

IRMMW-THz 2023

48th CONFERENCE ON INFRARED,
MILLIMETER, AND TERAHERTZ
WAVES



17 -22 September 2023
Montreal, Quebec, Canada



M O N T R E A L

Conference Program

IEEE Part. No. CFP23IMM-ART
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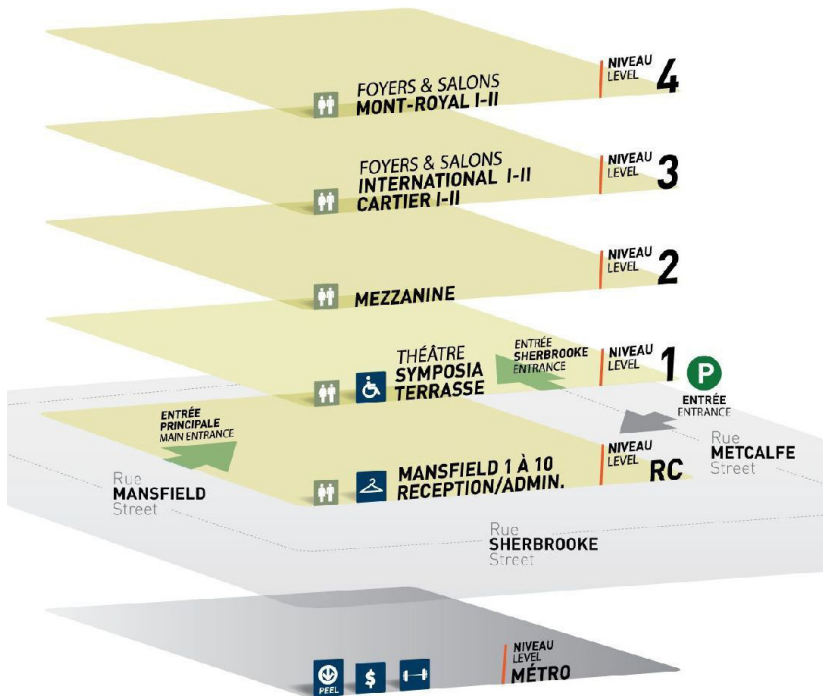
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Conference Venue: Centre Mont-Royal



Program at a Glance

	Sunday Sep 17	Monday Sep 18	Tuesday Sep 19	
08:00 - 08:30		Registration	Registration	
08:30 - 09:00		Opening Ceremony		
09:00 - 09:30	Student Workshops	Plenary	Plenary	
09:30 - 10:00				
10:00 - 10:30			Break	
10:30 - 11:00		Exhibitor Setup	Break	Oral sessions
11:00 - 11:30			Oral Sessions	
11:30 - 12:00				
12:00 - 12:30			Lunch	Lunch
12:30 - 13:00				
13:00 - 13:30				
13:30 - 14:00			Oral Sessions	Oral Sessions
14:00 - 14:30				
14:30 - 15:00				
15:00 - 15:30				
15:30 - 16:00			Break	Break
16:00 - 16:30			Oral Sessions	Oral Sessions
16:30 - 17:00				
17:00 - 17:30		Welcome Reception		
17:30 - 18:00				
18:00 - 18:30		Poster Sessions	Poster Sessions	
18:30 - 19:00				
19:00 - 19:30				
19:30 - 22:00				

Wednesday Sep 20	Thursday Sep 21	Friday Sep 22	
Registration	Registration		08:00 - 08:30
Plenary	Plenary	Closing Ceremony	08:30 - 09:00
		Plenary	09:00 - 09:30
Break	Break		
			10:00 - 10:30
Oral Sessions	Oral Sessions	Break	10:30 - 11:00
		Oral Sessions	11:00 - 11:30
Lunch	YS Award		Lunch
Oral Sessions	Oral Sessions	Transport to Excursion	12:30 - 13:00
Break	Break	Trip to Sentier des Cimes	13:30 - 14:00
Oral Sessions	Oral Sessions	Trip to Sentier des Cimes	14:30 - 15:00
Oral Sessions	Oral Sessions	Trip to Sentier des Cimes	15:30 - 16:00
Gala Dinner Windsor Ballrooms	Poster Sessions	Trip to Sentier des Cimes	16:30 - 17:00
			17:30 - 18:00
			18:00 - 18:30
			18:30 - 19:00
			19:00 - 19:30
			19:30 - 22:00

Welcome to IRMMW-THz 2023

Dear Colleagues,

It is a pleasure to welcome you to the 2023 48th International Conference on Infrared Millimeter and Terahertz Waves (IRMMW-THz), which is being held in Montreal, Canada from Sept. 17 - 22, 2023. This is the first time IRMMW-THz comes to Canada and we are very happy to host you in the vibrant and alive city of Montreal. The IRMMW-THz scientific community is very well represented in Canada with many academic groups, companies and government organizations involved in various aspects of interest to our field of research. IRMMW-THz 2023 is organized by a Local Organizing Committee composed of scientists working in the many disciplines that comprise the IRMMW-THz community and coming from both university and government-based research institutes in Canada and in the US close to the border.

IRMMW-THz 2023 is a live-only event with no hybrid component this year. The fully in-person conference is being hosted at Centre Mont-Royal, located one block from McGill University main campus and easily accessible from all major public transportation routes that connect you to the rest of the amazing city of Montreal. Centre Mont-Royal is a modern conference facility that has hosted many prestigious meetings and is ideally suited to host our modest sized conference, with a spacious symposium theatre for the plenary talks and easily accessible breakout rooms for our five parallel sessions. Conference exhibitors and poster sessions will be hosted in the Foyer International (3rd floor) and Foyer Mont-Royal (4th floor), providing plenty of opportunities for networking and social engagement. In addition to this printed conference program, the program is also accessible via the Whova digital platform and mobile app, where networking and notifications will be communicated during our event.

I welcome all of you, and encourage you to attend the technical activities, meet our sponsors and exhibitors and enjoy the social program of the 48th IRMMW-THz conference. It is going to be a memorable event, with high quality technical content, a convenient conference center and a safe, student-friendly city with many attractions to take in.

Sincerely,
Professor David Cooke, Conference Chair, on behalf of the Local Organizing Committee.



General Information

Conference Overview

The International Conference on Infrared, Millimeter and THz Waves is a truly multidisciplinary event, which covers wide ranges of Physics and Engineering topics and consequently attracts the attention of a very diverse audience. The Local Organizing Committee of the 2023 Conference in Montreal has recognized this multidisciplinary nature and decided to focus the technical program on four different thematic topics and one general Applications topic. The different topic areas and their co-Chairs are: **Sources & Detectors** (Prof. Lu Wang, ICFO); **Multi-Physics** (Prof. Chiko Otani, RIKEN); **Material Science** (Prof. Lyubov Titova, WPI); and **Engineering in Systems** (Prof. Joo-Hiuk Son, Seoul U.). **Applications** is also recognized as a separate topic so that the audience and presenters that are more interested in the practice of new technology will find many targeted papers.

All the co-Chairs will contribute to the composition of this portion of the program, with the ultimate responsibility falling on **Profs. Tsuneyuki Ozaki and Francois Blanchard**. As a consequence, the TPC members were asked to specify a specific “Topic of competence” (despite the fact that many experienced authors have expertise in more than one area), in their roles as reviewers. In addition, each major Topic was further subdivided to facilitate the sorting of submitted papers and their assignment to specific reviewers.

Over 700 papers from 34 countries were submitted to the conference this year. The papers were reviewed and ranked by the TPC (technical program committee). The accepted papers have been divided into ten plenary talks, 45 keynote talks, 359 oral presentations distributed in five parallel sessions, and 312 poster presentations. In addition, a student workshop is held on the Sunday, organized by **Prof. Jean Michel-Menard**. The workshop will feature four tutorial speakers and a networking event with selected industrial representatives from small to large companies.

The largest topic by paper submission with 224 papers in total was **Sources & Detectors**, consistent with previous years. This topic was subdivided to reflect the diversity of instruments and techniques that enable us to generate and measure terahertz radiation. This topic area now has 4 sessions on Electronic-Based Sources and Detectors and 8 sessions on Laser-Based Sources and Detectors. Highlights in this area are Monday's opening Plenary session from Prof. Robert Boyd highlighting the nonlinear optics of THz generation and Tuesday's Plenary session from Prof. Tobias Kampfrath discussing spintronic THz sources and applications for photonics.

The **Multi-Physics** topic saw 104 papers submitted which allowed us to create a very inspiring program with a mix of oral and poster presentations. Based on the accepted papers, oral sessions were dedicated for THz Driven Electron Sources, Ultrafast and Nonlinear Phenomena and Spectroscopy. Highlighted are the Monday Plenary of Prof. Steven Jamiison, discussing THz-driven electron manipulation and acceleration and Wednesday's Plenaries from Prof. Koichiro Tanaka on THz High Harmonic Generation Spectroscopy and Prof. Matthias Hoffmann on THz pump, x-ray probe experiments at LCLS.

More than 170 abstracts were submitted to the **Material Science** topic, which has led to a broad and very interesting program. This program contains oral sessions dedicated to THz emission and spectroscopy of condensed matter, nanomaterials, 2D-materials, time-resolved spectroscopy, strong light-matter coupling, nanoscopy and near-field microscopy, metamaterials, metasurfaces and plasmonics. Vibrant posters sessions are planned on Monday, Tuesday and Thursday. Highlighted are Thursday's Plenary from Prof. Martin Dressel, this year's Kenneth J. Button Prize winner, discussing the low energy electrodynamics of correlated electron systems, and Friday's Plenaries from Prof. Hannah Joyce on THz properties of nanowires and Prof. Jun Kono discussing THz cavity sensing of quantum vacuum dressed materials.

The **Engineering in Systems** topic area received more than 130 papers enabling a very inspiring program with a solid mix of oral and poster presentations. Based on the accepted papers, 8 oral sessions have been dedicated to Metrology, Passive and Active Sensing, Passive Components, Novel Imaging Techniques and Nondestructive Testing. Prof. Mona Jarrahi's Plenary on plasmonic detection of THz light on Tuesday morning will discuss recent impressive results.

The THz field now spans a broad range of **Applications**. 98 papers will be presented in this topic area. These range from one of the earliest applications, Astronomy, to Defense & Security, and Biomedical topics. Of special interest are recent applications in Agri-Food and Telecom. Thursday's Plenary by Prof. Thomas Kuerner will highlight recent progress in THz 6G communications.

The IRMMW-THz 2023 conference has received this year a large number of sponsorships, 24 in total. We have one gold sponsor, nineteen silver sponsors, one friend and three institutional sponsors from the Montreal

area. You can find their information in the exhibition and sponsors section. We would like to thank these sponsorships for enabling us to offer a complete conference experience this year. In addition, we thank Tourisme Montréal for initial organizational support and financial support of our international conference. During this week, there will be a live and online exhibition with ~20 companies and institutions. We invite you to visit this exhibition through the week.

The conference social program includes a welcome reception on Sunday evening, a gala dinner on Wednesday at the Windsor Ballroom, Montreal, and an excursion to visit the charming Laurentian region of Quebec, complete with a nature walk and a night of entertainment. Interactive poster sessions are on Monday, Tuesday and Thursday, where attendees can enjoy the presentations along with some beverages and snacks.

The Local Organizing Committee is happy to welcome you to Montreal and wishes you a very pleasant stay and a fruitful conference experience at IRMMW-THz 2023!



Committees

Conference Chair

David G. Cooke, McGill University

Local Organizing Committee

Michael Ruggiero - Website and creative assets

Francois Legare - Exhibition and sponsorship

Ke Wu - Exhibition and sponsorship

Luca Razzari -

Denis Seletskiy - Volunteer organization

Jean-Michel Menard - Student workshop

Denis Morris - Swiss Prize

Ksenia Dolgaleva - Volunteer

Luca Razzari - Volunteer

Maksim Skorobogatiy - Volunteer

Giacomo Balistreri - Secretariat

Professional Conference Organization

Jenna Beak - Conference management

Alissa Higuchi - Exhibitor and sponsor management

Una Xu - Registration management

Technical Program Committee Chairs

Tsuneyuki Ozaki - TPC co-chair

Francois Blanchard - TPC co-chair

Lu Wang - Topic track chair (Sources & Detectors)

Chiko Otani - Topic track chair (Multi-Physics)

Lyubov Titova - Topic track chair (Material Science)

Joo-Hiuk Son - Topic track chair (Engineering & Systems)

Technical Program Committee

Alfred Leitenstorfer
Andrea Markelz
Angelo Freni
Antonio Clemente
Axel Zeitler
Carlo Sirtori
Christelle Kadlec
Christoph Lange
Clara Saraceno
Daniel Mittleman
Dejan Filipovic
Dmitry Turchinovich
Daniel Molter
Dmitry Removich
Edmund Linfield
Emma MacPherson
Erio Gandini
Frank Hegmann
Frank Vanvliet
Giacomo Scalari
Gian Piero
Gintaras Valusis
Guillaume Ducournau
Guillermo Carpintero
Hartmut Roskos
Heinz-Wilhelm Hübers
Hiroaki Minamide
Huabing Wang
Huang Senlin
Ibraheem Al-Naib
Igal Brener
Ileana-Cristina Benea-Chelmus
Irmantas Kasalynas
Jan Stake
Jean François Roux
Jérôme Faist
Jian-Rong Gao
Jinjun Feng
John Jelonnek
Jos Oomens
József András Fülöp
Juliette Mangeney
Juncheng Cao
Karl Unterrainer
Kazuhiko Hirakawa
Kazuue Fujita
Louis Jofre-Roca
Manfred Helm
Marco Peccianti
Masahiro Asada
Masayoshi Tonouchi
Matt Reid
Mauro Ettore
Meng-ju ReneeSher
Michael Bakunov
Michele Ortolani
Mikhail Glyavin
Minah Seo
Netty Honingh
Nuria Llombart
Patrick Mounaix
Peiheng Wu
Pernille Klarskov
Peter Siegel
Peter Haring
Peter Uhd Jepsen
Ramón Gonzalo
Rebecca Milot
Riccardo Ozzola
Roger A. Lewis
Rostislav Mikhaylovskiy
Sascha Preu
Stefano Alberti
Tae-Inn Jeon
Taiichi Otsuji
Toshihiko Kiwa
Tyler Cocker
Withawat Withayachumnankul
Vince Wallace
Xavier Ropagnol

Practical Information

Reception Desk

During the welcome reception, attendees can register and obtain their badges and delegate bags. The reception desk is located on the Mezzanine level (2nd floor) of the conference center.

Internet Access

Wireless internet access is available in the conference center by joining Network: CMR
User IRMMWTHz Password: 1THz300um

Whova Mobile App

IRMMW-THz is again using the Whova app to enhance your experience and provide instant access to the conference agenda, which can be updated in real time. In addition, Whova provides opportunities to engage with the community and exhibitors and we encourage everyone to download and use the app.

Coffee Break and Refreshments

Coffee, tea and treats are served during the morning and afternoon coffee breaks in the 3rd floor Foyer. During the poster session, drinks and snacks will be served in the 3rd and 4th floor Foyers as well.

Lunch Breaks

Due to financial constraints this year, lunch is not provided at the conference venue. Attendees are given 1.5 hours to for lunch each day. Many options are available for all price ranges. Large capacity options are the Eaton Centre food court or the TimeOut Market, both a 5 minute walk from the conference centre and can be reached via the underground.

Official Language and Time Zone

The official language of the conference is English, which should be used for all presentations, posters, and open discussions. The conference program follows the EDT time zone.

Information for Presenters

PLENARY TALKS 45 min. (40 min. presentation + 5 min. discussion)
KEYNOTE TALKS 30 min. (25 min. presentation + 5 min. discussion)
STANDARD ORAL TALKS 15 min. (12 min. presentation + 3 min. discussion)

The oral sessions will be held in the Symposia theatre and the breakout session rooms Cartier I & II and International I & II located on the 3rd floor of the conference centre. For in-person presenters, it is not possible to use your own computer. Please bring your slides (pptx or pdf format only) on a USB device and upload them during any break before the session. All presenters should introduce themselves to the Chair of the sessions at least 15 minutes before the start of the session.

POSTER PRESENTATIONS

Poster sessions will be presented live and in person during Monday, Tuesday and Thursday sessions, located on the 3rd and 4th levels of the conference center. Refreshments will be served during the poster sessions, and attendees will also have the possibility to interact with exhibitors in the same space. Posters can also be uploaded to the Whova app and attendees can interact with authors via the app. The poster presenters are asked to respond to these questions.

All poster boards are 4H x 8W feet in size. The maximum size your poster should be is 3.75 H x 7.5 W in size. The boards will be grey and Velcro or pins may be used to mount poster materials (push pins provided). The poster does not necessarily have to fill the entire working area but must not be larger than the board. The board must be oriented in landscape (long dimension is horizontal).

Information for Session Chairs

Session chairs should arrive in their assigned rooms at least 15 minutes before the start of their session and check the attendance of all speakers. There will be student assistance for managing the session and the questions, as well as any audio/visual problems. If a speaker is missing, please communicate this to the student assistant in the room. Please do not fill in the time of any missing talk by moving forward with the next scheduled talk in the session.

Policy on Paper Presentation for All Participants

The policy of the IRMMW-THz Society is that at least one of the authors of an accepted paper must be present at the conference to present said paper (orally or at a poster session). If the author is not present at the assigned session where the paper is being presented, the paper will be removed from the final digest of manuscripts that is archived on IEEEXplore. This policy will be strictly enforced.

Photography/Videography

Please note that photographs and footage by a photographer will be taken throughout the IRMMW-THz 2023. Attendees cannot record or photograph in-person presentations or posters.

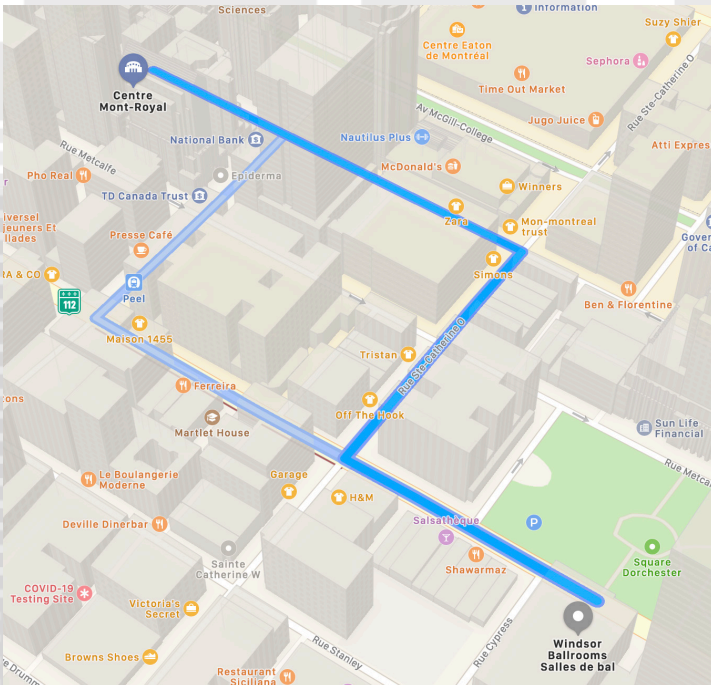
Social Program

Welcome Reception

The welcome reception will take place on Sunday, Sept. 17th from 17:00 to 19:00 at Centre Mont-Royal. During the event, in-person attendees can register and obtain their conference welcome packages including their badges. Attendees can register at the registration desk located on the Mezzanine at any time during the conference starting at 8:30.

Conference Dinner

The gala conference banquet will take place starting with cocktails from 18:30 - 19:30, followed by dinner to 22:00 at the beautiful Windsor Ballrooms located at 1170 rue Peel, only an 8 minute walk from Centre Mont-Royal. The conference will use both the Victorian style Salon Windsor and the French Renaissance style Salon Versailles, both constructed in 1908. Speeches will be broadcast between rooms. Joining the two adjacent ballrooms is Peacock Alley, named so for the peacock designs in the stained glass windows. Your conference badge is required to enter the Gala so please bring it with you.



Excursion: Sentiers des Cimes and Party in the Laurentians

Following the conference on Friday, buses will take participants to a beautiful tree-top hike along a boardwalk at the Sentiers des Cimes. At the end of the boardwalk is a gradual spiral up a 40 m high tower, overlooking the Laurentian forests for a panoramic view of the Fall leaves changing color. Afterwards, the group will return to the buses for a short trip to a lodge for a BBQ and music from a talented Québécois band. After the party, the buses will return the participants to the conference centre. There is a limited option for those who wish to remain to reserve a chalet for the weekend and take in the sites.

Montreal Night Life

Montreal is world-renowned for its active night life, celebrating good times through food, music, art and entertainment. Whether it's finding an amazing restaurant or discovering a hidden speakeasy, the local volunteers can help you explore Montreal and discover something for you. Please do not hesitate to ask for tips from the locals to make the most of your Montreal experience.

About IRMMW-THz

The International Conference on Infrared, Millimeter, and Terahertz Waves (IRMMW- THz), begun in 1974, is the oldest and largest continuous forum specifically devoted to the field of ultra-high frequency electronics and applications. In 2004 the original conference series – International Conference on Infrared and Millimeter Waves (IRMMW) joined up with the International Conference on THz Electronics to form the Joint 29th International Conference on Infrared and Millimeter Waves and the 12th International Conference on Terahertz Electronics (IRMMW-THz 2004). In 2008 the conference name was shortened to the 33rd International Conference on Infrared, Millimeter, and Terahertz Waves, keeping the same general acronym: IRMMW-THz 20XX. In 2009 the conference series was formally incorporated into a mutual benefit science society registered in the state of California, USA. The society was granted full non-profit status as a US 501c3 corporation in May 2016. The International Society of Infrared, Millimeter, and Terahertz Waves (IRMMW-THz) has the mission statement: “Promoting the worldwide collection, dissemination and exchange of scientific and technical knowledge in the areas and disciplines involving infrared, millimeter, and terahertz waves.” The IRMMW-THz Society has a permanent Board of Directors, official By-Laws, and independent financial resources, and will assure the continuation of the conference series for the foreseeable future.

The IRMMW conference and its long standing accompanying monthly publication, The Journal of Infrared, Millimeter and Terahertz Waves, were among the very first scientific outlets for the burgeoning field of far infrared components and instruments that arose in the mid 1970s. The scope of the conference extends from millimeter wave devices, components and systems to far-infrared detectors and instruments and encompasses micro- and nano-scale structures to large-scale accelerators and Tokamaks and their applications. In 2011 a new focused THz journal, IEEE Transactions on Terahertz Science and Technology was added to the list of linked technical outlets for members of the IRMMW-THz Society.

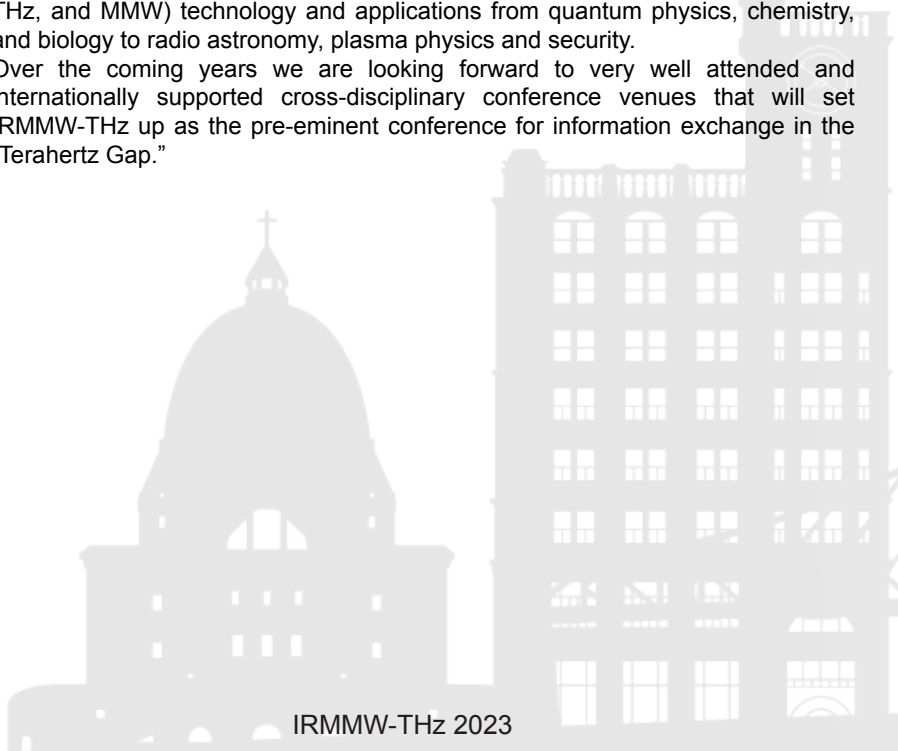
The international organizing committee is composed of world-recognized experts from countries across the globe. The conference typically alternates between the Americas, Asia and Europe on a three year cycle. Past conferences have been supported by US agencies such as IEEE, APS, DOE and DoD and dozens of local societies within the hosting countries. In 2003 both the IRMMW and THz Electronics conferences were held sequentially in Japan. Total attendees for both events was 520 registrants from 18 countries with 340 submitted papers. After 2003 the two conferences joined and attendance in 2004 (Karlsruhe, Germany) exceeded 450 scientists from 28 countries with over 400 contributed papers. From 2005 to 2019 the attendance grew slowly reaching a peak of over 1000 for our 44th conference in 2019 in Paris, France. Covid 19 forced the 2020 and 2021 venues (Buffalo, NY, USA and Chengdu, China) to all virtual platforms, but the attendance was well over 1100 at each event and paper counts were above 800 for each of these venues. Last year in Delft, Netherlands, we returned to a globally attended in person meeting run in a hybrid live/online format with over 700 submitted papers. The conference continues to thrive and grow with the THz field as we move back to fully live and in person event in our 48th IRMMW-THz conference here in Montreal, Canada.

Sandwiched between the optical on the short wavelength side and radio on the long wavelength extreme, the Terahertz or Far-Infrared has long been considered the last remaining scientific gap in the electromagnetic spectrum. Due to the historic role the IRMMW conference has played in bridging this gap by bringing together international researchers in many diverse fields – from space science to nuclear fusion – and recently chemistry and biology, the organizing committees would again like to reach out to scientists in adjacent fields who can benefit from recent developments in the far-IR.

In the last few years interest in terahertz imaging and spectroscopy from the biology, security, ultra-fast chemistry and health science communities has grown exponentially as new instrumentation and techniques have begun to make their way into many laboratories world-wide. This is especially the case in Europe and Japan, both of which have thriving cross-disciplinary programs supporting new applications in this frequency domain.

As a consequence, the conference organizing committees have significantly expanded the scope and the participating research communities. They have now included a special focus on terahertz techniques and applications, including both the traditional radio frequency domain, and the new fast pulse time domain approaches to generating, detecting and using high frequency energy. The conference offers the attendee a chance to hear and participate in a wide range of topic areas that span all aspects of Infrared, Terahertz and Millimeter-Wave (IR, THz, and MMW) technology and applications from quantum physics, chemistry, and biology to radio astronomy, plasma physics and security.

Over the coming years we are looking forward to very well attended and internationally supported cross-disciplinary conference venues that will set IRMMW-THz up as the pre-eminent conference for information exchange in the “Terahertz Gap.”



Past and Future Conferences

IRMMW-THz 2025 (50th)

Aug. 17-22, Helsinki, Finland

IRMMW-THz 2024

Sept. 1 - 6, Perth, Australia

IRMMW-THz 2023

Sept. 17-22, Montreal, Canada

IRMMW-THz 2022

Aug. 28 - Sept. 2, Delft, The Netherlands (hybrid)

IRMMW-THz 2021

Aug. 29 - Sept. 3, Chengdu, China (virtual)

IRMMW-THz 2020

Nov. 8 - 13, Buffalo, NY, USA (virtual)

IRMMW-THz 2019

Sept. 1 - 6, Paris, France

IRMMW-THz 2018

Sept. 9 - 14, Nagoya, Japan

IRMMW-THz 2017

Aug. 27 - Sept. 1, Cancun, Mexico

IRMMW-THz 2016

Sept. 25 - 30, Copenhagen, Denmark

IRMMW-THz 2015

Aug. 23 - 28, Hong Kong, China

IRMMW-THz 2014

Sept. 14 - 19, Tucson, AZ, USA

IRMMW-THz 2013

Oct. 1 - 6, Mainz, Germany

IRMMW-THz 2012

Sept. 30 - Oct. 5, Wollongong, Australia

IRMMW-THz 2011

Oct. 2 - 7, Houston, TX, USA

IRMMW-THz 2010

Sept. 5 - 10, Rome, Italy

IRMMW-THz 2009

Sept. 21 - 25, Busan, Korea

IRMMW-THz 2008

Sept. 15 - 19, Pasadena, CA, USA

IRMMW-THz 2007

Sept. 2 - 7, Cardiff, UK

IRMMW-THz 2006

Sept. 18 - 22, Shanghai, China

IRMMW-THz 2005

Sept 19 - 23, Williamsburg, VA, USA

IRMMW-THz 2004

Sept. 27 - Oct. 1, Karlsruhe, Germany

IRMMW-THz 2003

Sept. 29 - Oct. 3, Otsu, Japan

IRMMW-THz 2002

Sept. 22 - 26, San Diego, CA, USA

IRMMW-THz 2001

Sept. 10 - 13, Toulouse, France

IRMMW-THz 2000

Sept. 12 - 15, Beijing, China

IRMMW-THz 1999

Sept. 6 - 10, Monterey, CA, USA

IRMMW-THz 1998

Sept. 7 - 11, Colchester, UK

IRMMW-THz 1997

July 20 - 25, Wintergreen, VA, USA

IRMMW-THz 1996

July 14 - 19, Berlin, Germany

IRMMW-THz 1995

Dec. 11 - 14, Orlando, USA

IRMMW-THz 1994

Oct. 17 - 20, Sendai, Japan

IRMMW-THz 1993

Sept. 6 - 10, Colchester, UK

IRMMW-THz 1992

Dec. 14 - 17, Pasadena, CA, USA

IRMMW-THz 1991

Aug. 26 - 30, Lausanne, Switzerland

IRMMW-THz 1990

Dec. 10 - 14, Orlando, USA

IRMMW-THz 1989

Oct. 2 - 6, Wuerzburg, France

IRMMW-THz 1988

Dec. 5 - 9, Honolulu, HI, USA

IRMMW-THz 1987

Dec. 14 - 18, Orlando, FL, USA

IRMMW-THz 1986

Oct. 20 - 24, Tirrenia, Pisa, Italy

IRMMW-THz 1985

Dec. 9 - 13, Orlando, FL, USA

IRMMW-THz 1984

Oct. 22 - 26, Takarazuka, Japan

IRMMW-THz 1983

Dec. 12 - 17, Miami Beach, FL, USA

IRMMW-THz 1982

Feb. 14 - 18, Marseille, France

IRMMW-THz 1981

Dec. 7 - 12, Miami Beach, FL, USA

IRMMW-THz 1980

Oct. 6 - 10, Wuerzburg, Germany

IRMMW-THz 1979

Dec. 10 - 15, Miami Beach, FL, USA

IRMMW-THz 1978

Mar. 29 - Apr. 1, Guildford, UK

IRMMW-THz 1976

Dec. 6 - 11, Puerto Rico, USA

IRMMW-THz 1974

June 5 - 7, Atlanta, GA, USA

Prizes and Awards

Kenneth J. Button Prize

The Kenneth J. Button Prize is awarded annually at the International Conference on Infrared, Millimeter and Terahertz Waves in recognition of outstanding contributions to the science of infrared, millimeter, and terahertz waves. The Prize is named after the founder of the Conference Series and is administered by the Infrared, Millimeter, and Terahertz Society. It consists of a medal and a cash prize of \$3000. At each annual meeting of the Conference, the Kenneth J. Button Prize Committee meets to consider the nominations that have been submitted and elects the recipient of the Prize for the following year. The presentation is made at the following annual meeting of the Conference and the recipient is normally invited to give a plenary lecture at that meeting

In 1990 an award called “The Infrared and Millimeter Wave Prize,” to be awarded “for outstanding contributions to the field of infrared and millimeter waves,” was initiated by the Program Council (now known as the International Organizing Committee) and awarded in the first instance to Kenneth J Button, founder of the conference series. The following year it was agreed by the Program Council to rename the Prize “The Kenneth J Button Prize” in recognition of Ken Button’s outstanding contributions to the Infrared and Millimeter Wave Community, both as a scientist and as the initiator and driving force of this series of conferences. In September 2013, the criterion for awarding the Prize was changed to its present form: “for outstanding contributions to the science of infrared, millimeter, and terahertz waves”

Any scientist active in the field of the Conference may make a nomination for the K J Button Prize. The closing date for receipt of nominations for the following year is generally April 15, but check this web site each year to make certain. The closing date will be strictly observed. Any nominations received after that date will be carried forward to the following year.

2023 Winner



Martin Dressel

Universität Stuttgart, Germany

“for contributions to the understanding of novel materials by advancing spectroscopic methods in the microwave, terahertz, and infrared spectral ranges”

Plenary Talk, Thurs. 8:30 - 9:15 (Th-PL-1-1)

IRMMW-THz Society Exceptional Service Award

In 2010 the IRMMW-THz Society Board voted to institute an annual award honoring Exceptional Service to the Society and the IRMMW-THz Community at large. This award recognizes a single individual who has contributed continuously, and over a long period of time, to the goals of the IRMMW-THz Society and to the expansion of influence and organization of our technical community. The prize consists of a certificate, a compendium of all past IRMMW-THz conference brochures, and a waiver of the registration fee for attendance at the conference for the year in which the award is given.

Nominations are open to anyone from the IRMMW-THz community. Winners are selected by vote of the IRMMW-THz International Organizing Committee at the conference which precedes the award. Nominations are open two months prior to the conference, and consist of a nominee name and affiliation and short write up describing the relevant contributions that would warrant receipt of the award (no CV's or paper lists, please, this is a Community Service award). Nominations should be sent to the IRMMW-THz General Secretary: Peter H. Siegel at phs@caltech.edu. Winners will be announced at the IRMMW-THz Conference Banquet each year.

2023 Winner



Xi-Cheng Zhang

Institute of Optics, University of Rochester,
NY, USA

Prizes and Awards

IRMMW-THz Zhenyi Wang Award

In 2021, at the behest of Professor Shenggang Liu, the IRMMW-THz Society Board is introducing the “Zhenyi Wang award for Excellence in IRMMW-THz” to recognize outstanding female contributors to Infrared, Millimeter, and Terahertz wave science, technology and applications. The Award consists of a cash prize of 15,000 Yuan (approximately USD2200 in 2022) and a certificate of recognition stating the research achievements of the award recipient. A committee of worldwide technical experts in IRMMW-THz science and applications evaluates nominations received for the award each year. The first recipient of the prize was announced at the 46th IRMMW-THz Conference, in Chengdu, China in September 2021. Subsequent winners are announced shortly following each conference in the given year (2024 will be announced after the 48th IRMMW-THz in Montreal). Each Award recipient will be invited to deliver a keynote presentation at the next conference in our series.

Application for the Award is open to women scientists and engineers with a PhD or equivalent degree in Physics, Electrical and Electronic Engineering, Chemistry, Biology or any other relevant IRMMW-THz inclusive research field, of any nationality, from academia, industry, private, or national laboratories. Applicants must have finished their PhD within the last twelve years (plus one more year for each child) on the closing date of the application of the award. Applicants should have an outstanding publication record and must be in a position of independently directing a research group or program (e.g. beyond a post-doctoral position).

Members of the Awards Committee, the Local, or the International Organizing Committee of the IRMMW-THz Society are ineligible for the award.

2023 Winner



Clara Saraceno

Ruhr Universität Bochum Germany

“for achievements in the development of high-power laser-driven Terahertz sources.”

Invited Tutorial
Sunday

Prizes and Awards

Young Scientist Award

In 2016 the IRMMW-THz Society Board voted to institute a Young Scientist Award to recognize interdisciplinary, outstanding scientific work by a young scientist who has made innovative contributions and discoveries in the field of infrared, millimeter, and Terahertz waves. The Award consists of a cash prize of \$2000 and a certificate of recognition of the research achievements of the award recipient. At each annual meeting of the Conference, the Young Scientist Award Committee meets to evaluate the applications that have been submitted and elects the recipient of the Prize for the following year. The Award recipient will be invited to deliver a keynote presentation to the IRMMW-THz Conference following the selection.

Eligibility Requirements for Applicants:

Application for the Award is open to young scientists with a PhD in Physics, Electrical and Electronic Engineering, Chemistry, and Biology or any other relevant research field, of any nationality from academia, industry, or national laboratories.

1. Applicants must be within 10 years after obtaining the PhD, but not over the age of 40, on the closing date of the application for the award.
2. The applicants should have a solid publication record and have published at least one article as a lead author in a high ranking international journal.
3. Members of the Award Committee are ineligible for the award.

2023 Winner



Valeria Gilliberti

Center for Life Nano Science, Istituto Italiano di Tecnologia, Rome, Italy

“for important breakthroughs in the domain of biophysical research with infrared near-field techniques”

Invited Keynote Talk

Thurs. Sept. 21, 15:30 - 16:00 (Th-PM2-3-1)

IRMMW-THz 2023

Prizes and Awards

Best Student Presentation Award

In 2011, the IRMMW-THz Society Board voted to implement an annual Best Student Presentation Award to recognize original contributions to the conference from outstanding student attendees. A cash prize is awarded to 1st, 2nd and 3rd place papers through a committee selection and voting process. During the 2023 submission process, students have the opportunity to sign up for the competition for the Best Student Presentation Award during the abstract submission process.

Based on the reviews of all these papers, the Award Committee will select the IRMMW- THz 2023 Best Student Presentation Award finalists. The finalists will present their work to the Student Award Committee in a closed session during the conference. The winner will be announced during the award ceremony.

List of Finalists

Tomohiro Fujimoto Observation of Terahertz Spin Hall Conductivity Spectrum in Bulk GaAs at Room Temperature	Mo-MP2-3
Harrison Lees Single-Mode Rib Waveguide For The Terahertz Range Using 3D Printed Alumina	We-PM2-4
Ahmed Jaber Light-matter Coupling Between Organic Molecules And A THz Metasurface	We-PM2-4
Josef Freudenstein Attoclocking Delocalized Bloch Electrons With Multi-terahertz Fields	Th-Am-2-4
Huiliang Ou Single-Mode Rib Waveguide For The Terahertz Range Using 3D Printed Alumina	We-PM2-4
Mirco Kutas Quantum Sensing In The Terahertz Frequency Range	Mo-PM1-1

Swiss THz Award

The Swiss Terahertz Company is sponsoring a prize for the conference IRMMW-THz 2023, held in Montreal. This year's award will recognize an outstanding innovation in terahertz technologies. The prize is ... that will be donated to the laboratory hosting the winner of the competition. A short-list of candidates will be selected by members of the Local Organizing Committee, based on the quality of their abstract, and the relevance and impact of their work to innovations in THz technologies. These candidates will be informed that their paper will be considered for the prize. The selection of the winner will be made by a jury of three members of the Technical Program Committee, based on the articles considered in this competition.

The prize: Brisk module consisting of BNA organic crystal emitter and Regi microbolometer camera detector. [BNA \(swissterahertz.com\)](http://BNA.swissterahertz.com)

Previous years winners:

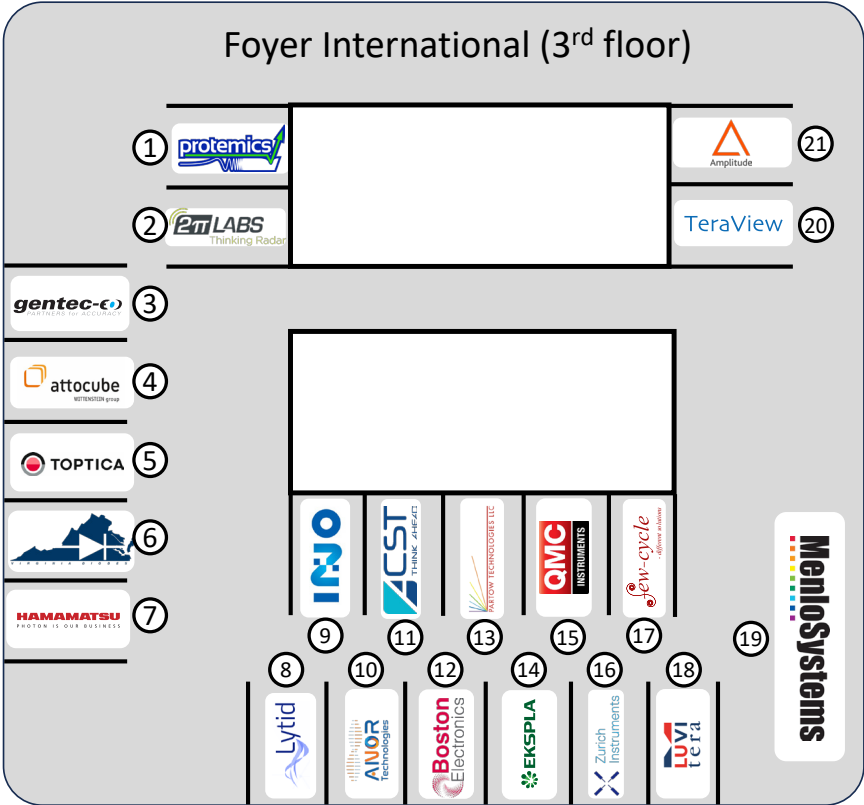
2022: IRMMW Delft - Dai Nakajima, Tohoku University, Japan

2021: IRMMW Buffalo - Samira Mansourzadeh, Univ. Bochum, Germany

2019: IRMMW Paris - Doviľ Čibiraitė Goethe Univ. Frankfurt, Germany

Exhibition and Sponsors

The live exhibition will take place in the Foyer International on the third floor of the conference center. The Foyer will serve as a hub between the breakout sessions and coffee and refreshment stations during the regular breaks and the poster sessions.



Exhibition and Sponsors

Silver Sponsors



VDI manufactures state-of-the-art test and measurement equipment for mm-wave and THz applications. These products include Vector Network Analyzer, Spectrum Analyzer and Signal Generator Extension Modules that extend the capability of high performance microwave measurement tools to higher frequencies. VDI's component products include detectors, mixers, frequency multipliers and custom systems for reliable operation at frequencies between 50 GHz and 2 THz. All VDI components include in-house fabricated GaAs Schottky diodes and microelectronic filter structures.



ACST is the leading European supplier of high-power frequency multipliers and THz sources. With 17 years of experience in terahertz solutions, we are a strong partner in the field of Radioastronomy, communications, and scientific instrumentation, but also for industrial applications like MM/SubMM-Wave imaging for security and non-destructive quality control. Our high-performance products and our wide range from semiconductor components over MM-Wave and THz modules up to THz sources and full systems serve the demand in scientific research, laboratory instrumentation, industry, security, and space. For more information visit our website or talk to us during the conference. www.acst.de



Created in 2001, Amplitude Laser Group manufactures and commercializes ultrafast lasers for scientific, medical, and industrial applications. Leading the international market since the outset, Amplitude is known for its excellence across a large array of products: diode-pumped ultrafast solid-state lasers, ultra-high energy Ti:Sapphire ultrafast lasers, and a full line of high-energy solid-state laser products. The group consists of three manufacturing locations and several commercial offices in Europe, Asia, and North America. Its 450 employees are committed to creating and developing innovative lasers, manufactured to the most rigorous standards including ISO 9001 and ISO 13485.



ANOR Technologies is a deep-tech company delivering a unique service redefining spectroscopy by leveraging Artificial Intelligence (AI) and Cloud Computing. Our solution is delivered via cloud services, combining portable devices or industrial sensors with AI-powered mobile or web applications. We manage multiple varieties of spectrometer devices, spectral data and create AI models utilising our cloud platforms, SentrioAI & SentrioSwift, allow users to build models and are crucial in applications such as: coating measurement, drug & explosive detection, plastic sorting, and food safety detection.

Exhibition and Sponsors



attocube's business sector 'Nanoscale Analytics' develops and produces innovative solutions for nanoscale imaging and spectroscopy. The neaSCOPE system is an ultra-stable, easy-to-use instrument for tip-enhanced optical measurements with remarkable scientific impact. Our technology overcomes the limitations of conventional instruments and enables a spatial resolution of 20 nanometers in the VIS to THz spectral range. Customers from academia and industry rely on attocube's groundbreaking 'Nanoscale Analytics' technology.



Gentec-EO is a leader in the laser beam measurement field with 50 years of experience. We design and manufacture a complete range of instruments to characterize your laser's performance: laser power meters, laser energy meters, terahertz radiometers, high-speed joulemeters, beam profilers, and custom measurement solutions. Our products are sold around the world, with distributors and representatives in over 35 countries and offices in Canada, USA, and Japan.



Hamamatsu Corporation is the North American subsidiary of Hamamatsu Photonics K.K. (Japan), a leading manufacturer of devices for the generation and measurement of infrared, visible, and ultraviolet light. These devices include photodiodes, silicon photomultipliers, photomultiplier tubes, scientific light sources, infrared detectors, photoconductive detectors, and image sensors. The parent company is dedicated to the advancement of photonics through extensive research. This corporate philosophy results in state-of-the-art products which are used throughout the world in scientific, industrial, and commercial applications.



INO is the largest center of expertise in optics and photonics in Canada. For the past 30 years, it has created and developed customized solutions to meet the needs of companies working in various lines of business throughout Quebec and Canada. As a high-tech leader, INO has implemented more than 6,500 solutions, carried out 74 technology transfers, and contributed to the creation of 35 new companies, providing employment to more than 2,000 people.



Protemics GmbH develops and sells terahertz full-system solutions for the areas of non-destructive testing and THz technology research. Our products and services are based on our pioneering Terahertz microprobe device series TeraSpike – the ideal tool for applications requiring THz measurements with micron-scale resolution at high measurement speeds.

Exhibition and Sponsors



2π-LABS GmbH is a high-tech radar sensor company focusing on robust and reliable MMIC-based wideband sub-THz-spectroscopy solutions. The company is headquartered in Bochum, Germany. The 2πSENSE software defined highly versatile D-band (126 - 182 GHz with 56 GHz bandwidth) radar sensor & technology platform enables fast, cost effective & accurate network analyzer like measurements for a wide variety of industrial and scientific applications. The covered applications are 1μm accurate ranging, wideband SAR & real aperture focus imaging and in-line material inspection for process control applications. In addition, the versatility of the 2πSENSE radar technology enables research-oriented usage at universities and institutes with a low barrier to entry.



At few-cycle Inc. we develop optical technologies for ultrafast laser science. Our aim is to redefine optical parametric amplification by providing the highest conversion efficiencies and high peak power IR pulses of up to 2.5TW.

We also offer unique femtosecond laser upgrades based on hollow-core fiber systems for pulse compression. Special high efficiency fibers developed for Yb lasers reach >90% throughput at average power levels beyond 100W. Our fibers have also been used to compress Yb pulses with more than 70mJ of pulse energy.



TOPTICA develops and manufactures high-end laser systems for scientific and industrial applications. The portfolio includes terahertz systems, diode lasers, ultrafast fiber lasers, frequency combs and continuous-wave fiber lasers and amplifiers. Over a dozen Nobel laureates all acknowledge the world-class exceptional specifications of TOPTICA's lasers, as well as their reliability and longevity.

TOPTICA provides terahertz spectrometers as well as components for both time-domain and frequency-domain techniques. Our products, including the TeraFlash pro and TeraFlash smart, set new standards in terms of dynamic range, bandwidth and measurement speed.



EKSPLA focuses on the design and manufacturing of advanced lasers and employs more than 30 years' experience. The ability to effectively tailor products for specific applications and requirements is one of the main competences of EKSPLA. 80 out of the 100 top universities use EKSPLA lasers. For researchers demanding a wide tuning range, high conversion efficiency and narrow line-width, EKSPLA tunable lasers are an excellent choice. All models feature hands-free wavelength tuning, valuable optical components protection system as well as wide range of accessories and extension units, offering probably the widest tuning range: from 192 nm to 18000 nm.

Exhibition and Sponsors



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TeraView

TeraView (<https://teraview.com/>) is the world's first and leading company solely focused on the application of terahertz light to provide solutions to customer issues. A spin out from the Toshiba Corporation and Cambridge University, TeraView has developed its proprietary technology across a number of markets. These include fault analysis and quality assurance for semiconductor chips used in mobile computing and communications, as well as non-destructive inspection of high value coatings used in the automotive, pharmaceutical, food and solar industries. With the largest number of systems in the field, as well as applications know-how made available to customers via a team of dedicated engineers using intellectual property and knowledge in peer-reviewed scientific publications, TeraView is uniquely placed to deliver the business benefits of terahertz to customers. Headquartered in Cambridge UK, sales and customer support are available throughout the Far East, North America and Europe either directly or through a network of distributors. of terahertz to customers. Headquartered in Cambridge UK, sales and customer support are available throughout the Far East, North America and Europe either directly or through a network of distributors.



QMC Instruments Ltd. has been proud to serve the terahertz research community since 1976; indeed since before it was known as the terahertz community! When the conference next comes to the Americas we will be celebrating our golden jubilee. We are based in the UK where we liaise very closely with academic colleagues at Cardiff University. We make detectors covering the range from 30 GHz to 30 THz. They include superconducting transition edge bolometers and semiconductor hot-electron bolometers. Our bespoke cryogenic system design capability includes detectors housed in helium reservoir cryostats, although more recently almost all systems are built in pulse tube coolers which operate continuously. Cooling platforms include sub-Kelvin designs and large format platforms for millimetre-wave imaging applications. In addition we offer passive optical components such as metal mesh filters, polarisers and wave-plates.



Lytid develops and commercializes advanced photonic products for industry and academy. Our goal is valorizing state-of-the-art terahertz (THz) and Infrared (IR) technologies into high-performance and accessible products. Diverse core technologies are employed by Lytid, including Quantum Cascade Lasers, electronic multiplied sources based on planar GaAs Schottky diodes, InGaAs SWIR scientific camera and mmw/sub-THz FMCW sensors. Our portfolio is developed with the aim of making these technologies available to demanding users who want to explore IR and THz applications, while delivering a plug&play, user-friendly product. Our systems are compact, powerful, reliable, easy-to-use and fully integrated, releasing the users from the complexity of the technologies.



Boston Electronics provides a wide range of infrared (IR), terahertz (THz), MMW, ultraviolet (UV), and visible detectors, sources, lasers, signal/image processing electronics and microscopy solutions. This makes us a unique resource for your electro-optical needs. We are known throughout the industry as having strong application support, advantaged products and deep experience in electro-optics technologies and markets; thus, making us a perfect partner for your product and research needs. We are agents for Lytid, SAS in North America and INO in the United States providing THz and MMW sales and application in the market. www.boselec.com

Friends



Eravant, located in Torrance, California, operates from a 60,000-square-foot design, manufacturing, assembly, and testing facility focused on supplying a global customer base with millimeter wave and sub-THz (18 to 330 GHz) components, subassemblies, and test equipment. Eravant is known for supporting the customer every step of the way from lab set-up, to R&D and prototype, and through program or volume production. We are an AS9100D certified, ITAR-registered, women-owned small business designing and manufacturing in the United States. The company's vision is to make millimeter wave and sub-THz accessible by lowering budget, knowledge, and experience barriers so more engineers and scientists can work to realize the technology of the future.

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record specs.

TeraFlash pro

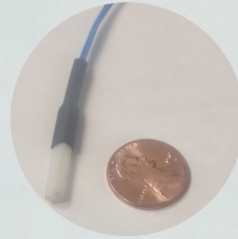
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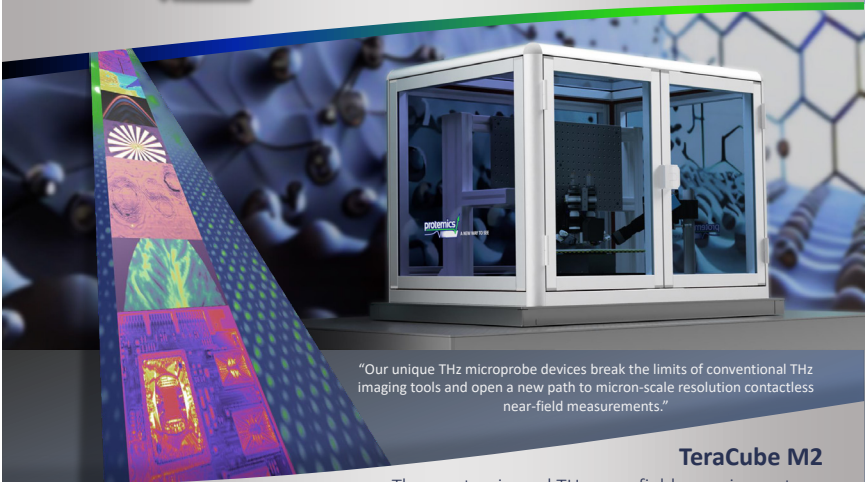
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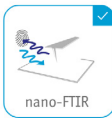
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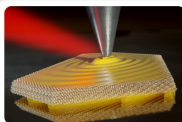
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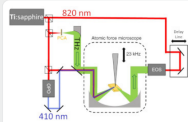
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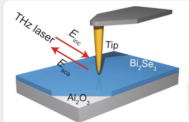
Applications



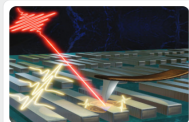
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Using advancing spectral sensing technologies, ANOR enhances solutions for industrial applications.

ANOR's end-to-end solution is delivered via cloud services, combining portable devices or industrial sensors with AI-powered mobile or web applications.

AI-powered spectral sensing



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ANOR's custom platforms, SensrioAI & SensrioSwift, allow users to easily build their own model to gather results by following a step by step tutorial.

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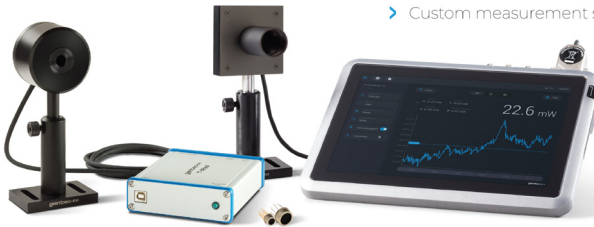


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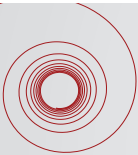


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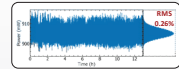
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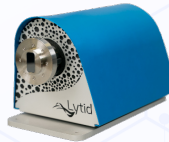
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Scientific Program

Plenary Speakers



Robert Boyd, University of Ottawa

Nonlinear Optics of IR and THz Radiation

This contribution presents a brief overview of research in infrared and terahertz nonlinear optics. The talk will include a discussion of early work including difference-frequency generation, infrared detection by upconversion via sum-frequency generation, and frequency down-shifting by stimulated Raman scattering. The talk will also include more recent work including nonlinear optical means for THz generation and consideration of the extremely large THz third-order nonlinear optical response resulting from phonon resonances.

Steven Jamison, Lancaster University

THz-driven Acceleration And Manipulation Of Electron Beams

Laser-derived THz sources are capable of acceleration or deflection of electron beams, with femtosecond temporal control. When combined with electron beam dynamics in free-space or magnetic transport systems, actively driven synchronization of electron beams to lasers becomes achievable. Maximizing the interaction between THz and electron beams requires solving challenges such as slow-light systems to obtain velocity phase-matching between wave and particle beam; generation of electromagnetic modes or interaction configurations that provide an electric field polarization collinear with wave and particle propagation; and design of dispersion free, or minimal dispersion, structures that maximizes the THz-electron interaction. Research of the THz acceleration group at Cockcroft Institute in these areas includes mode-tailored spintronic sources, high-field PPLN generation, slow-wave travelling source schemes, and dielectric and corrugated waveguide structures. The acceleration and manipulation of both relativistic and 100keV electron beams have been demonstrated. Relativistic beam concepts and are being developed further for ultrafast temporal compression and active synchronization control of high-energy beams, while boosting 100keV beams to MeV levels underpins the development of THz-driven electron injector technology.



Mona Jarrahi, UCLA Los Angeles

Plasmonic Terahertz Camera For Real-Time Terahertz Imaging

We present a terahertz camera based on a plasmonic focal-plane array that can generate ultrafast temporal and hyperspectral terahertz images with an imaging speed exceeding 16 fps. We demonstrate super-resolving both shape and depth information of imaged objects with a lateral/depth resolution as small as 60/10 μm and an effective number of pixels exceeding 1-kilo-pixels.

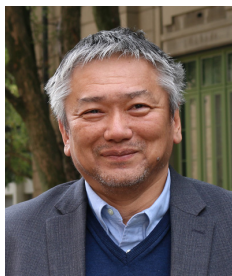




Tobias Kampfrath, Freie Universität Berlin

Terahertz Spintronics: New Insights Into Magnetic Phenomena and Their Application In Terahertz Photonics

By applying terahertz time-domain techniques to spintronic nanostructures, new insights into the ultrafast dynamics of electron spins can be gained. Relevant applications such as the spintronic generation and detection of terahertz electromagnetic fields emerge.



Koichiro Tanaka, Kyoto University

High Harmonic Spectroscopy For Many-body Dynamics In Solids

We report our recent results on high harmonic generation in crystalline solids, and the effect of many-body correlations on extreme nonlinear optical process driven by intense infrared field. Our observations indicate that high harmonic generation can be a new spectroscopic tool to investigate ultrafast non-equilibrium dynamics of the many-body system.



Matthias Hoffmann, SLAC National Accelerator Laboratory

Terahertz Pump/X-ray Probe Experiments At LCLS

I will give a summary of THz experiments using ultrafast x-ray pulses from free electron lasers as a probe. The first part will be a brief review of our past and current capabilities at SLAC and highlight results that we were able to achieve during the first ten years of operation of LCLS. The second part of the talk will focus at the the future capabilities of LCLS-II (which is coming on-line this year) and how we will scale to much higher repetition rates to enable new and exciting science.



Martin Dressel, Universität Stuttgart

Electrodynamics Of Solids: Low-Energy Spectroscopy Of Correlated Electrons

Electronic correlations in solids, though often neglected for simple materials, can become decisive effects leading to novel states of matter. Spectroscopic investigations have to adjust to the small energy scales of relevance here, μeV or meV . Hence, the crucial optical experiments are conducted in the far-infrared range, at THz and microwave frequencies or even below. In recent years, significant advances in methods, materials and understanding allowed us to shed new light on the electrodynamic properties of correlated electron systems, answer pertinent questions and reveal unexpected properties.



Thomas Keurner, Technische Universitaet Braunschweig

THz Communications On The Way Towards Its Application On 6G

Already a couple of years ago THz communications have not only become an attractive new research area on channel modeling but also triggered a couple of projects heading to develop appropriate technological solutions to enable the set-up of hardware demonstrators. In parallel discussions and activities in standardization and regulation already took off. In October 2017, IEEE published Std. IEEE 802.15.3d-2017 the worldwide first wireless communications standard operating in the 300 GHz frequency band. At the World Radio Conference 2019 (WRC-2019) 160 GHz of spectrum has been identified for the use of THz communications and ETSI has recently kicked-off an ETSI ISG THz targeting future standardization in 3GPP. The speaker has been actively involved in all those areas. The contribution will provide a brief overview on the current status of the development of THz Communication systems focusing on past and ongoing large research projects in Europe, recent results on advanced channel characterization at 300 GHz, current activities at IEEE 802 and ETSI and at hardware demonstrators operating in this frequency range.



Hannah Joyce, University of Cambridge

Nanowires In Terahertz Photonics: Harder, Better, Stronger, Faster

By virtue of their quasi one-dimensional geometries, III-V semiconductor nanowires present unique capabilities for terahertz photonic devices. Ultrafast terahertz polarisation modulators and miniature terahertz photoconductive detectors are two examples of such nanowire-based devices. By the same token, terahertz methods such as terahertz conductivity spectroscopy offer unparalleled insight into the electronic processes that dictate the performance of nanowire-based devices.



Jun Kono, Rice University

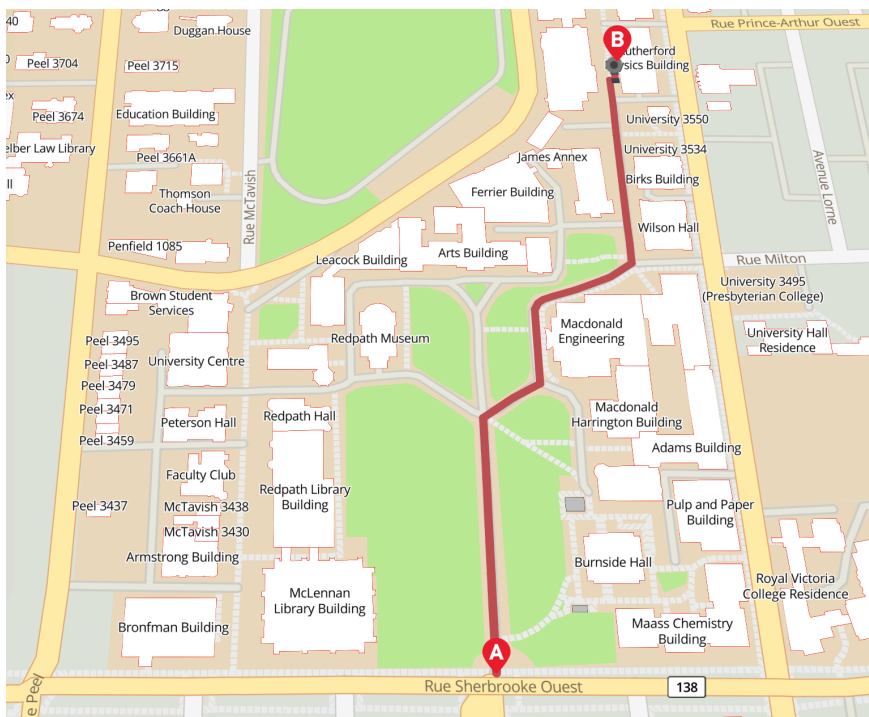
Quantum Vacuum Dressed Materials in Terahertz Cavities

This talk is about studying solids placed in terahertz cavities to uncover exotic new phases and phenomena in “ultrastrongly driven” materials in the complete absence of any external fields -- other than the fluctuating vacuum, or zero-point, electromagnetic fields. Judicious engineering of such fluctuating quantum vacuum fields surrounding condensed matter inside high-Q and small-mode-volume terahertz cavities can lead to nonintuitive and ultrastrong modifications of electronic states, producing a quantum-vacuum-dressed material with novel properties. Recent theoretical predictions include cavity-enhanced, cavity-induced, and/or cavity-mediated electron-phonon coupling and superconductivity, electron pairing, anomalous Hall effect, ferroelectric phase transitions, quantum spin liquids, and photon condensation. This talk will describe our recent studies of various solid-state systems in terahertz cavities in search of such vacuum-induced phases of matter.

Sunday 17 September

Student Workshop, Tutorials and Industrial Panel

The student workshop will be held at the Rutherford Physics Building (3600 University St.) on the Downtown Campus of McGill University. Due to the limited capacity of the available space, participation is limited to students who first registered to the workshop. Starting from the Roddick Gates (A) located at Sherbrooke and McGill College, McGill's main entrance, a walking map to the building is given below to the Rutherford Physics Building (B). Students are asked to show up between 8:45- 9:00 am to receive their conference badges, required to enter the workshop.



Student Workshop

Student workshop
Sunday Sept. 17, 2023

09:00-17:00

Rutherford Physics Building, McGill

Chairperson: Jean-Michel Menard, Univ. of Ottawa

08:45-09:00 Arrival and registration

09:00 - 09:10 Introduction

09:10 - 10:10 **Probing ultrafast nanoscale dynamics with terahertz scanning tunneling microscopy**

Frank Hegmann, University of Alberta

10:10 - 10:30 Coffee Break

10:30 - 11:30 **Terahertz characterization of biomacromolecules and biological water**

Andrea Markelz, University of Buffalo

11:30 - 13:00 Lunch (provided)

High average power, few-cycle terahertz sources and applications

13:00 - 14:00 Clara Saraceno, Ruhr University Bochum

Recipient of the 2023 IRMMW-THz Zhenyi Wang Award

14:00 - 14:15 Coffee Break

14:15 - 15:15 **Tilted pulse front pumped optical rectification-based THz sources**

János Hebling, University of Pécs

Discussion panel

Alexei Halpin (Council of Canadian Academies)

15:15 - 16:45 Lauren Gingras (Menlo)

Mariia Zhulbdybina (TRAQC)

16:45 - 17:00 **Conclusion**

17:30 **Reception at the Centre Mont-Royal**

Monday 18 September

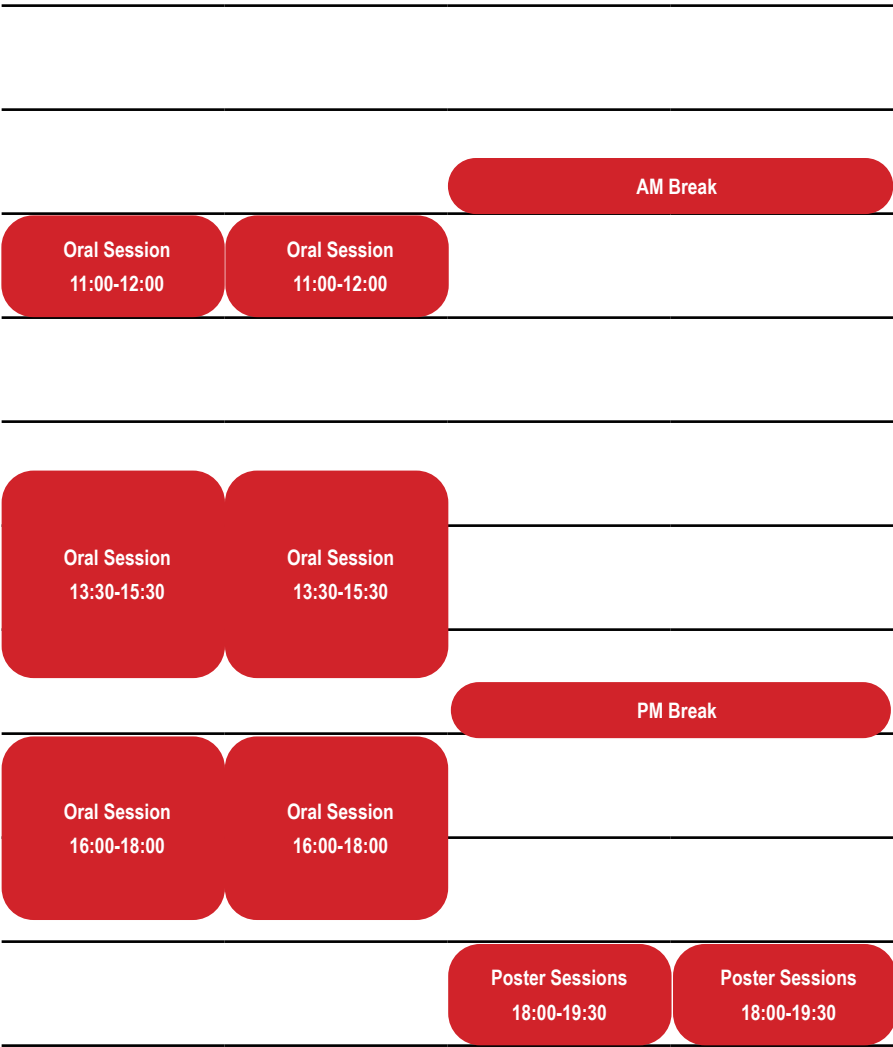
	Symposia Theatre	Cartier I	Cartier II
08:00-09:00	Opening Ceremonies		
09:00-10:00	Plenary 1 9:00-9:45		
10:00-11:00	Plenary 2 9:45-10:30		
11:00-12:00	Oral Session 11:00-12:00	Oral Session 11:00-12:00	Oral Session 11:00-12:00
12:00-13:00			
13:00-14:00			
14:00-15:00	Oral Session 13:30-15:30	Oral Session 13:30-15:30	Oral Session 13:30-15:30
15:00-16:00			
16:00-17:00	Oral Session 16:00-18:00	Oral Session 16:00-18:00	Oral Session 16:00-18:00
17:00-18:00			
18:00-19:00			

International
I

International
II

Third Floor
Foyer

Fourth Floor
Hall



Monday 18 September

8:30-9:00

Opening Ceremony

Symposia
Theatre

Chairperson(s): David Cooke

9:00-9:45

Plenary Session 1

Symposia
Theatre

Chairperson(s): Lyubov Titova

09:00

Nonlinear Optics Of THz Radiation

Mo-PL-1-1

Robert Boyd*

University of Ottawa, 25 Templeton Street, room 456, Canada

Plenary Session 2

Symposia
Theatre

Chairperson(s): Lyubov Titova

09:45

THz-driven Acceleration And Manipulation Of Electron Beams

Mo-PL-2-1

Steven Jamison*¹; Graeme Burt²; Darren Graeme³; Robert Appleby³; Morgan Hibberd³

¹Lancaster University, Department of Physics, Bailrigg, Lancaster, United Kingdom; ²Lancaster University, Lancaster, United Kingdom; ³Manchester University, Manchester, United Kingdom

11:00-12:00

Quantum-Cascade Lasers I

Symposia
Theatre

Chairperson(s): Xiang Lu

11:00

Terahertz Near-field Mapping Of Plasmon-polaritons In Layered Nano Materials

Mo-AM-1-1

Miriam Vitiello*

CNR Nano, Piazza San Silvestro 12, Pisa, Italy

11:30

Spectral Shaping In Ultra-Thin Terahertz Quantum Cascade Laser Pairs

Mo-AM-1-2

Marie C. Ertl*¹; Michael Jaidl¹; Benedikt Limbacher¹; Dominik Theiner¹; Miriam Giparakis²; Maximilian Beiser²; Aaron M. Andrews²; Gottfried Strasser²; Juraj Darmo¹; Karl Unterrainer¹

¹Institute of Photonics, Gusshausstrasse 27-29, Vienna, Austria; ²Institute of Solid State Electronics, Gusshausstrasse 25a, Vienna, Austria

11:45

THz Optical Solitons Formation In Double Ring Quantum Cascade Lasers

Mo-AM-1-3

Paolo Micheletti*¹; Urban Senica¹; Andres Forrer¹; Sara Cibella²; Guido Torrioli²; Martin Frankié³; Mattias Beck³; Jerome Faist³; Giacomo Scaleri³

¹ETH Zurich, ETH Hönggerberg, HPT F10 Auguste-Piccard-Hof 1, Zurich, Switzerland; ²CNR-Istituto di Fotonica e Nanotecnologie, Via del Fosso del Cavaliere, 100, Roma, Italy; ³ETH Zurich, ETH Hönggerberg, Auguste-Piccard-Hof 1, Zurich, Switzerland

11:00-12:00	THz Driven Electron Sources	Cartier I
Chairperson(s): Steven Jamison		
11:00	<p>Terahertz Surface Plasmon Polariton Amplification And Its Application In Electron Accelerations</p> <p>Ye Tian; Yushan Zeng* Shanghai Institute of Optics and Fine Mechanics (SIOM), No.390, Qinghe Rd., Jiading Dist., Shanghai, China</p>	Mo-AM-2-1
11:30	<p>THz-driven Electron Emission From Metallic Surfaces</p> <p>Tobias Buchmann*; Matej Sebek; Simon Lange; Peter Uhd Jepsen DTU Elektro, Otto Mønsted's Plads 343, Kongens Lyngby, Denmark</p>	Mo-AM-2-2
11:45	<p>Terahertz-induced Electron Emission From Thin Films</p> <p>Matej Sebek*¹; Tobias Olaf Buchmann²; Jie Ji³; Yinqiu Zhou³; Abhay Shivayogimath³; Peter Bøggild³; Simon Jappe Lange²; Peter Uhd Jepsen² ¹DTU, 343 Ørsted Pl., Lyngby, Denmark; ²DTU, 343 Ørsted Pl., Denmark; ³DTU, 309 Fysikvej, Denmark</p>	Mo-AM-2-3
11:00-12:00	Biosensors	Cartier II
Chairperson(s): Jiro Hirokawa		
11:00	<p>Sensitive Biosensor Chip Based On Metamaterials And Microcavity Used To Detecting Living Cells</p> <p>Kanglong Chen*¹; Xiaofang Zhao²; Lulu Han¹; Jun Yang²; Cunjun Ruan³ ¹Beihang University, No. 37 Xueyuan Road, Haidian District, Beijing, China; ²Peking University Third Hospital, 49 North Garden Rd., Haidian District, Beijing, China; ³Beihang University, Professor Cunjun Ruan, Beihang University No. 37 Xu, Beijing, China</p>	Mo-AM-3-1
11:15	<p>Selective Biodetection Platform For Melanoma Diagnosis Using Functionalized THz Metamaterials</p>	Mo-AM-3-2

Merle Richter*¹; Yannik Loth¹; Anna Katharina Wigger¹; Nicole Rachinger²; Daniela Nordhoff¹; Daniel Stock¹; Anja Katrin Bosserhoff²; Peter Haring Bolivar¹

¹University of Siegen, Hoelderlinstrasse 3, Siegen, Germany;

²Friedrich-Alexander University Erlangen-Nürnberg, Fahrstrasse 17, Germany

11:30 **Breathalyzer-based Prompt Coronavirus Screening Test Using Terahertz Spectroscopy Of Viruses In LC-Resonant Metamaterial Nano-Antenna Array** **Mo-AM-3-3**

Rudrarup Sengupta*¹; Heena Khand²; Gabby Sarusi²

¹Ben Gurion University of the Negev, Marcus Family Campus Ben-Gurion University of the Negev P.O.B. 653, Beer-Sheva, Israel; ²Ben-Gurion University of the Negev, Marcus Family Campus P.O.B 653, Israel

11:45 **Terahertz Ultrasensitive Biosensor Based On Wide-area And Intense Light-matter Interaction Supported By QBIC** **Mo-AM-3-4**

Yan Peng*¹; Binwei Liu²; Wu Xu³; Yiming Zhu³; Songlin Zhuang³

¹University of Shanghai for Science and Technology, Jungong Rd. 516, Shanghai, China; ²USST, Jungong Rd. 516, Yangpu Direct, Shanghai, China; ³USST, Jungong Rd. 516, Yangpu Direct, China

11:00-12:00

Metrology I

International I

Chairperson(s): Peter Uhd Jepsen

11:00 **In-fab Assessment Of Heat Budget In 3D NAND Flash Devices Using Terahertz Wave-based Metrology System** **Mo-AM-4-1**

Inkeun Baek*; Sungyoon Ryu; Ikseon Jeon; Yoonkyung Jang; Suhwan Park; Eun Hyuk Choi; Wontae Kim; Martin Priwisch; Taejoong Kim; Myungjun Lee; Yusin Yang
Samsung Electronics Co., Ltd., 1-1, Samsungjeonja-ro, Hwaseong-si, Korea, Republic of

11:30 **Reference Materials For THz Spectroscopy** **Mo-AM-4-2**

Mira Naftaly*
National Physical Laboratory, National Physical Laboratory, Hampton Road, United Kingdom

11:45 **Single-shot Ultrafast Terahertz Imaging** **Mo-AM-4-3**

Junliang Dong*¹; Pei You²; Alessandro Tomasino²; Aycan Yurtsever²; Roberto Morandotti²

¹Institut national de la recherche scientifique, 1650 Boul. Lionel Boulet, Varennes, Canada; ²Institut national de la recherche scientifique, 1650 Boul. Lionel Boulet, Canada

11:00-12:00	Novel Imaging Techniques I Chairperson(s): Hartmut Roskos	International II
11:00	Nonparaxial Imaging Using Terahertz Structured Light Gintaras Valusis* ¹ ; Rusne Ivaskėvičiūtė-Povilauskienė ¹ ; Paulius Kizevičius ¹ ; Ernestas Nacius ¹ ; Domas Jokubauskis ¹ ; Kestutis Ikamas ² ; Alvydas Lisauskas ² ; Ieva Matulaitiene ¹ ; Karolis Mundrys ¹ ; Sergey Orlov ¹ ; Linas Minkevicius ³ ¹ Center for Physical Sciences and Technology (FTMC), Saulėtekio ave. 3, Vilnius, Lithuania; ² Vilnius University, Saulėtekio ave. 3, Vilnius, Lithuania; ³ Center for Physical Sciences and Technology (FTMC), Saulėtekio ave. 3, Lithuania	Mo-AM-5-1
11:30	Multi-Modal Image Acquisition For AI-based Bulky Waste Sorting (incl. Terahertz Synthetic Aperture Radar) Dovilė Čibiraitė-Lukenskienė* ¹ ; Dominik Gundacker ¹ ; Friedrich Schlüter ² ; Jochen Aderhold ² ; Manuel Bihler ³ ; Michael Heizmann ³ ; Lukas Roming ⁴ ; Robin Gruna ⁴ ; Joachim Jonscheit ¹ ; Fabian Friederich ¹ ¹ Fraunhofer ITWM, Fraunhofer-Platz 1, Kaiserslautern, Germany; ² Fraunhofer WKI, Bienroder Weg 54E, Brunswick, Germany; ³ KIT Institute of Industrial Information Technology, Hertzstraße 16, Karlsruhe, Germany; ⁴ Fraunhofer IOSB, Fraunhoferstraße 1, Karlsruhe, Germany	Mo-AM-5-2
11:45	A Multi-Channel Terahertz Tomography Setup Karl Henrik May* ¹ ; Andreas Keil; Fabian Friederich; Georg von Freymann Fraunhofer ITWM, Fraunhofer-Platz 1, Kaiserslautern, Germany	Mo-AM-5-3
13:30-15:30	Laser Sources & Detectors I Chairperson(s): Robert Boyd	Symposia Theatre
13:30	Quantum Sensing In The Terahertz Frequency Range	Mo-PM1-1-1

Mirco Kutas*; Björn Haase; Jens Klier; Georg von Freymann;
Daniel Molter
Fraunhofer Institute for Industrial Mathematics ITWM,
Fraunhofer-Platz 1, Kaiserslautern, Germany

14:00 Research On 1THz Carbon-based Backward Wave Oscillator Mo-PM1-1-2

Fan Deng*¹; Wenxin Liu²; Jianliang Wang²
¹Aerospace Information Research Institute, Chinese Academy of Sciences, Beijing, China, Beijing, China, Beijing, China, Beijing, China, China; ²Aerospace Information Research Institute, Chinese Academy of Sciences, Beijing, China, Beijing, China, Beijing, China, Beijing, China

14:15 Noncollinear Parametric Detection Of Broadband Terahertz Pulses Mo-PM1-1-3

Sota Mine¹; Gabriel Gandubert²; Léo Guiramand²; Xavier Ropagnol²; Kosuke Murate³; François Blanchard*²
¹Ecole de technologie supérieure, 1100 rue Notre-Dame ouest, Montreal, Canada; ²Ecole de technologie supérieure, 1100 rue Notre-Dame ouest, Montreal, Canada; ³Nagoya University, Furocho, Chikusa, Nagoya, 4648603, Nagoya, Japan

14:30 Sensitive Detection Of Terahertz Pulses Via Parametrically Upconverted Near-infrared Photons Mo-PM1-1-4

Défi Junior Jubgang Fandio*; Aswin Vishnuradhan; Eeswar Kumar Yalavarthi; Wei Cui; Nicolas Couture; Angela Gamouras; Jean-Michel Ménard
University of Ottawa, Department of Physics, 25 Templeton St, Ottawa, Canada

14:45 Terahertz Parametric Generation By Collinear Injection Seeding Mo-PM1-1-5

Sota Mine*; Naoya Yamamoto; Kodo Kawase; Kosuke Murate
Nagoya University, Furo-cho, Chikusa-ku, Nagoya, Japan

15:00 Tunable Backward THz-Wave Parametric Oscillator Centered At A High Frequency Of 0.870 THz Mo-PM1-1-6

Joselito Muldera*¹; Kouji Nawata²; Yuma Takida³; Deepika Yadav⁴; Hiroaki Minamide⁵

¹RIKEN, 519-1399 Aramaki-aza Aoba, Aoba-ku, Sendai, Japan;

²Department of Information and Communication Engineering, Tohoku Institute of Technology, 35-1 Kasumi-cho, Yagiyama Taihaku-ku, Sendai, Japan; ³Tera-Photonics Research Team, RIKEN Center for Advanced Photonics, RIKEN, 519-1399 Aramaki-Aoba, Sendai City, Japan; ⁴Tera-Photonics Research Team, RIKEN Center for Advanced Photonics, RIKEN, RIKEN, 519-1399 Aramaki-aza Aoba, Japan; ⁵Tera-Photonics Research Team, RIKEN Center for Advanced Photonics, RIKEN, 519-1399 Aramaki-Aoba, Sendai, Japan

15:15 Pulse Train Terahertz Wave Parametric Generation Mo-PM1-1-7

Kosuke Murate*¹; Sota Mine¹; Toshiki Kinoshita¹; Shin'ichiro Hayashi²; Kodo Kawase¹

¹Nagoya University, Furocho, Chikusa, Nagoya, Japan;

²National Institute of Information and Communications Technology, 4-2-1, Nukui-Kitamachi, Koganei, Japan

13:30-15:30

High Field THz Generation I

Cartier I

Chairperson(s): Koichiro Tanaka

13:30 Laser-driven Terahertz Pulses: From GV/m To TV/m Field Strengths Mo-PM1-2-1

Bergé Luc*

Commissariat à l'Energie Atomique et aux Energies Alternatives, CEA, DAM, DIF, Arpajon, France

14:00 Laser-induced Gas Breakdown By A Train Of Femtosecond long-wave Infrared FEL Pulses Mo-PM1-2-2

Ryoichi Hajima*¹; Keigo Kawase¹; James K. Koga¹; Heishun Zen²; Hideaki Ohgaki²

¹National Institutes for Quantum Science and Technology, Umemidai 8-1-7, Kizugawa, Japan; ²Kyoto University, Gokasho, Uji, Japan

14:15 Generation Of Naturally Down-Chirped Few-Cycle Pulse From Free-Electron Laser Oscillator And Its Pulse Compression Mo-PM1-2-3

Heishun Zen*¹; Hideaki Ohgaki²; Ryoichi Hajima³

¹Institute of Advanced Energy, Kyoto University, Gokasho, Uji, Japan; ²Institute of Advanced Energy, Kyoto University, Gokasho, Uji, Japan; ³National Institutes for Quantum and Radiological Science and Technology, 8-1-7 Umemi-dai, Kizugawa, Japan

14:30 Shot-to-Shot Detection Of The Carrier Envelope Phase Evolution In A THz FEL Mo-PM1-2-4

J. Michael Klopff*; Igor Ilyakov; Alexey Ponomaryov; Alexej Pashkin; Jan-Christoph Deinert; Thales V. A. G. de Oliveira; Pavel Evtushenko; Manfred Helm; Stephan Winnerl; Sergey Kovalev
Helmholtz-Zentrum Dresden-Rossendorf (HZDR), Bautzner Landstraße 400, Dresden, Germany

14:45 Characterization Of High Energy THz Sources With Proton Radiography Mo-PM1-2-5

Gerrit Bruhaug*¹; Hans Rinderknecht¹; Mingsheng Wei¹; Yiwen E²; Kareem Garriga²; Xi-Cheng Zhang²; Gilbert Collins¹; J. R. Rygg¹

¹Laboratory for Laser Energetics, 250 East River Road, Rochester, United States; ²University of Rochester, 500 Joseph C. Wilson Blvd., Rochester, United States

15:00 Repetition Rate Dependence Of High-Power THz Generation In The Tilted-Pulse Front Geometry In Lithium Niobate Mo-PM1-2-6

Celia Millon*¹; Samira Mansourzadeh¹; Tim Vogel²; Clara Saraceno²

¹Ruhr University Bochum, Universität straÙe, 150, Bochum, Germany; ²Ruhr University Bochum, Universität straÙe, 150, Germany

15:15 Ultra-broadband Terahertz Radiation By Supercontinuum Generation And Optical Rectification In A Dispersion-engineered Waveguide: A Numerical Study Mo-PM1-2-7

Aleksei Gaier*; Ileana-Cristina Benea-Chelmus
EPFL, Hybrid photonic laboratory, EPFL, Switzerland, Lausanne, Switzerland

13:30-15:30 2D Materials & Condensed Matter Cartier II
Chairperson(s): Takayuki Kurihara

13:30 Band Transport By Large Fröhlich Polarons In MXenes Mo-PM1-3-1

Wenhao Zheng*; Hai Wang; Mischa Bonn
Max Planck Institute for Polymer Research, Ackermannweg 10, Mainz, Germany

14:00 Probing The Photoionization Of Liquid Water With Broadband Terahertz Mo-PM1-3-2

Fabio Novelli*¹; Kaixuan Chen²; Adrian Buchmann¹; Thorsten Ockelmann¹; Claudius Hoberg¹; Teresa Head-Gordon³; Martina Havenith¹

¹Ruhr University Bochum, Universitaetstr. 150, Bochum, Germany; ²Chemical Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, California 94720, USA, United States; ³Chemical Sciences Division, Lawrence Berkeley National Laboratory; Kenneth S. Pitzer Center for Theo, Berkeley, California 94720, USA, United States

14:15 Interface Potential Estimation On VO₂/Si Heterojunction By Terahertz Emission Spectroscopy With Temperature Variation **Mo-PM1-3-3**

Dongxun Yang*¹; Fumikazu Murakami¹; Shingo Genchi²; Hidekazu Tanaka²; Masayoshi Tonouchi¹

¹Institute of Laser Engineering, Osaka University, 2-6 Yamadaoka, Suita, Osaka, Japan; ²SANKEN, Osaka University, 8-1 Mihogaoka, Ibaraki, Osaka, Japan

14:30 Terahertz Emission Spectroscopy On Eu-doped GaN Superlattice LEDs **Mo-PM1-3-4**

Fumikazu Murakami*¹; Atsushi Takeo²; Brandon Mitchell³; Volkmar Dierolf⁴; Yasufumi Fujiwara²; Masayoshi Tonouchi¹
¹Osaka University, 2-6 Yamada-oka, Suita, Japan; ²Osaka University, 2-1 Yamada-oka, Suita, Japan; ³West Chester University, 700 S High St, West Chester, United States; ⁴Lehigh University, 27 Memorial Dr W, Bethlehem, United States

14:45 Terahertz Emission Enhancement Of Gallium-Arsenide-Based Photoconductive Antennas With AAO-Patterned Gold Nanoparticles **Mo-PM1-3-5**

Regine Loberternos*¹; Hannah Bardolaza¹; Neil Irvin Cabello¹; Hideaki Kitahara²; John Paul Ferrolino¹; Ivan Cedrick Verona¹; Lourdes Nicole Dela Rosa¹; Vince Paul Juguilon¹; Alexander De Los Reyes¹; Arnel Salvador¹; Armando Somintac¹; Masahiko Tani²; Elmer Estacio¹

¹University of the Philippines, National Institute of Physics, University of the Philippines, Diliman, Quezon City, Philippines; ²Research Center for Development of Far-Infrared Region, 3-9-1 Bunkyo, Fukui-shi, Japan

15:00 Enhancement Of Terahertz Emission In Gallium Telluride Under Pressure **Mo-PM1-3-6**

Kai Zhang*¹; Fuhai Su²; Tianwu Wang³
¹GBA branch of Aerospace Information Research Institute, Chinese Academy of Sciences, B7 of Technology Enterprise Accelerator, No.11 of Kaiyuan Avenue, Huangpu District, Guangzhou City, Guagnzhou, China; ²Key Laboratory of Materials Physics, Institute of Solid State Physics, HFIPS, Chinese Academy of Sci, 350 Shushanhu Road Hefei 230031, Anhui, Hefei, China; ³GBA branch of Aerospace Information Research Institute, Chinese Academy of Sciences, Huangpu District, Guangzhou City, B7 of Technology Enterprise Accelerator, No.11 of Kaiyuan Avenue, Guangzhou, China

15:15

Second Harmonic And Hyper-Rayleigh Generation Of (111) Silicon Wafer

Mo-PM1-3-7

Laetitia Dalstein; Marc Tondusson; Jerome Degert; Eric Freysz*
 Univ. Bordeaux, 351 cours de la liberation, Talence, France

13:30-15:30

QCLs & Electronic Sources

International
I

Chairperson(s): Giacomo Scalari

13:30

Phase Tuning Technique To Enhance The Output Power Of Sheet Beam Folded Waveguide Traveling Wave Tube

Mo-PM1-4-1

Yuan Zheng*¹; Yuxin Wang²; Shaomeng Wang³; Ping Zhang³; Shengpeng Yang³; Yubin Gong¹

¹University of Electronic Science and Technology of China, Qingshuihe Campus:No.2006, Xiyuan Ave, West Hi-Tech Zone, Chengdu, China; ²University of Electronic Science and Technology of China, Qingshuihe Campus:No.2006, Xiyuan Ave, West Hi-Tec, Chengdu, China; ³University of Electronic Science and Technology of China, Qingshuihe Campus:No.2006, Xiyuan Ave, West Hi-Tec, China

13:45

Grating-Groove-Ladder Slow Wave Structure For W-band Traveling Wave Tube

Mo-PM1-4-2

Jingrui Duan*¹; Zhigang Lu¹; Zhanliang Wang²; Shaomeng Wang²; Huarong School²; Yubin Gong²

¹Yangtze Delta Region Institute (Huzhou), No. 819 Xisai Mountain Road, Huzhou, China; ²University of Electronic Science and Technology of China, Xiyuan Avenue No. 2006, Chengdu, China

14:00

Additive Fabrication For Upper-Millimeter-Wave Traveling Wave Tube Amplifiers

Mo-PM1-4-3

Alan Cook*; Colin Joye; Franklin Wood; Benjamin S. Albright;
Reginald Jaynes; Jeffrey Calame
U.S. Naval Research Laboratory, 4555 Overlook Ave SW,
Washington, United States

14:15

Universal CUSP-Type Electron Gun For Helical Gyro-TWTs For DNP-NMR Applications

Mo-PM1-4-4

Max Vöhringer*¹; Alexander Marek²; Stefan Illy²; Gert Gantenbein²; Manfred Thumm²; Chuanren Wu²; John Jelonnek²
¹Karlsruhe Institute of Technology (KIT), Hermann-von-Helmholtz-Platz 1, Eggenstein-Leopoldshafen, Germany;
²Karlsruhe Institute of Technology (KIT), Hermann-von-Helmholtz-Platz 1, Germany

14:30

Novel Split-well Resonant-phonon Terahertz Quantum Cascade Laser Supporting Clean Four-level System.

Mo-PM1-4-5

Asaf Albo*¹; Nathalie Lander Gower¹; Shiran Levy²; Silvia Piperno²; Sadvikas J. Addamane³; John L. Reno³
¹Bar Ilan University, Bar-Ilan University Ramat Gan , 5290002 , Israel, Bar-Ilan University Ramat Gan , 5290002 , Israel, Ramat Gan, Israel; ²Bar Ilan University, Bar Ilan University, Bar-Ilan University Ramat Gan , 5290002 , Israel, Ramat Gan, Israel; ³Sandia National Laboratories, New Mexico, United States

14:45

High-power Density, Single Plasmon, Terahertz Quantum Cascade Lasers Via Transverse Mode Control

Mo-PM1-4-6

Chao Song¹; Mohammed Salih²; Lianhe Li²; Juliette Mangeney¹; Jerome Tignon¹; Giles Davies²; Edmund Linfield²; Sukhdeep Dhillon*³
¹CNRS/ENS, 24 rue Lhomond, Paris, France; ²School of Electronic and Electrical Engineering, University of Leeds, United Kingdom; ³CNRS, 24 rue Lhomond, Paris, France

15:00

Amplitude Stabilization Of A THz Quantum-Cascade Laser Using A Photonic Integrated Circuit

Mo-PM1-4-7

Sanchit Kondawar*¹; Nicholas North¹; Yingjun Han¹; Diego Pardo²; Nick Brewster²; Mohammed Salih¹; Michael Horbury¹; Lianhe Li¹; Paul Dean¹; Brian Ellison¹; Iman Kundu³; Alexander Valavanis¹
¹University of Leeds, Woodhouse, Leeds, LS2 9JT, United Kingdom; ²STFC Rutherford Appleton Laboratory, Harwell Oxford, Didcot, OX11 0QX, United Kingdom; ³Optalysis Ltd, Wakefield, WF10 5HW, United Kingdom

15:15

Widely Tunable Room-temperature Quantum-cascade Laser Sources In The Sub-THz To THz Frequency Range

Mo-PM1-4-8

Kazuue Fujita*; Shohei Hayashi; Akio Ito; Masahiro Hitaka;
 Tatsuo Dougakiuchi; Atsushi Nakanishi
 Hamamatsu Photonics K.K., 5000 Hirakuchi Hamakita-ku,
 5000 Hirakuchi Hamakita-ku, Hamamatsu, Japan

13:30-15:30	Telecom 1	International II
Chairperson(s): Thomas Kürner		
13:30	<p>Utilizing High-Intensity Optical Subcarrier Signal For Conversion Gain Enhancement Of A UTC-PD-Integrated HEMT Photonic Double-Mixer</p> <p>Tsung-Tse Lin*¹; Dai Nakajima¹; Kazuki Nishimura¹; Mitsuki Watanabe¹; Keisuke Kasai¹; Masato Yoshida¹; Tetsuya Suemitsu²; Taiichi Otsuji¹; Akira Satou¹</p> <p>¹Tohoku University, 2-1-1 Katahira, Aoba-ku, Sendai, Japan; ²Tohoku University, 6-6-10 Aramaki-aoba, Sendai, Japan</p>	Mo-PM1-5-1
14:00	<p>200 Gbit/s THz Tunneling Demultiplexer In The 300 GHz Band</p> <p>Daniel Headland¹; Withawat Withayachumnankul²; Masayuki Fujita³; Tadao Nagatsuma⁴; Pascal Szriftgiser⁵; Guillaume Ducournau*⁶</p> <p>¹Optoelectronics and Laser Technology Group, Department of Electronics Technology, Universidad Carlos III de Madrid, Leganés, Spain; ²Terahertz Engineering Laboratory, The University of Adelaide, Australia; ³Grad. School of Engineering Science, Osaka University, Toyonaka, Japan; ⁴Grad. School of Engineering Science, Osaka University, Toyonaka, Japan; ⁵PhLAM Laboratoire de Physique des Lasers, Cité Scientifique, Villeneuve d'Ascq, France; ⁶IEMN CNRS - Univ of Lille, Avenue Poincaré, Avenue Poincaré, Villeneuve d'Ascq, France</p>	Mo-PM1-5-2
14:15	<p>Coherent THz Wireless Communication Using A Microcomb And Photonic LO</p> <p>Brendan Heffernan*¹; Yuma Kawamoto²; Keisuke Maekawa²; James Greenberg¹; Rubab Amin¹; Takashi Hori³; Tatsuya Tanigawa³; Tadao Nagatsuma²; Antoine Rolland¹</p> <p>¹IMRA America, Inc., 1551 S. Sunset St., Suite C, Longmont, United States; ²Osaka University, 1-3 Machikaneyama, Building D, 3rd floor, Toyonaka, Japan; ³IMRA America, Inc., 2-1 Asahimachi, Kariya, Japan</p>	Mo-PM1-5-3
14:30	<p>Analyzing Performance Limitations Of THz Communication Systems Under Off-Axis Conditions And Channel Blockage</p>	Mo-PM1-5-4

Xuan-Wei Miao*¹; Pouya Torkaman²; Fu-Kai Shih³; Po-Cheng Su²; Kai-Ming Feng³; Shang-Hua Yang²

¹Department of Electrical Engineering, National Tsing Hua University, No.101, Section 2, Kuang-Fu Road, Hsinchu, Taiwan; ²Institute of Electronics Engineering, National Tsing Hua University, No.101, Section 2, Kuang-Fu Road, Hsinchu, Taiwan, Taiwan; ³Institute of Communication Engineering, National Tsing Hua University, No.101, Section 2, Kuang-Fu Road, Hsinchu, Taiwan, Taiwan

14:45

Multiband OFDM-Based THz Wireless Communication System

Mo-PM1-5-5

PO-CHENG SU*¹; Pouya Torkaman¹; Xuan-Wei Miao¹; Fu-Kai Shih¹; Kai-Ming Feng²; Shang-Hua Yang²

¹Institute of Electronics Engineering, National Tsing Hua University, No.101, Section 2, Kuang-Fu Road, Hsinchu City, Taiwan; ²Department of Electrical Engineering, National Tsing Hua University, No.101, Section 2, Kuang-Fu Road, Hsinchu City, Taiwan

15:00

Improved OFDM THz Communication System Performance Through Noise Suppression And Channel Estimation Via Channel Matrix Pruning Technique

Mo-PM1-5-6

pouya torkaman¹; Shang-Hua Yang²; Kai-Ming Feng³; Xuan-Wei Miao¹; Po-Cheng Su*¹; Fu-Kai Shih¹

¹National Tsing Hua university, No. 101, Sec. 2, Kuang-Fu Rd., Hsinchu 30013, Taiwan, R.O.C., Hsinchu, Taiwan; ²National Tsing Hua University- institute of electronics engineering, No. 101, Sec. 2, Kuang-Fu Rd- Hsinchu, Hsinchu, Taiwan; ³National Tsing Hua university-Institute of Communication Engineering, No. 101, Sec. 2, Kuang-Fu Rd., Hsinchu 30013, Taiwan, R.O.C., Hsinchu, Taiwan

15:15

140 Gbit/s Wireless Sub-THz Communication Using Ultra-Low Phase Noise Light Source

Mo-PM1-5-7

keisuke maekawa*¹; Takashi Hori²; Weijie Gao³; Toki Yoshioka³; James Greenberg⁴; Brendan Heffernan⁴; Antoine Rolland⁴; Tadao Nagatsuma⁵

¹Osaka university, 1-502 1-3 Machikaneyamacho Toyonaka, Osaka, Toyonaka, Japan; ²IMRA America, 2-1 Asahimachi, Kariya, Aichi, Japan, Japan; ³Osaka university, 1-3 Machikaneyamacho Toyonaka, Japan; ⁴IMRA America, 1551 South Sunset St, Suite C, Longmont, Colorado, United States; ⁵Osaka university, 1-3 Machikaneyama, Toyonaka, Osaka, Japan, Japan

16:00-17:45

Advanced THz Sources I

Symposia
Theatre

Chairperson(s): Tobias Kampfrath

- 16:00** **A 300-GHz Slotline-coupled Double-oscillator Emitter Integrated In 65-nm CMOS** **Mo-PM2-1-1**
- Marta Ferreras*; Jesús Grajal
Information Processing and Telecommunications Center,
Universidad Politécnica de Madrid, Avda. Complutense 30,
ETSI Telecomunicación, Madrid, Spain
- 16:15** **High-Power And High-Efficiency 1.3 THz Transmitter Using Discrete Schottky Diode Technology** **Mo-PM2-1-2**
- Diego Moro-Melgar*; Artur Negrus; Eduard Mueller; Frank Gorski; Ion Opra; Oleg Cojocari
ACST GmbH, Josef-Bautz-Str. 15, Hanau, Germany
- 16:30** **Stabilizing A SiGe BiCMOS Transmitter On A Molecular Absorption Line** **Mo-PM2-1-3**
- Alexandra Glück*; Nick Rothbart; Heinz-Wilhelm Hübers
German Aerospace Center (DLR), Rutherfordstraße 2, Berlin,
Germany
- 16:45** **Observation Of Terahertz Vector Beam Generated Directly In ZnTe Crystal** **Mo-PM2-1-4**
- Seigo Ohno*¹; Hiroaki Iwase²
¹Tohoku university, 6-3 Aramaki Aoba, Sendai, Sendai, Japan;
²Tohoku university, 6-3 Aramaki Aoba, Sendai, Japan
- 17:00** **Photonic Terahertz Source Frequency Stabilized To The Part Per Trillion Level Through Molecular Spectroscopy** **Mo-PM2-1-5**
- James Greenberg*; Brendan Heffernan; Antoine Rolland
IMRA America, Inc., 1551 S Sunset St, Suite C, Longmont,
United States
- 17:15** **High Spectral Purity Solid-state Dual-frequency Laser For The Generation Of Ultra-low Phase Noise Millimeter-wave To Terahertz CW Signals** **Mo-PM2-1-6**
- Loic MORVAN¹; José-Javier Fernandez-Pacheco*¹; Daniel Dolfi¹; Vincent Crozatier¹; Fabien Bretenaker²
¹Thales Research and Technology - France, 1 avenue Augustin Fresnel, Palaiseau, France; ²Université Paris-Saclay, CNRS, Ecole Normale Supérieure Paris-Saclay, Bâtiment 505, Campus d'Orsay., Orsay, France
- 17:30** **Nanowire-based THz Polarimetry** **Mo-PM2-1-7**

Michael Johnston*
University of Oxford, Clarendon Laboratory, Parks Rd, Oxford,
United Kingdom

16:00-18:00	Spectroscopy I	Cartier I
Chairperson(s): Sebastian Maehrlein		
16:00	Quantitative Measurement Of The Dispersion Of $\epsilon''(3)$ In Silica And Silicon Nitride In The 1-25 THz Range	Mo-PM2-2-1
	Binbin Zhou; Mattias Rasmussen; Siqi Yan; Narwan Kabir Noori; Oliver Nagy; Yunhong Ding; Simon Jappe Lange; Peter Uhd Jepsen* Technical University of Denmark, DTU Electro, Blg. 343, Kongens Lyngby, Denmark	
16:30	Refractive Index And Extinction Coefficient Measurement Of Reflective THz-FDS Based On SSKK Method For Solid Sample	Mo-PM2-2-2
	Yubo Wu* ¹ ; Cunjun Ruan ² ; Yufeng Jiao ² ¹ Beihang University, No. 37 Xueyuan Road, Haidian District, Beijing, China; ² Beihang University, No. 37 Xueyuan Road, Haidian District, China	
16:45	Using Terahertz Time-domain Spectroscopy To Measure Coating Thickness On Li-ion Electrodes	Mo-PM2-2-3
	Faezeh Zarrin Khat* ¹ ; Alasdair Pentland ¹ ; Carl Reynolds ² ; Emma Kendrick ² ; Philip F. Taday ¹ ¹ TeraView LTD, 1, Enterprise Cambridge Research Park, Cambridge, United Kingdom; ² School of Metallurgy and Materials, University of Birmingham, Birmingham, United Kingdom	
17:00	Terahertz Resonant Nano-spectrum Of Red Mineral Pigments	Mo-PM2-2-4
	Xiaoqiuyan Zhang* ¹ ; Tianyu Zhang ² ; Zhuocheng Zhang ² ; Xingxing Xu ² ; Feng Xiao ² ; Shigao Zhao ² ; Min Hu ² ¹ University of Electronic Science and Technology of China, No.2006, Xiyuan Ave, West Hi-Tech Zone, 611731, Chengdu, China; ² University of Electronic Science and Technology of China, No.2006, Xiyuan Ave, West Hi-Tech Zone, 611731, China	
17:15	Dielectric Characterization Of Low-Loss Glasses And Polymers For 6G Microelectronic Packaging Applications	Mo-PM2-2-5

Min Zhai¹; Pragna Bhaskar²; Haolian Shi¹; Madhavan Swaminathan²; Alexandre Locquet¹; David Citrin^{*1}
¹Georgia Tech Europe, 2 Rue Marconi, Metz, France; ²Georgia Institute of Technology, 225 N Ave NW, Atlanta, United States

17:30

Ultrathin MXene Assemblies Reaching Thin-film Absorption Limit In 0.5-10 THz

Mo-PM2-2-6

Tao Zhao^{*}; Hujie Wan; Tianpeng Ding; Peiyao Xie; Jinlin Xie; Min Hu; Xu Xiao
 University of Electronic Science and Technology of, No.2006, Xiyuan Ave, West Hi-Tech Zone, Chengdu, China

17:45

Nonlinear Refractive Index Of Solids At THz Frequency

Mo-PM2-2-7

Soheil Zibod^{*1}; Ksenia Dolgaleva²
¹University of Ottawa, 25 Templeton Street, Room 344, Ottawa, Canada; ²University of Ottawa, 25 Templeton Street, Ottawa, Canada

16:00-18:00

Condensed Matter I

Cartier II

Chairperson(s): Mischa Bonn

16:00

Observation Of Terahertz Spin Hall Conductivity Spectrum In Bulk GaAs At Room Temperature

Mo-PM2-3-1

Tomohiro Fujimoto^{*}; Takayuki Kurihara; Yuta Murotani; Natsuki Kanda; Tomohiro Tamaya; Changsu Kim; Jun Yoshinobu; Hidefumi Akiyama; Takeo Kato; Ryusuke Matsunaga
 The Institute for Solid State Physics, The University of Tokyo, 5-1-5 Kashiwanoha, Kashiwa, Japan

16:30

Optical Pump THz Probe Spectroscopy On Metal-Organic Frameworks

Mo-PM2-3-2

Jens Neu^{*1}; Sarah Ostresh²; James Nyakuchema³; Jier Huang⁴
¹University of North Texas (UNT), 210 Avenua A, Room 324, Denton, United States; ²Yale University, 225 Prospect Street, United States; ³Marquette University, Milwaukee, United States; ⁴Boston College, Chestnut Hill, MA, United States

16:45

Investigating The Effect Of Crystal Morphology On Optoelectronic Properties Of Zinc Phosphide Thin Films Via Optical-pump Terahertz Probe Spectroscopy

Mo-PM2-3-3

Yinghong Huang*¹; Xinyun Liu¹; Rajrupa Paul²; Elias Stutz²; Mahdi Zamani²; Djamshid Damry¹; Léa Buswel²; Simon Steinvall²; Jean-Baptiste Leran²; Mirjana Dimitrievska²; Anna Fontcuberta i Morral²; Jessica Boland¹
¹The University of Manchester, Oxford Road, Manchester, United Kingdom; ²École Polytechnique Fédérale de Lausanne, 1015, Lausanne, Switzerland

17:00 Ultrafast THz Dynamics Of Photocarriers In CsPbBr3 Microcrystals **Mo-PM2-3-4**

Sheng Lee*¹; Kyeongdeuk Moon²; Muhammad Shoaib²; Seokyoung Kim²; Tyler Cocker¹
¹Department of Physics and Astronomy, Michigan State University, East Lansing, United States; ²Department of Chemistry, Michigan State University, East Lansing, United States

17:15 Bandwidth-Activated Anharmonic Coupling **Mo-PM2-3-5**

Megan Nielson*; Lauren M. Davis; Aldair Alejandro; Brittany Knighton; Claire Rader; Jeremy A Johnson
 Brigham Young University, BNSN C100 BYU, Provo, United States

17:30 Probing How Dynamics, Disorder And Temperature Influence The Vibrational Spectra Of Molecular Crystals **Mo-PM2-3-6**

Andrew Burnett*; Calum Towler; John Kendrick
 University of Leeds, School of Chemistry, Woodhouse Lane, Leeds, United Kingdom

17:45 Accounting For Nonlinear Photoconductivity In Time-Resolved Terahertz Spectroscopy **Mo-PM2-3-7**

Leya Lopez*¹; J. Steven Dodge²; Derek G. Sahota²
¹Department of Physics, Simon Fraser University, 8888 University Dr, Burnaby, Canada; ²Simon Fraser University, 8888 University Dr W, Burnaby, Canada

16:00-18:00

Quantum-Cascade Lasers II

International I

Chairperson(s): Miriam Vitiello

16:00

Quantum-cascade Lasers For Terahertz High-resolution Spectroscopy

Mo-PM2-4-1

Xiang Lu*¹; Benjamin Röben²; Klaus Biermann¹; Lutz Schrottke¹; Jente Wubs³; Uwe Macherius³; Klaus-Dieter Weltman³; Jean-Pierre H. van Helden³; Holger T. Grahn¹
¹Paul-Drude-Institut für Festkörperelektronik, Leibniz-Institut im Forschungsverbund Berlin e. V, Hausvogteiplatz 5-7, Berlin, Germany; ²Physikalisch-Technische Bundesanstalt (PTB), Institut Berlin, Abbestraße 2-12, Berlin, Germany; ³Leibniz Institute for Plasma Science and Technology (INP), Felix-Hausdorff-Str. 2, Greifswald, Germany

16:30 **Broadband Antenna-coupled THz Quantum Cascade Laser Frequency Combs With Inverse-designed Waveguide Facets**

Mo-PM2-4-2

Urban Senica*; Sebastian Gloor; Paolo Micheletti; Mattias Beck; Jérôme Faist; Giacomo Scarlarì
ETH Zurich, Auguste-Piccard-Hof 1, Zurich, Switzerland

16:45 **Integration Of A 2.1-THz Quantum Cascade Laser Within An IEEE WM-130 Rectangular Metallic Waveguide**

Mo-PM2-4-3

Mohammed Salih*¹; Sanchit Kondawar¹; Nick Brewster²; Lianhe Li¹; Edmund Linfield¹; Hui Wang²; Peter Huggard²; Joshua Freeman¹; Daniel Gerber²; Alexander Valavanis¹
¹School of Electronic and Electrical Engineering, Woodhouse, Leeds, United Kingdom; ²RAL Space, Harwell Campus, Didcot, United Kingdom

17:00 **Optical Beatnote Detection From A Portable THz QCL Comb At 80 K By Direct Free Space Mixing In A High-frequency Hot Electron Bolometer**

Mo-PM2-4-4

Sara Cibella*¹; Guido Torrioli²; Pasquale Carelli²; Alessandro Gaggero²; Ennio Giovine²; Filippo Bolli³; Urban Senica⁴; Mattias Beck⁴; Jerome Faist⁴; Giacomo Scarlarì⁴
¹IFN-CNR, Via del Fosso del Cavaliere 100, via del fosso del cavaliere 100, Rome, Italy; ²IFN-CNR, IFN-CNR, via del fosso del cavaliere 100, roma, Italy; ³Department of Electronic Engineering, University of Rome Torvergata, Via del Politecnico 1, rome, Italy; ⁴Institute for Quantum Electronics, Department of Physics, ETH Zürich, Auguste- Piccard-Hof 1 8093 Zürich, Schweiz, Zürich, Switzerland

17:15 **Strongly Modulated Quantum Cascade Lasers For Broadband And Fast Doppler-Based FTIR Spectroscopy**

Mo-PM2-4-5

Alessio Cargioli*¹; Diego Picciocchi¹; Mathieu Bertrand¹; Sargis Hakobyan²; Richard Maulini²; Stéphane Blaser²; Tobias Gresch²; Antoine Muller²; Jerome Faist¹
¹ETH Zurich, Auguste- Piccard-Hof 1, Switzerland; ²Alpes Lasers, Avenue des Pâquiers 1, Switzerland

17:30 QCL-based THz Optical Wireless Communication Link Mo-PM2-4-6

Alessia Sorgi*¹; Marco Meucci¹; Ali Umair¹; Francesco Cappelli¹; Leonardo Viti²; Miriam Serena Vitiello²; Jacopo Catani¹; Luigi Consolino¹
¹National Institute of Optics-CNR (CNR-INO), via Nello Carrara 1, Sesto Fiorentino, Italy; ²NEST, CNR - Istituto Nanoscienze, Piazza San Silvestro 12, Pisa, Italy

17:45 Five-Stack Heterogeneous Terahertz Quantum Cascade Laser For Ultra-Broadband Emission Mo-PM2-4-7

Michael Jaidl*¹; Maximilian Beiser²; Miriam Giparakis²; Martin A. Kainz¹; Dominik Theiner¹; Benedikt Limbacher¹; Marie C. Ertl¹; Aaron M. Andrews²; Gottfried Strasser²; Juraj Darmo¹; Karl Unterrainer¹
¹TU Wien, Gusshausstrasse 27-29, Vienna, Austria; ²TU Wien, Gusshausstrasse 25a, Vienna, Austria

16:00-18:00

Telecom 2

International II

Chairperson(s): Paul Goldsmith

16:00 Absolute Security With Diffraction Grating In Terahertz Communication Links Mo-PM2-5-1

Yaseman Shir*¹; Chia-Yi Yeh¹; Zhaoji Fang¹; Rabi Shrestha¹; Hichem Guerboukha¹; John Malowicki²; Ngwe Thawdar²; Daniel Mittleman¹
¹Brown University, School of Engineering, 184 Hope Street, Providence, United States; ²Air Force Research Laboratory, 26 Electronic Pkwy, Rome, United States

16:15 Load Analysis Of Wireless Backhaul Links At 300 GHz Mo-PM2-5-2

Bo Kum Jung*¹; Thomas Kürner¹
 TU Braunschweig, Institut für Nachrichtentechnik, Schleinitzstraße 22, Braunschweig, Germany

16:30 TeraHertz Vs Microwaves Ray-Launching Model In A 0.45 THz Indoor Wireless Scenario Mo-PM2-5-3

Leyre Azpilicueta¹; Alper Schultze²; Mikel Celaya-Echarri¹; Fidel A. Rodríguez-Corbo³; Christopher Sumner⁴; Morgan Dryhurst⁴; Raed. M. Shubair⁵; Francisco Falcone¹; Miguel Navarro-Cia^{*4}

¹Universidad Publica de Navarra, Av. Cataluña, s/n, Spain;

²Fraunhofer Institute for Telecommunications, Heinrich Hertz Institute HHI, Einsteinufer 37, Germany; ³Tecnologico de Monterrey, Av. Eugenio Garza Sada 2501 Sur, Mexico;

⁴University of Birmingham, Edgbaston Campus, United Kingdom; ⁵New York University Abu Dhabi, Saadiyat Marina District, United Arab Emirates

16:45 **Continuous Asymmetric Beam Steering With A Reconfigurable Intelligent Surface In The Ka-Band At 31 GHz** **Mo-PM2-5-4**

Alexander Wolff^{*1}; Lars Franke²; Steffen Klingel²; Janis Krieger²; Lukas Mueller²; Ralf Stemler²; Marco Rahm²

¹RPTU Kaiserslautern-Landau, Paul-Ehrlich-Strasse 11, Kaiserslautern, Germany; ²RPTU Kaiserslautern-Landau, Paul-Ehrlich-Strasse 11, Germany

17:00 **Rough Surfaces Scattering And Mobility-Resilient Terahertz Wireless Links** **Mo-PM2-5-5**

Ruiyi Shen^{*}; Yasaman Ghasempour
Princeton University, 41 Olden St, Engineering Quadrangle, Princeton, United States

17:15 **An 83.2 Gbps SISO Wireless Communication System Utilizing Polarization And Frequency Division Multiplexing** **Mo-PM2-5-6**

Zheng Wang^{*}; Haoyi Cao; Weipeng Wang; Hongxin Zeng; Lin Huang; Ziqiang Yang; Yaxin Zhang

University of Electronic Science and Technology of China, Qingshuihe Campus of UESTC, No.2006, Xiyuan Avenue, Chengdu, China

17:30 **The Multipath Propagation Characteristics Of THz In Indoor Test-Room Environments** **Mo-PM2-5-7**

Jong Ho Kim^{*1}; Jinhyung Oh¹; Jang Seok Choi²; Jae Ho Seok²

¹Electronics and Telecommunications Research Institute, 218 Gajeong-ro, Yuseong-gu, Daejeon, Korea, Republic of;

²National Radio Research Agency, 767 , Bitgaram-ro, Naju-si, Jeollanam-do, Korea, Republic of

17:45 **Analysis Of Radio Propagation Characteristics In Data Center Environment With Rack In Terahertz Band** **Mo-PM2-5-8**

Jinhyung Oh*¹; Jong Ho Kim¹; Jang Seok Choi²; Jae Ho Seok²

¹Electronics and Telecommunications Research Institute, Ga-jeong ro 218, Yu-seong gu, Daejeon, Korea, Republic of;

²National Radio Research Agency, Bitgaram-ro 767, Naju-si, Jeollanam-do, Korea, Republic of

17:30-19:00

Poster Session 1

Foyer
(3rd floor)

6G Communications Push For Effective THz Sensing Technology: MOSFET Rectification Model Needs To Be Refounded

Mo-P1-01

Fabrizio Palma*¹; Renato Cicchetti²; Stefano Perticaroli³;
Orlandino Testa²

¹Rome University La Sapienza, Dip. DIET, Università di Roma La Sapienza, v. Eudossiana 18, Roma, 320 4357 257, Roma, Italy;

²Rome University La Sapienza, Rome University La Sapienza, Dip. DIET, Università di Roma La Sapienza, Roma, Italy; ³Radio Analog Micro Electronics, Roma, Italy, Roma, Italy

Novel 0.22-THz Extended Interaction Oscillator Based On The Four-Sheet-Beam Orthogonal Interconnection Structure

Mo-P1-02

Zhenhua Wu*; Jielong Li; Diwei Liu; Wei Wang; Zongjun Shi; Renbin Zhong; Kaichun Zhang; Min Hu; Zhaoyun Duan; Yanyu Wei; Yubin Gong; Shenggang Liu

University of Electronic Science and Technology of China, UESTC, Chengdu, China, Chengdu, China

Selecting Hazelnuts By Coupling A Self-organizing Map (SOM) And An Experimental System Operating In Transmission Configuration.

Mo-P1-03

Manuel Greco*¹; Sabino Giarnetti²; Emilio Giovenale³; Andrea Taschin³; Luca Senni³; Fabio Leccese¹; Andrea Doria³

¹Roma Tre University, Via della Vasca Navale, 84, Roma, Italy; ²Se.Te.L., Via Casamari, 6, Via Marentino, 134, Roma, Italy; ³Fusion and Nuclear Dept, ENEA, Via Enrico Fermi, 45, Frascati, Italy

Phase-sensitive Silicon CMOS TeraFETs

Mo-P1-04

Michael Shur*¹; Xueqing Liu²; Trond Ytterdal³

¹Rensselaer Polytechnic Institute, 9433 van Arsdale Drive, 9433 van Arsdale Drive, Vienna, United States; ²Rensselaer Polytechnic Institute, Rensselaer Polytechnic Institute, 9433 van Arsdale Drive, Troy, United States; ³University of Trondheim, s O.S. Bragstads PlassAddress: N-7491, Trondheim, Norway

All-printable And Mechanically-aligned Broadband Image Sensor Array Sheets

Mo-P1-05

Yuto Matsuzaki*¹; Daiki Sakai¹; Yuto Aoshima¹; Daiki Shikichi¹; Raito Ota¹; Satsuki Yasui²; Kou Li²; Yukio Kawano¹
¹Chuo University, 1-13-27, Kasuga, Bunkyo-ku, Japan; ²Tokyo Institute of Technology, 2-12-1, Ookayama, Meguro-ku, Japan

All-printable Stretchable Broadband Photo-thermoelectric Camera Sheets

Mo-P1-06

Daiki Sakai*; Yuto Aoshima; Yuto Matsuzaki; Kou Li; Yukio Kawano
Department of Science and Engineering, Chuo University, 1-13-27 Kasuga, Bunkyo-ku, Japan

Design Of A Circular Electron Injection Electron Optical System For 0.34 Terahertz Traveling Wave Tube

Mo-P1-07

Hang Ren*¹; Sheng Yu²; WeiHua Ge³; Rutai Chen³; Yubo Liu³; Tao Wang³

¹University of Electronic Science and Technology of China, No.2006 Xiyuan Avenue, Gaoxin District (West Zone), Chengdu, ChengDu, China; ²University Of Electronic Science And Technology Of China, No.2006 Xiyuan Avenue, Gaoxin District (West Zone), University of Electronic Science and Technology of China Chengdu, China, China; ³University of Electronic Science and Technology of China, University of Electronic Science and Technology o, Chengdu, China

A WR-3 Full Band Frequency Tripler Based On Planar Schottky Diode

Mo-P1-08

Jianghua Yu*; Yazhou Dong; Hongji Zhou; Hailong Guo; Jun Zhou; Yaxin Zhang
University of Electronic Science and Technology of China, Chengdu China, China

Numerical Research On Multi-objective Optimization Of Vacuum Electronic Devices Based On G-NSGA-II

Mo-P1-09

jianhuang liu¹; laqun liu*¹; yulan hu²; huihui wang²; dagang liu²
¹Yangtze Delta Region Institute (Huzhou), University of Electronic Science and Technology of China, Building B1, Science and Technology Innovation Complex, No. 819, Xisaishan Road, Huzhou, China; ²School of Electronic Science and Engineering, University of Electronic Science and Technology of Chi, No.4, Section 2, North Jianshe Road, China

THz Detection In P-Type FETs

Mo-P1-10

Przemyslaw Zagrajek^{*1}; Michal Zaborowski²; Jacek Marczewski²; Daniel Tomaszewski²

¹Institute of Optoelectronics, Military University of Technology, ul. gen. S. Kaliski 2, Warsaw, Poland; ²Institute of Microelectronics and Photonics, Lukasiewicz Research Center, al. Lotnikow 32/46, Warsaw, Poland

Terahertz Detector Integrated With Photonic Crystals Waveguide On Chip

Mo-P1-11

Xu Yan^{*1}; Xuecou Tu²; Yunjie Rui²; Chen Zhang²; Xiaoqing Jia²; Lin Kang²; Jian Chen²; Peiheng Wu²

¹Research Institute of Superconductor Electronics (RISE), School of Electronic Science and Engineerin, 163 Xianlin Road, Qixia District, Nanjing, Jiangsu Province, 210023, Nanjing City, China; ²Research Institute of Superconductor Electronics, School of Electronic Science and Engineering, Nanj, Jiangsu Province Nanjing, Qixia District, Xianlin R, China

Study Of 0.65THz Extended Interaction Amplifier Based On Folded Waveguide Cavity

Mo-P1-12

Yang Dong^{*1}; Jingyu Guo²; Shaomeng Wang²; Duo Xu²; Youfeng Yang²; Yuxin Wang²; Yuxin Wang²; Yuan Zheng²; Ping Zhang²; Zhanliang Wang²; Yubin Gong²

¹ University of Electronic Science and Technology of China, No. 2006 Xiyuan Avenue, High-Tech District (West District), Chengdu, China, Chengdu, China; ²University of Electronic Science and Technology of China, No. 2006 Xiyuan Avenue, High-Tech District (West D, China

A Full-band Tripler Based On A GaAs Monolithic For 460-700 GHz

Mo-P1-13

Yazhou Dong^{*1}; Shixiong Liang²; Hongji Zhou³; Jianghua Yu³; Hailong Guo³; Jun Zhou³; Hongxin Zeng³; Yaxin Zhang³

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Fabrication Error Study Of W-band Planar Beam-Wave Interaction Structure

Mo-P1-14

Monodipa Sarkar*¹; Niraj Kumar²

¹CSIR-Central Electronics Engineering Research Institute, CSIR-CEERI, OH-12, Pilani, India; ²CSIR-Central Electronics Engineering Research Institute, CSIR-CEERI Campus, Pilani, India

Terahertz Radiation Source Based On Two-stage Capillary Plasma Channel

Mo-P1-15

Shengpeng Yang*¹; Mi Tian¹; Bingyang Liang²; Yubin Gong¹

¹University of electronic science and technology of China (UESTC), No.2006, Xiyuan Ave, West Hi-Tech Zone, 611731, Chengdu, Sichuan, P.R.China, Chengdu, China; ²Xi'an University of Science and Technology, Yanta Road No. 58, Xi'an, China

Crosstalk Resistant Integrated Uni-Traveling Carrier Photodetector

Mo-P1-16

Souvaraj De¹; Ranjan Das¹; Karanveer Singh¹; Younus Mandalawi¹; Thomas Kleine-Ostmann*²; Thomas Schneider¹

¹TU Braunschweig, Schleinitzstraße 22, 38106 Braunschweig, Braunschweig, Germany; ²PTB Braunschweig, Bundesallee 100, 38116 Braunschweig, Braunschweig, Germany

Tunable Continuous-wave Terahertz Generator Based On Difference Frequency Generation With DAST Crystal

Mo-P1-17

Zelong Wang*; Yuye Wang; Haibin Li; Meilan Ge; Degang Xu
Tianjin University, 92 Weijin Road, Nankai District, Tianjin, China, Tianjin, China

Influence Of Current In The Spintronics Terahertz Emitter

Mo-P1-18

Da Tian*; Caihong Zhang; Hongsong Qiu; Jingbo Wu; Kebin Fan; Biaobing Jin; Jian Chen; Peiheng Wu
Nanjing University, No. 163 Xianlin Avenue, Qixia District, Nanjing, China, Nanjing, China

Electric Field Measurement For A 320GHz Wave By Rydberg-atom Based Sensor

Mo-P1-19

Motohiro Kumagai*; Shigeo Nagano; Shin'ichiro Hayashi; Norihiko Sekine
National Institute of Information and Communications Technology, 4-2-1 NukuiKITAMACHI KOGANEI, Tokyo, Japan

Frequency Controlled Terahertz Wave Parametric Generation By A Spectral Drill Cavity

Mo-P1-20

Shin'ichiro Hayashi*¹; Seigo Ohno²; Katsuhiko Miyamoto³;
Yoshiharu Urata⁴; Norihiko Sekine¹

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³Chiba University, 1-33, Yayoi-cho, Inage-ku, Chiba, Japan;
⁴PHLUXi, Inc., 5-3-32 Nakayama, Aoba, Sendai, Japan

High Peak Power Mid-infrared Optical Parametric Oscillator And Amplifier Based On BaGa4Se7

Mo-P1-21

Kai Chen*¹; Degang Xu¹; Jining Li¹; Kai Zhong¹; Yuye Wang¹;
Jiyong Yao²; Jianquan Yao¹

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China

Full-Wave Analysis Of A Complex Gyrotron Cavity With Coupled Smooth-Walled And Corrugated Resonators

Mo-P1-22

Vitalii Shcherbinin*¹; Tetiana Tkachova²; Oksana Andrieieva²;
Manfred Thumm¹; John Jelonnek¹

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Platz 1, Eggenstein-Leopoldshafen, Germany; ²Kharkiv
Institute of Physics and Technology, Akademicheskaya St. 1,
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Calculation Model Of Klystron

Mo-P1-23

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Chengdu, China; ²University of Electronic Science and
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Zone, Chengdu, Chengdu, China

A Novel G-band Dual Sheet Beam Sine Waveguide Traveling-wave Tube

Mo-P1-24

Shuanzhu Fang¹; Yuanqing Xiao²; Tiejing Wang²; Mengyao
Tang²; Fangfang Song²; Jun Luo*¹; Yanyu Wei³

¹China Electronic Product Reliability and Environmental Testing
Research Institute, Guangzhou, China, Guangzhou, China;
²China Electronic Product Reliability and Environmental Testing
Research Institute, Guangzhou, China, China; ³University of
Electronic Science and Technology of China, Chengdu, China,
China

Study And Design Of KFE Compact Gyrotron For KSTAR ECH System

Mo-P1-25

Sunggug Kim*¹; sonjong wang²; Mi Joung²; Jongwon Han²;
Inhyok Rhee²

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Daejeon, Korea, Republic of; ²Korea institute of Fusion Energy,
Gwahak-ro 169-148, Korea, Republic of

**Study On Electromagnetic Characteristics Of Millimeter
Wave Double Inner Conductor Bragg Structure**

Mo-P1-26

xueyong ding*¹; shifeng wang²; liansheng wang²; shuai yuan¹
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Sanya, sanya, China; ²sanya university, Department Of
Polytechnic, Sanya university, Sanya, 572025, sanya, China

**Investigation Of The Cause Of Two-beam Radiation In A
Multi-frequency Gaussian Beam Output Gyrotron FU CW
GVII**

Mo-P1-27

Yoshinori Tatematsu*; Yoshiki Koshido; Masafumi Fukunari;
Yuusuke Yamaguchi
University of Fukui, 3-9-1 Bunkyo, Fukui, Japan

**Theoretical Study Of Losses In A 170 GHz Gyrotron with
Confocal Resonator**

Mo-P1-28

Youwei Yang*
Nuclear Power Institute of China, No. 328, Section 1,
Changshun Avenue, Chengdu, China

Design Of A 28GHz Third Harmonic Gyrotron

Mo-P1-29

Zhuofeng Li*¹; Kai Jia²; Yinghui Liu²
¹University of Electronic Science and Technology of China,
Qingshuihe Campus of UESTC, No.2006, Xiyuan Avenue,
West Hi-tech Zone, Chengdu, China; ²University of Electronic
Science and Technology of China, Qingshuihe Campus of
UESTC, No.2006, Xiyuan Avenue, Chengdu, China

**Bowtie Loaded Meander Antenna With Asymmetric Multi-
source Excitation**

Mo-P1-30

Mei Yu*¹; Jin Shi²; Weiwei Xu³; Huabing Wang³; Jian Chen³;
Peiheng Wu³
¹Nantong University, Seyuan Road 9, Nantong, China;
²Nantong University, Seyuan Road 9, China; ³Nanjing
University, Xianlin Avenue 163, China

**Effects Of Stoichiometric Ratio Of NbN Films On The
Performance Of Hot Electron Bolometer Direct Detection**

Mo-P1-31

Hongkai Shi*; Runfeng Su; Tao Xu; Yijun Zhe; Xiaoqing Jia; Lin Kang; Xuecou Tu; Jian Chen; Peiheng Wu
Nanjing University, Xianlin Ave 163, Nanjing, China

Stabilization Of Lasing Frequency Of THz-QCLs In Free-running Using An External LED Light Mo-P1-32

Yoshihisa Irimajiri*
National Institute of Information and Communications Technology, 4-2-1, Nukui-kita, Koganei, Tokyo, Japan

MBE Growth Of 3 μM -thick InGaSb/AlInGaSb QCL Structures Mo-P1-33

Hiroaki Yasuda*; Norihiko Sekine; Iwao Hosako
National Institute of Information and Communications Technology, 4-2-1, Nukui-Kitamachi, Koganei, Tokyo, Japan

Sheet-Beam Higher Order Mode Extended Interaction Oscillator At 0.34THz Mo-P1-34

Jin Han*¹; Tianzhong Zhang²; Rongxing Zeng²
¹University of Electronics Science and Technology, Chengdu, Chengdu, China; ²University of Electronics Science and Technology, chengdu, China

Additive Manufacturing And Characterization Of Hollow Core Metal And Topas waveguides For Sensor Systems Mo-P1-35

Abhijeet Shrotri*¹; Amlan kusum Mukherjee²; Sven Lohoefer¹; Andre Springer¹; Oliver Stuebbe¹; Sascha Preu²
¹Technische Hochschule Ostwestfalen-Lippe, Campusallee 12, Lemgo, Germany; ²Technische Universität Darmstadt, Merckstraße 25, Darmstadt, Germany

Dielectric Properties Of Epoxy Composites Based On Ferroelectric And MWCNTs At THz Frequency Range Mo-P1-36

Alexander Badin*; Tatyana Shematilo; Victoria Moskalenko; Diana Pidotova; Daria Frolova; Kristina Lang; Grigorii Kuleshov
National Research Tomsk State University, Lenina av.36, Tomsk, Russian Federation

Terahertz Spectroscopy On CO₂-CH₄ β -hydroquinone Clathrate Replacement Reaction Mo-P1-37

Katharine Bancroft*¹; Johanna Koelbel¹; Michael Ruggiero²; Daniel Mittleman¹
¹Brown University, Department of Engineering, 184 Hope St, Providence, United States; ²University of Vermont, Department of Chemistry, 82 University Pl, Burlington, United States

THz Spectroscopy Of Cometary Simulants Mo-P1-38

Linus Stöckli*; Mathias Brändli; Daniele Piazza; Rafael Ottersberg; Axel Murk; Antoine Pommerol; Nicolas Thomas
University of Bern, Sidlerstrasse 5, Bern, Switzerland

17:30-19:00

Poster Session 2

Foyer (4th floor)

Quantification Of Anomalous Blueshifting With Increasing Temperature In The Terahertz Modes Of D-Glutamine

Mo-P2-01

Thomas Sanders*; Jackson Allen; Joseph Horvat; Roger Lewis
University of Wollongong, Northfields Ave, Wollongong, Australia

Nonlinear Study For Pair-Breaking In Superconducting Films Under Intense Terahertz Radiation

Mo-P2-02

Jie Tian; Hao Zhang*
Chongqing University of Science and Technology, 20 Daxuecheng East Road, Shapingba District, Chongqing, China

Electro-Optical Determination Of The Spectral Characteristics Of Components For THz-based Plasma Diagnostic

Mo-P2-03

Marco Zerbini*¹; Massimo Alonzo²; Luca Senni²; Andrea Taschin²; Andrea Doria¹; Emilio Giovenale¹; Giuseppe Galatola-Teka¹

¹ENEA CR Frascati, via Enrico Fermi, 45, Frascati, Italy;

²ENEA, via E. Fermi, 45, Italy

The Method For Removing Splits In The Phase Singularity Of An Optical Vortex Generated By A Spiral Mirror

Mo-P2-04

Yuki Goto*¹; Toru Ii Tsujimura²; Shin Kubo²
¹National Institute for Fusion Science, 322-6, Oroshi-cho, Toki, Japan; ²Chubu University, 1200 Matsumotocho, Kasugai, Japan

Current Status Of The ECH Gyrotron System On The DIII-D Tokamak

Mo-P2-05

Yuri Gorelov*; Antonio Torrezan; Mike Ross; Nikolai de Boucaud; Perry Nesbet; Alex Laut
General Atomics, 3550 General Atomics Court, San Diego, United States

Rhodochrosite At High Temperatures: A Terahertz Perspective On Structural Dynamics

Mo-P2-06

Naini Bajaj*¹; Aparajita Bandyopadhyay²; Amartya Sengupta¹
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New Delhi, India; ²Indian Institute of Technology Delhi, DRDO-
Industry-Academia Center of Excellence, New Delhi, India

Further Optimization Of Resonant GHz Wave Absorption Coatings

Mo-P2-07

Andreas Hentrich*¹; Burkhard Plaum²; Andreas Killinger³;
Günter Tovar¹
¹University of Stuttgart, Pfaffenwaldring 31, Stuttgart, Germany;
²University of Stuttgart, Pfaffenwaldring 31, Germany;
³University of Stuttgart, Allmandring 7b, Germany

Time Resolved Hyper-Raman Surface Spectroscopy Of (100) Silicon

Mo-P2-08

Laetitia Dalstein; Marc Tondusson; Jerome Degert; Eric Freysz*
Univ. Bordeaux, 351 cours de la liberation, Talence, France

Terahertz And Dc Conductivity Of Pyrolyzed Photoresist Films

Mo-P2-09

Justinas Jorudas*¹; Hamza Rehman²; Georgy Fedorov²;
Maria Cojocari²; Petri Karvinen²; Andrzej Urbanowicz¹; Daniil Pashnev¹;
Irmantas Kasalynas¹; Yuri Svirko²; Polina Kuzhir²
¹Center for Physical Sciences and Technology (FTMC),
Sauletekio ave. 3, Vilnius, Lithuania; ²University of Eastern
Finland, Yliopistokatu 7, Joensuu, Finland

Terahertz Time-Domain Spectroscopic Study Of Boson Peak Of Hydrogen-Bonded Glass-Forming Glycerol

Mo-P2-10

Dan Kyotani*¹; Soo-Han Oh¹; Yasuhiro Fujii²; Suguru Kitani³;
Yohei Yamamoto¹; Tatsuya Mori¹
¹Department of Materials Science, University of Tsukuba, 1-1-1
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Sciences, Ritsumeikan University, 1-1-1 Noji-higashi, Kusatsu,
Shiga, Japan; ³Laboratory for Materials and Structures, Tokyo
Institute of Technology, 4259 Nagatsuta-cho, Midori-ku,
Yokohama, Kanagawa, Japan

Generation Of The THz Spin Current In Hematite Contributed By Spin Seebeck Effect

Mo-P2-11

Hongsong Qiu*
Nanjing University, 163, Xinlin Street, Nanjing, China

Observation Of Anthracene Crystallization Under Irradiation Of Terahertz Free-Electron Laser

Mo-P2-12

Youwei Wang¹; Mihiko Maruyama²; Masato Ota¹; Kosaku Kato¹; Verdad C. Agulto¹; Valynn Katrine Mag-usara¹; Hiroshi Y. Yoshikawa²; Katsuo Tsukamoto²; Yuka Tsur³; Goro Isoyama⁴; Takashi Onuma⁵; Ryutaro Shimada⁵; Tomohiko Tateshima⁵; Kazufumi Takano⁶; Yutaro Tanaka²; Shigeyoshi Usami²; Masayuki Imanishi²; Mori Yusuke²; Masashi Yoshimura¹; Makoto Nakajima^{*1}

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Temperature Dependence Of The Conductivity Of InSb Measured By Terahertz Time-Domain Spectroscopy

Mo-P2-13

Shuang Liu^{*1}; Verdad C. Agulto¹; Toshiyuki Iwamoto²; Kosaku Kato¹; Valynn KATRINE Mag-usara¹; Masato Ota¹; Shamika Dolas³; Nathan Newman³; Liviu Nedelcu⁴; Masahiko Tani⁵; Masashi Yoshimura¹; Makoto Nakajima¹

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A HEMT-embedded Metasurface For Terahertz Beam-Scanning Based On Amplitude-Phase Quantization Error Optimization

Mo-P2-14

Tianyu Hu^{*}; Feng Lan; Yaxin Zhang; Tianyang Song; Luyang Wang; Ziqiang Yang

Huzhou Key Laboratory of Terahertz Integrated Circuits and Systems, Yangtze Delta Region Institute, H, NO.2006, Xlyuan Ave, West Hi-Tech Zone, Chengdu, C, China

Two-dimensional Niobium Carbide MXene, Nb₂CTx: Intrinsic And Photoexcited Carrier Dynamics

Mo-P2-15

Andrew M. Fitzgerald*¹; Kateryna Kushnir¹; Emily Sutherland¹;
Erika Colin-Ulloa¹; Tarek El-Melegy²; Mary Hassig²; Julia
Martin¹; Ken Ngo³; Ronald L. Grimm¹; Joshua R. Uzarski³;
Michel W. Barsoum²; N. Aaron Deskins¹; Lyubov V. Titova¹
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United States; ²Drexel University, 3300 Chestnut St,
Philadelphia, United States; ³US Army DEVCOM Soldier
Center, 15 General Greene Ave, Natick, United States

**Magnetostatic Field Assisted Tunability And Polarization
Conversion In Patterned Graphene Terahertz
Metamaterials**

Mo-P2-16

Zesen Zhou¹; Zhilong Gan¹; Fanqi Meng*²; Lei Cao¹
¹State Key Laboratory of Advanced Electromagnetic
Engineering and Technology, Huazhong University of Science
and Technology, Wuhan, China; ²Johann Wolfgang Goethe-
Universität, Frankfurt am Main, Germany

**A Physics-driven Neural Network Framework For End-to-
end Inverse Design Of Metasurface-based Holograms**

Mo-P2-17

Wei Wei*; Ping Tang; Jingzhu Shao; Jiang Zhu; Xiangyu Zhao;
Chongzhao Wu
Shanghai Jiao Tong University, No. 800 Dongchuan Road,
Minhang District, Shanghai, China

**Reconfigurable Sub-terahertz Transmission And Reflection
Integrated Metasurfaces Synergizing Polarization-
encoding And Wavefront Manipulation**

Mo-P2-18

Lan Chen*¹; Feng Lan²; Tianyu Hu²; Tianyang Song²; Luyang
Wang²; Yaxin Zhang²; Ziqiang Yang²
¹University of Electronic Science and Technology of China,
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Active Terahertz Metasurface Devices

Mo-P2-19

Yan Zhang*¹; Xinke Wang²; Guocui Wang²
¹Capital Normal University, Xisanhuan Beilu 105, Beijing,
China; ²Capital Normal University, Xisanhuan Beilu 105, China

**Active Broadband Terahertz Metasurface Based On
Mechanical Deformation Of Liquid Crystal Elastomer**

Mo-P2-20

Xiaolin Zhuang¹; Jianqiang Gu*¹; Wei Zhang²; Youwen An¹;
Dan Luo²
¹Tianjin University, No.92 Weijin Road, Nankai District, Tianjin,
China; ²Southern University of Science and Technology,
No.1088 Xueyuan Avenue, Nanshan District, Shenzhen, China

Graphene-Integrated Metasurface For THz Reconfigurable Polarization Converter **Mo-P2-21**

Lizhao Song; Andrew Squires*; Jia Du
CSIRO, 36 Bradfield Road, Lindfield, Australia

Electric-Field-Coupled Inductive-Capacitive Resonators For Terahertz Electromagnetically Induced Transparency Metamaterials **Mo-P2-22**

Haotian Ling*¹; Zhaolin Li²; Ke Li²; Ruiqi Zhao¹; Pengfei Ma¹; Yongping Zhou¹; Jingxuan Li¹; Xiaoyu Xu¹; Yu Feng¹; Yevhen Yashchychshyn³; Xudong Zou¹; Yifei Zhang²
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CRISPR/cas12-powered Platform For Specific And Sensitive Detection Of CtDNA Using A Terahertz Metamaterial Biosensor **Mo-P2-23**

Jianfang Zhu; Jingjing Zhao; Zhengfang Qian; Shuting Fan*
College of Physics and Optoelectronic Engineering, Shenzhen University, 3688 Nanhai Road, Shenzhen, Guangdong Province, China

Morphological Dependence Of All-dielectric Terahertz Metasurfaces **Mo-P2-24**

Jisoo Kyoung*
Dankook University, Dankook University 119, Dandae-ro, Dongnam-gu, Cheonan-si, Korea, Republic of

Multi-band Terahertz Switch Realized With Plasmon-induced Transparency Based On A Graphene Metamaterial Structure **Mo-P2-25**

Youpeng Yang; Shuting Fan*; Zhengfang Qian
College of Physics and Optoelectronic Engineering, Shenzhen University, 3688 Nanhai Road, Shenzhen, Guangdong Province, China

Metamaterial Fresnel Zone Plate For Backward Terahertz-wave Parametric Oscillator Applications **Mo-P2-26**

Yuehong Xu*¹; Hiroaki Minamide²; Tetsu Suzuki³; Zhengli Han⁴
¹RIKEN, RIKEN, 519-1399 Aoba, Aramaki, Aoba-ku, Sendai, Miyagi 980-0845, Japan, Sendai, Japan; ²RIKEN, RIKEN519-1399 Aoba, Aramaki, Aoba-ku, Sendai, Miya, Japan; ³RIKEN, RIKEN, 519-1399 Aoba, Aramaki, Aoba-ku, Sendai, Mi, Japan; ⁴Technical University of Denmark, Anker Engelunds Vej 101 2800 Kongens Lyngby, Denmark

Electromechanically Reconfigurable Plasmonic Cantilevers

Mo-P2-27

Hyeong Seok Yun*; Xiu Liu; Sheng Shen
Carnegie Mellon University, 5000 Forbes Ave, Pittsburgh, United States

Mutual Coupling Effects Between Meta-atoms For Enhanced Bandwidth

Mo-P2-28

Surya Revanth Ayyagari*¹; Alexey Basharin²; Simonas Indrišiūnas³; Daniil Pashnev³; Vytautas Janonis³; Polina Kuzhir⁴; Irmantas Kasalynas³

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Ultra-broadband Impedance-matched Terahertz Absorption Of Drude-Smith Type Thin-film Materials

Mo-P2-29

Tianyu Zhang*; Peiyao Xie; Ran Wang; Shenggang Liu; Min Hu
University of Electronic Science and Technology of China, No.2006, Xiyuan Ave, West Hi-Tech Zone, Chengdu, China

Correcting Pixel Errors For Terahertz Spatial Light Modulation Via Binary Erasure Codes

Mo-P2-30

Zihang Wu*¹; Hongxin Zeng²; Wei Wang³; Shu Liu²; Xilin Zhang²

¹University of Electronic Science and Technology of China, University of Electronic Science and Technology of China, Chengdu, China; ²University of Electronic Science and Technology of China, Chengdu, China; ³Hebei Semiconductor Research Institute, Hebei, China

Infrared Photocurrent Imaging And Spectroscopy With An Atomic-force-microscopy Probe

Mo-P2-31

Tommaso Venanzi¹; Valeria Giliberti²; Maria Eleonora Temperini¹; Simone Sotgiu¹; Raffaella Polito¹; Francesco Mattioli³; Camilla Coletti⁴; Stefano Roddaro⁵; Leonetta Baldassarre¹; Michele Ortolani^{*1}

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Generalized Phase-extraction Of Amplitude And Phase Contrast In Coherent THz-s-SNOM Based On Laser Feedback Interferometry.

Mo-P2-32

Daniel Mohun^{*1}; Nikollao Sulollari²; Paul Dean²

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A Terahertz Absorption Modulator Based On GaAs Schottky Diodes

Mo-P2-33

Chunyang Bi¹; Sen Gon^{*2}; Huajie Liang³; Lin Zou⁴; Ziqiang Yang⁵; Yaxin Zhang⁵; ^{*5.81}

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A Low Insertion Loss 140GHz Terahertz Modulator Based On GaAs-diodes

Mo-P2-34

Jinlong You^{*1}; Shixiong Liang²; Kesen Ding³; Hao Yi³; Sen Gong³; Yaxin Zhang³; Wei Wang⁴

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A High Power Capacity Terahertz On-chip Modulator Based On SRR

Mo-P2-35

Kesen Ding^{*1}; Shixiong Liang²; Jinlong You³; Hao Yi³; Wei Wang²; Sen Gong³; Yaxin Zhang³

¹Yangtze Delta Region Institute (Huzhou), University of Electronic Science and Technology of China, Huzhou, Huzhou, China; ²China Electronics Technology Group Corporation, Shijiazhuang, China; ³Yangtze Delta Region Institute (Huzhou), University of Electronic Science and Technology of China, Huzhou, China

Design Of A 220 GHz Terahertz Wide-Band Common Emitter Low Noise Amplifier Chip

Mo-P2-36

Lian Hu^{*1}; Ziqiang Yang¹; Qingfeng Li²; Qinwen Tong²; Yaxin Zhang¹

¹Yangtze Delta Region Institute of University of Electronic Science and Technology of China, Huzhou, Xisaishan Road, Huzhou City, Zhejiang Province, Huzhou, China; ²University of Electronic Science and Technology of China, Chengdu, Qingshuihe Campus of University of Electronic Scie, Chengdu, China

A 3-bit Terahertz Phase Shifter Based On GaAs Diodes

Mo-P2-37

Huajie Liang*¹; Shaokang Gu²; Lin Zou³; Shixiong Liang⁴; Yaxin Zhang²; Ziqiang Yang²

¹Yangtze Delta Region Institute (Huzhou) ,University of Electronic Science and Technology of China, 819 Xisaishan Road, Huzhou, Zhejiang Province, 819 Xisaishan Road, Huzhou, Zhejiang Province, Huzhou, China; ²University of Electronic Science and Technology of China, No.2006, Xiyuan Ave, West Hi-Tech Zone, Chengdu, China; ³Yangtze Delta Region Institute (Huzhou) ∪University of Electronic Science and Technology of C, 819 Xisaishan Road, Huzhou, Zhejiang Province, 819 Xisaishan Road, Huzhou, Zhejiang Province, Huzhou, China; ⁴National Key Laboratory of Application Specific Integrated Circuit, Hebei Semiconductor Research Ins, 113 Hezuo Road, Shijiazhuang, China

On-Chip Terahertz Circulator Based On Time-varying Coupled Resonators

Mo-P2-38

Xuan Sheng*¹; Ziqiang Yang¹; Huajie Liang¹; Lin Zou¹; Dan Liang¹; Yaxin Zhang²

¹Huzhou Key Laboratory of Terahertz Integrated Circuits and Systems, Yangtze Delta Region Institute (, 819 Xisaishan Road, Huzhou, Zhejiang, 2006 Xiyuan Avenue, Chengdu, Sichuan, Huzhou, China; ²University of Electronic Science and Technology of China, 2006 Xiyuan Avenue, Chengdu, Sichuan, Chengdu, China

This Study Explores The Use Of Passive And Flexible Optics Elements To Achieve THz Beam Profile Engineering For Imaging Applications Via Mechanical Bending.

Mo-P2-39

Linas Minkevičius*¹; Rusnė Ivaskevičiūtė-Povilauskienė¹; Vladislovas Cizas²; Ernestas Nacius²; Ignas Grigelionis²; Karolis Redeckas²; Matas Bernatonis²; Sergej Orlov²; Gintaras Valusis²

¹Center for Physical Sciences and Technology, Savanorių ave. 231, Vilnius, Lithuania; ²Center for Physical Sciences and Technology, Savanorių ave. 231, Vilnius, Lithuania

THz High-gain PTFE Low-profile Vortex Antenna

Mo-P2-40

Wenbo Li¹; Kai Huang¹; Hongxin Zeng*¹; Wei Wang²; Yaxin Zhang¹; Ziqiang Yang¹

¹School of Electronic Science and Engineering, University of Electronic Science and Technology of Chi, Chengdu,China, Chengdu, China; ²Hebei Semiconductor Research Institute, Shijiazhuang,China, China

A Low-Profile CPW-Fed Wideband Terahertz Antenna Based On UC-PBG Structures For Wireless Applications

Mo-P2-41

Mohammad Alibakhshikenari*¹; Mohammad M. Fakharian²
¹Universidad Carlos III de Madrid, Av. de la Universidad,
30, Leganés, Spain; ²University of Garmsar, Faculty of
Engineering, Garmsar, Iran

**Terahertz Super-Resolution Image Reconstruction By
Frequency Mapping**

Mo-P2-42

Ting Zhu¹; Guangyou Fang¹; Emma Pickwell-MacPherson²;
Xuequan Chen*¹

¹GBA Branch of Aerospace Information Research Institute,
Chinese Academy of Sciences, Room 501, Building B7,
Kai Yuan Da Dao No. 11, Huangpu District, Guangzhou,
Guangzhou, China; ²Department of Physics, University of
Warwick, Coventry CV4 7AL, United Kingdom, United Kingdom

3-D Printed Dual-band Dual-polarized Metalens Antenna

Mo-P2-43

Yilong Cai*; Wenqiang Deng; Yuxuan Xie; Shuyan Zhu
Sun Yat-sen University, Sun Yat-sen University Zhuhai
Campus, Zhuhai, China

**Terahertz Reflection Vibrometry For Analyzing Metal
Foil Displacement Induced By Single Cavitation Bubble
Collapse**

Mo-P2-44

Vladyslav Cherniak*¹; Jan C. Balzer¹; Bettar Ould El Mocta²;
Hemant Sagar²

¹University of Duisburg-Essen, Bismarckstr. 81, Duisburg,
Germany; ²University of Duisburg-Essen, Bismarckstr. 69,
Duisburg, Germany

**Emission Angle Of THz Beam From Nonlinear Quantum
Cascade Laser And The Effect Of Imaging Result**

Mo-P2-45

Atsushi Nakanishi*¹; Shohei Hayashi²; Hiroshi Satozono²;
Kazuue Fujita²

¹Hamamatsu Photonics K. K., 5000, Hirakuchi, Hamakita-ku,
Hamamatsu, Hamamatsu, Japan; ²Hamamatsu Photonics K.
K., 5000, Hirakuchi, Hamakita-ku, Hamamatsu, Japan

**Evidence Of Capillary Action In Multilayered Fibrous Media
Observed With THz Spectroscopy**

Mo-P2-46

Irina Nefedova*¹; Roman Grigoriev²; Aleksi Tamminen²; Helena
Rodilla³; Emma MacPherson⁴; Zachary Taylor²

¹AALTO UNIVERSITY, P.O. Box 11000, (Otakaari 1B), Espoo,
Finland; ²AALTO UNIVERSITY, Otakaari 24, Espoo, Finland;
³Chalmers University of Technology, Chalmersplatsen 4,
Göteborg, Sweden; ⁴University of Warwick, CV4 7AL, Coventry,
United Kingdom

Terahertz Radar And Deep Learning-Based Detection Of Soft Foreign Objects In Food Products: An Automatic Inspection Approach

Mo-P2-47

Seungeon Song¹; Donghoon Kwak¹; Youngduk Kim¹; Jonghun Lee^{*2}

¹Institute of Convergence Research, 333, Techno Jungang-daero, Hyeonpung-eup, Dalseong, Daegu, Korea, Republic of; ²Institute of Convergence Research, 333, Techno Jungang-daero, Hyeonpung-eup, Dalseong-gun, Daegu, Korea, Republic of

Qualitative Identification And Quantitative Detection Of β -lactose Solutions Using High Power THz-ATR Spectroscopy

Mo-P2-48

Wei Shi^{*1}; Haiqing Wang²; Lei Hou³; Lei Yang⁴; Cheng Ma³; Yusong Zhang⁴; Chunhui Li⁴; Hong Liu⁴

¹ Xi'an University of Technology, No.58 Yanxiang Road, Xi 'an City, Shaanxi Province, Xi'an, China; ²Xi'an University of Technology, No.58 Yanxiang Road, Xi 'an City, Shaanxi Province, Xi'an, China; ³Xi'an University of Technology, No.58 Yanxiang Road, Xi 'an City, Shaanxi Province, China; ⁴Xi'an University of Technology, No.58 Yanxiang Road, Xi 'an City, Shaanxi Province, Xi'an, China

Concept Of A Near-field Antenna-scanner For Mm-wave Applications

Mo-P2-49

David Ulm; Nora Meyne; Kai Baaske; Thomas Kleine-Ostmann*

Physikalisch-Technische Bundesanstalt, Bundesallee 100, Braunschweig, Germany

Simple And Affordable Spectrum Analyzer For The THz Radiation Range

Mo-P2-50

Pawel Komorowski*; Przemyslaw Zagrajek; Norbert Palka
Military University of Technology, gen. Sylwestra Kaliskiego 2, Warsaw, Poland

Evaluation Of The Reliability Factors On Illicit Drugs On-Site Identification Based On Portable Terahertz Time Domain Spectroscopy

Mo-P2-51

Zi Xi Josie Lim¹; Nan Zhang^{*1}; Wei Ji Phua¹; Angeline Tang²; Lijie Yu²; Jia Yi Kwang²; Angeline Tiong Whei Yap²; Lin Ke³
¹Anor Technologies Pte Ltd, 75 Ayer Rajah Crescent, #01-08, Singapore, Singapore; ²Health Sciences Authority, Singapore, 11 Outram Road, Singapore, Singapore; ³Agency for Science, Technology and Research, Singapore, 2 Fusionopolis Way, Singapore, Singapore

Demonstration Of A 245 GHz Real-Time Wireless Communication Link With 30 Gbps Data Rate

Mo-P2-52

Ting Zhang¹; Hao Zhang²; Xiaojing Huang²; Hajime Suzuki³; Joseph Pathikulangara³; Ken Smart³; Jia Du^{*1}; Jay Guo²
¹Commonwealth Scientific and Industrial Research Organization, 36 Bradfield RD, West Lindfield, Sydney, Australia; ²University of Technology, Sydney, Ultimo, Sydney, Australia; ³Commonwealth Scientific and Industrial Research Organization, Marsfield, Sydney, Australia

Loss And Dispersion Limitations Of THz Surface Wave Links

Mo-P2-53

Jie Qing¹; Miguel Navarro-Cia^{*2}
¹University of Electronic Science and Technology, Chenghua District, China; ²University of Birmingham, Edgbaston Campus, United Kingdom

Blockage Prediction In Directional MmWave Links Using Liquid Time Constant Network

Mo-P2-54

Martin Hedegaard Nielsen¹; Chia-Yi Yeh^{*2}; Ming Shen³; Muriel Médard¹
¹Massachusetts Institute of Technology, 50 Vassar St, Cambridge, United States; ²Massachusetts Institute of Technology, 50 Vassar St, Cambridge, United States; ³Aalborg University, Selma Lagerløfs Vej 312, Aalborg, Denmark

Millimeter-wave--Infrared Multi-wavelength Computed Tomography

Mo-P2-55

Daiki Shikichi^{*1}; Raito Ota¹; Kou Li²; Daiki Sakai¹; Takeru Suyama³; Hiroki Okawa⁴; Satoshi Ikehata³; Imari Sato³; Yukio Kawano¹
¹Chuo University, 1-13-27, Kasuga, Bunkyo-ku, Japan; ²Tokyo Institute of Technology, 2-12-1, Ookayama, Meguro-ku, Japan; ³National Institute of Informatics, 2-1-2, Hitotsubashi, Chiyoda-ku, Japan; ⁴Kanagawa Institute of Industrial Science and Technology, 705-1, Imaizumi, Ebina-shi, Japan

System For Automatic Detection Of Defects In Composite Structures

Mo-P2-56

Kamil Kaminski*¹; Norbert Palka¹; Marcin Maciejewski¹; Marcin Kowalski¹; Elzbieta Czerwinska¹; Przemyslaw Zagrajek¹; Piotr Synaszko²; Krzysztof Dragan²

¹Military University of Technology, 2 Kaliski Str, Warsaw, Poland; ²Air Force Institute of Technology, 6 Książe Bolesław Str., Warsaw, Poland

Encoder-Based Synchronization For ECOPS High-Speed Terahertz Raster Scanner

Mo-P2-57

Marcin Maciejewski*; Kamil Kaminski; Norbert Palka
Military University Of Technology, ul. gen. Sylwestra Kaliskiego 2, Warsaw, Poland

High-resolution Visualization Of The Temperature Changes In A Tissue-equivalent Phantom For THz Frequencies Using Fluorescent Thermoprobe

Mo-P2-58

Shota Yamazaki*; Maya Mizuno; Tomoaki Nagaoka
National Institute of Information and Communications Technology, Nukuiokitamachi 4-2-1, Koganei, Tokyo, Japan

Terahertz Time-domain Spectroscopy For The Analysis Of Latex Film Formation

Mo-P2-59

Gonçalo Costa*¹; Emily Brogden¹; Jacob Young¹; Arturo Hernandez-Serrano¹; Rayko Stantchev²; Stefan Bon¹; Emma MacPherson¹

¹University of Warwick, University of Warwick, Coventry, United Kingdom; ²National Sun Yat-sen University, National Sun Yat-sen University, Department of Physics, Kaohsiung, Taiwan

Advanced Experimental Investigations On Cooling Concepts Of Cavities For Megawatt-Class CW Gyrotrons

Mo-P2-60

Sebastian Stanculovic*¹; Konstantinos Avramidis²; Rosa Difonzo³; Eleonora Gajetti³; Gerd Gantenbein¹; Stefan Illy¹; John Jelonnek¹; Alberto Leggieri⁴; Tobias Ruess¹; Tomasz Rzesnicki¹; Laura Savoldi³

¹Karlsruhe Institute of Technology, Kaiserstr. 12, Karlsruhe, Germany; ²National and Kapodistrian University of Athens (NKUA), Athens, Greece; ³Politecnico di Torino, Corso Duca degli Abruzzi, 24,, Torino, Italy; ⁴THALES MIS, 2 Rue Marcel Dassault, Vélizy-Villacoublay, France

Diamond Dielectric Characterization With Superconducting LC Micro-resonators

Mo-P2-61

Francesco Mazzocchi*; Dirk Strauß; Theo Scherer
Karlsruhe Institute Of Technology, Hermann Von Helmholtz Platz 1, Eggenstein Leopoldshafen, Germany

Towards Fracture Toughness Measurements Of MPA CVD Diamond In Nuclear Fusion Devices

Mo-P2-62

Gaetano Aiello*¹; Pablo Estebanez²; Bronislava Gorr³; Andreas Meier³; Sabine Schreck³; Theo Scherer³; Dirk Strauss³; Christoph Wild⁴; Eckhard Woerner⁴

¹Karlsruhe Institute of Technology, Hermann-von-Helmholtz-Platz 1, Eggenstein-Leopoldshafen, Germany; ²Fusion for Energy, Josep Pla 2 Torres Diagonal Litoral B3, Barcelona, Spain; ³Karlsruhe Institute of Technology, Hermann-von-Helmholtz-Platz 1, Eggenstein Leopoldshafen, Germany; ⁴Diamond Materials GmbH & Co. KG, Hans-Bunte-Str. 19, Freiburg, Germany

Experimental And Theoretical Study Of Terahertz Spectrum On Luteolin

Mo-P2-63

Ting Zeng*¹; Gan Zhang²; Qin Huang²; Jun Zhou³; Sen Gong³

¹School of Medicine, Chengdu Medical College, No. 783, Xindu Avenue, Xindu District, No.2006, Xiyuan Ave, West Hi-Tech Zone, Chengdu, China; ²School of Medicine, Chengdu Medical College, No. 783, Xindu Avenue, Xindu District, China; ³School of Electronic Science and Engineering, University of Electronic Science and Technology of Chi, No.2006, Xiyuan Ave, West Hi-Tech Zone, China

A Novel Local Symmetry Peak Finding Method For Terahertz Content Extraction Through Multilayer Structures

Mo-P2-64

Yuqing Cui*¹; Yafei Xu; Xingyu Wang; Liuyang Zhang
Xi'an Jiaotong University, No 28 Xianning West Road, Beilin District, Xi'an, China

High Frequency Signal Generation From Aliased Signals In A Direct Digital Synthesizer For Terahertz Applications

Mo-P2-65

Eunsang Kwon*

THz Scanning System, 218, Gajeong-ro, Yuseong-gu, Daejeon, Republic of Korea, Daejeon, Korea, Republic of

Nondestructive Structural Observation Of Paintings Using Infrared, Millimeter And THz Pulsed Waves

Mo-P2-66

Kaori Fukunaga*¹; Yoshimi Ueno²

¹National Institute of ICT, Nukui-Kita 4-2-1, Koganei, Japan; ²C. R. S. Corporation, Tokyo, Japan

Tuesday 19 September

	Symposia Theatre	Cartier I	Cartier II
08:00-09:00	Plenary 1 8:30-9:15		
09:00-10:00	Plenary 2 9:15-10:00		
10:00-11:00			
11:00-12:00	Oral Session 10:30-12:00	Oral Session 10:30-12:00	Oral Session 10:30-12:00
12:00-13:00	ZW Awards 12:00-13:30		
13:00-14:00			
14:00-15:00	Oral Session 13:30-15:30	Oral Session 13:30-15:30	Oral Session 13:30-15:30
15:00-16:00			
16:00-17:00	Oral Session 16:00-18:00	Oral Session 16:00-18:00	Oral Session 16:00-18:00
17:00-18:00			
18:00-19:00			

International
I

International
II

Third Floor
Foyer

Fourth Floor
Hall



Tuesday 19 September

08:30-09:15	Plenary Session 3	Symposia Theatre
	Chairperson(s): Frank Hegmann	
08:30	Plasmonic Terahertz Camera For Real-Time Terahertz Imaging Mona Jarrahi* University of California Los Angeles, 420 Westwood Plaza, 420 Westwood Plaza, Los Angeles, United States	Tu-PL1-1
09:15-10:00	Plenary Session 4	Symposia Theatre
	Chairperson(s): Frank Hegmann	
09:15	Terahertz Spintronics: New Insights Into Magnetic Phenomena and Their Application In Terahertz Photonics Tobias Kampfrath* Freie Universität Berlin, Arnimallee 14, Berlin, Germany	Tu-PL2-2-1
10:30-12:00	Laser Sources & Detectors II	Symposia Theatre
	Chairperson(s): Hiroaki Minamide	
10:30	Investigation Of RTD THz Oscillator With Wide Frequency Tuning Capability Enes Mutlu* ¹ ; Wen Li ¹ ; Benedikt Sievert ² ; Robin Kress ¹ ; Simone Clochiatti ¹ ; Andreas Rennings ² ; Anton Grygoriev ¹ ; Werner Prost ¹ ; Daniel Erni ² ; Nils Weimann ¹ ¹ University of Duisburg-Essen, Lotharstr. 55 (ZHO), Duisburg, Germany; ² University of Duisburg-Essen, Bismarckstr. 81, Duisburg, Germany	Tu-AM-1-1
10:45	Resonant-Tunneling Diode With Spiral Bias Connections For Circularly Polarized Radiation Mingxiang Stephen Li* ¹ ; Safumi Suzuki ² ; Christophe Fumeaux ¹ ; Withawat Withayachumnankul ¹ ¹ Terahertz Engineering Laboratory, The University of Adelaide, The University of Adelaide, SA, 5005, Australia; ² Department of Electrical and Electronic Engineering, Tokyo Institute of Technology, 2-12-1 Ookayama, Meguro-ku, Tokyo 152-8552, Japan, Japan	Tu-AM-1-2
11:00	On-wafer Characterisation Of Resonant-tunnelling Diodes Up To 1.1 THz	Tu-AM-1-3

Patrik Blomberg*; Jan Stake; Josip Vukusic; Vladimir Drakinskiy

Chalmers University of Technology, Chalmersplatsen 4, Gothenburg, Sweden

11:15 **A Simple View On Large-Signal Resonant-Tunneling-Diode Dynamics** **Tu-AM-1-4**

Petr Ourednik*; Dinh Tuan Nguyen; Michael Feiginov
TU Wien, Gusshausstrasse 25/354, Vienna, Austria

11:30 **Conventional Vs. Island THz Slot-Antenna Resonant-Tunneling-Diode Oscillators** **Tu-AM-1-5**

Dinh Tuan Nguyen*¹; Petr Ourednik²; Michael Feiginov²
¹Technical University of Vienna, Karlsplatz 13, Vienna 1040, Austria, Vienna, Austria; ²Technical University of Vienna, Karlsplatz 13, Vienna 1040, Austria, Austria

11:45 **Nonlinear Optical Response In Resonant Tunneling Diode Terahertz Oscillators** **Tu-AM-1-6**

Takashi Arikawa*¹; Seiga Yamasaki²; Koichiro Tanaka²
¹University of Hyogo, 2167 Shosha, Himeji, Japan; ²Kyoto University, Oiwakecho, Kitashirakawa, Sakyo-ku, Kyoto, Japan

10:30-12:00 **Ultrafast Phenomena & Spectroscopy** **Cartier I**
Chairperson(s): Dmitry Turchinovich

10:30 **Terahertz Cavity Phonon Polaritons In The Deep-Strong Coupling Regime** **Tu-AM-2-1**

Andrey Baydin*¹; Manukumara Manjappa²; Sobhan Subhra Mishra³; Hongjing Xu⁴; Jacques Doumani⁵; Fuyang Tay⁶; Dasom Kim⁵; Felix Hernandez⁷; Paulo Rapp⁸; Eduardo Abramof⁸; Ranjan Singh³; Junichiro Kono⁵
¹Rice University, 6100 Main St., Houston, United States; ²Indian Institute of Science, CV Raman Road, Bengaluru, India; ³Nanyang Technological University, Singapore, Singapore; ⁴Rice University, 6100 Main St, Houston, United States; ⁵Rice University, 6100 Main St, United States; ⁶Rice University, 6100 Main St., United States; ⁷Universidade de São Paulo, Av. Prof. Luciano Gualberto 315, Brazil; ⁸Instituto Nacional de Pesquisas Espaciais, Av. dos Astronautas, 1.758. Jd. Granja, Brazil

11:00 **A Novel Terahertz Line Array Detection Scheme Of Polarimeter-interferometer System On EAST** **Tu-AM-2-2**

Huihui Yan*; Haqing Liu; Shouxin Wang; Hui Lian; Weiming Li
Institute Of Plasma Physics, Chinese Academy Of Sciences, No. 350 shushanhu Road, Hefei, Anhui, China, Hefei, China

11:15 **Research On The EAST Plasma Density Diagnostics By The Terahertz Spectroscopy Using Asynchronous Sampling And Single-shot Schemes** Tu-AM-2-3

Haitao Tao¹; Ming Fang¹; Haiqing Liu²; Cuizhen Wang²; Susu Hu³; Yinxian Jie³; Chun Zhou^{*3}

¹School of Electronic and Information Engineering, Anhui University, Hefei, China; ²Institute of Energy, Hefei Comprehensive National Science Center, Hefei, China; ³Institute of Plasma Physics, Hefei Institutes of Physics Science, Chinese Academy of Sciences, Hefei, China

11:30 **Terahertz Time Domain Spectroscopy For Characterizing Properties Of Carbon Nanotube Yarns** Tu-AM-2-4

Laura Londono^{*1}; Natalie Frey²; Andrew Fitzgerald²; Lyubov TITOVA²; Kateryna Kushnir²

¹Worcester Polytechnic Ins, 100 Institute Rd, 100 Institute Rd, Worcester, United States; ²Worcester Polytechnic Ins, Worcester Polytechnic Ins, 100 Institute Rd, Worcester, United States

11:45 **Terahertz Torsional Dynamics And Their Influence On Electron-Phonon Coupling In Organic Semiconductors** Tu-AM-2-5

Michael Ruggiero^{*}

University of Vermont, 82 University Place, Burlington, United States

10:30-12:00

Semimetals

Cartier II

Chairperson(s): Jigang Wang

10:30 **Terahertz And Multi-terahertz Spectroscopy Of Light-driven 3D Dirac Semimetal Cd3As2** Tu-AM-3-1

Yuta Murotani^{*}; Ryusuke Matsunaga

The Institute for Solid State Physics, The University of Tokyo, 5-1-5 Kashiwanoha, Kashiwa, Chiba, Japan

11:00 **Kerr Effect And Self-focusing In Nodal Semimetals In Terahertz Regime** Tu-AM-3-2

Chao Zhang^{*}

University of Wollongong, Northfield Avenue, Wollongong, Australia

11:15 **Terahertz Characterization Of Charge Carrier Dynamics In 3D Dirac Semi-metal Cd3As2 Nanowires** Tu-AM-3-3

Yahya Saboon*¹; Xinyu Liu¹; Thorsten Hesjedal²; Michael Johnston³; Laura Herz³; Jessica Boland⁴

¹The University of Manchester, Photon Science Institute, Department of EEE, Manchester, United Kingdom; ²University of Oxford, Department of Physics, Clarendon Laboratory, room 149, Oxford, United Kingdom; ³University of Oxford, Clarendon Laboratory, United Kingdom; ⁴The University of Manchester, Photon Science Institute, United Kingdom

11:30 THz-induced Carrier Multiplication In TaAs Weyl Semimetal Tu-AM-3-4

Sarah Houver*¹; Davide Soranzio²; Simone Biasco²; Chandra Shekhar³; Claudia Felser³; Elsa Abreu²; Matteo Savoini²; Steven Johnson²

¹Université Paris Cité, 10 rue Alice Domon et Léonie Duquet, Paris, France; ²ETH Zurich, Auguste-Piccard-Hof 1, 8093 Zürich, Switzerland; ³Max-Planck-Institute for Chemical Physics of Solids, Nöthnitzer Straße, 40 01187 Dresden, Germany

10:30-12:00

Waveguide

International
I

Chairperson(s): Vince Wallace

10:30 Research And Development Of Corporate-feed Waveguide Slot Array Antennas In 120GHz And 350GHz Bands Tu-AM-4-1

Jiro Hirokawa*

Tokyo Institute of Technology, S3-20, 2-12-1 Ookayama, Meguro, Tokyo, Japan

11:00 Time-Domain Integration Of Broadband Terahertz Pulses Via Tapered Two-Wire Waveguide Tu-AM-4-2

Giacomo Balistreri*¹; Alessandro Tomasino²; Junliang Dong¹; Aycan Yurtsever¹; Salvatore Stivala³; José Azaña¹; Roberto Morandotti¹

¹Institut National de la Recherche Scientifique, 1650, Boulevard Lionel Boulet, Varennes, Canada; ²Institut National de la Recherche Scientifique, 1650, Boulevard Lionel-Boulet, Varennes, Canada; ³University of Palermo, Viale delle Scienze, Palermo, Italy

11:15 Low-loss, 1-m Long Length, Hollow-core THz Waveguide Operating At 1 THz, Based On Anti-resonant Guiding Mechanism Tu-AM-4-3

Georges HUMBERT*¹; Jean-Louis AUGUSTE¹; Guillaume DUCOURNAU²; Jean-Francois LAMPIN²

¹XLIM Research Institute, 123 av. A. Thomas, LIMOGES, France; ²IEMN, Institute of Electronics, Microelectronics and Nanotechnology, Cité Scientifique - Avenue Poincaré, Villeneuve d'Ascq, France

11:30

Low-loss Coplanar Waveguide To WR-5 Waveguide E-plane Transition With Bias-Tee.

Tu-AM-4-4

Himanshu Gohil*¹; Hui Wang¹; Diego Pardo²; James Seddon³; Cyril Renaud³; Peter Huggard¹

¹Science and Technology Facilities Council - UKRI, R25, RAL Space, Harwell Campus, Didcot, United Kingdom; ²Kings College London, Kings College London, London, United Kingdom; ³University College London, University College London, London, United Kingdom

11:45

Terahertz Integrated Polarization Rotator Based On Effective-Medium-Clad Waveguide

Tu-AM-4-5

Weijie Gao*¹; Withawat Withayachumnankul²; Masayuki Fujita¹; Tadao Nagatsuma¹

¹Graduate School of Engineering Science, Osaka University, 1-3 Machikaneyamacho, Toyonaka, Osaka, Japan; ²Terahertz Engineering Laboratory, The University of Adelaide, Adelaide, South Australia, Australia

10:30-12:00

Antenna Imaging Techniques I

International II

Chairperson(s): Peter Siegel

10:30

Complementary Harmonic Suppression Of Radiation At 300/600 GHz By A Pair Of Frequency-Selective Surfaces Fabricated On Polyimide Membranes

Tu-AM-5-1

Hui Yuan*¹; Meng Zhang²; Daniel Erni³; Hartmut G. Roskos⁴
¹Goethe University Frankfurt am Main, Max-Von-Laue Str.1, Frankfurt am Main, Germany; ²University Duisburg-Essen, Bismarckstr. 81 (BA), Duisburg, Germany; ³University Duisburg-Essen, Bismarckstr. 81 (BA), Germany; ⁴Goethe-University Frankfurt am Main, Max-Von-Laue Str.1, Frankfurt am Main, Germany

11:00

A Tightly-Sampled Focal Plane Array In 22 Nm CMOS With Integrated Direct-Detectors For Terahertz Imaging Applications

Tu-AM-5-2

	Martijn Hoogelander; Robbin van Dijk; Maria Alonso-delPino*; Marco Spirito; Nuria Llombart Delft University of Technology, Mekelweg 4, Delft, Netherlands	
11:15	A Shaped Quartz Lens Antenna For Wide Scanning Sub-millimeter Imaging Systems	Tu-AM-5-3
	Huasheng Zhang*; Shahab Oddin Dabironezare; Nuria Llombart Delft University of Technology, Delft University of Technology, Delft, Netherlands	
11:30	Near-field Characterization Of A GHz Branchline Coupler Using A THz Microscope	Tu-AM-5-4
	Marius Neumann*; Paul Julius Ritter; Julius Mumme; Meinhard Schilling; Benedikt Hampel Technische Universität Braunschweig, Hans-Sommer-Str. 66, Braunschweig, Germany	
11:45	Multi-Spectral Photonic THz Imaging Using MUTC-PDs And Dielectric Rod Waveguide Antennas	Tu-AM-5-5
	Israa Mohammad*; Thomas Haddad; Sumer Makhlof; Andreas Stöhr University of Duisburg-Essen, Lotharstraße 55, Duisburg, Germany	

13:30-15:30

Laser Sources & Detectors III

**Symposia
Theatre**

Chairperson(s): Mona Jarrahi

13:30	High Sensitivity Spectroscopic Measurement With A Highly Nonlinear THz-PMT And An Is-TPG	Tu-PM1-1-1
	Naoya Kawai* ¹ ; Hisanari Takahashi ² ; Kota Katsuyama ¹ ; Yuma Takida ³ ; Tobias Olaf Buchmann ⁴ ; Matej Sebek ⁴ ; Simon Jappe Lange ⁴ ; Peter Uhd Jepsen ⁴ ; Hiroaki Minamide ³ ; Hiroshi Satozono ² ; Takayuki Ohmura ¹ ¹ HAMAMATSU PHOTONICS K.K., 314-5,Shimokanzo, Iwata City, Japan; ² HAMAMATSU PHOTONICS K.K., 5000,Hirakuchi, Hamamatsu City, Japan; ³ RIKEN, 519-1399 Aramaki-aza Aoba, Sendai City, Japan; ⁴ DTU Electro, 2800 Kongens, Lyngby, Denmark	
13:45	Simultaneous Measurement Of Orthogonal Terahertz Fields Enabled Via A THz MODEM (modulator/demodulator) Scheme	Tu-PM1-1-2

Huiliang Ou*¹; Rayko Stantchev²; Mykhaylo Semtsiv³; William Masselink³; James Lloyd-Hughes⁴; Emma MacPherson⁴
¹University of Warwick, Gibbet Hill Rd, Coventry, United Kingdom; ²National Sun Yat-Sen University, 70 Lienhai Rd, Kaohsiung, Taiwan; ³Humboldt University of Berlin, Unter den Linden 6, Germany; ⁴University of Warwick, Gibbet Hill Rd, United Kingdom

14:00 **Graphene Field-effect Transistors As THz Detectors: Distinguishing Between Resistive Self-mixing And The Hot-carrier Thermoelectric Effect** **Tu-PM1-1-3**

Florian Ludwig¹; Andrey Generalov*²; Jakob Holstein¹; Anton Murros²; Klaara Viisanen²; Mika Prunnila²; Hartmut G. Roskos¹
¹Goethe University Frankfurt, Max-von-Laue-Strasse 1, Frankfurt am Main, Germany; ²VTT Technical Research Centre of Finland, Tietotie 3, Espoo, Finland

14:15 **A Novel Scattering-type THz Microprobe With Integrated Source And Detector For Contact-free, High-speed Surface Imaging At Sub- μm -resolution** **Tu-PM1-1-4**

Martin Priwisch¹; Michael Nagel²; Alexander Michalski²; Denise Priwisch¹; Yoonkyung Jang¹; Ikseon Jeon¹; Inkeun Baek*¹
¹Samsung Electronics Co., Ltd., 1-1 Samsungjeonja, Hwaseong-si, Korea, Republic of; ²Protemics GmbH, Otto-Blumenthal-Strasse 25, Aachen, Germany

14:30 **The In-plane Photoelectric Effect For Terahertz Detection In Two- And Quasi-one-dimensional Electron Systems** **Tu-PM1-1-5**

Wladislaw Michailow*¹; Sergey Mikhailov²; Nikita Almond¹; Harvey Beere¹; David Ritchie¹
¹Cavendish Laboratory, University of Cambridge, JJ Thomson Avenue, Cambridge, United Kingdom; ²Institute of Physics, University of Augsburg, Universitätsstraße 1, Augsburg, Germany

14:45 **On-Chip Direct Laser Writing Of Spectral Filter Structures For Terahertz Field-Effect Transistors** **Tu-PM1-1-6**

Michael Kocybik*¹; Jakob Holstein²; Erik Waller¹; Alvydas Lisauskas²; Hartmut Roskos²; Maris Bauer¹; Fabian Friederich¹
¹Fraunhofer-Institute for Industrial Mathematics ITWM, Fraunhofer-Platz 1, Kaiserslautern, Germany; ²Goethe-Universität Frankfurt am Main, Max-von-Laue-Straße 1, Frankfurt am Main, Germany

15:00 **Design And Characterization Of A Hairpin Filter At GHz Frequencies Using A THz Microscope For Near-Field Analysis** **Tu-PM1-1-7**

Paul Julius Ritter*; Marius Neumann; Julius Mumme; Meinhard Schilling; Benedikt Hampel
 Technische Universität Braunschweig, Hans-Sommer-Str. 66,
 Braunschweig, Germany

15:15

Implementation Of A Multi-element Detector Consisting Of An 8×8 Network Of Patch-antenna-coupled TeraFETs For Gas Spectroscopy With THz-QCLs

Tu-PM1-1-8

Jakob Holstein*¹; Michael Horbury²; Nicholas North²; Harry Godden²; Lianhe Li²; Joshua Freeman²; Alexander Valavanis²; Edmund Linfield²; Alvydas Lisauskas¹; Hartmut G. Roskos¹; Anastasiya Krysl¹

¹Goethe University of Frankfurt, Max-vonLaue Straße 1, Frankfurt am Main, Germany; ²School of Electronic and Electrical Engineering, Woodhouse, Leeds LS2 9JT, United Kingdom

13:30-15:30

Spectroscopy II

Cartier I

Chairperson(s): Masaya Nagai

13:30

Breath Analysis Of COPD Patients By Terahertz/Millimeter-Wave Gas Spectroscopy -- A Proof-of-Principle Study

Tu-PM1-2-1

Nick Rothbart*¹; Rembert Koczulla²; Olaf Holz³; Klaus Schmalz⁴; Heinz-Wilhelm Hübers¹

¹German Aerospace Center (DLR), Rutherfordstr. 2, Berlin, Germany; ²Schoen Klinik Berchtesgadener Land, Malterhoeh 1, Germany; ³Fraunhofer ITEM, Feodor-Lynen-Straße 15, Germany; ⁴IHP, Im Technologiepark 25, Germany

13:45

Investigating The Rigidity Of Ortho-terphenyl

Tu-PM1-2-2

Johanna Koelbel*¹; Michael T. Ruggiero²; J. Axel Zeitler³; Daniel M. Mittleman¹

¹Brown University, Department of Engineering, 184 Hope Street, Providence, United States; ²University of Vermont, Department of Chemistry, 82 University Pl, Burlington, United States; ³University of Cambridge, Department of Chemical Engineering, Philippa Fawcett Drive, Cambridge, United Kingdom

14:00

Analytical Terahertz Wave Absorption Spectroscopy Of Dimethyl Ether

Tu-PM1-2-3

Ingrid Wilke*¹; Megan N. Powers²; Timothy E. Rice²; Arshad Chowdhury²; Muhammad Waleed Mansha³; Mona M. Hella³; Matthew A. Oehlschlaeger⁴

¹Rensselaer Polytechnic Institute, Department of Physics, 110 8th St., Troy, United States; ²Rensselaer Polytechnic Institute, Department of Mechanical Engineering, 110 8th Street, Troy, United States; ³Rensselaer Polytechnic Institute, Department of Electrical Engineering, 110 8th St., Troy, United States; ⁴Rensselaer Polytechnic Institute, Department of Mechanical Engineering, 110 8th St., Troy, United States

14:15 Real-Time Terahertz Absorption Spectroscopy Of Methanol And Deuterated-Methanol Vapour, Using A TeraFET Detector Array Tu-PM1-2-4

Michael Horbury*¹; Nicholas North²; Jakob Holstein³; Harry Godden²; Lianhe Li²; Joshua Freeman²; Edmund Linfield²; Hartmut Roskos³; Alvydas Lisauskas³; Alexander Valavanis²

¹University of Leeds, University of Leeds, Leeds, United Kingdom; ²University of Leeds, University of Leeds, United Kingdom; ³Johan Wolfgang Goethe-Universität, D-60438 Frankfurt am Main, Germany

14:30 Mapping Of Kidney Stone By Far-Infrared Spectroscopy Tu-PM1-2-5

Verdad Agulto*¹; Wangxuan Zhao¹; Mihoko Maruyama²; Masae Takahashi³; Kosaku Kato¹; Valynn Katrine Mag-usara¹; Masato Ota¹; Yutaro Tanaka²; Yusuke Mori²; Masashi Yoshimura¹; Makoto Nakajima¹

¹Institute of Laser Engineering, Osaka University, Suita, Osaka, Japan; ²Graduate School of Engineering, Osaka University, Suita, Osaka, Japan; ³Graduate School of Science, Tohoku University, Sendai, Miyagi, Japan

14:45 The Temperature Dependent Changes In The Terahertz Absorption Spectrum Due To The Self-assembly Of Quadruplexes In A Solution Of The Nucleoside Guanosine Monophosphate Tu-PM1-2-6

Yu Heng Tao*¹; Simon Schulke²; Gerhard Schwaab²; Steffen Murke²; Simone Pezzotti²; Stuart Hodgetts¹; Alan Harvey¹; Vincent Wallace¹; Martina Havenith²

¹The University of Western Australia, 35 Stirling Highway, Crawley, Australia; ²Ruhr-Universität Bochum, Universitätsstraße 150, Bochum, Germany

15:00 Liquid-Liquid Phase Separation Of Protein By Trivalent Heavy Metal Ions: Ion-specific Alteration Of Water Structure Exposed By THz Study Tu-PM1-2-7

Ria Saha*¹; Rajib Mitra²

¹S. N. Bose National Centre for Basic Sciences, JD Block, Sector 3, Salt Lake City, Kolkata - 700106, India, Kolkata, India; ²S. N. Bose National Centre for Basic Sciences, JD Block, Sector 3, Salt Lake City, Kolkata - 7001, Kolkata, India

15:15

Sensing Alcohol Contamination In Water by THz Time Domain Ellipsometry

Tu-PM1-2-8

Zahra Mazaheri*¹; Gian Paolo Papari²; Antonello Andreone³
¹federico II university of Naples, Via Vicinale Cupa Cintia, 26, 80126 Naples NA, naples, Italy; ²Department of Physics "E. Pancini", Università di Napoli Federico II, Naples, 80126 ITALY, Via Vicinale Cupa Cintia, 26, 80126 Naples NA, Italy; ³Department of Physics "E. Pancini", Università di Napoli Federico II, Naples, 80126 ITALY, Via Vicinale Cupa Cintia, 26, 80126 Naples NA, Italy

13:30-15:30

Condensed Matter II

Cartier II

Chairperson(s): Renee Sher

13:30

THz Spontaneous Magnon Fluctuations And Room-temperature Spin Switching In The Orthoferrite Sm0.7Er0.3FeO3

Tu-PM1-3-1

Takayuki Kurihara*¹; Marvin Weiss²; Andreas Herbst²; Julius Schlegel²; Tobias Danneegger²; Martin Evers²; Andreas Donges²; Makoto Nakajima³; Sebastian T.B. Goennenwein²; Ulrich Nowak²; Alfred Leitenstorfer²

¹The University of Tokyo, 5-1-5 Kashiwanoha, Kashiwa, Japan; ²Department of Physics, University of Konstanz, Universitaetsstrasse 10, Konstanz, Germany; ³Osaka University, 2-6 Yamadaoka, Suita, Japan

14:00

Differentiation Of The Microstructures Of Agarose Hydrogels Using Terahertz Time Domain Spectroscopy (THz-TDS)

Tu-PM1-3-2

Mark Justine Zapanta*; Annelies Postelmans; Wouter Saeys
KU Leuven, Kasteelpark Arenberg 30, Heverlee, Belgium

14:15

Low-Frequency Vibrational Spectroscopy And Crystal Structure Predictions For Fumaric Acid And Maleic Acid

Tu-PM1-3-3

Salvatore Zarrella; Timothy Korter*
Syracuse University, Department of Chemistry, 111 College Place, Syracuse, United States

14:30

Probing Ultrafast Non-equilibrium Dynamics In An Organic-dimer Mott Insulator With Terahertz-infrared Continuum Probe Pulses

Tu-PM1-3-4

Konstantin Warawa¹; Yassine Agarmani¹; Harald Schubert¹; Martin Dressel²; Michael Lang¹; Hartmut G. Roskos*¹; Mark D. Thomson¹

¹Goethe-University Frankfurt, Max-von-Laue-Str. 1, Frankfurt am Main, Germany; ²Universität Stuttgart, Pfaffenwaldring 57, Stuttgart, Germany

14:45

Crystal Symmetry Effects On Protein Structural Vibrational Signatures

Tu-PM1-3-5

Andrea Markelz¹; Alexander McNulty-Romaguera*²; Jeffrey McKinney³; Deepu George⁴; Timothy Lafave⁵; Alex Davie⁶; Tod Romo⁷; Alan Grossfield⁷; Jason Benedict⁸; Xiaotong Zhang⁸

¹University at Buffalo, 239 Fronczak Hall, Buffalo, United States; ²University at Buffalo, 239 Fronczak Hall, United States; ³Pledge TX, 45 Dan Rd, Canton, United States; ⁴Zygo Corporation, Laurel Brook Road, United States; ⁵University at Buffalo, 239 Fronczak, United States; ⁶IDEX Health & Science, LLC, West Henrietta, NY, United States; ⁷University of Rochester Medical Center, Rochester, NY, United States; ⁸University at Buffalo, Buffalo, NY, United States

15:00

Emission Of Coherent THz Magnons In An Antiferromagnetic Insulator Triggered By Ultrafast Spin-phonon Interactions

Tu-PM1-3-6

Enzo Rongione¹; Oliver Gueckstock²; Maximilian Mattern³; Olena Gomonay⁴; Meer Hendrik⁴; Christian Schmitt⁴; Rafael Ramos⁵; Takashi Kikkawa⁶; Martin Micica⁷; Eiji Saitoh⁵; Jairo Sinova⁴; Henri Jaffrès¹; Juliette Mangeney⁸; Sebastian Goennenwein⁹; Stephan Gerpraegs¹⁰; Tobias Kampfrath²; Mathias Kläui⁴; Matias Bargheer³; Tom Seifert²; Sukhdeep Dhillon*⁸; Romain Lebrun⁸

¹Unité Mixte de Physique, CNRS, Thales, Université Paris-Saclay, Palaiseau, France; ²Institute of Physics, Freie Universität Berlin, Freie Universität Berlin, Germany; ³Institut für Physik und Astronomie, Universität Potsdam, Universität Potsdam, Germany; ⁴Institute of Physics, Johannes Gutenberg-University Mainz, Germany; ⁵WPI Advanced Institute for Materials Research, Tohoku University, Tohoku University, Japan; ⁶Department of Applied Physics, The University of Tokyo, The University of Tokyo, Japan; ⁷ENS/CNRS, 24 rue Lhomond, Paris, France; ⁸CNRS, 24 rue Lhomond, Paris, France; ⁹Department of Physics, University of Konstanz, University of Konstanz, Germany; ¹⁰Walther-Meißner-Institut, Bayerische Akademie der Wissenschaften, Bayerische Akademie der Wissenschaften, Germany

13:30-15:30

Space, Environment, Communications and Spectroscopy

International
I

Chairperson(s): Tsung-Tse Lin

13:30 **Stratospheric Balloon Missions For High Resolution Submillimeter-FIR Astronomical Spectroscopy** Tu-PM1-4-1

Paul Goldsmith*
Jet Propulsion Laboratory, 4800 Oak Grove Dr., Pasadena, United States

14:00 **Silicon Meta-Optics For Compact Space-Based Optical Systems** Tu-PM1-4-2

Conner Ballew*; Sven van Berkel; Subash Khanal; Cecilia Leung; Leslie Tamppari; Goutam Chattopadhyay
Jet Propulsion Laboratory, 4800 Oak Grove Dr, Pasadena, United States

14:15 **Radiometric Calibration Of A Hyperspectral Microwave Sounder** Tu-PM1-4-3

Natalia Bliankinshtein*¹; Philip Gabriel²; Olivier Auriacombe³; Yi Huang⁴; Mengistu Wolde⁵; Shiqi Xu⁵; Lei Liu⁴; Jean-Christophe Angevain⁶

¹National Research Council of Canada, 1200 Montreal road U-61, Ottawa, Canada; ²Horizon Science and Technology, Wolfville, Canada; ³Omnisys Instruments AB, Gothenburg, Sweden; ⁴McGill University, Montreal, Canada; ⁵National Research Council of Canada, Ottawa, Canada; ⁶European Space Agency, Noordwijk, Netherlands

14:30 **On The Design Of Wide Band Multi-lens Focal Plane Arrays For The TIFUUN Instrument** Tu-PM1-4-4

Alexandra Mavropoulou¹; Shahab Oddin Dabironezare*¹; Jochem Baselmans²; Akira Endo¹

¹Delft University of Technology, Mekelweg 4, Delft, Netherlands; ²Netherlands Institute for Space Research, SRON, Niels Bohrweg 4, Leiden, Netherlands

14:45 **Two-Dimensional Fixed-Frequency Terahertz Beam Steering Based On Displacement Controlled Leaky-Waveguides** Tu-PM1-4-5

Naoki Tanaka*; Yasuaki Monnai
The University of Tokyo, 4-6-1, Komaba, Meguro-ku, Japan

15:00 **MmWave Vs FSO Propagation: First Results From An Experimental Testbed In Italy** Tu-PM1-4-6

Elizabeth Verdugo¹; Lorenzo Luini²; Carlo Riva²; Gianluca Galzerano³; Laura Resteghini⁴; Christian Mazzucco⁴; Roberto Nebuloni¹

¹EIIT, Consiglio Nazionale delle Ricerche, Piazza L. da Vinci, 32, Milan, Italy; ²DEIB, Politecnico di Milano, Via Ponzio 34/5, Milan, Italy; ³IFN, Consiglio Nazionale delle Ricerche, Piazza L. da Vinci, 32, Milan, Italy; ⁴Huawei Technologies Italia S.r.l., Centro Direzionale Milano 2, Palazzo Verrocchio Se, Milan, Italy

13:30-15:30

Chemistry, Biology & Medicine I

International II

Chairperson(s): Daniel Molter

13:30

Terahertz-driven Electron Field Emission And Ion Field Evaporation: Application To Atom Probe Tomography

Tu-PM1-5-1

Angela Vella^{*1}; Michella Karam¹; Jonathan Houard¹; Ganesh Damarla¹; Said Idlahcen²; Anna Martinez³; Domenico Paparo³; Ammar Hideur²

¹Univ Rouen Normandie, Groupe de Physique des Matériaux, Avenue de l'Université BP 12, Saint Etienne du Rouvray, France; ²Univ Rouen Normandie, CORIA, Avenue de l'Université, Saint Etienne du Rouvray, France; ³Dipartimento di Fisica 'E. Pancini', Università 'Federico II', Monte S. Angelo, via Cintia, Napoli, Italy

14:00

Detection Of Nucleocapsid Proteins Of COVID-19 Using A Terahertz Chemical Microscope

Tu-PM1-5-2

Xue Ding^{*1}; Sayaka Tsuji²; Mana Murakami³; Jin Wang⁴; Hirofumi Inoue Inoue⁵; Toshihiko Kiwa⁵

¹Okayama University, 3-1-1 Tsushimanaka kitaku, Okayama, Japan; ²Okayama University, Okayama University, 3-1-1 Tsushima-naka,kita-ku, Japan; ³Okayama University, Okayama University, 3-1-1 Tsushimanaka kitaku, Japan; ⁴Okayama University, Okayama University, 3-1-1 Tsushimanaka kita-ku, Japan; ⁵Okayama University, Okayama University, Japan

14:15

Terahertz ATR Sensing Of Cell Membrane Permeabilization during Trypsin Proteolysis

Tu-PM1-5-3

Guilhem Gallot^{*1}; Blandine Lordon²

¹Laboratory for Optics and Biosciences, Route De Saclay, Palaiseau, France; ²Laboratory for Optics and Biosciences, route de Saclay, Palaiseau, France

14:30

Out Of Focus Terahertz Reflection Measurements For The Determination Of The Porosity Of Pharmaceutical Tablets Based On The Refractive Index

Tu-PM1-5-4

Moritz Anuschek*¹; Thomas Kvistgaard Vilhelmsen²; J. Axel Zeitler³; Jukka Rantanen⁴
¹University of Copenhagen/Novo Nordisk A/S, Universitetsparken 2, København, Denmark; ²Novo Nordisk A/S, Novo Nordisk Park 1, Maalov, Denmark; ³University of Cambridge, Philippa Fawcett Dr, Cambridge, United Kingdom; ⁴University of Copenhagen, Universitetsparken 2, Copenhagen, Denmark

14:45 **Broadband Mm-wave Sealed-volume Liquid Bio-sensor Exploiting Tailored Delocalization Of Modal Fields In A Micro-scale Silicon Waveguide** **Tu-PM1-5-5**

Daniel Headland*¹; Daniel C. Gallego²; Muhsin Ali²; Ashish Kumar¹; Marina Moreno Mayorga³; Horacio Lamela¹; José M. Sánchez-Puelles³; Guillermo Carpintero¹
¹Universidad Carlos III de Madrid, Av. de la Universidad 30, Leganés, Spain; ²LeapWave Technologies, Parque Tecnológico, Av. Gregorio Peces Barba, Leganés, Spain; ³Consejo Superior de Investigaciones Científicas, C. Ramiro de Maeztu, 9, Madrid, Spain

15:00 **Evaluation Of Reflective Properties Of Meta-atoms Using Point Terahertz Sources And Its Application In Microfluidics** **Tu-PM1-5-6**

Luwei Zheng*; Kazuki Hara; Masayoshi Tonouchi; Kazunori Serita
 Osaka University, Suita, Osaka, Japan, Osaka, Japan, Japan

15:15 **Polarization-Sensitive THz Time-Domain Imaging Of 27 By 27 Mm2 Field Of View At About 0.5 Frames Per Second Using The PHASR Scanner 3.0** **Tu-PM1-5-7**

Zachery Harris*¹; Kuangyi Xu²; M. Hassan Arbab¹
¹SUNY at Stony Brook, Bioengineering, 100 Nicolls Rd., Stony Brook, United States; ²Stony Brook University, Bioengineering, 100 Nicolls Rd., Stony Brook, United States

16:00-18:00

Laser Sources & Detectors IV

**Symposia
Theatre**

Chairperson(s): Rebecca Milot

16:00

Terahertz Electrometry Via Infrared Spectroscopy Of Atomic Vapor

Tu-PM2-1-1

Shuying Chen*; Dominic J. Reed; Andrew R. MacKellar; Lucy A. Downes; Nourah F. A. Almuhaw; Matthew J. Jamieson; Charles S. Adams; Kevin J. Weatherill
Department of Physics, Durham University, Durham, United Kingdom

16:30 Investigation Of Fast Frequency Selective Qualitative Terahertz Spectroscopy Tu-PM2-1-2

Rejeena R Sebastian*; Redwan Ahmad; Xavier Ropagnol; François Blanchard
École de technologie supérieure ÉTS, 100 Notre-Dame St W, Montreal, Quebec H3C 1K3, Montreal, Canada

16:45 Rapid-Scan High-Resolution Frequency-Domain THz Spectroscopy With Dynamical Phase Control Tu-PM2-1-3

Yuto Shoji*¹; Eiji Ohmichi¹; Hideyuki Takahashi²; Hitoshi Ohta²
¹Kobe University, 1-1 Rokkodai, Nada, Kobe, Japan; ²Molecular Photoscience Research Center, Kobe University, 1-1 Rokkodai, Nada, Kobe, Japan

17:00 10 THz Bandwidth With A Fiber-Coupled THz Time-Domain Spectrometer Tu-PM2-1-4

Tina-Celine Hesselmann*; Lars Liebermeister; Alexander Dohms; Steffen Breuer; Shahram Keyvaninia; Marko Gruner; Konstantin Wenzel; Martin Schell; Robert Kohlhaas
Fraunhofer Institute for Telecommunications, Heinrich Hertz Institute, Einsteinufer 37, Berlin, Germany

17:15 Single-shot Spectrometers And Realtime THz Digitizers, Using Diversity Electro-Optic Sampling (DEOS) Tu-PM2-1-5

Eléonore Roussel¹; Christophe Szwej¹; Clément Evain¹; Bernd Steffen²; Christopher Gerth²; Marie Kristin Czwilina²; Bahram Jalali³; Serge Bielawski*⁴
¹PhLAM UMR CNRS8523, Lille University, Bat. P5, France; ²Deutsches Elektronen-Synchrotron DESY, Notkestr. 85, Hamburg, Germany; ³UCLA, University of California Los Angeles, United States; ⁴PhLAM UMR CNRS8523, Lille University, Bat. P5, Villeneuve d'Ascq, France

17:30 Single-Shot Terahertz Waveform Detection By Chirped-Pulse Up-Conversion Spectroscopy With Dispersion Compensation Tu-PM2-1-6

Ryo Tamaki*¹; Jun Takeda²; Ikufumi Katayama²
¹KISTEC, 705-1 Shimoimaizumi, Ebina, Japan; ²Yokohama National University, 79-5 Tokiwadai, Hodogaya, Yokohama, Japan

17:45 **Comparative Study Of Terahertz Chemical Microscopy And Flexible ISFET Approaches For Calcium Ion Detection** Tu-PM2-1-7

Sota Yoshida*¹; Toshihiko Kiwa¹; Jin Wang¹; Kenji Sakai²
¹Okayama univercity, Kita-ku, Tsushima-naka 1-1-1, Okayama city, Japan; ²Doshisha univercity, Tataro-Toya 1-3, Kyotanabe city, Japan

16:00-18:00 **Ultrafast & Nonlinear Phenomena I** Cartier I
Chairperson(s): Andrey Baydin

16:00 **Quantitative Terahertz Magnetometry** Tu-PM2-2-1

Dmitry Turchinovich*¹; Wentao Zhang²
¹Universität Bielefeld, Universitätsstr. 25, Bielefeld, Germany;
²Universität Bielefeld, Universitätsstr. 25, Germany

16:30 **Terahertz Field-Driven Nonlinear Magnonics In Antiferromagnets** Tu-PM2-2-2

Zhuquan Zhang*¹; Frank Gao²; Zi-Jie Liu¹; Yu-Che Chien¹; Alexander von Hoegen¹; Jonathan Curtis³; Prineha Narang³; Edoardo Baldini²; Keith Nelson¹
¹Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge, United States; ²The University of Texas at Austin, Main Building (MAI) 110 Inner Campus Drive Austin, Austin, United States; ³UCLA, 405 Hilgard Avenue, Los Angeles, United States

16:45 **Femtosecond Laser-induced Ultrafast Magnetization In Two-dimensional Magnetic Material-antiferromagnetic Heterostructures** Tu-PM2-2-3

Peiyan Li*¹; Sai Chen¹; Shanshan Liu²; Faxian Xiu²; Wei He³; Xiaojun Wu¹
¹Beihang University, No. 37 Xueyuan Road, Haidian District, Beijing, China; ²Fudan university, 57 Wudong Road, Yangpu District, Shanghai, China; ³Institute of Physics, Chinese Academy of Sciences, 55 Zhongguancun East Road, Haidian District, Beijing, China

17:00 **Hysteresis-induced Multistability In A Nonlinear Terahertz Split Ring Resonator** Tu-PM2-2-4

Gervais Dolvis Leutcho*; Lyne Woodward; François Blanchard
 École de technologie supérieure (ÉTS), 1100 R. Notre Dame O, Montréal, Canada

17:15 **High Field Terahertz Time-Domain Spectroscopy Of Lactose Monohydrate** Tu-PM2-2-5

Thomas Gill*; Andrew Burnett; Connor Kidd; Aniela Dunn; Joshua Freeman; Edmund Linfield; Alexander Davies; Paul Dean; Calum Towler; Lianhe Li
University of Leeds, University of Leeds, Woodhouse Lane, Leeds, United Kingdom

17:30 **Terahertz Nonlinear Photonics Based On The Ultrafast Thermodynamics Of Quantum Materials** **Tu-PM2-2-6**

Klaas-Jan Tielrooij*
Eindhoven University of Technology, Den Dolech 2, Eindhoven, Netherlands

16:00-18:00 **Topological & 2D Materials** **Cartier II**
Chairperson(s): Taiichi Otsuji

16:00 **Efficient Terahertz Harmonic Generation In Topological Metamaterials** **Tu-PM2-3-1**

Sergey Kovalev*¹; Klaas Tielrooij²; Igor Ilyakov³; Jan Deinert³; Thales Oliveira³; Alexej Ponomaryov³; Alessandro Principi⁴; Alexander Block²; Sabin Varghese²; Steffen Schreyeck⁵; Karl Brunner⁵; David Reig²; Grzegorz Karczewski⁵; Carmen Carbonell²; Sergio Valenzuela²; Laurens Molenkamp⁵; Tobias Kiessling⁵; Georgy Astakhov³
¹Helmholtz-Zentrum Dresden-Rossendorf, Bautzner Landstrasse 400, Dresden, Germany; ²Catalan Institute of Nanoscience, Barcelona, Spain; ³Helmholtz-Zentrum Dresden-Rossendorf, Bautzner Landstrasse 400, Germany; ⁴University of Manchester, Manchester, United Kingdom; ⁵Universität Würzburg, Würzburg, Germany

16:30 **Observation Of Terahertz Emission From Topological Material Candidate SrCd₂Sb₂ Single Crystals** **Tu-PM2-3-2**

Po-Wei Gong¹; Yi-Cheng Cheng¹; Pei-Tsung Yang¹; Xin-Yun Chang¹; Jiun-Haw Chu²; Cheng-Chien Chen³; Jiunn-Yuan Lin¹; Chih-Wei Luo¹; Chien-Ming Tu*¹
¹Department of Electrophysics, National Yang Ming Chiao Tung University, No. 1001, Daxue Rd. East Dist., Hsinchu, Taiwan; ²Department of Physics, University of Washington, Physics-Astronomy Building, Rm. C121, Box 351560, Seattle, United States; ³Department of Physics, University of Alabama at Birmingham, Campbell Hall, Rm.310, 1300 University Blvd., Birmingham, United States

16:45 **Topological Materials For Helicity-dependent THz Emission** **Tu-PM2-3-3**

Abdul Mannan*¹; Yahya Saboon¹; Chelsea Xia²; Djamshid Damry¹; Piet Schoenherr²; Dharmalingam Prabhakaran²; Laura M Herz²; Thorsten Hesjedal²; Michael Johnston²; Jessica Louise Boland¹

¹Photon Science Institute, Department of Electrical and Electronic Engineering, University of Manchester, Oxford Rd, Manchester, United Kingdom; ²Condensed Matter Group, Clarendon Laboratory, University of Oxford, Parks Rd, Oxford, United Kingdom

17:00 **Terahertz Surface Plasmon Resonance In Dirac Electron System Topological Insulator (Sb, Bi)2(Te, Se)3** **Tu-PM2-3-4**

Hinano Sugimoto*¹; Kana Nishimura²; Hitoshi Tabata²
¹the University of Tokyo, Engineering Building 5, 7-3-1 Hongo, Bunkyo-ku, Tokyo-to, Japan; ²the University of Tokyo, Engineering Building 5, 7-3-1 Hongo, Bunkyo-ku, Japan

17:15 **Temperature Dependence Of Intrinsic Spin Orbit Coupling Gap In Graphene Probed By Terahertz Photoconductivity** **Tu-PM2-3-5**

Kenneth Maussang*¹; Khalid Dinar¹; Cédric Bray²; Christophe Consejo¹; Juan Antonio Delgado-Notario³; Sergey Krishtopenko²; Ivan Yahniuk⁴; Sebastian Gerbert¹; Sandra Ruffenach²; Erwin Moench⁵; Kornelia Indykiewicz⁶; Benjamin Benhamou -- Bui¹; Benoit Jouault²; Jérémie Torres¹; Yahya Moubarak Meziani⁷; Wojciech Knap²; August Yurgens⁸; Sergey Ganichev⁴; Frédéric Teppe²

¹University of Montpellier, Place Eugène Bataillon, Montpellier, France; ²CNRS, Place Eugène Bataillon, Montpellier, France; ³Universidad de Salamanca, USAL-Nanolab, Salamanca, Spain; ⁴University of Regensburg, Terahertz Centre, Regensburg, Germany; ⁵University of Regensburg, Terahertz Center, Regensburg, Germany; ⁶Wroclaw University of Science and Technology, Wroclaw University of Science and Technology, Wroclaw, Poland; ⁷Salamanca University, USAL-Nanolab, Salamanca, Spain; ⁸Chalmers University of Technology, Chalmers University of Technology, Göteborg, Sweden

17:30 **Tunable Plasmonic Graphene Antenna Array For Communications At THz Frequencies** **Tu-PM2-3-6**

Elana P. de Santana*¹; Daniel Stock¹; Zhenxing Wang²; Kun-Ta Wang²; Sergi Abadal³; Max Lemme²; Peter Haring Bolívar¹

¹University of Siegen, Hölderlinstr. 3, Siegen, Germany; ²AMO GmbH, Otto-Blumenthal-Straße 25, Aachen, Germany; ³Technical University of Catalonia, Jordi Girona, 1-3, Mòdul D6, Barcelona, Spain

17:45 **Tuneable Terahertz Frequency-selective Absorber Based On A Graphene/gold Bilayer Metasurface** **Tu-PM2-3-7**

Andrew Squires*¹; Xiang Gao²; Jia Du¹; Zhaojun Han¹; Dong han Seo³; James Cooper¹; Adrian Murdock¹; Simon Lam¹; Ting Zhang¹; Tim van der Laan¹

¹CSIRO, 36 Bradfield Road, Lindfield, Australia; ²Beijing Institute of technology, Haidan District, China; ³Korea Institute of Energy technology, Naju, Korea, Republic of

16:00-18:00

Passive Components

**International
I**

Chairperson(s): Hui Yuan

16:00 **A Spiral Phase Plate Prepared Via High-resolution 3D Printing For THz Vortex Beam Generation** **Tu-PM2-4-1**

Andreea Aura Paraipan*¹; Innem V. A. K. Reddy²; Giacomo Balistreri³; Luca Zanotto³; Diana Gonzales-Hernandez⁴; Mostafa Shalaby⁵; Roberto Morandotti¹; Carlo Liberale⁴; Luca Razzari¹

¹INRS, 1650 Blvd. Lionel Boulet, Varennes, Canada; ²King Abdullah University of Science and Technology, Thuwal 23955-6900, Kingdom of Saudi Arabia, Saudi Arabia; ³INRS Énergie, Matériaux et Télécommunications, 1650 Blvd. Lionel Boulet, Varennes, Canada; ⁴King Abdullah University of Science and Technology, Thuwal 23955-6900, Saudi Arabia; ⁵Swiss Terahertz Research-Zürich, Swiss Terahertz GmbH, 8005 Zürich, Switzerland

16:15 **Fabrication Of Freestanding THz Band-pass Filters** **Tu-PM2-4-2**

Erwin Hack*; Ivan Shorubalko; Jil Graf; Peter Zolliker; Elena Mavrona

Empa, Uberlandstrasse 129, Dubendorf, Switzerland

16:30 **A High Q-Factor 270 GHz 3D-printed Photonic Crystal Slot Resonator** **Tu-PM2-4-3**

Yixiong Zhao*¹; Masoud Sakaki²; Niels Benson³; Jan Balzer⁴

¹University of Duisburg-Essen, Faculty of Engineering, Chair of Communication Systems (NTS), Bismarckstrasse 81, Duisburg, Germany; ²University of Duisburg Essen, Institute of Technology for Nanostructures (NST), Bismarckstrasse 81, Duisburg, Germany; ³University Duisburg Essen, Institute of Technology for Nanostructures (NST), Bismarckstr. 81, Duisburg, Germany; ⁴University of Duisburg-Essen, Chair of Communication Systems (NTS), Bismarckstrasse 81, Duisburg, Germany

16:45 **A Combined 60/170 GHz Notch Filter For Collective Thomson Scattering At ITER** Tu-PM2-4-4

Dietmar Wagner*¹; Walter Kasperek²; Fritz Leuterer¹; Harald Schütz¹; Jörg Stober¹; Manfred Thumm³

¹Max Planck Institute for Plasma Physics, Boltzmannstr. 2, Garching, Germany; ²University of Stuttgart, Pfaffenwaldring 31, Stuttgart, Germany; ³KIT Karlsruhe, Kaiserstr. 12, Karlsruhe, Germany

17:00 **Monte Carlo Evaluation Of The Effects Of Higher Order Modes In High-power Millimeter-wave Systems** Tu-PM2-4-5

Burkhard Plaum*

University of Stuttgart, IGVP, Pfaffenwaldring 31, Stuttgart, Germany

17:15 **Terahertz CPS-based Spoof Surface Plasmon Polariton Filter On Silicon Nitride Substrate** Tu-PM2-4-6

Mohsen Haghighat*; Thomas Darcie; Levi Smith

University of Victoria, 3800 Finnerty Road, Victoria, Canada

17:30 **Lattice Type Dependence Of Transmittance Spectrum In Moth-eye Antireflective Structures** Tu-PM2-4-7

Rikuo Koike*; Shotaro Kawano; Haruyuki Sakurai; Kuniaki Konishi; Norikatsu Mio

The University of Tokyo, 7-3-1, Hongo, Bunkyo-ku, Japan

17:45 **Masked Stereolithography 3D-printed Terahertz Diffractive Lens** Tu-PM2-4-8

Po-Jen Yu*¹; Tsung-Chieh Tseng²; Yu-Hang Wang¹; You-Chia Chang²; Shang-Hua Yang¹

¹Institute of Electronics Engineering, National Tsing Hua University, Hsinchu 300, Taiwan, No. 101, Sec. 2, Guangfu Rd., East Dist., Hsinchu, Taiwan; ²Department of Photonics and Institute of Electro-Optical Engineering, National Yang Ming Chiaung Tung, 1001 University Road, Hsinchu, Taiwan

16:00-18:00

Chemistry, Biology & Medicine II

International II

Chairperson(s): Andrea Markelz

16:00 **Retrieving The Dynamic Hydration Profile Of Skin In Vivo With A Handheld Terahertz Probe** Tu-PM2-5-1

Xuefei Ding*; A. I. Hernandez-Serrano; Emma Pickwell-MacPherson

University of Warwick, Department of Physics, Coventry, United Kingdom

- 16:30 Slush-skin Thickness Measurements With Terahertz Time-Domain Spectroscopy** **Tu-PM2-5-2**
- Daniel Molter*; Stefan Duran; Jens Klier; Dmytro Kharik; Dominik Gundacker; Joachim Jonuscheit; Georg von Freymann
Fraunhofer ITWM, Fraunhofer-Platz 1, Kaiserslautern, Germany
- 16:45 Pulsed Terahertz Time Domain Spectroscopy For Evaluating Treatment Efficacy: Initial Validation In Monitoring Pancreatic Ductal Adenocarcinoma** **Tu-PM2-5-3**
- Debamitra Chakraborty*¹; Bradley N. Mills²; Jing Cheng¹; Ivan Komissarov¹; Scott A Gerber²; Roman Sobolewski¹
¹University of Rochester, University of Rochester, Rochester, United States; ²University of Rochester Medical Center, University of Rochester Medical Center, Rochester, United States
- 17:00 Hyperbolic-elliptical Lenses For Rapid THz Reflection Imaging Of Curved Biological Surfaces** **Tu-PM2-5-4**
- Arjun Virk*; Zachery Harris; Hassan Arbab
Stony Brook University, 100 Nicolls Road, Stony Brook, United States
- 17:15 In-vivo Stratum Corneum Hydration Inspection Using A Non-invasive Terahertz Hand-held Scanner** **Tu-PM2-5-5**
- Arturo Hernandez Serrano*; Emma Pickwell-MacPherson
University of Warwick, Gibbet Hill Road, Coventry, United Kingdom
- 17:30 Using THz-ATR Spectroscopy For Detecting Mimicked Interstitial Fluid Flow In Ex Vivo Skin** **Tu-PM2-5-6**
- Lorenza Pia Foglia*; Bjørn Hübschmann Mølvig; Mads Ehrhorn; Miriam Galbiati; Simon Jappe Lange; Peter Uhd Jepsen
Technical University of Denmark, Ørstedes Plads, Building 343, Kongens Lyngby, Denmark
- 17:45 Wavefront Modified Spherical Vector Beams For THz Cornea Imaging** **Tu-PM2-5-7**
- Joel Lamberg*¹; Faezeh Zarrinkhat²; Aleksi Tamminen¹; Juha Ala-Laurinaho¹; Zachary Taylor¹
¹Aalto University, Maarintie 8, Espoo, Finland; ²TeraView LTd, Enterprise Cambridge Research Park, Cambridge, United Kingdom

Recent Advances In THz Clinotrons

Tu-P1-01

Alexei Kuleshov^{*1}; Sergey Vlasenko²; Sergey Kishko²; Sergey Ponomarenko³; Eduard Khutoryan²

¹O. Ya. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine, 12 ac. Proskura str., Kharkiv, Ukraine; ²O. Ya. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine, 12 ac. Proskura str., Ukraine; ³Max Planck Institute for Plasma Physics, Greifswald, 17491 Germany, Germany

THz Detection Optimization Of Antenna Coupled AlGaN/GaN High Electron Mobility Transistors

Tu-P1-02

Maxim Moscotin^{*1}; Justinas Jorudas¹; Miroslav Saniuk¹; Pawel Prystawko²; Sergey Rumyantsev²; Wojciech Knap²; Grzegorz Cywinski²; Irmantas Kasalynas¹

¹Center for Physical Sciences and Technology (FTMC), Sauletekio av. 3, Vilnius, Lithuania; ²Institute of High Pressure Physics PAS, Polish Academy of Sciences, ul. Sokolowska 29/37, Warsaw, Poland

Amplified Mode Switching Effect In THz Field Effect Transistors With Grating Gate

Tu-P1-03

Michael5184218830 Shur^{*1}; John Mikalopas²; Gregory Aizin²

¹Rensselaer Polytechnic Institute, 9433 van Arsdale Drive, 9433 van Arsdale Drive, Vienna, United States; ²Kingsborough College of the City University of NYC, Kingsborough College of the City University of NYC, 2001 Oriental Blvd, Brooklyn, United States

Algorithm For Determination Of Cutoff Frequency Of Noise Floor Level For Terahertz Time-domain Signals.

Tu-P1-04

Edgar Santiago Reyes Reyes^{*1}; Ramon Carriles Jaimes¹; Enrique Castro Camus²

¹Centro de Investigaciones en Óptica, A.C., Loma del Bosque 115, Leon, Mexico; ²Philipps-Universität Marburg, Renthof 5, Marburg, Germany

Coherent Emission From A Linear Array Of RTDs

Tu-P1-05

Fanqi Meng^{*1}; Zhenling Tang²; Jahnabi Hazarika³; Safumi Suzuki²; Roskos Hartmut G.³

¹Goethe University Frankfurt, Max von Laue street 1, Frankfurt am Main, Germany; ²Tokyo Institute of Technology, O-okayama 2-12-1-S9-3, Meguro-ku., Tokyo, Japan; ³Goethe University Frankfurt, Max von Laue street 1, Frankfurt, Germany

Passive Compensation Method For Permanent Magnet Undulator Based On Temperature Compensation Alloy

Tu-P1-06

Longgang Yan*; Peng Li; Lijun Chen
Institute of Applied Electronic, Mianshan Road 64, Mianyang, China

Fabrication And Characterization Of Low Barrier Height InAs/GaxIn1-xAs/InAs Heterostructure Diodes Toward Millimeter-wave Detection

Tu-P1-07

Moto Inoue*; Masatoshi Koyama; Toshihiko Maemoto; Shigehiko Sasa
Osaka Institute of Technology, 5-16-1 Ohmiya, Asahi-ku, Osaka, Japan

Design Of Rectangular Microstrip Patch Antenna For Early Breast Cancer Screens

Tu-P1-08

Xuanxuan Zhang*¹; Lixia Yang²; Haiqing Liu³; Zhiyong Zou⁴; Weiming Li⁵; Cuizhen Wang⁶; Yuan Yao⁵
¹Anhui University, Anhui University, 111 Jiulong Road, Shushan District, Hefei City, Anhui Province, China, Hefei, China;
²School of Electronic and Information Engineering, Anhui University, Anhui University, No.111, Jiulong Road, Shushan Di, Hefei, China; ³Institute of Plasma Physics, Hefei Institutes of Physics Science, Chinese Academy of Sciences, Hefei, No.350, Shushan Lake Road, Luyang District, Hefei, China; ⁴Institute of Energy, Hefei Comprehensive National Science Center, Anhui, Hefei, No.350, Shushan Lake Road, Luyang District, Hefei, Hefei, China; ⁵Institute of Plasma Physics, Hefei Institutes of Physics Science, Chinese Academy of Sciences, Hefei, No.350, Shushan Lake Road, Luyang District, Hefei, Hefei, China; ⁶Institute of Energy, Hefei Comprehensive National Science Center, Anhui, Hefei, No.350, Shushan Lake Road, Luyang District, Hefei, China

A High-Order Mode Terahertz Extended Interaction Oscillator With Three Electron Beams

Tu-P1-09

Youfeng Yang*; Ping Zhang; Yuan Zheng; Yang Dong; Shaomeng Wang; Zhanliang Wang; Zhigang Lu; Yubin Gong
University of Electronic Science and Technology of China, Qingshuihe Campus.No. 2006, Xiyuan Avenue, Chengdu, Chengdu, China

Concept Design Of Collective Thomson Scattering Applied To EAST

Tu-P1-10

Jingshuo Zhang*; Chengming Qu; Lifu Zhang; Zhengwei Wu;
Ge Zhuang; Jinlin Xie
Department of Plasma Physics and Fusion Engineering, USTC,
No. 96, Jinzhai Road, Hefei City, Anhui Province, Hefei, China

A Design And Performance Of A Low-cost THz Imaging System Using InP Gunn Diode Emitter, Paraffin Wax Optics And Commercially Available GaAs HEMTs

Tu-P1-11

Linās Minkevičius^{*1}; Vincas Tamosiūnas²; Ignotas Bucius²;
Domas Jokubauskis¹; Karolis Redeckas¹; Gintaras Valusis¹
¹Center for Physical Sciences and Technology, Savanoriu ave.
231, Vilnius, Lithuania; ²Vilnius University, Sauletekio ave. 3,
Vilnius, Lithuania

A Novel Broadband Port-Access Scheme To Interface Several Waveguide Bands To A Single Schottky Barrier Diode Detector

Tu-P1-12

Muhsin Ali^{*1}; Daniel Headland²; Alejandro Rivera-Lavado¹; Oleg Cojocari³; Andreas Stöhr⁴; Guillermo Carpintero²
¹LeapWave Technologies, Avenida Gregorio Peces-Barba 1, Leganés, Spain; ²Universidad Carlos III de Madrid, Avenida de la Universidad 30, Leganés, Spain; ³ACST GmbH, D-63457 Hanau, Germany; ⁴University of Duisburg-Essen, Lotharstr. 55, Duisburg, Germany

On The Experimental Characterization Of Generated And Received Pulses Of Photoconductive Antennas

Tu-P1-13

Huasheng Zhang*; Juan Bueno; Paolo Sberna; Nuria Llombart; Andrea Neto
Delft University of Technology, Delft University of Technology,
Delft, Netherlands

Improved Large Area Photoconductive Antenna Design For High Field THz Generation

Tu-P1-14

Connor Kidd*; Mark Rosamond; Thomas Gill; Lianhe Li; Edmund Linfield; Alexander Davies; Joshua Freeman
School of Electrical and Electronic engineering, University of Leeds, Woodhouse Lane, Leeds, United Kingdom

Improvement In The Detection Efficiency Of Terahertz (THz) Time-domain Spectroscopy (TDS) By Applying An Alternating Magnetic Field Bias In Spintronic Emitter

Tu-P1-15

Hideaki Kitahara¹; Katsuyuki Ishii²; Miezal Talara¹; Takashi Furuya¹; Mary Escaño¹; Masahiko Tani^{*1}; Dmitry Bulgarevich³; Dongfeng He³; Makoto Watanabe³

¹FIR, Univ. of Fukui, 3-9-1 Bunkyo, Fukui, Japan; ²University of Fukui, 3-9-1 Bunkyo, Fukui, Japan; ³National Institute for Materials Science, 1-2-1 Sengen, Tsukuba, Japan

Dimensioning Photoconductive Connected Array Sources To Maximize The Radiated Power.

Tu-P1-16

Martijn Huiskes^{*1}; Juan Bueno¹; Nuria Llombart²; Andrea Neto²

¹Delft University of Technology, Mekelweg 4, Delft, Netherlands; ²Delft University of Technology, Mekelweg 4, Netherlands

Impact Of Antenna Metal's Thicknesses And Structures On Terahertz (THz) Wave Generation Performance Of Spintronic Emitters

Tu-P1-17

Miezal Talara¹; Dmitry Bulgarevich²; Kana Kobayashi¹; Hideaki Kitahara¹; Takashi Furuya¹; Mary Clare Escaño¹; Makoto Watanabe²; Masahiko Tani^{*1}

¹Research Center for Development of Far-Infrared Region, University of Fukui, Bunkyo 3-9-1, Fukui, Japan; ²Research Center for Structural Materials, National Institute for Materials Science, 1-2-1 Sengen, Tsukuba, Japan

Recording THz Pulse Shapes At 88 MHz Repetition Rate Using Photonic Time-stretch, At Synchrotron SOLEIL

Tu-P1-18

Christophe Szwaj¹; Eléonore Roussel¹; Clément Evain¹; Marc Le Parquier¹; Pascale Roy²; Laurent Manceron²; Jean-Blaise Brubach²; Marie-Agnès Tordeux²; Marie Labat²; Serge Bielawski^{*3}

¹PhLAM UMR CNRS 8523, Lille University, Bat. P5, Villeneuve d'Ascq, France; ²Synchrotron SOLEIL, Gif-sur-Yvette, France; ³PhLAM Laboratory, Lille University, Lille University, Bat P5, Villeneuve d'Ascq, France

Terahertz Detection Using A Ridge Waveguide

Tu-P1-19

Sota Mine^{*1}; Gabriel Gandubert²; Xavier Ropagnol²; Kosuke Murate³; François Blanchard²

¹École de technologie supérieure, Furo-cho, Chikusa-ku, Nagoya, Japan; ²École de technologie supérieure, Montréal, QC, Canada; ³Nagoya University, Furo-cho, Chikusa-ku, Nagoya, Japan

The Measurement Of The Coating Uniformity Of Lithium Iron Phosphate Cathodes On Metal Substrates With Terahertz Time-domain Spectroscopy

Tu-P1-20

Faezeh Zarrin Khat*¹; Alasdair Pentland¹; Carl Reynolds²;
Emma Kendrick²; Philip F. Taday¹

¹TeraView LTD, 1, Enterprise Cambridge Research Park,
Cambridge, United Kingdom; ²School of Metallurgy and
Materials, University of Birmingham, Birmingham, United
Kingdom

**Thermoelectric Effect In Carbon Nanotube Films For THz
And IR Ultra-broadband Photodetectors**

Tu-P1-21

Yue Wang*; Guangcheng Sun; Xiaoju Zhang; Zijian Cui;
Xinmei Wang

Xi'an University of Technology, No 5 Jinhua South Road, Xi'an,
China

**LT-GaAs Metasurfaces As Continuous-wave THz Detectors
Operating In The Telecommunications Band**

Tu-P1-22

James Seddon*¹; Lucy Hale²; Hyunseung Jung³; Sarah
Norman⁴; Sadvikas Addamane⁵; Igal Brener⁵; Cyril Renaud⁶;
Oleg Mitrofanov⁶

¹University College London, Department of Electronic &
Electrical Engineering, Roberts Building,, University College
London, Torrington Place,, London, United Kingdom;

²University College London, Roberts Building, University
College London, Torrington Place, London, United Kingdom;

³Sandia National Laboratories, Sandia National Laboratories,,
Albuquerque, United States; ⁴University College London,
Roberts Building Torrington Place, London, United Kingdom;

⁵Sandia National Laboratories, Sandia National Laboratories,
Albuquerque, United States; ⁶University College London,
Roberts Building, Torrington Place, London, United Kingdom

**Experimental Investigations On Effects Of The Magnetic
Field Taper On A Continuously Frequency-Tunable
Gyrotron**

Tu-P1-23

Tao Song*¹; Wei Wang¹; Diwei Liu²

¹University of Electronic Science and Technology of China,
No.2006, Xiyuan Ave, West Hi-Tech Zone, Chengdu, China;

²University of Electronic Science and Technology of China,
No.2006, Xiyuan Ave, West Hi-Tech Zone, 611731, Chengdu,
China

**Study Of The Pill-box Window For The High-power
Microwave Transmission Line**

Tu-P1-24

Shouqi Xiong*; Zaojin Zen; Yi Jiang; Xinrui Hu; Guowu Ma;
Hongbin Chen
Institute of Applied Electronics, China Academy of Engineering
Physics, No. 64 Mianshan Road, Mianyang, China

**Dependence Of Efficiency Degradation Caused By Beam
Misalignment On The Azimuthal Index In Gyrotrons**

Tu-P1-25

Xianfei Chen*; Houxiu Xiao; Xiaotao Han
Huazhong University of Science and Technology, Wuhan
National High Magnetic Field Center, Huazhong University of
Science and Technology, Hongshan District, Luoyu road, 1037,
Wuhan, China

**Temperature Control Of Irradiated Biological Samples With
Pulse Repetition Frequency Modulation Of A Gyrotron**

Tu-P1-26

Yuusuke Yamaguchi*; Masafumi Fukunari; Yoshinori Tatematsu
Research Center for Development of Far-Infrared Region,
University of Fukui, 3-9-1 Bunkyo, Fukui, Japan

**Experiments On Efficient Fifth-Harmonic Multiplication in
A Conventional V-Band Gyrotron**

Tu-P1-27

Mikhail Glyavin¹; Gregory Denisov²; Irina Zotova²; Andrey
Malkin²; Alexander Sergeev²; Roman Rozental²; Andrey
Fokin²; Vladimir Belousov²; Mikhail Shmelev²; Alexey Chirkov²;
Alexander Tsvetkov²; Ilya Bandurkin²

¹IAP RAS, 46 Ulyanov str., 9519033406, Nizhny Novgorod,
Russian Federation; ²IAP RAS, IAP RAS, 46 Ulyanov str.,
Nizhny Novgorod, Russian Federation

**Advances In Terahertz Detection With Graphene Field-
effect Transistors**

Tu-P1-28

Dmitry Svintsov*¹; Dmitry Mylnikov¹; Elena Titova¹; Denis
Bandurin²; Kostya Novoselov²

¹Moscow Institute of Physics and Technology, 9 Institutskiy
lane, Dolgoprudny, Russian Federation; ²National University of
Singapore, 21 Lower Kent Ridge Road, Singapore, Singapore

**Modulation--doped Multiple CdTe Quantum Wells As THz
Detectors, Filters And Emitters**

Tu-P1-29

Jerzy Łusakowski*¹; Dmitriy Yavorskiy²; Krzysztof Karpierz³; Andrzej Fraczak¹; Mikołaj Grymuza¹; Eryk Imos¹; Adam Siemaszko¹; Wiktoria Solarska¹; Maciej Zaremba¹; Rafal Zdunek¹; Zbigniew Adamus⁴; Tomasz Slupinski⁴; Tomasz Wojtowicz⁴

¹University of Warsaw, Faculty of Physics, Pasteura 5, Warsaw, Poland; ²Institute of High Pressure Physics, Sokolowska 29, Warsaw, Poland; ³University of Warsaw, Faculty of Physics, Pasteura 5, Poland; ⁴Institute of Physics, Polish Academy of Sciences, Lotników 32/46, Warsaw, Poland

Status Of The Heterodyne Superconductor-Insulator-Superconductor Receivers For The LCT

Tu-P1-30

Minran Chen¹; Boxun Wang¹; Yao Li¹; Shuqin Wang¹; Duo Cao*²; Feng Liu¹; Yi Zhang¹; Wangzhou Shi¹

¹Shanghai Normal University, 100 Guilin Road, China;

²Shanghai Normal University, 100 Guilin Road, Shanghai, China

Multilayer Vacuum Window Design For Submillimeter Telescope Receivers

Tu-P1-31

Yi Zhang*¹; Duo Cao²; Feng Liu²

¹Shanghai Normal University, Guilin Road 100, Xuhui District, Shanghai, China; ²Shanghai Normal University, Guilin Road, Xuhui District, China

Real-Time Analysis Of THz Quantum-Cascade Laser Signals Using A Field Effect Transistor Array

Tu-P1-32

Nicholas North*¹; Jakob Holstein²; Michael Horbury¹; Harry Godden³; Lianhe Li³; Joshua Freeman³; Edmund Linfield³; Hartmut Roskos²; Alvydas Lisauskas²; Alexander Valavanis³

¹University of Leeds, University of Leeds, Woodhouse, Leeds, United Kingdom; ²Johan Wolfgang Goethe-Universität, D-60438 Frankfurt am Main, Frankfurt, Germany; ³University of Leeds, University of Leeds, Woodhouse, leeds, United Kingdom

Growth Response Of Escherichia Coli Bacterial Cells On Exposure To 1.25 Wm-2 Synchrotron-sourced Terahertz Radiation

Tu-P1-33

Zoltan Vilagosh*¹; The Hong Phong Peter Nguyen²; Palalle Tharushi Perera²; Denver Linklater²; Dominique Appaddo³; Jitraporn Vongsvivut³; Mark J. Tobin³; Rodney Croft⁴; Elena P. Ivanova²

¹RMIT, Melbourne Australia, 124 La Trobe St., Melbourne, Australia; ²RMIT, University, 124 La Trobe St., Melbourne, Australia; ³ANSTO Australian Synchrotron, 800 Blackburn Road, Clayton, Australia; ⁴University of Wollongong, Illawarra Health & Medical Research Institute., Northfields Avenue., Wollongong, Australia

Compact Single-shot Electro-optic Detection System For THz Pulses With Femtosecond Time Resolution At MHz Repetition Rates

Tu-P1-34

Bernd Steffen*; Marie Kristin Czwalianna
Deutsches Elektronen-Synchrotron DESY, Notkestr. 85,
Hamburg, Germany

Research On W-band Sheet-Electron-Beam Vacuum-Tube Power Amplifier And Oscillator

Tu-P1-35

Ivan Chistyakov¹; Vladimir Titov²; Roman Torgashov²; Andrey Starodubov²; Igor Navrotsky¹; Dmitriy Zolotykh¹; Nikita Ryskin*²
¹Saratov Branch, Kotelnikov Institute of Radio Engineering and Electronics RAS, 38 Zelenaya st., 1 Panfilova st., Saratov, Russian Federation; ²Saratov Branch, Kotelnikov Institute of Radio Engineering and Electronics RAS, 38 Zelenaya st., 83 Astrakhanskaya st., Saratov, Russian Federation

Free Induction Decay Signals Stimulated And Detected By Photomixing

Tu-P1-36

Francis Hinde¹; François Parnet²; François Bondu²; Guillaume Ducournau³; Jean-François Lampin³; Gael Mouret¹; Goulc'hén Loas²; Emilien Peytavit*⁴

¹LPCA, Dunkerque, France; ²Institut FOTON, Rennes, France; ³IEMN, Villeneuve d'Ascq, France; ⁴IEMN, IEMN Avenue Poincaré, Villeneuve d'Ascq, France

Low Temperature Permittivity And Loss Tangent Of Zirconia From 220 To 325 GHz

Tu-P1-37

Guangjiang Li*; Sudheer Jawla; Michael Shapiro; Richard Temkin

Plasma Science and Fusion Center, Massachusetts Institute of Technology, 190 Albany Street, Cambridge, United States

Terahertz ATR Sheds Light On Real-time Exchange Kinetics Occurring Through Plasma Membrane During Photodynamic Therapy

Tu-P1-38

Xiujun Zheng¹; Blandine Lordon^{*1}; Anne-Françoise Mingotaud²; Patricia Vicendo²; Rachel Brival²; Isabelle Fourquaux³; Laure Gibot²; Guilhem Gallot¹

¹Laboratory for Optics and Biosciences, Route De Saclay, Palaiseau, France; ²IMRCP, Université de Toulouse, Toulouse, France; ³Centre de Microscopie Electronique Appliquée à la Biologie, Université de Toulouse, Toulouse, France

18:00-19:30

Poster Session 4

Foyer
(4th floor)

Modeling With TESLA-family Of 2.5D Large-signal Codes: Predicting Performance And Stability Of The Experimental Mm-wave TWTs

Tu-P2-01

Igor Chernyavskiy^{*1}; Alexander Vlasov¹; Alan Cook¹; Thomas Antonsen²

¹US Naval Research Laboratory, 4555 Overlook Ave SW, Washington, United States; ²Leidos, Reston, United States

Charge-transfer Dyes In A Polymer Matrix: an Avenue Towards Large Area THz Emitters?

Tu-P2-02

Felix Gorka^{*1}; Goretti Guadalupe Hernandez Cardoso¹; Enrique Castro-Camus¹; Henning Menzel²; Tasja Schwenke²; Li Zhao³; Florens Kurth³; Wolfgang Kowalsky³; Hans-Hermann Johannes³; Martin Koch¹

¹Philipps-University Marburg, Renthof 7a, Marburg, Germany;

²TU Braunschweig, Hagenring 30, Braunschweig, Germany;

³TU Braunschweig, Schleinitzstr. 22, Braunschweig, Germany

Output Coupling Optimization For An Optically Pumped CH₃OH Gas Laser

Tu-P2-03

Xuan Li^{*1}; Zhiyong Zou²; Jiaying Xie³; Haiqing Liu³; Yinxian Jie³

¹Institute of Plasma Physics, Hefei Institutes of Physical Science, Chinese Academy of Sciences, No.350, ShuShanHu Road Luyang District, Hefei, Anhui, 230031, P.R.China., No.96, JinZhai Road Baohe District, Hefei, Anhui, 230026, P.R.China., Hefei, China; ²Institute of Energy, Hefei Comprehensive National Science Center, Hefei, Anhui, China; ³Institute of Plasma Physics, Hefei Institutes of Physical Science, Chinese Academy of Sciences, No.350, ShuShanHu Road Luyang District, Hefei, Anh, China

NanoMi: A Modular Platform For Terahertz-integrated UTEM

Tu-P2-04

Samuel Ruttiman*¹; Makoto Schreiber¹; Mark Salomons²; Darren Homeniuk²; Xuanhao Wang³; Olivier Adkin-Kaya⁴; Mohammad Kamal⁴; Jesus Alejandro Marin Calzada¹; Patrick Price²; Martin Cloutier²; Misa Hayashida²; Ray Egerton¹; Ken Harada⁵; Yoshio Takahashi⁶; Heiko Muller⁷; Marek Malac²; Frank Hegmann¹

¹University of Alberta Department of Physics, 4-181 CCIS, University of Alberta, Edmonton, Canada; ²NRC-NANO, 11421 Saskatchewan Dr NW, Edmonton, Canada; ³University of Alberta Department of Computer Science, 8900 114 St NW, Edmonton, Canada; ⁴University of Alberta Department of Electrical and Computer Engineering, 9211 116 Street NW, Edmonton, Canada; ⁵RIKEN, 2520 Akenuma, Hatoyama, Japan; ⁶Hitachi Advanced Research Lab, 2520 Akenuma, Hatoyama, Japan; ⁷CEOS GmbH, Englerstraße 28, Heidelberg, Germany

Terahertz-induced Influence On The Octanol-water Phase Separation

Tu-P2-05

Qin Zhang*; Kaicheng Wang; Lixia Yang; Shaomeng Wang; Yubin Gong
University of Electronic Science and Technology of China, No.2006, Xiyuan Ave, West Hi-Tech Zone, Chengdu, China

Infrared Nanospectroscopy And Terahertz Irradiation Of Pathological Protein Aggregates

Tu-P2-06

Antonia Intze¹; Raffaella Polito¹; Maria Eleonora Temperini¹; Valeria Giliberti²; Michele Ortolani*¹
¹Sapienza University of Rome, Piazzale Aldo Moro 2, Dipartimento di Fisica, Rome, Italy; ²Istituto Italiano di Tecnologia, Viale Regina Elena 291, Rome, Italy

Study On Isoniazid-Succinic Acid Cocrystal Using Terahertz Spectroscopy And DFT Calculations

Tu-P2-07

Jiale Zhang*¹; Mei Wan²; Jiyuan Fang²; Yaqi Jing²; Zhi Hong²; Yong Du²
¹China Jiliang University, Hangzhou, Hangzhou, China; ²China Jiliang University, Hangzhou, China

THz Spectroscopic Electron Paramagnetic Resonance Of The Fe³⁺ Defect In GaN

Tu-P2-08

Viktor Rindert*¹; Steffen Richter¹; Sean Knight¹; Vanya Darakchieva¹; Mathias Schubert²

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Terahertz Response Of An Interacting Confined Electron-Hole Pair

Tu-P2-09

Filip Klimovic*; Tomáš Ostatnický

Charles University, Faculty of Mathematics and Physics, Ke Karlovu 3, Prague 2, Czech Republic

Crystal Structure And Vibrational Analysis Of Pyrazinamide-Glutaric Acid Based On Terahertz Spectroscopy And DFT Calculation

Tu-P2-10

Yaqi Jing*; Mei Wan; Jiale Zhang; Jiyuan Fang; Zhi Hong; Yong Du

China Jiliang University, Hangzhou, Hangzhou, China

We Study The Atmospheric THz Transmission Properties Over A Wide Range Of Temperature And Humidity Conditions: From 6 To 45°C And Relative Humidity From 20 To 90%.

Tu-P2-11

Martin Koch*¹; Enrique Castro-Camus²; Fatima Taleb²; Juan Viana²

¹Philipps-Universität Marburg, Renthof 5, Marburg, Germany;

²Philipps-Universität Marburg, Renthof 5, Germany

Temperature Dependence Of The Dielectric Function Of Dehydrated Biological Samples In The THz Band

Tu-P2-12

Jan Helminiak*¹; Mariana Alfaro-Gomez²; Goretti Guadalupe Hernandez-Cardoso¹; Martin Koch¹; Enrique Castro-Camus¹

¹Philipps-Universität Marburg, Renthof 5, Marburg, Germany;

²Universidad Autonoma de Aguascalientes, Avenida Universidad 940, Ciudad Universitaria, Aguascalientes, Mexico

Signal Processing System For Solid Source Interferometer On EAST

Tu-P2-13

Jiamin Zhang*¹; Yuan Yao²; Tianyi Ruan³; Yao Zhang²; Haiqing Liu²; Yinxian Jie²; Bili Ling²

¹Anhui University, Institutes of Physical Science and Information Technology, Anhui University, Hefei, Anhui 230601 P.R., Institute of Plasma Physics, Chinese Academy of Sciences, Hefei, Anhui 230031 P.R. China, Hefei, China; ²Institute of Plasma Physics, Chinese Academy of Sciences, Hefei, Anhui 230031, P.R. China, Hefei, China; ³Anhui University, Hefei, Anhui 230031, P.R. China, Hefei, Anhui 230601 P.R. China, Hefei, China

Sensitive Terahertz Photoresponse Of A Three-Dimensional Dirac Semimetal

Tu-P2-14

Meng Chen*; Yingxin Wang; Ziran Zhao
Tsinghua University, Tsinghua University, Haidian District, Beijing, China

Effect Of The Degree Of Sulfation On The Hydration State Of Agarose Gels Investigated Using Terahertz Time Domain Spectroscopy (THz-TDS)

Tu-P2-15

Mark Justine Zapanta*; Annelies Postelmans; Wouter Saeys
KU Leuven, Kasteelpark Arenberg 30, Heverlee, Belgium

THz-near IR Hyper-Raman Surface Spectroscopy Of Silicon Wafer Surface

Tu-P2-16

Laetitia Dalstein*; Marc Tondusson; Jerome Degert; Eric Freysz
Univ. Bordeaux, 351 cours de la liberation, Talence, France

Influence Of Substrate Temperature On Preparation Of High-Tc Superconducting NbN Thin Film For SIS Tunnel Junction

Tu-P2-17

Fangting Lin*; Xingyue Zhang; Xiaoyong He
Shanghai Normal University, No. 100, Guilin Road, Shanghai, China

Terahertz Longitudinal Conductivity Of Epitaxial Mn₃Sn Thin Films

Tu-P2-18

Tinggui Yin*; Tianyu Zhang; Dong Gao; Fu Tang; Zechuan Bin; Jun Qin; Longjiang Deng; Shigao Zhao; Qingying Yi; Shenggang Liu; Lei Bi; Min Hu
University of Electronic Science and Technology of China, ChengDu, China, PiDu distribute XiYuan avenue No. 2006, Chengdu, China

Near-Perfect THz Absorber With Wide Range Tunability

Tu-P2-19

Omnia Samy¹; Taiichi Otsuji²; Amine El Moutaouakil¹

¹UAE University, College of Engineering, P.O. Box No. 15551, Al Ain, United Arab Emirates; ²Research Institute of Electrical Communication (RIEC), Tohoku University, 2-1-1 Katahira, Aoba-ku, Sendai, Japan

Terahertz Direct High-order Modulator Based On Coding Multi-subarray Metasurface

Tu-P2-20

Ao Zhu^{*1}; Lan Wang¹; Shixiong Liang²; Wei Wang³; Yaxin Zhang⁴; Ziqiang Yang⁵

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Frequency Spectrum Prediction Of Metamaterial Absorbers Based On Semi-Random Matrix Generation Method Combined With Deep Learning

Tu-P2-21

Jianian Wang*; Renbin Zhong; Benzhen Guo; Jianhui Fang; Qian Wu; Boli Xu; Qimeng Liu; Jiale Dong; Huimin Zhang
University of Electronic Science and Technology of China, No.2006, Xiyuan Avenue, West Hi-tech Zone, Chengdu, China

Ultrafast Non-equilibrium Carrier Dynamics In Vertical Graphene

Tu-P2-22

Peiyao Xie^{*1}; Tianyu Zhang²; Tao Zhao²; Wenjie Fu²; Shenggang Liu²; Min Hu²

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Novel Cherenkov Threshold In Nonlocal Graphene Hyperbolic Metamaterials

Tu-P2-23

Ran Wang*; Tianyu Zhang; Shenggang Liu; Min Hu
University of Electronic Science and Technology of China, No.2006, Xiyuan Ave, West Hi-Tech Zone, Chengdu, China

Infrared Attenuate Total Reflection Cell With A Functionalized Surface

Tu-P2-24

Ulrich Schade*¹; Ljiljana Puskar²; Ronny Golnak²; Sasha Veber³; Jörg Beckmann⁴

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Trace Detection Of Furazolidone Based On Terahertz Meta-surface Sensors

Tu-P2-25

Xujun Xu*¹; Tingting Yuan²; Jingwen Wu²; Jianjun Liu²; Yong Du²

¹China Jiliang University, Hangzhou, Hangzhou, China; ²China Jiliang University, Hangzhou, China

THz Optical Characterization Of Novel Chalcogenide Phase Change Materials

Tu-P2-26

Krishna Kumar*¹; Miroslavna Kovylyna²; Daniil Pashnev³; Surya R. Ayyagari³; Irmantas Kasalynas³; Borja Vidal²; Carlos Garcia-Meca¹

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Dual-band Tunable Absorber Of Terahertz Metamaterial Based On Gallium Arsenide

Tu-P2-27

Tingting Yuan*¹; Jingwen Wu²; Xujun Xu²; Jianjun Liu²; Yong Du²

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Terahertz Near-Field Imaging For Buried Structures

Tu-P2-28

Pingchuan Ma*¹; Daniel M. Mittleman
Brown University, Department of Engineering, 184 Hope St.,
Providence, United States

Microscopic Study On The Essence Of Enamel Demineralization By Terahertz Near-field Technique

Tu-P2-29

Feng Xiao*¹; Xiaoqiuyan Zhang²; Li Cheng³; Aopeng Zhang³; Jingjing Luo³; Fanglong Wu³; Hongmei Zhou³; Tao Hu³; Min Hu⁴

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³West China Hospital of Stomatology, Sichuan University, South Renmin Road, Wuhou District, Chengdu, China; ⁴University of Electronic Science and Technology of China (UESTC), 2006 Xiyuan Avenue, Gaoxin West District, Chengdu, China

Temperature Dependent Dynamics Of Charge Carriers In Tellurium-Hyperdoped Silicon

Tu-P2-30

KM Ashikur Rahman*¹; Mohd Saif Shaikh²; Qianao Yue¹; S. Senali Dissanayake¹; Shengqiang Zhou²; Meng-Ju Sher¹

¹Wesleyan University, 265 Church St, Middletown, United States; ²Helmholtz-Zentrum Dresden-Rossendorf, Institute of Ion Beam Physics and Materials Research, Bautzner Landstraße 400, Dresden, Germany

A Terahertz QPSK Phase Shifter Based On Insertion Micro-structure Chips

Tu-P2-31

Meng Hao*¹; Huajie Liang²; Ziqiang Yang³; Dan Liang⁴; Kexiang Hu⁴; Lin Zou⁴

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Terahertz-capillary Electrophoresis (THz-CE) For Direct Detection Of Separated Substances In Solutions

Tu-P2-32

Keiko Kitagishi*¹; Kazunori Serita²; Masayoshi Tonouchi²; Takayuki Kawai³

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²Osaka University, 2-6 Yamadaoka, Suita, Japan; ³Kyushu University, 744Motooka, Nishi-ku, Fukuoka, Japan

Development Of Data Labeling Techniques For Terahertz Image-based AI Cancer Diagnosis

Tu-P2-33

Myeong Suk Yim*¹; Yun Heung Kim²; Byeong Cheol Yoo²; Hyun Ju Choi²; Seung Jae Oh³; Youngbin Ji¹

¹Gimhae Biomedical Industry Promotion Agency, 80-59, Golden root-ro, Juchon-myeon, Gimhae-si, Korea, Republic of; ²Deepnoid.Inc, Seoul, Korea, Republic of; ³YUHS-KRIBB Medical Convergence Research Institute, Seoul, Korea, Republic of

90~99 GHz Image-Rejection Mixer In 0.14-um MHEMT Technology

Tu-P2-34

Woojin Chang*¹; Byoung-Gue Min²; Jong-Yul Park²; Dong Min Kang²

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Analysis Methods Comparison On A W-Band Corrugated Horn Antenna

Tu-P2-35

Abdallah Chahadih*¹; Cristian Franceschet²; Bruno Maffei³

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Design Of 340 GHz High-Gain Monopulse Antenna For Terahertz Capture And Tracking System

Tu-P2-36

Caixia Wang*¹; Zhongbo Zhu²; Xiaohe Cheng³; Sheng Li²; Wei Shao²; Xiaojun Li²

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Design Of THz Low-Loss Flexible Waveguide Structure

Tu-P2-37

Wei Shao*; Caixia Wang; Sheng Li; Zhongbo Zhu; Xiaojun Li
National Key Laboratory of Science and Technology on Space Microwave, CAST Xi'an, No.504, East Chang'an Street, Xi'an, Shaanxi,China, Xi'an, China

Design Of A 220 GHz Fourth-harmonic Mixer Based On Schottky Diode

Tu-P2-38

Xuechun Sun¹; Penglin Yang¹; Tianchi Zhou¹; Jiahao Yang¹; Hongji Zhou*¹; Jingrui Liang¹; Jia Zhang¹; Jun Zhou¹; Yaxin Zhang¹; Shixiong Liang²; Wei Wang²

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THz Topological Waveguides In 600 GHz Frequency Region.

Tu-P2-39

Abdu Subahan Mohammed*¹; Edouard Leboviev²; Gaëtan Lévêque³; Yan Pennec³; Marc Faucher³; Alberto Amo⁴; Pascal Szriftgiser⁴; Guillaume Ducournau³

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Reconfigurable Terahertz Holograms With Cascaded Diffractive Optical Elements

Tu-P2-40

Wei Jia; Dajun Lin; Berardi Sensale-Rodriguez*
University of Utah, 50 S Central Campus Dr., Salt Lake City, United States

Iterative Design Of Multiple-Input Single-Output Structures For THz Signal Multiplexing

Tu-P2-41

Mateusz Surma*¹; Mateusz Kaluza¹; Patrycja Czerwinska¹; Pawel Komorowski²; Przemyslaw Zagrajek²; Agnieszka Siemion¹

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3D Printed Diffractive Optical Elements For THz Spatial Multiplexing

Tu-P2-42

Mateusz Kaluza*¹; Mateusz Surma¹; Pawel Komorowski²;
Przemyslaw Zagrajek²; Agnieszka Siemion¹

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Warsaw, Poland

**Research On Multipath Artifacts For Typical Concave
Objects In Millimeter Wave Security Imaging**

Tu-P2-43

PeiSheng Liang*; Chi Zhang; Di Wu; Cheng Liu; Tao Song; Wei
Wang; DiWei Liu

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Qingshuihe Campus, University of Electronic Science and
Technology of China No.2006, Xiyuan Ave West, No.4, Section
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**Fast Spectrometer Based On Software-defined Radio For
Plasma Diagnostics**

Tu-P2-44

Di Pan*; Yucheng Cai; Chengming Qu; Xinhang Xu; Lifu
Zhang; Jingshuo Zhang; Jinlin Xie

Department of Plasma Physics and Fusion Engineering, USTC,
No. 96, Jinchai Road, Hefei City, Anhui Province, China

**A Novel Fresnel Elliptical Reflector For MMW And THz
Near Field Imaging**

Tu-P2-45

Nazli Kazemi*¹; petr Musilek²; Fazel Ghiasvand³

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Alberta, Donadeo Innovation Centre for Engineering - 9211 116
Street NW, Edmonton, Canada; ³University of Tabriz, Tabriz,
Iran, Iran

**Frequency-diverse Phase Holograms With Spatial Filtering
For Submillimeter-wave Imaging**

Tu-P2-46

Samu-Ville Pälli*; Aleksi Tamminen; Juha Ala-Laurinaho; Sazan
Rexhepi; Zachary Taylor

Aalto University, Maarintie 8, Espoo, Finland

**VMD-based Methods For Denoising Terahertz Signals
Obtained From Biological Tissue**

Tu-P2-47

Mohamed Boutaayamou*; Jacques G. Verly

University of Liège, Quartier Polytech 1, 10, Allée de la
découverte, Liège, Belgium

**Terahertz Spectra Study Of Quercetin And Quercitrin From
Ecdysantherarosea**

Tu-P2-48

Ting Zeng*¹; Sen Gong²; Jun Zhou²; Yagang Zhang²

¹Chengdu Medical College, No. 783, Xindu Avenue, Xindu District, Chengdu, Sichuan Province, Chengdu, China;

²University of Electronic Science and Technology of China, No.2006, Xiyuan Ave, West Hi-Tech Zone, China

OSAS-B: A 4.7-THz Heterodyne Spectrometer For Atomic Oxygen In The Mesosphere And Lower Thermosphere

Tu-P2-49

Martin Wienold*¹; Alexey Semenov¹; Heiko Richter¹; Enrico Dietz¹; Sven Frohmann¹; Patrick Dern¹; Xiang Lü²; Lutz Schrottke²; Bernd Klein³; Heinz-Wilhelm Hübers⁴

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An Improved Photonic Crystal Resonator For Sensing Applications At 100 GHz

Tu-P2-50

Yixiong Zhao*; Xuan Liu; Jan C. Balzer

University Duisburg-Essen, Bismarckstr. 81, Duisburg, Germany

Standardizing Terahertz Time-domain Experimental Data And Processing

Tu-P2-51

Jongmin Lee¹; Chi Ki Leung²; Mingrui Ma²; Axel Zeitler*²

¹University of Cambridge, Department of Chemical Engineering and Biotechnology, United Kingdom; ²University of Cambridge, Department of Chemical Engineering and Biotechnology, Philippa Fawcett Drive, Cambridge, United Kingdom

A 124.9 GHz Traveling Wave Switch Direct Modulator Using Different Switch Units

Tu-P2-52

Tianchi Zhou*

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THz Communication System At 1.8 THz By Photonics-Based Transmitter And Electronics-based Receiver

Tu-P2-53

Isao Morohashi*¹; Yoshihisa Irimajini¹; Akira Kawakami¹;
Tadashi Kishimoto¹; Pham Tien Dat¹; Atsushi Kanno²; Norihiko
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²Nagoya Institute of Technology, 4-2-1 Nukui-Kitamachi,
Koganei, Tokyo, Japan

**A Minimalist Terahertz Direct Modulator-based Real-time
High-speed Communication System**

Tu-P2-54

Yi Hao*¹; Ding Kesen¹; You Jinlong¹; Wang Wei²; Liang
Shixiong²; Sen Gong¹; Zhang Yaxin¹

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Integratable 3D Printed Terahertz Horn Coupler

Tu-P2-55

Qigejian Wang*¹; Haisu Li²; Syed Daniyal Ali Shah³; Boris
Kuhlmeiy⁴; Shaghik Atakaramians⁵

¹The University of New South Wales, School of Electrical
Engineering and Telecommunications (G17), UNSW Sydney,
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Australia; ⁴School of Physics, The University of Sydney, School
of Physics, The University of Sydney, Camperdown, Australia;
⁵The University of New South Wales, School of EET (G17),
UNSW Sydney, Kensington, Australia

**A Concept For The Efficient Integration Of Reconfigurable
Intelligent Surfaces Into A Ray Tracing Framework**

Tu-P2-56

Christoph Herold*¹; Thomas Kürner
Technische Universität Braunschweig, Schleinitzstraße 22,
Braunschweig, Germany

**Terahertz Sensor Based On Topological Photonic
Waveguide**

Tu-P2-57

Xuejiao Xu*¹; Zhijie Mei¹; Xudong Liu¹; Yiwen Sun
Shenzhen University, No.1066, Xueyuan Avenue, Nanshan
District, Shenzhen, China

**Nondestructive Inspection Of Bridge Tendon Using A THz
A-scanner**

Tu-P2-58

Dae-Su Yee*; Ji Sang Yahng; Seung Hyun Cho
Korea Research Institute of Standards and Science, 267
Gajeong-ro, Yuseong-gu, Daejeon, Korea, Republic of

**Real-time On-line Thickness Measurement Of
Supercapacitor Electrode Coating Using Terahertz
Technology**

Tu-P2-59

Zhengxian Gao*¹; Chun Wang²; Xu Zheng²; Chen Li²; Xiaoqing
Jia³; Xuecou Tu³; Lin Kang³; Jian Chen³; Peiheng Wu³

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Technology and Innovation, Chentian Industrial Zone, Baotian
1st Road, Shenzhen, China; ³Nanjing University, Xianlin Ave
163, Nanjing, China

**Coatings Thickness Detection On Anisotropic Materials
With Sparse Decomposition Method**

Tu-P2-60

Yulei Huang¹; Weixing Li¹; Lin Ke²; Meiqiang Zhu¹; Nan Zhang*³

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Road, Xuzhou, China; ²Agency for Science, Technology
and Research, Singapore, 2 Fusionopolis Way, Singapore,
Singapore; ³Suzhou TeraScan Technologies Co Ltd, Creative
Industrial Park 22-404, Suzhou Industrial Park, Suzhou, China

**Terahertz Nondestructive Characterization Of Tertiary Mill
Scale On Commercial Hot-rolled Steel Strips**

Tu-P2-61

Min Zhai¹; Alexandre Locquet¹; Cyrielle Roquelet²; Jean-Luc
Borean²; Philip Meilland²; David Citrin*¹

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²ArcelorMittal Maizières Research SA, Voie Romaine, BP
30320, Maizières-lès-Metz, France

**Microprobe-based Terahertz Near-field Imaging Of Highly
Scattering Pharmaceutical Coatings On Small Tablets**

Tu-P2-62

Michael Nagel*¹; Matthias Wolfgang²; Martin Spoerk²;
Johannes G. Khinast³; Simon Sawallich¹; Alexander Michalski¹

¹Protomics GmbH, Otto-Blumenthal-Str. 25, Aachen, Germany;
²Research Center Pharmaceutical Engineering GmbH,
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Inffeldgasse 13, Graz, Austria

**Sparse Synthetic Antenna Array For 3D Imaging And
Spectroscopy In The Terahertz Range**

Tu-P2-63

Manal Ait Assou*; Georges Humbert; Aurelian Crunteanu; Cyril
Decroze
XLIM, 123 Albert Thomas Avenue, Limoges, France

Assessment Of Anti-corrosion Coatings Adhesion Using Terahertz Time Domain Reflection Spectroscopy.

Tu-P2-64

Vincent Wallace*

University of Western Australia, 35 Stirling Highway, Perth, Australia

Defects Detection In Indian Timber Wood Using THz Imaging Technique

Tu-P2-65

Mercy Latha A*

Council Of Scientific And Industrial Research-Central Electronics Engineering Research Institute (CS, Near to BITS, Pilani Campus, Pilani, Jhunjhunu, India



Wednesday 20 September

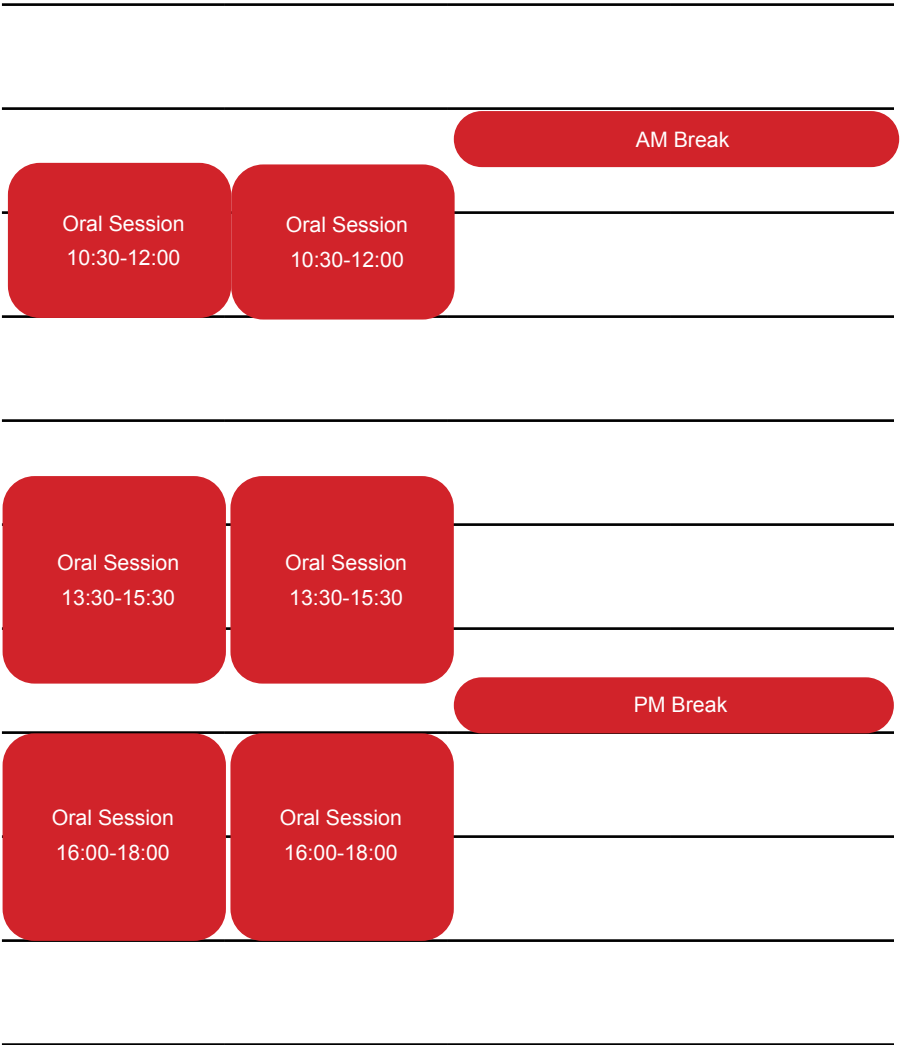
	Symposia Theatre	Cartier I	Cartier II
08:00-09:00	Plenary 1 8:30-9:15		
09:00-10:00	Plenary 2 9:15-10:00		
10:00-11:00			
11:00-12:00	Oral Session 10:30-12:00	Oral Session 10:30-12:00	Oral Session 10:30-12:00
12:00-13:00	YS Awards 12:00-13:30		
13:00-14:00			
14:00-15:00	Oral Session 13:30-15:30	Oral Session 13:30-15:30	Oral Session 13:30-15:30
15:00-16:00			
16:00-17:00	Oral Session 16:00-18:00	Oral Session 16:00-18:00	Oral Session 16:00-18:00
17:00-18:00			
18:00-19:00			

International
I

International
II

Third Floor
Foyer

Fourth Floor
Hall



Wednesday 20 September

08:30-09:15	Plenary Session 5	Symposia Theatre
	Chairperson(s): François Blanchard	
08:30	High Harmonic Spectroscopy For Many-body Dynamics In Solids Koichiro Tanaka* ¹ ; Kento Uchida ² ¹ Kyoto University, Oiwake, Kitashirakawa, Sakyo, Kyoto-shi, Japan; ² Kyoto University, Oiwake, Kitashirakawa, Sakyo, Kyoto, Japan	We-PL-1-1
09:15-10:30	Plenary Session 6	Symposia Theatre
	Chairperson(s): François Blanchard	
09:15	Terahertz Pump/X-ray Probe Experiments At LCLS Matthias Hoffmann* SLAC National Accelerator Laboratory, 2575 Sand Hill Road, Menlo Park, United States	We-PL-2-1
10:30-12:00	Laser Sources & Detectors V	Symposia Theatre
	Chairperson(s): James Lloyd-Hughes	
10:30	Broadband GaP Contact Grating Terahertz Source Pumped At 3.9 μm ABHISHEK GUPTA* ¹ ; ROKAS JUTAS ² ; CLAUDIA GOLLNER ² ; AUDRIUS PUGZLYS ² ; ANDRIUS BALTUSKA ² ; JOZSEF FULOP ¹ ¹ ELI-ALPS, Wolfgang Sandner utca 3, SZEGED, Hungary; ² Photonics Institute, TU Wien, Vienna, Austria	We-AM-1-1
11:00	A New Screening Methodology For Terahertz Generation Crystals (Enoch) Sin-Hang Ho* ¹ ; gabriel Valdivia Berroeta ² ; Zachary Zaccardi ³ ; Sydney Pettit ³ ; Bruce Palmer ³ ; Matthew Lutz ³ ; Claire Rader ³ ; Brittan Hunter ³ ; Natalie Green ³ ; Connor Barlow ³ ; Coriantumr Wayment ³ ; Daisy Harmon ³ ; Paige Petersen ³ ; Stacey Smith ³ ; David Michaelis ³ ; Jeremy Johnson ³ ¹ Brigham Young University, Brigham Young University, Provo, United States; ² Boehringer Ingelheim Inc., Connecticut, USA., United States; ³ Brigham Young University, C100 BNSN, Brigham Young University, Provo, United States	We-AM-1-2
11:15	Intense Broadband THz Generation In The Organic Crystal BNA By Compression Of Ytterbium Laser Pulses Based On A Gas-filled Hollow-core Fiber	We-AM-1-3

Young-Gyun Jeong*¹; Luca Zanotto¹; Dong-Jae Seo²; Yujin Nam²; Xin Jin¹; Jisoo Kyoung²; Bruno E. Schmidt³; Mostafa Shalaby⁴; Luca Razzari¹

¹INRS-EMT, 1650 Boul. Lionel-Boulet, Varennes, Canada;

²Dankook University, 119 Dandae-ro, Dongnam-gu,

Cheonan, Korea, Republic of; ³few-cycle Inc., 1650 Boul.

Lionel-Boulet, Varennes, Canada; ⁴Swiss Terahertz GmbH, Technoparkstrasse 1, Zürich, Switzerland

11:30 Characterization Of Organic Nonlinear Optical Crystals For THz Applications We-AM-1-4

Hirohisa Uchida*¹; Chisa Koyama²; Kohei Hayase³; Kosuke Murate³; Kodo Kawase³; Kei Takeya⁴

¹ARKRAY Inc., Yosuien-nai, 59 Gansuin-cho, Kamigyo-ku,

Japan; ²ARKRAY Inc., Yosuien-nai, 59 Gansuin-cho, Kamigyo-

ku, Japan; ³Nagoya University, Chikusa-ku, Nagoya, Japan;

⁴Institute for Molecular Science, Okazaki, Japan

11:45 Improved Terahertz Generation Through Heterogenous Multi-Layered Organic Crystal Structures We-AM-1-5

Aldair Alejandro*; Daisy Ludlow; Paige Petersen; Kayla

Holland; Fatoumata N'diaye; Tanner Manwaring; David

Michaelis; Jeremy Johnson

Brigham Young University, BNSN C100, Provo, United States

10:30-12:00

Spectroscopy III

Cartier I

Chairperson(s): Shuying Chen

10:30 Terahertz Multispectral Sub-Wavelength Tomography Using A Solid-Immersion Lens We-AM-2-1

Da-Hye Choi*; Mugeon Kim; Dong Woo Park; Eui Su Lee; IL-Min Lee

Electronics and Telecommunications Research Institute, 218

Gajeong-ro, Yuseong-gu, Daejeon, Korea, Daejeon, Korea,

Republic of

10:45 Detecting Crystallization Of Norfloxacin In Paper Tablets After Wet Granulation By Terahertz Time-domain Spectroscopy We-AM-2-2

Lara Heidrich*¹; Ayat Abdelkader²; Jan Ornik¹; Enrique Castro-Camus¹; Cornelia M. Keck²; Martin Koch¹

¹Philipps-Universität Marburg, Renthof 5, Marburg, Germany;

²Philipps-Universität Marburg, Robert-Koch-Straße 4, Marburg, Germany

11:00 Towards Single-pulse Terahertz Spectroscopy At MHz Rates We-AM-2-3

Nicolas Couture*¹; Wei Cui²; Markus Lipp³; Rachel Ostic²; Défi Jubgang²; Aswin Vishnuradhan²; Eeswar Yalavarthi²; Angela Gamouras⁴; Nicolas Joly⁵; Jean-Michel Ménard²

¹University of Ottawa, 25 Templeton St., Ottawa, Canada;

²University of Ottawa, 25 Templeton St., Canada; ³Max Planck Institute for the Science of Light, Staudtstraße 2, Germany;

⁴National Research Council Canada, 1200 Montreal Rd., Canada; ⁵Friedrich-Alexander University, Schloßplatz 4, Germany

11:15

The Effect Of Terahertz Scattering On Loss Coefficient In Granular Compacts

We-AM-2-4

Keir N Murphy*¹; Daniel Markl²; Alison Nordon³; Mira Naftaly⁴

¹University of Strathclyde, 99 George St, Glasgow, United Kingdom;

²University of Strathclyde, 99 George St, Glasgow, United Kingdom;

³University of Strathclyde, 99 George St., Glasgow, United Kingdom;

⁴National Physical Laboratory, Hampton Rd, Teddington, United Kingdom

11:30

Characterization Of Morphology-Dependent Transport In Lead-Halide Perovskite Printed Films Using Time-Resolved Terahertz Spectroscopy

We-AM-2-5

Nils Refvik*¹; Lennart Reb²; Christoph Lindenmeier²; Charles Jensen¹;

Howe Simpson¹; Damini Vrushabendrakumar³;

Karthik Shankar³; Peter Müller-Buschbaum²; Frank Hegmann¹

¹Department of Physics, University of Alberta, 4-181 CCIS, Edmonton, Canada;

²TUM School of Natural Sciences, Department of Physics, Chair for Functional Materials, James-Franck-Str. 1 85748, Garching, Germany;

³Department of Electrical and Computer Engineering, University of Alberta, Donadeo Innovation Centre for Engineering, Edmonton, Canada

11:45

Enhanced Liquid Sensing With 3D Printed Terahertz Photonic Crystals

We-AM-2-6

Marcel Grzeslo; Jonas Tebart; Rihab Hamad; Andreas Stöhr;

Andreas Klein*

University Duisburg-Essen, Lotharstr. 55, Duisburg, Germany

10:30-12:00

Superconductivity & Condensed Matter

Cartier II

Chairperson(s): Martin Dressel

10:30

Higgs Coherence Spectroscopy Of A Parametrically Driven Superconductor

We-AM-3-1

JIGANG WANG*

Ames National Laboratory, Department of Physics and
Astronomy, AMES, United States

11:00 **Tunable THz Beam Splitter Based On Superconducting NbN** We-AM-3-2

Yan Teng; Yuhua Xiao; Shaochen Li; Chun Li; Ling Jiang*
Nanjing Forestry university, Nanjing Forestry University, China

11:15 **THz And Mid-Infrared Linear Dichroism In The High Tc Superconductor La_{2-x}Sr_xCuO₄** We-AM-3-3

Deepu George¹; Andrea Markelz¹; John Cerne*¹; Xi He²; Ivan Bozovic²; Timothy LaFave Jr.¹

¹University at Buffalo, State University of New York, 239 Fronczak Hall, Department of Physics, University at Buffalo, SUNY, Buffalo, United States; ²Brookhaven National Laboratory, Condensed Matter Physics & Materials Science Dept., Bldg. 480 P.O. Box 5000, Upton, United States

11:30 **Status Of The Spurious Evidence For Photoinduced Superconductivity** We-AM-3-4

Steve Dodge*; Leya Lopez; Derek Sahota
Simon Fraser University, 8888 University Drive, Burnaby, Canada

11:45 **Terahertz Excitation Of Chiral Phonons Probed Via The Faraday Effect** We-AM-3-5

Jeremy Johnson*¹; Megan Nielson²; Sin-Hang (Enoch) Ho²; Aldair Alejandro²; Matthew Lutz²; Clayton Moss²

¹Brigham Young University, C312 BNSN BYU, Provo, United States; ²Brigham Young University, C371 BNSN BYU, Provo, United States

10:30-12:00

Antenna Imaging Techniques II

International
I

Chairperson(s): Zachary Taylor

10:30 **Terahertz Single Pixel Imaging Via Spatial Polarization Modulating Masks** We-AM-4-1

Seth Lowry*¹; Matt Reid²; Christopher Collier¹

¹University of British Columbia, Okanagan campus, 1137 Alumni Ave, Kelowna, Canada; ²University of Northern British Columbia, 3333 University Way, Prince George, Canada

10:45 **Multi-color Terahertz Spatial Light Modulator For Single-pixel Imaging** We-AM-4-2

Chenyu Wang*; Yu Liao; Xudong Liu; Yiwen Sun
Department of Biomedical Engineering, School of Medicine,
Shenzhen University, No.1066 Xueyuan Avenue, Nanshan
District, Shenzhen, China

11:00

Antenna For Free Space-coupled Third-order Sub-harmonic Coherent Detector Array In The 300 GHz Band

We-AM-4-3

Meng Zhang*¹; Zhenming Tian²; Benedikt Sievert²; Christian Preuss²; Nils Weimann²; Andreas Rennings²; Daniel Erni²
¹University of Duisburg-Essen, Bismarckstrasse 81, Duisburg, Germany; ²University of Duisburg-Essen, Bismarckstrasse 81, Germany

11:15

Improved Phase Retrieval Techniques For Millimeter Wave Beams In Noisy Environments

We-AM-4-4

Alex Laut*; Kyle Thackston; Lavanya Periasamy; James Anderson
General Atomics, PO Box 85608, San Diego, United States

11:30

Analysis Of Surface Roughness With 3D SAR Imaging At 1.5 THz

We-AM-4-5

Aman Batra*¹; Yevhen Ivanenko²; Viet T. Vu²; Michael Wiemeler¹; Mats I. Pettersson²; Diana Goehringer³; Thomas Kaiser¹
¹Universität Duisburg-Essen, Bismarckstr. 81, Duisburg, Germany; ²Blekinge Institute of Technology, Valhallavägen 1, Karlskrona, Sweden; ³Technische Universität Dresden, Nöthnitzer Str. 46, Dresden, Germany

10:30-12:00

Chemistry, Biology & Medicine III

International II

Chairperson(s): Angela Vella

10:30

Towards The Detection Of Heavy Metals In Plants Using THz

We-AM-5-1

Lisa Kreuzer*¹; Fabian Brix²; Petra Düchting²; Sebastian Gassel¹; Carsten Brenner¹; Milan Deumer³; Robert Kohlhaas³; Ute Krämer²; Martin R. Hofmann¹
¹Ruhr University Bochum, Photonics and Terahertz Technology, Universitaetsstraße 150, Bochum, Germany; ²Ruhr University Bochum, Molecular Genetics and Physiology of Plants, Universitätsstraße 150, Bochum, Germany; ³Fraunhofer Institute for Telecommunications, Heinrich Hertz Institute, Einsteinufer 37, Berlin, Germany

11:00 **Comprehensive Data Analysis And Machine Learning Models For Automatic Identification Of Chemical Compounds Based On Terahertz Spectra** **We-AM-5-2**

Zi Xi Josie Lim¹; Nan Zhang*¹; Wei Ji Phua¹; Lijie Yu²; Jia Yi Kwang²; Angeline Tang²; Angeline Tiong Whei Yap²; Yee-Fun Lim³; Lin Ke⁴

¹Anor Technologies Pte Ltd, 75 Ayer Rajah Crescent, #01-08, Singapore, Singapore; ²Health Sciences Authority, Singapore, 11 Outram Road, Singapore, Singapore; ³Agency for Science, Technology and Research, Singapore, 2 Fusionopolis Way, Singapore, Singapore; ⁴Agency for Science, Technology and Research, Singapore, 2 Fusionopolis Way, Singapore, Singapore

11:15 **In-line Non-destructive Multi-wavelength Medicine Quality Inspection** **We-AM-5-3**

Yuya Kinoshita*; Sayaka Hirokawa; Kou Li; Daiki Sakai; Yuto Matsuzaki; Yuto Aoshima; Raito Ota; Daiki Shikichi; Yukio Kawano

Chuo university, Japan, #1609, 1-13-27 Kasuga, Bunkyo-ku, Japan

11:30 **Machine Learning Classification Of Breast And Oral Fresh Cancer Tissue Based On Terahertz Imaging** **We-AM-5-4**

Jyotirmayee Dash*¹; Arun Jana²; Lenin B¹; Shyamsundar Mandyam¹; Bala Pesala¹

¹TeraLumen Solutions Pvt. Ltd., Siruseri, Chennai, India; ²TeraLumen Solutions Pvt. Ltd., Siruseri., Chennai, India

13:30-15:30

Laser Sources & Detectors VI

**Symposia
Theatre**

Chairperson(s): Matthias Hoffmann

13:30 **Terahertz Hot-Electron Bolometric Detectors Based On Metal/Black-AsP/Graphene FETs: Proposal And Evaluation** **We-PM1-1-1**

Taiichi Otsuji*¹; Victor Ryzhii¹; Chao Tang²; Maxim Ryzhii³; Vladimir Mitin⁴; Michael Shur⁵

¹RIEC, Tohoku University, 2-1-1 Katahira, Aoba-ku, Sendai, Japan; ²FRIS, Tohoku University, 2-1-1 Katahira, Aoba-ku, Sendai, Japan; ³University of Aizu, Ikkicho, Aizuwakamatsu, Japan; ⁴University at Buffalo, SUNY, 12 Capen Hall, Buffalo, United States; ⁵Rensselaer Polytechnic Institute, 110 8th Street, Troy, United States

13:45	<p>Fast THz Detection By An Asymmetric-Dual-Grating-Gate Graphene-Channel FET Based On Plasmonic And Photothermoelectric Effects</p> <p>Koichi Tamura*¹; Shinnosuke Uchigasaki¹; Hironobu Seki¹; Chao Tang¹; Daichi Ogiura¹; Kento Suwa¹; Hirokazu Fukidome¹; Yuma Takida²; Hiroaki Minamide²; Tetsuya Suemitsu³; Taiichi Otsuji¹; Akira Satou¹</p> <p>¹RIEC, Tohoku university, 2-1-1 Katahira, Aoba-ku, Sendai, Japan; ²RIKEN Center for Advanced Photonics, RIKEN, 519-1399 Aramaki-za-aoba, Aoba-ku, Sendai, Japan; ³New Industry Creation Hatchery Center, Tohoku University, 6-6-10 Aramaki-za-aoba, Aoba-ku, Sendai, Japan</p>	We-PM1-1-2
14:00	<p>Influence Of Antenna Parameters On Terahertz Photoelectric Tunable-step Detector Operation</p> <p>Ran Chen*; Harvey Beere; David Ritchie; Wladislaw Michailow</p> <p>University of Cambridge, Cavendish Laboratory, University of Cambridge, J. J. Thomson Avenue, Cambridge, United Kingdom</p>	We-PM1-1-3
14:15	<p>Integrated Ultra-Broadband THz Photodiode With Silicon Rod Waveguide Interface</p> <p>Shuya Iwamatsu*¹; Muhsin Ali²; José Luis Fernandez-Estevez¹; Marcel Grzeslo¹; Sumer Makhlouf³; Guillermo Carpintero⁴; Andreas Stöhr¹</p> <p>¹University of Duisburg-Essen, Lotharstr. 55, Duisburg, Germany; ²LeapWave Technologies, Avenida Gregorio Peces-Barba 1, Leganés, Spain; ³Microwave Photonics GmbH, Essener Str. 5, Oberhausen, Germany; ⁴Universidad Carlos III de Madrid, Avenida de la Universidad 30, Leganés, Spain</p>	We-PM1-1-4
14:30	<p>Ultra-Compact And Room-Temperature Focal Plane Assemblies For Lunar Advanced Filter Observing Radiometer For Geologic Exploration</p> <p>Giacomo Mariani*; Matt Kenyon; Byeongho Eom</p> <p>NASA Jet Propulsion Laboratory, 4800 Oak Grove Dr, Pasadena, United States</p>	We-PM1-1-5
14:45	<p>BABAR-ERI: Black Array Of Broadband Absolute Radiometers -- Earth Radiation Imager</p> <p>Christopher Yung*¹; Cameron Straatsma²; Nathan Tomlin¹; David Harber²; Odele Coddington²; John Lehman¹; Michelle Stephens¹</p> <p>¹National Institute of Standards and Technology, 325 Broadway, Boulder, United States; ²Laboratory for Atmospheric and Space Physics, 1234 Innovation Dr, Boulder, United States</p>	We-PM1-1-6

15:00 **On Cold Operation Of An SiGe HBT As A Broadband Low-NEP THz Direct Detector** We-PM1-1-7

Janusz Grzyb*¹; Marcel Andree¹; Bernd Heinemann²; Holger Ruecker²; Ullrich Pfeiffer¹

¹University of Wuppertal, Rainer-Gruenter-Str. 21, Wuppertal, Germany; ²IHP-Leibniz-Institut fue Innovative Mikroelektronik, Im Technologiepark 25, Frankfurt (Oder), Germany

15:15 **A Broadband Dual-Polarized Low-NEP SiGe HBT Terahertz Direct Detector For Polarization-Sensitive Imaging** We-PM1-1-8

Marcel Andree*¹; Vishal Jagtap²; Janusz Grzyb²; Ullrich Pfeiffer²

¹University of Wuppertal, Rainer-Gruenter Str. 21, Adersstraße 48, Wuppertal, Germany; ²University of Wuppertal, Rainer-Gruenter Str. 21, Germany

13:30-15:30

Nonlinear THz Phenomena

Cartier I

Chairperson(s): Guoqian Liao

13:30 **Nonlinear THz Control Of Lead Halide Perovskite Lattices In 3, 2, And 1 Dimensions** We-PM1-2-1

Sebastian F. Maehrlein*¹; Joanna M. Urban¹; Maximilian Frenzel¹; Marie Cherasse¹; Gaell Trippé-Allard²; Abdelaziz Jouaiti³; Sylvie Ferlay³; Emmanuelle Deleporte²

¹Fritz Haber Institute of the Max Planck Society, Faradayweg 4-6, Berlin, Germany; ²Université Paris-Saclay, ENS Paris-Saclay, 4 Av. des Sciences, Gif-sur-Yvette, France; ³Université de Strasbourg-CNRS, 4 Rue Blaise Pascal, Strasbourg, France

14:00 **Interplay Between Intervalley Scattering And Impact Ionization Induced By Intense Terahertz Pulse In InSb Thin Films** We-PM1-2-2

Carlos Miguel Garcia Rosas*¹; Xavier Ropagnol¹; Leo Guiramand²; Francois Blanchard²; Tsuneyuki Ozaki¹

¹Institut National de la Recherche Scientifique, 1650 boulevard Lionel Boulet, Varennes, Canada; ²École de technologie supérieure, 1100 rue Notre-Dame Ouest, Montreal, Canada

14:15 **High-harmonic Generation In P-doped Si By Band Non-parabolicity, Energy-dependent Relaxation And Dopant Photo-ionization** We-PM1-2-3

Fanqi Meng^{*1}; Frederik Walla²; Sergey Kovalev³; Jan-Christoph Deinert³; Igor Ilyakov³; Min Chen³; Alexey Ponomaryov³; Sergey G. Pavlov⁴; Heinz-Wilhelm Hübers⁴; Nikolay V. Abrosimov⁵; Christoph Jungemann⁶; Hartmut.G Roskos²; Mark D. Thomson²

¹Goethe University Frankfurt, Max von Laue street 1, Frankfurt am Main, Germany; ²Goethe University Frankfurt, Max von Laue street 1, Frankfurt, Germany; ³Helmholtz-Zentrum Dresden-Rossendorf, Bautzner Landstr. 400, Dresden, Germany; ⁴German Aerospace Center (DLR), Rutherfordstr. 2, Berlin, Germany; ⁵Leibniz-Institut für Kristallzüchtung (IKZ), Max-Born Str. 2, Berlin, Germany; ⁶RWTH Aachen, Kackertstr 15, Aachen, Germany

14:30 Ultrafast Carrier Dynamics In Germanium Driven By Strong THz Field We-PM1-2-4

ABHISHEK GUPTA^{*1}; VINEET GUPTA²; JANOS BOHUS²; KALYANI CHORDIYA²; MOUSUMI KAHALY²; ASHUTOSH SHARMA²; JOZSEF FULOP²

¹ELI-ALPS, Wolfgang Sandner utca 3, SZEGED, Hungary; ²ELI-ALPS, WOLFGANG SANDNER UTCA 3, SZEGED, Hungary

14:45 High-field Terahertz Carrier Dynamics In Ge And GaAs We-PM1-2-5

Matthew Lutz^{*}; Clayton Moss; Josue Dominguez; Jeremy Johnson
Brigham Young University, Ezra Taft Benson Building, Campus Dr, Provo, United States

15:00 Martensite Transformation Triggered With Intense THz Pulses We-PM1-2-6

Masaya Nagai^{*1}; Yuhei Higashitani¹; Masaaki Ashida¹; Koichi Kusakabe²; Hirohiko Niioka³; Azusa Hattori⁴; Hidekazu Tanaka⁴; Goro Isoyama⁵; Norimasa Ozaki⁶

¹Osaka University, Machikaneyama 1-3, Toyonaka, Japan; ²University of Hyogo, 3-2-1 Kouto, Kamigori, Japan; ³Osaka University, 2-8, Yamadaoka, Suita, Japan; ⁴Osaka, 8-1 Mihogaoka, Ibaraki, Japan; ⁵Osaka University, 8-1 Mihogaoka, Ibaraki, Japan; ⁶Osaka University, 2-1 Yamadaoka, Ibaraki, Japan

13:30-15:30

Metasurfaces & Plasmonics I

Cartier II

Chairperson(s): Jean-Michel Ménéard

13:30 Vectorial Currents And Broadband Terahertz Vector Beams With Optoelectronic Metasurfaces We-PM1-3-1

Jacob Pettine*¹; Lauren Gingras²; Peter Adel²; Chun-Chieh Chang³; Rohit Prasankumar⁴; Ronald Holzwarth⁵; Antoinette Taylor³; Shizeng Lin³; Prashant Padmanabhan³; Hou-Tong Chen³

¹Los Alamos National Laboratory, PO Box 1663, Los Alamos, United States; ²Menlo Systems, Bunsenstrasse 5, Germany;

³Los Alamos National Laboratory, PO Box 1663, United States; ⁴Intellectual Ventures, Bellevue, United States; ⁵Menlo Systems, Martinsried, Germany

14:00 **Continuous 3D Multimodal Buckling Modulated Chiral Responses In Reconfigurable Terahertz Metamaterials** **We-PM1-3-2**

Donghai Han*; Liuyang Zhang

Xi'an Jiaotong University, No. 28, West Xianning Road, Xi'an, China

14:15 **Sensitivity Enhancement Of THz Meta-Material By Decoupling Its Resonance From Substrate's Fabry-Pérot Oscillations** **We-PM1-3-3**

Heena Khand*¹; Rudrarup Sengupta²; Gabby Sarusi²

¹Ben Gurion University of the Negev, Marcus Family Campus Ben-Gurion University of the Negev P.O.B. 653, Beer-Sheva, Israel; ²Ben-Gurion University of the Negev, Marcus Family Campus P.O.B 653, Israel

14:30 **1-bit Terahertz Time-space-coding Metasurfaces With Refined Wavefront Modulation For Harmonic Beam Scanning Enhancement** **We-PM1-3-4**

Munan Yang*¹; Feng Lan¹; Yaxin Zhang¹; Dongfang Shen²; Tianyang Song³; Luyang Wang³; Ziqiang Yang¹

¹Yangtze Delta Region Institute (Huzhou), University of Electronic Science and Technology of China, H, 404B, Research Institute Building, University of Electronic Science and Technology of China (Qingshu, Chengdu, China); ²School of Electronic Science and Engineering, University of Electronic Science and Technology of Chi, 404B, Research Institute Building, University of E, Chengdu, China; ³School of Electronic Science and Engineering, University of Electronic Science and Technology of Chi, 404B, Research Institute Building, University of Electronic Science and Technology of China (Qingshu, Chengdu, China)

14:45 **High-efficiency And Wideband Five-order Geometric-Phase Coding Metasurfaces For Sub-terahertz RCS Reduction** **We-PM1-3-5**

Haobin Sun^{*1}; Feng Lan²; Munan Yang³; Tianyang Song³;
Luyang Wang⁴; Yaxin Zhang⁴; Ziqiang Yang⁴

¹School of Electronic Science and Engineering, University
of Electronic Science and Technology, Cheng, NO.2006,
Xiyuan Ave, West Hi-Tech Zone, Chengdu, Chengdu, China;

²School of Electronic Science and Engineering, University
of Electronic Science and Technology, Cheng, NO. 2006,
Xiyuan Ave, West Hi-Tech Zone, Chengdu, China; ³School of
Electronic Science and Engineering, University of Electronic
Science and Technology, Cheng, NO. 2006, Xiyuan Ave, West
Hi-Tech Zone, Chengdu, The Yangtze Delta Region Institute
(Huzhou), University of Electronic Science and Technology
of Chin, Chengdu, China; ⁴School of Electronic Science and
Engineering, University of Electronic Science and Technology,
Cheng, NO. 2006, Xiyuan Ave, West Hi-Tech Zone, Chengdu,
Chengdu, China

15:00

**Coherent Thermal Emission From Circular N-GaN Surface
Relief Gratings**

We-PM1-3-6

Vytautas Janonis^{*1}; Evaldas Valasevicius¹; Pawel Prystawko²;
Irmantas Kasalynas¹

¹Center for Physical Sciences and Technology, Saulėtekio ave.
3., Vilnius, Lithuania; ²Institute of High Pressure Physics PAS,
Ul Sokolowska 29 37, Warsaw, Poland

15:15

**Absorptive Infrared Metasurface On 100 Nm-Thick
Dielectric Membrane**

We-PM1-3-7

Harumi Asada^{*}; Takehito Suzuki
Tokyo University of Agriculture and Technology, #405 Building
5, 2-24-16 Naka-cho, Koganei-shi, Tokyo, Japan

13:30-15:30

THz Microscopy

International
I

Chairperson(s): Masayoshi Tonouchi

13:30

**Continuous Carrier-Envelope Phase Control For Terahertz-
Driven Scanning Probe Microscopy Of 2D Semiconductors**

We-PM1-4-1

Bruno Schuler^{*1}; Jonas Allerbeck¹; Joel Kuttruff²; Laric
Bobzien¹; Lysander Huberich¹; Maxim Tsarev²

¹Empa - Swiss Federal Laboratories for Materials Science and
Technology, Ueberlandstrasse 129, Duebendorf, Switzerland;

²University of Konstanz, Universitaetsstrasse 10, Konstanz,
Germany

13:45

**Surface Oxidisation Layer Identification Of Indium Nitride
Nanoparticles Via S-SNOM**

We-PM1-4-2

Xinyun Liu*¹; Rajiv Prinja²; Tom Vincent³; Baset Gholizadeh³; Daniel Johnson³; Nazir Kherani⁴; Jessica Boland³

¹University of Manchester, 2.323 Photon Science Institute, University of Manchester, Manchester, United Kingdom;

²Department of Electrical & Computer Engineering, University of Toronto, Department of Electrical & Computer Engineering,, Canada;

³University of Manchester, Photon Science Institute, University of Manchester, Manchester, United Kingdom;

⁴Department of Electrical & Computer Engineering, University of Toronto, Department of Electrical & Computer Engineering, U, Canada

14:00

Scattering-type Near-Field Optical Microscopy Characterization Of Topological Insulator Bi₂Te₃ Nanowires

We-PM1-4-3

Daniel Johnson*¹; Tom Vincent¹; Xinyun Liu¹; Baset Gholizadeh¹; P. Schöenherr²; Thorsten Hesjedal²; Olga Kazakova³; Nathaniel Huang³; Jessica Boland¹

¹University of Manchester, Photon Science Institute, Alan Turing Building, Manchester, United Kingdom; ²University of Oxford, Clarendon Laboratory, Parks Road, Oxford, United Kingdom; ³National Physical Laboratory, Hampton Road, Teddington, United Kingdom

14:15

Nanoscale Charge Motion In GaAs Nanobars Studied By Terahertz Spectroscopy

We-PM1-4-4

Hynek Nemeč*¹; Vova Pushkarev²; Tomas Ostatnicky³; Petr Kuzel²

¹Institute of Physics of the Czech Academy of Sciences, Na Slovance 2, Praha, Czech Republic; ²Institute of Physics of the Czech Academy of Sciences, Na Slovance 2, Czech Republic; ³Charles University, Faculty of Mathematics and Physics, Ke Karlovu 3, Praha, Czech Republic

14:30

Charge Carrier Profiling With MIR And THz S-SNOM

We-PM1-4-5

Cristiane N. Santos*¹; Édouard Lebouvier¹; Benjamin Walter²; Sophie Eliet¹; Nicolas Chevalier³; Jean-Michel Hartmann³; Romain Peretti¹; Marc Faucher¹; Jean-François Lampin¹

¹IEMN - CNRS, Avenue Henri Poincaré, Villeneuve d'Ascq, France; ²Vmicro SAS, Avenue Henri Poincaré, Villeneuve d'Ascq, France; ³Univ. Grenoble Alpes, F-38000 Grenoble, MINATEC Campus, F-38054 Grenoble, France

14:45

Investigating WTe₂ Atomic-Scale Defects In K-space Using THz Scanning Tunneling Microscopy

We-PM1-4-6

Vedran Jelic; Stefanie Adams*; Mohamed Hassan; Trevor Hickley; Tyler L. Cocker
Michigan State University, 567 Wilson Rd, East Lansing, United States

15:00 **Multilayer Permittivity And Thickness Extraction In Infrared Scanning Near-field Optical Microscopy Using Deep Learning** **We-PM1-4-7**

Dario Siebenkotten*; Clemens Elster; Bernd Kästner
Physikalisch-Technische Bundesanstalt, Abbestraße 2-12, Berlin, Germany

15:15 **A General Approach To THz Near-Field Waveform Sampling in A Lightwave-Driven Scanning Tunneling Microscope Junction** **We-PM1-4-8**

Vedran Jelic¹; Mohamed Hassan*¹; Stefanie Adams¹; Kaedon Cleland-Host¹; Spencer E. Ammerman²; Tyler L. Cocker¹
¹Michigan State University, 567 Wilson Rd, East Lansing, United States; ²Swiss Federal Laboratories for Materials Science and Technology, Ueberlandstrasse 129, 8600, Dubendorf, Switzerland

13:30-15:30

Novel Imaging Techniques II

International II

Chairperson(s): Gintaras Valusis

13:30 **Depth Reconstruction For Reference-Free THz Holography Based On Physics-Informed Deep Learning** **We-PM1-5-1**

Mingjun Xiang*¹; Hui Yuan²; Lingxiao Wang¹; Kai Zhou¹; Hartmut Roskos²
¹Frankfurt Institute for Advanced Studies, Ruth-Moufang-Straße 1, Frankfurt am Main, Germany; ²Goethe-Universität Frankfurt am Main, Ruth-Moufang-Straße 1, Frankfurt am Main, Germany

14:00 **Subsurface Defect Detection And Classification In 3D THz Images Of Glass Fiber Reinforced Thermoplastic Based On 3D Convolutional Neural Network** **We-PM1-5-2**

Aya Souliman*; Yashkumar Darji; Matthias Kahl; Michael Möller; Peter Haring Bolívar
University of Siegen, Hölderlinstr. 3, Siegen, Germany

14:15 **Ultra-Wideband Terahertz 3D Imaging With Aspherical Telecentric F-θ Optics** **We-PM1-5-3**

Shiva Mohammadzadeh*¹; Jens Klier¹; Jörg Seewig²; Georg von Freymann¹; Fabian Friederich¹

¹Fraunhofer ITWM, Fraunhofer-Platz 1, Kaiserslautern, Germany; ²Institute for Measurement and Sensor Technology, RPTU Kaiserslautern, Gottlieb-Daimler-Straße, Gebäude 44, Kaiserslautern, Germany

14:30

Digital Holographic Diffraction Tomography Based On Physics-enhanced Deep Neural Network Using Continuous-wave Terahertz

We-PM1-5-4

Jie Zhao*¹; Xiaoyu Jin²; Dayong Wang²; Lu Rong²; Yunxin Wang²; Shufeng Lin²

¹Beijing University of Technology, Ping Leyuan No. 100, Chaoyang District, Beijing, China; ²Beijing University of Technology, Ping Leyuan No. 100, Chaoyang District, China

14:45

Automatic Analysis Of Images From The THz TDS Reflection Scanner

We-PM1-5-5

Norbert Paika*¹; Kamil Kaminski¹; Marcin Maciejewski¹; Piotr Synaszko²; Krzysztof Dragan³

¹Military University of Technology, 2 Kaliski Str., Warsaw, Poland; ²Air Force Institute of Technology, 6 Książę Bolesław Str., Warsaw, Poland; ³Air Force Institute of Technology, 6 Książę Bolesław Str., Poland

15:00

Two- And Four-step Phase Shifting Methods For Terahertz Holography

We-PM1-5-6

Rusnė Ivaskeviciūtė-Povilauskienė*¹; Linas Minkevičius¹; Domas Jokubauskis¹; Agnieszka Semion²; Gintaras Valušis³
¹Center for Physical Sciences and Technology, Saulėtekio Ave. 3, Vilnius, Lithuania; ²Warsaw University of Technology, 75 Koszykowa, Warsaw, Poland; ³Center for Physical Sciences and Technology, Sauletekio Ave. 3, Vilnius, Lithuania

15:15

SiGe MIMO In-line Imager With 12x64 Elements For Real-time 3D Image Acquisition

We-PM1-5-7

Matthias Kahl*¹; Raphael Hussung²; Andreas Keil²; Esref Turkmen³; Diego Moro-Melgar⁴; Oleg Cojocari⁴; Wojciech Debski³; Fabian Friederich²; Peter Haring Bolivar¹

¹University of Siegen, Hoelderlinstrasse 3, Siegen, Germany; ²Fraunhofer ITWM, Fraunhofer-Platz 1, Kaiserslautern, Germany; ³Silicon Radar GmbH, Im Technologiepark 1, Frankfurt (Oder), Germany; ⁴ACST GmbH, Josef-Bautz-Straße 15, Hanau, Germany

16:00-18:00	High Field THz Generation II	Symposia Theatre
Chairperson(s): Luc Bergé		
16:00	500 GHz Field-Resolved Detection In Thin-film Lithium Niobate Devices	We-PM2-1-1
Alessandro Tomasino* ¹ ; Amirhassan Shams-Ansari ² ; Marko Loncar ² ; Ileana-Cristina Benea-Chelmus ¹ ¹ EPFL, STI IEM HYLAB, Lausanne, Switzerland; ² Harvard School of Engineering and Applied Sciences, Harvard University, Cambridge, United States		
16:30	Spatiotemporal Imaging Of Near-Fields From A Tilted Pulse Front THz Source	We-PM2-1-2
Annika Gabriel*; Mohamed Othman; Matthias Hoffmann; Emilio Nanni SLAC National Accelerator Laboratory, 2575 Sand Hill Rd., Menlo Park, United States		
16:45	High-intensity THz Pulses Generation In Lithium Niobate Using A Reflective Echelon Scheme	We-PM2-1-3
Ammar Hideur ¹ ; Anna Martinez* ² ; Rezki Bechecker ³ ; Léo Guiramand ⁴ ; François Blanchard ⁴ ; Xavier Ropagnol ⁴ ; Saïd Idlahcen ³ ; Thomas Godin ³ ; Jonathan Houard ⁵ ; Domenico Paparo ⁶ ; Angela Vella ⁵ ¹ Université de Rouen Normandie, 675, Avenue de l'Université, Saint Etienne du Rouvray, France; ² Università 'Federico II', Monte S. Angelo, via Cintia, Italy; ³ Université de Rouen Normandie, 675, Avenue de l'Université, Saint Etienne du Rouvray, France; ⁴ École de technologie supérieure, Québec H3C 1K3, Montréal, Canada; ⁵ Université de Rouen Normandie, Avenue de l'Université, Saint Etienne du Rouvray, France; ⁶ Università 'Federico II', Monte S. Angelo, via Cintia, Napoli, Italy		
17:00	Scaling Tilted-pulse-front Based THz Setups By Control Of The Spatio-temporally Coupled Pump Pulse Parameters	We-PM2-1-4
Tobias Kroh ¹ ; Nicholas Matlis* ² ; Franz Kaertner ² ¹ Deutsches Elektronen-Synchrotron DESY, Notkestr. 85, Hamburg, Germany; ² Deutsches Elektronen-Synchrotron (DESY), Notkestr. 85, Hamburg, Germany		
17:15	Generation Of 208 KV/cm Peak Field At 2.6 THz In GaP	We-PM2-1-5

Wei Cui*¹; Eeswar Yalavarthi¹; Aswin Vishnu Radhan¹;
Mohammad Bashirpour¹; Angela Gamouras²; Jean-Michel
Ménard¹

¹University of Ottawa, 25 Templeton Street, Ottawa, Canada;

²National Research Council Canada, 1200 Montreal Road,
Ottawa, Canada

17:30

**Lithium Niobate Based Single-Cycle THz Source With
643mW Of Average Power**

We-PM2-1-6

Tim Vogel*; Clara J. Saraceno

Ruhr-University Bochum, Universitaetsstr. 150, Postbox 17, ID
2, Bochum, Germany

16:00-18:00

Spintronics

Cartier I

Chairperson(s): Melanie Müller

16:00

**Spin-momentum Locking And Ultrafast Spin-charge
Conversion In Ultrathin Epitaxial Bi1-xSbx Topological
Insulator**

We-PM2-2-1

Jean-Marie GEORGE*¹; Enzo RONGIONE²; Laetitia
BARINGTHON¹; Diana SHE¹; Gilles PATRIARCHE³; Romain
LEBRUN⁴; Aristide LEMAITRE³; Martina MORASSI³; Nicolas
REYREN¹; Francois BERTRAN⁵; Sukhdeep DHILLON⁶; Patrick
LE FEVRE⁵; Henri JAFFRES¹

¹CNRS, 1 Av Augustin Fresnel, Unite mixte de Physique CNRS
Thales, Palaiseau, France; ²Thales, 1 Av Augustin Fresnel,
Unite mixte de Physique CNRS Thales, Palaiseau, France;
³CNRS, Université Paris-Saclay, CNRS, C2N, Centre de
Nanosciences et de Nanotechnologies, Palaiseau, France;
⁴Thales, 1 Av Augustin Fresnel, France; ⁵Synchrotron Soleil,
Synchrotron SOLEIL, L'Orme des Merisiers, Départementale
128, St Aubin, France; ⁶CNRS, ENS, Université PSL, CNRS,
Sorbonne Université, Un, 2Laboratoire de Physique de l'Ecole
Normale Supérieure, Paris, France

16:30

**Enhancement Effect Of A Neodymium Magnet Mount On
Terahertz Electromagnetic Waves From The Ultrafast
Photocurrent And From Coherent LO Phonon In A GaAs-
based Epilayer**

We-PM2-2-2

Hideo Takeuchi*¹; Yusuke Sengi²; Shungo Matsuoka²; Kai
Matsunaga²

¹Osaka Metropolitan Univesity, 3-3-138 Sugimoto, Sumiyoshi,
Osaka, Japan; ²Osaka City Univesity, 3-3-138 Sugimoto,
Sumiyoshi, Osaka, Japan

16:45

**Coated Spintronic Emitters For Improved THz Time-
domain Spectroscopy**

We-PM2-2-3

Ford Wagner*¹; Simas Melnikas²; Joel Cramer³; Djamshid Damry¹; Chelsea Xia¹; Kun Peng¹; Gerhard Jakob³; Mathias Kläui³; Simonas Kicas²; Michael Johnston¹

¹University of Oxford, Clarendon Laboratory, Parks Road, Oxford, United Kingdom; ²Center for Physical Sciences and Technology, Savanoriu ave.231, Vilnius, Lithuania; ³Johannes Gutenberg University, Institute of Physics, Mainz, Germany

17:00

Spintronic Terahertz Emitter On A Fiber Tip

We-PM2-2-4

Felix Paries*¹; Nicolas Tiercelin²; Geoffrey Lezier²; Matthias Vanwolleghem²; Maria-Andromachi Systaki³; Gerhard Jakob³; Martin Jourdan³; Mathias Kläui³; Zdenek Kaspar⁴; Tom Seifert⁴; Tobias Kampfrath⁴; Georg von Freymann⁵; Daniel Molter¹

¹Fraunhofer ITWM, Fraunhofer-Platz 1, Kaiserslautern, Germany; ²Université de Lille, CNRS, Centrale Lille, Université de Polytechnique des Hauts-de-France, Av. Henri Poincaré, Lille, France; ³Institut für Physik, Johannes-Gutenberg-Universität Mainz, Staudingerweg 7, Mainz, Germany; ⁴Department of Physics, Freie Universität Berlin, Physikinstitut der FU, Arnimallee 14, Berlin, Germany; ⁵Department of Physics and Research Center OPTIMAS, RPTU Kaiserslautern-Landau, Erwin-Schroedinger-Str. 46, Kaiserslautern, Germany

17:15

Spintronic Coding Surface For THz Generation And Manipulation

We-PM2-2-5

Sai Chen¹; Hanchen Wang²; Jingyu Liu³; Peng Chen⁴; Mingxuan Zhang*²; Xiufeng Han⁴; Caihua Wan⁴; Haiming Yu¹; Yan Zhang³; Xiaojun Wu²

¹Beihang University, Beijing, Beijing, China; ²Beihang University, No.38 Xueyuan Road, Beijing, China; ³Capital Normal University, 105 West Third Ring North Road, Haidian District, Beijing, China; ⁴Institute of Physics, Chinese Academy of Sciences, No. 8, South Third Street, Zhongguancun, Haidian District, Beijing, China

17:30

Spintronic Inverse Spin Hall Photomixing Beyond 1THz

We-PM2-2-6

Pierre Kolejak¹; Geoffrey Lezier¹; Guillaume Ducournau¹; Jean-François Lampin¹; Tiercelin Nicolas¹; Mathias Vanwolleghem*²

¹Institut d'Electronique, de Microélectronique et de Nanotechnologies, Faculté des Sciences et Technologies - Université de LILLE, Avenue Poincaré, Villeneuve d'Ascq, France; ²Institut d'Electronique, de Microélectronique et de Nanotechnologies, Faculté des Sciences et Technologies - Université de LILLE, Avenue Poincaré, Villeneuve d'Ascq, France

17:45

THz Emission From Exchange-Coupled Fe/Ru/Ni Spintronic Emitters

We-PM2-2-7

Roman Adam*¹; Christian Greb²; Daniel Bürgler³; Derang Cao⁴; Sarah Heidtfeld⁵; Fangzhou Wang⁵; Jing Cheng⁶; Debamitra Chakraborty⁶; Ivan Komissarov⁶; Hilde Hardtdegen⁵; Martin Mikulics⁵; Markus Buscher⁵; Claus Michael Schneider⁵; Roman Sobolewski⁶

¹Research Centre Julich, Wilhelm-Johnen-Straße, Juelich, Germany; ²Research Centre Juelich, Wilhelm-Johnen-Straße, Germany; ³Research Centre Julich, Wilhelm-Johnen-Straße, Julich, Germany; ⁴Qingdao University, Qingdao, China; ⁵Research Centre Julich, Wilhelm-Johnen-Straße, Germany; ⁶University of Rochester, Rochester, United States

16:00-18:00

Metasurfaces & Plasmonics II

Cartier II

Chairperson(s): Jacob Pettine

16:00

Light-matter Coupling Between Organic Molecules And A THz Metasurface

We-PM2-3-1

Ahmed Jaber*¹; Michael Reitz²; Avinash Singh³; Ali Maleki¹; Yongbao Xin⁴; Brian Sullivan⁴; Ksenia Dolgaleva¹; Robert Boyd¹; Claudiu Genes²; Jean-Michel Ménard¹

¹University of Ottawa, 75 Laurier Ave E, Ottawa, Canada; ²Max Planck Institute for the Science of Light, Staudtstraße 2, 91058, Erlangen, Germany; ³University of Ottawa, 75 Laurier Ave E, Canada; ⁴Iridian Spectral Technologies Ltd, 2700 Swansea Crescent, Ottawa, Canada

16:30

Simultaneous Terahertz Generation-manipulation By Nonlinear Metasurfaces

We-PM2-3-2

Yongchang Lu¹; Qingwei Wang¹; Xi Feng¹; Li Niu¹; Xueqian Zhang¹; Quan Xu¹; Yanfeng Li¹; Jianqiang Gu¹; Chunmei Ouyang¹; Zhen Tian¹; Weili Zhang²; Jiaguang Han*³

¹Tianjin University, Weijin Road 92#, China; ²Oklahoma State University, Stillwater 74078, United States; ³Tianjin University, Weijin Road 92#, Tianjin, China

16:45

Generating Terahertz Perfect Vortex Beam Via All-dielectric Metasurface

We-PM2-3-3

Fan Huang*¹; Wanying Liu¹; Jianqiang Gu¹; Quan Xu¹; Quanlong Yang²

¹Center for Terahertz Waves and College of Precision Instrument and Optoelectronics Engineering, Tian, No.92 Weijin Road, Nankai District, Tianjin, China, Tianjin, China; ²School of Physics and Electronics, Central South University, South Lushan Road, Changsha, Hunan, Changsha, China

17:00 **Broadband THz Bandpass Filters Based On Multi-layered Metasurfaces** We-PM2-3-4

Ali Maleki*¹; Avinash Singh²; Ahmed Jaber²; Wei Cui²; Yongbao Xin³; Brian Sullivan³; Robert W. Boyd²; Jean-Michel Menard¹
¹University of Ottawa, 25 Templeton St, Ottawa, Canada;
²University of Ottawa, 25 Templeton St, Canada; ³Iridian Spectral Technologies Ltd, 25 Templeton St, Canada

17:15 **Polarization Selective Dual Frequency Metasurface-based Resonant Thermal Terahertz Emitters On N-GaAs/GaAs** We-PM2-3-5

Ignas Grigelionis*¹; Vladislovas Cizas¹; Kestutis Ikamas²; Vytautas Jakstas¹; Barbora Skelaite²; Domas Jokubauskis¹; Andrius Biciunas¹; Andrzej Urbanowicz¹; Marius Treideris¹; Renata Butkute¹; Linas Minkevicius¹
¹Center for Physical Sciences and Technology, Sauletekio ave. 3, Vilnius, Lithuania; ²Vilnius University, Sauletekio ave. 3, Vilnius, Lithuania

17:30 **Electrically Tunable THz Metasurfaces Enabling Near-Unity Modulation Depth** We-PM2-3-6

Hou-Tong Chen*¹; Chun-Chieh Chang¹; Hichem Guerboukha²; Daniel Mittleman²; John Reno³; Michael Lilly³; Sadvikas Addamane³
¹Los Alamos National Laboratory, PO Box 1663, MS K771, Los Alamos, United States; ²Brown University, School of Engineering, Providence, United States; ³Sandia National Laboratories, Center for Integrated Nanotechnologies, Albuquerque, United States

17:45 **Manipulation Of Terahertz Waves With A Right- Or Left-handed Metasurface For Directivity Enhancement** We-PM2-3-7

Keita Mochizuki*; Harumi Asada; Takehito Suzuki
Tokyo University of Agriculture and Technology, #405 Building 5, 2-24-16, Naka-cho, Koganei-shi, Tokyo, Japan

16:00-18:00

Integrated Technologies 1

International
I

Chairperson(s): Hongxin Zeng

16:00

Single-Mode Rib Waveguide For The Terahertz Range Using 3D Printed Alumina

We-PM2-4-1

Harrison Lees*¹; Masoud Sakaki²; Daniel Headland³; Niels Benson⁴; Jan Balzer⁴; Withawat Withayachumnankul¹
¹The University of Adelaide, The University of Adelaide, Adelaide, Australia; ²University of Duisburg-Essen, University of Duisburg-Essen, Duisburg, Germany; ³Universidad Carlos III de Madrid, Universidad Carlos III de Madrid, Spain; ⁴University of Duisburg-Essen, University of Duisburg-Essen, Germany

16:30 **Characterization Of Flexible Micro Coaxial Cables In The WR03 Band** **We-PM2-4-2**

Benedikt Sievert*; Daniel Erni; Andreas Rennings
University of Duisburg-Essen, General and Theoretical Electrical Engineering, Bismarckstraße 81, Duisburg, Germany

16:45 **0.75—1.1THz Waveguide-Integrated Amplitude Modulator Based On InAs Photo-excitation** **We-PM2-4-3**

Julien Guise¹; Hajasoa Ratovo¹; Monique Thual²; Jeffrey Hesler³; Theodore Reck³; Emmanuel Centeno⁴; Jean-Baptiste Rodriguez¹; Laurent Cerutti¹; Fernando Gonzalez-Posada¹; Thierry Taliercio¹; Stéphane Blin*¹

¹IES, Univ Montpellier, CNRS, 860 rue St Priest, CC 05005, Montpellier, France; ²Institut Foton, Univ Rennes, CNRS, 6 rue Kerampont, Lannion, France; ³VDI Inc, 979 Second street, S.E. Suite 309, Charlottesville, United States; ⁴Institut Pascal, Univ Clermont-Auvergne, CNRS, Campus Universitaire des Cèzeaux, Aubière, France

17:00 **Frequency-dependent Resolution Using Asymmetric Terajet Microscopy** **We-PM2-4-4**

Alesia Paddubskaya¹; Nadzeya Valynets¹; Andrey Novitsky²; Yanfeng Li*³; Jiaguang Han³; Oleg Minin⁴; Igor Minin⁴

¹Institute for Nuclear Problems of Belarusian State University, Bobruiskaya str. 11, 220006 Minsk, Belarus; ²Belarusian State University, Nezavisimosti av.4, 220030 Minsk, Belarus; ³Tianjin University, Weijin Road 92, Nankai District, Tianjin, China; ⁴Tomsk Polytechnic University, Lenina Ave. 30, 634050 Tomsk, Russian Federation

17:15 **Photonic Integrated Phase Control For Continuous Wave Terahertz Spectroscopy** **We-PM2-4-5**

Lauri Schwenson*; Simon Nellen; Lars Liebermeister; Milan Deumer; Sebastian Lauck; Martin Schell; Robert Kohlhaas
Fraunhofer Heinrich-Hertz-Institute, Einsteinufer 37, Berlin, Germany

17:30 **Improving The Performance Of THz Delivery From A Quantum Cascade Laser Within A Dry 3He Dilution Refrigerator** **We-PM2-4-6**

Matthew Vaughan*¹; Wladislaw Michailow²; Matthew Tan²; Mohammed Salih¹; Lianhe Li¹; Harvey Beere²; David Ritchie²; Edmund Linfield¹; Giles Davies¹; John Cunningham¹

¹University of Leeds, Woodhouse, Leeds, United Kingdom; ²Cavendish Laboratory, Cavendish Laboratory, Cambridge, United Kingdom

17:45 **Thickness And Refractive Index Calculation Of Contact Lenses Over Time Using Terahertz Imaging And Optical Coherence Tomography** **We-PM2-4-7**

Stephy Vijaya Kumar Jayasree*¹; Antony J. Fitzgerald¹; Barry Cense²; Gavin Swartz³; Vincent Wallace¹

¹Department of Physics, The University of Western Australia, 35 Stirling Hwy., Crawley, Perth, Australia; ²ECE, The University of Western Australia, 35 Stirling Hwy., Crawley, Perth, Australia; ³Division of Optometry, School of Allied Health, The University of Western Australia, 35 Stirling Hwy., Crawley, Perth, Australia

16:00-18:00

Non-Destructive Testing I

International II

Chairperson(s): Shunichi Futatsumori

16:00 **Ancient Enamel Plate Characterized By Time Domain Spectro Imaging** **We-PM2-5-1**

Patrick Patrick Mounaix*¹; Philip Taday²; Frederic Fauquet³; Rémy Chapoulie⁴; Aurélie Mounier⁵; Ayed Ben Amara⁶

¹University of Bordeaux, 351 cours de la Libération cedex, Talence, France; ²Teraview Ltd, Cambridge, CB4 0DS, UK, United Kingdom; ³Bordeaux University, 2Laboratoire IMS- UMR 5218 CNRS, Université Bordea, France; ⁴Montaigne University, 3Archéosciences Bordeaux : Matériaux, Temps, Image, France; ⁵Montaigne University, Archéosciences Bordeaux : Matériaux, Temps, Image, France; ⁶Montaigne University, archéosciences Bordeaux : Matériaux, Temps, Image, France

16:15 **Terahertz FMCW Synthetic Aperture Imaging Based On RSMA For Nondestructive Testing** **We-PM2-5-2**

Zhen Ding; Jiajia Qian; Jun Zhou*; Luyang Liu; Xiuxiu Yang; Qianfei Wang; Yaxin Zhang

Yangtze Delta Region Institute (Huzhou), UESTC, No. 819, Xisaishan Road, Huzhou, Huzhou, China

16:30	<p>Free-space Terahertz Spectrum Analysis With An Optoelectronic Hybrid System</p> <p>Alexander Theis*; Michael Kocybik; Georg von Freymann; Fabian Friederich Fraunhofer ITWM, Fraunhofer-Platz 1, Kaiserslautern, Germany</p>	We-PM2-5-3
16:45	<p>Sub-Diffraction-Limit Mm-Wave Near-Field Imaging Using Truncated Silicon Rod</p> <p>Yuma Kawamoto*¹; Daniel Gallego²; Alejandro Rivera-Lavado²; Tadao Nagatsuma¹; Daniel Headland³; Guillermo Carpintero³ ¹Osaka University, 1-3 Machikaneyama, Toyonaka, Japan; ²LeapWave Technologies, Parque Tecnológico, Av. Gregorio Peces Barba, 1, Leganes, Spain; ³Universidad Carlos III de Madrid, Av. de la Universidad, 30, Leganes, Spain</p>	We-PM2-5-4
17:00	<p>THz Signal Identification For Intelligent Characterization Under High-resolution Mode Based On The Pelee-ECA Network</p> <p>Xingyu Wang*; Yafei Xu; Yuqing Cui; Liuyang Zhang Xi'an Jiaotong University, No. 28 Xianning West Rd, Xi'an, Xi'an, ShaanXi, China, China</p>	We-PM2-5-5
17:15	<p>Electric Potential Mapping Measurement For All-Solid-State Lithium-Ion Batteries Using A Terahertz Chemical Microscope</p> <p>Taketo Yamaguchi*; Yusei Hosokawa; Ryota Tomie; Takumi Higuchi; Takashi Teranishi; Jin Wang; Kenji Sakai; Toshihiko Kiwa Okayama University, 3-1-1 Tsushimanaka Kitaku, Okayama, Japan</p>	We-PM2-5-6
17:30	<p>Carbon Nanotube-based Transparent Stretchable Millimeter-wave--infrared Imager</p> <p>HONGHAO LI*¹; Norika Takahashi²; Yoshiaki Togami²; Masayuki Hamanaka²; Kou LI²; Yukio Kawano² ¹Chuo University, 1-13-27, Kasuga, Bunkyo-ku, Japan; ²Chuo university, 1-13-27, Kasuga, Bunkyo-ku, Japan</p>	We-PM2-5-7
17:45	<p>THz-TDS With A GHz Single-cavity Dual-comb Laser</p> <p>Justinas Pupeikis*¹; Benjamin Willenberg²; Christopher Phillips²; Sandro Camenzind²; Ursula Keller²; Robert Kohlhaas³; Lars Liebermeister³; Bjorn Globisch³ ¹ETH Zurich, Auguste-Piccard-Hof 1, Zurich, Switzerland; ²ETH Zurich, Auguste-Piccard-Hof 1, Switzerland; ³Fraunhofer Institute for Telecommunications, Einsteinufer 37, Germany</p>	We-PM2-5-8

Thursday 21 September

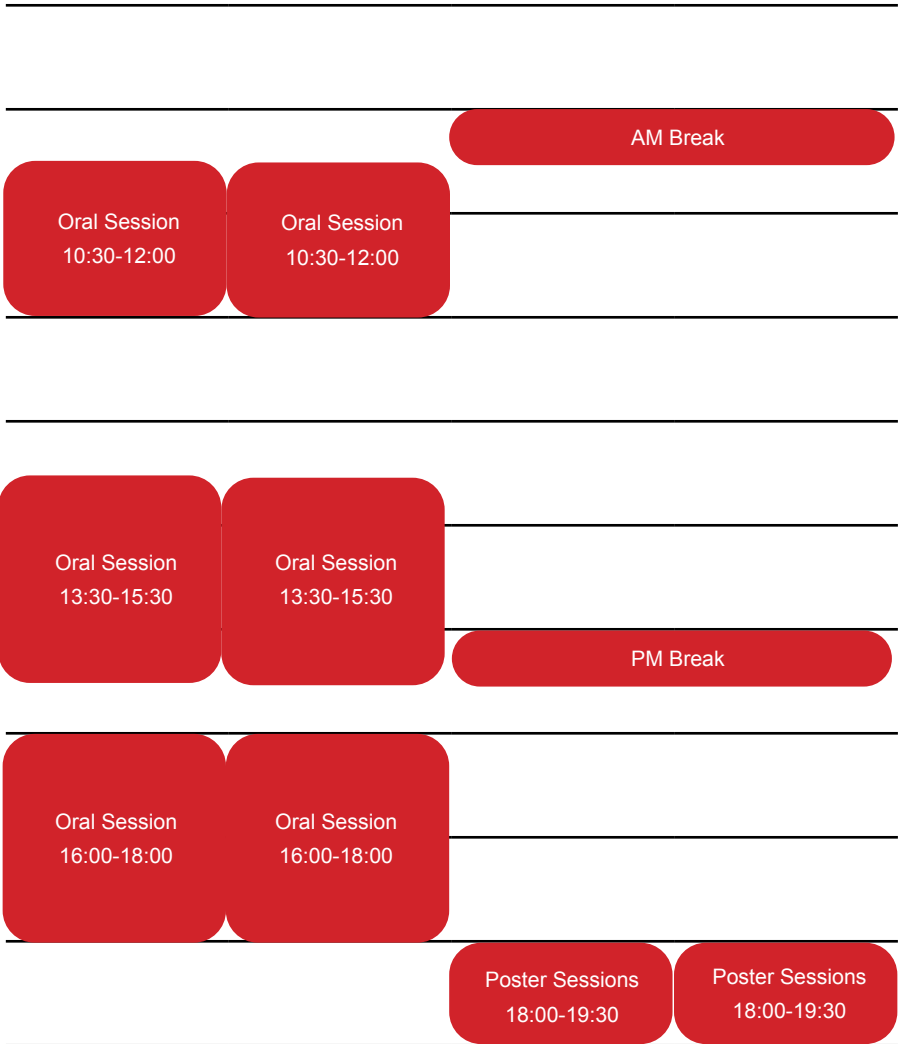
	Symposia Theatre	Cartier I	Cartier II
08:00-09:00	Plenary 1 8:30-9:15		
09:00-10:00	Plenary 2 9:15-10:00		
10:00-11:00			
11:00-12:00	Oral Session 10:30-12:00	Oral Session 10:30-12:00	Oral Session 10:30-12:00
12:00-13:00			
13:00-14:00			
14:00-15:00	Oral Session 13:30-15:30	Oral Session 13:03-15:30	Oral Session 13:30-15:30
15:00-16:00			
16:00-17:00	Oral Session 16:00-18:00	Oral Session 16:00-18:00	Oral Session 16:00-18:00
17:00-18:00			
18:00-19:00			

International
I

International
II

Third Floor
Foyer

Fourth Floor
Hall



Thursday 21 September

08:30-09:15	Plenary Session 7	Symposia Theatre
	Chairperson(s): Chiko Otani	
08:30	Electrodynamics Of Solids: Low-Energy Spectroscopy Of Correlated Electrons Martin Dressel* Universität Stuttgart, 1. Physikalisches Institut, Pfaffenwaldring 57, Stuttgart, Germany	Th-PL-1-1
09:15-10:30	Plenary Session 8	Symposia Theatre
	Chairperson(s): Chiko Otani	
09:15	THz Communications On The Way Towards Its Application On 6G Thomas Kuerner* Technische Universitaet Braunschweig, Schleinitzstr. 22, Braunschweig, Germany	Th-PL-2-1
10:30-12:00	Advanced THz Sources II	Symposia Theatre
	Chairperson(s): Sukhdeep Dhillon	
10:30	Fundamental Balanced Mixer Module For 300-GHz Band Based On Fermi-Level Managed Barrier Diode On SiC Platform Hiroshi Ito* ¹ ; Yuma Kawamoto ² ; Takahiro Ohara ² ; Tadao Nagatsuma ² ; Tadao Ishibashi ³ ¹ The University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo, Japan; ² Osaka University, Toyonaka, Osaka, Japan; ³ Wavepackets LLC, Naka-gun, Kanagawa, Japan	Th-AM-1-1
10:45	Power Combined Amplifiers For Terahertz Varactor Sources Theodore Reck*; Eric Bryerton; Jeffrey Hesler Virginia Diodes, 979 Second Street, Charlottesville, United States	Th-AM-1-2
11:00	Design And Optimization Of A High-Power Terahertz Doubler Based On Dual-Chip GaAs Monolithic Technology.	Th-AM-1-3

Hongji Zhou*¹; Shixiong Liang²; Yazhou Dong³; Hailong Guo³; Jianghua Yu³; Jun Zhou³; Jingrui Liang³; Yaxin Zhang³

¹Huzhou Key Laboratory of Terahertz Integrated Circuits and Systems, Yangtze Delta Region Institute (, Yangtze Delta Region Institute (Huzhou), University of Electronic Science and Technology of China, H, Qingshuihe Campus of UESTC, No.2006, Xiyuan Avenue, West Hi-tech Zone, Chengdu, Sichuan, P.R.China, Huzhou, China; ²National Key Laboratory of Solid-State Microwave Devices and Circuits, Hebei Semiconductor Research, National Key Laboratory of Solid-State Microwave D, National Key Laboratory of Solid-State Microwave Devices and Circuits, Hebei Semiconductor Research, Shijiazhuang, China; ³Huzhou Key Laboratory of Terahertz Integrated Circuits and Systems, Yangtze Delta Region Institute (, Huzhou Key Laboratory of Terahertz Integrated Circ, Huzhou, China

11:15

Monolithically Integrated Optically Pumped InP-based THz-Mixer

Th-AM-1-4

Marcel Grzeslo*¹; Andrej Lavrič²; Tim Brüning¹; Jonas Tebart¹; Shuya Iwamatsu¹; Jose Luis Fernández Estévez¹; Andreas Stöhr¹

¹University of Duisburg-Essen, Lotharstraße 55, Duisburg, Germany; ²University of Ljubljana, Trzaska cesta 25, Ljubljana, Slovenia

11:30

Terahertz Wave Generated By Photomixing Of Dual-wavelength Laser Lights Injection-locked To A 560-GHz-spacing Soliton Microcomb For THz Wireless Communication

Th-AM-1-5

Yu Tokizane*¹; Shota Okada²; Kenji Nishimoto²; Hiroki Kishikawa²; Yasuhiro Okamura²; Naoya Kuse²; Atsushi Kanno³; Shintaro Hisatake⁴; Takeshi Yasui²

¹Tokushima University, 2-1, Minami-Josanjima-cho, Tokushima, Japan; ²Tokushima University, Tokushima, Japan; ³Nagoya Institute of Technology, Aichi, Japan; ⁴Gifu University, Gifu, Japan

11:45

Fiber-coupled THz Transceiver Based On Rhodium-doped InGaAs With 6.5 THz Bandwidth And Up To 106 μ W Emitted THz Power

Th-AM-1-6

Alexander Dohms*¹; Steffen Breuer; Shahram Keyvaninia; Marko Gruner; Lars Liebermeister; Martin Schell; Robert Kohlhaas

Fraunhofer Heinrich Hertz Institute, Einsteinufer 37, Berlin, Germany

10:30-12:00	Ultrafast & Nonlinear Phenomena II Chairperson(s): Klaas-Jan Tielrooij	Cartier I
10:30	Bloch Wavefunction Interferometry Of Driven Electron-Hole States Seamus O'Hara* ¹ ; Joseph Costello ² ; Qile Wu ³ ; Kenneth West ⁴ ; Loren Pfeiffer ⁴ ; Mark S. Sherwin ⁵ ¹ University of California, Santa Barbara, 717 Gayley Walk Apt 101, Goleta, United States; ² Universtiy of California, Santa Barbara, Broida Hall, Santa Barbara, United States; ³ University of California, Santa Barbara, Broida Hall, United States; ⁴ Princeton University, B404 Engineering Quad, United States; ⁵ Univeristy of California, Santa Barbara, Broida Hall, Santa Barbara, United States	Th-AM-2-1
11:00	Ultrafast Expansion Of Electron-hole Plasma In GaAs Probed By THz Radiation Tomas Ostatnicky* ¹ ; Filip Klimovič ¹ ; Tinkara Troha ² ; Filip Kadlec ² ; Petr Kuzel ² ; Hynek Němec ² ¹ Charles University, Faculty of Mathematics and Physics, Ke Karlovu 3, Praha 2, Czech Republic; ² Institute of Physics ASCR, Na Slovance 2, Praha 8, Czech Republic	Th-AM-2-2
11:15	Ultrafast Optical Pump-probe Of Magnetic Kagome Metals Marcos Vinicius Goncalves Faria* ¹ ; Ece Uykur; Stephan Winnerl; Oleksiy Pashkin; Manfred Helm Helmholtz-Zentrum Dresden-Rossendorf, Bautzner Landstraße 400, Dresden, Germany	Th-AM-2-3
11:30	Attoclocking Delocalized Bloch Electrons With Multi-terahertz Fields Josef Freudenstein* ¹ ; Markus Borsch ² ; Manuel Meierhofer ¹ ; Dmytro Afanasiev ¹ ; Christoph Peter Schmid ¹ ; Fabian Sandner ¹ ; Marlene Liebich ¹ ; Anna Girnghuber ¹ ; Matthias Knorr ¹ ; Mackillo Kira ² ; Rupert Huber ¹ ¹ University of Regensburg, Universitätsstraße 31, Regensburg, Germany; ² University of Michigan, 1301 Beal Avenue, Ann Arbor, United States	Th-AM-2-4
11:45	Ultrafast Dynamics Of Coulomb Electric Field Contraction by Relativistic Electron Bunch	Th-AM-2-5

MAKOTO NAKAJIMA*¹; Masato Ota¹; Koichi Kan²; Youwei Wang¹; Verdad C Agulto¹; Kosaku Kato¹; Yasunobu Arikawa¹; Tatsunosuke Matsui³; Makoto Asakawa⁴
¹Osaka university, 2-6 Yamadaoka, Suita, Japan; ²Osaka university, Ibaraki, Ibaraki, Japan; ³Mie University, Mie, Japan; ⁴Kansai University, Suita, Japan

10:30-12:00	Condensed Matter & Semimetals Chairperson(s): Sarah Houver	Cartier II
10:30	<p>Investigation Of Terahertz Tunable High Q-factor BIC Resonance</p> <p>Xiaoyong He* Shanghai Normal University, , No. 100 Guilin Road, Shanghai, China, Shanghai, China</p>	Th-AM-3-1
10:45	<p>Electrical Properties Of Thin Layers Of III/V Semiconductors Obtained By Terahertz Reflectometry And Transmissometry</p> <p>Konstantin Wenzel*¹; Steffen Breuer¹; Robert B. Kohlhaas¹; Martin Schell²; Lars Liebermeister² ¹Fraunhofer Institute for Telecommunications, Heinrich Hertz Institute, Einsteinufer 37, Berlin, Germany; ²Fraunhofer Institute for Telecommunications, Heinrich Hertz Institute, Einsteinufer 37, Hardenbergstraße 36, 10623 Berlin, Berlin, Germany</p>	Th-AM-3-2
11:00	<p>Strong Proton-Phonon Coupling In Perovskite-type Electrolyte Of Proton-Conducting Fuel Cell</p> <p>Masaya Nagai*¹; Hikaru Takehara¹; Masaaki Ashida¹; Yuji Okuyama²; Yukimune Kani³ ¹Osaka University, Machikaneyama 1-3, Toyonaka, Japan; ²University of Miyazaki, 1-1 Gakuenkibanadai-nishi, Miyazaki, Japan; ³Panasonic Holdings Corporation, 3-1-1 Yagumo-nakamachi, Moriguchi, Japan</p>	Th-AM-3-3
11:15	<p>Terahertz Spectroscopic Study Of Vibrational Density Of States In LiCl-6H₂O</p> <p>Soo Han Oh*¹; Dan Kyotani¹; Yasuhiro Fujii²; Suguru Kitani³; Yohei Yamamoto¹; Tatsuya Mori¹ ¹Department of Materials Science, University of Tsukuba, 1-1-1 Tennodai, Tsukuba, Ibaraki, Japan; ²Department of Physical Sciences, Ritsumeikan University, 1-1-1 Noji-higashi, Kusatsu, Shiga, Japan; ³Laboratory for Materials and Structures, Tokyo Institute of Technology, 4259 Nagatsuta-cho, Midori-ku,, Yokohama, Kanagawa, Japan</p>	Th-AM-3-4

11:30 Charge-Carrier Dynamics In Mixed Lead-Tin 2D/3D Metal Halide Perovskites **Th-AM-3-5**

Jake Hutchinson¹; Edoardo Ruggeri²; Samuel Stranks²; Rebecca Milot^{*3}

¹University of Warwick, Department of Physics, Gibbet Hill Road, United Kingdom; ²University of Cambridge, Cambridge, United Kingdom; ³University of Warwick, Department of Physics, Gibbet Hill Road, Coventry, United Kingdom

11:45 Tailoring Ultrafast Carrier Dynamics In GeS And GeSe Via Cu Intercalation **Th-AM-3-6**

Sepideh Khanmohammadi¹; Kateryna Kushnir Friedman^{*1}; Catherine Tran²; Srihari Kastuar³; Erika Colin-Ulloa¹; Chinedu Ekuma⁴; Kristie Koski⁵; Lyubov Titova¹

¹Worcester Polytechnic Institute, 100 Institute Rd, Worcester, United States; ²University of California Davis, 1 Shields Ave, Davis, United States; ³Lehigh University, 27 Memorial Dr W, Bethlehem, United States; ⁴Lehigh university, 27 Memorial Dr W, Bethlehem, United States; ⁵UC Davis, 1 Shields Ave, Davis, United States

10:30-12:00

Integrated Technologies 2

International I

Chairperson(s): Withawat Withayachumnankul

10:30 Terahertz Meta-chips And High-speed Communication Systems **Th-AM-4-1**

Hongxin Zeng^{*}; Yaxin Zhang; Sen Gong; Lin Huang; Ziqiang Yang

UESTC: University of Electronic Science and Technology of China, UESTC: University of Electronic Science and Technology of China, No. 2006, Xiyuan Avenue, High-tech Zone (West Zone), Chengdu, Chengdu, China

11:00 Quasi-Optical LO Coupling Validation For A Planarly Integrated 2x2 Pixel Heterodyne Array At 1.95 THz **Th-AM-4-2**

Sven van Berkel^{*1}; Alain Maestrini¹; Cecile Jung-Kubiak¹; Sjoerd Bosma²; Maria Alonso-delPino²; Darren Hayton¹; Jacob Kooi¹; Jose Siles¹; Nuria Lombart²; Imran Mehdi¹; Goutam Chattopadhyay¹

¹NASA Jet Propulsion Laboratory / California Institute of Technology, 4800 Oak Grove Drive, Pasadena, United States; ²Delft University of Technology, Mekelweg 4, Delft, Netherlands

11:15 Full-Duplex Beamforming In The Sub-Terahertz Regime **Th-AM-4-3**

Subhajit Karmakar^{*1}; Atsutse Kludze²; Jacques Doumani³; Andrey Baydin³; Junichiro Kono⁴; Yasaman Ghasempour⁵
¹Princeton University, Department of Electrical and Computer Engineering, Princeton University, Princeton NJ 08544, USA, Princeton, United States; ²Princeton University, Department of Electrical and Computer Engineering,, Princeton, United States; ³Rice University, Department of Electrical and Computer Engineering, Houston, United States; ⁴Rice University, Department of Electrical and Computer Engineering, Department of Physics and Astronomy, Houston, United States; ⁵Princeton University, Department of Electrical and Computer Engineering, Princeton, United States

11:30

Packaging Technology For The Realization Of Tx And Rx Modules Based On RTD Devices

Th-AM-4-4

Christian Preuss^{*1}; Simone Clochiatti¹; Robin Kress¹; Enes Mutlu¹; Florian Vogelsang²; Werner Probst¹; Nils Pohl²; Nils Weimann¹

¹University of Duisburg-Essen, Lotharstrasse 55, Duisburg, Germany; ²University of Bochum, Universitätsstraße 150, Bochum, Germany

11:45

Modeling, Fabrication And RF Performance Of A W-Band Breadboard Optical Model For LiteBIRD MHFT

Th-AM-4-5

Abdallah Chahadih^{*1}; Cristian Franceschet²; Bruno Maffei³; Marco De Petris⁴; Luca Lamagna⁴; Jon Gudmundsson⁵; Marco Bersanelli²

¹Institut d'astrophysique spatiale, 121 Rue Jean Teillac, Bures sur Yvette, France; ²Dipartimento di Fisica, Università degli Studi di Milano & INFN, Via Giovanni Celoria 16 - 20133 Milano (Lombardia), Italy; ³Institut d'astrophysique spatiale, 121 Rue Jean Teillac, 91440 Bures-sur-Yvette, France; ⁴Dipartimento di Fisica, Università La Sapienza & INFN, Piazzale Aldo Moro, 2 - 00185 Roma, Italy; ⁵The Oskar Klein Centre, Department of Physics, Stockholm University, SE-106 91 Stockholm, Sweden, Sweden

10:30-12:00

Non-Destructive Testing II

International II

Chairperson(s): Patrick Mounaix

10:30

Scattering Measurements With A Moving Human At 60 And 300 GHz

Th-AM-5-1

Tobias Doeker*¹; Daniel Mittleman²; Thomas Kürner¹

¹Technische Universität Braunschweig, Schleinitzstr.
22, Braunschweig, Germany; ²Brown University, Box D,
Providence, United States

10:45 Evaluation Of Small Bolt And Nut Detection Performance Using Airport Runway Foreign Object Debris Detection System Based On A 96-GHz Millimeter-Wave Radar System Th-AM-5-2

Shunichi Futatsumori*¹; Naruto Yonemoto¹; Noriaki Hiraga¹;
Nobuhiko Shibagaki²; Yosuke Sato²; Kenichi Kashima²

¹Electronic Navigation Research Institute, National Institute of
Maritime, Port and Aviation Technolo, 7-42-23, Jindaiji-higashi,
Chofu, Chofu, Japan; ²Hitachi Kokusai Electric Inc., Minato-ku,
Tokyo, Japan

11:00 CW-THz System For High Scan Rate Inline Thickness Measurements Th-AM-5-3

Niklas Schulz*; Carsten Brenner; Lisa C. Kreuzer; Nils
Surkamp; Martin R. Hofmann

Ruhr University Bochum, Universitätsstr. 150, Bochum,
Germany

11:15 Influence Of Surface Roughness On Material Classification For Reflective THz-TDS Measurements Th-AM-5-4

Sebastian Gassel*; Martin R. Hofmann; Carsten Brenner
Ruhr University Bochum, Universitätsstrasse 150, Bochum,
Germany

11:30 Bound States In The Continuum Enabled THz Dielectric Metasurface For High Sensitivity Refractive-Index Sensing Th-AM-5-5

Marie Georgiades*¹; James Seddon²; Cyril Renaud¹

¹University College London, Torrington Place, London, United
Kingdom; ²University College London, Torrington Place,
Torrington Place, London, United Kingdom

11:45 Probing Live PN Junctions With Terahertz Waves Th-AM-5-6

Bryce Chung*¹; Harrison Lees¹; Chitchanok Chuengsatiansup²;
Withawat Withayachumnankul¹

¹The University of Adelaide, North Terrace, Adelaide, Australia;
²The University of Melbourne, Parkville, Melbourne, Australia

13:30-15:30	High Field THz Generation III	Symposia Theatre
Chairperson(s): Alessandro Tomasino		
13:30	GW-TW Terahertz Radiation From Ultraintense Laser-plasma Interactions Guoqian Liao*; Hongyi Lei; Fangzheng Sun; Yutong Li Institute of Physics, Chinese Academy of Sciences, P.O. Box 603, Beijing, China	Th-PM1-1-1
14:00	Measuring The Electro-optic Response Of Quartz For Accurate Sampling Of Intense THz Fields Maximilian Frenzel*; Leona Nest; Joanna M. Urban; Michael S. Spencer; Sebastian F. Maehrlein Fritz-Haber-Institute of the Max-Planck-Society, Faradayweg 4-6, Berlin, Germany	Th-PM1-1-2
14:15	Frequency-resolved Measurement Of Two-color Air Plasma Terahertz Emission Emmanuel Abraham* ¹ ; Eiji Hase ² ; Jérôme Degert ¹ ; Eric Freysz ¹ ; Takeshi Yasui ³ ¹ Bordeaux University, 351 cours de la Libération, Talence, France; ² Tokushima University, 2-1 Minami-Josanjima, Tokushima, Japan; ³ Tokushima University, 2-1 Minami-Josanjima, Tokushima, Japan	Th-PM1-1-3
14:30	Evaluation Of Methods For Measuring The Field Of An Intense THz Pulse xavier ropagnol* ¹ ; Carlos Miguel Garcia Rosas ² ; Hirohisa Uchida ³ ; François Blanchard ⁴ ; Tsuneyuki Ozaki ² ¹ INRS-EMT, 1650 boulevard lionel boulet, Montreal, Canada; ² INRS, 1650 boulevard lionel boulet, 1650 boulevard lionel boulet, Varennes, Canada; ³ Arkray INC, Kamigyo-Ku., Kyoto, Japan; ⁴ ÉTS, 1100 rue notre dame, Montreal, Canada	Th-PM1-1-4
14:45	DC Electric Field Assisted Precise Control Of THz Radiation From Femtosecond Laser Plasma Filament In Air Tie-Jun Wang* ¹ ; Juan Long ² ; Yuxin Leng ² ; Ruxin Li ² ; See Leang Chin ³ ¹ Chinese Academy of Sciences, No. 390 Qinghe Road, Jiading District, Shanghai, China; ² Chinese Academy of Sciences, No. 390 Qinghe Road, Jiading District, China; ³ Laval University, 2375 rue de la Terrasse, Canada	Th-PM1-1-5
15:00	Single-shot Waveform Detection Of Air-plasma Based THz Sources	Th-PM1-1-6

Alexander Ohrt; Siyan Zhou; Long Cheng; Yunhong Ding;
 Peter Uhd Jepsen; Binbin Zhou*
 Department of Electrical and Photonics Engineering, Technical
 University of Denmark, Ørstedes Plads, Building 343, Kgs.
 Lyngby, Denmark

15:15

**High-repetition-rate, High-average-power Mid-infrared
 Optical Parametric Oscillator Based On BaGa4Se7
 Pumped By A 1064 Nm Master-oscillator Power-amplifier
 Laser System**

Th-PM1-1-7

Yue Sun*¹; Kai Chen¹; Kai Zhong¹; Degang Xu²; Chao Yan¹;
 Shuai Liu¹; Yuye Wang¹; Jining Li¹; Jiyong Yao³; Jianquan Yao¹
¹School of Precision Instruments and Optoelectronics
 Engineering, Tianjin University, Tianjin, China, Tianjin,
 China; ²School of Precision Instruments and Optoelectronics
 Engineering., Tianjin University, Tianjin, China, Tianjin, China;
³Beijing Center for Crystal Research and Development,
 Chinese Academy of Sciences, Beijing, China

13:30-15:30

Gyro-Oscillators and Amplifiers I

Cartier I

Chairperson(s): Stefano Alberti

13:30

**Progress In High Power Gyrotron Development Projects
 At KIT**

Th-PM1-2-1

Gerd Gantenbein*¹; Konstantinos Avramidis²; Benjamin Ell¹;
 Lena Delpech³; Lukas Feuerstein¹; Stefan Illy¹; John Jelonnek¹;
 Jianbo Jin¹; Laurent Krier¹; Heinrich Laqua⁴; Tobias Ruess¹;
 Tomasz Rzesnicki¹; Sebastian Stanculovic¹; Manfred Thumm¹
¹Karlsruhe Institute of Technology, Kaiserstrasse 12, Karlsruhe,
 Germany; ²National and Kapodistrian University of Athens,
 Zografou GR-15784, Athens, Greece; ³CEA, Cedex, Saint-
 Paul-lez-Durance, France; ⁴Max Planck Institute for Plasma
 Physics, Wendelsteinstrasse 1, Greifswald, Germany

13:45

**Study Of 136/170 GHz Dual-Frequency Operation Based
 On The KIT 2 MW 170 GHz Coaxial-Cavity Pre-Prototype
 Gyrotron**

Th-PM1-2-2

Tobias Ruess*¹; Gerd Gantenbein; Stefan Illy; Jianbo Jin;
 Tomasz Rzesnicki; Sebastian Stanculovic; Manfred Thumm;
 John Jelonnek
 Karlsruhe Institute of Technology, Hermann-von-Helmholtz-
 Platz 1, Eggenstein-Leopoldshafen, Germany

14:00

**Progress In The Design Of Megawatt-Class Fusion
 Gyrotrons Operating At The Second Harmonic Of The
 Cyclotron Frequency**

Th-PM1-2-3



Stefan Illy*¹; Konstantinos Avramidis²; Ioannis Chelis²; Benjamin Ell¹; Lukas Feuerstein¹; Gerd Gantenbein¹; Zisis Ioannidis³; John Jelonnek¹; Jianbo Jin¹; George Latsas²; Alexander Marek¹; Dimitrios Peponis²; Tomasz Rzesnicki¹; Manfred Thumm¹; Ioannis Tigelis²; Chuanren Wu¹
¹Karlsruhe Institute of Technology (KIT), Kaiserstr. 12, Karlsruhe, Germany; ²National and Kapodistrian University of Athens (NKUA), University Campus, Athens, Greece; ³National and Kapodistrian University of Athens (NKUA), Euripou Campus, Psachna, Greece

14:15 **Parasitic-modes Free, High-performance Operation Of The European 1 MW, 170 GHz Short-Pulse Prototype Gyrotron For ITER** Th-PM1-2-4

Tomasz Rzesnicki*¹; Konstantinos Avramidis²; Ioannis Chelis²; Gerd Gantenbein¹; Lukas Feuerstein¹; Stefan Illy¹; John Jelonnek¹; Jianbo Jin¹; Alberto Leggieri³; Francois Legrand³; Christophe Lievin³; Alexander Marek¹; Tobias Ruess¹; Sebastian Stanculovic¹; Manfred Thumm¹
¹Karlsruhe Institute of Technology (KIT), Kaiserstr. 12, Karlsruhe, Germany; ²National and Kapodistrian University of Athens (NKUA), University Campus, Athens, Greece; ³THALES, Vélizy-Villacoublay, France

14:30 **Resonant Ring With A Gain Of 32 For Use With A 1 MW 110 GHz Gyrotron** Th-PM1-2-5

Elliot Claveau*; Michael Shapiro; Richard Temkin
Massachusetts Institute of Technology, 77 Massachusetts Avenue, NW17, Cambridge, United States

14:45 **Nonlinear Theory Of Beam-wave Interaction In Gyrotron Cavities With Gradual And Abrupt Transitions** Th-PM1-2-6

Oleksandr Maksymenko*¹; Vitalii Shcherbinin¹; Manfred Thumm²; John Jelonnek²
¹Institute for Pulsed Power and Microwave Technology, Karlsruhe Institute of Technology (KIT), Kaiserstr. 12, 76131 Karlsruhe, Germany, Akademicheskaya St. 1, 61108, Kharkiv, Ukraine, Eggenstein-Leopoldshafen, Germany; ²Institute for Pulsed Power and Microwave Technology, Karlsruhe Institute of Technology (KIT), Kaiserstr. 12, 76131 Karlsruhe, Germany, Eggenstein-Leopoldshafen, Germany

15:00 **Enhanced Performance Of 264 GHz EIO Subsystem** Th-PM1-2-7

Albert Roitman*; Doug Yake; Parth Gandhi; Dave Berry; Tom Sertic
CPI Canada, 45 River Drive, Georgetown, Canada

15:15

A High-gain MMIC Power Amplifier Covering 55-115 GHz Based On 50-nm GaN HEMTs

Th-PM1-2-8

Bingfei Dou^{*1}; Qin Ge²; Jing Liu³; Xiaojiang Yao⁴

¹Hefei Science of China Microelectronics Innovation Center Co., Ltd., 5089, Wangjiang West Road, Hefei, China, Hefei, China; ²Industry and Information Technology Bureau of Shenzhen Municipality, Fuzhong 3rd Road, Futian, Shenzhen, Shenzhen, China; ³Hefei Science of China Microelectronics Innovation Center Co., Ltd., Hefei, 230000, China, Hefei, China; ⁴College of Integrated Circuit Science and Engineering, Nanjing University of Posts and Telecommunications, Nanjing, 210000, China, China

13:30-15:30

Spintronics, Plasmonics & Valleytronics

Cartier II

Chairperson(s): Jean-Marie George

13:30

High-power Operation Of Spintronic Terahertz Emitters For THz-field-driven Scanning Probe Microscopy At MHz Repetition Rates

Th-PM1-3-1

Alkisti Vaitis¹; Vivien Sleziona¹; Luis E. Parra Lopéz¹; Tom S. Seifert²; Fabian Schulz³; Natalia Martin Sabanés⁴; Martin Wolf¹; Tobias Kampfrath²; Melanie Müller^{*1}

¹Fritz Haber Institute of the Max Planck Society, Faradayweg 4-6, Berlin, Germany; ²Freie Universität Berlin, Arnimallee 14, Berlin, Germany; ³CIC NanoGUNE-BRTA, Tolosa Hiribidea 76, San Sebastian, Spain; ⁴IMDEA Nanoscience, Faraday 9, Madrid, Spain

14:00

Terahertz Time Domain Spectroscopy Of A Single Split Ring Resonator Coupled To An Amino Acid Crystal

Th-PM1-3-2

Théo Hannotte^{*}; Adrien Pillet; Jean-François Lampin; Romain Peretti

IEMN, Cité Scientifique Avenue Henri Poincaré CS 60069, Villeneuve d'Ascq, France

14:15

Terahertz Plasmons In Periodic Structures Of Epitaxial Graphene

Th-PM1-3-3

Arvind Singh^{*1}; Hynek Nemeč¹; Jan Kunc²; Petr Kuzel¹

¹Institute of Physics Czech Academy of Sciences, Na Slovance 2, 18200 Prague 8, Czech Republic, Prague, Czech Republic;

²Faculty of Mathematics and Physics Charles University, Ke Karlovu 3, Prague 2 12116, Czech Republic, Czech Republic

14:30

Different Terahertz Phases Of AlGaIn/GaN Grating-Gate Plasmonic Crystals

Th-PM1-3-4

Pavlo Sai¹; M. Dub¹; V. Korotyeyev²; M. Filipiak¹; M. Słowikowski¹; Yu. Ivonyak¹; D. But¹; G. Cywinski¹; W. Knap¹
¹Institute of High Pressure Physics of the Polish Academy of Sciences, ul. Sokolowska 29/37, Warsaw, Poland; ²V. Ye. Lashkaryov Institute of Semiconductor Physics (ISP), NASU, 41 pr. Nauki, Kyiv, Ukraine

14:45 Spintronic THz Emitters Based On Transition Metals And Semi-metals/Pt Multilayers Th-PM1-3-5

Sylvain Massabeau^{*1}; Jacques Hawecker²; Enzo Rongione¹; Anastasios Markou³; Sachin Krishnia¹; Florian Godel¹; Sophie Collin¹; Romain Lebrun¹; Jérôme Tignon²; Juliette Mangeney²; Thomas Boulier²; Jean-Marie George¹; Claudia Felser³; Henri Jaffrès¹; Sukhdeep Dhillon²

¹Unité Mixte de Physique CNRS, Thales, Université Paris-Saclay (UMPHY), 1 Avenue Augustin Fresnel, Palaiseau, France; ²Laboratoire de Physique de l'Ecole Normale Supérieure, ENS, Université PSL, CNRS, Sorbonne Université, 24 Rue Lhomond, Paris, France; ³Max-Planck-Institute for Chemical Physics of Solids, Nöthnitzer Straße 40, Dresden, Germany

15:00 Layer-controlled Nonlinear Terahertz Valleytronics In Two-dimensional Semi-metal And Semiconductor PtSe2 Th-PM1-3-6

Minoosh Hemmat^{*1}; Sabine Ayari¹; Martin Micica¹; Hadrien Vergnet¹; Guo Shasha²; Mehdi Arfaoui³; Xuechao Yu⁴; Daniel Vala⁵; Adrien Wright¹; Kamil Postava⁵; Juliette Mangeney¹; Francesca Carosella¹; Sihem Jaziri³; Qi Jie Wang⁴; Liu Zheng²; Jerome Tignon¹; Robson Ferreira¹; Emmanuel Baudin¹; Sukhdeep Dhillon¹

¹Laboratoire de Physique de l'Ecole normale supérieure, ENS, Université PSL, CNRS, Sorbonne Université, 24 rue Lhomond, France; ²School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore; ³Science faculty of Tunisia, Université Tunis El Manar, Campus Universitaire 10, Tunisia; ⁴School of Electrical and Electronic Engineering & School of Physical and Mathematical Sciences, Nanyang, 50 Nanyang Avenue, Singapore; ⁵Faculty of Materials Science and Technology, VSB, Technical University of Ostrava, 17. listopadu 217, Czech Republic

15:15 Spintronic Terahertz Emission From Metal/PtSe2 Heterostructures Th-PM1-3-7

Martin Micica*¹; Khasan Abdukayumov²; Fatima Ibrahim³; Celine Vergnaud³; Alain Marty³; Jean-Yves Veuillen⁴; Pierre Mallet⁴; Isabelle Gomes de Moraes³; Djordje Dosenovic⁵; Abdelkarim Ouerghi⁶; Vincent Renard⁷; Florie Mesple⁷; Frederic Bonell³; Hanako Okuno⁵; Mair Chshiev³; Jean-Marie George⁸; Henri Jaffres⁸; Sukhdeep Dhillon¹; Matthieu Jamet²

¹Laboratoire de Physique de l'Ecole Normale Supérieure, 24 rue Lhomond, Paris, France; ²Univ. Grenoble Alpes, CEA, CNRS, Grenoble INP, IRIG-Spintec, 38000, Grenoble, France; ³Univ. Grenoble Alpes, CEA, CNRS, Grenoble INP, IRIG-Spintec, 17 avenue des Martyrs, Grenoble, France; ⁴Université Grenoble Alpes, CNRS, Grenoble INP, Institut NEEL, 38000, Grenoble, France; ⁵Université Grenoble Alpes, CEA, IRIG-MEM, 38000 Grenoble, France, 38000, Grenoble, France; ⁶Université Paris-Saclay, CNRS, Centre de Nanosciences et de Nanotechnologies, 91120, Palaiseau, France; ⁷Université Grenoble Alpes, CEA, CNRS, IRIG-PHELIQS, 38000 Grenoble, 38000, Grenoble, France; ⁸Unité Mixte de Physique, CNRS, Thales, Université Paris-Saclay, F-91767, Palaiseau, France

13:30-15:30	Active Sensing 1	International I
Chairperson(s): Luca Zanotto		
13:30	Nonlinear Ghost Imaging For Scattering-Assisted Terahertz Waveform Synthesis.	Th-PM1-4-1
	Vittorio Cecconi ¹ ; Vivek Kumar ² ; Juan Sebastian Toterogongora ¹ ; Luke Peters ¹ ; Luana Olivieri ¹ ; Jacopo Bertolotti ³ ; Alessia Pasquazi ¹ ; Marco Peccianti* ¹ ¹ Loughborough University, Sir David Davies Building, Loughborough, United Kingdom; ² University of Sussex, Falmer, Brighton, United Kingdom; ³ University of Exeter, Dept. of Physics and Astronomy, Exeter, United Kingdom	
14:00	3D Tensor Compressive Sensing THz Single-Pixel Imaging For Refractive Index Estimation	Th-PM1-4-2

Szu-Hsi Chen*¹; Chia-Ming Mai²; Yi-Chun Hung³; Shang-Hua Yang⁴; Yuan-Hao Huang⁵

¹National Tsing Hua University, No. 101, Section II, Kuang-Fu Road, Electrical Eng, Hsinchu City, Taiwan; ²National Tsing Hua University, No. 101, Section II, Kuang-Fu Road, Electrical En, Hsinchu City, Taiwan; ³National Tsing Hua University, No. 101, Section II, Kuang-Fu Road, Electrical Eng, Hsinchu, Taiwan; ⁴National Tsing Hua University, No. 101, Section II, Kuang-Fu Road, Electrical En, Hsinchu, Taiwan; ⁵National Tsing Hua University, No. 101, Section II, Kuang-Fu Road, Electrical Engineering Depart. National Tsing Hua University, Hsinchu, Taiwan

14:15

Learning-Based THz Multi-Layer Imaging With Model-Based Masks

Th-PM1-4-3

PU WANG*¹; Toshiaki Koike-Akino²; Petros Boufounos²; Wataru Tsujita²; Genki Yamashita³; Tomonori Fukuta³; Makoto Nakajima⁴

¹Mitsubishi Electric Research Laboratories, 201 Broadway, Cambridge, United States; ²Mitsubishi Electric Research Laboratories, 201 Broadway, United States; ³Mitsubishi Electric Corporation Advanced Technology R&D Center, Amagasaki City, 661-8661, Japan; ⁴Osaka University, Osaka 565-0871, Japan

14:30

Far-field Terahertz Electric-field Imaging Using A Polarization Image Sensor

Th-PM1-4-4

Léo Guiramand*; Xavier Ropagnol; François Blanchard
École de technologie supérieure, 1100 R. Notre Dame O,
Montréal, Canada

14:45

An Optoelectronic M-Sequence Radar For The Terahertz Range

Th-PM1-4-5

Kevin Kolpatzek*; Sinan Akdas; Jan C. Balzer; Andreas Czulwik
University of Duisburg-Essen, Bismarckstr. 81, Duisburg,
Germany

15:00

Frequency-multiplexing For Imaging At Submillimeter Waves

Th-PM1-4-6

Aleksi Tamminen*¹; Samu-Ville Pälli²; Juha Ala-Laurinaho²; Sazan Rexhepi²; Zachary Taylor²

¹Aalto University, Maarintie 8, Espoo, Finland; ²Aalto University, Aalto University, Maarintie 8, Espoo, Finland

15:15

Imaging Of Large-Area Graphene Using Terahertz Cross-Correlation Spectroscopy

Th-PM1-4-7

Bjørn Mølvig*¹; Thorsten Bæk²; Jie Ji³; Peter Bøggild³; Simon Lange²; Peter Jepsen²

¹Technical University of Denmark, Ørsteds Plads 343, Kongens Lyngby, Denmark; ²Technical University of Denmark, Ørsteds Plads 343, Denmark; ³Technical University of Denmark, Fysikvej 311, Denmark

13:30-15:30

Metrology II

International II

Chairperson(s): Inkeun Baek

13:30

Characterization Of Photonic-Assisted Free-Space Sub-THz Data Transmission

Th-PM1-5-1

Mohanad Dawood AlDabbagh¹; Jess Smith²; Thomas Kleine-Ostmann¹; Mira Naftaly*²; Irshaad Fatadin²

¹Physikalisch-Technische Bundesanstalt, Bundesallee 100, Braunschweig, Germany; ²National Physical Laboratory, Hampton Rd, Teddington, United Kingdom

13:45

High Precision Molecular Laser Frequency Measurements Using A THz Frequency Comb

Th-PM1-5-2

Alexandra Khabbaz*¹; Jean-François Lampin¹; Luan Juppert²; Olivier Pirali²; Gael Mouret³; Francis Hindle³

¹IEMN-CNRS, Avenue Poincaré, Villeneuve d'Ascq, France; ²Institute of Molecular Sciences of Orsay, Rue André Rivière, France; ³Université du Littoral Côte d'Opale, Avenue Schumann, France

14:00

Imaging The Stokes Vector Of Backscattered THz Speckle Fields Using The Two-Channel PHASR Scanner

Th-PM1-5-3

Kuangyi Xu*; Zachery B. Harris; M. Hassan Arbab
Stony Brook University, 100 Nicolls Road, Stony Brook, United States

14:15

THz Dielectric Properties Of 3D Printable Silica Nanoparticle-based Photoresin

Th-PM1-5-4

Emil John Magaway*¹; Yeganeh Farahi¹; Stephen Hanham²; Zhenyu Zhang³; Adriana Guaidia-Moreno⁴; Miguel Navarro-Cia¹

¹University of Birmingham, School of Physics and Astronomy, Birmingham, United Kingdom; ²University of Birmingham, School of Engineering, Birmingham, United Kingdom; ³University of Birmingham, School of Chemical Engineering, Birmingham, United Kingdom; ⁴Nanoscribe GmbH, Eggenstein-Leopoldshafen, Germany

14:30 **Fast Scanning Terahertz Computed Tomography With A Telecentric F- θ Lens** **Th-PM1-5-5**

Lu Rong*¹; Ran Ning²; Shufeng Lin²; Jie Zhao²; Yunxin Wang²; Dayong Wang¹; Min Wan³

¹Beijing University of Technology, 100 Ping Le Yuan, Beijing, China; ²Beijing University of Technology, 100 Ping Le Yuan, China; ³University College Dublin, Belfield, Ireland

14:45 **On-wafer RF High-power Measurement With An LSMO Load At 40 GHz** **Th-PM1-5-6**

Thomas Quinten*¹; Lampin Jean-François²; Etienne Okada³; Victor Pierron¹; Chantal Gunther¹; Laurence Méchin¹; Benjamin Walter⁴; Bruno Guillet¹

¹GREYC (Caen university, CNRS, ENSICAEN), 6 Bd Maréchal Juin, Caen, France; ²Institut d'Electronique de Microélectronique et de Nanotechnologie (IEMN), Cité scientifique, avenue Poincaré, VILLENEUVE D'ASCQ, France; ³Institut d'Electronique de Microélectronique et de Nanotechnologie (IEMN), Cité scientifique, avenue Poincaré, VILLENEUVE D'ASCQ, France; ⁴Vmicro SAS, Avenue Poincaré, VILLENEUVE D'ASCQ, France

15:00 **How Accurate Are Reflection Measurements With TDS Systems?** **Th-PM1-5-7**

Andreas STEIGER*¹; Benjamin Röben²

¹PTB, ABBESTR., 2-12, Berlin, Germany; ²PTB, ABBESTR. 2-12, Berlin, Germany

15:15 **Optical Alignment For Non-contact In Vivo THz Sensing** **Th-PM1-5-8**

Jacob Young*¹; Emma pickwell-macpherson²; Rakyo Stantchev³

¹University of Warwick, University of Warwick, department of physics, Coventry, United Kingdom; ²University of Warwick, University of Warwick, department of physics, coventry, United Kingdom; ³National Sun Yat-sen University, National Sun Yat-sen University, department of physics, Kaohsiung City, Taiwan

16:00-18:00

Laser Sources & Detectors VII

**Symposia
Theatre**

Chairperson(s): Jozsef Fülöp

16:00 **Multi-pixel Addressable Photoconductive Arrays For THz Beam Shaping And Polarization Control** **Th-PM2-1-1**

James Lloyd-Hughes*

University of Warwick, Department of Physics, Gibbet Hill Road, Coventry, United Kingdom

16:30 Active Multipixel Photoconductive Emitter Technology For THz Beam Shaping And Steering Th-PM2-1-2

Nishtha Chopra^{*1}; Justas Deveikis²; James Lloyd-Hughes³
¹University of Warwick, University of Warwick, Gibbet Hill Road, 3.06 (MAS Building), Coventry, United Kingdom; ²University of Warwick, University of Warwick, University of Warwick, Gibbet Hill Road, Coventry, United Kingdom; ³University of Warwick, University of Warwick, Gibbet Hill Road, Coventry, United Kingdom

16:45 97% Throughput Hollow-Core Fibers For Pulse Compression Of High Power Yb Lasers Th-PM2-1-3

Young-Gyun Jeong¹; Ivanov Maksym²; Pedram Ghaderi²; Etienne Doiron²; Riccardo Piccoli¹; Luca Zanotto¹; Gabriel Tempea²; Roberto Morandotti¹; Francois Legare¹; Luca Razzari¹; Bruno Schmidt^{*2}
¹INRS-EMT, 1650 Blvd. Lionel Boulet, Varennes, Canada; ²few-cycle Inc., 1650 Blvd. Lionel Boulet, Varennes, Canada

17:00 Terahertz Generation From Water Under Long Wavelength Excitation Th-PM2-1-4

Yiwen E*; X.-C. Zhang
University of Rochester, 480 Intercampus Dr, Rochester, United States

17:15 Enhanced Terahertz Emission From Gallium Arsenide Nano-Hole Array Under Low Power Optical Pump Th-PM2-1-5

Yangfan Gu^{*1}; Kemeng Wang²; Yongchang Lu²; Jianqiang Gu²
¹Tianjin University, Tianjin University, No.92, Weijin road, Nankai district, Tianjin, Tianjin, China; ²Tianjin University, No.92, Weijin road, Nankai district, Tianjin, China

17:30 Tunable Pump Compression And Fast Modulation For Pulsed THz Generation Th-PM2-1-6

Yazan Lampert*; Alessandro Tomasino; Shima Rajabali; Ileana-Cristina Benea-Chelmus
Hybrid Photonic Laboratory, EPFL, BM 3136, Station 17, Switzerland

17:45 Optimization Of Multicycle THz Generation Using Versatile Optical Pulse Trains Th-PM2-1-7

Christian Rentschler*; Umit Demirbas; Zhelin Zhang; Mikhail Pergament; Nicholas H. Matlis; Franz X. Kaertner
Deutsches Elektronen-Synchrotron DESY, Notkestrasse 85, Hamburg, Germany

16:00-18:00

Nano & Quantum Devices

Cartier I

Chairperson(s): Hannah Joyce

16:00

Mid-infrared Quantum Well Photodetectors With 100GHz 3dB-bandwidth At Room Temperature

Th-PM2-2-1

Stefano Barbieri*¹; Quyang Lin²; Michael Haki²; Jean-Francois Lampin²; Wenjian Wan³; J. C. Cao³; Hua Li³; Emilien Paytavit⁴
¹IEMN Laboratory - CNRS, Avenue Henri Poincaré, Villeneuve d'Ascq, France; ²IEMN Laboratory and CNRS, Avenue Henri Poincaré, Villeneuve d'Ascq, France; ³Key Laboratory of Terahertz Solid State Technology, Shanghai, Shanghai, China; ⁴IEMN Laboratory - CNRS, Avenue Henri Poincaré, Villeneuve d'Ascq, France

16:30

Tunable Terahertz Cyclotron Emission From Two-dimensional Dirac Fermions

Th-PM2-2-2

Benjamin Benhamou--Bui*¹; Sebastian Gebert²; Maria Szola³; Christophe Consejo³; Sergey Krishtopenko³; Sandra Ruffenach³; Jérémie Torres³; Cédric Bray³; Benoit Jouault³; Kenneth Maussang³; Milan Orlita⁴; Xavier Baudry⁵; Philippe Ballet⁶; Sergey Morozov⁶; Vladimir Gavrilenko⁶; Nikolay Mikhailov⁷; Sergey Dvoretzskii⁷; Frederic Teppe³
¹University of Montpellier, 163 rue Auguste Broussonnet, Campus Triolet Place Eugène Bataillon, Montpellier, France; ²University of Würzburg, Am Hubland 97074 Würzburg, Germany; ³University of Montpellier, 163 rue Auguste Broussonnet, France; ⁴LNCMI-G, 25 Martyrs Avenue, 38042 Grenoble Cedex 9, France; ⁵CEA Leti, 17 avenue de Martyrs 38054 Grenoble, France; ⁶Institute for Physics of Microstructures of Russian Academy of Sciences, Akademicheskaya Str., 7, Afonino, Nizhny Novgorod, Russian Federation; ⁷A.V. Rzhanov Institute of Semiconductor Physics, Siberian Branch of Russian Academy of Sciences, ISP SB RAS, 13 Lavrentiev aven., Novosibirsk, 6300, Russian Federation

16:45

Graphene-Coupled Highly Efficient THz Photomixer

Th-PM2-2-3

Alaa Jabbar Jumaah*¹; Masoumeh Goudarzi²; Maira Beatriz Perez Sosa²; Jaime Gómez Rivas²; Hartmut G. Roskos³; Shihab Al-Daffaie²
¹Eindhoven University of Technology, Groene Loper 19, Eindhoven, Netherlands; ²Eindhoven University of Technology, Groene Loper 19, Eindhoven, Netherlands; ³Goethe-Universität Frankfurt am Main, Max-von-Laue-Straße 1, Frankfurt am Main, Germany

17:00	<p>Tunable Antenna-Coupled Intersubband Terahertz (TACIT) Mixer: Frequency-agile THz Heterodyne Detector Based On Intersubband Transitions In Single GaAs/AlGaAs Quantum Well</p> <p>Changyun Yoo*¹; Kenneth West²; Loren Pfeiffer²; Jonathan Kawamura¹; Mark Sherwin³; Boris Karasik¹</p> <p>¹Jet Propulsion Laboratory, 4800 Oak Grove Drive, Pasadena, United States; ²Princeton University, Princeton University, Princeton, United States; ³UCSB, UCSB, Santa Barbara, United States</p>	Th-PM2-2-4
17:15	<p>THz Detection By Photomixing In Graphene</p> <p>Mark D. Thomson¹; Florian Ludwig¹; Jakob Holstein¹; Reiam Al-Mudhafar²; Shihab Al-Daffaie*³; Hartmut G. Roskos¹</p> <p>¹Goethe-Universität, Max-von-Laue-Str. 1, Frankfurt am Main, Germany; ²Institute of Laser University of Baghdad, Baghdad, Baghdad, Iraq; ³Eindhoven University of Technology, Groene Loper 5,, Eindhoven, Netherlands</p>	Th-PM2-2-5
17:30	<p>Superconducting Nanowire Single-Photon Detector Arrays For The Near- To Mid-Infrared</p> <p>Benedikt Hampel*; Richard P. Mirin; Sae Woo Nam; Varun B. Verma</p> <p>National Institute of Standards and Technology, 325 Broadway, Boulder, United States</p>	Th-PM2-2-6
17:45	<p>Topological Quantum Materials For Ultra-Sensitive Terahertz Detection</p> <p>Lin Wang*</p> <p>State Key Laboratory for Infrared Physics, Shanghai Institute of Technical Physics, Chinese Academy, 500 Yu-tian Road, China</p>	Th-PM2-2-7

16:00-18:00

Nanoscopy & Near-Field Effects

Cartier II

Chairperson(s): Daniel Mittleman

16:00	<p>Mid-Infrared Nanospectroscopy To Probe Protein Conformation at The Nanoscale</p> <p>Antonia Intze¹; Maria Eleonora Temperini¹; Raffaella Polito²; Michele Ortolani²; Valeria Giliberti*¹</p> <p>¹Istituto Italiano di Tecnologia, Center for Life Nano- and Neuro-Science, viale Regina Elena 291, Rome, Italy; ²Department of Physics, Sapienza University of Rome, Piazzale A. Moro 2, Italy</p>	Th-PM2-3-1
16:30	<p>Detector Development For Far-Infrared Near-Field Nanospectroscopy*</p>	Th-PM2-3-2

G. Lawrence Carr*
Brookhaven Nat'l Lab, bldg. 741, Brookhaven Nat' Lab, Upton,
United States

16:45 **Time-resolved THz-TDS Nanoscopy For Probing Carrier Dynamics With Femtosecond Temporal And Nanometer Spatial Resolution** **Th-PM2-3-3**

Tobias Gokus*; Jonas Albert; Artem Danilov; Suman Paul;
Andreas Huber
attocube systems AG, Eglfinger Weg 2, Haar, Germany

17:00 **THz-pump / MIR-probe Nanospectroscopy On Si-doped GaAs-InGaAs Core-shell Nanowires** **Th-PM2-3-4**

Andrei Luferau*¹; Stephan Winnerl¹; Susanne Kehr²; Maximilian Obst²; Felix Kaps²; Emmanouil Dimakis¹; Alexej Pashkin¹; Lukas Eng²; Manfred Helm¹
¹Helmholtz-Zentrum Dresden-Rossendorf, Bautzner Landstraße 400, Dresden, Germany; ²Technische Universität Dresden, Nöthnitzer Str. 61, Dresden, Germany

17:15 **Revealing Near-field Mode Distribution In Terahertz Asymmetric Split-ring-resonators** **Th-PM2-3-5**

Xingxing Xu*; Min Hu; Xiaoqiuyan Zhang; Fu Tang; Shigao Zhao; Shenggang Liu
University of Electronic Science and Technology of China, pidu distribute, No. 2006 xiyuan avenue, Chengdu, China

17:30 **Thermal Near-field Spectroscopic Analysis On Dielectrics** **Th-PM2-3-6**

Yusuke Kajihara*¹; Kuan-Ting Lin²; Ryoko Sakuma²
¹The University of Tokyo, Komaba 4-6-1, Meguro-ku, Tokyo, Japan; ²The University of Tokyo, Komaba 4-6-1, Meguro-ku, Japan

17:45 **Near Field Analysis Of Individual High Quality Factor THz Resonators** **Th-PM2-3-7**

Lucy Hale*¹; Yuezhen Lu²; Abdullah Zaman²; Sadvikas Addamane³; Igal Brenner³; Oleg Mitrofanov¹; Riccardo Degl'Innocenti²
¹University College London, Electrical and Electronic Engineering, London, United Kingdom; ²Lancaster University, New Engineering Building, Gillow Ave, Bailrigg, Lancaster, United Kingdom; ³Center for Integrated Nanotechnologies, Sandia National Laboratories, Albuquerque, United States

16:00-18:00

Active Sensing 2

International
I

Chairperson(s): Kevin Kolpatzeck

- 16:00 THz 3D Imaging Based On An Inverse Spherical Synthetic Aperture** Th-PM2-4-1
Tobias Kubiczek*; Efe Satiroglu; Thorsten Schultze; Jan C. Balzer
University of Duisburg-Essen, Bismarckstr. 81, Duisburg, Germany
- 16:15 Low-Loss And High-Speed Generalized Terahertz Time-Domain Spectroscopic Ellipsometry** Th-PM2-4-2
Hao Chen; Kaijie Wang; Guangyou Fang; Xuequan Chen*
GBA Branch of Aerospace Information Research Institute, Chinese Academy of Sciences, Room 501, Building B7, Kai Yuan Da Dao No. 11, Huangpu District, Guangzhou, Guangzhou, China
- 16:30 Characterization Of Active Liquid Crystal: Comparison Using Continuous And Time Domain Terahertz Techniques** Th-PM2-4-3
Audrey Le Boulout*¹; Anastasiia Pusenkova²; Mariia Zhuldybina¹; Xavier Ropagnol³; Thomas Gisder⁴; Marc-Michael Meinecke⁴; Heiko Schroeder⁴; Heiko Gustav Kurz⁴; Tigran Galstian²; François Blanchard¹
¹École de technologie supérieure (ÉTS), 1100 Notre Dame Ouest, Montréal, Canada; ²Université Laval (ULaval), 2325 Rue de l'Université, Québec, Canada; ³INRS-ET, 1650, boul. Lionel-Boulet, Varennes, Canada; ⁴Volkswagen Group Innovation, Berliner Ring 2, Wolfsburg, Germany
- 16:45 Optical Properties Of Wood Biomass Material obtained By Terahertz Ellipsometry** Th-PM2-4-4
Atsushi Nakanishi*¹; Verdad Agulto²; Kosaku Kato²; Toshiyuki Iwamoto³; Hiroshi Satozono¹; Makoto Nakajima²
¹Hamamatsu Photonics K. K., 5000, Hirakuchi, Hamakita-ku, Hamamatsu, Japan; ²Osaka University, 2-6 Yamadaoka, Suita, Japan; ³Nippo Precision Co., Ltd., 734 Miyakubo, Hosakamachi, Nirasaki, Japan
- 17:00 Terahertz Radar Sensing For Real-time Monitoring Of Powder Streams** Th-PM2-4-5

Anis Moradikouchi*¹; Marlene Bonmann²; Tomas Bryllert²;
Anders Sparén³; Jonas Johansson³; Staffan Folestad²; Jan
Stake²; Helena Rodilla²

¹Chalmers University of Technology, Chalmersplatsen 4,
Gothenburg, Sweden; ²Chalmers University of Technology,
Chalmersplatsen 4, Sweden; ³AstraZeneca, Pepparedsleden 1,
Mölndal, Sweden

17:15 Flexible Terahertz Gas Sensing Platform: Combining Hollow Waveguide Gas Cells With An Opto-Electronic Light Source Th-PM2-4-6

Dominik Theiner*¹; Benedikt Limbacher¹; Michael Jaidl¹; Marie Ertl¹; Karl Unterrainer¹; Juraj Darmo¹; Michael Hlavatsch²; Boris Mizaikoff²

¹Photonics Institute, TU Wien, Gusshausstrasse 27-29, Vienna, Austria; ²Institute of Analytical and Bioanalytical Chemistry, University of Ulm, Albert-Einstein-Allee 11, Ulm, Germany

17:30 Photoconductive THz Near-field Detectors Operated With A 1550 Nm Cw-laser System For High Spatial- And Spectral-resolution Measurements Th-PM2-4-7

Simon Sawallich*¹; Anselm Deninger²; Alexander Michalski¹; Max C. Lemme³; Michael Nagel¹

¹Protemics GmbH, Otto-Blumenthal-Str. 25, Aachen, Germany; ²Topica Photonics AG, Lochhamer Schlag 19, Graefelfing, Germany; ³ELD, RWTH Aachen University, Otto-Blumenthal-Str. 25, Aachen, Germany

17:45 A Scanless Method For Terahertz Time-domain Imaging Th-PM2-4-8

Luca Zanotto*¹; Giacomo Balistreri¹; Andrea Rovere¹; O-Pil Kwon²; Roberto Morandotti¹; Riccardo Piccoli³; Luca Razzari¹

¹INRS-EMT, 1650 boulevard Lionel-Boulet, Varennes, Canada; ²Ajou University, Suwon, 443-749, Korea, Republic of; ³Politecnico di Milano, Piazza Leonardo Da Vinci, 32, Milano, Italy

16:00-18:00

THz Quantum Optics & Near-Field Microscopy

International II

Chairperson(s): Marco Rahm

16:00

Landau Polaritons In The Ultrastrong And Superstrong Coupling Regime In A Multimode Terahertz Photonic-Crystal Cavity

Th-PM2-5-1

Fuyang Tay*¹; Ali Mojjibpour¹; Stephen Sanders¹; Shuang Liang²; Hongjing Xu¹; Geoff Gardner²; Andrey Baydin¹; Michael Manfra²; Alessandro Alabastri¹; David Hagenmüller³; Junichiro Kono¹

¹Rice University, 6100 Main St, Houston, United States;

²Purdue University, 525 Northwestern Ave, West Lafayette, United States; ³Université de Strasbourg and CNRS, 8 All.

Gaspard Monge, Strasbourg, France

16:30

Direct Measurement Of The THz Local Density Of Optical States

Th-PM2-5-2

Jaime Gomez Rivas*¹; Stan ter Huurne²; Djero Peeters²

¹Eindhoven University of Technology, PO BOX 513, Eindhoven, Netherlands; ²Eindhoven University of Technology, P.O. Box 513, Eindhoven, Netherlands

16:45

Superconducting Josephson Probe Microscope

Th-PM2-5-3

Ping Zhang*¹; Shoucheng Hou¹; Zixi Wang¹; Zihan Wei¹; Hongmei Du¹; Dingding Li¹; Yangyang Lv¹; Hancong Sun²; Yonglei Wang¹; Huabing Wang¹; Peiheng Wu¹

¹Research Institute of Superconductor Electronics, Nanjing University, 163 Xianlin Avenue, Nanjing, China; ²Purple Mountain Laboratories, 9 Mozhou East Road, Nanjing, China

17:00

Strong Light-matter Coupling In SiGe Quantum Wells Embedded In Terahertz Patch Antenna Cavities

Th-PM2-5-4

Michele Ortolani*¹; Leonetta Baldassarre¹; Tommaso Venanzi¹; Fritz Berkmann¹; Enrico Talamas Simola²; Michele Montanari²; Elena Campagna²; Luciana Di Gaspare²; Sara Cibella³; Andrea Notargiacomo³; Ennio Giovine³; Cedric Corley-Wiciak⁴; Giovanni Capellini⁴; Michele Virgilio⁵; Giacomo Scaleri⁶; Monica De Seta⁷

¹Sapienza University of Rome, Piazzale Aldo Moro 2, Dipartimento di Fisica, Rome, Italy; ²Roma Tre University, Department of Science, Via della Vasca Navale, Rome, Italy; ³CNR Institute for Photonics and Nanotechnologies, Via Fosso del Cavaliere, Rome, Italy; ⁴IHP microelectronics, Technologiepark Ostbrandenburg, Frankfurt am Oder, Germany; ⁵University of Pisa, Largo Pontecorvo, Pisa, Italy; ⁶ETH Zurich, ETH Hönggerberg, HPT F 6, Zurich, Switzerland; ⁷Roma Tre University, Department of Science, Italy

17:15

Quantum Algorithm Emulator For Implementation Of Deutsch-Jozsa Algorithm In The THz Region

Th-PM2-5-5

Zizwe Chase*¹; Ashley Blackwell²; Riad Yahiaoui²; Yi-Huan Chen²; Zhixiang Huang³; Xi Wang³; Thomas Searles²; Pai-Yen Chen²

¹University of Illinois at Chicago, 851 S. Morgan St., MC 154, Chicago, United States; ²University of Illinois at Chicago, 851 S. Morgan St., MC 154, United States; ³University of Delaware, 210 South College Ave., United States

17:30 **Terahertz Landau Polaritons In Nano-slots: Ultrastrong Coupling Under Extreme Spatial Confinement** **Th-PM2-5-6**

Dasom Kim*¹; Sunghwan Kim²; Dukhyung Lee²; Shuang Liang³; Fuyang Tay¹; Michael Manfra⁴; Dai-Sik Kim²; Junichiro Kono¹

¹Rice University, 6100 Main St., Houston, United States; ²UNIST, Ulsan, Korea, Republic of; ³Perdue Univeristy, West Lafayette, United States; ⁴Perdue, West Lafayette, United States

17:45 **Twin Beams Probe Pulses For Subcycle Sampling Of THz-MIR Fields** **Th-PM2-5-7**

Patrick Cusson*; Stéphane Virally; Denis Seletskiy
Polytechnique Montréal, 2500, chemin de Polytechnique, Montréal, Canada

18:00-19:30

Poster Session 5

**Foyer
(3rd floor)**

Nanostructured THz Gunn Diode Using A Patch Antenna Combined With Side-contact And Field-plate Technologies

Th-P1-01

Ahid S. Hajo*¹; Deniz Cicek¹; Yunus Celik¹; Armin Dadgar²; Oktay Yilmazoglu¹; Sascha Preu¹

¹TU Darmstadt, Merckstr. 25, Darmstadt, Germany; ²University Magdeburg, Merckstr. 25, Darmstadt, Germany

Design And Simulation Of Electron Optics System For 340 GHz Extended Interaction Klystron

Th-P1-02

Kedong Zhao¹; Wenxin Liu*²; Xiangpeng Liu³; Cunjun Ruan⁴

¹Beihang University, 37 Xueyuan Road, Haidian District, Beijing, P.R. China, Beijing, China; ²Aerospace Information Research Institute Chinese Academy of Sciences, No.9 Dengzhuang South Road, Haidian District, Beij, No.1 Yanqihu East Rd, Huairou District, Beijing, PR China, China; ³Fan Gongxiu Honors College, Beijing University of Technology, 100 Pingleyuan, Chaoyang District, Beijing, China; ⁴Beihang University, 37 Xueyuan Road, Haidian District, Beijing, P.R., China

Introduction Of Inverted-HEMT Structure In A Grating-Gate Plasmonic THz Detector For Drastic Improvement Of The Pulse Response

Th-P1-03

Kenichi Narita*¹; Takumi Negoro¹; Yuma Takida²; Hiroaki Minamide²; Taiichi Otuji¹; Tetsuya Suemitsu³; Akira Satou¹
¹Tohoku Univ., 2-1-1 Katahira, Aoba-ku, Sendai, Japan; ²RIKEN Center for Advanced Photonics, 519-1399, Aramaki, Aoba-ku, Sendai, Japan; ³New Industry Creation Hatchery Center, 6-6-10, Aramaki, Aoba-ku, Sendai, Miyagi, Japan

Ion-Implanted GeSn Terahertz Photoconductive Antenna On Silicon

Th-P1-04

Pin-Han Lee¹; Wang-Chien Chen²; Shang-Hua Yang*³
¹National Tsing Hua University, 8F, No. 32, Jinshan 15th St., East Dist., Hsinchu City 300063, Taiwan (R.O.C.), Hsinchu, Taiwan; ²National Tsing Hua University, 8F, No. 32, Jinshan 15th St., East Dist., Hsinchu, Taiwan; ³National Tsing Hua University, R909 Delta Building, No. 101, Section 2, Kuang-fu, Taiwan

Terahertz Absorbance Of Sputtered Nanocrystalline TiO₂ Thin Film

Th-P1-05

GURUVANDRA SINGH*¹; Subhash Nimanpure²; Amit Haldar³; Debankit Priyadarshi³; Amit Kumar Gangwar⁴; Preetam Singh⁵; SHOYON PAL⁶; Mukesh Jewariya⁵
¹Academy of Scientific and Innovative Research (AcSIR), Ghaziabad-201002, India, JRF HOSTEL NPL COLONY NEW RAJENDRA NAGAR, NEW DELHI, India; ²USAR, GGSIP University, East Campus, Surajmal Vihar, Delhi-110092, India, USAR, GGSIP, DELHI, India; ³School of Physical Sciences, NISER, Bhubaneswar, Odisha-752050, India, NISER Bhubaneswar, Bhubaneswar, India; ⁴Academy of Scientific and Innovative Research (AcSIR), Ghaziabad-201002, India, CSIR-NPL, New Delhi, India; ⁵CSIR-National Physical Laboratory, Dr. K.S. Krishnan Marg, New Delhi-110012, India, CSIR NPL NEW DELHI, NEW DELHI, India; ⁶School of Physical Sciences, NISER, Bhubaneswar, Odisha-752050, India, NISER Bhubaneswar, Khurda, India

Optimization Of Substrate-lens-coupled CMOS Field-effect Transistor Detectors For 250 GHz By Pixel Binning Technique

Th-P1-06

Kestutis Ikamas*¹; Dmytro B. But²; Domantas Vizbaras¹;
Cezary Kolacinski²; Alvydas Lisauskas¹

¹Institute of Applied Electrodynamics and Telecommunications,
Vilnius University, Sauletekio al. 3, Vilnius, Lithuania;

²CENTERA Laboratories, Institute of High Pressure Physics
PAS, 19 Poleczki Street, Warsaw, Poland

Reduction Of Spectral Linewidth Of Resonant-Tunneling-Diode THz Oscillators Due To External Feedback

Th-P1-07

Masahiro Asada*¹; Safumi Suzuki²

¹Tokyo Institute of Technology, 2-12-1-S9-3 Ookayama,
Meguro-ku, Tokyo, Japan; ²Tokyo Institute of Technology, 2-12-
1-S9-3 Ookayama, Meguro-ku, Tokyo, Japan

0.34THz Longitudinal Double-Beams Staggered Double-Blade Backward Wave Oscillator

Th-P1-08

Peng He*¹; Liu Wenxin²

¹Chinese Academy of Sciences, No.5 Yanqi East Second
Road, Huairou District, Beijing, Bei Jing, China; ²Chinese
Academy of Sciences, No.5 Yanqi East Second Road, Huairou
District, Bei, BEIJING, China

A Tunable Narrow-band THz Radiation Using Subwavelength Hole Array Layer

Th-P1-09

Ping Zhang*¹; Yin Dong²; Youfeng Yang²; Bingyang Liang²;
Shengpeng Yang²; Yuan Zheng³; Shaomeng Wang²; Zhanliang
Wang²; Yubin Gong²

¹University of Electronic Science and Technology of China,
University of Electronic Science and Technology of China,
Qingshuihe Campus: No. 2006, Xiyuan Avenue, Chengdu
high tech Zone (West District), Chengdu, China; ²University
of Electronic Science and Technology of China, University of
Electronic Science and Technology of, Qingshuihe Campus:
No. 2006, Xiyuan Avenue, Chengdu high tech Zone (West
District), Chengdu, China; ³University of Electronic Science
and Technology of China, University of Electronic Science and
Technology of, Qingshuihe Campus, University of Electronic
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Terahertz Resonant-Tunneling-Diode Oscillator With Coupled Offset Fed Slot-Ring Antenna Pairs

Th-P1-10

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Research On Ripple Suppression Of High-voltage Power Supply For Gyrotron cathode Based On Series Linear Filtering Th-P1-11

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Design And Analysis Of Electron Optics System For 0.67 THz Traveling Wave Tube Th-P1-12

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Theoretical Investigation On Detecting Terahertz Waves By Rydberg Atoms Th-P1-13

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Limit Of Oscillation Frequency In Two-element Slot-ring Type RTD Oscillator Array Th-P1-14

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Power Detection Of Solid-state Terahertz Transmitters: Terahertz Induced Thermoacoustic Signal And Its Characteristics Th-P1-15

Weipeng Wang*; Lin Huang; Hongji Zhou; Sen Gong; Hongxin Zeng; Jun Zhou; Huajie Liang; Dan Liang; Tao Jiang; Cong Dai; Ziqiang Yang; Yaxin Zhang
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Two-dimensional Effects In Multicycle THz Generation With Tunable Pump Pulse Trains In Lithium Niobate Th-P1-16

Umit Demirbas; Christian Rentschler*; Zhelin Zhang; Mikhail Pergament; Nicholas H. Matlis; Franz X. Kaertner
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Time-domain Measurements Of A ~300 GHz Split-ring Resonator Coupled To THz Goubau Line Waveguide By Evanescent Electric Field

Th-P1-17

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Manipulating The Refractive Index Of THz Generation Crystals

Th-P1-18

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Adapting Terahertz Spintronic Emitters Towards Maximum Performance

Th-P1-19

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Self-referencing Reflection Sensor For Industrial Applications

Th-P1-20

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Monolithic Compact Terahertz Emitter And Detector

Th-P1-21

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Shot-noise Limited Detection Of Terahertz Transients From Spintronic Emitters

Th-P1-22

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Highly Efficient THz Waves Using Laser Chaos

Th-P1-23

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Temperature-dependent THz Transients Emitted By Optically Excited FeNi/Pt Spintronic Emitters

Th-P1-24

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Efficient Terahertz Generation Via Optical Rectification In Halide Perovskites

Th-P1-25

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Conceptual Study And Design Of A Compact, Ultra-short Pulse Infrared/Terahertz Free Electron Laser

Th-P1-26

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High-Power, Ultra-Broadband THz Generation In Organic Crystal MNA

Th-P1-27

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Spectral Range Broadening Of Multimode-Laser-Driven Terahertz Spectroscopy System Using Two Laser Diodes

Th-P1-28

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Vibration Analysis Of A 0.34THz Traveling Wave Tube

Th-P1-29

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High-power And Pulse Test Of The 105/140 GHz Dual-Frequency MW-level Gyrotron

Th-P1-30

Linlin Hu*; Dimin Sun; Qili Huang; Tingting Zhuo; Peng Hu; Yi Jiang; Guowu Ma; Hongbin Chen; Hongge Ma
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A Dual-Frequency Mode Converter For A 70/105 GHz Gyrotron

Th-P1-31

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Graphene Quantum Dot Bolometer Camera: Practical Approaches And Preliminary Results

Th-P1-32

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Printed Terahertz Metasurfaces For Multispectral Imaging By Thermo-conversion

Th-P1-33

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CW Laser Emission Up To 5 THz Using Optically Pumped Water Molecules

Th-P1-34

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Luan Juppet⁴; Olivier Pirali⁴

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**Development Of Multiple-Tunnel Slow-Wave Structures
For Miniature W-band Traveling-Wave Tubes With Multiple
Sheet Electron Beams**

Th-P1-35

Alena Rostuntsova¹; Roman Torgashov¹; Dmitriy Nozhkin²;
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**Monte Carlo Simulations Of Signal Contrast Mechanisms
In Broadband Terahertz Polarimetric Imaging Of Biological
Tissues**

Th-P1-36

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**Investigation Of THz Absorption Spectra Of α -lactose
Aqueous Solution**

Th-P1-37

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Theoretical Study Of THz- Optoacoustic Signal Generation

Th-P1-38

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The Reflectance Of Hydrated Melanin At 2.0 THz To 18.0 THz

Th-P2-01

Zoltan Vilagosh^{*1}; Negin Foroughimehr²; Elena P. Ivanova¹; Andrew W. Wood²¹RMIT, University, 124 La Trobe St, Melbourne, Australia;²Swinburne University of Technology, Jonh St, Hawthorn, Australia**Far-Infrared Absorption Properties Of Bone-Related Calcium Phosphates**

Th-P2-02

Verdad Agulto^{*1}; Wangxuan Zhao¹; Mihoko Maruyama²; Yuga Ono²; Kosaku Kato¹; Yutaro Tanaka²; Hiroshi Yoshikawa²; Yusuke Mori²; Masashi Yoshimura¹; Makoto Nakajima¹¹Institute of Laser Engineering, Osaka University, Suita, Osaka, Japan;²Graduate School of Engineering, Osaka University, Suita, Osaka, Japan**Non-contact Millimeter Wave Dielectric Spectroscopy On Aqueous Solution**

Th-P2-03

Che Min Wu^{*1}; Chia Chin Cheng²; Shang Hua Yang²¹National Tsing Hua University, 101, Section 2, Kuang-Fu Road, Hsinchu 300044, Taiwan R.O.C., Hsing Chu City, Taiwan;²National Tsing Hua University, National Tsing Hua University, 101, Section 2, Kuang-Fu Road,, Hsinchu City, Taiwan**Discussion On Appropriate Evaluation Methods For Low Absorbers In The Case Of Terahertz Spectroscopy**

Th-P2-04

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Characterization Of Melanin Suspended In Alginate Biofilms At The THz Band Using FTIR And TDS Spectroscopy

Th-P2-05

Mariana Alfaro^{*1}; Lidia Verduzco-Grajeda¹; Monica Ortiz-Martinez²; Elodie Strupiechonski³; Diego Gonzalez-Quijano¹; Nayeli Solis-Delgadillo¹¹Universidad Autónoma de Aguascalientes, Av. Universidad 940, Aguascalientes, Mexico;²CINVESTAV, Libramiento Norponiente 2000, Real de Juriquilla, Mexico;³CIDESI, Av. Playa Pie de la Cuesta No. 702., Mexico

**Terahertz Generation In AlxGa1-xAs/GaAs
Heterostructured P-i-n Diodes**

Th-P2-06

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**Multiphysics Simulation Of Low Frequency Terahertz
Induced Thermoacoustic Signal Characteristics**

Th-P2-07

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**Complex Third Order Nonlinear Optical Susceptibility In
The Terahertz Region Evaluated By Free-Electron Laser**

Th-P2-08

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**Femtosecond Circular Photogalvanic Effect In FeCo/
graphene Nanobilayers**

Th-P2-09

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Kitasomagun, Japan; ⁶Osaka University, Machikaneyama, Toyonaka, Japan

Time-Domain Spectroscopy For Space Exploration At Terahertz Energy Scales

Th-P2-13

Yookyung Ha*¹; Jonas Woeste¹; Oliver Gueckstock²; Georgios Kourkafas³; Jovana Petrovic⁴; Mihailo Rabasovic⁵; Aleksandar Krmpot⁶; Tom S. Seifert²; Andrea Denker³; Tobias Kampfrath²; Nikola Stojanovic⁶; Michael Gensch⁶

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Temperature Dependence Of The Anisotropic Dielectric Properties Of Semi-insulating B-Ga2O3 In The Terahertz Region

Th-P2-14

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Chiral Nonlocal Terahertz Photoconductivity In Heterostructures Based On Topological Hg1-xCdxTe Films

Th-P2-15

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**On-Chip THz Time-Domain Spectroscopy Sensor With
Adjustable Sample Interaction By A Daughterboard**

Th-P2-16

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**Thermal Transport Of Defect Graphene By Raman
Spectroscopy.**

Th-P2-17

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Physics, Mohammed VI Polytech, Institute of Applied Physics,
Mohammed VI Polytechnic University, Lot 660, Hay Moulay
Rachid, Ben Gu, Ben Guerir, Morocco

**Catching A Terahertz Pulse In A Photonic Crystal Net
Triggers Dynamic Frequency Conversion**

Th-P2-18

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**Strong Coupling Of An EIT-like Metamaterial With Photons
In A Photonic Crystal Cavity**

Th-P2-19

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Free-electron Infrared Nonlinearities In Heavily Doped InGaAs Nanoantennas

Th-P2-20

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Planar Chiral Metasurface With Maximal Chirality Empowered By Toroidal Dipole Resonances

Th-P2-21

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Terahertz Wave Absorbing Properties Of Double-coils Randomly Distributed In Cellulose Nanofibers

Th-P2-22

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Highly Sensitive Terahertz Metamaterial Sensor With Enhanced Spatial Distribution Of Strong Electric Field

Th-P2-23

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Efficient And Broadband Terahertz Polarization Converter Enabled By An All-metal Stereo Reflective Metasurface

Th-P2-24

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Photo-Curing Resin With Carbon Nanotube/Cellulose Nanofiber Composite Flakes As Electromagnetic Shielding Material

Th-P2-25

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Terahertz Surface Plasmon Resonance Microscopy In The Otto Configuration

Th-P2-26

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Vietnam-Russia Tropical Science and Technology Research
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Investigation Of Dual Frequency Terahertz Band-stop Filter Based On 3D Printed all-dielectric Metamaterials

Th-P2-27

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Exciting Extended Bound States In The Continuum In Symmetry-Broken Scalable All Dielectric THz Metasurface

Th-P2-28

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Development Of A 3D Printed Dual-Band MmWave And THz Near-Field Microscope For Skin Cancer Detection

Th-P2-29

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Terahertz Near-Field Response Of Graphene Devices

Th-P2-30

Zechuan Bin*; Xingxing Xu; Fu Tang; Tianyu Zhang; Tinggui
Yin; Shigao Zhao; Qingying Yi; Shenggang Liu; Min Hu
University of Electronic Science and Technology of China,
Qingshuihe Campus, University of Electronic, Science and
Technology, No. 2006 Xiyuan Avenue, Cooperative Street, Pidu
District, Chengdu, Sichuan, Chengdu, China

Towards A Versatile And Cost-Effective Lock-In Amplifier

Th-P2-31

Mads Ehrhorn*; Oscar G. Garcia; Edmund J. R. Kelleher;
Simon J. Lange
Technical University of Denmark, Anker Engelunds Vej 1, Kgs.
Lyngby, Denmark

**Deep Learning To Accelerate Terahertz Metamaterials
Design For Biosensing Application**

Th-P2-32

Mavis Gezimati*; Ghanshyam Singh
University of Johannesburg, Auckland Park Kingsway Campus,
P.O Box 524. University of Johannesburg, Johannesburg-2006,
South Afr, Johannesburg, South Africa

**Metallic 3D Printed Double-Ridged WR3.4 Interface for THz
Power Combining**

Th-P2-33

Rihab Hamad*¹; carlos Biurrun-Quel²; thomas haddad³; sumer
maklouf³; marcel Grzeslo³; andreas Klein³; andreas Stöhr³
¹University of Duisburg-Essen, ZHO/Optoelectronics, Lotharstr.
55, Duisburg, Germany; ²Universidad Pública de Navarra,
Campus de Arrosadía, Pamplona, Spain; ³University of
Duisburg-Essen, ZHO/Optoelectronics, Lotharstr. 55, Germany

**Optimizing High-Performance Terahertz Sub-Harmonic
Mixers With Customized Sparrow Search Algorithm**

Th-P2-34

Jingrui Liang*¹; Jun Zhou²; Hongji Zhou²; Tianchi Zhou²; Xiuxiu
Yang²; Jiahao Yang²; Xuechun Sun²; Jia Zhang²; Yaxin Zhang²
¹Huzhou Key Laboratory of Terahertz Integrated Circuits
and Systems, Yangtze Delta Region Institute (, Building
B1, Science and Technology Innovation complex, No. 819
Xisaishan Road, Huzhou City, Zhejiang, No. 2006 Xiyuan
Avenue, Chengdu High-tech Zone (West District), Huzhou,
China; ²Huzhou Key Laboratory of Terahertz Integrated Circuits
and Systems, Yangtze Delta Region Institute (, Building B1,
Science and Technology Innovation com, No. 2006 Xiyuan
Avenue, Chengdu High-tech Zone (West District), Huzhou,
China

**A Shared-focus, Multi-pass Sample Cell (SFSC) Useful For
THz And Optical Spectroscopy**

Th-P2-35

Joseph Demers*; Harvard Harding; Ricardo Franco; Esteban
Franco
Bakman Technologies, 16022 Arminta St, Suite 1, Los Angeles,
United States

Broadband Terahertz Plasmonic Multiplexers

Th-P2-36

Junliang Dong*¹; Alessandro Tomasino²; Giacomo Balistreri²;
Pei You²; Anton Vorobiov³; Étienne Charette²; Boris Le Drogoff²;
Mohamed Chaker²; Aycan Yurtsever²; Salvatore Stivala⁴; Maria
A. Vincenti⁵; Costantino De Angelis⁵; Detlef Kip³; Jose Azana²;
Roberto Morandotti²

¹Institut national de la recherche scientifique, 1650 Boul. Lionel
Boulet, Varennes, Canada; ²Institut national de la recherche
scientifique, 1650 Boul. Lionel Boulet, Canada; ³Helmut
Schmidt University, Holstenhofweg 85, Hamburg 22043,
Germany; ⁴University of Palermo, Viale delle Scienze, Palermo
90128, Italy; ⁵University of Brescia, Via Branze 38, Brescia
25123, Italy

THz Dielectric Directional Coupler Based On Effective Medium Cladding

Th-P2-37

Nikolaos Xenidis*¹; Dmitri Lioubchenko¹; Joachim
Oberhammer²

¹KTH Royal Institute of Technology, Malvinas Väg 10,
Stockholm, Sweden; ²KTH Royal Institute of Technology,
Malvinas Vag 10, Stockholm, Sweden

Design Of A Terahertz Waveguide Diplexer With High Isolation

Th-P2-38

Jia Zhang*¹; Tianchi Zhou²; Xuechun Sun²; Jiahao Yang³;
Jingrui Liang²; Jun Zhou²; Yaxin Zhang²; Wei Wang⁴

¹Huzhou Key Laboratory of Terahertz Integrated Circuits and
Systems, Yangtze Delta Region Institute (, Huzhou 313001,
China, Chengdu 611731, China, Huzhou, China; ²University of
Electronic Science and Technology of China, Chengdu 611731,
China, Cheng Du, China; ³University of Electronic Science
and Technology of China, Cheng Du, China; ⁴National Key
Laboratory of Solid-State Microwave Devices and Circuits,
Hebei Semiconductor Research, Shijiazhuang, China

Typical Solutions Of Antenna On Chip (AoC) In Terahertz Band And Improved Structure For THz Applications

Th-P2-39

Yuxin Ren*¹; Peng Wu²; Wenhua Chen³; Zhongjun Yu²

¹Chinese Academy of Sciences, Beijing, SHANXI, Beijing,
China; ²Chinese Academy of Sciences, Beijing, Beijing, China;
³Tsinghua University, Beijing, China

Terahertz Side Arm Orthomode Transducer With High Isolation And High Cross-polarization Discrimination

Th-P2-40

Wenbo Li¹; Kai Huang¹; Hongxin Zeng^{*1}; Wei Wang²; Yaxin Zhang¹; Ziqiang Yang¹

¹University of Electronic Science and Technology of China, Chengdu, China, Chengdu, China; ²Hebei Semiconductor Research Institute, Shijiazhuang, China, China

Design Analysis Of Microwave Ablation Using Minimally Invasive Antenna In Human Liver

Th-P2-41

Maleeha Khan^{*1}; Dennis Giannacopoulos²

¹McGill University, Montreal, Canada, 1235 Rue Bishop, Montreal, Canada; ²McGill University, 845 Sherbrooke St West, Montreal, Canada

60 Lines Measurement In A Single Experiment Using Super-Resolution TDS

Th-P2-42

Noureddin OSSEIRAN^{*1}; Aditya RAJ²; Sophie Eliet¹; Romain Peretti¹

¹Institut d'Electronique, de Microélectronique et de Nanotechnologie, CNRS , Univ. Lille, Cité Scientifique Avenue Henri Poincaré, CS 60069, Villeneuve d'Ascq, France; ²Institut d'Electronique, de Microélectronique et de Nanotechnologie, CNRS , Univ. Lille, Cité Scientifique Avenue Henri Poincaré, CS 6006, Villeneuve d'Ascq, France

A Terahertz Wave Frequency Measurement System Based On Fabry-Pérot Resonator

Th-P2-43

Aiqin Wang^{*}; Peisheng Liang; Tao Song; Wei Wang; Diwei Liu
University of Electronic Science and Technology of China, 2006 Xiyuan Avenue, Gaoxin West District, Chengdu, Chengdu, China

Lens Absorber Coupled MKIDs For Far Infrared Imaging Spectroscopy

Th-P2-44

Shahab Oddin Dabironezare^{*1}; Sven van Berkel²; Pierre M. Echternach²; Peter K. Day²; Charles M. Bradford²; Jochem Baselmans³

¹Delft University of Technology, Mekelweg 4, Delft, Netherlands; ²NASA Jet Propulsion Laboratory (JPL), 4800 Oak Grove Dr, Pasadena, United States; ³Netherlands Institute for Space Research, SRON, Niels Bohrweg 4, Leiden, Netherlands

Distinguish Proliferative And Apoptotic Glioma Cells With Terahertz Metamaterials

Th-P2-45

Ke Li¹; Qingtong Wang²; Yanpeng Shi¹; Hao Xue²; Gang Li²;
Yifei Zhang^{*3}

¹Shandong University, Shandong University, Building 3B, 1500
ShunHuaLu, Jinan, China; ²Shandong University, Department
of Neurosurgery, Qilu Hospital, Cheeloo, Jinan, China;

³Shandong University, Building 3B, 1500 ShunHuaLu, Building
3B, 1500 ShunHuaLu, Jinan, China

**Progress In Process Development Of La_{0.7}Sr_{0.3}MnO₃ Thin
Films For Uncooled THz Bolometers**

Th-P2-46

Thomas Quinten^{*1}; Yoann Lechaux¹; Victor Pierron¹; Chantal
Gunther¹; Laurence Méchin¹; Jean-François Lampin²; Marc
Faucher²; Benjamin Walter³; Bruno Guillet¹

¹GREYC (Caen university, CNRS, ENSICAEN), 6 Bd Maréchal
Juin, Caen, France; ²IEMN (université Lille, CNRS), Cité
scientifique, avenue Poincaré, Villeneuve d'Ascq, France;

³Vmicro SAS, Cité scientifique, avenue Poincaré, Villeneuve
d'Ascq, France

**Absolute Security With Digital Beamforming For High-
Frequency Links**

Th-P2-47

Chia-Yi Yeh^{*1}; Muriel Médard¹; Daniel M. Mittleman²

¹MIT, 50 Vassar St, Room 36-512, Cambridge, United States;

²Brown University, 184 Hope St, Barus and Holley Room 228,
Providence, United States

**High-speed THz Imaging Using A HCN Laser And A HEMT
THz Detector**

Th-P2-48

Nu Zhang^{*1}; Haiqing Liu¹; Huihui Yan¹; Hongbei Wang²; Jiaxing
Xie¹; Damao Yao¹

¹Institute of Plasma Physics, Chinese Academy of Sciences,
No. 350 shushanhu Road, Hefei, China; ²Institute of Energy,
Hefei Comprehensive National Science Center, No. 350
shushanhu Road, China

**Spectrally Efficient Optoelectronic Wireless Terahertz
Communication System**

Th-P2-49

Bashar Husain^{*}; Kevin Kolpatzek; Alexander Frömring; Lars
Häring; Andreas Czylik

University of Duisburg-Essen, Bismarckstr. 81, Duisburg,
Germany

Metasurface Enabled THz Multi User Communications

Th-P2-50

Fahid Hassan¹; Jeffrey Lei²; Hichem Guerboukha^{*2}; Hou-Tong Chen³; Chun-Chieh Chang³; Sadvikas Addamane⁴; Michael Lilly⁴; Edward Knightly¹; Daniel M. Mittleman⁵

¹Rice University, Rice University, United States; ²Brown University, 184 Hope St, Providence, United States; ³Los Alamos National Laboratory, Los Alamos National Laboratory, United States; ⁴Sandia National Laboratories, Sandia National Laboratories, United States; ⁵184 Hope St, 184 Hope St, Providence, United States

Electrically Small High Permittivity Lens Antenna Using Artificially Loaded Thermoplastics At 170 GHz

Th-P2-51

Nick van Rooijen^{*}; Maria Alonso-delPino; Juan Bueno; Marco Spirito; Nuria Lombart
Delft university of technology, Mekelweg 4, Netherlands

Broad Angle Receiver For The THz Band

Th-P2-52

Yasith Amarasinghe^{*1}; Hichem Guerboukha²; Yaseman Shiri²; Rabi Shrestha²; Pernille Klarskov¹; Daniel Mittleman²

¹Aarhus University, Department of Electrical and Computer Engineering, Aarhus University, Finlandsgade 22, Aarhus N, Denmark; ²Brown University, School of Engineering, Brown University, 184 Hope, Providence, United States

Analysis Of Water Thin Films Terahertz Spectra As A Function Of Polarization Using A Modified Total Reflectance Accessory

Th-P2-53

Manuel Alejandro Justo Guerrero¹; Arturo Mendoza-Galván¹; Elodie Strupiechonski^{*2}

¹CINVESTAV-Qro, Lib. Norponiente #2000, Mexico; ²CIDESI, Av. pie de la cuesta, Queretaro, Mexico

Extracting Error Bars On Refractive Index Retrieved In THz-TDS

Th-P2-55

Noureddin Osseiran¹; Jeyan Bichon²; Aditya Raj²; Sophie Elief²; Romain PERETTI^{*3}

¹CNRS IEMN, Univ. Lille, CNRS, Centrale Lille, Univ. Polytechn, Villeneuve d'ascq, France; ²CNRS IEMN, Avenue Poincaré, France; ³CNRS IEMN, Avenue Poincaré, Villeneuve d'ascq, France

Burning Depth Determination In Wood With THz 3D Imaging Based On An Inverse Linear Synthetic Aperture

Th-P2-56

Tobias Kubiczek^{*}; Thorsten Schultze; Jan C. Balzer
University of Duisburg-Essen, Bismarckstr. 81, Duisburg, Germany

Measurement Of The THz Stokes Vectors Using The PHASR Scanner: Precise Determination Of The Jones Matrix Of The Scanning System

Th-P2-57

Zachery Harris*¹; Kuangyi Xu²; M. Hassan Arbab¹
¹SUNY at Stony Brook, Bioengineering, 100 Nicolls Rd., Stony Brook, United States; ²Stony Brook University, Bioengineering, 100 Nicolls Rd., Stony Brook, United States

Biological Response Of Human Skin Cells To 300 GHz Radiation

Th-P2-58

Seung Jae Oh*¹; Inhee Maeng²; Hye Young Son³; Eui su Lee⁴; Ilmin Lee⁵; Kyung Hyun Park⁶
¹Yonsei University, 50-1 Yonsei-ro, Seoul, Korea, Republic of; ²Yonsei University, 50-1 Yonsei-ro, Korea, Republic of; ³Yonsei University, College of Medicine Yonsei University, Seoul, Korea, Republic of; ⁴Electronics and Telecommunications Research Institute, Daejeon, Korea, Republic of; ⁵Electronics and Telecommunications Research Institute (ETRI), Daejeon, Korea, Republic of; ⁶Electronics and Telecommunications Research Institute (ETRI), Daejeon, Korea, Republic of

Evaluation Of Potential Risks Associated With Cancel Cell Motility And Utilisation Of MMW Radiation In Anticancer Applications

Th-P2-59

Sergii Romanenko¹; Anabel Sorolla²; Vincent Wallace*³
¹Bogomoletz Institute of Physiology, Bogomoletz str., Kyiv, Ukraine; ²Harry Perkins Institute of Medical Research, 6 Verdun St, Perth, Australia; ³The University of Western Australia, 35 Stirling Highway, Perth, Australia

Cryogenic Ultrafast Scattering-type Terahertz-probe Optical-Pump Microscopy (CUSTOM Facility) Capabilities At The University Of Manchester

Th-P2-60

Baset Gholizadeh*¹; Richard Curry²; Jessica Boland²
¹Manchester, Office Number 2.319, Alan Turing Building, The University of Manchester, Manchester, United Kingdom; ²University of Manchester, The Photon Science Institute, Oxford rd, Manchester, United Kingdom

Porosity Inversion Of Multilayer Medium At THz Frequency

Th-P2-61

Bingyang Liang*¹; Lixia Yang²; Ping Zhang²; Yuanguo Zhou¹; Shengpeng Yang²; Shaomeng Wang²; Yubin Gong²
¹Xi'an University of Science and Technology, No. 58 Yanta Middle Road, Beilin District, Xi'an, China; ²University of electronic science and technology of China, No. 2006, Xiyuan Avenue, High-tech Zone, Chengdu, China

Real-time Inspection Of Food Products Using Terahertz Imaging System

Th-P2-62

Mercy Latha A*

Council Of Scientific And Industrial Research-Central
Electronics Engineering Research Institute (CS, near to BITS,
Pilani campus, Pilani, India

Dual-wavelength CW Lasers Injection-locked To Optical Comb Modes For Carrier Conversion From THz Wave To Near-infrared Light Via Electro-optical Polymer Modulator

Th-P2-63

Yudai Matsumura*¹; Eiji Hase¹; Yu Tokizane¹; Naoya Kuse¹;
Takeo Minamikawa¹; Junichi Hujikata¹; Hiroki Kishikawa¹;
Masanobu Haraguchi¹; Yasuhiro Okamura¹; Takahiro Kajj²;
Akira Otomo²; Atsushi Kanno²; Shintaro Hisatake³; Takeshi
Yasui¹

¹Tokushima University, 2-1, Minamijosanjima-cho., Tokushima,
Japan; ²National Institute of Information and Communications
Technology, 4-2-1, Nukuikitamachi, Koganei, Japan; ³Gifu
University, 1-1, Yanagito, Gifu, Japan



Friday 22 September

	Symposia Theatre	Cartier I	Cartier II
08:00	Closing Ceremonies		
09:00	Plenary 1 9:00-9:45		
10:00	Plenary 2 9:45-10:30		
11:00	Oral Session 11:00-12:30	Oral Session 11:00-12:30	Oral Session 11:00-12:30
12:00			
13:00			
14:00			
15:00			
16:00			
17:00			
18:00			

International
I

International
II

Third Floor
Foyer

Fourth Floor
Hall

AM Break

Oral Session
11:00-12:30

Oral Session
11:00-12:30

Bus Transfer to Sentier des Cimes
13:00-15:00

Sentier des Cimes
15:00-17:00

Transfer to Mount Tremblant
17:00-17:30

Party at Le Grand Lodge Mount
Tremblant

Friday 22 September

08:30-09:00

Closing Ceremonies

Symposia
Theatre

Chairperson(s): David Cooke

09:00-09:45

Plenary Session 9

Symposia
Theatre

Chairperson(s): Joo-Hiuk Son

09:00

Nanowires In Terahertz Photonics: Harder, Better, Stronger, Faster

Fr-PL-1-1

Hannah Joyce*¹; Stephanie Adeyemo²; Srabani Kar²; Jamie Lake²; Chawit Uswachoke²; Chennupati Jagadish³; Hoe Tan³; Yunyan Zhang⁴; Huiyun Liu⁵; Jessica Boland⁶; Djamshid Damry⁷; Michael Johnston⁷

¹University of Cambridge, 9 JJ Thomson Ave, Cambridge, United Kingdom; ²University of Cambridge, 9 JJ Thomson Ave, United Kingdom; ³Australian National University, Research School of Physics, Australia; ⁴Zhejiang University, School of Micro-Nano Electronics, China; ⁵University College London, Department of Electronic and Electrical Engineerin, United Kingdom; ⁶University of Manchester, Photon Science Institute, United Kingdom; ⁷University of Oxford, Clarendon Laboratory, United Kingdom

09:45-10:30

Plenary Session 10

Symposia
Theatre

Chairperson(s): Joo-Hiuk Son

09:45

Quantum Vacuum Dressed Materials In Terahertz Cavities

Fr-PL-2-1

Junichiro Kono*
Rice University, 6100 Main St, MS-378, Houston, United States

???

tbd

Symposia
Theatre

Chairperson(s): Tsuneyuki Ozaki

11:00-12:30

Laser Sources & Detectors VIII

Cartier I

Chairperson(s): Sergey Kovalev

11:00

High-performance Terahertz Optoelectronic Receivers Enabled By Monolithic Integration Of SBDs And UTC-PDs: Modelling And Design

Fr-AM-2-1

Iñigo Belio-Apaolaza^{*1}; James Seddon²; José M. Pérez-Escudero³; Iñigo Ederra³; Cyril C. Renaud¹

¹University College London, 8TH floor Roberts Building, Torrington Place, London, United Kingdom; ²University College London, 8TH floor Roberts Building, Torrington Place,, LONDON, United Kingdom; ³Public University of NavarraPublic University of Navarra, Av. Cataluña, s/n, Spain

11:15 Photoconductive, Continuous Wave THz Detectors Based On Rhodium Doped InGaAs With 125 DB Peak Dynamic Range Fr-AM-2-2

Milan Deumer^{*}; Shaffi Berrios; Steffen Breuer; Shahram Keyvaninia; Simon Nellen; Chris Phong Van Nguyen; Lars Liebermeister; Martin Schell; Robert Kohlhaas
Fraunhofer Heinrich Hertz Institute, Einsteinufer 37, Berlin, Germany

11:30 RF Waveform Noise Measurement By Electro-optic Sampling Fr-AM-2-3

Filip Sosnicki^{*}; Ali Golestani; Michal Karpinski
University of Warsaw, Pasteura 5, Warszawa, Poland

11:45 2 THz Receiver For Thermospheric Science With 7000K DSB Noise Temperature At Room Temperature Fr-AM-2-4

Alain Maestrini^{*1}; José Siles²; Choonsup Lee¹; Robert Lin¹; Liju Philip¹; Imran Mehdi¹

¹Jet Propulsion Laboratory, 4800 Oak Grove Drive, Pasadena, United States; ²Jet Propulsion Laboratory, 4800 Oak Grove Driver, Pasadena, United States

12:00 Adaptive THz Beam Steering At UTC-PD Array By Genetic Algorithm Fr-AM-2-5

Ming Che^{*1}; Kazuya Kondo²; Ryo Doi¹; Kazutoshi Kato¹

¹Kyushu University, Kyushu University, 744 Motoooka Nishi-ku, Fukuoka, Japan; ²Kyushu University, Kyushu University, 744 Motoooka Nishi-ku, Japan

12:15 Purely Photonic Wireless Link At 120 GHz With A Photoconductive Antenna As Heterodyne Receiver Fr-AM-2-6

Milan Deumer; Lars Liebermeister^{*}; Oliver Stiewe; Simon Nellen; Robert B. Kohlhaas; Robert Elschner; Colja Schubert; Ronald Freund; Martin Schell
Fraunhofer Institute for Telecommunications, Heinrich Hertz Institute, Einsteinufer 37, Berlin, Germany

11:00-12:30	Metasurfaces & Plasmonics III Chairperson(s): Yushan Zeng	Cartier II
11:00	<p>Broadband Achromatic Terahertz Metalens Based On All-dielectric Sandwich-Shaped Meta-atoms</p> <p>Yi Xu*¹; Jianqiang Gu¹; Quanlong Yang²; Jianguang Han³ ¹Tianjin University, 92 Weijin Road, Nankai District, 605, Block C, Teaching Building No. 26, Tianjin, China; ²Central South University, 932 Lushan South Road, China; ³Guilin University of Electronic Technology, 1 Jinji Road, China</p>	Fr-AM-3-1
11:15	<p>Dielectric Interference Metasurface For Five-Channel Terahertz Field Control</p> <p>Tong Wu*¹; Xueqian Zhang²; Quan Xu²; Jianguang Han² ¹Tianjin University, Tianjin University No. 92, Weijin Road, Nankai District, Tianjin, China, Tianjin, China; ²Tianjin University, Tianjin University No. 92, Weijin Road, Nankai Dis, China</p>	Fr-AM-3-2
11:30	<p>Solid-state Intensity Modulator Based On A Single-layer Graphene-loaded Metasurface Operating At 2.4 THz</p> <p>Ruqiao Xia*; Nikita Almond; Harvey Beere; David Ritchie; Wladislaw Michailow University of Cambridge, Cavendish Laboratory, 19 J J Thomson Avenue, Cambridge, United Kingdom</p>	Fr-AM-3-3
11:45	<p>Nonlinear Metasurfaces For Amplitude-controllable And Pump-handedness-selective THz Generation</p> <p>Qingwei Wang*¹; Xi Feng¹; Yongchang Lu¹; Li Niu²; Quan Xu²; Xueqian Zhang²; Jianguang Han³ ¹Tianjin University, 92 Weijin Road, Nankai District, Tianjin, China, Tianjin, China; ²Tianjin University, 92 Weijin Road, Nankai District, Tianjin, China, China; ³Tianjin University, 92 Weijin Road, Nankai District, Tianjin, China, No. 1, Jinji Road, Guilin, Guangxi, 541004, China, China</p>	Fr-AM-3-4
12:00	<p>Enhanced THz Field Detection Using A Bull's-eye Plasmonic Antenna</p> <p>Hesam Heydarian*¹; Xitong Xie²; Aswin Vishnuradhan¹; Eeswar Kumar Yalavarthi¹; Arnaud Weck²; Angela Gamouras¹; Jean-Michel Ménard¹ ¹University of Ottawa, Department of Physics, Ottawa, Canada; ²University of Ottawa, Department of Mechanical Engineering, Ottawa, Canada</p>	Fr-AM-3-5
12:15	<p>A Planar Plasmonic Reflector For Polaritons</p>	Fr-AM-3-6

Shima Rajabali*¹; Josefine Enkner¹; Erika Cortese²; Mattias Beck¹; Simone De Liberato²; Jerome Faist¹; Giacomo Scalari¹
¹Institute of Quantum Electronics, ETH Zürich, Auguste-Piccard-Hof 1, Zürich, Switzerland; ²School of Physics and Astronomy, University of Southampton, Southampton, United Kingdom

11:00-12:30	Active Sensing 3	International I
Chairperson(s): Marco Peccianti		
11:00	Terahertz Circular Dichroism Imaging Of Twisted-layered Moiré Metasurfaces Katsuhiko Miyamoto* ¹ ; Seigo Ohno ² ; Souma Makihara ¹ ; Takumi Yoichi ¹ ; Takeo Minari ³ ; Takashige Omatsu ¹ ; Shota Tsuji ¹ ¹ Chiba University, 1-33, Yayoi-cho, Inage-ku, Chiba, Japan; ² Tohoku University, 6-3, Aza-Aoba, Aoba-ku, Sendai, Japan; ³ National Institute for Materials Science, 1-1 Namiki, Tsukuba, Japan	Fr-AM-4-1
11:15	A High Pump Power Commercial THz TDS System For The Hyperspectral Imaging Of New Classes Of Metasurfaces Lauren Gingras* ¹ ; Jacob Pettine ² ; Peter Adel ¹ ; Ronald Holzwarth ¹ ; Hou-Tong Chen ² ¹ Menlo Systems, Bunsenstr. 5, Martinsried, Germany; ² Center for Integrated Nanotechnologies, Los Alamos National Laboratory, United States	Fr-AM-4-2
11:30	High Q Tunable THz Plasmonic Metasurface Based On InSb Particles Sina Aghili* ¹ ; Rasoul Alaee ² ; Aydin Amini ³ ; Ksenia Dolgaleva ² ¹ University of Ottawa, 75 Laurier Ave E, Ottawa, ON K1N 6N5, Ottawa, Canada; ² University of Ottawa, 75 Laurier Ave E, Ottawa, ON K1N 6N5, Canada; ³ McMaster University, 1280 Main St W, Hamilton, ON L8S 4L8, Canada	Fr-AM-4-3
11:45	Phase-Correcting Millimeter-Wave Miter Bend Mirrors To Reduce Mode Conversion Kyle Thackston* ¹ ; Alex Laut ² ; James Anderson ² ¹ General Atomics, 3550 General Atomics Ct, G13-502, San Diego, United States; ² General Atomics, 3550 General Atomics Ct, San Diego, United States	Fr-AM-4-4
12:00	Electron Cyclotron Emission Diagnostics For Next Generation Nuclear Fusion Experiments, Such As DEMO	Fr-AM-4-5

Marco Zerbini*; Massimo Alonzo; Giuliano Rocchi
ENEA CR Frascati, via E. Fermi, 45, Frascati, Italy

12:15 **Optimized Terahertz Hyperspectral Analysis In The Frequency- And Time- Domains** Fr-AM-4-6

Margaret Granger*; Alexa Urrea; Jeremy Johnson
Brigham Young University, BNSN C100, Provo, United States

11:00-12:30

Metamaterials, plasmonics and nanomaterials

International
II

Chairperson(s): Junichiro Kono

11:00 **Dynamic Transmission Of Terahertz Waves Through Bifeo3 Film Under Out Of Plane Applied Bias** Fr-AM-5-3

Shreeya Rane*; Arun Jana; Palash Roy Choudhury; Dibakar Roy Chowdhury
Mahindra University, Mahindra University Bahadurpally, Mahindra University Bahadurpally, Hyderabad, India

11:15 **Femtosecond Laser Induced Emission Of Coherent Terahertz Pulses From Ruthenium Thin Films** Fr-AM-5-1

Lorenzo Cruciani*¹; Stefan van Vliet¹; Alessandro Troglia²; Roland Bliem²; Klaasjan van Druten³; Paul Planken²
¹Advanced Research Center for Nanolithography, Science Park 106, Amsterdam, Netherlands; ²Advanced Research Center for Nanolithography, Science Park 106, Netherlands; ³University of Amsterdam, Science Park 904, Netherlands

11:30 **All-dielectric Tunable Q-factor Guided-mode Resonance Using Quasi-bound States In The Continuum** Fr-AM-5-2

Hyeon Sang Bark*
Gwangju Institute of Science and Technology, 123 Cheomdangwagi-ro(Oryung-dong), Advanced Photonics Research Institute 317, Gwangju, Korea, Republic of

11:45 **Printed Terahertz Spiral Zone Plate For Vortex Beam Generation** Fr-AM-5-4

Redwan Ahmad*¹; Léo Guiramand²; Mariia Zhuldybina²; Xavier Ropagnol²; Ngoc Duc Trinh³; Chloé Bois³; Francois Blanchard²
¹École de technologie supérieure (ÉTS), Apt 12, 4665 Avenue Bourret, Montreal, Canada; ²École de technologie supérieure (ÉTS), 1100 Notre-Dame St W, Montreal, Canada; ³Printability and Graphic Communications Institute (ICI), 999 Av. Émile-Journal, Montreal, Canada

12:00 **Photonic Crystal THz Leaky-Wave Antenna 3D-Printed In Alumina** Fr-AM-5-5

Hichem Guerboukha*¹; Masoud Sakaki²; Rabi Shrestha¹;
Jingwen Li³; Niels Benson⁴; Daniel Mittleman⁵
¹Brown University, 184 Hope St, Providence, RI 02912,
Providence, United States; ²Universität Duisburg-Essen,
Universität Duisburg-Essen, Germany; ³Jiangnan University,
Jiangnan University, China; ⁴Universität Duisburg-Essen,
Universität Duisburg-Essen, Germany; ⁵Brown University, 184
Hope St, Providence, RI 02912, United States, Providence,
United States

12:15

**Microscope For Electromagnetic Field Distribution
Imaging With Intrinsic Josephson Junctions**

Fr-AM-5-6

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Jensen, Charles	We-AM-2	Johnston, Michael	We-PM2-2, Mo-PM2-1, Tu- AM-3, Tu-PM2-3, Fr-PL-1
Jeon, Ikseon	Mo-AM-4, Tu-PM1-1	Jokubauskis, Domas	We-PM1-5, Mo-AM-5, Tu- P1, We-PM2-3
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Jepsen, Peter	Th-PM1-4	Jonuscheit, Joachim	Mo-AM-5, Tu-PM2-5
Jepsen, Peter Uhd	Tu-PM1-1, Mo-AM-2, Mo-AM-2, Mo-PM2-2, Th- PM1-1	Jorudas, Justinas	Mo-P2, Tu-P1
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Jubgang, Défi	We-AM-2	Kaps, Felix	Th-PM2-3
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Maehrlein, Sebastian F.	Th-PM1-1, We-PM1-2	Manwaring, Tanner	Th-P1, We-AM-1
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maekawa, keisuke	Mo-PM1-5	Marek, Alexander	Mo-PM1-4, Th-PM1-2, Th-PM1-2
Maemoto, Toshihiko	Tu-P1	Mariani, Giacomo	We-PM1-1
Maeng, Inhee	Th-P2	Marin Calzada, Jesus Alejandro	Tu-P2
Maestrini, Alain	Th-AM-4, Fr-AM-2	Markelz, Andrea	We-AM-3, Tu-PM1-3
Maffei, Bruno	Th-AM-4, Tu-P2	Markl, Daniel	We-AM-2
Mag-usara, Valynn Katrine	Th-P1, Tu-PM1-2	Markou, Anastasios	Th-PM1-3
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Mag-usara, Valynn Katrine	Th-P2, Mo-P2	Martín Sabanés, Natalia	Th-PM1-3
Magaway, Emil John	Th-PM1-5	Martinez, Anna	Tu-PM1-5, We-PM2-1
Mai, Chia-Ming	Th-PM1-4	Marty, Alain	Th-PM1-3
Mai, Ta	Th-P1	Maruyama, Mihiko	Mo-P2
Makhlof, Sumer	Tu-AM-5, We-PM1-1	Maruyama, Mihoko	Th-P2, Tu-PM1-2
Makihara, Souma	Fr-AM-4	Massabeau, Sylvain	Th-PM1-3
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Maksym, Ivanov	Th-PM2-1	Mathmann, Baptiste	Th-P1
Maksymenko, Oleksandr	Th-PM1-2	Matlis, Nicholas	We-PM2-1
Malac, Marek	Tu-P2	Matlis, Nicholas H.	Th-PM2-1, Th-P1
Maleki, Ali	We-PM2-3, We-PM2-3	Matsui, Tatsunosuke	Th-AM-2
Malkin, Andrey	Tu-P1	Matsumura, Yudai	Th-P2
Mallet, Pierre	Th-PM1-3	Matsunaga, Kai	We-PM2-2
Malowicki, John	Mo-PM2-5	Matsunaga, Ryusuke	Mo-PM2-3, Tu-AM-3
Manceron, Laurent	Tu-P1	Matsuoka, Shungo	We-PM2-2
Mandalawi, Younus	Mo-P1	Matsuzaki, Yuto	Mo-P1, Mo-P1, We-AM-5
Mandyam, Shyamsundar	We-AM-5	Mattern, Maximilian	Tu-PM1-3
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Mangeney, Juliette	Tu-PM1-3, Mo-PM1-4, Th-PM1-3, Th-PM1-3	Matulaitiene, Ieva	Mo-AM-5
Manjappa, Manukumara	Tu-AM-2	Maulini, Richard	Mo-PM2-4
Mannan, Abdul	Tu-PM2-3	Maussang, Kenneth	Th-PM2-2, Tu-PM2-3

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May, Karl Henrik	Mo-AM-5	Mikalopas, John	Tu-P1
Mazaheri, Zahra	Tu-PM1-2	Mikhailov, Nikolay	Th-PM2-2, Th-P2
Mazzocchi, Francesco	Mo-P2	Mikhailov, Sergey	Tu-PM1-1
Mazzucco, Christian	Tu-PM1-4	Mikulics, Martin	We-PM2-2
McKinney, Jeffrey	Tu-PM1-3	Millon, Celia	Mo-PM1-2
McNulty-Romaguera, Alexander	Tu-PM1-3	Mills, Bradley N.	Tu-PM2-5
Méchin, Laurence	Th-PM1-5, Th-P2	Milot, Rebecca	Th-P1, Th-AM-3
Médard, Muriel	Mo-P2, Th-P2	Min, Byoung-Gue	Tu-P2
Mehdi, Imran	Th-AM-4, Fr-AM-2	Minamide, Hiroaki	Tu-PM1-1, Mo-PM1-1, We-PM1-1, Mo-P2, Th-P1
Mei, Zhijie	Tu-P2	Minamikawa, Takeo	Th-P2
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Meierhofer, Manuel	Th-AM-2	Mine, Sota	Mo-PM1-1, Tu-P1, Mo-PM1-1, Mo-PM1-1
Meilland, Philip	Tu-P2	Mingotaud, Anne-Françoise	Tu-P1
Meinecke, Marc-Michael	Th-PM2-4	Minin, Igor	We-PM2-4
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Ménard, Jean-Michel	We-AM-2, We-PM2-1, We-PM2-3, Mo-PM1-1, Fr-AM-3	Minkevičius, Linas	We-PM1-5, Mo-P2
Mendoza-Galván, Arturo	Th-P2	Mio, Norikatsu	Tu-PM2-4
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Park, Dong Woo	We-AM-2	Pesala, Bala	We-AM-5
Park, Jong-Yul	Tu-P2	Peters, Luke	Th-PM1-4
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Rinderknecht, Hans	Mo-PM1-2	Roussel, Eléonore	Tu-PM2-1, Tu-P1
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Ritchie, David	We-PM1-1, We-PM2-4, Fr- AM-3, Tu-PM1-1	Roy, Pascale	Tu-P1
Ritter, Paul Julius	Tu-PM1-1, Tu-AM-5	Roy Choudhury, Palash	Fr-AM-5
Riva, Carlo	Tu-PM1-4	Roy Chowdhury, Dibakar	Fr-AM-5
Rivera-Lavado, Alejandro	We-PM2-5, Tu-P1	Rozental, Roman	Tu-P1
Röben, Benjamin	Th-PM1-5, Mo-PM2-4	Rozhnev, Andrey	Th-P1
Rocchi, Giuliano	Fr-AM-4	Ruan, Cunjun	Mo-AM-3, Mo-PM2-2, Th-P1
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Rodilla, Helena	Mo-P2, Th-PM2-4		
Rodriguez, Jean-Baptiste	We-PM2-4		
Rodriguez-Corbo, Fidel A.	Mo-PM2-5		

Ruecker, Holger	We-PM1-1	Salomons, Mark	Tu-P2
Ruess, Tobias	Th-PM1-2, Th-PM1-2, Mo-P2, Th-PM1-2	Salvador, Arnel	Mo-PM1-3
Ruffenach, Sandra	Th-PM2-2, Tu-PM2-3	Samy, Omnia	Tu-P2
Ruggeri, Edoardo	Th-AM-3	Sánchez-Puelles, José M.	Tu-PM1-5
Ruggiero, Michael	Mo-P1, Tu-AM-2	Sanders, Stephen	Th-PM2-5
Ruggiero, Michael T.	Tu-PM1-2	Sanders, Thomas	Mo-P2
Rui, Yunjie	Mo-P1	Sandner, Fabian	Th-AM-2
Rumyantsev, Sergey	Tu-P1	Saniuk, Miroslav	Tu-P1
Ruttiman, Samuel	Tu-P2	Saraceno, Clara	Mo-PM1-2
Ryabova, Ludmila	Th-P2	Saraceno, Clara J.	We-PM2-1, Th-P1
Rygg, J. R.	Mo-PM1-2	Sarkar, Monodipa	Mo-P1
Ryskin, Nikita	Th-P1, Tu-P1	Sarukura, Nobuhiko	Th-P2
Ryu, Sungyoon	Mo-AM-4	Sarusi, Gabby	Mo-AM-3, We-PM1-3
Ryzhii, Maxim	We-PM1-1	Sasa, Shigehiko	Tu-P1
Ryzhii, Victor	We-PM1-1	Satiroglu, Efe	Th-PM2-4
Rzesnicki, Tomasz	Th-PM1-2, Th-PM1-2, Mo-P2, Th-PM1-2, Th-PM1-2	Sato, Imari	Mo-P2
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Saeyes, Wouter	Tu-PM1-3, Tu-P2	Sato, Yosuke	Th-AM-5
Sagar, Hemant	Mo-P2	Satou, Akira	We-PM1-1, Mo-PM1-5, Th-P1
Saha, Ria	Tu-PM1-2	Satozono, Hiroshi	Tu-PM1-1, Mo-P2, Th-PM2-4
Sahota, Derek	We-AM-3	Savoini, Matteo	Tu-AM-3
Sahota, Derek G.	Mo-PM2-3	Savoldi, Laura	Mo-P2
Sai, Pavlo	Th-PM1-3	Sawallich, Simon	Th-PM2-4, Tu-P2, Th-P2
Saitoh, Eiji	Tu-PM1-3	Sberna, Paolo	Tu-P1
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Sakai, Kenji	We-PM2-5, Tu-PM2-1	Scalari, Giacomo	Th-PM2-5, Mo-PM2-4, Mo-AM-1, Fr-AM-3
Sakaki, Masoud	We-PM2-4, Tu-PM2-4, Fr-AM-5	Schade, Ulrich	Tu-P2
Sakuma, Ryoko	Th-PM2-3	Schell, Martin	We-PM2-4, Th-AM-1, Tu-PM2-1, Fr-AM-2, Th-AM-3, Fr-AM-2
Sakuragi, Shirou	Th-P2	Scherer, Theo	Mo-P2, Mo-P2
Sakurai, Haruyuki	Tu-PM2-4	Schiff-Kearn, Aidan	Th-P2
Salih, Mohammed	We-PM2-4, Mo-PM2-4, Mo-PM1-4, Mo-PM1-4	Schilling, Meinhard	Tu-PM1-1, Tu-AM-5

Schlegel, Julius	Tu-PM1-3	Seewig, Jörg	We-PM1-5
Schlüter, Friedrich	Mo-AM-5	Seifert, Tom	Tu-PM1-3, We-PM2-2, Th-P1
Schmalz, Klaus	Tu-PM1-2	Seifert, Tom S.	Th-P2, Th-PM1-3
Schmid, Christoph Peter	Th-AM-2	Seki, Hironobu	We-PM1-1
Schmidt, Bruno	Th-PM2-1	Sekine, Norihiko	Mo-P1, Mo-P1, Mo-P1, Tu-P2
Schmidt, Bruno E.	We-AM-1	Seletskiy, Denis	Th-P1, Th-PM2-5
Schmitt, Christian	Tu-PM1-3	Semenov, Alexey	Tu-P2
Schneider, Claus Michael	We-PM2-2	Semion, Agnieszka	We-PM1-5
Schneider, Thomas	Mo-P1	Semtsiv, Mykhaylo	Tu-PM1-1
Schoenherr, Piet	Tu-PM2-3	Sengi, Yusuke	We-PM2-2
Schönherr, P.	We-PM1-4	Sengupta, Amartya	Mo-P2
School, Huarong	Mo-PM1-4	Sengupta, Rudrarup	Mo-AM-3, We-PM1-3
Schreck, Sabine	Mo-P2	Senica, Urban	Mo-PM2-4, Mo-AM-1, Mo-PM2-4
Schreiber, Makoto	Tu-P2	Senni, Luca	Mo-P1, Mo-P2
Schreyeck, Steffen	Tu-PM2-3	Sensale-Rodriguez, Berardi	Tu-P2
Schroeder, Heiko	Th-PM2-4	Seo, Dong han	Tu-PM2-3
Schrottke, Lutz	Mo-PM2-4, Tu-P2	Seo, Dong-Jae	We-AM-1
Schubert, Colja	Fr-AM-2	Seok, Jae Ho	Mo-PM2-5, Mo-PM2-5
Schubert, Harald	Tu-PM1-3	Sergeev, Alexander	Tu-P1
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Schultze, Thorsten	Th-PM2-4, Th-P2	Shaikh, Mohd Saif	Tu-P2
Schulz, Fabian	Th-PM1-3	Shalaby, Mostafa	Tu-PM2-4, We-AM-1
Schulz, Niklas	Th-AM-5	Shams-Ansari, Amirhassan	We-PM2-1
Schultze, Alper	Mo-PM2-5	Shankar, Karthik	We-AM-2
Schütz, Harald	Tu-PM2-4	Shao, Jingzhu	Mo-P2
Schwaab, Gerhard	Tu-PM1-2	Shao, Wei	Tu-P2, Tu-P2
Schwenke, Tasia	Tu-P2	Shapiro, Michael	Tu-P1, Th-PM1-2
Schwenson, Lauri	We-PM2-4	SHARMA, ASHUTOSH	We-PM1-2
Searles, Thomas	Th-PM2-5	Shasha, Guo	Th-PM1-3
Sebek, Matej	Tu-PM1-1, Mo-AM-2, Mo-AM-2	Shcherbinin, Vitalii	Mo-P1, Th-PM1-2
Seddon, James	Fr-AM-2, Th-AM-5, Tu-AM-4, Tu-P1		

SHE, Diana	We-PM2-2	Shubair, Raed. M.	Mo-PM2-5
Shekhar, Chandra	Tu-AM-3	Shur, Michael	Mo-P1, We-PM1-1
Shematilo, Tatyana	Mo-P1	Shur, Michael5184218830	Tu-P1
Shen, Dongfang	We-PM1-3	Siebenkotten, Dario	We-PM1-4
Shen, Ming	Mo-P2	Siemaszko, Adam	Tu-P1
Shen, Ruiyi	Mo-PM2-5	Siemion, Agnieszka	Tu-P2, Tu-P2
Shen, Sheng	Mo-P2	Sievert, Benedikt	Tu-AM-1, We-AM-4, We-PM2-4
Sheng, Xuan	Mo-P2	Siles, Jose	Th-AM-4
Sher, Meng-Ju	Tu-P2	Siles, José	Fr-AM-2
Sherwin, Mark	Th-PM2-2	Simpson, Howe	We-AM-2
Sherwin, Mark S.	Th-AM-2	Singh, Arvind	Th-PM1-3
Shi, Haolian	Mo-PM2-2	Singh, Avinash	We-PM2-3, We-PM2-3
Shi, Hongkai	Mo-P1	Singh, Ghanshyam	Th-P2
Shi, Jin	Mo-P1	SINGH, GURUVANDRA	Th-P1
Shi, Qiwu	Th-P2	Singh, Karanveer	Mo-P1
Shi, Wangzhou	Tu-P1	Singh, Preetam	Th-P1
Shi, Wei	Mo-P2, Th-P1, Th-P1	Singh, Ranjan	Tu-AM-2
Shi, Yanpeng	Th-P2	Sinova, Jairo	Tu-PM1-3
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Sorenson, Kailyn	Th-P1	Strasser, Gottfried	Mo-PM2-4, Mo-AM-1
Sorgi, Alessia	Mo-PM2-4	Strauß, Dirk	Mo-P2
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Souliman, Aya	We-PM1-5	Stutz, Elias	Mo-PM2-3
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Spencer, Michael S.	Th-PM1-1	Su, Po-Cheng	Mo-PM1-5
Spirito, Marco	Tu-AM-5, Th-P2	SU, PO-CHENG	Mo-PM1-5
Spoerk, Martin	Tu-P2	Su, Po-Cheng	Mo-PM1-5
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Stake, Jan	Tu-AM-1, Th-PM2-4	Suemitsu, Tetsuya	We-PM1-1, Mo-PM1-5, Th-P1
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Stephens, Michelle	We-PM1-1	Sun, Haobin	We-PM1-3
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Stivala, Salvatore	Tu-AM-4, Th-P2	Sun, Xuechun	Tu-P2, Th-P2, Th-P2
Stober, Jörg	Tu-PM2-4	Sun, Yiwen	We-AM-4, Tu-P2
Stock, Daniel	Tu-PM2-3, Mo-AM-3	Sun, Yuankun	Th-P1

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Swartz, Gavin	We-PM2-4	Tan, Matthew	We-PM2-4
Synaszko, Piotr	Mo-P2, We-PM1-5	Tanaka, Hidekazu	We-PM1-2, Mo-PM1-3
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Szwaj, Christophe	Tu-PM2-1, Tu-P1	Tang, Angeline	Mo-P2, We-AM-5
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Takahashi, Masae	Tu-PM1-2	Tao, Haitao	Tu-AM-2
Takahashi, Norika	We-PM2-5	Tao, Yu Heng	Tu-PM1-2
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Temkin, Richard	Tu-P1, Th-PM1-2	Titova, Elena	Tu-P1
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Temperini, Maria Eleonora	Mo-P2, Th-PM2-3, Tu-P2	TITOVA, Lyubov	Tu-AM-2
Teng, Yan	We-AM-3	Titova, Lyubov V.	Mo-P2
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Thackston, Kyle	We-AM-4, Fr-AM-4	Tomasino, Alessandro	Tu-AM-4, We-PM2-1, Th-PM2-1, Mo-AM-4, Th-P2
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Tian, Zhen	We-PM2-3	Torrioli, Guido	Mo-PM2-4, Mo-AM-1
Tian, Zhenming	We-AM-4	Totero gongora, Juan Sebastian	Th-PM1-4
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Tigelis, Ioannis	Th-PM1-2	Trang, Ta Thu	Th-P2
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Trippé-Allard, Gaell	We-PM1-2	Uzarski, Joshua R.	Mo-P2
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Tseng, Tsung-Chieh	Tu-PM2-4	Valdivia Berroeta, gabriel	We-AM-1
Tsuji, Sayaka	Tu-PM1-5	Valenzuela, Sergio	Tu-PM2-3
Tsuji, Shota	Fr-AM-4	Valusis, Gintaras	Tu-P1
Tsujita, Wataru	Th-PM1-4	Valušis, Gintaras	We-PM1-5, Mo-P2, Mo-AM-5
Tsukamoto, Katsuo	Mo-P2	Valynets, Nadzeya	We-PM2-4
Tsuri, Yuka	Mo-P2	van Berkel, Sven	Th-AM-4, Tu-PM1-4, Th-P2
Tsvetkov, Alexander	Tu-P1	van der Laan, Tim	Tu-PM2-3
Tu, Chien-Ming	Tu-PM2-3	van Dijk, Robbin	Tu-AM-5
Tu, Xuecou	Mo-P1, Mo-P1, Tu-P2	van Druten, Klaasjan	Fr-AM-5
Tuan Nguyen, Dinh	Tu-AM-1	van Helden, Jean-Pierre H.	Mo-PM2-4
Tucker, Robyn	Th-P1	van Rooijen, Nick	Th-P2
Turchinovich, Dmitry	Tu-PM2-2	van Vliet, Stefan	Fr-AM-5
Turkmen, Esref	We-PM1-5	Vanwollegheem, Mathias	Th-P1, We-PM2-2
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Uchida, Kento	We-PL-1	Varghese, Sabin	Tu-PM2-3
Uchigasaki, Shinnosuke	We-PM1-1	Vaughan, Matthew	We-PM2-4
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Viisanen, Klaara	Tu-PM1-1	Waller, Erik	Tu-PM1-1
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