

PROGRAMME

9th September 2013

9.00 Registration

9.30 Welcome

*Claudio Paoloni, Lancaster University, UK
Xiaodong Chen, Queen Mary University of London, UK*

9.40 Plenary Session I

Chair: Xiaodong Chen (Queen Mary, University of London, UK)

Electromagnetic radiation by combining surface plasmon polaritons and free electron beam

Liu, S. ; Hu, M. ; Zhang, P. ; Gong, S. ; Zhao, T. ; Zhong, R. ; Chen, X.

Terahertz Research Center, School of Physical Electronics, University of Electronic Science and Technology of China, UESTC, (CHINA)

InP on BiCMOS Technology Platform for Millimeter-Wave and THz MMIC

Krozer, V.¹ ; Jensen, T.¹ ; Kraemer, T.¹ ; Ostermay, I.¹ ; Weimann, N.¹ ; Schmueckle, F. J.¹ ; Krueger, O.¹ ; Heinrich, W.¹ ; Lisker, M.² ; Elkhoully, M.² ; Glisic, S.² ; Tillack, B.² ; Meliani, C.²

¹Ferdinand-Braun-Institut, (GERMANY) ; ²IHP, (GERMANY)

The design and manufacture of a high frequency CATR

Yu, J.¹ ; Liu, X.¹ ; Yuan, Y.¹ ; Chen, X.³ ; Yang, C.¹ ; Lu, Z.¹ ; Wylde, R.² ; Sebek, G.² ; Parini, C.³

¹School of Electronic Engineering, Beijing University of Posts and Telecommunications, (CHINA) ;

²Thomas Keating Ltd, (UNITED KINGDOM) ; ³School of Electronic Engineering & Computer Science, Queen Mary, University of London, (UNITED KINGDOM)



10.55 Coffee Break and Poster Session I

11.25 Session I - Components

Chairs: Byron Alderman (STFC RAL, UK)

Yong Fan (UESTC, China)

Keynote- Design of 220GHz and 425GHz TMIC Membrane Sub-Harmonic Mixers

Zhang, B.¹ ; Fan, Y.¹ ; Chen, Z.² ; Liu, G.¹ ; Lu, C.¹ ; Chen, N.¹ ; Yang, X.¹ ; Liu, J.¹ ; Yu, L.¹ ; Chen, Z.¹ ; Wu, S.¹

¹University of Electronic Science and Technology of China, UESTC, (CHINA) ; ²RAL - Rutherford Appleton Laboratory, (UNITED KINGDOM)

W-band sub-harmonic mixers based on quantum barrier devices with low local oscillator power requirements

Stenson, D. P. ; Doychinov, V. ; Li, L. ; Linfield, E.

School of Electronic and Electrical Engineering, University of Leeds, (UNITED KINGDOM)

Scalable, monolithically-integrated detectors for THz imaging

Boppel, S.¹ ; Lisauskas, A.¹ ; Bauer, M.¹ ; Mundt, M.¹ ; Krozer, V.¹ ; Roskos, H. G.¹ ; Venckevicius, R.² ; Minkevicius, L.² ; Kašalynas, I.² ; Seliuta, D.² ; Valušis, G.² ; Shevchenko, S.³ ; Würfl, J.³ ; Heinrich, W.³ ; Tränkle, G.³

¹Physikalisches Institut, Johann Wolfgang Goethe-Universität Frankfurt, (GERMANY); Semiconductor Physics Institute, Center for Physical Science and Technology, Vilnius, (LITHUANIA); Ferdinand-Braun-Institut, Leibniz-Institut für Höchstfrequenztechnik (FBH), Berlin, (GERMANY)

Broadband thin flat lens at sub-THz Frequencies

Savini, G.¹ ; Ade, P. R.² ; Moseley, P.¹ ; Zhang, J.² ; Saenz, E.³

¹Department of Physics & Astronomy, University College London, (UNITED KINGDOM) ; ²School of Physics & Astronomy, Cardiff University, (UNITED KINGDOM) ; ³ESA ESTEC, (NETHERLANDS)

Developments in THz Primary Noise Standards

Vizard, D. R. ; Liu, T.

VivaTech Consulting SARL, (FRANCE)



12.45 Lunch break



14.00 Session II – Imaging and Sources

Chairs: Aldo Di Carlo (University of Rome Tor Vergata, Italy)

Ken Wood (QMC Instruments, UK)

Keynote- MEMS and combined MEMS/LC technology for mm-wave Electronic Scanning

Farinelli, P.¹ ; Montori, S.¹ ; Fritzs, C.² ; Chiuppesi, E.¹ ; Marcaccioli, L.¹ ; Giacomozzi, F.³ ; Sorrentino, R.¹ ; Jakoby, R.²

¹Department of Electronic and Information Engineering, University of Perugia, (ITALY) ; ²Technische Universitaet Darmstadt, (GERMANY) ; ³Fondazione Bruno Kessler, (ITALY)

Evaluation of wheat seeds by terahertz imaging

Guo, T.¹ ; Ding, Z.¹ ; Zhang, D.¹ ; Zhou, J.¹ ; Yang, Z.² ; Wang, X.² ; Yu, J.^{1,3} ; Chen, X.^{1,4}

¹Terahertz Science and Technology Research Center, (CHINA) ; ²School of Life Science and Technology, UESTC, (CHINA) ; ³School of electronic engineering, BUPT, (CHINA) ; ⁴School of Electronic Engineering and Computer Science, Queen Mary, University of London, (UNITED KINGDOM)

Evaluation of tissue Dielectric Properties from MR Images

Laurita, R. ; Cavagnaro, M. ; Frezza, F. ; Tannino, M.

La Sapienza University of Rome, (ITALY)

Schottky diode mixers for MetOp SG satellites

Wang, H. ; Rea, S. ; Alderman, B. ; Moyna, B. ; Brewster, N.

Rutherford Appleton Laboratory, STFC-RAL, (UNITED KINGDOM)

THz-TDS analysis of hidden explosives for Homeland Security scenarios

Pierno, L.¹ ; Fiorello, A.M.¹ ; Scafè, S.¹ ; Cunningham, J.² ; Burnett, A.D.³ ; Linfield, E.H.² ; Davies, A.G.²

¹Selex ES, (ITALY) ; ²School of Electronic and Electrical Engineering, University of Leeds, Leeds (UNITED KINGDOM) ; ³Astbury Centre for Structural Molecular Biology, University of Leeds, Leeds (UNITED KINGDOM)

Devices and Material characterization at mm-wave and Terahertz

De Chirico, G.

Agilent Technologies, (ITALY)



15.35 Coffee Break and Poster Session I



16.00 Session III – Vacuum Electronics 1

Chairs: Alan Phelps (University of Strathclyde, UK)

Junsheng Yu (BUTP, China)

Keynote- High-Harmonic Terahertz Radiation from prebunched Electron Beam in the tapered Grating Structure

Zhang, Y. ; Hu, M. ; Liu, D. ; Liu, S.

Terahertz Science and Technology Research Center, University of Electronic Science and Technology of China, (CHINA)

Nano-Klystron: new Design and Technology for THz Source

Balucani, M.¹ ; Scafè, S.² ; D'Inzeo, G.¹ ; Paffi, A.¹ ; Ferrara, V.¹ ; Nenzi, P.¹

¹Università Roma 1 – DIET, (ITALY) ; ²Selex ES S.p.A., (ITALY)

Periodic-Surface-Lattice Cavities for Millimetre-wave Cherenkov Sources

MacLachlan, A.J.¹ ; Phipps, A.R.¹ ; Robertson, C. W.¹ ; Konoplev, I.V.² ; Cross, A.W.¹ ; Phelps, A.D.R.¹

¹University of Strathclyde, (UNITED KINGDOM) ; ²JAI, Department of Physics, Oxford University, (UNITED KINGDOM)

Magic 3-D Simulations of a 1.37 THz Gyro-Multiplier

Constable, D.A.¹ ; Bandurkin, I.V.² ; Savilov, A.V.² ; He, W.¹ ; Whyte C.G.¹ ; Robertson, C.W.¹ ; Phelps, A.D.R.¹ ; Cross, A.W.¹ ; Ronald, K.¹

¹Department of Physics, University of Strathclyde, (UNITED KINGDOM) ; ²Russian Academy of Sciences, (RUSSIAN FEDERATION)

17.05 End of the session



19.30 Gala Dinner

Venue: Palazzo Brancaccio, one of the most outstanding patrician palaces in Rome.

Poster Session I

Chairs: W. B. Dou (UESTC, China)

Rosa Letizia (Lancaster University & Cockcroft Institute, UK)

Effect of Gaussian Feed Cross-polarization on the Cross-polar Characteristics of Tri-reflector Compact Antenna Test Range

Chao, Y.¹ ; Yang, C.¹ ; Yu, J.¹ ; Yao, Y.¹ ; Chen, X.²

¹School of Electronic Engineering, Beijing University of Posts and Telecommunications, (CHINA) ;

²School of Electronic Engineering and Computer Science, Queen Mary, University of London, (UNITED KINGDOM)

CARM: a THz source for plasma heating

Spasovskiy, I.¹ ; Ceccuzzi, S.² ; Dattoli, G.¹ ; Di Palma, E.¹ ; Doria, A.³ ; Gallerano, G. P.³ ; Giovenale, E.³ ; Mirizzi, F.² ; Ravera, G.² ; Surrenti, V.¹ ; Tuccillo, A.²

¹ENEA UTAPRAD-MAT, (ITALY) ; ²ENEA FUS, (ITALY) ; ³ENEA UTAPRAD-SOR, (ITALY)

Thermal analysis of THz double corrugated waveguide

Mohan, S. ; Paoloni, C.

Engineering Department, Lancaster University, (UNITED KINGDOM)

Study of weak vibrational modes in aromatic compounds using terahertz spectroscopy

Zhang, D.¹ ; Ding, Z.¹ ; Guo, T.¹ ; Zhou, J.¹ ; Wang, X.² ; Yu, J.^{1,3} ; Chen, X.^{1,4}

¹Terahertz Science and Technology Research Center, (CHINA) ; ²School of Life Science and Technology, UESTC, (CHINA) ; ³School of electronic engineering, BUPT, (CHINA) ; ⁴School of Electronic Engineering and Computer Science, Queen Mary, University of London, (UNITED KINGDOM)

3D PIC simulation of starting process of oscillation in a 42 GHz gyrotron

Li, X. ; Lang, J. ; Alfadhl, Y. ; Chen, X.

School of Electronic Engineering and Computer Science, Queen Mary University of London, (UNITED KINGDOM)

Novel Klystron Approach for THz frequency amplification

Paoloni, C.

Engineering Department, Lancaster University (UNITED KINGDOM)

Phase matching condition of THz pulse shaping in difference frequency mixing

Li, D. ; Ma, J. ; Zhou, W. ; Yu, J. ; Zhao, P.

Shandong University of Science and Technology, (CHINA)

200 GHz BWO Experiment with a Pseudospark-sourced Electron Beam

Yin, H.¹ ; Bowes, D.¹ ; He, W.¹ ; Cross, A.W.¹ ; Ronald, K.¹ ; Phelps, A.D.R.¹ ; Liu, G.¹ ; Chen, X.² ; Li, D.²

¹University of Strathclyde, (UNITED KINGDOM) ; ²School of Electronic Engineering & Computer Science, Queen Mary, University of London, (UNITED KINGDOM)

A Power Combined Amplifier Module in W-band

Chen, Z.^{1,2} ; Rea, S.² ; Wang, H.² ; Alderman, B.² ; Zhang, B.¹ ; Fan, Y.¹

¹School of Electronic Engineering, University of Electronic Science and Technology of China, (CHINA) ;

²STFC-RAL, (UNITED KINGDOM) ;



10th September 2013

9.00 Plenary Session II

Chair: Claudio Paoloni, Lancaster University, UK

THz radiation and its applications: A review of events and a glance to the future

Gallerano, G. P.

ENEA- Radiation Sources Laboratory, Frascati, (ITALY)



9.20 Session IV – Vacuum Electronics 2

Chairs: Yubin Gong (UESTC, China)

Xuyuan Chen (Vestfold College University, Norway)

Keynote- Latest Developments on a W-band Gyro-TWA

He, W. ; Donaldson, C.R. ; Zhang, L. ; McElhinney, P. ; Ronald, K. ; Cross, A.W. ; Phelps, A.D.R.

Department of Physics, SUPA, University of Strathclyde, (UNITED KINGDOM)

Study of the critical issues in the assembly of cold cathodes in electron gun for vacuum tube

Ciceroni, C. ; Ulisse, G. ; Brunetti, F. ; Di Carlo, A.

Dept. of Electronic Engineering, University of Rome "Tor Vergata", (ITALY)

Tapered Metallic Photonic Crystal Slow Wave Structure for Terahertz Vacuum Electron Devices

Letizia, R. ; Mineo, M. ; Paoloni, C.

Engineering Department, Lancaster University & Cockcroft Institute (UNITED KINGDOM)

A Novel H-plane Loaded Folded Waveguide Slow Wave Structure for Traveling Wave Tube

Hou, Y. ; Xu, J. ; Wang, S. ; Yue, L. ; Lu, Z. ; Wei, Y. ; Gong, Y.

University of Electronic Science and Technology of China, UESTC, (CHINA)

Studies involving simulations of a mm-wave cusp-gun gyro-TWA

Robertson, C.W. ; Young, A.R. ; Ronald, K. ; Cross, A.W. ; Whyte, C.G.

Department of Physics, University of Strathclyde, (UNITED KINGDOM)



10.40 Coffee Break and Poster Session II



11.10 Session V – Short Oral

Chairs: Giorgio Savini (UCL, UK)

Qi-Ye Wen (UESTC, China)

Keynote - Graphene Based Ultrafast All-Optical Terahertz Modulator

Wen, Q.¹; Sun, D.¹; Chen, Z.²; Tian, W.¹; Liu, H.¹; Yang, Q.¹; Jing, Y.¹; Zhang, H.¹

¹State Key Laboratory of Electronic Films and Integrated Devices and ²National Key Laboratory of Science and Technology of Communication, University of Electronic Science and Technology of China, Chengdu, (CHINA)

A 42 to 56GHz Wide Band CMOS Power Amplifier

Yan, P.¹; Chen, J.^{1,2}; Hong, W.¹; Jiang, X.¹

¹School of Information Science and Engineering Southeast University, Nanjing (CHINA) ; ²Nanjing Electronic Devices Institute, Southeast University, (CHINA)

Effective Compression of Hyperspectral Imagery Using Three Dimensional Discrete Cosine Transform

Qiao, T.¹; Ren, J.¹; Craigie, C.²; Marshall, S.¹; Maltin C.²

¹University of Strathclyde, (UNITED KINGDOM) ; ²Quality Meat Scotland, The Rural Centre, Ingliston, Edinburgh, (UNITED KINGDOM)

THz characterization of textiles

Molloy, J. ; Naftaly, M.

National Physical Laboratory, (UNITED KINGDOM)

An introduction to ISMAR

Rule, I.¹; Lee, C.¹; Moyna, B.²

¹Met Office, (UNITED KINGDOM) ; ²Rutherford Appleton Laboratory, (UNITED KINGDOM)

Overview of real-world Terahertz applications

Portieri, A.

TeraView, (UNITED KINGDOM)

Semiconductor-based THz plasmonic metamaterials

Letizia, R.

Engineering Department, Lancaster University & Cockcroft Institute (UNITED KINGDOM)

A Staggered Double Vane Circuit for Millimeter Wave Traveling Wave Tube

Shi, X. ; Wang, Z. ; Zhang, Y. ; Lai, J. ; Lu, Z. ; Yin, H. ; Wei, Y. ; Gong, Y.

University of Electronic Science and Technology of China, (CHINA)

Development of a 0.14THz Folded Waveguide Traveling-wave Tube

Linlin H. ; Wenqiang L. ; Xu-ao, Y. ; Hongbin C.

Institute of Applied Electronics, China Academy of Engineering Physics, (CHINA)

An Investigation on Open Cavity Composed of Ellipsoidal Mirror and Planar Mirrors

Dou, W. B.

State Key Lab of Millimeter Waves, Southeast University, (CHINA)

Particle Tracing Simulation of a Vacuum Electron Gun for THz Application

Leggieri, A. ; Ulisse, G. ; Di Paolo, F. ; Brunetti, F. ; Di Carlo, A.

Electronic Engineering Department, University of Rome "Tor Vergata", (ITALY)

Design of 183GHz/325GHz Dual-channel Quasi-optical System

Long, K.¹ ; Liu, X.¹ ; Lu Z.¹, Yu, J.¹ ; Yao, Y.¹ ; Chen, X.²

¹Beijing University of Posts and Telecommunications, (CHINA) ; ²School of Electronic Engineering and Computer Science, Queen Mary, University of London, (UNITED KINGDOM)



12.55 Lunch break



14.05 Session VI - Antennas

Chairs: Peter Hargrave (Cardiff University, UK)

Yuan Yau (BUTP, China)

Keynote- Coated dielectric lenses for applications in high purity THz electromagnetic wave polarization detection

Hargrave, P.¹ ; Savini, G.² ; Gradziel, M.³ ; Tynan, N.³ ; Trappe, N.³ ; Sorenson, S.⁴ ; Ade, P.¹ ; Sudiwala, R.¹ ; Walker, I.¹ ; Van der Vorst, M.⁵

¹School of Physics & Astronomy, Cardiff University, (UNITED KINGDOM) ; ²University College London, (UNITED KINGDOM) ; ³National University of Ireland, Maynooth, (IRELAND), ⁴TICRA, (DENMARK), ⁵European Space Agency ESTEC, (NETHERLANDS)

Broadband Planar Yagi Antenna for Millimetre & Sub-millimetre Detectors

Tan, B.^{1,2} ; Yassin, G.¹ ; Withington, S.³ ; Goldie, D.³

¹Department of Physics (Astrophysics), University of Oxford (UNITED KINGDOM) ; ²IRI, Wawasan Open University, Penang, (MALAYSIA) ; ³Cavendish Laboratory, University of Cambridge (UNITED KINGDOM)

The Distortion Research of Reflector Based on Diffracted Gaussian Beam Analysis

Yuan, L.¹ , Liu, X.¹ ; Yao, Y.¹ ; Yu, J.¹ ; Chen, X.² ; Lu, Z.¹

¹School of Electronic Engineering, Beijing University of Posts and Telecommunications, (CHINA) ; ²School of Electronic Engineering and Computer Science, Queen Mary, University of London, (UNITED KINGDOM)

Smooth walled feed horns for mm and submm radio astronomy

Leech, J. ; Tan, B. ; Yassin, G.

Department of Physics, University of Oxford, (UNITED KINGDOM)



15.10 Coffee Break and Poster Session II



15.35 Session VII – Instruments & Measurements

Chairs: Richard Dudley (NPL, UK)

Bo Zhang (UESTC, China)

Keynote- Pre-Launch Calibration of Space Instrumentation from 100 GHz to 1 THz

Miall, J. ; Dudley, R.A. ; Protheroe, S.J.

National Physical Laboratory, NPL, (UNITED KINGDOM)

Harmonic Mixers for Spectrum Analysis in the Microwave Range

Wendler, W.

Rohde & Schwarz GmbH & Co. KG, (Germany)

Investigation of Wideband Synthesizer Covering 16GHz to 32GHz

Tian, L. ; Zhu, X. W. ; Li, Y. ; Yang, L. ; Miao, P.

School of Information Science and Engineering, Southeast University, (CHINA)

Metal-Insulator-Metal (MIM) Plasmonic Waveguide Based Directional Couplers Operating at Telecom Wavelengths

Stoja, E. ; Frezza, F.

Department of Information Engineering, Electronics and Telecommunications, "La Sapienza" University of Rome, (ITALY)

THz optical constants of liquid crystals BL037 and GT3-23001

Dudley, R. ; Naftaly, M.

National Physical Laboratory, (UNITED KINGDOM)



17.00 Shenggang Liu Science and Technology Development Foundation

Best Student Paper Award Ceremony

Alan Phelps (University of Strathclyde, UK)

Shenggang Liu (UESTC, CHINA)

17.15 Announcement of the UCMMT2014

Xiaobo Yang (UESTC, CHINA)

17.30 Private Visit to National Roman Museum, Palazzo Massimo (Kindly offered by Thomas Keating Ltd.)



Poster Session II

Chairs: Wenlong He (University of Strathclyde, UK)

Francesca Brunetti (University of Rome Tor Vergata, Italy)

An input coupler for a W-band gyro-TWA

Zhang, L. ; He, W. ; Donaldson, C.R. ; Ronald, K. ; McElhinney, P. ; Cross, A.W.

Department of Physics, SUPA, University of Strathclyde, (UNITED KINGDOM)

Microwave windows for W-band gyro-devices

Donaldson, C.R. ; He, W. ; Zhang, L. ; Ronald, K. ; Cross, A.W.

Department of Physics, SUPA, University of Strathclyde, (UNITED KINGDOM)

Study on an Electron Gun Based on Carbon Nanotube Cold Cathodes

Yuan, X.S. ; Li, X.

School of Physical Electronics, University of Electronic Science and Technology of China, (CHINA)

Study on algorithms of terahertz pulsed reflection imaging

Guo, T.¹ ; Ding, Z.¹ ; Zhang, D.¹ ; Zhou, J.¹ ; Yu, J.^{1,2} ; Chen, X.^{1,3}

¹Terahertz Science and Technology Research Center, UESTC, (CHINA) ; ²School of electronic engineering, BUPT, (CHINA) ; ³School of Electronic Engineering and Computer Science, Queen Mary, University of London, (UNITED KINGDOM)

Experimental demonstration of a broadband terahertz absorber using SiO₂ based metamaterial structures

Mo, M.¹ ; Wen, Q.¹ ; Chen, Z.² ; Yang, Q.¹ ; Jing, Y.¹ ; Zhang, H.¹

¹State Key Laboratory of Electronic Films and Integrated Devices and ²National Key Laboratory of Science and Technology of Communication, University of Electronic Science and Technology of China, Chengdu, (CHINA)

Effects of the backward waves on the denisov-type quasi-optical mode converter

Wang, W. ; Liu, D. ; Qiao, S. ; Liu, S.

Terahertz Research Center, School of Physical Electronics, University of Electronic Science and Technology of China, (CHINA)

Electrically-driven metal-insulator transition of VO₂ thin films in a nanoscale metal-oxide-metal device structure

Qiu, D.¹ ; Wen, Q.¹ ; Yang, Q.¹ ; Chen, Z.² ; Jing, Y.¹ ; Zhang, H.¹

¹State Key Laboratory of Electronic Films and Integrated Devices and ²National Key Laboratory of Science and Technology of Communication, University of Electronic Science and Technology of China, Chengdu, (CHINA)

Simulation of a broad band circularly polarized crossbow tie antenna at terahertz waves using hybrid approach of FEM and geometric optics

Mir, A. ; Liu, H. ; Yu, J.

Beijing University of Posts and Telecommunications, (CHINA)



11th September 2013

9.30 Cultural tour in Rome

**Visit of Coliseum, Palatinum and Roman Forum
Lunch at the restaurant “Terme del Colosseo”**

Guides will be available in English and Chinese.

For info and update please visit <http://ucmmt2013.lancs.ac.uk/>