

Volume 1

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Submitting Author Index

PREFACE

Croeso i Caerdydd. Welcome to Cardiff. Welcome also to IRMMW-THz2007!

This year our conference has come to City Hall, Cardiff, which we hope you will all agree is a suitable and pleasant venue. Cardiff is the Capital city of Wales. It was granted city status in 1905 and its City Hall was opened to commemorate this in 1906. Cardiff Castle is located only a hundred metres away, and was originally built by the Romans more than 2000 years ago. We sincerely hope that you will all enjoy spending a little time in our wonderful city.

This conference coincides with a period in time when our particular scientific field is enjoying unprecedented attention, is expanding rapidly and finding an ever wider range of applications. This is certainly reflected in the scope and depth of the technical programme that will be presented during the conference by delegates gathered from all over the world. As in recent years it has not been deemed practical or desirable that all submitted papers be presented orally. We have arranged the oral presentations into 4 parallel sessions running throughout the week. The oral programme is augmented by three large poster sessions to take place in the early evening on Monday, Tuesday and Wednesday. Poster presentations should not be thought of as lesser in any respect compared to oral presentations. The poster sessions provide an opportunity to dedicate more time to the discussion of work with interested colleagues in a convivial atmosphere.

The conference this year is sponsored by the Institute of Physics here in the UK, and by the host institution, the School of Physics & Astronomy at Cardiff University. It is also technically co-sponsored by IEEE-MTTS. We would like to express our gratitude to all sponsors and supporters.

We would also like to thank all members of the committees which have overseen not only this particular conference but also this long-running conference series. We believe that there is great value to a large multi-disciplinary meeting of this kind. The quality and quantity of the contributions made this year show that the research community agrees with us. On that note we confidently anticipate yet another successful IRMMW-THz conference at Caltech in Pasadena next year, and we wish Peter Siegel and his team well with their preparations.

Sincerely yours,

Matt Griffin & Terry Parker
Conference Co-Chairs

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von Ortenberg, Michael	Humboldt University at Berlin, Germany
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SPONSORS

This year's conference is sponsored by:



School of Physics & Astronomy, Cardiff University



Institute of Electrical and Electronics Engineers,
Microwave Theory and Techniques Society

IOP Institute of Physics
Institute of Physics

and supported by:

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GENERAL INFORMATION

Official Language

The official language of the conference is English, which should be used for all printed material, presentations and open discussions.

Information for Session Chairs

Session Chairs should arrive at the session room at least 10 minutes before the start of the session and should check the attendance and preparedness of all speakers in the session according to the schedule.

It is very important that the sessions run to schedule. Chairs must ensure that speakers do not take up more than their allotted time. The session Chair should warn each speaker when they have 2 minutes in which to finish. The Chair should ask speakers to conclude promptly if they begin to over-run, in which case the period set aside for questions should be shortened so that the next speaker begins on time.

Chairs should pause the session or organise additional discussions if any speakers are absent. This will ensure that the parallel sessions run according to the published common schedule. Delegates can then plan to attend presentations from different sessions.

Information for Speakers

Oral presentations

Each oral session room will contain a computer equipped with a projector. Presenters should only use the session room computer for their presentation.

Speakers should bring a USB-Memory-Stick with the presentation files in ppt (MS PowerPoint) or pdf format, suitable for display, and should load and preview their presentations on the conference computers before the session is scheduled to start. (The conference organisers can provide a memory stick for file transfer if needed.)

All speakers should be present at least 10 minutes before the start of the session, and inform the session chairman of their arrival.

It is very important for the smooth running of the programme that speakers do not take more than the allocated time for their presentation. The conference runs parallel sessions and it will assist all delegates in planning the programme of talks they wish to see if all sessions run according to the common published schedule.

Time allocations for talks is as follows:

Plenary	60 minutes (50 minute presentation plus 10 minutes for discussion)
Invited keynote	30 minutes (25 minute presentation plus 5 minutes for discussion)
Contributed	20 minutes (15 minute presentation plus 5 minutes for discussion)

Poster Sessions

There will be two-hour poster sessions following on Monday, Tuesday and Wednesday starting at 17.00 hrs. These sessions will take place in the Lower Hall. All poster presentations have been allocated to one of these evening sessions.

Each poster will have a numbered display area available which is 2 m high and 1 m wide. Materials necessary to mount posters to the display boards will be available.

Posters should be set up by 16.00 hrs on the day of the allocated session and taken down again before noon the following day. The poster sessions will run 17:00 - 19:00 each day. During this time, the presenters are expected to make themselves available at the display board.

Posters not taken down by noon on the day following the session will be removed by conference staff.

Internet Room

A small number of PCs for Internet access will be provided in the Internet Room. In addition a Wireless Internet system will be available in the same room.

Social & Partner Programme

Sunday September 2nd

All those registered for the conference will be able to pick up their delegate packs from the Entrance Hall of the conference venue from 16.00 to 20.00 hrs. Refreshments will be available in the Lower Hall.

Monday September 3rd

The conference Partner Programme begins. There are guided tours and events taking place on Monday, Tuesday and Wednesday. Those interested can register with the Helpdesk in the Entrance Hall.

Tuesday September 4th

All delegates and their companions are invited to a wine reception to be held in the National Museum of Wales (separate building situated next to the conference venue) starting at 20.00 hrs.

Thursday September 6th

The conference banquet will be held in The Assembly Room starting at 20.00 hrs. Delegates should bring their pre-paid tickets. These tickets will be made available at the time of registration.

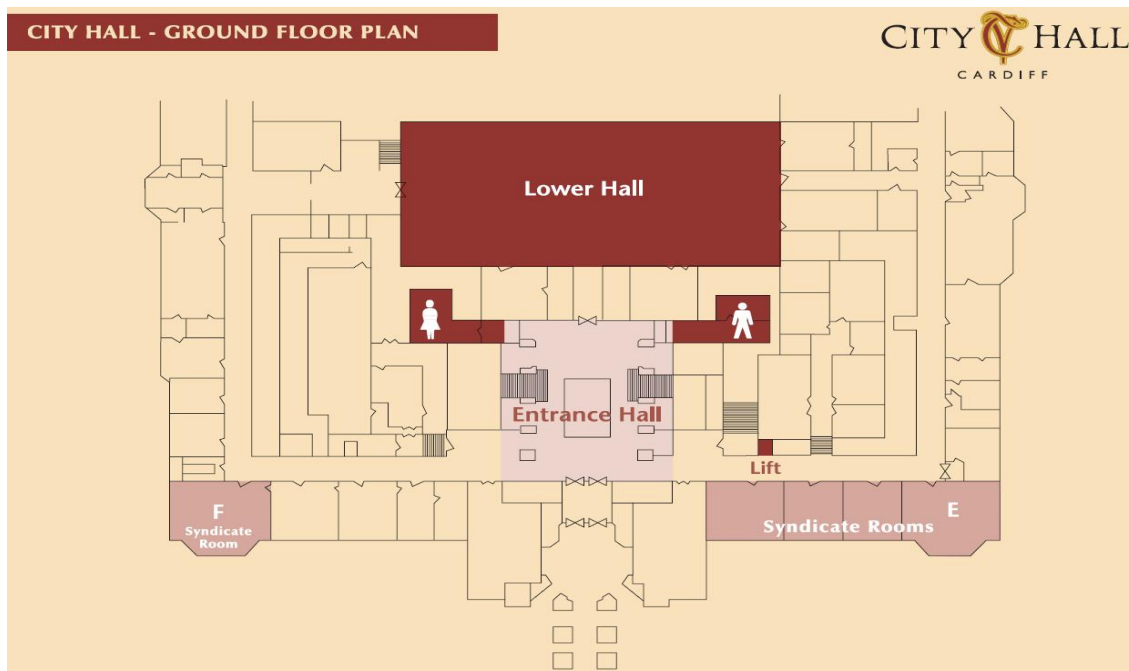
Exhibition

An exhibition will take place throughout the day from Monday to Wednesday in the Lower Hall. Commercial suppliers and scientific publishers will be joined by educational organisations. Please take time to visit the exhibition.

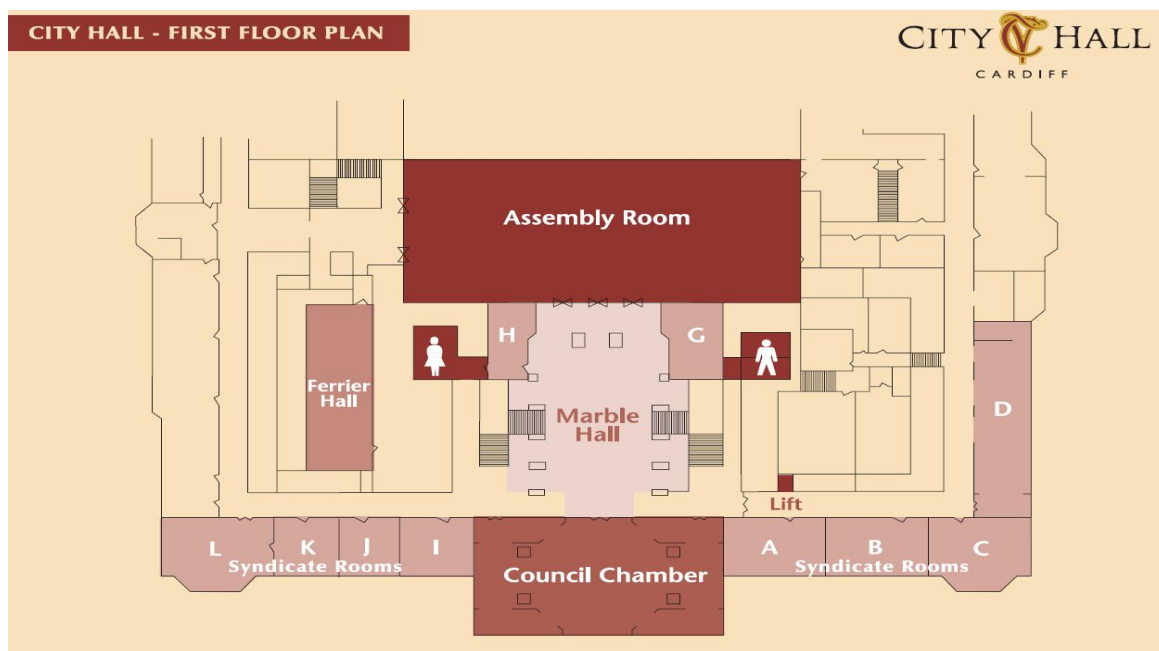
Refreshments

Tea and coffee will be served during session breaks in the Lower Hall on the ground floor.

Layout of Conference Venue



- | | |
|---------------|--|
| Entrance Hall | – registration and helpdesk. |
| Lower Hall | – poster sessions, exhibition and refreshments |
| Room E | – computer terminal and wireless internet |
| Room F | – conference office. |



- All session rooms are located on the first floor.
- | | |
|-----------------|--------------------------------------|
| Assembly Room | - Plenary and Sessions ending in "1" |
| Ferrier Hall | - Sessions ending in "2" |
| Council Chamber | - Session ending in "3" |
| Room D | - Session ending in "4" |

The Kenneth J Button Prize

**The Kenneth J Button Prize for 2007
is awarded to
Professor Terence James Parker
University of Essex, Colchester, CO4 3SQ, UK**

for outstanding contributions to the field of solid state spectroscopy
and, in particular, for the investigation of surface and interface modes in
semiconductors and magnetic media.

The Kenneth J Button Prize is awarded annually at the International Conference on Infrared and Millimeter Waves and Terahertz Electronics in recognition of outstanding contributions to the Science of the Electromagnetic Spectrum.

The Prize is named after the founder of the Conference and is administered by the Institute of Physics in London. It consists of a bronze medal, a certificate and a cash prize of £2000.

At each annual meeting of the Conference, a sub-committee of the Conference's International Advisory Committee will consider the nominations that have been submitted and will elect the recipient of the Medal and Prize. The presentation will be made at the following annual meeting of the Conference and the recipient will normally be invited to give a plenary lecture at that meeting.

Any scientist active in the field of the Conference may make a nomination for the Prize. To make a nomination, the information listed below should be sent, under the heading **NOMINATION FOR THE KENNETH J BUTTON PRIZE**, to
The Secretary to the Awards Committee, The Institute of Physics (London),
PREFERABLY by e-mail to: awards@iop.org
or by mail to: 76 Portland Place, London, W1B 1NT, UK
or by Fax to: +44 (0)207 470 4848.

THE CLOSING DATE FOR NOMINATIONS for the 2008 Prize is Friday, April 4, 2008, the same as the closing date for the submission of abstracts to the 2008 conference in Pasadena.

FORM OF NOMINATION

1. The Proposer's name, title, full address, and e-mail address.
2. The Nominee's full name, title, present position, address, and e-mail address.
3. A curriculum vitae for the nominee (a full publication list is not required, see Item 6 below).
4. A list of all qualifications and honors.
5. A statement of up to 500 words in support of the nomination in English (the language of the Conference), indicating the contributions to the subject made by the nominee and the impact of those contributions on the development of the subject.
6. A list of up to ten publications by the nominee.
7. The names, titles, mailing addresses and e-mail addresses of two people of standing in the subject (i.e. referees) who may be consulted about the nomination.

IRMMW-THz2008 Conference

IRMMW-THZ 2008

"TERAHERTZ FOR LIFE"

PASADENA, CALIFORNIA USA

SEPTEMBER 15TH-19TH 2008



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IRMMW-THZ 2008

"TERAHERTZ FOR LIFE"

JOINT 33RD INTERNATIONAL CONFERENCE ON INFRARED
AND MILLIMETER WAVES AND 16TH INTERNATIONAL
CONFERENCE ON TERAHERTZ ELECTRONICS

CALIFORNIA INSTITUTE OF TECHNOLOGY

Pasadena, California USA

September 15th-19th 2008

www.irmmw-thz2008.org

Important Dates: Registration Opens: Monday March 3, 2008

Abstracts due: Friday April 4, 2008 (1 Page PDF Format)

Notification of Paper Acceptances: Friday May 16, 2008

Final Papers Due: Monday June 30th, 2008 (2 Page PDF)

MAJOR TOPICAL AREAS:

1. New IR, THz and MMW applications in Biology and Medicine
2. IR, THz and MMW Imaging, especially biomedical applications
3. Ultra-fast Components and Measurements in Chemistry and Physics
4. IR, THz and MMW Astronomy, Atmospheric and Environmental Science Applications
5. IR, THz and MMW Spectroscopy, Instrumentation and Material Properties
6. IR, THz and MMW Applications in Security and Defense
7. MMW Telecommunication and Industrial Applications
8. Ultra High Speed MMW Digital Devices
9. MMW and Submillimeter-Wave Radar and Communications
10. MMW systems, Transmission Lines and Antennas
11. Gyro-Oscillators and Amplifiers, Plasma Diagnostics
12. Free Electron Lasers and Synchrotron Radiation
13. Novel devices and Instruments for IR, THz and MMW applications
14. Terahertz Devices, Components and Instruments; both Frequency and Time Domain.
15. IR, THz, and MMW Sources, Detectors and Receivers
16. IR, THz and MMW Future Applications, Markets and Directions

The International Conference on Infrared and Millimeter Waves/THz Electronics (IRMMW-THz), now in its 37th year, is the oldest and largest continuous forum specifically devoted to the field of ultra high frequency electronics and applications. The IRMMW conference and its long-time accompanying monthly publication, *Journal of Infrared and Millimeter 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. It encompasses micro- and nano-scale structures to large accelerators and Tokomaks and applications as diverse as space science, biology and medicine. The conference typically alternates between Europe, Asia and the US on a three year cycle. The theme of the 2008 conference is "THz for Life" emphasizing the cross disciplinary nature of the field, the involvement of the Life sciences, recent emphasis on the search for Life in the universe and the Life long career opportunities working in this unique frequency range. Special outreach sessions on medical and bio applications are planned as well as a number of well known invited tutorial speakers. The opening reception and banquet are in the historic Caltech Athenaeum, frequented by Einstein, Hawking, Millikan, Feynman, Pauling, Moore, Ramo... Outings to the nearby Huntington Library and Gardens, the Pasadena Norton Simon Museum and the renowned J. Paul Getty Center are being planned.

We hope to see you all in historic Pasadena, California next September!

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Conference hosted by JPL Submillimeter Wave Advanced Technology Team (SWAT)
and the Caltech Divisions of Biology and Engineering and Applied Science
For general inquiries please email: irmmw-thz@caltech.edu

SWAT



Programme at a Glance

Sunday September 2nd

16.00 - 20.00	Registration	Entrance Hall
18.00 - 20.00	Welcome Reception	Lower Hall

Monday September 3rd

08.20 - 08.30	Opening Ceremony (Chairs: M.J.Griffin & T.J.Parker)			
08.30 – 09.30	Plenary 1 (Weightman)			
09.30 – 10.30	Plenary 2 (Sakamoto)			
10.30 – 10.45	Morning Coffee			
10.45 – 13.00	Session MonA1 ITER	Session MonA2 Time Domain Spectroscopy Systems & Measurements I	Session MonA3 Waveguides	Session MonA4 Applications in Biology I
13.00 – 14.30	Lunch			
14.30 – 17.00	Session MonB1 Gyrotrons I High Power	Session MonB2 Astronomy & Remote Sensing I	Session MonB3 Detectors I	Session MonB4 Sources I
17.00 – 19.00	Poster Session MonP			

Tuesday September 4th

08.30 – 09.30	Plenary 3 (Domier)			
09.30 – 10.30	Plenary 4 (Richards)			
10.30 – 10.45	Morning Coffee			
10.45 – 13.00	Session TueA1 Gyrotrons II High Frequency	Session TueA2 Astronomy & Remote Sensing II	Session TueA3 Materials I	Session TueA4 THz Imaging & Optical Systems I
13.00 – 14.30	Lunch			
14.30 – 17.00	Session TueB1 Gyrotrons III Amplifiers	Session TueB2 Plasma Diagnostics	Session TueB3 Applications in Biology II	Session TueB4 Propagation Phenomena
17.00 – 19.00	Poster Session TueP			
19.00 – 21.00	Reception at National Museum of Wales			

Wednesday September 5th

08.30 – 09.30	Plenary 5 (Parker) The Kenneth J. Button Prize Lecture			
09.30 – 10.30	Plenary 6 (Grischkowsky)			
10.30 – 10.45	Morning Coffee			
10.45 – 13.00	Session WedA1 Gyrotrons IV Gyro-devices	Session WedA2 Astronomy & Remote Sensing III	Session WedA3 Applications in Medicine	Session WedA4 Sources II
13.00 – 14.30	Lunch			
14.30 – 17.00	Session WedB1 FEL Synchrotron I	Session WedB2 Applications in Security & Industry	Session WedB3 Time Domain Spectroscopy Systems & Measurements II	Session WedB4 THz Spectroscopic Measurements
17.00 – 19.00	Poster Session WedP			

Thursday September 6th

08.30 – 09.30	Plenary 7 (Hu)			
09.30 – 10.30	Plenary 8 (Keilmann)			
10.30 – 10.45	Morning Coffee			
10.45 – 13.00	Session ThuA1 FEL Synchrotron II	Session ThuA2 Detectors II	Session ThuA3 THz Devices & Components I	Session ThuA4 Materials II
13.00 – 14.30	Lunch			
14.30 – 17.00	Session ThuB1 Gyrotrons V Components	Session ThuB2 Sources III	Session ThuB3 THz Imaging & Optical Systems II	Session ThuB4 Radar & Communications Systems
19.00 – 22.00	Banquet			

Friday September 7th

08.30 – 09.30	Plenary 9 (Padilla)			
09.30 – 10.30	Plenary 10 (Tredicucci)			
10.30 – 10.45	Morning Coffee			
10.45 – 13.00	Session FriA1 MM-Wave Components	Session FriA2 Sources IV	Session FriA3 THz Devices & Components II	Session FriA4 Filters, Resonators & Modulators
13.00 – 14.30	Lunch			
14.30 – 17.00	Session FriB1 THz Devices & Components III	Session FriB2 Sources V	Session FriB3 THz Imaging & Optical Systems III	Session FriB4 Materials III
17.00	Conference Closes			

Conference Programme: Plenary Talks

Monday, September 3rd		Chair: R J Temkin
PL-1 09.00	<i>Are there THz solutions to problems in understanding the physics of life?</i> Peter Weightman Univesrity of Liverpool Physics Department, Oxford Street, Liverpool, Merseyside, UK	P. 1
PL-2 09.45	<i>Gyrotrons and mm wave technology for ITER.</i> Keishi Sakamoto Japan Atomic Energy Agency 801-1 Mukoyama, Naka Ibaraki, Japan	P. 4
Tuesday, September 4th		Chair: N C Luhmann
PL-3 09.00	<i>Advances in millimeter/far infrared plasma diagnostics instrumentation.</i> Calvin Domier et al. Department of Applied Science, University of California, Davis, CA 95616, USA	P. 8
PL-4 09.45	<i>CMB experiments.</i> Paul Richards Department of Physics, University of California, Berkeley CA, USA	P. 12
Wednesday, September 5th		Chair: M von Ortenberg
PL-5 09.00	<i>Far infrared Fourier transform spectroscopy of solids.</i> T J Parker The Physics Centre, University of Essex, Colchester CO4 3SQ, UK	P. 16
PL-6 09.45	<i>Unique applications of THz time-domain spectroscopy and waveguide THz-TDS.</i> Daniel Grischkowsky Department of Electrical Engineering and Computer Science, Oklahoma State Universtiy, 202 Engineering South, Stillwater, OK, USA	P. 20
Thursday, September 6th		Chair: P H Siegel
PL-7 09.00	<i>THz quantum-cascade lasers and video-rate imaging.</i> Qing Hu Department of Electrical and Computer Engineering, MIT, 77 Massachusetts Ave, Cambridge, MA 02139, USA	P. 24
PL-8 09.45	<i>Infrared nanoscopy.</i> Fritz Keilmann Max-Planck-Institut für Biochemie, Am Klopferspitz 18, Martinsried, Bavaria, Germany	P. 26
Friday, September 7th		Chair: J M Chamberlain
PL-9 09.00	<i>Metamaterials and their THz applications.</i> W J Padilla et al. Boston College, Department of Physics, 140 Commonwealth Ave, Chetnut Hill, MA 02467, USA	P. 30

PL-10 09.45	<i>Recent advances and future prospects of THz quantum cascade lasers.</i> Alessandro Tredicucci NEST CNR-INFM & Scuola Normale Superiore Piazza dei Cavalieri, 7 Pisa, Italy	P. 34
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Monday, September 3rd

10.45-13.05: Oral Session MonA1 ITER	Chair: Tran
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MonA1-1 1111	<i>The European 2MW, 170GHz coaxial cavity gyrotron for ITER (Invited Keynote)</i> Jean-Philippe Hogge EPFL-CRPP Station 13, Lausanne Vaud, Switzerland	P. 38
MonA1-2 1112	<i>Recent results of development in Russia of high power gyrotrons (Invited Keynote)</i> Alexander Litvak et al. Institute of Applied Physics of RAS, Ul'yanov Street 46, Nizhny Novgorod, Russia	P. 41
MonA1-3 1113	<i>New test results of 170GHz/1MW/CW gyrotron for ITER</i> Sergey Usachev et al. GYCOM Ltd, 8 Vvedenskogo st., Moscow, Russia	P. 44
MonA1-4 1114	<i>Studies on a 120 GHz1.0 MW, longpulse gyrotron for plasma start-up in ITER</i> Machavaram Kartikeyan et al. Indian Institute of Technology, Roorkee Department of Electronics & Computer Engineering, Roorkee Uttarancha, India	P. 46
MonA1-5 1115	<i>Models for cavities of 170 GHz coaxial gyrotrons for ITER</i> Olgierd Dumbrajs et al. Helsinki University of Technology, FI-02015 TKK, Otaniemi Espoo, Finland	P. 48
MonA1-6 1116	<i>Simulation of high power CW gyrotron collectors including the effect of secondary emission</i> Stefan Illy et al. Forschungszentrum Karlsruhe, Association EURATOM-FZK, Karlsruhe, Germany	P. 50

10.45-13.05: Oral Session MonA2 TDS Systems and Measurements I	Chair: Wenzhong Shen
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MonA2-1 1121	<i>Time-domain THz spectrometer based on the asynchronous optical sampling (Invited Keynote)</i> Thomas Dekorsy et al. Universität Konstanz , Fachbereich Physik, Fach M700, 78457 Konstanz, Germany	P. 52
MonA2-2 1122	<i>THz time-domain spectroscopy of THz quantum cascade lasers (Invited Keynote)</i> Karl Unterrainer et al. Institut für Photonik, Vienna Universität of Technology, Gusshausstrasse 27/387, 1040 Wien, Austria	P. 55
MonA2-3 1123	<i>Very compact THz-TDS imaging system with diffraction limited spatial resolution</i> Shinichi Watanabe et al. University of Tokyo Department of Physics, Faculty of Science, University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo, Japan	P. 56
MonA2-4 1124	<i>Evanescent-field terahertz time-domain microscopy</i> John Cunningham et al. University of Leeds, School of Electronic and Electrical Engineering, Woodhouse Lane, Leeds, West Yorkshire, UK	P. 58
MonA2-5 1125	<i>Real-time, one-dimensional terahertz time-domain spectroscopic imaging of moving object</i> Takeshi Yasui et al. Grad. Sch. Eng. Sci., Osaka Univ. 1-3 Machikaneyama, Toyonaka, Osaka, Japan	P. 60
MonA2-6 1126	<i>THz pulse reconstruction</i> John Fletcher et al. Durham University, Physics Department, Science Laboratories, South Road Durham, County Durham, UK	P. 62

10.45-13.05: Oral Session MonA3 Waveguides	Chair: Coutaz
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MonA3-1 1131	<i>Progress on design and testing of corrugated waveguide components for ITER ECH and CD transmission lines (Invited Keynote)</i> Robert Olstad et al. General Atomic, P.O. Box 85608, San Diego, California, USA	P. 64
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MonA3-2 1132	<i>Propagation dynamics of guided THz signals in straight and bended metallic slit waveguides (Invited Keynote)</i> Markus Wächter et al. RWTH, Aachen University, Sommerfeldstr. 24, Aachen, NRW, Germany	P. 67
MonA3-3 1133	<i>Mode retrieval in a circular corrugated waveguide</i> Hiroshi Idei et al. Advanced Fusion Research Center, Research Institute for Applied Mechanics, Kyushu University 6-1 Kasuga-Kohen, Kasuga Fukuoka, Japan	P. 69
MonA3-4 1134	<i>Transmission profiling of phase shifted 1D Bragg reflectors in standard and coaxial waveguide</i> Philip MacInnes et al. SUPA Physics Department, John Anderson Building, University of Strathclyde, Glasgow, Strathclyde, Scotland, UK	P. 71
MonA3-5 1135	<i>Electromagnetic design of a high power resonant diplexer-combiner based on rectangular corrugated waveguide</i> Alessandro Simonetto et al. IFP-CNR via Cozzi 53, Milano, Italy	P. 73
MonA3-6 1136	<i>Bendings and filters with single strip THz plasmonic waveguides</i> Tahsin Akalin et al. IEMN, Lille University, Av. Poincare, Cite Scientifique BP 69002, Villeneuve d'Ascq Nord, France	P. 75

10.45-13.05: Oral Session MonA4	Chair: Miles
Applications in Biology I	

MonA4-1 1141	<i>Biological applications of THz radiation (Invited Keynote)</i> Peter Haring-Bolivar et al. University of Siegen, Germany	P. 77
MonA4-2 1142	<i>The HIPER project - "Bringing the NMR paradigm to ESR" (Invited Keynote)</i> Graham Smith et al. St.Andrews, University School of Physics and Astronomy, North Haugh, St.Andrews, Fife, UK	P. 79
MonA4-3 1143	<i>Investigation on living cells with a THz BioMEMS</i> Bertrand Bocquet et al. IEMN - University of Lille BP 60069, Villeneuve d'Ascq Nord-Pas de Calais, France	P. 82
MonA4-4 1144	<i>Exploring the nanoworld with terahertz and infrared laser spectrometers and chemical nanoscopes</i>	P. 84

	Erik Bruendermann Ruhr-Universitaet Bochum Physical Chemistry II - NC 7-68, Faculty of Chemistry and Biochemistry, Universitätsstrasse 150 Bochum, NRW, Germany	
MonA4-5 1145	<i>High sensitive detection of bio-molecules with integrated THz sensor chip</i> Akihiro Tanabashi et al. RIKEN, The Institute of Physical and Chemical Research 2-1 Hirosawa, Wako, Saitama, Japan.	P. 86
MonA4-6 1146	<i>CW THz spectroscopy and modeling of solvated and unsolvated crystalline peptides</i> Karen Siegrist et al. NIST 100 Bureau Drive, 8443, Gaithersburg MD, USA	P. 88

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MonB1-1 1211	Keynote to be announced	P. 91
MonB1-2 1212	<i>Initial testing of a 95 GHz, 2.5 MW Gyrotron</i> Stephen Cauffman et al. Communications & Power Industries, 94 Murasaki St., Irvine CA, USA	P. 94
MonB1-3 1213	<i>Investigations on an experimental 170 GHz coaxial cavity gyrotron</i> Bernhard Piosczyk et al. Forschungszentrum Karlsruhe Institut für Hochleistungsimpuls und Mikrowellentechnik, Postfach 3640, Karlsruhe, BW, Germany	P. 96
MonB1-4 1214	<i>Experimental study of a 1.5 MW, 110 GHz gyrotron with a single-stage depressed collector</i> Eunmi Choi et al. MIT, 167 Albany street, NW 16-178, Cambridge MA, USA	P. 98
MonB1-5 1215	<i>Gyrotron: resources for development</i> Vladimir Zapevalov Institute of Applied Physics, RAS 46, Uljanova, Nizhny Novgorod, Russia	P. 100
MonB1-6 1216	<i>Experimental results on high-power gyrotrons for the stellarator W7-X</i> Gerd Gantenbein et al. Forschungszentrum Karlsruhe, IHM Hermann-von-Helmholtz- Platz 1, Eggenstein-Leopoldshafen, Germany	P. 102
MonB1-7 1217	<i>Extended operation of the 1 MW, CW gyrotrons for W7-X</i> Harald Braune et al. Max-Planck-Institut für Plasmaphysik, Teilinstitut Greifswald, Wendelsteinstrasse 1, Greifswald, MV, Germany	P. 104

14.30-17.00: Oral Session MonB2 Astronomy and Remote Sensing I	Chair: P. L. Richards
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MonB2-1 1221	<i>IRMMW-THz in space: the golden age (Invited Keynote)</i> Peter Siegel Caltech/JPL, 4800 Oak Grove Drive, Pasadena CA, USA	P. 106
MonB2-2 1222	<i>Superconducting detector arrays and multiplexers (Invited Keynote)</i> Jonas Zmuidzinas et al. California Institute of Technology, Pasadena, CA 91125, USA	P. 109
MonB2-3 1223	<i>Calculation of the transition temperature of type II superconductors</i> Hans-Peter Roeser et al. University of Stuttgart Pfaffenwaldring 31, Stuttgart Baden-Wuerttemberg, Germany	P. 111
MonB2-4 1224	<i>Focal plane array technologies for SISCAM</i> Hiroshi Matsuo et al. National Astronomical Observatory of Japan 2-21-1 Osawa, Mitaka Tokyo, Japan	P. 113
MonB2-5 1225	<i>Middle-infrared ultrafast superconducting single photon detector</i> Gregory Goltsman et al. Moscow State Pedagogical University, Malaya Pirogovskaya 29, Moscow, Russia	P. 115
MonB2-6 1226	<i>High sensitive 0.13 - 0.38 THz TES array radiometer for the Big Telescope Azimuthal of Special Astrophysics Observatory of Russian Academy of Sciences.</i> Alexander Vystavkin et al. Institute of Radioengineering and Electronics of Russian Academy of Sciences, 11 Mokhovaya Street, Moscow Region, Russian Federation	P. 117
MonB2-7 1227	<i>CLOVER: A high-sensitivity polarization instrument for CMB B-mode observations</i> Paolo Calisse et al. Cardiff University, The Parade, Cardiff CF24 3AA, UK	P. 119

14.30-17.00: Oral Session MonB3 Detectors I	Chair: S. Withington
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MonB3-1 1231	<i>Antenna coupled radiation detectors (Invited Keynote)</i> Yoshizumi Yasuoka Department of Electrical and Electronic Engineering, National Defense Academy 1-10-20 Hashirimizu, Yokosuka, Japan	P. 121
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MonB3-2 1232	<i>Picosecond polarisation detector for infrared and terahertz radiation</i> Josef Kiermaier et al. Faculty of Physics, University of Regensburg Universitätsstr. 31, Regensburg, Bayern, Germany	P. 124
MonB3-3 1233	<i>Manipulation of two photon absorption in HgCdTe p-n junction</i> Wei Lu et al. National Lab for Infrared Physics, Shanghai Institute of Technical Physics, 500 Yu Tian Road, Shanghai, China	P. 126
MonB3-4 1234	<i>Terahertz range GaAs/AlGaAs quantum well photodetector</i> Mikhail Patrashin et al. NICT 4-2-1 Nukui-Kitamachi, Koganei, Tokyo, Japan	P. 128
MonB3-5 1235	<i>THz frequency range planar diodes based on GaAs/AlAs superlattices optimization</i> Dmitry Pavelyev et al. Nizhny Novgorod State University, Gagarin ave 23 Nizhny Novgorod province, Russia	P. 130
MonB3-6 1236	<i>Multichannel balanced detection of ultrashort THz pulses</i> Boris Pradarutti et al. Fraunhofer IOF, Albert-Einstein-Str. 7, Jena, Thuringen, Germany	P. 132
MonB3-7 1237	<i>Broadband asymmetric quantum well infrared photodetector in Long Wavelength Infrared Range (LWIR)</i> Mustafa Hostut et al. Cumhuriyet University, Department of Electrical and Electronics, Faculty of Engineering, Cumhuriyet University, Sivas, Turkey	P. 134

14.30-17.00: Oral Session MonB4	Chair: Malcolm Dunn
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MonB4-1 1241	<i>THz death ray (Invited Keynote)</i> Keith Nelson et al. Massachusetts Institute of Technology, 77 Massachusetts Ave., Cambridge, MA 02139, USA	P. 137
MonB4-2 1242	<i>Generation of coherent terahertz radiation in 2D nitride-based structures</i> Christophe Palermo et al. Institut d'Electronique du Sud c.c. 084, Universite Montpellier II, Place Bataillon Montpellier, Cedex 5, France	P. 140
MonB4-3 1243	<i>Frequency tunability of optically pumped terahertz silicon lasers</i> Sergey Pavlov et al. Institute of Planetary Research, Rutherfordstr. 2, Berlin, Germany	P. 142

MonB4-4 1244	<i>Coherent power combination in highly integrated resonant tunneling diode oscillators with slot antennas</i> Safumi Suzuki et al. Tokyo Tech. 2-12-1-S9-3 O-okayama, Meguro-ku, Tokyo, Japan	P. 144
MonB4-5 1245	<i>THz emission properties of Fe implanted InGaAs excited with 1.5micro-meter femtosecond fiber laser</i> Masayoshi Tonouchi et al. Inst. Laser Eng., Osaka Univ. 2-6 Yamadaoka, Suita Osaka, Japan	P. 146
MonB4-6 1246	<i>Indium nitride as novel THz-radiation source for time-domain THz-systems</i> Ingrid Wilke et al. Rensselaer Polytechnic Institute Department of Physics, Applied Physics and Astronomy, 110 8th Street, Troy NY, USA	P. 148
MonB4-7 1247	<i>Development of sub-THz TUNNETT diode for biomedical imaging</i> Toru Kurabayashi et al. Semiconductor Research Institute Aoba 519-1176, Aramaki-aza, Aoba-ku, Sendai Miyagi, Japan	P. 150

17.00-19.00: Poster Session MonP5 Gyrotrons		
MonP5-1 1501	<i>Computer optimization of electron gun designs</i> R. Lawrence Ives et al. Calabazas Creek Research, Inc. 690 Port Drive, San Mateo CA, USA	P. 152
MonP5-2 1502	<i>Design studies on a 110 GHz, 1.0-1.5 MW, CW gyrotron</i> Machavaram Kartikeyan et al. Indian Institute of Technology Roorkee Department of Electronics & Computer Engineering, Roorkee Uttaranchal, India	P. 154
MonP5-3 1503	<i>Nonlinear analysis of 94GHz second-harmonic gyrotron with complex cavity</i> Xin-jian Niu et al. Vacuum Electronics National Laboratory, Institute of High Energy Electronics, UESTC No.4, Section 2, Jianshe North Road, Chengdu Sichuan, China	P. 156
MonP5-4 1504	<i>Pseudospark sourced beam-wave interaction experiments</i> Adrian Cross et al. Department of Physics, University of Strathclyde, 107 Rottenrow, Glasgow, UK	P.158

MonP5-5 1505	<i>Development of a millimeter and submillimeter wave ESR measurement system</i> Toshiyuki Fujita et al. Research Center for Development of FIR region, University of Fukui Bunkyo 3-9-1, Fukui, Japan.	P. 160
MonP5-6 1506	<i>Development of 394.6 GHz CW gyrotron (Gyrotron FU CW II) for 600 MHz DNP/proton-NMR</i> Toshitaka Idehara et al. Research Center for Development of Far Infrared Region, University of Fukui Bunkyo 3-9-1, Fukui, Japan	*
MonP5-7 1507	<i>Development of THz gyrotron FU CW series</i> Toshitaka Idehara et al. Research Center for Development of Far Infrared Region, University of Fukui Bunkyo 3-9-1, Fukui, Japan	P. 162
MonP5-8 1508	<i>RF-photogun as ultra bright terahertz source</i> Willem Op 't Root et al. TU/e P.O. Box 513, Eindhoven Noord-Brabant, The Netherlands	*
MonP5-9 1509	<i>Development of a sub terahertz high power pulse gyrotron</i> Teruo Saito et al. Research Center for Development of Far-Infrared Region, University of Fukui 3-9-1, Bunkyo, Fukui, Japan	P. 164
MonP5-10 1510	<i>X-band and submillimeter-wave DNP experiments on radical-doped toluene solution</i> Mitsuru Toda et al. Research Center for Development of Far-Infrared Region, University of Fukui 3-9-1, Bunkyo, Fukui, Japan	P. 166
MonP5-11 1511	<i>Post-amplification of a gyrotron RF beam by a sheet electron beam</i> George Anastassiou et al. National Technical University Of Athens 9, Iroon Polytechniou St., Athens, Attiki, Greece	P. 168
MonP5-12 1512	<i>Parameters analysis of a large-orbit coaxial-waveguide cyclotron autoresonance maser amplifier</i> Bing Chai et al. Institute of Photoelectronics, Southwest Jiaotong University 111 Erhuanlubeiyiduan, Campus Mail Box 50, Chengdu Sichuan, China	P. 170
MonP5-13 1513	<i>A quasi-self-consistent field theory and simulation for gyroklystrons with abrupt transition</i> Ying-Hui Liu et al. University of Electronic Science and Technology of China, NO.4, Section 2, North Jianshe Road, Chengdu, Sichuan, China	P. 172

MonP5-14 1514	<i>The linear investigation of cyclotron autoresonance maser amplifiers with coaxial structure</i> Chun-Rong Qiu et al. College of Science, Southwest Jiaotong University College of Science, Southwest Jiaotong University, Chengdu, Sichuan, China	P. 174
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17.00-19.00: Poster Session MonP5 Astronomy & Remote Sensing		
MonP5-15 1515	<i>IRAM Plateau de Bure Interferometer new SIS receivers: four bands, dual polarisation</i> Jean-Yves Chenu et al. Institut de RadioAstronomie Millimétrique, Domaine Universitaire, Saint Martin d'Hères, France	P. 176
MonP5-16 1516	<i>High resolution Fourier transform spectroscopy of environmentally hazardous gases at millimeter and submillimeter wavelengths</i> Nawaf Almoayed et al. Tufts University ECE Dept., 161 College Ave, Medford MA USA	P. 178
MonP5-17 1517	<i>Tests of finline-coupled TES bolometers for CLOVER</i> Michael Audley et al. University of Cambridge Detector Physics Group, Cavendish Laboratory, Madingley Road, Cambridge, United Kingdom	P. 180
MonP5-18 1518	<i>Test-bed interferometer to develop active optics techniques for space interferometers in mid-IR and far-IR astronomy missions.</i> Martin Caldwell et al. Rutherford Appleton Laboratory, Chilton, Didcot, Oxon, UK	P. 182
MonP5-19 1519	<i>Dome A, the ultimate THz site on Earth</i> Paolo Calisse et al. Cardiff University The Parade, Cardiff, Wales, UK	*
MonP5-20 1520	<i>Investigation of non linear response of Planck HFI detectors</i> Andrea Catalano et al. Observatoire de paris - LERMA 61 avenue de l'Observatoire, Paris, France	*
MonP5-21 1521	<i>Planar antenna arrays for CMB polarization detection</i> Goutam Chattopadhyay et al. Jet Propulsion Laboratory, Mail Stop 168-314, 4800 Oak Grove Dr, Pasadena, California, USA	P. 184
MonP5-22 1522	<i>Alignment tolerances of antenna optics for KVN 21-m shaped Cassegrain antenna</i> Moon-Hee Chung et al. Korea Astronomy & Space Science Institute San 61-1 Whaam-dong Yusong-gu, Taejon, South Korea	P. 186

MonP5-23 1523	<i>Quasi-optical design and analysis of the Millimetre-wave Bolometric Interferometer (MBI)</i> Gareth Curran et al. Institute of Technology Blanchardstown, Blanchardstown Road North, Blanchardstown, Dublin 15, Ireland	P. 188
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MonP5-24 1524	<i>Enhanced photoconductive terahertz antenna array devices</i> Mohammad Awad et al. RWTH Aachen University, Institute of Semiconductor Electronics Sommerfeldstr. 24, Aachen, NRW, Germany	P. 190
MonP5-25 1525	<i>Theory of terahertz generation in a slab of electro-optic material with femtosecond laser pulse focused to a line</i> Michael Bakunov et al. University of Nizhny Novgorod, 23 Gagarin Ave., Nizhny Novgorod, Russia	P. 192
MonP5-26 1526	<i>Efficient Cherenkov emission of terahertz radiation from an ultrashort laser pulse propagating along a waveguiding structure with nonlinear core</i> Sergey Bodrov et al. Institute of Applied Physics, Russian Academy of Sciences, 46 Ulyanov Street, Nizhniy Novgorod, Russia	P. 194
MonP5-27 1527	<i>Generation of terahertz pulsed radiation from photoconductive emitters using 1060 nm laser excitation</i> Iliyana Hinkov et al. Fraunhofer Institute for Physical Measurement Techniques, Heidenhofstrasse 8, Freiburg i. Br. Baden Wuerttemberg, Germany	P. 196
MonP5-28 1528	<i>Efficient THz generation using the difference frequency generation in ZnTe quasi-phase matching structures</i> Changsoo Jung et al. Advanced Photonics Research Institute, GIST 1 Oryong-dong, Buk-gu, Gwangju, Republic of Korea	*
MonP5-29 1529	<i>Interference experiments with a coherent tunable THz niplip superlattice photomixer</i> S. Preu et al. Max Planck Research Group, Erlangen Div 2, Guenther-Scharowsky Strasse. 1, Erlangen, Germany	P. 198

MonP5-30 1530	<i>Picosecond pulse generation and photomixing with uni-travelling-carrier photodiodes</i> Jean-Francois Lampin et al. Institut d Electronique de Microelectronique et de Nanotechnologie, Avenue Poincar B.P. 60069, Villeneuve d Ascq, France	P. 200
MonP5-31 1531	<i>THz emission from Be-doped GaAs</i> Roger Lewis et al. University of Wollongong, Northfields Avenue, Wollongong NSW, Australia	P. 202
MonP5-32 1532	<i>Concept of internal mixing in semiconductor lasers and optical amplifiers for room-temperature generation of tunable continuous terahertz waves</i> Alvydas Lisauskas et al. Physikalisches Institut, Johann Wolfgang Goethe-Universitaet Frankfurt, Max-von-Laue-Str. 1, Frankfurt am Main, Germany	P. 204
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MonP5-33 1533	<i>Hygroscopicity measurement of window materials using terahertz time-domain spectroscopy (THz-TDS)</i> Jega Balakrishnan et al. School of Electrical & Electronic Engineering, The University of Adelaide, South Australia 5005, Australia	P. 206
MonP5-34 1534	<i>Sample-induced beam distortions in terahertz time domain spectroscopy and imaging systems</i> John Bowen et al. University of Reading Whiteknights, Reading, Berkshire, UK	P. 208
MonP5-35 1535	<i>Transmission and emission terahertz time-domain spectroscopy with polarisation-sensitive photoconductive receivers</i> Enrique Castro-Camus et al. University of Oxford Clarendon Laboratory, Parks Road, Oxford, UK	P. 210
MonP5-36 1536	<i>Apodisation, denoising and system identification techniques for THz transients in the wavelet domain</i> Sillas Hadjiloucas et al. The University of Reading Cybernetics, School of Systems Engineering, Whiteknights, Reading, Berkshire, UK	P. 212
MonP5-37 1537	<i>Fast scanning and real-time monitoring of a pulsed terahertz signal</i> Yun-Sik Jin et al. Korea Electrotechnology Research Institute (KERI) 28-1, Sung-Ju Dong, Changwon Gyungnam, Korea	P. 214

MonP5-38 1538	<i>Synchronisation of a millimeter-wave BWO with a spectrum analyzer via a simple phase lock system</i> Charles Jones et al. North Carolina Central University Department of Physics, 1801 Fayetteville St., Durham NC USA	P. 216
MonP5-39 1539	<i>Theoretical investigation of continuous and pulsed image-plane intensity distributions with applications for time domain THz spectroscopy.</i> Damien Kelly et al. Institut für Photonik & Zentrum für Mikro- und Nanostrukturen, Technische Universität Wien, Vienna, Austria	P. 218
MonP5-40 1540	<i>A compact THz-TDS system for stable and quick measurements</i> Keiko Kitagishi et al. Otsuka Electronics Co. Ltd. 3-26-3 Shodai-tajika, Hirakata Osaka, Japan	P. 220
MonP5-41 1541	<i>THz time-domain spectroscopy uncertainties</i> Hungyen Lin et al. The University of Adelaide Centre for Biomedical Engineering and School of Electrical and Electronic Engineering, The University of Adelaide, Adelaide SA, Australia	P. 222
MonP5-42 1542	<i>Conductivity of nanoporous InP membranes investigated using terahertz time-domain spectroscopy</i> Suzannah Merchant et al. University of Oxford Clarendon Laboratory, Parks Road, Oxford, UK	P. 224
MonP5-43 1543	<i>Terahertz time-domain spectroscopy for a superconducting MgB₂ film</i> Tatsuya Mori et al. Physics Department, Graduate School of Science, Tohoku University 6-3, Sendai Miyagi, Japan	*
17.00-19.00: Poster Session MonP5 THz Spectroscopic Measurements		
MonP5-44 1544	<i>A compact CW-THz spectrometer for applications to gas phase identification and quantification of multiple species</i> Francis Hindle et al. Universite du Littoral Cote d'Opale LPCA, CNRS - UMR 8101, 189A ave M. Schumann, Dunkerque Nord, France	P. 226
MonP5-45 1545	<i>Characterization of fluorine-doped thin-multiwalled carbon nanotubes by terahertz spectroscopy</i> Chul Kang et al. Advanced Photonics Research Institute, GIST 1 Oryong-dong, Buk-gu, Gwangju, South Korea	P. 228

MonP5-46 1546	<i>Terahertz pump-probe spectroscopy in LT-InGaAs thin film</i> Masaya Nagai et al. Dep. Physics, Kyoto University Kitashirakawa, Sakyo, Kyoto, Japan	P. 230
MonP5-47 1547	<i>Infrared photoconductivity of negatively charged Te donor in Ge</i> Hiroyasu Nakata et al. Osaka Kyoiku University, 4-698-1 Asahigaoka, Kashiwara Osaka, Japan	P. 232
MonP5-48 1548	<i>Investigation of electronic states on pressure-tuned heavy electron systems in TmTe by infrared spectromicroscopy under high pressure</i> Takao Nanba et al. Faculty of Science, Kobe University Rokko-dai, nada-ku, Kobe 657-8501 Japan	P. 235
MonP5-49 1549	<i>A new approach to spectral analysis of molecules adsorbed on surfaces</i> Ekaterina Sobakinskaya et al. Institute for Physics of Microstructures RAS GSP-105, Nizhny Novgorod, Russia	*
MonP5-50 1550	<i>ESR measurement of triple chain magnet Cu₃(OH)4SO₄ by millimeter region</i> Hiroshi Yamamoto et al. Kobe University Graduate School of Science and Technology Rokkodai-tyo 1-1, Nada-ku, Kobe Hyogo, Japan	P. 237
MonP5-51 1551	<i>Terahertz spectra of GaSe crystal measured by terahertz time-domain spectroscopy</i> Dong-Wen Zhang et al. National University of Defense Technology Department of Physics, College of Science, Changsha Hunan, China	P. 239
17.00-19.00: Poster Session MonP5 FEL – Synchrotron		
MonP5-52 1552	<i>Concept of a high power W-band maser based on a two-dimensional structure</i> Lorna Fisher et al. University of Strathclyde 107 Rottenrow, Glasgow Strathclyde, UK	P. 241
MonP5-53 1553	<i>Development of FEM based on coupling of propagating and trapped waves in advanced Bragg resonators</i> Naum Ginzburg et al. Institute of Applied Physics, Russian Academy of Science, 46 Ulyanov Str., Nizhny Novgorod Nizhegorodskaya, Russia	P. 243
MonP5-54 1554	<i>THz and mmW sources using "Grid" photonic crystals</i> Alexandra Gurinovich et al. Belarus State University, Research Institute for Nuclear Problems, 11 Bobruiskaya str., Minsk, Belarus	P. 245

MonP5-55 1555	<i>Photonic crystal reflex klystron as a high power submillimeter wave source</i> Kyu-Ha Jang et al. Seoul National University 24-B05, Department of Physics and Astronomy, Seoul National University, Seoul, Korea	*
MonP5-56 1556	<i>Mode formation of hybrid metallic photonic-band-gap coaxial resonator</i> Jung-Il Kim et al. Korea Electrotechnology Research Institute P.O. Box 20, Changwon Gyeongnam, Korea	P. 247
MonP5-57 1557	<i>Powermeters and 2D beam imaging systems for powerful Novosibirsk terahertz free electron laser</i> Vitaly Kubarev et al. Budker Institute of Nuclear Physics Lavrentiev av. 11, Novosibirsk, Russia	P. 249
MonP5-58 1558	<i>The study of some key technologies for a compact terahertz source based on free electron lasers</i> Jia-sheng Tian et al. Huazhong University of Science and Technology, Department of Electronics and Information, Wuhan Hubei 430074, China	P. 251
MonP5-59 1559	<i>Effects of coaxial wiggler magnetic field on electron dynamics in a free-electron laser</i> Mahdi Esmaeilzadeh et al. Iran University of Science & Technology, Department of Physics, Narmak, Tehran, Iran	P. 253
MonP5-60 1560	<i>Effects of self-fields on dispersion relation in a helical wiggler with ion-channel guiding</i> Mahdi Esmaeilzadeh et al. Iran University of Science & Technology, Department of Physics, Narmak, Tehran, Iran	P. 256
MonP5-61 1561	<i>The Darwin model for space-charge dynamics</i> Grigoriy Gorbik et al. Institute for Radiophysics and Electronics of NAS of Ukraine vul. Ak. Proskury, 12, Kharkiv Region, Ukraine	P. 258
MonP5-62 1562	<i>Magnetostatic resonance effect in ubitron based on hybrid resonance</i> Vitaliy Goryashko et al. Institute for Radiophysics and Electronics of NAS of Ukraine vul. Ak. Proskury, 12, Kharkiv Region, Ukraine	*
MonP5-63 1563	<i>Study of optical discharge produced by powerful Novosibirsk terahertz free electron laser</i> Vitaly Kubarev et al. Budker Institute of Nuclear Physics Lavrentiev av. 11, Novosibirsk, Russia	*

MonP5-64 1564	<i>Generation and application of high current density sheet beams for THz vacuum electron sources</i> Yiman Wang et al. School of Materials Science and Engineering, Beijing University, 100 Pingleyuan, Chaoyang District, Beijing, China	P. 260
MonP5-65 1565	<i>Novel schemes of production and amplification of superradiance pulses by short intense electron beams</i> Irina Zotova et al. Institute of Applied Physics RAS Ulyanova 46, GSP-120, Nizny Novgorod, Russia	P. 262
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MonP5-67 1567	<i>Active THz imaging for stand-off detection</i> Michael Breit et al. General Electric Global Research, Freisinger Landstrae 50, Munich, Bavaria, Germany	*
MonP5-68 1568	<i>Millimeter and submillimeter wave sintering of ceramics</i> Seitaro Mitsudo et al. Research Center for Development of Far-Infrared Region, University of Fukui Bunkyo 3-9-1, Fukui, Japan	P. 267
MonP5-69 1569	<i>A compact mmW imaging sensor for concealed weapon detection</i> Denis Noetel et al. FGAN-FHR Neuenahrer Strasse 20, Wachtberg-Werthhoven, NRW, Germany	P. 269
MonP5-70 1570	<i>Detection and inspection device of illicit drugs in sealed envelopes using THz waves</i> Yoshiaki Sasaki et al. RIKEN 519-1399 Aramaki-Aoba, Aoba-ku, Sendai Miyagi, Japan	P. 271
MonP5-71 1571	<i>Non-destructive detection of particulate matter in soot collection filter using 94 GHz source</i> Takayuki Shibuya et al. RIKEN 519-1399, Aramaki Aoba, Aoba-ku Sendai Miyagi, Japan	P. 273
MonP5-72 1572	<i>A quantitative method for detecting explosive materials using terahertz spectroscopy</i> Yingxin Wang et al. Department of Engineering Physics, Tsinghua University Haidian District, Beijing, China	P. 275

MonP5-73 1573	<i>Vibrational spectra of ketamine hydrochloride and 3, 4-methylene-dioxymethamphetamine in THz range</i> Guangqin Wang et al. Capital Normal University Department of Physics, Capital Normal University, Xisanhuan Beulu No.105, Beijing, China	P. 277
MonP5-74 1574	<i>THz emission characteristics from LSI-TEG chips under zero bias voltage</i> Masatsugu Yamashita et al. RIKEN Sendai 519-1399 Aramaki, Aoba-ku, Sendai Miyagi, Japan	P. 279
MonP5-75 1575	<i>Application of terahertz spectrum in the detection of harmful food additives</i> Haruko Yoneyama et al. THz Biological Sensing Research Lab., RIKEN, Japan 2-1, Hirosawa, Wako-shi Saitama, Japan	P. 281
MonP5-76 1576	<i>Identification of explosives and drug & inspection of material defect with THz radiation and IR thermal wave</i> Cunlin Zhang et al. Department of Physics, Capital Normal University No. 105 of Xi San Huan Bei Rd., Beijing, China	*
MonP5-77 1577	<i>THz fingerprint spectra detected by sensor chips based on coplanar strip-lines made on low-permittivity plastic substrate</i> Jiro Kitagawa et al. Hiroshima University 1-3-1 Kagamiyama, Higashi-Hiroshima, Hiroshima, Japan	P. 283
17.00-19.00: Poster Session MonP5 Applications in Biology		
MonP5-78 1578	<i>Laser-terahertz emission from the chemical sensing plate</i> Toshihiko Kiwa et al. Dept. of Electrical and Electronic Eng., Okayama University 3-1-1 Tsushimanaka, Okayama City, Okayama, Japan	P. 285
MonP5-79 1579	<i>Continuous millimeter-wave TUNNETT diode system for microanalytical applications</i> Toru Kurabayashi et al. Semiconductor Research Institute Aoba 519-1176, Aramaki-aza, Aoba-ku, Sendai Miyagi, Japan	P. 287
MonP5-80 1580	<i>Determination of alcohol and sugar concentration in aqueous solutions using reflection terahertz time-domain spectroscopy</i> Uffe Møller et al. COMDTU, Technical University of Denmark Oersteds Plads, Building 343, Kongens Lyngby, Denmark	P. 289

MonP5-81 1581	<i>Electromagnetic modeling of the DNA monolayer in THz bio-chips</i> Mohammad Neshat et al. University of Waterloo, 200 University Ave. West, Waterloo Ontario, Canada	P. 291
MonP5-82 1582	<i>A study of the endogenous electromagnetic field into the space around the flower plants</i> Valery Shalatonin University of Informatics and Radioelectronics 6, P. Brouki St., Minsk region, Belarus	P. 293
MonP5-83 1583	<i>Towards a THz osmometer</i> Apostolos Zafiropoulos et al. The University of Reading, Cybernetics, School of Systems Engineering, Whiteknights, Reading, Berkshire, UK	P. 295
17.00-19.00: Poster Session MonP5 Filters, Resonators and Modulators		
MonP5-84 1584	<i>Plastic THz band-pass filters and applications</i> Fabrice Bernard et al. National Physical Laboratory, Hampton Road, Teddington Middlesex, UK	P. 297
MonP5-85 1585	<i>Simulation of Smith-Purcell radiation in a novel quasioptical cavity</i> Bei ran Chen et al. University of Electronic Science and Technology of China Chengdu, Sichuan, China	*
MonP5-86 1586	<i>Photonic crystals with GaAs defect for opto-THz modulation</i> Ladislav Fekete et al. Institute of Physics of the ASCR Na Slovance 2, Prague, Czech Republic	P. 299
MonP5-87 1587	<i>Resonant metal gratings for THz material characterization</i> Thorsten Goebel et al. Technical University of Darmstadt, Institute of Microwave Engineering, Merckstrae 25, Darmstadt Hessen, Germany	P. 301
MonP5-88 1588	<i>1-D and 2-D metal mesh based quasi-optical selective components for high-power applications at Novosibirsk terahertz free electron laser</i> Sergei Kuznetsov et al. Budker Institute of Nuclear Physics, SB RAS Acad., Lavrentiev prospect 11, Novosibirsk, Russia	P. 303
MonP5-89 1589	<i>Terahertz plasmon propagation on flat and corrugated metal surface</i> Maxim Nazarov et al. Physics Department, M.V.Lomonosov Moscow State University, Leninskie Gory, Moscow, Russia	P. 305

MonP5-90 1590	<i>T-ray multilayer interference filter</i> Withawat Withayachumnankul et al. School of Electrical & Electronic Engineering, The University of Adelaide North Terrace Campus, Adelaide, South Australia, Australia	P. 307
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Tuesday, September 4th

10.45-13.05: Oral Session TueA1
Gyrotrons II – High Frequency

Chair: Olgierd Dumbrajs

TueA1-1 2111	<i>The 1THz Gyrotron, at Fukui University (Invited Keynote)</i> Toshitaka Idehara et al. Research Center for Development of Far Infrared Region, University of Fukui, Bunkyo 3-9-1, Fukui-shi, Fukui Prefecture, Japan	P. 309
TueA1-2 2112	<i>High frequency source development at Calabazas Creek Research (Invited Keynote)</i> R. Lawrence Ives et al. Calabazas Creek Research, Inc. 690 Port Drive, San Mateo CA, USA	P. 312
TueA1-3 2113	<i>Generation of multi-kW level THz radiation in a pulsed fundamental harmonic gyrotron</i> Mikhail Glyavin et al. Institute of Applied Physics, RAS, 46 Ul'yanov Street, Nizhny Novgorod, Russia	P. 315
TueA1-4 2114	<i>5 kW pulse terahertz gyrotron</i> Michael Read et al. Calabazas Creek Research Inc. 2381 Middle Road, Plainfield VT, USA	P. 316
TueA1-5 2115	<i>Simulation results of a CW 1 THz gyrotron (Gyrotron FU CW III)</i> La Agusu et al. Research Center for Development of Far-Infrared Region, University of Fukui, 3-9-1 Bunkyo, Fukui-shi Fukui-ken, Japan	P. 318
TueA1-6 2116	<i>High-harmonic gyrodevices with frequency multiplication</i> Andrey Savilov et al. Institute of Applied Physics, 46 Ulyanov Str., Nizhny Novgorod, Russia	P. 321

10.45-13.05: Oral Session TueA2
Astronomy & Remote Sensing II

Chair: Jonas Zmuidzinas

TueA2-1 2121	<i>THz heterodyne technology for astronomy and planetary science (Invited Keynote)</i> Wolfgang Wild SRON, National Institute for Space Research, Groningen, Netherlands	P. 323
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TueA2-2 2122	<i>Facility heterodyne receiver for the Atacama pathfinder experiment telescope (Invited Keynote)</i> Victor Belitsky et al. Chalmers University of Technology, Group for Advanced Receiver Development (GARD), Chalmers University, Gothenburg, Vstragtaland, Sweden	P. 326
TueA2-3 2123	<i>The Atacama Cosmology Telescope - ACT</i> Mark Devlin University of Pennsylvania, David Rittenhouse Laboratory, 209 South 33rd Street, Philadelphia PA, USA	P. 329
TueA2-4 2124	<i>MUSTANG. First light and current status.</i> Simon Dicker et al. University of Pennsylvania, David Rittenhouse Labs, 209 S. 33rd St, Philadelphia PA, USA	P. 331
TueA2-5 2125	<i>Development of CILCO, a novel instrument for remote sensing of cirrus clouds in the far-infrared/submillimeter.</i> Darren Hayton et al. Cardiff University, Cardiff School of Physics and Astronomy, The Parade, Cardiff, UK	P. 333
TueA2-6 2126	<i>Astronomical testing observation in multi-Fourier transform interferometer: aperture systesis technique and CMB</i> Izumi S. Ohta et al. Tohoku University, 6-3 Aoba Aramaki Aoba-ku, Sendai, Miyagi, Japan	P. 335

10.45-13.05: Oral Session TueA3	Chair: Willie Padilla
Materials I	

TueA3-1 2131	<i>Active metamaterials: a novel approach to manipulate terahertz waves (Invited Keynote)</i> Hou-Tong Chen et al. Los Alamos National Laboratory, MPA-CINT, MS K771, LANL, Los Alamos NM, USA	P. 337
TueA3-2 2132	<i>Characterization of wire pair negative index metamaterials at terahertz frequencies (Invited Keynote)</i> Mohammad Awad et al. RWTH Aachen University, Institute of Semiconductor Electronics, Sommerfeldstr. 24, Aachen, NRW, Germany	P. 340
TueA3-3 2133	<i>FIR-magnetospectroscopy on HgSe:Fe quantum dots</i> Michael von Ortenberg et al. Humboldt University at Berlin Institute of Physics, Newtonstrasse 15, Berlin, Germany	P. 342

TueA3-4 2134	<i>Design of negative index metamaterials in optical communication wavelength</i> Sungkeun Oh et al. Division of Electrical & Computer Engineering, Ajou University, #438, Woncheon-Hall, Suwon Gyeonggi, South Korea	P. 344
TueA3-5 2135	<i>Electromagnetic wave absorbing properties of polymer-carbon nanocomposites in THz region</i> Kenichiro Tanaka et al. Technology Research Institute of Osaka Prefecture 2-7-1 Ayumino, Izumi Osaka, JAPAN	P. 346
TueA3-6 2136	<i>Left-handed metamaterials with cut-off hole arrays at millimetre waves</i> Mario Sorolla Ayza et al. Dept. of Electrical Engineering, Universidad Publica de Navarra, Campus Arrosadia, Pamplona, Navarre, Spain	P. 348

10.45-13.05: Oral Session TueA4	Chair: Xuechu Shen
THz Imaging & Optical Systems I	

TueA4-1 2141	<i>Imaging FTS spectroscopy (Invited Keynote)</i> David Naylor University of Lethbridge, Alberta, Canada	P. 350
TueA4-2 2142	<i>Imaging by THz single photon counting (Invited Keynote)</i> Kenji Ikushima et al. Department of Basic Science, University of Tokyo, Komaba, Tokyo, Japan	P. 353
TueA4-3 2143	<i>On the way to an active terahertz camera: optic design and its experimental verification</i> Torsten Loeffler et al. JWG - University Frankfurt, Max-von-Laue-Str. 1, Frankfurt, Hessen, Germany	P. 356
TueA4-4 2144	<i>Towards passive terahertz imaging using a semiconductor quantum dot sensor</i> Peter Kleinschmidt et al. National Physical Laboratory, Hampton Road, Teddington, Middlesex, UK	P. 358
TueA4-5 2145	<i>Terahertz imaging with a 120x160 pixel microbolometer matrix 50-fps camera</i> Boris Knyazev et al. Budker Institute of Nuclear Physics, Lavrentyev str. 11, Novosibirsk, Russia	P. 360
TueA4-6 2146	<i>In-depth measurement of 60GHz band near field and transmission mode microscopy</i> Somboon Theerawisitpong et al. Nippon Institute of Technology, 4-1 Gakuendai, Miyashiro-machi, MinamiSaitama-gun, Saitama-ken, Japan	P. 362

TueB1-1 2211	<i>Design and demonstration of W-band gyrotron amplifiers for radar applications (Invited Keynote)</i> Monica Blank et al. CPI 811 Hansen Way, M/S B-450, Palo Alto, CA USA	P. 364
TueB1-2 2212	<i>50 MW 30 GHz gyroklystron</i> Michael Read et al. Calabazas Creek Research Inc., 2381 Middle Road, Plainfield VT, USA	P. 367
TueB1-3 2213	<i>Microwave components for 30 GHz high-power gyroklystron</i> Sergey Kuzikov et al. Institute of Applied Physics, Russian Academy of Sciences 46 Ulyanov Str., Nizhny Novgorod, Russia	P. 369
TueB1-4 2214	<i>Initial operation of a wideband 140 GHz, 1 kW gyro-amplifier</i> Colin Joye et al. Massachusetts Institute of Technology, MIT PSFC, NW16-178, 167 Albany St., Cambridge, MA USA	P. 371
TueB1-5 2215	<i>Experimental second-harmonic axis-encircling beam Gyro-TWT mplifier</i> Stephen Harriet et al. NSWC Crane / UC Davis, 300 Highway 361 Code 80943 BLDG 3168, Crane IN, USA	P. 373
TueB1-6 2216	<i>On the theory of frequency-multiplying gyroklystrons</i> Andrey Savilov et al. Institute of Applied Physics, 46 Ulyanov Str., Nizhny Novgorod, Russia	P. 375
TueB1-7 2217	<i>A new type of coupled cavity interaction circuit for gyrotron traveling wave amplifier applications</i> Jirun Luo et al. Institute of Electronics, Chinese Academy of Science, No. 19 Beisihuanxilu, Beijing, China	P. 377

TueB2-1 2221	<i>Designing far infrared diagnostics for fusion plasma experiments (Invited Keynote)</i> Alexandru Boboc EURATOM/UKAEA Fusion Association, Culham Science Centre, EFDA-JET, K1/0/22, Abingdon, Oxon, UK	P. 378
TueB2-2 2222	<i>Study of a DCN laser interferometer/polarimeter for EAST tokamak</i> Haiqing Liu et al. Institute of Plasma Physics, Chinese Academy of Sciences, P.O. Box 1126, Hefei, Anhui, China	P. 381
TueB2-3 2223	<i>Electromagnetic characterization of the new oblique ECE system at JET</i> Saul Garavaglia et al. 1IFP-CNR, Associazione EURATOM-ENEA-CNR sulla Fusione via Cozzi 53, Milan, Italy	P. 383
TueB2-4 2224	<i>Tests of a double-detector technique for the FIR polarimetry on Tore Supra</i> Christophe Gil et al. CEA Centre de Cadarache, DRFC/SCCP Bat 507, Saint-Paul-Lez-Durance Bouches du Rhone, France	P. 385
TueB2-5 2225	<i>Broadband radiometer system with fast frequency switching synthesizer for electron cyclotron emission measurements in LHD</i> Hiroshi Idei et al. Advanced Fusion Research Center, Research Institute for Applied Mechanics, Kyushu University 6-1 Kasuga-Kohen, Kasuga Fukuoka, Japan	P. 387
TueB2-6 2226	<i>FADIS, a fast switch and combiner for high-power millimetre wave beams</i> Walter Kasperek et al. Institut fuer Plasmaforschung der Universitaet Stuttgart, Pfaffenwaldring 31, Stuttgart Baden-Wuerttemberg, Germany	P. 389
TueB2-7 2227	<i>Plasma scattering measurement in NSTX Tokamak using a submillimeter wave gyrotron as a radiation source</i> Isamu Ogawa et al. Research Center for Development of Far-Infrared Region, University of Fukui 9-1, Bunkyo 3-Chome, Fukui, Japan	P. 391

TueB3-1 2231	<i>Probing of small molecules and proteins low frequency vibrations using terahertz radiation at SRS Daresbury Laboratory (Invited Keynote)</i> Hannan Fersi et al. The University of Manchester, Manchester Interdisciplinary Biocentre, 131 Princess Street, Manchester, UK	P. 393
TueB3-2 2232	<i>TD THz spectroscopy of GPCR biomolecules</i> Anthony Vickers et al. University of Essex, Wivenhoe Park, Colchester, Essex, UK	P. 395
TueB3-3 2233	<i>T-ray spectroscopy of biomolecules</i> Bernd Fischer et al. The University of Adelaide School of Electrical & Electronic Engineering and Centre for Biomolecular Engineering, North Terrace, Adelaide, SA, Australia	P. 398
TueB3-4 2234	<i>The electromagnetic response of human skin in the submillimeter frequency range</i> Yuri Feldman et al. The Department of Applied Physics, The Hebrew University of Jerusalem 215, Bergman bld, Givat Ram, Jerusalem Givat Ram, Israel	P. 400
TueB3-5 2235	<i>High resolution THz spectroscopy of organic and bio-organic molecules</i> Joseph Melinger et al. Naval Research Laboratory, Electronics Science and Technology Division, Code 6812, 4555 Overlook Ave., SW Washington DC, USA	P. 402
TueB3-6 2236	<i>Application of terahertz pulsed imaging for three-dimensional non-destructive inspection of pharmaceutical tablet uniformity</i> Yaochun Shen et al. TeraView Limited, Platinum Building, St John's Innovation Park, Cambridge, Cambridgeshire, UK	P. 404
TueB3-7 2237	<i>The partition function of large biomolecules, and its relevance to infrared and terahertz spectroscopy.</i> Harvey Rutt Optoelectronics Research Centre, University of Southampton, Highfield, Southampton, UK	P. 406

TueB4-1 2241	<i>Propagation modelling based on measurements and simulations of surface scattering in specular direction (Invited Keynote)</i> Thomas Kleine-Ostmann et al. Physikalisch-Technische Bundesanstalt Bundesallee 100, Braunschweig, Lower Saxony, Germany	P. 408
TueB4-2 2242	<i>Terahertz transmission property of quadrupole electric field in three-strip coplanar transmission-line on low-permittivity substrate</i> Masayuki Onuma et al. Hiroshima University, 1-3-1 Kagamiyama, Higashi-Hiroshima, Hiroshima, Japan	P. 411
TueB4-3 2243	<i>Evidence of surface plasmon-like wave propagation along a 1D metallic grid</i> Jean-Louis Coutaz et al. LAHC, University of Savoie, Campus Scientifique, Le Bourget du Lac Cedex, Savoie, France	P. 413
TueB4-4 2244	<i>Strong optical activity of metal screw arrays in terahertz transmission</i> Masanori Hangyo et al. Institute of Laser Engineering, Osaka University, 2-6 Yamadaoka, Suita Osaka, Japan	P. 415
TueB4-5 2245	<i>Propagation of surface plasmon polaritons on periodic metal arrays</i> Michael Martl et al. Vienna University of Technology, Gusshausstrasse 27, Vienna, Austria	P. 417
TueB4-6 2246	<i>Novel millimetre-wave diffraction phenomena</i> George Brand School of Physics, University of Sydney, Sydney NSW, Australia	P. 419
TueB4-7 2247	<i>Effect of small damping constant on electric field enhancement at narrow interface in terahertz attenuated total reflection</i> Takanori Okada et al. Pioneering Research Unit for Next Generation, Kyoto University, Kyodai Katsura Venture Plaza, Minami-kan 2108, 1-36 Goryo-ohara, Kyoto Nishikyo-ku, Japan	P. 421

17.00-19.00: Poster Session TueP5

Gyrotrons

TueP5-1 2501	<i>Proposal of large orbit cyclotron autoresonance maser amplifier with outer-slotted-coaxial structure</i> Chun-Rong Qiu et al. College of Science, Southwest Jiaotong University, Chengdu, Sichuan, China	P. 423
TueP5-2 2502	<i>Analysis and simulation of a Ka_Band Gyro_TWT</i> Hui Wang et al. Institute of High Energy Electronics, University of Electronic Science and Technology of China, Chengdu, Sichuan, China	P. 425
TueP5-3 2503	<i>The design of a TE021 mode high power Ka-Band gyroklystron</i> JianXun Wang et al. University of Electronic Science and Technology of China, School of Physical Electronics, Chengdu, China	P. 427
TueP5-4 2504	<i>Mode competition in a large-orbit coaxial-waveguide cyclotron autoresonance maser amplifier</i> Shi-Chang Zhang Institute of Photoelectronics, Southwest Jiaotong University, 111 Erhuanlubeiyiduan, Campus Mail Box 50 Chengdu, Sichuan, China	P. 429
TueP5-5 2505	<i>Broadband design of slotted TE21 second harmonic Gyro-BWO</i> Nai-ching Chen et al. National Tsing-Hua University, 101 Section 2 Kuang Fu Road, Hsinchu, Taiwan 30013	P. 431
TueP5-6 2506	<i>Stability and tunability of the gyrotron backward-wave oscillator</i> Chao-Ta Fan et al. National Tsing Hua University 101, Section 2, Kuang-Fu Road, Hsinchu, Taiwan	*
TueP5-7 2507	<i>Small-signal theory analysis and design of a KA-BNAD</i> Ran Yan et al. University of Electronic Science and Technology of China School of Physical Electronics, Chengdu, Sichuan, China	P. 432
TueP5-8 2508	<i>Operation of a quasioptical multi-mode generator for 105 - 150 GHz</i> Andreas Arnold et al. Forschungszentrum Karlsruhe (FZK) IHM, Bau 421, Hermann-von-Helmholtz-Platz 1, Eggenstein- Leopoldshafen, Baden, Germany	P. 434

TueP5-9 2509	<i>Operation of a 34 GHz harmonic peniotron oscillator</i> Lawrence Dressman et al. NSWC Crane Bldg. 3168, Code 80943, 300 Hwy 361, Crane IN, USA	*
TueP5-10 2510	<i>Improved collectors for high power gyrotrons</i> R. Lawrence Ives Calabazas Creek Research, Inc. 690 Port Drive, San Mateo CA, USA	P. 436
TueP5-11 2511	<i>Status of the field marshal environment and toolset</i> Robert Jackson et al. Calabazas Creek Research, Inc. 6006 Tamannary Dr., Greensboro NC, USA	P. 438
TueP5-12 2512	<i>Improvement of quasi-optical mode converter for 170 GHz coaxial cavity gyrotron at FZK</i> Jianbo Jin et al. Forschungszentrum Karlsruhe, IHM/FZK, P.O. Box 3640, D-76021 Karlsruhe, Germany	P. 440
TueP5-13 2513	<i>Mathematical models to study coaxial gyrotron resonators with the azimuthally corrugated inner conductors</i> Oleksiy Kononenko et al. Kharkov National University, Svobody sq., 4, Department of Mathematics and Mechanics, Kharkov, Ukraine	P. 442
TueP5-14 2514	<i>Efficiency enhancement of active microwave pulse compressors</i> Sergey Kuzikov et al. Institute of Applied Physics, Russian Academy of Sciences 46 Ulyanov Str., Nizhny Novgorod, Russia	P. 444
17.00-19.00: Poster Session TueP5 Astronomy & Remote Sensing		
TueP5-15 2515	<i>Comparison of PWV measurements determined from co-located 20 m water vapour monitors (IRMA) used in the thirty meter telescope (TMT) site testing campaign</i> Regan Dahl et al. University of Lethbridge, 4401 University Drive W, Department of Physics, Lethbridge, Alberta, Canada	P. 446
TueP5-16 2516	<i>Characterization and performances of the Planck-LFI flight model passive components.</i> Ocleto D'Arcangelo et al. Istituto di Fisica del Plasma, via Cozzi 53, Milano, Italy	P. 448

TueP5-17 2517	<i>The HIFI instrument for the Herschel mission: mixers status</i> Pieter Dieleman et al. SRON, National Institute for Space Research, P.O.Box 800, Groningen, Netherlands	*
TueP5-18 2518	<i>Lumped element kinetic inductance detectors</i> Simon Doyle et al. School of Physics and Astronomy, Cardiff University, The Parade, Cardiff, UK	P. 450
TueP5-19 2519	<i>The modelling front contact metallization grid pattern for multi crystalline silicon solar cell</i> Edris Faizabadi et al. Department of Physics, Faculty of Science, K. N. Toosi University of Technology, Shariati St.Tehran, Iran	P. 452
TueP5-20 2520	<i>Analysis of the SMILES optics alignment</i> Philipp Fuerholz et al. IAP University of Berne, Sidlerstrasse 5, Berne, Switzerland	P. 454
TueP5-21 2521	<i>A High yield process route for fabricating microstrip-coupled superconducting transition edge sensors</i> Dorota Glowacka et al. University of Cambridge, Cavendish Laboratory, Madingley Road, Cambridge, UK	P. 456
TueP5-22 2522	<i>Optical design of the SCUBA-2 FTS</i> Brad Gom et al. University of Lethbridge, 4401 University Drive W, Lethbridge, Alberta, Canada	P. 458
TueP5-23 2523	<i>Research on the transmittable characteristics of the 340GHz SMMW in the aerosphere</i> Bing Gong et al. Nanjing University of Science and Technology, Institute of Near Sensing Technique with Millimeter Wave and Optical Wave, Nanjing, Jiangsu China	*
17.00-19.00: Poster Session TueP5 Sources		
TueP5-24 2524	<i>Direct conversion of THz emission from a periodic electrostatic field by use of a laser-produced relativistic ionization front</i> Nobuo Ohata et al. Utsunomiya University, Yoto 7-1-2, Utsunomiya Tochigi, Japan	P. 460
TueP5-25 2525	<i>Terahertz generation by the photomixing of a compact two-colour laser diode</i> Simon Osborne et al. Tydall National Institute, Lee Maltings, Cork, Ireland	*

TueP5-26 2526	<i>Actively stabilized synchronously pumped enhancement cavity for THz generation</i> Michael Theuer et al. Fraunhofer IPM c/o University of Kaiserslautern, Erwin-Schroedinger-Str. 46, Kaiserslautern Palatinate, Germany	P. 462
TueP5-27 2527	<i>Optical generation terahertz radiation from ZnSe surface nanoparticles</i> Xiaojun Wu et al. State Key Laboratory of Optoelectronic Materials and Technologies, Institute of Optoelectronic and Functional Composite Materials, School of Physics and Engineering, Sun Yat-Sen (Zhongshan) University, Guangzhou, China	P. 464
TueP5-28 2528	<i>Emission of terahertz radiation from an interdigitated grating gates HEMT</i> Meziani Yahya Moubarak et al. Tohoku University, Research Institute of Electrical Communication, 2-1-1 Katahira, Aoba-ku, Sendai Miyagi, Japan	P. 466
TueP5-29 2529	<i>Tunable THz difference frequency generation with 1550nm fiber soliton laser</i> Yandong Gong et al. Institute for InfoComm Research, 21 Heng Mui Keng Terrace, Singapore	P. 468
TueP5-30 2530	<i>The numerical calculation and analyze of the pulse-laser pumped D2O Gas Tera-Hz laser</i> Zhihong He et al. Chinese Sun Yat-Sen University, State Key Laboratory of Optoelectronic Materials and Technologies, No.135, Xin Gang Xi Road, Guangzhou, China	P. 470
TueP5-31 2531	<i>A study of the dynamics of the carrier density in the semiconductor optical amplifier induced by the injected optical pulses</i> Jian He et al. Institute of Optoelectronics Science and Engineering, Huazhong University of Science and Technology, 1037 Luo Yu Road, Wuhan, Hubei, China	*
TueP5-32 2532	<i>Terahertz parametric gain in semiconductor superlattices</i> Timo Hyart et al. University of Oulu, Tervakukkakuja 1 as 27, Oulu, Finland	P. 472
TueP5-33 2533	<i>QCL with terahertz TEM-horn antennas</i> Tahsin Akalin et al. IEMN, Lille University, Av. Poincare, Cite Scientifique BP 69002, Villeneuve d'Ascq, France	P. 474
TueP5-34 2534	<i>Modelling of static and dynamic behaviour of 2.9 THz Quantum Cascade Lasers.</i> Jean-Claude Mollier et al. SUPAERO 10, Avenue Edouard Belin, Toulouse cedex 4, France	P. 476

17.00-19.00: Poster Session TueP5 TDS Systems & Measurements		
TueP5-35 2535	<i>An algorithm for the removal of spurious oscillations from spectra derived from THz time-domain data</i> Mira Naftaly et al. University of Leeds, Woodhouse Lane, Leeds, UK	P. 478
TueP5-36 2536	<i>Investigation of charge transport in conjugated systems using time-resolved terahertz spectroscopy</i> Hynek Nemec et al. Lund University, Getingeaven 60, Lund, Sweden	*
TueP5-37 2537	<i>Terahertz time-domain spectroscopy of liquid crystal materials</i> Ilya Ozheredov et al. Physics Department and International Laser Center, M.V.Lomonosov Moscow State University, Moscow, 119992 GSP-2 Leninskie Gory, Moscow, Russia	P. 480
TueP5-38 2538	<i>Broadband terahertz time domain spectroscopy system with photoconductive antennas</i> Shingo Saito et al. National Institute of Information and Communications Technology, 588-2, Iwaoka, Nishi-ku, Kobe Hyogo, Japan	P. 482
TueP5-39 2539	<i>Role of low-temperature-grown GaAs substrate of photoconductive antenna in broadband terahertz time domain spectroscopy</i> Hiroshi Shimamoto et al. Graduate School of Engineering Science, Osaka University, 1-3 Machikaneyama-cho, Toyonaka Osaka, Japan	P. 484
TueP5-40 2540	<i>THz analysis of high pressure combustion processes</i> Mark Stringer et al. University of Leeds, Institute of Microwaves and Photonics, School of Electronic and Electrical Engineering, Leeds, UK	*
TueP5-41 2541	<i>Carrier dynamics in Er,O-codoped GaAs revealed by time-resolved terahertz emission measurements</i> Yoshikazu Terai et al. Division of Materials and Manufacturing Science, Graduate School of Engineering, Osaka University 2-1 Yamadaoka, Suita Osaka, Japan	P. 486

TueP5-42 2542	<i>Cyclotron absorption in two-dimensional electron gas systems monitored by terahertz time-domain spectroscopy</i> Prashanth Upadhy et al. Institute of Microwaves and Photonics, School of Electronic and Electrical Engineering, Woodhouse Lane, Leeds, UK	P. 488
TueP5-43 2543	<i>Highly precise terahertz time domain spectroscopy of multi-layer samples</i> Rafal Wilk et al. Institut fuer Hochfrequenztechnik, TU Braunschweig, Schleinitzstr. 22, Braunschweig, Niedersachsen, Germany	P. 490
TueP5-44 2544	<i>New insights into the mechanism and kinetics of the solid-state phase transition of carbamazepine by time-resolved terahertz spectroscopy</i> J. Axel Zeitler et al. University of Cambridge Department of Chemical Engineering, Pembroke Street, Cambridge, UK	P. 492
17.00-19.00: Poster Session TueP5 THz Imaging & Optical Systems		
TueP5-45 2545	<i>Terahertz near-field spectroscopy and microscopy based on metal-dielectric antenna</i> Milan Berta et al. Institute of Physics of the ASCR, v.v.i. Na Slovance 2, Prague 8, Czech Republic	P. 494
TueP5-46 2546	<i>A quantitative thermographic diagnosis method for the breakage of the cable and high voltage line</i> Chunli Fan et al. Naval University of Engineering, Department of Power Engineering, Wuhan, Hubei, China	*
TueP5-47 2547	<i>A three-dimensional subsurface defect identification algorithm for infrared thermography based on conjugate gradient method</i> Chunli Fan et al. Naval University of Engineering, Department of Power Engineering, Wuhan, Hubei, China	*.
TueP5-48 2548	<i>Self-consistent analytic scattering theory for apertureless THz near-field microscope</i> Haewook Han et al. Pohang University of Science and Technology, Department of Electrical and Computer Engineering, San 31, Hyoja-dong, Nam-gu Pohang Gyoungbuk, Korea	P. 496

TueP5-49 2549	<i>A THz triangulation and imaging system and its applications</i> Michael Herrmann et al. Fraunhofer IPM c/o Kaiserslautern University, Erwin-Schroedinger-Str. 46, Kaiserslautern, Germany	P. 498
TueP5-50 2550	<i>Spectroscopic imaging using a frequency agile ring-cavity</i> Tomofumi Ikari et al. RIKEN 519-1399, Aramaki Aza Aoba, Aoba-ku, Sendai Miyagi, Japan	P. 500
TueP5-51 2551	<i>Analysis of terahertz systems and analytical methods for modelling their optical efficiency.</i> Stuart Kehoe et al. National University Of Ireland, Experimental Physics Dept., Co. Kildare, Ireland	P. 502
TueP5-52 2552	<i>Fresnel optics and optical systems for terahertz imaging at free electron lasers</i> Boris Knyazev et al. Budker Institute of Nuclear Physics, Lavrentyev str. 11, Novosibirsk, Russia	P. 504
TueP5-53 2553	<i>Thin crystal optical rectification: preliminary investigation</i> Hungyen Lin et al. The University of Adelaide, Centre for Biomedical Engineering and School of Electrical and Electronic Engineering, Adelaide, Australia	*
TueP5-54 2554	<i>Dielectric property imaging system in the millimeter wave range</i> Maya Mizuno et al. NICT 4-2-1, Nukui-Kitamachi, Koganei Tokyo, Japan	P. 506
TueP5-55 2555	<i>Nonuniformity correction algorithm based on wavelet transform for Infrared Focal Plane Arrays</i> Han-lin Qin et al. School of Technology Physics, Xidian University, 204# No.2 South Taibai Road, Xi'an, Shanxi, China	P. 508
TueP5-56 2556	<i>Adaptive filtering for nonuniformity correction in infrared focal plane arrays</i> Han-lin Qin et al. School of Technology Physics, Xidian University, 204# No.2 South Taibai Road, Xi'an, Shanxi, China	P. 510
TueP5-57 2557	<i>Quantification of boundary definition using pulsed terahertz radiation for wedged geometries</i> Gillian Walker et al. University of Reading, Whiteknights, Reading, UK	P. 512

TueP5-58 2558	<i>Wavelet-based terahertz local coherent tomography</i> Xiaoxia Yin et al. The University of Adelaide, School of Electrical & Electronic Engineering, Adelaide, Australia	P. 514
17.00-19.00: Poster Session TueP5 Plasma Diagnostics		
TueP5-59 2559	<i>Filamentary arrays in breakdown plasmas generated by a 1.5 MW, 110 GHz gyrotron</i> Yoshiteru Hidaka et al. Massachusetts Institute of Technology, 167 Albany St., NW16-176, Cambridge MA, USA	P. 516
TueP5-60 2560	<i>Initial Results on AM microwave reflectometry in CPD</i> Hiroshi Idei et al. Advanced Fusion Research Center, Research Institute for Applied Mechanics, Kyushu University, 6-1 Kasuga-Kohen, Kasuga Fukuoka, Japan	P. 518
TueP5-61 2561	<i>Properties of microwave discharge in Goubau transmission line</i> Alexei Kuleshov et al. Institute of Radiophysics and Electronics of NAS of Ukraine, 12, Proskura st., Kharkov, Ukraine	P. 520
TueP5-62 2562	<i>Photoionization of atmospheric gases probed by terahertz pulses</i> Zoltan Mics et al. Institute of Physics, Academy of Sciences of the Czech Republic, Na Slovance 2, Prague, Czech Republic	*
TueP5-63 2563	<i>Multiline FIR lasers by two wavelength CW CO2 laser pumping</i> Kazuya Nakayama et al. Chubu University 1200, Matumoto-cho, Kasugai Aichi, Japan	P. 522
TueP5-64 2564	<i>Nanosecond phase coherent pulse generation at 94GHz at kW power level</i> Duncan Robertson et al. University of St Andrews, School of Physics, North Haugh, St Andrews, Fife, Scotland	P. 524
17.00-19.00: Poster Session TueP5 Materials		
TueP5-65 2565	<i>Characterization of low-temperature microwave annealed PZT thin films with various thicknesses</i> Tsun-Hsu Chang et al. National Tsing Hua University, No.101, Sec.1, Kuang-Fu Rd, Hsinchu, Taiwan	P. 526

TueP5-66 2566	<i>Chaotic electron dynamics in a semiconductor superlattice</i> Mahdi Esmailzadeh et al. Iran University of Science & Technology, Department of Physics, Narmak, Tehran, Iran	P. 528
TueP5-67 2567	<i>Spin pumping in superlattice nanowire under pulsed magnetic signals</i> Edris Faizabadi Department of Physics, Faculty of Science, K. N. Toosi University of Technology, Shariati St., Tehran, Iran	P. 530
TueP5-68 2568	<i>Evaluation of the spectral function for the chain nanostructures TTF-TCNQ</i> Edris Faizabadi et al. Department of Physics, Faculty of Science, K. N. Toosi University of Technology, Shariati st., Tehran, Iran	P. 532
TueP5-69 2569	<i>Low THz absorption of Na₃La₉B₈O₂₇ Crystal</i> Bihui Hou et al. Beijing University of Technology, College of Applied Sciences, Beijing, China	P. 534
TueP5-70 2570	<i>Multipeaks THz absorption of Zn₃BPO₇ crystal</i> Bihui Hou et al. Beijing University of Technology, College of Applied Sciences, Beijing, China	P. 536
TueP5-71 2571	<i>Direct current control of radiation-induced magnetoresistance oscillations in two-dimensional electron systems</i> Xiaolin Lei Department of Physics, Shanghai Jiaotong University, 1954 Huashan Road, Shanghai, China	P. 538
TueP5-72 2572	<i>Dielectric properties of conducting polymer at terahertz wavelength</i> Edwin Nguema Agnandji et al. Centre de Physique Molculaire Optique et Hertzienne (CPMOH), Universit de Bordeaux I, 351 Cours de la libration, Talence, Aquitaine, France	P. 540
TueP5-74 2574	<i>Heterogeneous dielectrics in the lower terahertz frequency range: evaluation and extension of physical models</i> Steffen Wietzke et al. TU Braunschweig, Institut fr Hochfrequenztechnik, Schleinitzstr. 22, Braunschweig, Niedersachsen, Germany	P. 542
TueP5-75 2575	<i>Optical phonon and polariton in THz spectrum of crystal</i> Bingxin Yang et al. Graduate University of Chinese Academy of Science, 19A Yuquan Road, Beijing 100039, China	P. 544

TueP5-76 2576	<i>The longitudinal composition distribution of HgCdTe film grown by LPE</i> Shi Yanli et al. Kunming Institute of Physics, Jiaochang East Road 31TH, Kunming, Yunnan, China	P. 546
TueP5-77 2577	<i>Optical properties of carbon materials in THz region</i> Zhiyong Zhu et al. Shanghai Institute of Applied Physics, CAS Jiading district, Jialuo Rd.2019, Shanghai, China	P. 550
TueP5-78 2578	<i>IR thermographic detection of defects in multi-layered composite materials used in military applications</i> W. Swiderski et al. Military Institute of Armament Technology, Zielonka, Poland	P. 553
TueP5-79 2579	<i>Transport properties of bilayer two-dimensional electron gas under in-plane magnetic field</i> Xu-Guang Guo et al. State Key Laboratory of Functional Materials for Informatics, Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences 865 Changning Road, Shanghai, China	*
17.00-19.00: Poster Session TueP5 Applications in Medicine		
TueP5-80 2580	<i>Terahertz spectroscopic imaging of paraffin-embedded liver cancer samples</i> Tokujiro Enatsu et al. Osaka University, Yamada-oka 2-6, Suita, Osaka, Japan	P. 557
TueP5-81 2581	<i>Measurement of terahertz properties of pastes and gels used in medical examinations</i> Norihiisa Hiromoto et al. Shizuoka University, 3-5-1 Johoku, Hamamatsu, Hamamatsu Shizuoka, Japan	P. 559
TueP5-82 2582	<i>Terahertz pulsed imaging as an analytical tool for tablet coating quality</i> Louise Ho et al. TeraView Limited, Platinum Building, St John's Innovation Park, Cambridge, UK	P. 561
TueP5-83 2583	<i>Refractive index and complex permittivity characterization of breast tissues at millimeter wave and terahertz frequencies</i> Usman Khan et al. Tufts University, 161 College Ave, Halligan Hall, Medford MA, USA	*

TueP5-84 2584	<i>Using of terahertz radiation for monitoring of senile osteoporosis development</i> Boris Knyazev et al. Budker Institute of Nuclear Physics, Lavrentyev str. 11, Novosibirsk, Russia	P. 563
TueP5-85 2585	<i>Influence of surface clutter on THz transmission through skin</i> Gretel Png et al. School of Electrical and Electronic Engineering, The University of Adelaide, North Terrace, Adelaide, Australia	P. 565
TueP5-86 2586	<i>The use of tissue mimicking phantoms in analysing contrast in THz pulsed imaging of biological tissue.</i> Caroline Reid et al. University College London, Department of Medical Physics and BioEngineering, London, UK	P. 567
TueP5-87 2587	<i>Detection of tulobuterol crystal in transdermal tapes using terahertz pulsed spectroscopy and imaging</i> Tomoaki Sakamoto et al. National Institute of Health Sciences, 1-18-1, Kami-yoga, Setagaya-ku, Tokyo, Japan	P. 569
TueP5-88 2588	<i>Millimeter wave irradiation and invasion into living bodies by the anti-reflecting effect</i> Masato Teranaka et al. School of Medicine, Kagawa University, 1750-1 Ikenobe, Miki-cho, Kida-gun Kagawa, Japan	P. 571
TueP5-89 2589	<i>Terahertz spectroscopy of stem cells</i> Nickolay Zinov'ev et al. University of Durham, Department of Physics, Durham, UK	P. 573

Wednesday, September 5th

10.45-13.05: Oral Session WedA1
Gyrotrons IV – Gyro Devices

Chair: Michael Petelin

WedA1-1 3111	<i>"Soft" and "hard" mode switching in gyrotrons (Invited Keynote)</i> Gregory Nusinovich et al. IREAP, University of Maryland, Energy Research Facility, College Park, Maryland, USA	P. 575
WedA1-2 3112	<i>Gyro-TWTs and gyro-BWOs with helically corrugated waveguides (Invited Keynote)</i> Sergey Samsonov et al. Institute of Applied Physics, Russian Academy of Sciences, 46 Ulyanov Street, Nizhny Novgorod, Russia	P. 578
WedA1-3 3113	<i>A W-band Gyro-BWO based on helically corrugated waveguide</i> Wenlong He et al. SUPA, Department of Physics, University of Strathclyde, 107 Rottenrow, Glasgow, UK	P. 581
WedA1-4 3114	<i>Wideband continuous frequency tunable coaxial gyrotron oscillators</i> Ioannis Tigelis et al. National and Kapodistrian University of Athens, Department of Physics, Building V, Panepistimiopolis, Zografou Attiki, Greece	P. 583
WedA1-5 3115	<i>W-band TE01 gyrotron backward-wave oscillator with distributed losses</i> Tsun-Hsu Chang et al. National Tsing Hua University, No.101, Sec.1, Kuang-Fu Rd, Hsinchu, Taiwan	P. 585
WedA1-6 3116	<i>Selective suppression of high order axial modes in the gyrotron backward-wave oscillator</i> Kuo-Feng Pao et al. National Tsing Hua University No. 101, Section 2, Kuang-Fu Road, Hsinchu, Taiwan	P. 587

10.45-13.05: Oral Session WedA2
Astronomy & Remote Sensing III

Chair: Matt Griffin

WedA2-1 3121	<i>FIR/THz space interferometry: science opportunities, mission concepts, and technical challenges (Invited Keynote)</i> David Leisawitz et al. NASA Goddard Space Flight Center, Code 665, Bldg 21, Room 128, Greenbelt Maryland, USA	P. 589
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WedA2-2 3122	<i>The Atacama large millimeter array (Invited Keynote)</i> Tom Wilson Max Planck Institute for Radioastronomy, Bonn, Germany	P. 591
WedA2-3 3123	<i>SCUBA-2: a 10,000-pixel submillimeter camera for astronomy</i> Adam Woodcraft Edinburgh University Royal Observatory, Blackford Hill, Edinburgh, UK	P. 594
WedA2-4 3124	<i>BLAST - The Balloon-borne Large Aperture Submillimetre Telescope</i> Peter Hargrave et al. School of Physics & Astronomy, Cardiff University, The Parade, Cardiff, UK	P. 596
WedA2-5 3125	<i>Status of the Planck High Frequency Instrument</i> Jean-Michel Lamarre et al. Observatoire de Paris, 61 Av de l'Observatoire, 75014 Paris, France	P. 598
WedA2-6 3126	<i>Design and performance of the flight configuration SIR on TELIS</i> P. Yagoubov et al. National Institute for Space Research, Landleven 12, Groningen, The Netherlands	P. 600

10.45-13.05: Oral Session WedA3	Chair: Peter Haring Bolivar
Applications in Medicine	

WedA3-1 3131	<i>Near-field imaging for study of on flow in heart muscle fibers (Invited Keynote)</i> Guilhelm Gallot et al. Laboratoire d'Optique et Biosciences, Ecole Polytechnique, CNRS Unité Mixte de Recherche 7645, Institut National de la Santé et de la Recherche Médicale U696, Palaiseau, France	P. 602
WedA3-2 3132	<i>Terahertz spectroscopy of breast tumours (Invited Keynote)</i> Philip Ashworth et al. TeraView Ltd. and Cavendish Laboratory, University of Cambridge, Department of Physics, Cambridge, UK	P. 603
WedA3-3 3133	<i>Development of an intra-operative THz imaging probe for breast conserving surgery.</i> Vincent Wallace et al. TeraView Ltd, Platinum Building, St John's Innovation Park, Cowley Road, Cambridge, UK	P. 606
WedA3-4 3134	<i>Transmittance measurement of human breast tissues in millimeter waves</i> Konstantin Korolev et al. Tufts University, 161 College Avenue, Department of Electrical and Computer Engineering, Medford MA, USA	P. 607

WedA3-5 3135	<i>Non-destructive evaluation of the mechanical properties of pharmaceutical solid dosage forms with terahertz imaging.</i> Roger Hutton GlaxoSmithKline Pharmaceutical Development, New Frontiers Science Park, Third Avenue, Harlow, UK	P. 609
WedA3-6 3136	<i>Monitoring the dehydration of collagen by time-domain THz-transmission measurements</i> Ingrid Wilke et al. Rensselaer Polytechnic Institute, Department of Physics, Applied Physics and Astronomy, 110 8th Street, Troy NY, USA	P. 611

10.45-13.05: Oral Session WedA4 Sources II	Chair: Tjeerd Klaassen
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WedA4-1 3141	<i>Line-narrowed, compact and coherent source of widely tunable THz radiation (Invited Keynote)</i> Malcolm Dunn et al. University of St Andrews, School of Physics & Astronomy, North Haugh, St Andrews, UK	P. 613
WedA4-2 3142	<i>Control of terahertz pulse generation by optical pulse shaping (Invited Keynote)</i> Matthew Harper et al. National Physical Laboratory, Hampton Road, Teddington, Middlesex, UK	P. 616
WedA4-3 3143	<i>THz electroluminescence from strained GaAsN layers doped with shallow acceptors</i> Alexander Andrianov et al. Ioffe Physical Technical Institute, 26 Politechnicheskaya, St. Petersburg, Russia	P. 619
WedA4-4 3144	<i>Solid-state sources for applications to 2 THz</i> Thomas Crowe et al. Virginia Diodes, Inc., University of Virginia, 979 Second Street SE, Suite 309, Charlottesville VA, USA	P. 621
WedA4-5 3145	<i>Intraband emission and absorption of terahertz radiation in GaAs/AlGaAs</i> Sergey Ganichev et al. Faculty of Physics, University of Regensburg, Regensburg, Bayern, Germany	P. 623
WedA4-6 3146	<i>Coherent synthesis of THz wave profiles</i> Toshiaki Hattori et al. University of Tsukuba, Institute of Applied Physics, Tennodai 1-1-1, Tsukuba Ibaraki, Japan	P. 625

14.30-17.00: Oral Session WedB1 FEL – Synchrotrons I	Chair: Alan Phelps
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WedB1-1 3211	<i>The synchrotron radiation IR microspectroscopy facility at Diamond Light Source (Invited Keynote)</i> Gianfelice Cinque et al. Diamond Light Source, Chilton, Didcot, UK	P. 627
WedB1-2 3212	<i>High power THz sources on 4GLS.</i> Mark Surman et al. STFC Daresbury Laboratory, Daresbury, Warrington, UK	P. 630
WedB1-3 3213	<i>IR and THz radiation from the metrology light source of the PTB</i> Ralph Müller et al. Physikalisch-Technische Bundesanstalt (PTB), Photon Radiometry Department, Abbestr. 2-12, Berlin, Germany	P. 632
WedB1-4 3214	<i>First results from the Far-IR beamline at the Canadian Light Source</i> Dominique Appadoo et al. Canadian Light Source, 101 Perimeter Rd, Saskatoon, Saskatchewan, Canada	P. 633
WedB1-5 3215	<i>New schemes of THz generation by free electron devices</i> Andrea Doria et al. ENEA Via E. Fermi 45, Frascati RM, Italy	P. 634
WedB1-6 3216	<i>Novosibirsk free electron laser: second stage construction and new results on the terahertz user stations (review)</i> Boris Knyazev et al. Budker Institute of Nuclear Physics, Lavrentyev str. 11, Novosibirsk, Russia	P. 636
WedB1-7 3217	<i>Development of a compact Cherenkov free-electron laser</i> Makoto Asakawa et al. Kansai University, 3-3-35 Yamate-cho, Suita Osaka, Japan	P. 638

14.30-17.00: Oral Session WedB2
Applications in Security & Industry

Chair: Anthony Vickers

WedB2-1 3221	<i>Infrared/THz detector systems, optical components and instrumentation (Invited Keynote)</i> Ken Wood QMC Instruments Ltd., School of Physics and Astronomy, Cardiff University, The Parade, Cardiff, UK	P. 640
WedB2-2 3222	<i>Recent work on imaging using time-domain based interferometry (Invited Keynote)</i> Phil Taday TeraView Ltd, Cambridge, UK	P. 644

WedB2-3 3223	<i>Millimetre-wave and terahertz technology for the detection of hidden threats - A review</i> Mike Kemp Iconal Technology LTD, Cowley Road, Cambridge	P. 647
WedB2-4 3224	<i>Static terahertz imaging at a distance for concealed weapon detection</i> Matthew Campbell et al. SPARTA, Inc., 1911 N. Fort Myer Drive, Suite 1100, Arlington, VA USA	P. 649
WedB2-5 3225	<i>Stand-off detection of hidden objects using a 0.8 THz imaging radar</i> Alexey Semenov et al. DLR Institute of Planetary Research, Rutherfordstrasse 2, Berlin, Germany	P. 652
WedB2-6 3226	<i>TERAEYE- A fully passive THz inspection system based on nanotechnology for security applications</i> Valeria Ferrando et al. C.Engineering Largo C. Salinari 18/19, Rome, Italy	P. 654
WedB2-7 3227	<i>THz transmittance and reflectance spectroscopy on security-relevant materials using synchrotron radiation</i> Heinz-Wilhelm Hübers et al. German Aerospace Center (DLR) Rutherfordstr. 2, Berlin, Germany	P. 656

14.30-17.00: Oral Session WedB3

Chair: Daniel
Grischkowsky

TDS Systems & Measurements II

WedB3-1 3231	<i>Picosecond dynamics of hydrated water in biomolecular solution revealed by terahertz time-domain attenuated total reflection spectroscopy (Invited Keynote)</i> Takashi Arikawa et al. Kyoto University, Kitashirakawa, Sakyo-ku, Kyoto, Japan	P. 658
WedB3-2 3232	<i>Terahertz time-domain spectroscopy for studying pharmaceutical cocrystal formation by mechano-chemistry techniques and their material properties</i> Edward Parrott et al. University of Cambridge, Department of Chemical Engineering, Pembroke Street, Cambridge, UK	P. 660
WedB3-3 3233	<i>Picosecond dynamics of water and heavy water investigated by using terahertz time-domain attenuated total reflection spectroscopy</i> Hiroyuki Yada et al. Kyoto University, Kitashirakawa, Sakyo, Kyoto, Japan	P. 662

WedB3-4 3234	<i>Effect of water cluster on absorption property in terahertz time-domain spectroscopy</i> Satoshi Yamauchi et al. Ibaraki University, 4-12-1 Nakanarusawa, Hitachi Ibaraki, Japan	P. 664
WedB3-5 3235	<i>Highly sensitive birefringence measurement in THz frequency region and its application to stress measurement</i> Masahiko Tani et al. Institute of Laser Engineering, Osaka University, 2-6 Yamadaoka, Suita Osaka, Japan	P. 666
WedB3-6 3236	<i>Ion-irradiated InGaAs based photoconductive antennas excited at 1.55 m for time domain terahertz spectroscopy</i> Juliette Mangeney et al. CNRS I.E.F., Bt 220, Universite Paris Sud, Orsay, France	P. 668
WedB3-7 3237	<i>Photoconductivity of organic semiconductor polymers by THz-TDS</i> Okan Esenturk et al. University of Maryland, Chemistry and Biochemistry Department, College Park MD, USA	P. 670

14.30-17.00: Oral Session WedB4
THz Spectroscopic Measurements

Chair: Fritz Keilmann

WedB4-1 3241	<i>Ultrafast nonlinear terahertz response of n-type GaAs (Invited Keynote)</i> Michael Woerner et al. Max Born Institute, Max Born Strasse 2A, Berlin, Germany	P. 672
WedB4-2 3242	<i>Coherent-source THz-spectroscopy of solids (Invited Keynote)</i> Martin Dressel et al. University of Stuttgart, Physikalisches Institut, Pfaffenwaldring 57, Stuttgart BW, Germany	P. 675
WedB4-3 3243	<i>THz spectroscopy for art conservation science</i> Kaori Fukunaga et al. NICT 4-2-1, Nukui-Kita, , Koganei, Tokyo, Japan	P. 678
WedB4-4 3244	<i>Terahertz ESR spectroscopy of quantum and frustrated systems</i> Susumu Okubo et al. Kobe University, 1-1 Rokko, Kobe Hyogo, Japan	P. 680
WedB4-5 3245	<i>Development of highly sensitive THz ESR system using a cantilever</i> Hitoshi Ohta et al. Molecular Photoscience Research Center, Kobe University 1-1, Rokkodai, Nada, Kobe Hyogo, Japan	P. 681

WedB4-6 3246	<i>THz spectroscopy on liquid crystals from the CB family</i> Rafal Wilk et al. Institut fuer Hochfrequenztechnik, TU Braunschweig, Schleinitzstr. 22, Braunschweig, Niedersachsen, Germany	P. 682
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17.00-19.00: Poster Session WedP5		
Gyrotrons		
WedP5-1 3501	<i>Accumulation of the space charge in the adiabatic trap of centimeter and millimeter wavelength gyrotrons</i> Vladimir Manuilov Nizhny Novgorod State University, Gagarin Ave, 23, Nizhny Novgorod, Russia	P. 684
WedP5-2 3502	<i>Double anode magnetron injection gun for gyroklystron amplifier</i> YouLei Pu et al. University of Electronic Science and Technology of China, Chengdu, Sichuan, China	P. 686
WedP5-3 3503	<i>Eigenmodes and ohmic quality factor of a tapered cavity resonator</i> R. K. Singh et al. Centre of Research in Microwave Tubes, Dept. of Electronics Engg., Inst. of Technology, Banaras Hindu University, Varanasi U.P., India	P. 688
WedP5-4 3504	<i>Experimental study on 100GHz two-step LIGA-based backward wave devices</i> Jinkyu So et al. Seoul National University, 24-B05, Department of Physics and Astronomy, Seoul National University Seoul, Korea	*
WedP5-5 3505	<i>On the possibility to use the treatment of gyrotron cathodes by the potassium ion flow for their emission homogeneity increase</i> Gennadi Sominski et al. St. Petersburg State Polytechnical University, Physical Electronics Dept., 29 Polytechnicheskaya, St. Petersburg, Russia	P. 690
WedP5-6 3506	<i>Dispersion characteristics of TE waves in beam-loaded corrugated waveguides with losses</i> Ioannis Tigelis et al. National and Kapodistrian University of Athens, Department of Physics, Building V, Panepistimiopolis, Zografou Attiki, Greece	P. 692

WedP5-7 3507	<i>Preliminary work on perturbed-wall Vlasov launchers for TE_{0n} modes using Surf3D</i> Ronald Vernon et al. University of Wisconsin, Dept. of Electrical & Computer Engineering, 1415 Engineering Dr., Madison, Wisconsin, USA	P. 694
WedP5-8 3508	<i>The design of a novel gun for gyro-amplifiers</i> Li Wang et al. Institute of High Energy Electronics, University of Electronic Science and Technology of China, Chengdu, Sichuan, China	P. 696
WedP5-9 3509	<i>RF windows of low reflectivity and absorption for high average power gyroklystrons</i> Yong Xu et al. Institute of High Energy Electronics, University of Electronic Science and Technology of China, Chengdu, Sichuan, China	P. 698
WedP5-10 3510	<i>Possible excitation of radial satellites in high-power gyrotrons</i> Konstantinos Avramides et al. National Technical University of Athens, 43 Timfristou St., Chalandri Attica, Greece	P. 700
WedP5-11 3511	<i>Analysis of the iterative phase retrieval approach by optimizing different measurement parameters</i> Sudheer Kumar Jawla et al. Centre de Recherche en Physique des Plasmas (CRPP), Ecole Polytechnique Federale de Lausanne, Lausanne, Vaud, Switzerland	P. 702
WedP5-12 3512	<i>A new concept for the collection of an electron beam guided by an externally applied magnetic field</i> Ioannis Pagonakis et al. Centre de Recherche en Physique des Plasmas EPFL Ecublens, Station 13, Lausanne, Vaud, Switzerland	P. 704
WedP5-13 3513	<i>Numerical study of the effect of stray magnetic field on the beam quality of the 170 GHz, 2 MW gyrotron gun for ITER</i> Ioannis Pagonakis et al. Centre de Recherche en Physique des Plasmas EPFL Ecublens, Station 13, Lausanne, Vaud, Switzerland	P. 706
WedP5-14 3514	<i>Demonstration of high efficiency 1MW oscillation by 170 GHz CW gyrotron</i> Keishi Sakamoto et al. Japan Atomic Energy Agency 801-1 Mukoyama, Naka Ibaraki, Japan	P. 708

17.00-19.00: Poster Session WedP5 Astronomy & Remote Sensing		
WedP5-15 3515	<i>Photonic local oscillator operating at 77 K for a 2 mm band SIS astronomical heterodyne receiver array</i> Peter Huggard et al. Millimetre Wave Technology Group, Space Science and Technology Department, Rutherford Appleton Laboratory, Chilton, Didcot, UK	P. 710
WedP5-16 3516	<i>The design, manufacture and testing of novel smooth-walled horns for THz focal plane array receivers.</i> Jamie Leech et al. Oxford University, Astrophysics Group, Denys Wilkinson Building, Keble Road, Oxford, UK	*
WedP5-17 3517	<i>High sensitivity THz detector using 2D electron gas heterostructure</i> Dmitry Morozov et al. Cardiff University, School of Physics and Astronomy, The Parade, Cardiff, UK	*
WedP5-18 3518	<i>Pipeline processing for stochastic studies of telescope performance affected by thermo-elastic deformation.</i> Tully Peacocke et al. National University of Ireland, Maynooth Co. Kildare, Ireland	P. 712
WedP5-19 3519	<i>Design of an infrared water vapour monitor for measurements of the atmospheric water content in Antarctica</i> Richard Querel et al. University of Lethbridge, 4401 University Drive W, Lethbridge, Alberta, Canada	P. 714
WedP5-20 3520	<i>Terahertz receivers development for astronomy and security applications</i> Heiko Richter et al. DLR Institute of Planetary Research, Rutherfordstrasse 2, Berlin, Germany	P. 716
WedP5-21 3521	<i>Port compensation using the Herschel/SPIRE imaging Fourier transform spectrometer</i> Locke Spencer et al. University of Lethbridge, Dept. of Physics, 4401 University Drive W, Lethbridge, Alberta, Canada	P. 718
WedP5-22 3522	<i>Ground performance testing of the Herschel SPIRE instrument</i> Bruce Swinyard et al. Space Science and Technology Department, Rutherford Appleton Laboratory, Chilton, Didcot, Oxfordshire, UK	*

WedP5-23 3523	<i>Spitzer and SCUBA observations of star formation</i> Derek Ward-Thompson Cardiff University, School of Physics and Astronomy, The Parade, Cardiff, UK	P. 720
17.00-19.00: Poster Session WedP5 Sources		
WedP5-24 3524	<i>Design of a coaxial Bragg resonator for a 250 GHz cyclotron autoresonance maser oscillator</i> Ying-Xin Lai et al. Institute of Photoelectronics, Southwest Jiaotong University Campus, Mail Box 50, Chengdu, Sichuan 610031, China	P. 722
WedP5-25 3525	<i>Novel Smith-Purcell FEL open resonator with different structures of grating</i> Juan Lin et al. University of Electronic Science and Technology of China, Vacuum Electronics National Laboratory, Chengdu Sichuan, China	P. 724
WedP5-26 3526	<i>Frequency mixing processes in FA center systems</i> Mohammad Majles Ara et al. Teacher Training University, 49 Mofateh Ave., Tehran, Iran	P. 726
WedP5-27 3527	<i>Phase-matched DAST-DFG THz-wave generation using independently controllable dual wavelength light source</i> Katsuhiko Miyamoto et al. RIKEN 519-1399, Aoba, Aramaki, Aoba-ku, Sendai Miyagi, Japan	P. 728
WedP5-28 3528	<i>Terahertz radiation pattern of argon cluster irradiated with intense femtosecond laser pulses</i> Takeshi Nagashima et al. Osaka University, Institute of Laser Engineering, 21st Century Plaza 3F, 2-6 Yamadaoka, Suita Osaka, Japan	P. 730
WedP5-29 3529	<i>THz ellipsometry using free electron laser source</i> Pavel Rudych et al. Institute of Nuclear Physics, Lavrentyeva 11, Novosibirsk, Russia	*
WedP5-30 3530	<i>Efficiency enhancement of THz Radiation by photomixing using pulse-modulated multimode laser diode</i> Kyoji Shibuya et al. Institute of Laser Engineering, Osaka University 2-6 Yamadaoka, Suita Osaka, Japan	P. 732

WedP5-31 3531	<i>Powerful (MV/cm-GV/cm) single-cycle terahertz pulses generation</i> Hui-Chun Wu et al. Institute of Physics, Chinese Academy of Sciences, ZhongGuanCun, NanSan Str. 8, Beijing, China	*
WedP5-32 3532	<i>Simulation of 8mm 2-harmonic gyroklystron</i> Chaojun Lei et al. The Chinese People Armed Police Forces Academy, Aimin District, Langfang Hebei, China	*
17.00-19.00: Poster Session WedP5 Detectors		
WedP5-33 3533	<i>Electron-hole pair generation in terahertz-driven heterojunctions</i> Juncheng Cao et al. State Key Laboratory of Functional Materials for Informatics, Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, 865 Changning Road, Shanghai, China	P. 734
WedP5-34 3534	<i>A highly sensitive terahertz photon detector based on a semiconductor quantum dot</i> Peter Kleinschmidt et al. National Physical Laboratory, Hampton Road, Teddington, Middlesex, UK	P. 736
WedP5-35 3535	<i>High frequency electron dynamics in novel semiconductor alloys</i> Amalia Patane et al. University of Nottingham, School of Physics and Astronomy, Nottingham, UK	*
WedP5-36 3536	<i>Room temperature amplification of the detection of THz-optical-beating in high electron mobility transistor</i> Jeremi Torres et al. Institut d'Electronique du Sud, Universite Montpellier 2 cc084, Place E. Bataillon, Montpellier, Herault, France	P. 738
WedP5-37 3537	<i>Coherent detection of terahertz radiation with scalable antennas</i> Stephan Winnerl et al. Forschungszentrum Dresden-Rossendorf Institute of Ion Beam Physics and Materials Research, P.O. Box 510119, Dresden, Saxony, Germany	P. 740
WedP5-38 3538	<i>Low dark current InGaAs/GaAs very-long-wavelength quantum well infrared photodetector</i> Da Yuan Xiong et al. National Laboratory for Infrared Physics, Shanghai Institute of Technical Physics, Chinese Academy of Sciences, 500 Yutian Road, Shanghai, China	P. 742

WedP5-39 3539	<i>Numerical simulation of two-color infrared HgCdTe detectors for optimizing design</i> Xiang Yan Xu et al. Shanghai Institute of Technical Physics, Chinese Academy of Science, 500 Yu Tian Road, Shanghai, China	P. 744
WedP5-40 3540	<i>THz Schottky diodes on epitaxial AlGaAs-membrane</i> Oleg Cojocari et al. T. U. Darmstadt/ACST GmbH Merckstr. 25, Darmstadt, Hessen, Germany	P. 746
WedP5-41 3541	<i>Semiconductor hot electron detector for mm and submm ranges</i> Fedor Sizov et al. V. Lashkaryov Institute of Semiconductor Physics of NASU, Nauki Av., 41, Kiev, Ukraine	P. 748
WedP5-42 3542	<i>Advanced imaging and spectroscopy of biological and chemical agents at terahertz frequencies</i> Eyal Gerecht et al. NIST, 325 Broadway, Boulder CO, USA	P. 750
WedP5-43 3543	<i>LSMO thermometers for uncooled bolometric applications</i> Bruno Guillet et al. GREYC ENSICAEN Electronic team, 6 Bd Marechal Juin, Caen, France	*
WedP5-44 3544	<i>THz-wave detection at room temperature using stimulated polariton scattering in MgO:LiNbO3</i> Ruixiang Guo et al. RIKEN Sendai 519-1399, Aramaki, Aoba-ku, Sendai Miyagi, Japan	*
WedP5-45 3545	<i>Submillimeter-wave Schottky diode receivers</i> Imran Mehdi et al. Jet Propulsion Laboratory, 4800 Oak Grove Drive, Pasadena CA, USA	P. 752
WedP5-46 3546	<i>Detector of modulated terahertz radiation based on HEMT with mechanically floating gate</i> Maxim Ryzhii et al. University of Aizu Tsuruga, Ikki-machi, Aizu-Wakamatsu Fukushima, Japan	P. 754
WedP5-47 3547	<i>Design of a 4th harmonic Schottky diode mixer for THz frequencies</i> Jan Schuer et al. Institute for Microwave Technology (LHFT), University of Erlangen-Nuremberg, Cauerstr. 9, Erlangen Bavaria, Germany	P. 756

17.00-19.00: Poster Session WedP5 THz Devices & Components		
WedP5-48 3548	<i>Photo-mixer for portable THz systems</i> Angela Dyson et al. University of Essex, Colchester, Essex, UK	P. 758
WedP5-49 3549	<i>Wavelength calibration for terahertz pulse spectrometers</i> Richard Dudley et al. National Physical Laboratory, Hampton Road, Teddington, Middlesex, UK	P. 760
WedP5-50 3550	<i>Refractive index measurement with a THz triangulator and radar</i> Michael Herrmann et al. Fraunhofer IPM c/o Kaiserslautern University, Erwin-Schroedinger-Str. 46, Kaiserslautern, Germany	P. 762
WedP5-51 3551	<i>Faraday rotators for millimetre and sub-millimetre wave frequencies</i> Robert Hunter et al. University of St Andrews, Dept. of Physics and Astronomy, North Haugh, St Andrews, UK	*
WedP5-52 3552	<i>Mode-selective dielectric resonator coupled to dielectric image waveguide for mm-wave sensing applications</i> Mohammad Neshat et al. University of Waterloo, 200 University Ave. W, Waterloo, Ontario, Canada	P. 764
WedP5-53 3553	<i>Non-linear large signal analysis of transition edge-sensors using a harmonic balance algorithm</i> Karwan Rostem et al. Cambridge University, Cavendish Laboratory, Cambridge, UK	P. 766
WedP5-54 3554	<i>Temperature dependent carrier dynamics of InAs/GaAs quantum dots probed by terahertz time-domain spectroscopy</i> Joo-Hiuk Son et al. University of Seoul, Department of Physics, 90 Jeonnong-dong, Dongdaemun-gu Seoul, Republic of Korea	P. 769
WedP5-55 3555	<i>Modelling and measurement of frequency selective surfaces for use as optical filters in the FIR and sub-millimetre</i> Carole Tucker et al. Cardiff University, School of Physics and Astronomy, The Parade, Cardiff, UK	P. 771
WedP5-56 3556	<i>Photogalvanic effects in HgTe quantum wells</i> Bernhard Wittmann et al. Faculty of Physics, University of Regensburg, Regensburg, Bayern, Germany	P. 773

WedP5-57 3557	<i>A millimeter-wave sampled-line six-port reflectometer at 300GHz</i> Guoguang Wu et al. University of Virginia, 2303 Fontaine Avenue, Charlottesville VA, USA	P. 775
WedP5-58 3558	<i>Optical characterization of quantum dots entrained in hollow optical fibers</i> Qinghao Zhang et al. College of Science, Zhejiang University of Technology, Hangzhou, Zhejiang, China	*
17.00-19.00: Poster Session WedP5 Waveguides		
WedP5-59 3559	<i>Method for synthesis of wideband multimode waveguide units</i> Gregory Denisov et al. Institute of Applied Physics, 46, Ulyanov St., Nizhny Novgorod, Russia	P. 777
WedP5-60 3560	<i>Calculation of 3-D waveguide structures with EFIE</i> Gregory Denisov et al. Institute of Applied Physics, 46, Ulyanov St., Nizhny Novgorod, Russia	P. 779
WedP5-61 3561	<i>Synthesis of multi-mode waveguide systems</i> Sergey Kuzikov et al. Institute of Applied Physics, Russian Academy of Sciences 46 Ulyanov St., Nizhny Novgorod, Russia	P. 781
WedP5-62 3562	<i>The analysis of wave propagation in cylindrical dielectric waveguide array</i> Jia-sheng Tian et al. Huazhong University of Science and Technology, Department of Electronics and Information, Wuhan, Hubei, China	P. 783
WedP5-63 3563	<i>Wideband bent circular waveguide mode coupling in Ka waveband</i> Le Xu et al. Center of Information Network, Sichuan Normal University of China, No.5 Jing'an Road, Chengdu, Sichuan, china	P. 785
17.00-19.00: Poster Session WedP5 MMW Components		
WedP5-64 3564	<i>Optimization of grid lines and fingers of solar cells by a new numerical method</i> Edris Faizabadi et al. Department of Physics, Faculty of Science , K. N. Toosi University of Technology, Shariati St., Tehran, Iran	P. 787

WedP5-65 3565	<i>Study on the virtual prototype of millimetre-wave radiometer</i> Qinghui Fan et al. Nanjing University of Science & Technology, Institute of Near-Sensing Tech. with Millimeter-Wave & optical-wave, Nanjing, Jiangsu, China	*
WedP5-66 3566	<i>Design and initial test results of phased array antenna system for electron Bernstein wave heating and current drive in QUEST</i> Hiroshi Idei et al. Advanced Fusion Research Center, Research Institute for Applied Mechanics, Kyushu University 6-1 Kasuga-Kohen, Kasuga Fukuoka, Japan	P. 789
WedP5-67 3567	<i>Development of planar components using advanced fabrication</i> Naoki Ito et al. Art, Science and Technology Center for Cooperative Research, Kyushu University 6-1 Kasuga-Koen, Kasuga Fukuoka, Japan	P. 791
WedP5-68 3568	<i>Development of the transmission line and the launcher for the ITER ECH system</i> Ken Kajiwara et al. Japan Atomic Energy Agency, 801-1 Mukoyama, Naka-shi Ibaraki, Japan	P. 793
WedP5-69 3569	<i>Fast quasi-optical phase shifter based on induced photoconductivity in silicon</i> Sergey Kuzikov et al. Institute of Applied Physics, Russian Academy of Sciences, 46 Ulyanov Str., Nizhny Novgorod, Russia	P. 795
WedP5-70 3570	<i>Quasi-optical accelerating structure operated with a superposition of synchronized modes</i> Sergey Kuzikov et al. Institute of Applied Physics, Russian Academy of Sciences 46 Ulyanov Str., Nizhny Novgorod, Russia	P. 797
WedP5-71 3571	<i>TEM horn antennas for generation and detection of terahertz pulses</i> Jean-Francois Lampin et al. Institut d'Electronique de Microelectronique et de Nanotechnologie, Avenue Poincare B.P. 60069, Villeneuve d'Ascq, France	P. 799
WedP5-72 3572	<i>Shield components adopted to the ITER ECRH upper launcher</i> Peter Spaeh et al. Forschungszentrum Karlsruhe P.O. Box 3640, Eggenstein-Leopoldshafen Baden-Wuerttemberg, Germany	P. 801

WedP5-73 3573	<i>Prospect of 40-170GHz band spherical antenna</i> Toshitatsu Suzuki et al. Nippon Institute of Technology Watanabe lab., Department of Electrical and Electronics Engineering, 4-1 Gakuendai, Miyashiro-machi, Minamisaitama-gun, Saitama-ken, Japan	P. 803
WedP5-74 3574	<i>Design of transmission components for THz-gyrotrons</i> Yoshinori Tatematsu et al. Research Center for Development of Far-Infrared Region, University of Fukui 3-9-1 Bunkyo, Fukui-city, Fukui, Japan	P. 805
WedP5-75 3575	<i>Commissioning of the second two-frequency gyrotron</i> Dietmar Wagner et al. Max-Planck-Institut fuer Plasmaphysik, Boltzmannstr. 2, Garching, BY Germany	P. 807
WedP5-76 3576	<i>Analysis of standing waves in millimetre-wave optics.</i> Mark Whale et al. National University of Ireland, Maynooth, 53 College Green, Co. Kildare, Ireland	P. 809
17.00-19.00: Poster Session WedP5 Propagation Phenomena		
WedP5-77 3577	<i>Three loss mechanisms for T-ray microwires</i> Shaghik Atakaramians et al. The University of Adelaide, School of Electrical & Electronic Engineering, SA 5005, Adelaide, Australia	P. 811
WedP5-78 3578	<i>Propagation in rectangular subwavelength waveguides</i> George Brand University of Sydney, School of Physics, Sydney, NSW Australia	P. 813
WedP5-79 3579	<i>Guidance properties on the surface of copper and stainless steel wires in the terahertz frequency range</i> Tae-In Jeon et al. Korea Maritime University, 1, Dongsam-dong, Youngdo-ku, Busan, Korea	P. 815
WedP5-80 3580	<i>Fourier spectroscopy of water vapor absorption in 40 m transport optical channel of Novosibirsk terahertz free electron laser</i> Vitaly Kubarev et al. Budker Institute of Nuclear Physics, Lavrentiev av. 11, Novosibirsk, Russia	P. 817
WedP5-81 3581	<i>THz transmission in polymer materials</i> Mira Naftaly et al. University of Leeds, Woodhouse Lane, Leeds, UK	P. 819

WedP5-82 3582	<i>Dispersion characteristics of coaxial waveguide with spiral corrugations</i> Qi Xin et al. Institute of Photoelectronics, Southwest Jiaotong University, Campus Mail Box 50, Chengdu, Sichuan, China	*
WedP5-83 3583	<i>Polarization dependence of transmission of terahertz radiation through periodic array of sub-wavelength rectangular holes</i> Guozhong Zhao et al. Department of Physics, Capital Normal University, No. 105 of Xi San Huan Bei Rd., Beijing, China	P. 821
17.00-19.00: Poster Session WedP5 Radar & Communication Systems		
WedP5-84 3584	<i>Sensitivity analysis of an HgCdTe based photoconductive receiver for long-wavelength free space optical communication systems</i> P. Chakrabarti et al. Banaras Hindu University, Varanasi, Department of Electronics Engineering, Institute of Technology, Uttar Pradesh, India	P. 823
WedP5-85 3585	<i>Pseudo random interleaving of convolutional code with low rice channel K factor for mobile millimetre-wave receiver</i> Ronglin Hu et al. Nanjing University of Science and Technology, Institute of Near Sensing Technique with Millimeter Wave and Optical Wave, Nanjing, Jiangsu, China	*
WedP5-86 3586	<i>Radiometer cross sections modelling for passive millimeter-wave detection</i> Xiang Shi et al. Millimeter Wave Near Sensing Technology Institute, Nanjing University of Science and Technology, Nanjing Jiangsu, China	P. 825
WedP5-87 3587	<i>Study of measurement velocity approach on chirp-SF and pulse doppler of millimetre-wave radar</i> Guili Wang et al. Nanjing University of Science & Technology, Institute of Near-Sensing Tech. with Millimeter-Wave & optical-wave, NUST, Nanjing Jiangsu, China	*

Thursday, September 6th

10.45-13.05: Oral Session ThuA1
FEL – Synchrotrons II

Chair: Andrea Doria

ThuA1-1 4111	<i>Non-linear effects from accelerator-produced coherent THz pulses (Invited Keynote)</i> G. Lawrence Carr et al. Brookhaven National Laboratory, National Synchrotron Light Source, Bldg 725D, Upton, NY, USA	P. 827
ThuA1-2 4112	<i>Free-electron maser based on two-dimensional distributed feedback (Invited Keynote)</i> Alan Phelps et al. University of Strathclyde, Dept. of Physics, John Anderson Building, 107 Rottenrow, Glasgow, UK	P. 830
ThuA1-3 4113	<i>Two dimensional Bragg structures (modeling and experimental testing of selective properties)</i> Naum Ginzburg et al. Institute of Applied Physics, Russian Academy of Science, 46 Ulyanov Str., Nizhny Novgorod, Russia	P. 833
ThuA1-4 4114	<i>Submillimeter radiation production by intercavity stimulated scattering in planar FEM at the ELMI device</i> Andrey V. Arzhannikov et al. Budker Institute of Nuclear Physics, SB RAS Lavrent'eva 11, BINP, Novosibirsk 630090, Russia	P. 835
ThuA1-5 4115	<i>Submillimeter Bragg FEM based on moderately relativistic electron beam: project and first experiments</i> Nikolai Peskov et al. Institute of Applied Physics, Russian Academy of Science, 46 Ulyanov Str., Nizhny Novgorod, Russia	P. 837
ThuA1-6 4116	<i>Modelling of a free-electron maser based on two-dimensional distributed feedback</i> Ivan Konoplev et al. SUPA, Department of Physics, University of Strathclyde Department of Physics, 107 Rottenrow, Glasgow, UK	P. 839

10.45-13.05: Oral Session ThuA2
Detectors II

Chair: Robert Haddon

ThuA2-1 4121	<i>Modes, coherence and photons in THz optical systems (Invited Keynote)</i> Stafford Withington Cambridge University, Cavendish Laboratory, Madingley Road, Cambridge, UK	P. 841
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ThuA2-2 4122	<i>NEP and responsivity of THz zero-bias Schottky diode detectors (Invited Keynote)</i> Jeffrey Hesler et al. Virginia Diodes Inc., University of Virginia, 979 Second Street, Suite 309, Charlottesville, Virginia, USA	P. 844
ThuA2-3 4123	<i>Polarization detection of terahertz electromagnetic radiation by three-contact photoconductive receiver</i> Hiroyuki Makabe et al. Institute of Laser Engineering, Osaka University, Yamada-oka 2-6, Suita, Osaka, Japan	P. 846
ThuA2-4 4124	<i>Fabrication of reproducible air-bridged Schottky diodes for use at 200GHz</i> Byron Alderman et al. Rutherford Appleton Laboratory, Chilton, Didcot, Oxfordshire UK	P. 848
ThuA2-5 4125	<i>Semiconductor lasers for the generation and detection of THz radiation</i> Stefan Hoffmann et al. Ruhr-Universitaet Bochum, AG Optoelektronische Bauelemente und Werkstoffe, IC2/156, Bochum, Germany	P. 850
ThuA2-6 4126	<i>Operation of a monolithic planar Schottky receiver using a THz quantum cascade laser</i> Michael Wanke et al. Sandia National Labs, PO Box 5800, M.S. 1082, Albuquerque, NM, USA	P. 852

10.45-13.05: Oral Session ThuA3

Chair: Heinz-Wilhelm Hubers

THz Devices & Components I

ThuA3-1 4131	<i>Bolometric infrared detection using carbon nanotube films (Invited Keynote)</i> Robert Haddon et al. Department of Chemistry, University of California, Riverside, California 92521, USA	P. 854
ThuA3-2 4132	<i>A Sb-based pN diodes for high frequency applications (Invited Keynote)</i> James Champlain et al. Naval Research Laboratory, Code 6853, 4555 Overlook Avenue, SW, Washington DC, USA	P. 855
ThuA3-3 4133	<i>Fiber-coupled sensor chip based on micro-strip-line working in THz regime</i> Jiro Kitagawa et al. Hiroshima University, 1-3-1 Kagamiyama, Higashi-Hiroshima, Hiroshima Japan	P. 857

ThuA3-4 4134	<i>Resistive polarisers and quasi-optical planar isolators</i> Robert Hunter et al. University of St Andrews, Dept. of Physics and Astronomy, North Haugh, St Andrews, Fife, UK	P. 859
ThuA3-5 4135	<i>Spectral modifications of femtosecond laser pulses induced by high-efficiency optical rectification</i> Andrey Stepanov et al. Institute of Spectroscopy, RAS Institute of Spectroscopy, RAS, Troitsk, Moscow Region, Russia	P. 861
ThuA3-6 4136	<i>To be announced</i>	

10.45-13.05: Oral Session ThuA4 Materials II	Chair: Hou-Tong Chen
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ThuA4-1 4141	<i>Transmittance and absorption of CVD-diamond in terahertz range (Invited Keynote)</i> Vitaly Kubarev Budker Institute of Nuclear Physics, Lavrentiev av. 11, Novosibirsk, Russia	P. 863
ThuA4-2 4152	<i>Left handed metamaterials at terahertz frequency (Invited Keynote)</i> Didier Lippens et al. IEMN Universit� de Lille 1, Avenue Poincar� , Villeneuve d'Ascq Nord, France	P. 866
ThuA4-3 4143	<i>Terahertz-frequency conductivity of charge stripes in the antiferromagnet La5/3Sr1/3NiO4</i> James Lloyd-Hughes et al. University of Oxford ,Clarendon Laboratory, Parks Road, Oxford, UK	P. 869
ThuA4-4 4144	<i>The impact of a donor and/or acceptor strength of the pi-electron molecular systems on the THz range transitions efficiency and nonlinear-optical response</i> Alexander Shkurinov et al. Department of Physics and International Laser Center, M.V.Lomonosov Moscow State University, Leninskie Gory, Moscow, Russia	P. 871
ThuA4-5 4145	<i>Assessment of magnetic materials for use in quasi-optical non-reciprocal devices operating at frequencies above 90 GHz</i> Bin Yang et al. Queen Mary, University of London, Electronic Engineering, Mile End Road, London, UK	P. 873

ThuA4-6 4146	<i>The mechanisms of absorption in high-gap semiconductors at millimeter and submillimeter wavelengths</i> Jyotsnamoy Dutta et al. North Carolina Central University, 1801 Fayetteville St., Department of Physics, Durham, NC, U.S.A.	P. 875
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14.30-17.00: Oral Session ThuB1 Gyrotrons V – Components	Chair: Toshitaka Idehara
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ThuB1-1 4211	<i>Low power mm-wave transmission characteristics of a frequency tuneable double disk CVD-diamond window (Invited Keynote)</i> Roland Heidinger et al. Forschungszentrum Karlsruhe, IMF I, P.O. Box 3640, Karlsruhe, Baden-Wrttemberg, Germany	P. 877
ThuB1-2 4212	<i>Experimental study of gyrotron efficiency enhancement by improvement of electron beam quality</i> Oleg Louksha et al. St. Petersburg State Polytechnical University Physical Electronics Dept., SPbSPU, 29 Polytechnicheskaya, Saint Petersburg, Russia	P. 880
ThuB1-3 4213	<i>Improved magnetron injection guns for gyrotrons</i> R. Lawrence Ives et al. Calabazas Creek Research Inc., 690 Port Drive, San Mateo, CA, USA	P. 882
ThuB1-4 4214	<i>A cusp gun for gyro-amplifiers</i> David Rowlands et al. University of Strathclyde, SUPA, Department of Physics, John Anderson Building, 107 Rottenrow, Glasgow, UK	P. 884
ThuB1-5 4215	<i>Nonlinear dynamics in cylindrical plasma-filled diode</i> Daohui Li et al. Queen Mary, University of London, Department of Electronic Engineering, Mile End Road, London UK	P. 886
ThuB1-6 4216	<i>Quasi-optical mode converter for a multi-frequency D-band gyrotron</i> Oliver Prinz et al. Forschungszentrum Karlsruhe, PO box 3640, Karlsruhe, BW, Germany	P. 888
ThuB1-7 4217	<i>Some calculations concerning variable spacing double-disk windows for possible use in step-tunable gyrotrons</i> Ronald Vernon et al. University of Wisconsin, Dept. of Electrical & Computer Engineering, 1415 Engineering Dr., Madison, Wisconsin, USA	P. 890

ThuB2-1 4221	<i>Sub-millimeter waves from a compact, low voltage (Invited Keynote)</i> Brian Steer et al. Communications & Power Industries, 45 River Drive, Georgetown, Ontario, Canada	P. 892
ThuB2-2 4222	<i>CW terahertz-wave source based on photonic millimeter-wave generation and its application for spectroscopic measurement</i> Naofumi Shimizu et al. NTT Microsystem Integration Labs., 3-1 Morinosato- Wakamiya, Atsugi-shi, Kanagawa, Japan	P. 895
ThuB2-3 4223	<i>Tunable terahertz generation at quasi-phase matching structures using femtoscond laser pulses</i> Nan Ei Yu et al. Advanced Photonics Research Institute, 1 Oryong-dong, Buk- ku, Gwangju Institute of Science and Technology, Gwangju Jun-Nam, South korea	P. 897
ThuB2-4 4224	<i>Terahertz radiation with a special kind of mimicking surface plasmon wave structure</i> Shenggang Liu et al. University of Electronic Science and Technology of China, North Jianshe Road, Chengdu, Sichuan,China	P. 899
ThuB2-5 4225	<i>Terahertz-pulse emission through Laser excitation of surface plasmons in a metal grating</i> Gregor Welsh et al. University of Strathclyde, Department of Physics, 107 Rottenrow East, Glasgow, Lanarkshire, UK	P. 901
ThuB2-6 4226	<i>Electron bunch profile diagnostics using coherent Smith-Purcell radiation emitted in the THz range</i> Maurice Kimmitt et al. Physics Centre, University of Essex, 91 Regent Road, Brightlingsea, Colchester, Essex UK	P. 903
ThuB2-7 4227	<i>Experimental study on 0.5 THz superradiant Smith-Purcell radiation</i> Jinkyu So et al. Seoul National University, 24-B05, Department of Physics and Astronomy, Seoul National University, Seoul, Korea	P. 905

14.30-17.00: Oral Session ThuB3 THz Imaging & Optical Systems II	Chair: Qing Hu
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ThuB3-1 4231	<i>Electronic scanning for passive millimetre wave imaging (Invited Keynote)</i> Neil Salmon et al. QinetiQ, Malvern Technology Centre, St. Andrews Road, Malvern, Worcester, UK	P. 906
ThuB3-2 4232	<i>High-accuracy topography measurement of optically rough surfaces with THz radiation</i> Bernhard Hils et al. Universitaet Frankfurt Physikalisches Institut, Max von Laue Strasse 1, Frankfurt Main, Hessen, Germany	P. 907
ThuB3-3 4233	<i>Acoustic phase imaging with terahertz radiation</i> Federico Buerstgens et al. Photonics and Optoelectronics Group, University of Munich, Amalienstr. 54, Munich, Bavaria, Germany	P. 909
ThuB3-4 4234	<i>THz tomographic imaging by using the two-dimensional electro-optic sampling</i> Hideaki Kitahara et al. Institute of Laser Engineering, Osaka University, 3F 21st century Plaza, 2-6 Yamadaoka, Suita, Osaka, Japan	P. 911
ThuB3-5 4235	<i>A Terahertz Modulating Stokes Spectropolarimeter</i> Giorgio Savini et al. Cardiff University, School of Physics and Astronomy, The Parade, Cardiff, UK	P. 913
ThuB3-6 4236	<i>EO sampling methods for real-time THz imaging</i> Toshiaki Hattori et al. University of Tsukuba, Institute of Applied Physics, Tennodai 1-1-1, Tsukuba, Ibaraki, Japan	P. 915
ThuB3-7 4237	<i>THz near-field measurement of square holes</i> Aurele Adam et al. TUDELFT Optics Research Group, Department Imaging Science & Technology, Faculty of Applied Sciences, Delft University of Technology, PO Box 5046, Delft Zuid, Netherlands	P. 917

14.30-17.00: Oral Session ThuB4 Radar & Communications Systems	Chair: Monica Blank
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ThuB4-1 4241	<i>A 94 GHz FMCW instrumentation radar (Invited Keynote)</i> Duncan Robertson et al. University of St. Andrews, School of Physics, North Haugh, St. Andrews, Fife, UK	P. 919
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ThuB4-2 4242	<i>Submillimeter-wave active radar imager</i> Peter Siegel et al. Caltech/JPL, 4800 Oak Grove Drive, Pasadena, CA, USA	P. 922
ThuB4-3 4243	<i>SAFIRE: A close range real time millimetre wave radar for public education</i> David MacFarlane et al. University of St Andrews, School of Physics and Astronomy, North Haugh, St Andrews, Fife, UK	P. 924
ThuB4-4 4244	<i>Target identification and signal processing of millimeter-wave active/passive detecting system based on TMS320LF2812</i> Yinghong Luan et al. Nanjing University of Science & Technology, School of Electronic Engineering & Optoelectronic Technology, NanJing, JiangSu China	P. 926
ThuB4-5 4245	<i>Demonstration of a differential-absorption radar (DAR) on the resonant signature of a biochemical aerosol at 530 GHz</i> E. B. Brown et al. Physical Domains, LLC, P.O. Box 1574, La Canada, CA, USA	P. 928
ThuB4-6 4246	<i>Low-dispersive dielectric reflectors for future wireless terahertz communication systems</i> Norman Krumbholz et al. TU Braunschweig, Institut fuer Hochfrequenztechnik, Schleinitzstr.22, Braunschweig, Niedersachsen, Germany	P. 930

Friday, September 7th

10.45-13.05: Oral Session FriA1

Chair: Thomas Kleine-Ostmann

MMW Components

FriA1-1 5111	<i>Quasi-optical components for control of high-power wave beams (Invited Keynote)</i> M Petelin et al. Institute of Applied Physics, Russian Academy of Sciences 46 Ulyanov St., Nizhny Novgorod, Russia	P. 932
FriA1-2 5112	<i>Low power testing of losses in components for the ITER ECH transmission lines (Invited Keynote)</i> Seong-Tae Han et al. Plasma Science and Fusion Center, Massachusetts Institute of Technology, 167 Albany Street, Cambridge, MA, USA	P. 934
FriA1-3 5113	<i>EC waves polarization control in the TJ-II stellarator</i> Angela Fernandez-Curto et al. Euratom-CIEMAT, Association Avda. Complutense, 22, Madrid Spain	P. 937
FriA1-4 5114	<i>The electron cyclotron heating system for the stellarator W7-X: status and recent achievements</i> Walter Kasperek et al. Institut fuer Plasmaforschung der Universitaet Stuttgart, Pfaffenwaldring 31, Stuttgart, Baden-Wuerttemberg, Germany	P. 939
FriA1-5 5115	<i>Reducing standing waves in quasi-optical systems by optimum feedhorn design</i> Graham Smith et al. St. Andrews University, School of Physics and Astronomy, North Haugh, St.Andrews, Fife, UK	P. 941
FriA1-6 5116	<i>Low profile high directivity millimetre-wave antenna using freeformed metamaterial</i> Yoonjae Lee et al. Queen Mary, University of London, Mile End Road, London, UK	P. 943

10.45-13.05: Oral Session FriA2

Chair: Jean Leotin

Sources IV

FriA2-1 5121	<i>Growth fabrication and measurement of terahertz quantum cascade lasers (Invited Keynote)</i> Edmund H Linfield et al. University of Leeds, School of Electronic and Electrical Engineering, Leeds, UK	P. 945
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FriA2-2 5122	<i>Spectral characterization of terahertz quantum cascade lasers by heterodyne and homodyne mixing (Invited Keynote)</i> Heinz-Wilhelm Hübers et al. German Aerospace Center (DLR), Rutherfordstr. 2, Berlin, Germany	P. 946
FriA2-3 5123	<i>Effects of doping on terahertz quantum-cascade lasers</i> Alexander Benz et al. Vienna University of Technology, Gusshausstrasse 29/387, Vienna, Austria	P. 949
FriA2-4 5124	<i>Ultra-compact low threshold whispering-gallery terahertz quantum-cascade lasers</i> Gernot Fasching et al. Photonics Institute, Vienna University of Technology, Florag. 7/1, Vienna, Austria	P. 951
FriA2-5 5125	<i>Linewidth enhancement factor of a THz quantum cascade laser</i> Richard Green et al. Scuola Normale Superiore, Piazza dei Cavalieri 7, Pisa Toscana, Italy	P. 953
FriA2-6 5126	<i>How to manipulate the frequency of a THz QCL</i> Niels Hovenier et al. Kavli Institute of Nanoscience, P.O. Box 5046, Lorentzweg 1, Delft, The Netherlands	P. 955

10.45-13.05: Oral Session FriA3 THz Devices & Components II	Chair: Jeffrey Hesler
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FriA3-1 5131	<i>Terahertz integrated device using a transferred thin-film GaAs layer on silicon substrates (Invited Keynote)</i> T Ouchi et al. Canon Research Center, 5-1, Morinosato-Wakamiya, Atsugi-shi, Kanagawa, Japan	P. 957
FriA3-2 5132	<i>Strong enhancement of responsivity and tunability of THz quantum-well photodetectors by magnetic field (Invited Keynote)</i> Bo Zhang et al. Shanghai Institute of Technical Physics, Chinese Academy of Sciences, 500 Yu Tian Road, Shanghai, China	P. 960
FriA3-3 5133	<i>Detection and emission of THz waves by novel semiconductor nanodevices</i> Aimin Song et al. University of Manchester, School of Electrical & Electronic Engineering, Manchester, UK	P. 963

FriA3-4 5134	<i>Portable THz magneto-spectrometer in the range 3 to 30THz</i> Jean Leotin et al. LNCMP, 143 Avenue de Rangueil, Toulouse, Haute-Garonne, France	P. 964
FriA3-5 5135	<i>A source and its associated vector detector covering the 250-1000 GHz frequency domain with sweep spans larger than 9 GHz.</i> Philippe Goy et al. AB Millimetre, 52 rue Lhomond, Paris, 5eme arrondissement France	P. 966
FriA3-6 5136	<i>Development status of a 420-1980 GHz vector network analyzer for time-domain reflectometry and imaging applications</i> Willem Jellema et al. Netherlands Institute for Space Research (SRON), P.O. Box 800, Groningen, The Netherlands	P. 968

10.45-13.05: Oral Session FriA4
Filters, Resonators & Modulators

Chair: James Champlain

FriA4-1 5141	<i>Tunable photonic crystals controlled by spin-crossover material in terahertz range. (Invited Keynote)</i> Patrick Mounaix et al. Centre de Physique Molculaire Optique et Hertzienne (CPMOH), Universit de Bordeaux I, 351 Cours de la libration, Talence, Aquitaine, France	P. 970
FriA4-2 5142	<i>Metal mesh filters for THz applications (Invited Keynote)</i> Carole Tucker et al. Cardiff University, School of Physics and Astronomy, Queen's Buildings, The Parade, Cardiff, UK	P. 973
FriA4-3 5143	<i>Development of a high-Q open resonator in the 50 GHz to 700 GHz frequency range</i> Patrik Arnold et al. Institut of Applied Physics, University of Bern, Siedlerstrasse 5, Bern, Switzerland	P. 976
FriA4-4 5144	<i>Development of thick metal mesh THz-filters by LIGA-technology for high-power applications at Novosibirsk terahertz free electron laser</i> Sergei Kuznetsov et al. Budker Institute of Nuclear Physics, SB RAS Acad., Lavrentiev prospect 11, Novosibirsk, Russia	P. 978
FriA4-5 5145	<i>Optically controllable photonic crystals used as THz modulators</i> Filip Kadlec et al. Institute of Physics, Academy of Sciences, Czech Republic, Na Slovance 2, Prague 8 N/A, Czech Republic	P. 980

FriA4-6 5146	<i>Flexible polymer based artificial materials for terahertz applications</i> Andrew Gallant et al. Durham University, School of Engineering, Science Laboratories, South Road, UK	P. 982
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14.30-17.00: Oral Session FriB1 THz Devices & Components III	Chair: Karl Unterrainer
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FriB1-1 5211	<i>Flexible Bragg reflectors for the terahertz regime composed of polymeric compounds (Invited Keynote)</i> Christian Jansen et al. TU Braunschweig, Rebenring 3, Braunschweig, Lower Saxony Germany	P. 984
FriB1-2 5212	<i>InGaAs photodiodes as an emitter of THz waves for 1560 nm pulse excitation</i> Yutaka Kadoya et al. Hiroshima University, 1-3-1 Kagamiyama, Higashihiroshima, Hiroshima Japan	P. 987
FriB1-3 5213	<i>A submillimeter wave material scanner - applications and prospects</i> Christian Krebs et al. FGAN, Neuenahr Str.20, Wachtberg, Rheinland Pfalz, Germany	P. 989
FriB1-4 5214	<i>Static Fourier-spectrometer for solid surface studies in far infrared</i> Guerman Zhizhin et al. ScTtc Centre for Unique Instrumentation of RAS, Butlerova str.15, STC UI RAS, Moscow, Russia	P. 991
FriB1-5 5215	<i>Continuous wave THz spectrometer based on two LT-GaAs antennas without interdigitated electrodes</i> Rafal Wilk et al. Institut fuer Hochfrequenztechnik, TU Braunschweig, Schleinitzstr. 22, Braunschweig, Niedersachsen, Germany	P. 993

14.30-17.00: Oral Session FriB2 Sources V	Chair: Carole Tucker
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FriB2-1 5221	<i>Characteristics of intense THz radiation from coherent LO phonons in GaAs/AlAs multiple quantum wells (Invited Keynote)</i> K Mizoguchi et al. Department of Applied Physics, Osaka City University, 3-3-138 Sugimoto, Sumiyoshi-ku, Osaka, Japan	P. 995
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FriB2-2 5222	<i>Room temperature detection and emission of terahertz radiation by plasma oscillations in nanometer size transistors</i> Wojciech Knap et al. GES-UMR 5650 CNRS, Université Montpellier, Montpellier, France	P. 998
FriB2-3 5223	<i>Interdigitated THz emitters</i> Guillermo Acuna et al. Photonics and Optoelectronics Group, University of Munich, Amalienstr. 54, Munich, Bavaria, Germany	P. 1000
FriB2-4 5224	<i>Characterization of THz emitter based on a high-speed p-i-n photodiode</i> Daniel Schoenherr et al. Technische Universitaet Darmstadt, Institut fr Hochfrequenztechnik, Merckstrasse 25, Darmstadt, Hessen Germany	P. 1002
FriB2-5 5225	<i>High power C-doped GaN photoconductive THz emitter</i> Brahm Pal Singh et al. Matsushita Electric Industrial Co. Ltd., Semiconductor Company, Semiconductor Device Research Center, 1-1 Saiwai-cho, Takatsuki, Osaka, Japan	P. 1004

14.30-17.00: Oral Session FriB3 Chair: Michael Woerner(TBC)
THz Imaging & Optical Systems III

FriB3-1 5231	<i>Recent progress in laser terahertz emission microscopy toward high-resolution imaging (Invited Keynote)</i> Sunmi Kim et al. Institute of Laser Engineering, Osaka University, 2-6 Yamadaoka, Suita, Osaka, Japan	P. 1006
FriB3-2 5232	<i>Pixel-less THz upconversion imaging devices</i> Wenzhong Shen et al. Laboratory of Condensed Matter Spectroscopy and Opto-Electronic Physics, Department of Physics, Shanghai Jiao Tong University, 1954 Hua Shan Road, Shanghai, China	P. 1009
FriB3-3 5233	<i>Wide bandwidth mixer array development in millimeter wave imaging systems for plasma diagnostics</i> Zuowei Shen et al. Department of Electrical and Computer Engineering, UC Davis, USA	P. 1010
FriB3-4 5234	<i>THz sensing method based on metallic mesh and an application for high-resolution sensing and imaging</i> Eiji Kato et al. Advantest Labs. Ltd., 48-2 Matsubara, Kamiyashi, Aoba, Sendai, Miyagi, Japan	P. 1012

FriB3-5 5235	<i>Evaluation of 3D spatial resolution for terahertz pulsed imaging systems</i> Zhengrong Tian et al. National Physical Laboratory, Hampton Road, Teddington Middlesex, UK	P. 1014
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14.30-17.00: Oral Session FriB4 **Chair: Terry Parker**
Materials III

FriB4-1 5241	<i>Cyclotron resonance in 2D electron systems of II-VI diluted magnetic semiconductor (Invited Keynote)</i> Yasutaka Imanaka et al. National Institute for Materials Science, 3-13 Sakura, Tsukuba, Ibaraki, Japan	P. 1016
FriB4-2 5242	<i>Antiferromagnetic resonance and impurity spin excitations in FeO₃ : submillimeter quasi-optical spectroscopy in high magnetic fields</i> Alexander Mukhin et al. A.M.Prokhorov General Physics Institute of RAS, Vavilov St. 38, Moscow, Russia	P. 1019
FriB4-3 5243	<i>Investigation of surface and guided wave polariton modes in doped GaN-Al_xGa_{1-x}N multi quantum wells</i> Saber Farjami Shayesteh et al. University of Guilan, Department of Physics, P O Box 1914, Rasht, Guilan, Iran	P. 1021
FriB4-4 5244	<i>Effects of indium impurity on optical gap in nanolayer In_xGa(1-x)As in the presence of spin orbit interaction</i> Edris Faizabadi et al. Department of Physics, Faculty of Science, K. N. Toosi University of Technology, Shariati St., Tehran, Iran	P. 1023

* Paper not available at time of going to press

** Paper received late, added as appendix