, Chinese Academy of Sciences,, China

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[1]JPL, United States; [2]LERMA, France; [3]Radiometer Physics GmbH, Germany

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[1]Fukui Univ. of Tech., Japan; [2]Research Center for Development of Far-Infrared Region, University of Fukui, Japan; [3]Faculty of Education and Regional Studies, University, Japan; [4]Chair of Liberal Arts, Japan Coast Guard Academy, Japan; [5]Institute of Laser Engineering, Osaka University, Japan

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[1]Osaka University, Japan; [2]Kio University, Japan

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[1]ITMO University, Russian Federation; [2]Institute of Optics, University of Rochester, United States

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[1]Res. Center for Dev. of FIR Region, Univ. Fukui, Japan; [2]RIKEN, Japan; [3]Univ. Nizhny Novgorod, Russian Federation

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[1]University of Stuttgart/ILH, Germany; [2]Andrew and Erna Viterbi Faculty of Electrical Engineering/Technion, Israel; [3]Karlsruhe Institute for Technology /IHE, Germany; [4]University of Stuttgart/ ILH, Germany

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Florian Gaudfrin[1]; Romain Ceolato[1]; Olivier Pujol[2]; Guillaume Huss[3]; Nicolas Riviere[1]
[1]ONERA, The French Aerospace Lab, France; [2]LOA, Université de Lille, France; [3]LEUKOS, France



Alvaro Gonzalez Garcia; Keiko Kaneko; Shin'ichiro Asayama
National Astronomical Observatory of Japan, Japan



Marija Strojnik
CIO, Mexico



Romain Ceolato[1]; Nina Diakonova[2]; Jerome Meilhan[3]; Wojciech Knap[2]
[1]ONERA, The French Aerospace Lab, France; [2]CNRS Laboratoire Charles Coulomb UMR 522, Université Montpellier, France; [3]CEA Leti-MINATEC, France



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Clotilde Prophete[1]; Romain Pierrat[1]; Herve Sik[2]; Emmanuel Kling[2]; Remi Carminati[1]; Julien de Rosny[1]
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Alexander Andrianov; Alexey Zakhar'in
Ioffe Institute, Russian Federation



Maximilien Billet; Yann Desmet; Fuanki Bavedila; Stefano Barbieri; Guillaume Ducournau; Jean-Francois Lampin; Emilien Peytavit
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Shoulu Jiang; Xianfeng Li; Runfeng Su; Lin Kang; Biaobing Jin; Weiwei Xu; Jian Chen; Peiheng Wu Nanjing University, China



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[1]ACST GmbH, Germany; [2]Max-Plank Institute for Physics, Germany

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Joanna Carthy; Paul Gow; Sam Berry; Ben Mills; Vasilis Apostolopoulos
University of Southampton, United Kingdom

# TUESDAY, AUGUST 29, 2017

| 08:15 - 10:00 | TUESDAY PLENARY<br>Chairperson: Gian Piero Gallerano | COZUMEL ROOM |
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| 08:30 | **SEMICONDUCTOR-BASED INFRARED METAMATERIALS: SCIENCE, APPLICATIONS AND CHALLENGES**.....N/A | TP.1 |

Igal Brener
Sandia National Laboratory, United States

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Peter Uhd Jepsen
Technical University of Denmark, Denmark

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[1]IEMN, University of Lille, France; [2]INTEC-Ghent, Belgium

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Thomas Crowe; Jeffrey Hesler; Steven Retzloff
Virginia Diodes, Inc., United States

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NASA Jet Propulsion Laboratory, United States

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CPI Canada, Canada

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

| 10:30 - 12:00 | THZ EMITTERS | TULUM ROOM |
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| 11:00 | **STUDY OF ZN1-XQXTE(Q=MN,V) CRYSTALS GROWN FROM TE-RICH SOLUTION AS TERAHERTZ EMITTERS AND SENSORS**.....233 | TA2.2 |
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| 10:30 - 12:00 | NOVEL COMPONENTS III | XCARET ROOM |
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Berhanu Bulcha[1]; Jeffrey Hesler[2]; Vladimir Drakinskiy[3]; Jan Stake[3]; Scott Barker[4]
[1]NASA Goddard Space Flight Center, United States; [2]Virginia DIodes, Inc., United States; [3]Chalmers University of Technology, Sweden; [4]University of Virginia, United States

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[1]University of Glasgow, United Kingdom; [2]Sapienza University of Rome, Italy; [3]Istituto Italiano di Tecnologia, Italy; [4]Politecnico di Milano, Italy

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| **10:30 - 12:00** | **SPECTROSCOPY TECHNIQUES I**<br>Chairperson: Alexander Shkurinov | **ISLA MUJERES ROOM** |

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Hou-Tong Chen[1]; Chun-Chieh Chang[1]; Li Huang[2]
[1]Los Alamos National Laboratory, United States; [2]Harbin Institute of Technology, China

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[1]Fraunhofer Institute for Industrial Mathematics, Germany; [2]Fraunhofer Institute for Maunfacturing Engineering and Automation, Germany

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Dook van Mechelen
ABB Corporate Research, Switzerland

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Elyas Bayati[1]; Dale Winebrenner[1]; M. Hassan Arbab[2]
[1]University of Washington, United States; [2]State University of New York, Stony Brook, United States

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

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| **14:00 - 15:30** | **METAMATERIALS I**<br>Chairperson: Igal Brener | **COZUMEL ROOM** |
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Kanghee Lee; Jaehyeon Son; Byungsoo Kang; Jagang Park; Fabian Rotermund; Bumki Min
Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of

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CIC NanoGune, Spain

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Willie Padilla
Duke University, United States

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Daniel Headland[1]; Chun-Chieh Chang[2]; Derek Abbott[1]; Withawat Withayachumnankul[1]; Hou-Tong Chen[2]
[1]University of Adelaide, Australia; [2]Los Alamos National Laboratory, United States

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| **14:00 - 15:30** | **INTEGRATED SYSTEMS**<br>Chairperson: Hartmut Roskos | **TULUM ROOM** |
| **14:00** | **THZ SILICON SYSTEMS-ON-CHIP: EM-CIRCUITS-SYSTEMS CO-DESIGN APPROACH**.....267 | **TB2.1** |

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Princeton University, United States

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Roee Ben Yishay; Danny Elad
IBM, Israel

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Fraunhofer Heinrich Hertz Institute, Germany

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| | | |
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Jun Jiang; Bin Lu; Yaoling Tian; Hailong Hao; Xianjin Deng; Jian Zhang
Institute of Electronic Engineering, China

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Junqi Liu
Institute of Semiconductors, Chinese Academy of Sciences, China

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Ileana-Cristina Benea-Chelmus; Markus Rösch; Giacomo Scalari; Mattias Beck; Jerome Faist
ETH Zurich, Switzerland

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Alireza Mottaghizadeh; Zahra Asghari; Maria Amanti; Djamal Gacemi; Angela Vasanelli; Carlo Sirtori
Universite Paris Diderot- Paris7, France

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[1]Ecole Normale Superieure, France; [2]Ruhr-Universität Bochum, Germany; [3]Université Paris Diderot, France; [4]Université Paris-Sud, France; [5]University of Leeds, United Kingdom

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Dominic Bachmann[1]; Markus Roesch[2]; Martin Kainz[1]; Sebastian Schönhuber[1]; Martin Brandstetter[1]; Giacomo Scalari[2]; Mattias Beck[2]; Jerome Faist[2]; Aaron M. Andrews[1]; Juraj Darmo[1]; Gottfried Strasser[1]; Karl Unterrainer[1]
[1]Technische Universitaet Wien, Austria; [2]ETH Zürich, Switzerland

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| **14:00 - 15:30** | **SPECTROSCOPY TECHNIQUES II** | **ISLA MUJERES ROOM** |

Chairperson: Marc Scheffler

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| **14:00** | **INFRARED SPECTROSCOPY WITH VISIBLE LIGHT**.....N/A | **TB4.1** |

Leonid Krivitskiy
Agency for Science Technology and Research, Singapore

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Martin Wienold[1]; Tasmim Alam[1]; Lutz Schrottke[2]; Holger T. Grahn[2]; Heinz-Wilhelm Hübers[1]
[1]German Aerospace Center (DLR), Germany; [2]Paul-Drude-Institut Berlin, Germany

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University of Fukui, Japan

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Eglof Ritter[1]; Ljiljana Puskar[2]; Emad F. Aziz[2]; Klaus-Peter Hofmann[3]; Peter Hegemann[1]; Ulrich Schade[2]
[1]Humboldt-Universität zu Berlin, Germany; [2]Helmholtz-Zentrum Berlin für Materialien und Energie, Germany; [3]Charité - Universitätsmedizin Berlin, Germany

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Isao Morohashi; Norihiko Sekine; Akifumi Kasamatsu; Iwao Hosako
National Institute of Information and Communications Technology, Japan

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Boyoung Kang[1]; Keisuke Takano[2]; Makoto Nakajima[2]
[1]Center for Advanced Meta-materials, Korea, Republic of; [2]Institute of Laser Engineering, Osaka University, Japan

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Xomalin Peralta; Guillermo Naranjo
The University of Texas at San Antonio, United States

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Yeong Hwan Ahn; Sae June Park
Ajou University, Korea, Republic of

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Simon Lehnskov Lange; Thea Maria Bjork Kristensen; Krzysztof Iwaszczuk; Peter Uhd Jepsen
Technical University of Denmark, Denmark

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Niels van Hoof; Arkabrata Bhattacharya; Alexei Halpin; Jaime Gómez-Rivas
Dutch Institute for Fundamental Energy Research, Netherlands

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Seontae Kim[1]; In-Keun Baek[1]; Ranajoy Bhattacharya[1]; Dongpyo Hong[1]; Sattorov Matlabjon[2]; Gun-Sik Park[3]
[1]Seoul National University, Korea, Republic of; [2]Seoul-Teracom Inc., Korea, Republic of; [3]Seoul National University/Seoul-Teracom Inc., Korea, Republic of

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| **16:00 - 17:30** | **SILICON THZ SYSTEMS** | **TULUM ROOM** |

Chairperson: Kaushik Sengupta

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Hani Sherry
ST Microelectronics, France

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Philipp Hillger; Andreas Schlüter; Ritesh Jain; Stefan Malz; Janusz Grzyb; Ullrich Pfeiffer
University of Wuppertal, Germany

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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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Ivonne Escorcia; James Grant; John Gough; David Cumming
University of Glasgow, United Kingdom

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Nick Rothbart[1]; Klaus Schmalz[2]; Johannes Borngräber[2]; Dietmar Kissinger[2]; Heinz-Wilhelm Hübers[1]
[1]German Aerospace Center (DLR), Germany; [2]IHP, Germany

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

Chairperson: Qing Hu

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| **16:00** | **MODELING AND DESIGN OF AL.25GA.75AS/GAAS TERAHERTZ QUANTUM CASCADE LASERS WITH A REALISTIC BAND STRUCTURE**.....316 | **TC3.1** |

Elodie Strupiechonski
CINVESTAV CONACYT, Mexico

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| **16:15** | **THZ SURFACE EMISSION BY DIFFERENCE FREQUENCY GENERATION IN QUANTUM CASCADE LASERS**.....318 | **TC3.2** |

Frederic Demmerle; Dominik Burghart; Wolfhard Oberhausen; Alexander Wolf; Ganpath Kumar Veerabathran; Jonas Krakofsky; Hannes Schmeiduch; Gerhard Boehm; Markus-Christian Amann
Walter Schottky Institut - Technical University Munich, Germany

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| **16:30** | MID-INFRARED-**PUMPED QUANTUM CASCADE STRUCTURE FOR TERAHERTZ DETECTION**.....320 | **TC3.3** |

Weidong Chu[1]; Yan Xie[2]; Ning Yang[1]; Suqing Duan[1]; Yingxin Wang[2]; Ziran Zhao[2]; Lianhe Li[3]
[1]Institute of Applied Physics and Computational Mathematics, China; [2]Tsinghua University, China; [3]Leeds University, United Kingdom

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| **16:45** | **TERAHERTZ MULTIHETERODYNE SPECTROSCOPY WITH QUANTUM CASCADE LASERS — A FEASIBILITY STUDY**.....322 | **TC3.4** |

Lukasz Sterczewski[1]; Jonas Westberg[1]; Yang Yang[2]; David Burghoff[2]; John Reno[3]; Qing Hu[2]; Gerard Wysocki[1]
[1]Princeton University, United States; [2]Massachusetts Institute of Technology, United States; [3]Sandia National Laboratories, United States

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| **17:00** | **HIGH-RESOLUTION TERAHERTZ GAS-PHASE SPECTROSCOPY BASED ON EXTERNAL OPTICAL FEEDBACK IN A QUANTUM CASCADE LASER**.....324 | **TC3.5** |

Till Hagelschuer; Martin Wienold; Heiko Richter; Nick Rothbart; Heinz-Wilhelm Hübers
German Aerospace Center (DLR), Germany

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| **16:00 - 17:30** | **SPECTROSCOPY I** | **ISLA MUJERES ROOM** |

Chairperson: Frank Hegmann

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| **16:00** | **METASTABLE AND MESOSCOPIC DYNAMICS IN CORRELATED TRANSITION METAL OXIDES**.....N/A | **TC4.1** |

Richard Averitt
University of California San Diego, United States

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| **16:30** | **ELECTRON ENERGY RELAXATION IN (CD1-XZNX)3AS2 DIRAC SEMIMETALS STUDIED BY TERAHERTZ LASER PULSES**.....327 | **TC4.2** |

Alexandra Galeeva[1]; Ivan Krylov[1]; Konstantin Drozdov[1]; Anatoly Knjazev[2]; Alexey Kochura[3]; Alexander Kuzmenko[3]; Vasily Zakhvalinskii[4]; Sergey Danilov[5]; Ludmila Ryabova[1]; Dmitry Khokhlov[1]
[1]M.V. Lomonosov Moscow State University, Russian Federation; [2]Kursk Construction College, Russian Federation; [3]South-West State University, Russian Federation; [4]Belgorod National Research University, Russian Federation; [5]University of Regensburg, Germany

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| **16:45** | **NON-EQUILIBRIUM DYNAMICS OF CHARGE-DENSITY-WAVE PHASE MODES IN K0.3MOO3**.....329 | **TC4.3** |

Mark D. Thomson[1]; Kaneez Rabia[1]; Fanqi Meng[1]; Maxim Bykov[2]; Sander van Smaalen[2]; Hartmut G. Roskos[1]
[1]Physikalisches Institut, Goethe Universität Frankfurt, Germany; [2]Laboratory of Crystallography, University of Bayreuth, Germany

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| **17:00** | **TIME RESOLVED TERAHERTZ SPECTROSCOPY OF TOPOLOGICAL INSULATOR SB2TE3**.....331 | **TC4.4** |

Jaehun Park[1]; Hyejin Choi[2]; Seonghoon Jung[1]; Tae Hyeon Kim[2]; Jimin Chae[2]; Hanbum Park[2]; Kwangho Jeong[2]; Mann-Ho Cho[2]
[1]Pohang Accelerator Laboratory, Korea, Republic of; [2]Yonsei University, Korea, Republic of

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| **17:15** | **TEST OF FERMI-LIQUID THEORY IN MNSI WITH TERAHERTZ CONDUCTIVITY MEASUREMENTS**.....332 | **TC4.5** |

J. Steven Dodge[1]; Laleh Mohtashemi[1]; F. Michael Bartram[1]; Amir Farahani[1]; Eric Karhu[2]; Theodore L. Monchesky[2]
[1]Simon Fraser University, Canada; [2]Dalhousie University, Canada

## 17:30 - 19:00 TUESDAY POSTER SESSION

COZUMEL EXHIBIT HALL

**LABEL-FREE AND REAGENTLESS BACTERIAL DETECTION AND ASSESSMENT BY CONTINOUS-WAVE TERAHERTZ IMAGING**.....333 **TD.1**

Xiang Yang[1]; Jia Shi[2]; Ke Yang[1]; Degang Xu[2]; Jianquan Yao[2]; Yuye Wang[2]; Weiling Fu[1]
[1]Third Military Medical University, China; [2]Tianjin University, China

**NUMERICAL SIMULATION ON VOLTAGE-ACTIVATED CALCIUM FLUX OF NEUROBLASTOMA CELLS IN RESPONSE TO 2.5THZ ELECTRIC PULSES**.....334 **TD.2**

Wenfei Bo; Jin Xu; Jingchao Tang; Yang Yang; Jialu Ma; Zhanliang Wang; Yubin Gong
University of Electronic Science and Technology of China, China

**263 GHZ TWT BASED EPR SPECTROMETER**.....336 **TD.3**

Diana Gamzina; Yuan Zheng; Derek Gagnon; Paul Stucky; Logan Himes; R. David Britt; Neville C. Luhmann
UC Davis, United States

**REAL-TIME THZ BREAST CANCER DIAGNOSIS**.....338 **TD.4**

Nikolay Bagraev[1]; Andrew Chernev[2]; Leonid Klyachkin[1]; Vladislav Odintsov[3]; Vyacheslav Bazarbaev[3]; Konstantin Taranets[1]
[1]Ioffe Institute, Russian Federation; [2]St Petersburg Academic University, Russian Federation; [3]St Petersburg Clinical hospital of RAS, Russian Federation

**STUDY ON THE EFFECT OF TERAHERTZ ELECTRICAL FIELD ON THE KCSA MEMBRANE PROTEIN SYSTEM**.....339 **TD.5**

Tang Jingchao; Yin Hairong; Xu Jin; Bo Wenfei; Yang Yang; Ma Jialu; Gong Yubin
University of Electronic Science and Technology of China, China

# WEDNESDAY, AUGUST 30, 2017

| 08:15 - 10:00 | WEDNESDAY PLENARY<br>Chairperson: Peter Uhd Jepsen | COZUMEL ROOM |
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| 08:30 | TERAHERTZ NEAR-FIELD MICROSCOPY: SCIENCE, TECHNOLOGY AND INSIGHTS.....N/A | WP.1 |
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Oleg Mitrofanov
University College London, London, United Kingdom.

| 09:15 | THE LARGE MILLIMETER TELESCOPE: EARLY SCIENCE, NEW TECHNOLOGIES AND INSTRUMENTATION.....N/A | WP.2 |
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David Hughes[1]; Itziar Arextaga[1]; Edgar Castillo[1]; Miguel Chavez[1]; Simon Doyle[2]; Neal Erickson[3]; Daniel Ferrusca[1]; David Gale[1]; Jose-Luis Hernandez Rebollar[1]; Alfredo Montana[1]; Gopal Narayanan[3]; Alexandra Pope[3]; Arturo Ruiz-Gomez[1]; David Sanchez[1]; F. Peter Schloerb[3]; Kamal Souccar[3]; Miguel Velázquez[1]; Grant Wilson[3]; Min Yun[3]
[1]Instituto Nacional de Astrofísica, Óptica y Electrónica, Mexico; [2]Cardiff University, United Kingdom; [3]University of Massachusetts Amherst, United States

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

| 10:30 - 12:00 | NOVEL SOURCES I | TULUM ROOM |
|---|---|---|
| | Chairperson: Roger Lewis | |
| 10:30 | **HIGH-REPETITION-RATE, WIDELY TUNABLE INJECTION-SEEDED TERAHERTZ-WAVE PARAMETRIC GENERATOR**.....433 | WA2.1 |
| | Yoshikiyo Moriguchi[1]; Kouji Nawata[2]; Yuma Takida[2]; Yu Tokizane[2]; Shigenori Nagano[1]; Taizo Eno[1]; Kaoru Kumagai[1]; Hiroaki Minamide[2]<br>[1]Topcon Corporation, Japan; [2]Tera-Photonics Research Team, RIKEN Center for Advanced Photonics (RAP), RIKEN, Japan | |
| 10:45 | **TERAHERTZ EMISSION FROM THIN METAL FILMS WITH POROUS NANOSTRUCTURES**.....435 | WA2.2 |
| | Liangliang Zhang[1]; Yuejin Zhao[2]; Xiaomei Yu[3]; Qun Hao[2]; Cunlin Zhang[1]; Xi-Cheng Zhang[4]<br>[1]Department of Physics,Capital Normal University, China; [2]Department of Optical Engineering, Beijing Institute of Technology, China; [3]Institute of Microelectronics, Peking University, China; [4]The Institute of Optics, University of Rochester, United States | |
| 11:00 | **ROOM TEMPERATURE TUNEABLE THZ GENERATION BASED ON EXCITONIC OPTICAL NONLINEARITIES IN GAAS/ALGAAS MULTI-QUANTUM WELL STRUCTURES**.....437 | WA2.3 |
| | Avan Majeed<br>Sheffield university, United Kingdom | |
| 11:30 | ADVANCES IN 1550-NM DRIVEN THZ, GAAS PHOTOCONDUCTIVE SWITCHES.....438 | WA2.4 |
| | Andrea Mingardi; Weidong Zhang; Elliott Brown<br>[1]Wright State University, United States | |

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| **11:45** | **THE ROLE OF BANDGAP ENERGY EXCESS IN SURFACE EMISSION OF TERAHERTZ RADIATION FROM SEMICONDUCTORS**.....440 | **WA2.5** |

Mariana Alfaro-Gomez[1]; Enrique Castro-Camus[2]
[1]Universidad Autónoma de Aguascalientes, Mexico; [2]Centro de Investigaciones en Optica, Mexico

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| **10:30 - 12:00** | **GRAPHENE DEVICES I** | **XCARET ROOM** |

Chairperson: Jean Leotin

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| **10:30** | RESONANT OF NON-RESONAT **CONDUCTIVITY OF A COMMENSURATE TOPOLOGICAL INSULATOR-GRAPHENE HETEROSTRUCTURE IN TERAHERTZ REGIME**.....442 | **WA3.1** |

Chao Zhang; Matthew Sanderson
University of Wollongong, Australia

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| **10:45** | **MATERIAL-DEPENDENCIES OF THE THZ EMISSION FROM PLASMONIC GRAPHENE-BASED PHOTOCONDUCTIVE ANTENNA STRUCTURES**.....444 | **WA3.2** |

Christoph Suessmeier[1]; Sergi Abadal[2]; Daniel Stock[1]; Stephan Schaeffer[1]; Eduard Alarcón[2]; Anna Katharina Wigger[1]; Seyan Ehsan Hosseininejad[2]; Stefan Wagner[3]; Albert Cabellos-Aparicio[2]; Max Lemme[3]; Peter Haring Bolívar[1]
[1]University of Siegen, Germany; [2]NaNoNetworking Center in Catalunya (N3Cat), Spain; [3]RWTH Aachen University, Germany

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| **11:00** | **NONLINEAR SURFACE PLASMON POLARITON AND OPTICAL BISTABILITY OF GRAPHENE IN TERAHERTZ REGIME**.....446 | **WA3.3** |

Chao Zhang; Matthew Sanderson
University of Wollongong, Australia

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| **11:15** | **TERAHERTZ CONDUCTIVITY AND SCATTERING IN FEW-LAYER STACKED GRAPHENE**.....448 | **WA3.4** |

Ashish Chanana; Prashanth R. Gopalan; Hugo Condori; Berardi Sensale-Rodriguez; Ajay Nahata
University of Utah, United States

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| **11:30** | **TERAHERTZ LIGHT-EMITTING TRANSISTOR BASED ON CURRENT INJECTION DUAL-GATE GRAPHENE-CHANNEL FET**.....449 | **WA3.5** |

Deepika Yadav[1]; Youssef Tobah[2]; Kenta Sugawara[1]; Junki Mitsushio[1]; Gen Tamamushi[1]; Takayuki Watanabe[1]; Alexander Dubinov[3]; Maxim Ryzhii[4]; Victor Ryzhii[5]; Taiichi Otsuji[1]
[1]Research Institute of Electrical Communication, Tohoku University, Sendai, Japan; [2]Department of Electrical and Computer Engineering, University of Texas at Austin, United States; [3]Institute for Physics of Microstructures, RAS, Lobachevsky State University of Nizhny Novgorod, Russian Federation; [4]Department of Computer Science and Engineering, University of Aizu, Japan; [5]Institute of Ultra-High-Frequency Semiconductor Electronics, Moscow, Russian Federation

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| **10:30 - 12:00** | **PRECISION MEASUREMENTS**<br>Chairperson: Peiheng Wu | **ISLA MUJERES ROOM** |
| **10:30** | **ABSOLUTE CALIBRATION IN FIR RADIOMETRIC MEASUREMENTS**.....451 | **WA4.1** |

Marco Zerbini; Giuseppe Galatola-Teka
ENEA Frascati, Italy

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| **10:45** | **ASYNCHRONOUS-OPTICAL-SAMPLING THZ TIME-DOMAIN SPECTROSCOPY WITH A FREE-RUNNING, DUAL-WAVELENGTH MODE-LOCKED FIBER LASER**.....453 | **WA4.2** |

Takeshi Yasui[1]; Guoqing Hu[2]; Tatsuya Mizuguchi[1]; Xin Zhao[2]; Takeo Minamikawa[1]; Ting Li[2]; Zheng Zheng[2]
[1]Tokushima University, Japan; [2]Beihang University, China

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| **11:00** | **ABSOLUTE-FREQUENCY HIGH-RESOLUTION REAL-TIME TERAHERTZ DUAL-COMB SPECTROMETER**.....455 | **WA4.3** |

Frederik Walla; Borja Jerez; Pedro Martín-Mateos; Cristina de Dios; Pablo Acedo
Universidad Carlos III de Madrid, Spain

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| **11:15** | **A WAVEFRONT ANALYZER FOR TERAHERTZ TIME-DOMAIN SPECTROMETERS**.....457 | **WA4.4** |

Emmanuel Abraham[1]; Mathilde Brossard[2]; Pierre Fauché[3]; Mathias Perrin[1]; Krzysztof Iwaszczuk[4]; Peter Uhd Jepsen[4]
[1]Bordeaux University, France; [2]Nethis, France; [3]SATT, France; [4]Technical University of Denmark, Denmark

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| **11:30** | **PHASE COHERENT TRANSFER AND RETRIEVAL OF TERAHERTZ FREQUENCY STANDARD VIA OPTICAL FIBER WITH $10^{-18}$-LEVEL ACCURACY AND STABILITY**.....458 | **WA4.5** |

Shigeo Nagano; Motohiro Kumagai; Hiroyuki Ito; Masatoshi Kajita; Yuko Hanado
National Institute of Information and Communications Technology, Japan

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| **11:45** | **METROLOGY OF TRANSMISSION AND REFLECTION MEASUREMENTS BY TDS**.....460 | **WA4.6** |

Andreas Steiger[1]; Mathias Kehrt[1]; Anselm Deninger[2]
[1]PTB, Germany; [2]TOPTICA Photonics AG, Germany

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| **14:00 - 15:30** | **NANOSTRUCTURES**<br>Chairperson: Michael Johnston | **COZUMEL ROOM** |
| **14:00** | **TERAHERTZ THERMOMETRY OF GOLD NANOSPHERES IN WATER**.....462 | **WB1.1** |

Fabio Novelli; James W. M. Chon; Jeffrey A. Davis
Swinburne University of Technology, Australia

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| **14:15** | **A TERAHERTZ DETECTOR WITH SINGLE WALLED CARBON NANOTUBE P-N JUNCTION**.....464 | **WB1.2** |

Yuki Ochiai; Daichi Suzuki; Yukio Kawano
Tokyo Institute of Technology, Japan

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

Andrew Chernev[1]; Nikolay Bagraev[2]; Vyacheslav Chromov[2]; Leonid Klyachkin[2]; Anna Malyarenko[2]; Nikolay Rul'[2]; Anton Emelyanov[1]; Michael Dubina[1]
[1]St Petersburg Academic University, Russian Federation; [2]Ioffe Institute, Russian Federation

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

Valerii Trukhin[1]; Alexey Bouravleuv[2]; Ilia Mustafin[1]; Anton Eliseev[1]; George Cirlin[2]; Joona-Pekko Kakko[3]; Harri Lipsanen[3]
[1]Ioffe Institute, ITMO University, Russian Federation; [2]St Petersburg Academic University, Russian Federation; [3]Aalto University, Finland

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| **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

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

Kotaro Makino[1]; Kosaku Kato[2]; Keisuke Takano[2]; Shota Kuromiya[2]; Makoto Nakajima[2]; Yuta Saito[1]; Junji Tominaga[1]; Takashi Nakano[1]
[1]National Institute of Advanced Industrial Science and Technology (AIST), Japan; [2]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 |
| | Kosuke Murate[1]; Kazuki Maeda[1]; Shin'ichiro Hayashi[2]; Kodo Kawase[1]<br>[1]Nagoya University, Japan; [2]National Institute of Information and Communications Technology, Japan | |
| 14:15 | **SCALING UP COMPACT TERAHERTZ SOURCES: GENERATING MV/CM THZ FIELDS**.....475 | WB2.2 |
| | Amrutha Gopal[1]; Abel Woldegeorgis[1]; Ronny Groesse[2]; Takayuki Kurihara[3]<br>[1]Helmholtz Institute Jena & Fredrich-Schiller University, Jena, Germany; [2]Fredrich-Schiller University,Jena, Germany; [3]Department of Physics, University of Konstanz, Universitatsstr. 10 Konstanz, 78457 Germany, Germany | |
| 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 |
| | Isao Morohashi; Yoshihisa Irimajiri; Akira Kawakami; Takahide Sakamoto; Norihiko Sekine; Akifumi Kasamatsu; Iwao Hosako<br>National Institute of Information and Communications Technology, Japan | |
| 14:45 | **HIGH-POWER PHOTOCONDUCTIVE TERAHERTZ SOURCE ENABLED BY THREE-DIMENSIONAL LIGHT CONFINEMENT**.....478 | WB2.4 |
| | Nezih Yardimci; Semih Cakmakyapan; Soroosh Hemmati; Mona Jarrahi<br>University of California - Los Angeles, United States | |
| 15:00 | **PROGRESS IN CONTINUOUS WAVE THZ MOLECULAR LASER OPTICALLY PUMPED BY A QUANTUM CASCADE LASER**.....480 | WB2.5 |
| | Antoine Pagies; Guillaume Ducournau; Jean-Francois Lampin<br>IEMN/CNRS, France | |

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| **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

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| **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

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

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

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

Josep Miquel Jornet
University at Buffalo, United States

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

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

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| **15:15** | **TERAHERTZ ELECTROMAGNETIC RESPONSE OF THE SEMICONDUCTING POLYMER POLYFLUORENE MODIFIED WITH GRAPHENE OXIDE PARTICLES**.....492 | **WB3.5** |

Alexander Andrianov; Andrey Aleshin
Ioffe Institute, Russian Federation

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| **14:00 - 15:30** | **SYNCHROTRONS AND ACCELERATORS**<br><br>Chairperson: Neville Luhmann | **ISLA MUJERES ROOM** |
| **14:00** | **COMMITTING SINS IN THE IR AND THZ: BREAKING THE DIFFRACTION-LIMIT WITH SYNCHROTRON INFRARED NANO SPECTROSCOPY**.....N/A | **WB4.1** |

Michael Martin
Lawrence Berkeley National Laboratory, United States

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| **14:30** | **TERAFERMI: STATUS OF THE BEAMLINE AND PILOT EXPERIMENTS**.....494 | **WB4.2** |

Paola Di Pietro[1]; Stefano Lupi[2]; Nidhi Adhlakha[1]; Luca Capasso[1]; Simone Di Mitri[1]; Simone Spampinati[1]; Cristian Svetina[1]; Giuseppe Penco[1]; Enrico Allaria[1]; Marco Veronese[1]; Eleonore Roussel[1]; Mauro Trovò[1]; Giulio Gaio[1]; Luca Giannessi[1]; Andrea Perucchi[1]
[1]Elettra Sincrotrone Trieste, Italy; [2]CNR-IOM and Dip. di Fisica, Università di Roma "La Sapienza", Italy

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| **14:45** | **DETERMINATION OF THE TIMING JITTER OF THZ-SYNCHROTRON RADIATION BY A CROSS-CORRELATION TECHNIQUE**.....496 | **WB4.3** |

Andreas Pohl[1]; Nils Deßmann[1]; Arne Hoehl[2]; Markus Ries[3]; Godehard Wüstefeld[3]; Gerhard Ulm[2]; Heinz-Wilhelm Hübers[1]
[1]HU Berlin / DLR Berlin, Germany; [2]PTB, Germany; [3]HZB, Germany

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| **15:00** | **EXPERIMENTAL RESULTS ON THE TUNABLE SUPERRADIATE THZ RADIATION FROM THE UNDULATOR IN TSINGHUA UNIVERSITY BEAMLINE**.....498 | **WB4.4** |

Xiao Lu Su; Dan Wang; Li Xin Yan; Chuan Xiang Tang
Tsinghua University, China

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| **15:15** | **THZ LINEAR ACCELERATION FOR COMPACT ELECTRON AND X-RAY SOURCES**.....500 | **WB4.5** |

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

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| **16:00 - 17:30** | **NEAR FIELD IMAGING AND SPECTROSCOPY II**<br>Chairperson: Rainer Hillenbrand | **COZUMEL ROOM** |
| **16:00** | **NEAR-FIELD NANOSCOPY OF CURRENT-INDUCED EXCESS NOISE IN GRAPHENE**.....502 | **WC1.1** |

Kuan-Ting Lin[1]; Qianchun Weng[1]; Hirofumi Nema[1]; Sunmi Kim[1]; Kenta Sugawara[2]; Taiichi Otsuji[2]; Susumu Komiyama[1]; Yusuke Kajihara[1]
[1]The University of Tokyo, Japan; [2]Tohoku University, Japan

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| **16:15** | **NEAR-FIELD MICROSCOPY WITH PHASE SENSITIVE COHERENT DETECTION EMPLOYING QUANTUM CASCADE LASERS**.....504 | **WC1.2** |

Oleg Mitrofanov[1]; Leonardo Viti[2]; Maria Giordano[2]; Enrico Dardanis[2]; Daniele Ercolani[2]; Antonio Politano[3]; Lucia Sorba[2]; Miriam Vitiello[2]
[1]University College London, United Kingdom; [2]NEST, Istituto Nanoscienze - CNR, Italy; [3]Università degli Studi della Calabria, Italy

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| **16:30** | **ANALYZING NANOSCALE OPTICAL AND THERMAL PROPERTIES IN NANOPOROUS GRAPHENE BY NEAR-FIELD INFRARED MICROSCOPY**.....506 | **WC1.3** |

Takuya Okamoto[1]; Daichi Suzuki[1]; Yoshikazu Ito[2]; Takeshi Fujita[3]; Yukio Kawano[1]
[1]Tokyo Institute of Technology, Japan; [2]University of Tsukuba, Japan; [3]Tohoku University, Japan

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| **16:45** | **INTEGRATED PROBES FOR NEAR FIELD THZ MICROSCOPY**.....508 | **WC1.4** |

Naser Qureshi[1]; Angelica Yesenia Garcia Jomaso[1]; Joel Perez Urquizo[1]; Gaudencio Paz Martínez[2]; Jesus Garduño Mejia[1]; Carlos Treviño Palacios[2]
[1]Universidad Nacional Autonoma de Mexico, Mexico; [2]INAOE, Puebla, Mexico

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| **17:00** | **RESONANT SCATTERING PROBES IN THE TERAHERTZ RANGE**.....509 | **WC1.5** |

Thomas Siday; Michele Natrella; Jiang Wu; Huiyun Liu; Oleg Mitrofanov
University College London, United Kingdom

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| **16:00 - 17:30** | **GYROTRONS I** | **TULUM ROOM** |

Chairperson: Manfred Thumm

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| **16:00** | **DEVELOPMENT OF FUSION GYROTRONS FOR W7-X**, ITER AND EU DEMO: ONGOING ACTIVITIES AND **FUTURE PLANS** OF KIT.....512 | **WC2.1** |

John Jelonnek[1]; Gaetano Aiello[1]; Konstantinos Avramidis[1]; Gerd Gantenbein[1]; Giovanni Grossetti[1]; Stefan Illy[1]; Zisis C. Ioannidis[1]; Jianbo Jin[1]; Parth Kalaria[1]; Alexander Marek[1]; Ioannis Pagonakis[1]; Tomasz Tzesnicki[1]; Sebastian Ruess[1]; Tobias Ruess[1]; Theo Scherer[1]; Martin Schmid[1]; Dirk Strauss[1]; Manfred Thumm[1]; Fabian Wilde[2]; Chuanren Wu[1]; Andy Zein[1]
[1]Karlsruhe Institute of Technology, Germany; [2]IPP Greifswald, Germany, Germany

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| **16:30** | **DEVELOPMENT OF MW GYROTRONS AND EQUATORIAL LAUNCHER FOR ITER**.....515 | **WC2.2** |

Koji Takahashi; 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

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| **16:45** | **STATUS OF TESTING ACTIVITIES ON GYROTRONS FOR MAGNETIC FUSION APPLICATIONS**.....516 | **WC2.3** |

Kevin Felch; Monica Blank; Steve Cauffman; Philipp Borchard
Communications and Power Industries, United States

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

Hannah Hoffmann[1]; Sudheer Jawla[1]; Michael Shapiro[1]; Richard Temkin[1]; Gregory Hanson[2]
[1]Massachusetts Institute of Technology, United States; [2]Oak Ridge National Laboratory, United States

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

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

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

Chairperson: Willie Padilla

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

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

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

Xuling Lin[1]; Zhi Zhang[1]; Jianbing Zhang[2]
[1]Beijing Institute of Space Mechanics and Electricity, China; [2]Shanghai Institute of Applied Physics, Chinese Academy of Sciences, China

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| **16:30** | **SINGLE PIXEL THZ IMAGING USING NEAR FIELD PHOTOMODULATION**.....526 | **WC3.3** |

Euan Hendry
University of Exeter, United Kingdom

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| **17:00** | **ENHANCED 3D CW TERAHERTZ IMAGING WITH ULTRA SPARSE ARRAYS USING A PHASE COHERENCE METHOD**.....527 | **WC3.4** |

Bessem Baccouche[1]; Wolfgang Sauer-Greff[2]; Ralph Urbansky[2]; Fabian Friederich[1]
[1]Fraunhofer ITWM, Germany; [2]University of Kaiserslautern, Germany

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| **17:15** | **THREE-DIMENSIONAL IMAGE RECONSTRUCTION FOR TERAHERTZ HOLOGRAPHIC WITH SPARSE RANDOM SAMPLING DATA**.....529 | **WC3.5** |

Ye Zhang[1]; Yujiao Zhao[2]; Bin Deng[1]; Yuliang Qin[1]; Binbin Cheng[2]; Jie Liu[2]; Xianjin Deng[2]; Hongqiang Wang[1]
[1]National University of Defense Technology, China; [2]China Academy of Engineering Physics, China

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| **17:30** | **FAST COMPRESSIONLESS RECONSTRUCTION FOR TERAHERTZ IMAGING**.....531 | **WC3.6** |

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

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| **16:00 - 17:30** | **TIME-DOMAIN MEASUREMENTS**<br>Chairperson: Andrea Markelz | **ISLA MUJERES ROOM** |
| **16:00** | **QUANTUM THEORY OF FAST ELECTRO-OPTIC CORRELATIONS**.....533 | **WC4.1** |

Ileana-Cristina Benea-Chelmus[1]; Curdin Maissen[2]; Jerome Faist[1]
[1]ETH Zurich, Switzerland; [2]CIC nanoGUNE, Spain

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

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

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

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

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

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

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

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

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| **17:30 - 19:00** | **SPECIAL SESSION ON BIOMEDICAL SCIENCE AND APPLICATIONS**<br>Chairperson: Enrique Castro Camus | **COZUMEL ROOM** |
| **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** | **THZ IMAGING AS AN ADJUNCT FOR T2 WEIGHTED MAGNETIC RESONANCE IMAGING**.....542 | **WD.2** |

Yong Hu; Shijun Sung; Neha Bajwa; Daniel Ennis; Zachary Taylor
UCLA, United States

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| **18:00** | **STATISTICAL SIGNAL PROCESSING FOR QUANTITATIVE ASSESSMENT OF PULSED TERAHERTZ IMAGING OF HUMAN BREAST TUMORS**.....543 | **WD.3** |

Magda El-Shenawee[1]; Tyler Bowman[1]; Tanny Chavez[1]; Kamrul Khan[1]; Jingxian Wu[1]; Avishek Chakraborty[1]; Keith Bailey[2]
[1]University of Arkansas, United States; [2]Oklahoma State University, United States

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| **18:15** | **ESTIMATION OF DEFORMABLE TRANSFORMATION BETWEEN MEDICAL IMAGES**.....N/A | **WD.4** |

Hassan Rivaz
Concordia University, Canada

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| **18:30** | **DIFFUSION IMAGING OF THE BRAIN FOR MAPPING OF WHITE MATTER TRACTS: CORRELATION OF STRUCTURE AND FUNCTION**.....N/A | **WD.5** |

Lauren O'Donnell
Harvard University, United States

# THURSDAY, AUGUST 31, 2017

| 08:15 - 10:00 | THURSDAY PLENARY<br>Chairperson: Martin Koch | COZUMEL ROOM |
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| 08:30 | **PROMISING NEW WIRELESS COMMUNICATION TECHNOLOGY - 100GBIT/S BY 300 GHZ BAND**.....545 | RP.1 |

Iwao Hosako
National Institute for Communications Technology, Japan

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| 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 |
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| | Chairperson: Leonid Krivitskiy | |
| 10:30 | **BRIDGING THE GAP BETWEEN THE THZ AND IR FREQUENCY REGIME**.....551 | RA1.1 |

Korbinian J. Kaltenecker[1]; Binbin Zhou[2]; Nicolas Stenger[2]; Sebastian Engelbrecht[3]; Bernd M. Fischer[3]; Peter Uhd Jepsen[2]
[1]French-German Research Institute of Saint-Louis/Technical University of Denmark, France; [2]Technical University of Denmark, Denmark; [3]French-German Research Institute of Saint-Louis, France

| 10:45 | **FREQUENCY DIVIDE-AND-CONQUER APPROACH TO CREATING ULTRA-BROADBAND FREQUENCY COMBS IN THE MID-IR-THZ REGION**.....553 | RA1.2 |
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Konstantin Vodopyanov
CREOL - The College of Optics and Photonics, University of Central Florida, United States

| 11:00 | **ALL-INFRARED SPECTROSCOPY TOOLS**.....555 | RA1.3 |
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Fritz Keilmann
Ludwig-Maximilians-Universität München, Germany

| 11:15 | **TERAHERTZ EMISSION FROM ULTRAFAST SPIN AND CHARGE CURRENT AT A RASHBA INTERFACE.**.....557 | RA1.4 |
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Qi Zhang; Matthias B. Jungfleisch; Wei Zhang; John Pearson; Haidan Wen; Axel Hoffmann
Argonne National Lab, United States

| 11:30 | **MECHANISM FOR INTENSITY ENHANCEMENT OF ULTRABROADBAND COHERENT INFRARED PULSES FROM TWO-COLOR EXCITED AIR PLASMA**....558 | RA1.5 |
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Eiichi Matsubara[1]; Masaya Nagai[2]; Masaaki Ashida[2]
[1]Osaka Dental University, Japan; [2]Osaka University, Japan

| 11:45 | **ULTRA-BROADBAND TERAHERTZ TIME DOMAIN SPECTROSCOPY BY SOLID STATE BIASED COHERENT DETECTION**.....560 | **RA1.6** |
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Alessandro Tomasino[1]; Riccardo Piccoli[1]; Diego Caraffini[1]; Andrey Markov[1]; Anna Mazhorova[1]; Rafik Naccache[1]; Fiorenzo Vetrone[1]; Yoann Jestin[1]; Alessandro Busacca[2]; Luca Razzari[1]; Roberto Morandotti[1]
[1]Institut National de la Recherche Scientifique, Canada; [2]University of Palermo, Italy

| 10:30 - 12:00 | **GYROTRONS II** | **TULUM ROOM** |
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Chairperson: Richard Temkin

| 10:30 | **DESIGN CONSIDERATION AND OSCILLATION CHARACTERISTICS OF HIGH-POWER 300 GHZ GYROTRON**.....562 | **RA2.1** |
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Teruo Saito[1]; Yuusuke Yamaguchi[1]; Masafumi Fukunari[1]; Yoshinori Tatematsu[1]; Takumi Hirobe[1]; Ryuji Shinbayashi[1]; Shunsuke Tanaka[1]; Shin Kubo[2]; Takashi Shimozuma[2]; Kenji Tanaka[2]; Masaki Nishiura[3]
[1]University of Fukui, Japan; [2]National Institute for Fusion Science, Japan; [3]The University of Tokyo, Japan

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

| 11:00 | **STUDY OF HIGH POWER AND HIGH FREQUENCY GYROTRON FOR FUSION REACTOR**.....566 | **RA2.3** |
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Keishi Sakamoto[1]; Ryosuke Ikeda[2]; Tsuyoshi Kariya[3]; Yasuhisa Oda[2]; Takayuki Kobayashi[2]; Ken Kajiwara[2]; Kazuo Hayashi[2]; Ryutaro Minami[3]; Koji Takahashi[2]; Tsuyoshi Imai[3]; Shinichi Moriyama[2]
[1]Japan Agency for Quantum and Radiological Science and Technology, Japan; [2]National Institute for Quantum and Radiological and Technology, Japan; [3]University of Tsukuba, Japan

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| **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 Eremeev; Michael Shmelev; Evgeny Tai; Elena Solyanova
Institute of Applied /GYCOM Ltd, Russian Federation

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| **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[1]; Naum Ginzburg[1]; Alim Kaminsky[2]; Sergei Sedykh[2]; Vladislav Zaslavsky[1]
[1]Institute of Applied Physics RAS, Russian Federation; [2]Joint Institute for Nuclear Research, Russian Federation

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

Chairperson: Matthias Hoffmann

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

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

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| **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

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| **11:00** | **HYDRATION DYNAMICS IN CACO3 NUCLEATION BY THZ SPECTROSCOPY**.....576 | **RA3.3** |

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

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

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

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| **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

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| **10:30 - 12:00** | **TERAHERTZ IMAGING**<br>Chairperson: Euan Hendry | **ISLA MUJERES ROOM** |
| **10:30** | **REAL-SPACE NANO-IMAGING OF HOT ELECTRON DYNAMICS**.....581 | **RA4.1** |

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

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

Sven Augustin[1]; Sven Frohmann[2]; Peter Jung[2]; Heinz-Wilhelm Hübers[1]
[1]Humboldt Universität zu Berlin, Germany; [2]Technische Universität Berlin, Germany

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| **11:15** | **AMPLITUDE VS. TIME-OF-FLIGHT CONTRAST IN THZ TOMOGRAPHY**.....586 | **RA4.3** |

Miguel Banuelos-Saucedo
Centro de Ciencias Aplicadas y Desarrollo Tecnológico, Universidad Nacional Autónoma de México, Mexico

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| **11:30** | **CONTRIBUTION OF TERAHERTZ TIME-DOMAIN ANALYSIS TO ART HISTORY: THE CASE OF THE PAINTINGS OF THE SANTO ENTIERRO DE NUESTRO SEÑOR JESUCRISTO ALTARPIECE**.....588 | **RA4.4** |

Corinna Ludovica Koch Dandolo[1]; Alma Montserrat Gomez-Sepulveda[2]; Arturo Hernandez-Serrano[1]; Roxanne Radpour[3]; José Álvaro Zárate Ramírez[2]; Gerardo Hernandez[2]; Carolusa Gonzalez Tirado[4]; Mirta Insaurralde[5]; Enrique Castro-Camus[1]
[1]Centro de Investigaciones en Optica, Mexico; [2]Escuela de Conservacion y Restauracion de Occidente, Mexico; [3]UCLA, United States; [4]Instituto Nacional de Antropologia e Historia, Mexico; [5]El Colegio de Michoacan, Mexico

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| **11:45** | **STRATIGRAPHIC DETAILS OF A 17TH CENTURY OIL PAINTING ON CANVAS REVEALED BY TERAHERTZ IMAGING**.....590 | **RA4.5** |

Junliang Dong[1]; Alexandre Locquet[1]; Anne Adrian[2]; Claire Meunier[2]; Kevin Kazek[2]; Philippe Brunella[2]; David S. Citrin[1]
[1]Georgia Institute of Technology, United States; [2]Musee de la Cour d'Or, France

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| **14:00 - 15:15** | **IMAGING AND SENSING APPLICATIONS**<br>Chairperson: Masahiko Tani | **COZUMEL ROOM** |
| **14:00** | **TERAHERTZ VOLATILE GAS SENSING AND SENSITIVITY ANALYSIS BASED ON MICROPOROUS POLYMER STRUCTURES**.....591 | **RB1.1** |

Borwen You[1]; Ja-Yu Lu[2]; Toshiaki Hattori[1]
[1]University of Tsukuba, Japan; [2]National Cheng Kung University, Taiwan

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

Arturo Hernandez-Serrano[1]; Enrique Castro-Camus[1]; Dorilian Lopez[2]
[1]Centro de Investigaciones en Optica, Mexico; [2]Tecnologico de Monterrey, Mexico

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| **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

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

Korbinian J. Kaltenecker[1]; Binbin Zhou[2]; Sebastian Engelbrecht[3]; Bernd M. Fischer[3]; Peter Uhd Jepsen[2]
[1]French-German Research Institute of Saint-Louis/Technical University of Denmark, France; [2]Technical University of Denmark, Denmark; [3]French-German Research Institute of Saint-Louis, France

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

Chairperson: Yuri Gorelov

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| **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

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| **14:15** | **EXPERIMENTAL STUDY OF A THZ BAND DOUBLE-BEAM GYROTRON**.....602 | **RB2.2** |

Toshitaka Idehara[1]; Mikhail Glyavin[2]; Alexei Kuleshov[3]; Svilen Sabchevski[4]; Vladimir Manuilov[2]; Vladislav Zaslavsky[2]; Irina Zotova[2]; Anton Sedov[2]
[1]University of Fukui, Japan; [2]Institute of Applied Physics, RAS, Russian Federation; [3]Usikov Institute of Radiophysics and Electronics, Ukraine; [4]Institute of Electronics, BAS, Bulgaria

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| **14:30** | **DEVELOPMENT OF ADVANCED OUTPUT COUPLING STRUCTURES FOR GYROTRONS**.....604 | **RB2.3** |

Lawrence Ives[1]; Michael Read[1]; Thuc Bui[1]; David Marsden[1]; George Collins[1]; Samuel Schaub[2]; William Guss[2]; Richard Temkin[2]; Jeffrey Neilson[3]; Yuri Gorelov[4]; Mirela Cengher[4]; Charles Moeller[4]; Alexandra LeViness[4]; John Lohr[4]
[1]Calabazas Creek Research, Inc., United States; [2]Massachusetts Institute of Technology, United States; [3]Lexam Research, United States; [4]General Atomics, United States

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| **14:45** | **2 MW CW RF LOAD FOR ECH SYSTEMS**.....606 | **RB2.4** |

Lawrence Ives[1]; David Marsden[1]; Jeffrey Neilson[2]; George Collins[1]
[1]Calabazas Creek Research, Inc., United States; [2]Lexam Research, United States

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| **15:00** | **REDUCTION OF THE OHMIC LOSS OF MITER BEND POLARIZER MIRRORS FOR HIGH-POWER LONG-PULSE ECRH SYSTEMS**.....608 | **RB2.5** |

Dietmar Wagner[1]; Fritz Leuterer[1]; Joerg Stober[1]; Walter Kasparek[2]; Carsten Lechte[2]
[1]Max-Planck-Institut fuer Plasmaphysik, Germany; [2]University Stuttgart, Germany

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| **14:00 - 15:30** | **SPECTROSCOPY III** | **XCARET ROOM** |

Chairperson: Michael Martin

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| **14:00** | **GMR AT THZ FREQUENCIES IN COPLANAR WAVEGUIDES**.....610 | **RB3.1** |

Nicolas Peters; John Cunningham; Bryan Hickey; Lianhe Li; Edmund Linfield; Giles Davies; Christopher Wood
University of Leeds, United Kingdom

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| **14:15** | **PHOTOELECTRIC EFFECTS IN HG1-XCDXTE FILMS IN THE TERAHERTZ SPECTRAL RANGE**.....612 | **RB3.2** |

Alexandra Galeeva[1]; Alexey Artamkin[1]; Sergey Dvoretskii[2]; Nikolay Mikhailov[2]; Sergey Danilov[3]; Ludmila Ryabova[1]; Dmitry Khokhlov[1]
[1]M.V. Lomonosov Moscow State University, Russian Federation; [2]Rzhanov Institute of Semiconductor Physics, Russian Federation; [3]Regensburg University, Germany

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| **14:30** | **MAGNETO --THZ SPECTROSCOPY IN SPINEL SUPERCONDUCTOR LITI2O4 THIN FILMS**.....614 | **RB3.3** |

Yue Huang[1]; Kimberly Reichel[1]; Junichiro Kono[2]; Lixin Cao[3]; Daniel Mittleman[1]
[1]Brown University, United States; [2]Rice University, United States; [3]Institute of Physics, Chinese Academy of Sciences, China

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| **14:45** | **TEMPERATURE-RESOLVED TERAHERTZ TIME DOMAIN SPECTROSCOPY TO INVESTIGATE SOLID STATE PHASE-TRANSITIONS IN AMINO ACID CRYSTALS**.....616 | **RB3.4** |

Jens Neu; Coleen T. Nemes; Kevin P. Regan; Michael R. C. Williams; Charles A. Schmuttenmaer
Yale University, United States

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| **15:00** | **TERAHERTZ PROBING OF TEMPERATURE-DRIVEN TOPOLOGICAL PHASE TRANSITION IN HGCDTE BULK CRYSTAL AND HGTE QUANTUM WELL**.....618 | **RB3.5** |

Sandra Ruffenach[1]; Michal Marcinkiewicz[1]; Sergey S. Krishtopenko[1]; Christophe Consejo[1]; Jérémie Torres[2]; Milan Orlita[3]; Wojciech Knap[1]; Dmitry Smirnov[4]; Sergey V. Morozov[5]; Vladimir I. Gavrilenko[5]; Nikolay N. Michailov[6]; Sergey Dvoretskii[6]; Frederic Teppe[1]
[1]L2C - UMR5221, France; [2]IES - UMR5214, France; [3]LNCMI, France; [4]NHMFL, United States; [5]IPM, Russian Federation; [6]ISP, Russian Federation

| 14:00 - 15:30 | BIOLOGY AND MEDICINE I | ISLA MUJERES ROOM |
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| | 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 |
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Holger Breitenborn[1]; Rafik Naccache[2]; Anna Mazhorova[1]; Matteo Clerici[3]; Riccardo Piccoli[1]; Larousse K. Khorashad[4]; Alexander O. Govorov[4]; Luca Razzari[1]; Fiorenzo Vetrone[5]; Roberto Morandotti[1]
[1]Institut National de la Recherche Scientifique (INRS-EMT), Canada; [2]Concordia University, Canada; [3]University of Glasgow, United Kingdom; [4]Ohio University, United States; [5]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 |
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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 |
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Andrea Markelz[1]; Mengyang Xu[1]; Deepu George[1]; Ralph Jimenez[2]
[1]University at Buffalo, SUNY, United States; [2]University of Colorado, Boulder, CO, United States

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| **15:15** | **A NOVEL APPROACH OF AQUEOUS SOLUTION ANALYSIS USING A FULLY-INTEGRATED TERAHERTZ NEAR-FIELD SENSOR**.....627 | **RB4.5** |

Laven Mavarani[1]; Philipp Hillger[1]; Janusz Grzyb[1]; Quentin Cassar[2]; Amel Al-Ibadi[2]; Thomas Zimmer[2]; Gaëtan MacGrogan[3]; Jean-Paul Guillet[2]; Patrick Mounaix[2]; Ullrich Pfeiffer[1]
[1]Institute for High-Frequency & Communication Technology, University of Wuppertal, Germany; [2]University of Bordeaux, IMS UMR CNRS 5218, France; [3]Institut Bergonié, Centre Régional de Lutte Contre le Cancer, France

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| **16:00 - 17:30** | **PHOTOCONDUCTIVE DEVICES I**<br>Chairperson: Mona Jarrahi | **COZUMEL ROOM** |
| **16:00** | **FIBER-COUPLED, PHOTOCONDUCTIVE RECEIVER FOR HETERODYNE DETECTION UP TO 1 THZ STABILIZED BY AN OPTICAL FREQUENCY COMB**.....629 | **RC1.1** |

Simon Nellen[1]; Björn Globisch[1]; James O'Gorman[2]; Aravind Anthur[3]; Vidak Vujicic[3]; Liam Barry[3]; Martin Schell[1]
[1]Fraunhofer HHI, Germany; [2]Xylophone Optics, Ireland; [3]Dublin City University, Ireland

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| **16:30** | **ULTRA-THIN INGAAS-MSM PHOTODETECTORS FOR THZ OPTOELECTRONICS APPLICATIONS**.....632 | **RC1.2** |

Maximilien Billet; Desmet Yann; Guillaume Ducournau; Xavier Wallart; Christophe Coinon; Jean-Francois Lampin; Emilien Peytavit
Institut d'électronique de microélectronique et de nanotechnologies, France

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| **16:45** | **70 DB SIGNAL-TO-NOISE RATIO AT 3 THZ USING LOCALLY DOPED INGAAS-BASED PHOTOCONDUCTIVE DETECTORS**.....634 | **RC1.3** |

Robert Kohlhaas; Simon Nellen; Lars Liebermeister; Björn Globisch; Martin Schell
Fraunhofer Heinrich-Hertz-Institute, Germany

| 17:00 | **VERTICAL NANOWIRE CONTACTED THZ SCHOTTKY DETECTORS BASED ON GALLIUM ARSENIDE FOR ZERO-BIAS OPERATION**.....636 | RC1.4 |
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Ahid S. Hajo; Oktay Yilmazoglu; Franko Küppers
Technische Universität Darmstadt, Germany

| 17:15 | **MONOLITHIC ECHO-LESS PHOTOCONDUCTIVE SWITCHES FOR HIGH-RESOLUTION TERAHERTZ TIME-DOMAIN SPECTROSCOPY**.....638 | RC1.5 |
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Kenneth Maussang[1]; José Palomo[1]; Jean-Michel Manceau[2]; Raffaele Colombelli[2]; Isabelle Sagnes[3]; Lianhe Li[4]; Edmund Linfield[4]; Giles Davies[4]; Juliette Mangeney[1]; Jerome Tignon[1]; Sukhdeep Dhillon[1]
[1]Ecole Normale Superieure, France; [2]Université Paris-Sud, France; [3]LPN, France; [4]University of Leeds, United Kingdom

| 16:00 - 17:00 | **GYROTRONS IV** | TULUM ROOM |
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Chairperson: Alexander Litvak

| 16:00 | **DEVELOPMENT OF HIGH POWER THZ BAND GYROTRONS AND THEIR APPLICATIONS IN PHYSICAL RESEARCH**.....639 | RC2.1 |
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Mikhail Glyavin; Gregory Denisov
Institute of Applied Physics RAS, Russian Federation

| 16:15 | **COMMISSIONING OF THE EXTENDED MULTI-FREQUENCY ECRH SYSTEM AT ASDEX UPGRADE**.....641 | RC2.2 |
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Dietmar Wagner[1]; Joerg Stober[1]; Michael Kircher[1]; Fritz Leuterer[1]; Francesco Monaco[1]; Max Muenich[1]; Martin Schubert[1]; Hartmut Zohm[1]; Gerd Gantenbein[2]; John Jelonnek[2]; Manfred Thumm[2]; Andreas Meier[2]; Theo Scherer[2]; Dirk Strauss[2]; Walter Kasparek[3]; Carsten Lechte[3]; Burkhard Plaum[3]; Alexander Zach[3]; Alexander Litvak[4]; Gregory Denisov[4]; Alexey Chirkov[4]; Leonid Popov[5]; Vadim Nichiporenko[5]; Vadim Myasnikov[5]; Evgeny Tai[5]; Elena Solyanova[5]; Sergey Malygin[5]; Vladimir Malygin[4]
[1]Max-Planck-Institut fuer Plasmaphysik, Germany; [2]KIT Karlsruhe, Germany; [3]University Stuttgart, Germany; [4]Institute of Applied Physics, Russian Federation; [5]GYCOM Ltd., Russian Federation

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| **16:30** | **OVERSIZED KA-BAND SURFACE-WAVE OSCILLATOR BASED ON 2D PERIODICAL CORRUGATED STRUCTURE**.....643 | **RC2.3** |

Naum Ginzburg; Evgeny Ilyakov; Igor Kulagin; Nikolai Peskov; Vladislav Zaslavsky; Alexander Sergeev
Institute of Applied Physics RAS, Russian Federation

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| **16:45** | **DESIGN AND EXPERIMENT OF A BROADBAND W-BAND GYRO-TWA BASED ON A HELICALLY CORRUGATED INTERACTION REGION**.....645 | **RC2.4** |

Wenlong He; Craig Donaldson; Liang Zhang; Paul McElhinney; Huabi Yin; Jason Garner; Kevin Ronald; Adrian Cross; Alan Phelps
The University of Strathclyde, United Kingdom

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| **16:00 - 17:30** | **SPECTROSCOPY IV**<br>Chairperson: Xuechu Shen | **XCARET ROOM** |
| **16:00** | **AMORPHOUS TERAHERTZ DYNAMICS AT THE ATOMIC LEVEL - INSIGHTS FROM A DUAL EXPERIMENTAL AND THEORETICAL APPROACH**.....647 | **RC3.1** |

Michael Ruggiero; Axel Zeitler
University of Cambridge, United Kingdom

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| **16:15** | **TERAHERTZ SPECTROSCOPY OF VIBRATIONAL ANHARMONICITY IN CRYSTALLINE Γ-AMINOBUTYRIC ACID**.....649 | **RC3.2** |

Sara Dampf; Timothy Korter
Syracuse University, United States

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| **16:30** | **BOSON PEAK INVESTIGATION OF GLASSY GLUCOSE BY TERAHERTZ TIME-DOMAIN SPECTROSCOPY AND LOW-FREQUENCY RAMAN SCATTERING**.....651 | **RC3.3** |

Mikitoshi Kabeya[1]; Tatsuya Mori[1]; Yasuhiro Fujii[2]; Akitoshi Koreeda[2]; Byoung Wan Lee[3]; Jae-Hyeon Ko[3]; Seiji Kojima[1]
[1]University of Tsukuba, Japan; [2]Ritsumeikan University, Japan; [3]Hallym University, Korea, Republic of

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| **16:45** | **TERAHERTZ PROPERTIES OF FREE STANDING FILMS OF COMPOSITES OF BACTERIAL CELLULOSE WITH CONDUCTING POLYMER PEDOT/PSS**.....653 | **RC3.4** |

Alexander Andrianov; Andrey Aleshin
Ioffe Institute, Russian Federation

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| **17:00** | **VIBRATIONAL AND ENERGETIC ANALYSIS OF SORBITOL CRYSTAL FORMS**.....655 | **RC3.5** |

Teresa Dierks; Timothy Korter
Syracuse University, United States

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| **17:15** | **CHARACTERIZATION OF CRYSTALLINE MUCONIC ACID POLYMORPHS**.....657 | **RC3.6** |

Adam Zaczek; Timothy Korter
Syracuse University, United States

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| **16:00 - 17:30** | **BIOLOGY AND MEDICINE II** | **ISLA MUJERES ROOM** |

Chairperson: Robert Giles

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| **16:00** | **THE APPLICATION OF EFFECTIVE MEDIUM THEORY IN TISSUE PHANTOMS**.....659 | **RC4.1** |

Shuting Fan; Bao Truong; Anthony Fitzgerald; Vincent Wallace
The University of Western Australia, Australia

| 17:30 - 19:00 | THURSDAY POSTER SESSION | Cozumel exhibit hall |
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**DETECTION OF HIGH INTENSITY THZ RADIATION BY INP DOUBLE HETEROJUNCTION BIPOLAR TRANSISTORS**.....666 **RD.1**

Nina Dyakonova[1]; Dominique Coquillat[1]; Dmytro But[1]; Frederic Teppe[1]; Wojciech Knap[1]; Virginie Nodjiadjim[2]; Muriel Riet[2]; Agnieszka Konczykowska[2]; Philipp Faltermeier[3]; Peter Olbrich[3]; Sergey Ganichev[3]
[1]Laboratoire Charles Coulomb (L2C), UMR 5221 CNRS-Université de Montpellier, France; [2]III-V Lab, France; [3]Terahertz Centre, University of Regensburg, Germany

**W-SHAPE NANODIODE CONTROLLED BY SURFACE STATES FOR THZ DETECTION**.....668 **RD.2**

Irving Eduardo Cortes-Mestizo[1]; Edgar Briones[2]; Alfredo Belio Manzano[1]; Leticia Ithsmel Espinosa-Vega[1]; Victor Hugo Mendez Garcia[1]
[1]Universidad Autónoma de San Luis Potosí, Mexico; [2]Instituto de Estudios Superiores de Occidente, Mexico

**A DIELECTRIC LOADED HIGHER ORDER MODE THZ ELECTRON INJECTOR**.....670 **RD.3**

Moein Fakhari[1]; Franz Kaertner[1]; Arya Fallahi[2]
[1]DESY, Hamburg University, Germany; [2]DESY, Germany

**DISPERSIVE PROPERTIES OF SELF-COMPLEMENTARY LOG-PERIODIC ANTENNAS IN PULSED THZ SYSTEMS**.....672 **RD.4**

Anuar de Jesus Fernandez Olvera[1]; Uttam Nandi[1]; Justin Norman[2]; Arthur C. Gossard[2]; Hartmut G. Roskos[3]; Sascha Preu[1]
[1]TU Darmstadt, Germany; [2]UC Santa Barbara, United States; [3]Johann Wolfgang Goethe University Frankfurt, Germany

**POLARIZATION SPLITTER FOR TERAHERTZ FREQUENCIES BY THREE-DIMENSIONAL PRINTING**.....674 **RD.5**

Arturo Hernandez-Serrano; Enrique Castro-Camus
Centro de Investigaciones en Optica, Mexico

# FRIDAY, SEPTEMBER 1, 2017

| 08:15 - 10:00 | FRIDAY PLENARY<br>Chairperson: Gun-Sik-Park | COZUMEL ROOM |
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| 08:30 | ONE KELVIN MEANS 21 GHZ: PROBING SUPERCONDUCTORS WITH LOW-FREQUENCY OPTICS.....758 | FP.1 |
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Marc Scheffler; Markus Thiemann; Manfred Beutel; Uwe S. Pracht; Martin Dressel
Universität Stuttgart, Germany

| 09:15 | TERAHERTZ CAVITY QUANTUM ELECTRODYNAMICS.....N/A | FP.2 |
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Junichiro Kono
Rice University, United States

| 10:30 - 12:00 | PHOTOCONDUCTIVE DEVICES II | COZUMEL ROOM |
|---|---|---|
| | Chairperson: Haewook Han | |
| 10:30 | **BROADBAND TERAHERTZ SPECTROMETRY THROUGH PLASMONIC PHOTOMIXERS**.....762 | FA1.1 |
| | Mona Jarrahi<br>University of California Los Angeles, United States | |
| 11:00 | **RESONANT FREQUENCY TUNING AND TRANSMISSION ENHANCEMENT OF TERAHERTZ PLASMONIC ANTENNA BY DIELECTRIC ENGINEERING**.....763 | FA1.2 |
| | Toshio Sugaya; Takashi Iguchi; Yukio Kawano<br>Tokyo Institute of Technology, Japan | |
| 11:15 | **INVESTIGATION INTO FREE-SPACE TERAHERTZ RADIATION FROM A LT-GAAS-ON-QUARTZ PHOTOCONDUCTIVE EMITTER**.....765 | FA1.3 |
| | David Bacon; Andrew Burnett; Matthew Swithenbank; Christopher Russell; Lianhe Li; Christopher Wood; John Cunningham; Edmund Linfield; Giles Davies; Paul Dean; Joshua Freeman<br>University of Leeds, United Kingdom | |
| 11:30 | **NANOELECTRODE THZ PHOTOMIXER USING A MOCVD-GROWN INGAAS THIN LAYER**.....767 | FA1.4 |
| | Kiwon Moon; Eui Su Lee; Il-Min Lee; Dong Woo Park; Hyun Soo Kim; Jeong-Woo Park; Sang-Pil Han; Kyeong Sun Choi; Kyung Hyun Park<br>Electronics and Telecommunications Research Institute (ETRI), Korea, Republic of | |
| 11:45 | **OPTIMIZING THE METAL ADHESION LAYER OF PLASMONIC PHOTOCONDUCTIVE SOURCES FOR HIGH-POWER TERAHERTZ GENERATION**.....769 | FA1.5 |
| | Deniz Turan[1]; Sofia Carolina Corzo-Garcia[2]; Enrique Castro-Camus[2]; Mona Jarrahi[1]<br>[1]University of California, Los Angeles, United States; [2]Centro de Investigaciones en Optica, Mexico | |

| 10:30 - 12:00 | GYROTRONS V | TULUM ROOM |
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| | 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[1]; Liang Zhang[1]; Wenlong He[1]; Guoxiang Shu[1]; Kevin Ronald[1]; Alan Phelps[1]; Junping Zhao[2]; Yong Yin[3]
[1]University of Strathclyde, United Kingdom; [2]Xi'an Jiaotong University, China; [3]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**

Alexander Sidorov; Sergey Razin; Sergey Golubev; Andrey Fokin; Alexey Veselov; Dmitry Sidorov; Alexey Luchinin; Alexander Vodopyanov; Mikhail Glyavin
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**

Ioannis Pagonakis; Chuanren Wu; Konstantinos Avramidis; Gerd Gantenbein; Stefan Illy; Manfred Thumm; John Jelonnek
Karlsruhe Institute of Technology, Germany

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

Seitaro Mitsudo; Kenshi Hiiragi; Kaishi Khono; Muu Narioka; Yutaka Fujii
University of Fukui, Japan

| 10:30 - 12:00 | SPECTROSCOPY V | XCARET ROOM |
|---|---|---|
| | Chairperson: Naser Qureshi | |
| 10:30 | **STUDY OF THE SLOW-WAVE INTERACTION IN A THREE VALLEY SEMICONDUCTOR IN HIGH ELECTRIC FIELDS**.....779 | FA3.1 |
| | Petr Makhalov; Dmitri Lioubtchenko; Joachim Oberhammer<br>KTH Royal Institute of Technology, Sweden | |
| 10:45 | **ANHARMONIC TERAHERTZ DYNAMICS CHARACTERISED WITH FIRST-PRINCIPLES SIMULATIONS**.....781 | FA3.2 |
| | Michael Ruggiero[1]; Alessandro Erba[2]; Axel Zeitler[1]<br>[1]University of Cambridge, United Kingdom; [2]University of Torino, Italy | |
| 11:00 | **TERAHERTZ SPECTROSCOPY OF A SINGLE ATOM IN A FULLERENE CAGE**.....783 | FA3.3 |
| | Shaoqing Du[1]; Ya Zhang[1]; Kenji Yoshida[1]; Kazuhiko Hirakawa[2]<br>[1]Center for Photonics Electronics Convergence, Institute of Industrial Science, University of Tokyo, Japan; [2]Institute for Nano Quantum Information Electronics, University of Tokyo, Japan | |
| 11:30 | **DYNAMICS OF PHOTO-INDUCED CARRIERS IN SILICON STUDIED BY RELATIVISTIC DOPPLER REFLECTION OF THZ LIGHT**.....784 | FA3.4 |
| | Masaaki Tsubouchi[1]; Nanase Kohno[2]<br>[1]National Institutes for Quantum and Radiological Science and Technology, Japan; [2]Kyoto University, Japan | |
| 11:45 | **TERAHERTZ SPECTRAL FINGERPRINTS DETECTION WITH HILBERT-HUANG TRANSFORM**.....786 | FA3.5 |
| | Yunpeng Su[1]; Xiaoping Zheng[1]; Xiaojiao Deng[1]; Yuqiang Deng[2]<br>[1]Tsinghua University, China; [2]National Institute of Metrology, China | |

| 10:30 - 12:00 | **BIOLOGY AND MEDICINE III** | **ISLA MUJERES ROOM** |
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| | 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[1]; S. Carolina Rojas-Landeros[1]; Mariana Alfaro-Gomez[2]; Arturo Hernandez-Serrano[1]; Enrique Castro-Camus[1]<br>[1]Centro de Investigaciones en Optica, Mexico; [2]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<br>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[1]; Aldo Moreno[1]; Giacomo Ulisse[2]; Blanca Duarte[3]; Fabian Dornuf[2]; Fernando Larcher[3]; Viktor Krozer[2]; Pablo Acedo[1]<br>[1]Universidad Carlos III de Madrid, Spain; [2]Goethe University Frankfurt, Germany; [3]CIEMAT, Spain | |
| **11:15** | **EVALUATION OF BIOLOGICALLY RELEVANT LEVEL OF MMW RADIATION ABSORPTION IN NEURONAL TISSUE**.....794 | **FA4.4** |
| | Sergii Romanenko[1]; Peter Siegel[2]; Livia Hool[1]; Alan Harvey[1]; Vincent Wallace[1]<br>[1]The University of Western Australia, Australia; [2]California Institute of Technology, Pasadena, United States | |

| 11:30 | **BIOLOGICAL EFFECTS OF INTENSE THZ PULSES ON HUMAN SKIN TISSUE MODELS**.....796 | **FA4.5** |
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Cameron Hough[1]; David Purschke[1]; Chenxi Huang[1]; Lyubov Titova[2]; Olga Kovalchuk[3]; Brad Warkentin[1]; Frank Hegmann[1]
[1]University of Alberta, Canada; [2]Worcester Polytechnic Institute, United States; [3]University of Lethbridge, Canada