Monday 11 July 2016			
09:30 - 10:30	**Registration, refreshments and exhibition**		
10:30 - 11:00	**Welcome Session** Conference Chair: Richard Hoad, QinetiQ Technical Programme Committee: Dave Giri, Pro-Tech IET President: Naomi Climer		
11:00 - 12:00	**Keynote Speaker** **The Science of Invisibility** Professor Sir John Pendry, *Imperial College London, UK*		
12:00 - 12:10	**Comfort break**		
	Room: Great Hall **Session title:** TC 1 **-** HPEM Sources, Antennas and Facilities – Narrowband Sources and Modelling (1) **Session Chair:** D V Giri, *Pro-Tech, USA* **Session Co-Chair:** W Prather, *Air Force Research Laboratory, USA*	**Room:** Pippard Lecture Theatre **Session title:** TC 6 **-** HPEM-Lightning EM Effects/Measurements – Lighting Protection and Testing **Session Chair:** F Rachidi, *EPFL, Switzerland* **Session Co-Chair:** A Kaelin, *EMProtec, Switzerland*	**Room:** Read Lecture Theatre **Session title:** TC 14 - Statistical Methods in HPEM - Statistical Investigations in HPEM (1) **Session Chair:** C Kasmi, *French Network and Information Security Agency, France* **Session Co-Chair:** L O Fichte, *Helmut-Schmidt University, Germany*
12:10	**1.a.1** **The influence of naval warship experience upon reliable high-voltage pulsed power design** F J Agee[1], [1]*Adamco, Inc., USA*	**1.b.1** **Lightning direct effect test system of current component A** W J Xu[1], X L Yao[1], J R Sun[1], J L Chen[1], [1]*Xi'an Jiao tong University, China*	**1.c.1** **Determining the critical frequencies for back- and front door coupling into electronic devices** L O Fichte[1], M Stiemer[1], S Potthast[2], F Sabath[2], [1]*Helmut-Schmidt University, Germany,* [2]*Bundeswehr Research Institute for Protective Technologies - NBC Protection, Germany*
12:30	**1.a.2** **On the use of XOOPIC for the simulation of Virtual Cathode Oscillators** E Neira[1], F Vega[1], F Rachidi[2], [1]*Universidad Nacional de Colombia, Colombia,* [2]*Swiss Federal Institute of Technology, Switzerland*	**1.b.2** **Impulse current test system for lightning direct effect of airplane** J Sun[1], X L Yao[1], W J Xu[1], J L Chen[1], [1]*Xi'an Jiao Tong University, China*	**1.c.2** **Re-sampling optimized technique applied to EMC TL issues** C Kasmi[1], S Lalléchère[2], J Lopes Esteves[1], S Girard[2], P Bonnet[2], F Paladian[2], [1]*French Network and Information Security Agency-ANSSI, France,* [2]*Institut Pascal, France*
12:50	**1.a.3** **Ku-band high power microwave generation from the coaxial foil less transit-**		**1.c.3** **Ultra-wideband pulse propagation in mode-stirred reverberation chambers**

	time oscillator with low external magnetic field J P Ling[1], J D Zhang[1] ,J T He[1], T Jiang[1], *[1]National University of Defence Technology, China*		L R Arnaut[1], *[1]Queen Mary University London, UK*
13:10			**1.c.4** **Scaled measurements of realistic counter-DEW scenarios** S M Anlage[1], B Xiao[1], Z Drikas[2], J Gil Gil[2], T D Andreadis[2], T M Antonsen[1], E Ott[1], *[1]University of Maryland, USA, [2]US Naval Research Laboratory, USA*
13:30	**Lunch and exhibition**		
	Room: Great Hall **Session title:** TC 1 - HPEM Sources, Antennas and Facilities – Narrowband Sources and Modelling (2) **Session Chair:** D V Giri, *Pro-Tech, USA* **Session Co-Chair:** W Prather, *Air Force Research Laboratory, USA*	**Room:** Pippard Lecture Theatre **Session title:** TC 6 - HPEM-Lightning EM Effects/Measurements – Lighting Incidence **Session Chair:** F Rachidi, *EPFL, Switzerland* **Session Co-Chair:** M Rubinstein, *HEIG-VD, Switzerland*	**Room:** Read Lecture Theatre **Session title:** TC 14 **-** Statistical Methods in HPEM – Statistical Investigations in HPEM (2) **Session Chair:** C Kasmi, *French Network and Information Security Agency, France* **Session Co-Chair:** L O Fichte, *Helmut-Schmidt University, Germany*
14:45	**2.a.1** **EMP environment of high power laser facility** C Meng[1,2], H Jin[1,2], C Yang[1,2], X Li[1,2], W Zheng[3], *[1]Tsinghua University, China, [2]Ministry of Education, China, [3]China Academy of Engineering Physics, China*	**2.b.1** **VLF lightning detection rate dependence on field strength** J Ashkenazy[1], A Lipshtat[1], A S Kesar[1], *[1]Soreq NRC, Israel*	**2.c.1** **Progress in a statistical topological approach using wave-chaos for electromagnetic effects (STUWEE) studies** G Hadi[1], S Hemmady[1], E Schamiloglu[1], *[1]University of New Mexico, USA*
15:05	**2.a.2** **Wideband sources for vulnerability tests** S Agafonov[1], D Baryshevsky[1], V Baryshevsky[1], A Borisevich[2], A Gurinovich[1], *[1]Research Institute for Nuclear Problems, [2]Electrophysical Laboratory, Belarus*	**2.b.2** **Occurrence of downward and upward flashes at the Säntis Tower: Relationship with -10°C temperature altitude** M Azadifar[1], M Lagasio[2], E Fiori[2], F Rachidi[1], M Rubinstein[3], R Procopio[4], *[1] Swiss Federal Institute of Technology (EPFL), Switzerland, [2]CIMA Research Foundation, Italy, [3]University of Applied Sciences of Western Switzerland, Switzerland, [4]University of Genoa, Italy*	**2.c.2** **Calculation of electromagnetic pulse effect threshold probability with maximum entropy model** K Li[1], Y Xie[1], Y Chen[1], *[1]Xi'an Jiao tong University, China*
15:25			**2.c.3** **Efficient full-wave simulation of the stochastic field coupling to transmission line networks using the method of moments** M Magdowski[1], R Vick[1], *[1]Otto-von-Guericke-University, Germany*
15:45			**2.c.4** **Statistical significance and reliability of HEPM field tests** L O Fichte[1], S Knoth[1], S

			Pothast[2], F Sabath[2], M Stiemer[1], *[1]Helmut-Schmidt University, Germany, [2]Bundeswehr Research Institute for Protective Technologies – NBC-Protection, Germany*
16:05	**Refreshments and exhibition**		
	Room: Great Hall **Session title:** TC 1 - HPEM Sources, Antennas and Facilities – UWB Sources, Materials and Pulse Power **Session Chair:** D V Giri, *Pro-Tech, USA* **Session Co-Chair:** W Prather, *Air Force Research Laboratory, USA*	**Room:** Pippard Lecture Theatre **Session title:** TC 6 - HPEM-Lightning EM Effects/Measurements – Lighting Modelling and Effects **Session Chair:** F Rachidi, *EPFL, Switzerland* **Session Co-Chair:** M Rubinstein, *HEIG-VD, Switzerland*	**Room:** Read Lecture Theatre **Session title:** TC 3 - HPEM Measurement Techniques – Measurement Techniques and Related Analysis **Session Chair:** F Sabath, *Bundeswehr, Germany* **Session Co-Chair:** *Z Kancleris, Semiconductor Physics Institute, Lithuania*
16:35	**3.a.1** **Marx generator design for narrow-width pulse generation** J Zhou[1], Y Huang[1], H Jiang[1], Q Xu[1], C Song[1], L Xing[2], J Nalborczyk3, *[1]University of Liverpool, UK, [2]Nanjing University of Aeronautics and Astronautics, China, [3]MPE Ltd, UK*	**3.b.1** **The connection between the electromagnetic radiation, electronic charge and the time-energy uncertainty principle** V Cooray[1], G Cooray[2], *[1]Uppsala University, Sweden, [2]Karolinska University Hospital, Sweden*	**3.c.1** **3-Axis optical sensor for real time and vectorial analysis of UWB electric field** G Gaborit[1,2], L Gillette[1,2], J Dahdah[1,2], L Duvillaret[2], A Bazin[3], J Tarayre[3], J Luc[3], *[1]IMEP-LAHC, France, [2]KAPTEOS, France, [3]CEA, France*
16:55	**3.a.2** **Optimization of a long range anechoic chamber for IEMI tests** J C Joly[1], N Albuisson[1], J P Adam[1], P Hamel[2], Y Beniguel[2], G Dun[3], *[1]CEA Gramat, France, [2]IEEA, France, [3]Siepel, France*	**3.b.2** **Comparison of two techniques of calculating electromagnetic fields from lightning** V Cooray[1], G Cooray[2], *[1]Uppsala University, Sweden, [2]Karolinska University Hospital, Sweden*	**3.c.2** **New susceptibility and immunity figures of PWM patterns and circuits with temperature impacts** J-M Dienot[1,2], *[1]University P. Sabatier, France, [2]LGP, France*
17:15	**3.a.3** **Perturbation by glass-encased Cs cell of electromagnetic-field sensor based on quantum phenomena** M Ishii[1], M Kinoshita[1], *[1]NMIJ/AIST, Japan*	**3.b.3** **Influence of electromagnetic transient models of grounding system on lightning overvoltage of 1000-kV substation** J L He[1], B Zhang[1], Y P Tu[2], *[1]Tsinghua University, China, [2]North China Electrical Power University, China*	**3.c.3** **Development of Multi-channel Norms Detector** X Kong[1], Y Z Xie[1], *[1]Xi'an Jiao Tong University, China*
17:35			**3.c.4** **Wide band resistive sensors** P Ragulis[1], Ž Kancleris[1], R Simniškis[1], M Dagys[1], *[1]Center for Physical Sciences and Technology, Lithuania*
17:55	**Close of day 1**		
18:00 - 19:30	**Welcome drinks reception** Queens Tower Rooms, Imperial College London		

Tuesday 12 July 2016			
08:30 - 09:00	**Registration, refreshments and exhibition**		
	Room: Read Lecture Theatre **Session title:** TC 1 - HPEM Sources, Antennas and Facilities – Antennas **Session Chair:** D V Giri, *Pro-Tech, USA* **Session Co-Chair:** W Prather, *Air Force Research Laboratory, USA*	**Room:** Pippard Lecture Theatre **Session title:** TC 2 **-** HPEM Coupling to Structures and Cables – Coupling Analysis Effects, Simulations and Suppression **Session Chair:** J P Parmantier, *ONERA, France* **Session Co-Chair:** LO Fichte, *Helmut-Schmidt University, Germany*	**Room:** Great Hall **Session title:** TC 3 - HPEM Measurement Techniques – HPEM Field Measurements **Session Chair:** F Sabath, *Bundeswehr, Germany* **Session Co-Chair:** *E Savage, Metatech Corporation, USA*
09:00	**4.a.1** **Design and manufacturing of a high power L-band helical antenna** N Albuisson[1], J C Joly[1], J M Lopez[1], J P Adam[1], *[1]CEA, France*	**4.b.1** **An overview of the natural frequencies of a straight wire by various methods** D V Giri[1], F M Tesche[1], *[1]Pro-Tech, USA*	**4.c.1** **Circuit elements (R, L and C) for High-Voltage (HV) and High-Frequency (HF) applications** D V Giri[1], *[1]Pro-Tech, USA*
09:20	**4.a.2** **Analysis of folded feed half impulse radiating antenna for high-power impulse radiation** S B Umbarkar[1], H A Mangalvedekar[2], A Sharma[3], R Vasappanavara[1], R Agrawal[3], M D Patil[1], S Kulkarni[1], S J Petkar[1], *[1]Ramrao Adik Institute of Technology, India, [2]Veermata Jijabai Technological Institute, India, [3]Bhabha Atomic Research Centre, India*	**4.b.2** **Power-balance in the time-domain for IEMI coupling prediction** J F Dawson[1], I D Flintoft[1], A C Marvin[1], M P Robinson[1], L Dawson[1], *[1]University of York, UK*	**4.c.2** **Comparison of active and passive shielding effectiveness measurement techniques** G Eastwood[1], R Hoad[1], B Petit[1], T Ress[1], *[1]QinetiQ, UK*
	Session title: TC 11 - UWB Target Detection, Discrimination and Neutralisation – Discrimination and Imaging **Session Chair:** V Koshelev, *HCEI, Russia* **Session Co-Chair:** D V Giri, *Pro-Tech, USA*	**Session 4b continued**	**Session 4c continued**
09:40	**4.a.3** **Object detection by three-channel antenna system of ultra-wideband borehole radar** V I Koshelev[1], E V Balzovsky[1], Y I Buyanov[1], E S Nekrasov[1], *[1]Institute of High Current Electronics SB RAS, Russia*	**4.b.3** **Quick numerical approach for specific absorption rate determination in a reverberating environment - application to an EM stopping vehicle project** N Albuisson[1], J C Joly[1], *[1]CEA, France*	**4.c.3** **The uncertainty of measurement in NEMP testing** M Kreitlow[1], G Schmidt[1], F Sabath[1], *[1]Bundeswehr Research Institute for Protective Technologies and NBC Protection, Germany*
10:00	**4.a.4** **Retrieving metal objects in multi-receiver FDEM data through signal matching** M Smetryns[1], P D Smedt[1], J D Pue[1], T Saey[1], N Note[1], M Van Meirvenne[1], *[1]Ghent University, Belgium*	**4.b.4** **Analytical evaluation of the per-unit-length conductance of a coated two-wire transmission line** N Mora[1], I Junqua[2], F Rachidi[1], J P Parmantier[2], *[1]Swiss Federal Institute of Technology, Switzerland, [2]EMC group,*	**4.c.4** **Shielded cable leakage measured in the time domain** E B Savage[1], W A Radasky[1], R Williamson[1], *[1]Metatech Corporation, USA*

		France	
10:20	**4.a.5** **Utilization and enhancement of early-time diffusion component of short pulses in imaging through obscuring random media** E Bleszynski[1], M Bleszynski[1], T Jaroszewicz[1], *[1]Monopole Research, USA*	**4.b.5** **Realistic modelling of electromagnetic coupling in air insulation substation** B Nekhoul[1], B Khellifi[1], S Mezoud[2], *[1]University of Jijel, Algeria, [2]USTHB University, Algeria*	**4.c.5** **Lithium Niobate ($LiNbO^3$) waveguides for sensing of high powered and short duration Electromagnetic Pulses (EMP)** A Dzipalski[1], A J Waddie[1], I Thurston[2], M Moutrie[2], M R Taghizadeh[1], *[1]Heriot-Watt University, UK, [2]Atomic Weapons Establishment, UK*
10:40			**4.c.6** **Calibration of transient (sub-ns) field sensors using a half TEM antenna radiator** V H Bhosale[1], M J Thomas[2], S S Rai[3], D C Pande[3], S B Umbarkar[4], *[1]DRDO, India, [2]Indian Institute of Science (IISc), India, [3]LRDE, India, [4]Veermata Jijabai Technological Institute (VJTI), India*
11:00	**Refreshments and exhibition**		
	Room: Read Lecture Theatre **Session title:** TC 12 - UXO Landmine & IED Detection and Neutralisation (1) **Session Chair:** F Vega*, National University of Colombia, Colombia* **Session Co-Chair:** J Sachs, *Ilmenau University, Germany*	**Room:** Pippard Lecture Theatre **Session title:** TC 8 **-** HPEM -Bio Effects and Medical Applications **Session Chair:** L O Fichte, *Helmut-Schmidt University, Germany* **Session Co-Chair:** D V Giri, *Pro-Tech, USA*	**Room:** Great Hall **Session title:** SS 01 **-** Aircraft EM Certification Developments **Session Chair:** G Barber*, QinetiQ, UK* **Session Co-Chair:** P Surman, *Pulse Power and Measurement Ltd, UK*
11:30	**5.a.1** **Belgium's World War 1 front zone today: a sleeping UXO problem characterised by frequency domain EMI** N Note[1], T Saey[1], M Smetryns[1], M Van Meirvenne[1], *[1]Ghent University, Belgium*	**5.b.1** **Delivery of picosecond pulses to subcutaneous tissues** S Xiao[1], R Petrella[1], K Schoenbach[1], *[1]Old Dominion University, USA*	**5.c.1** **An automated test system for assessing aircraft for radiated effects from Transmitting Portable Electronic Devices (T-PEDs)** G D M Barber[1], T Noad[1], R F Marson[1], *[1]QinetiQ, UK*
11:50	**5.a.2** **Humanitarian microwave detection of improvised explosive devices in Colombia (Project MEDICI)** J Sachs[1], R Bustamante[2], F Vega[3], C Baer[4], *[1]Technische Universität Ilmenau, Germany, [2]Universidad de los Andes, Colombia, [3]Universidad Nacional de Colombia, Colombia, [4]Ruhr-Universität Bochum, Germany*	**5.b.2** **The acute UWB pulse exposure induced the temporary hyperglycaemia and hepatic injury of KM mouse** X Lu[1], K Guo[1], Y Xie[1], *[1]Xi'an Jiao tong University, China*	**5.c.2** **The development and use of analogue fibre optic links for HIRF testing** P Surman[1], D Bromley[1], *[1]Pulse Power and Measurement Ltd, UK*
12:10	**5.a.3** **On the applicability of search coils used in commercial handheld metal detectors for metallic target characterization** D Ambrus[1], D Vasic[1], V Bilas[1], L A Marsh[2], J L Davidson[2], A J Peyton[2], *[1]University of Zagreb,*		**5.c.3** **The development of a High Intensity Radiated Field (HIRF) aircraft HF test facility** T Hague[1], G D M Barber[2], T Duggan[2], *[1]AR Europe Ltd, UK, [2]QinetiQ, UK*

	Croatia, [2]University of Manchester, UK		
12:30	**Lunch and exhibition**		
13:30	**Poster Session 1** Details below		
	Room: Read Lecture Theatre **Session title:** TC 12 - UXO Landmine & IED detection and Neutralization (2) **Session Chair:** F Vega, *National University of Colombia, Colombia* **Session Co-Chair:** J Sachs, *Ilmenau University, Germany*	**Room:** Pippard Lecture Theatre **Session title:** TC 13 - HPEM - EM Transients in UHV/EHV Transmission Lines and Substations – EM Transients (1) **Session Chair:** X Wu, *State Grid, China* **Session Co-Chair:** Y Xie, *Xi'an Jiao tong University, China*	**Room:** Great Hall **Session title:** SS 01 **-** Aircraft EM Certification Developments – Susceptibility Test Methods **Session Chair:** G Barber, *QinetiQ, UK* **Session Co-Chair:** P Surman, *Pulse Power and Measurement Ltd, UK*
14:30	**6.a.1** **UWB backscattering characterization of improvised explosives devices** D Martinez[1], S Gutierrez[1], S Rodriguez[1], F Vega[1], R Bustamante[2], J Sachs[3], C Baer[4], *[1]Universidad Nacional de Colombia, Colombia, [2]Universidad de los Andes, Colombia, [3]Technische Universität Ilmenau, Germany, [4]Ruhr-Universität Bochum, Germany*	**6.b.1** **Momentum in magnetic clouds before sudden impulse observations on ground magnetometers** J L Gilbert[1], *[1]Metatech Corporation, USA*	**6.c.1** **A comparison of EED radiated susceptibility test methods** P P Meekums[1], N J Carter[1], T Noad[1], G D M Barber[1], R Hoad[1], *[1]QinetiQ, UK*
	Session 6a continued	**Session 6b continued**	**Session title:** TC 7 **-** HPEM Analytic and Numerical Modelling – Analytical Modelling (1) **Session Chair:** S Tkachenko, *University of Magdeburg, Germany* **Session Co-Chair:** S Zheng, *Science and Technology on Electromagnetic Compatibility Laboratory, China*
14:50	**6.a.2** **Permittivity of improvised explosives made of ammonium nitrate and fuel oil** T Just[1], S Gutierrez[3], J Sachs[1], C Baer[2], F Vega[3], R Bustamente[4], *[1]Technische Universität Ilmenau, Germany, [2]Ruhr-Universität Bochum, Germany, [3]Universidad Nacional de Colombia, Colombia, [4]Universidad de los Andes, Colombia*	**6.b.2** **Frequency spectrum analysis of radiated partial discharge signals** A Jaber[1], P Lazaridis[1], Y Zhang[1], B Saeed[1], U Khan[1], D Upton[1], H Ahmed[1], P Mather[1], M F Q Vieira[2,1], R Atkinson[3], M Judd[4], R Seviour[1], I Glover[1], *[1]University of Huddersfield, UK, [2]Universidade Federal de Campina Grande, Brazil, [3]University of Strathclyde, UK, [4]High Frequency Diagnostics & Engineering Ltd, UK*	**6.c.2** **Aspects of the shielding effectiveness of wire-meshes** R Gunnarsson[1], M Bäckström[1], *[1]Saab Aeronautics, Sweden*
15:10	**Refreshments and exhibition**		
	Session title: SS 03 - Cyber Electromagnetics **Session Chair:** D Thomas, *QinetiQ, UK* **Session Co-Chair:** C Kasmi, *French Network and Information Security Agency, France*	**Session 6b continued**	**Session 6c continued**
15:40	**6.a.3**	**6.b.3**	**6.c.3**

	Susceptibility testing for detecting IEMI-based covert channels C Kasmi[1], J Lopes Esteves[1], P Valembois[1], *[1]Wireless Security Lab, France*	**UWB radiation source location based on the electromagnetic time reversal method** S Y He[1], Y Z Xie[1], M Gao[1], S Wang[1], X Kong[1], *[1]Xi'an Jiao tong University, China*	**Random coupling model applied to the irradiation of buildings** G Gradoni[1], D Micheli[2], S M Anlage[3], E Ott[3], T M Antonsen[1], *[1]University of Nottingham, UK, [2]Telecom Italia Lab, Italy, [3]University of Maryland, USA*
16:00	**6.a.4** **Identifying some radiated EMSEC vulnerabilities of tablet personal computers** S R Patient[1], A L Macintyre[1], M D Thomas[1], R Hoad[1], *[1]QinetiQ, UK*	**6.b.4** **Worldwide correlation study of geomagnetic sudden storm commencements (SSCs)** W A Radasky[1], E B Savage[1], J L Gilbert[1], *[1]Metatech Corporation, USA*	**6.c.4** **Electromagnetic coupling to thin wire structures inside resonators** S V Tkachenko[1], J B Nitsch[1], R Rambousky[1,2], R Vick[1], *[1]Otto-von-Guericke University, Germany, [2]Bundeswehr Research Institute for Protective Technologies and NBC Protection (WIS), Germany*
16:20	**Close of day 2**		

Poster Session 1 Poster Session Chairs: W Radasky*, Metatech Corp., USA* and D V Giri, *Pro-Tech, US*	
P1	**Computational comparison of bow-tie and notch arrays fed via notional PCSS signal** S Nickolas[1], J Roos[1], P Collins[1], J Petrosky[1], A J Terzuoli[1], T Zens[1], *[1]Institute of Electrical and Electronics Engineers, USA*
P2	**Compact and lightweight PCI generator for HEMP shelter and filter verification** J-H Shin[1], K-H Son[1], Y-K Jung[1], D-G Youn[1], *[1]HPEM Application Laboratory, Republic of Korea*
P3	**Development of a damped sinusoidal pulse radiator with a high stability for the IEMI testing** K-T Lee[1], Y-K Jeong[1], D-G Youn[1], *[1]Replex Co., Ltd., Republic of Korea*
P4	**Radiation pattern and scattering parameter on finite cylindrical loop antenna using the iterative method WCIP** I N Jarboua[1], N O Ammar[1], T A Aguili[1], H Baudrand[2], *[1]System Communications Laboratory, Tunisia, [2]Laplace Laboratory, France*
P5	**Design of current component C generator for lightning direct effect of CFRP** W J Xu[1], X L Yao[1], J R Sun[1], J L Chen[1], *[1]Xi'an Jiao tong University, China*
P6	**Analysis of transient in buildings grounding system using a modified image method** Z Gouichiche[1], J Roudet[1], E Clavel[1], P Joyeux[2], *[1]G2elab, France, [2]Hager Group, France*

Wednesday 13th July 2016	
08:30 - 09:00	**Registration, refreshments and exhibition**
	Plenary Session **Room:** Great Hall Session Chair: R Seviour, *University of Huddersfield, UK* Session Co-Chair: E S Schamiloglu, *University of New Mexico, USA*
09:00	**PS 1** **Development of non-linear transmission lines for HPEM applications** N Seddon[1], *[1]MBDA UK Ltd, UK*
09:30	**PS 2** **History of High-Power Electromagnetics (HPEM) with illustrative examples of HPEM systems** D V Giri[1], *[1]Pro-Tech, USA*
10:00	**PS 3** **HPEM activities in Switzerland over the last 50 years** *M Nyffeler[1],D V Giri[2], [1]Armasuisse Science and Technology, Switzerland, [2]University of New Mexico and Pro-Tech, USA*

10:30	**Refreshments and exhibition**		
11:00	**PS 4** **Electromagnetics in emerging medical technologies** *J Venkataraman[1], D V Giri[2], [1]Rochester Institute of Technology, USA, [2]Pro-Tech, USA*		
11:30	**PS 5** **Heuristic approach to evaluate the occurrence of IEMI sources in criminal activities** F Sabath[1], H Garbe[2], *[1]Bundeswehr Research Institute for Protective Technologies and NBC-Protection (WIS), Germany, [2]Leibniz Universität Hannover, Germany*		
12:00	**PS 6** **Recent advances in HPEM Standards - 2016** R Hoad[1], W A Radasky[2], *[1]QinetiQ, UK, [2]Metatech, USA*		
12:30	**PS 7** **Advances in transient response modelling of multi-conductor transmission lines** Y Xie[1], Z Du[1], J Guo[1], Z Li[1], [1]*Xi'an Jiao tong University, China*		
13:00	**Lunch and exhibition**		
14:00	**Poster Session 2** Details below		
	Room: Great Hall **Session title:** TC 4 **-** HPEM-IEMI Threats, Effects and Protection -Shielding/Protection/ Propagation of HPEM Threats **Session Chair:** W Radasky*, Metatech Corp., USA* **Session Co-Chair:** R Hoad*, QinetiQ, UK*	**Room:** Pippard Lecture Theatre **Session title:** TC 13 - HPEM - EM Transients in UHV/EHV Transmissions lines and Substations – EM Transients (2) **Session Chair:** X Wu*, State Grid, China* **Session Co-Chair:** W Radasky*, Metatech Corp., USA*	**Room:** Read Lecture Theatre **Session title:** TC 7 - HPEM Analytic and Numerical Modelling - Numerical Modelling (1) **Session Chair:** S Tkachenko*, University of Magdeburg, Germany* **Session Co-Chair:** S Zheng*, Science and Technology on Electromagnetic Compatibility Laboratory, China*
15:00	**7.a.1** **High power radio frequency risk/hazard assessment tool** L Chatt[1], B Petit[1], R Hoad[1], *[1]QinetiQ, UK*	**7.b.1** **Stratified ground effects in the land-ocean geoelectric field during magnetic storms** J L Gilbert[1], *[1]Metatech Corporation, USA*	**7.c.1** **Hypothesis testing for verification of electromagnetic simulation** W N Reynolds[1], A D Greenwood[2], *[1]Stellar Science Ltd. Co., USA, [2]Air Force Research Laboratory, USA*
15:20	**7.a.2** **Shielding effectiveness studies of energy saving windows and coated window panes – a summary** P Ängskog[1,2], M Bäckström[1,3], C Samuelsson[3], B Vallhagen[3], *[1]KTH Royal Institute of Technology, Sweden, [2]University of Gävle, Sweden, [3]SAAB Aeronautics, Sweden*	**7.b.2** **The electromagnetic effect study of GIS enclosure under high frequency electromagnetic pulse** S Chen[1], J Guo[1], S Shen[1], Y Zhou[1], *[1]Xi'an Jiao tong University, China*	**7.c.2** **Software and hardware assessment of FDTD simulations for very large and complex scenes** B Pecqueux[1], P Leyde[1], C Gonzalez[1], J-P Adam[1], *[1]CEA, France*
15:40	**Refreshments and exhibition**		
16:00	**7.a.3** **Shielding effectiveness of screens from polypyrrole conducting layers** R Simniskis[1], Ž Kancleris[1], M Kirsnytė[1], *[1]Centre for Physical Sciences and Technology, Lithuania*		**7.c.3** **JEMS-FDTD and its applications in electromagnetic scattering and coupling by large complex object** H Y Li[1], H J Zhou[1], X F Bao[2], *[1]Institute of Applied Physics and Computational Mathematics, China, [2]Software Centre for High Performance Numerical*

			Simulation, China
16:20	**7.a.4** **RF propagation to targets in maritime environments** F Sonnemann[1], J Urban[1], R Stark[1], *[1]Diehl BGT Defence GmbH & Co. KG, Germany*		
16:40	**Close of day 3**		
19:00 - 22:00	**Conference Dinner, IET London: Savoy Place** Best Student Paper, Early Career Award, Best NOTE Awards, HPEM Fellows		

Poster Session 2 Poster Session Chairs: W Radasky, *Metatech Corp., USA* and D V Giri, *Pro-Tech, US*	
P7	**Analysis of HPEM effects on an automobile by using ultra-wideband pulse generators** J-H Kuk[1], K-H Yun[1], J Lee[1], J S Choi[1], *[1]Agency for Defence Development, Republic of Korea*
P8	**Destruction rate analysis of CMOS Logic IC under the condition of various Pulse and PRF** J W Park[1], J J Bang[1], R W Kim[1], C S Huh[1], J S Choi[1,2], J W Lee1[2], *[1]Inha University, Incheon, [2]Agency for Defence Development, Dajeon*
P9	**Destruction characteristics of semiconductor device** J J Bang[1], J W Park[1], C S Huh[1], J S Choi[1], J W Lee[2], S M Hwang[3], *[1]Inha University, Korea, [2]Agency for Defence Development, Korea, [2]Agency for Defence Development, Korea, [3]Hanhwa Corporation, Korea*
P10	**Analysis of mobile targets in the presence of high-power electromagnetic energy using multiscale, multiphysics techniques** T J Arcuri[1], I Kasperovich[1], A L Drozd[1], *[1]ANDRO Computational Solutions, US*
P11	**Antennas and wireless device interference simulations within a vehicle** D L Edgar[1], O Donadio[1], A Moknache[1], F Bocquet[2], *[1]ANSYS, France*
P12	**Study of transient disturbance on secondary cable due to VFTO** W Zhang[1], *[1]North China Electric Power University, China*
P13	**Periodic structures for novel electromagnetic sources manufactured by 3D printing** A R Phipps[1], A J MacLachlan[1], C W Robertson[1], I V Konoplev[2], A D R Phelps[1], A W Cross[1], *[1]University of Strathclyde, UK, [2]University of Oxford, UK*

Thursday 14 July 2016			
08:30 - 09:00	**Registration and refreshments**		
	Room: Great Hall **Session title:** TC 4 - HPEM-IEMI Threats, Effects and Protection - HPEM Effects on Electronics **Session Chair:** W Radasky, *Metatech Corp., USA* **Session Co-Chair:** R Hoad, *QinetiQ, UK*	**Room:** Pippard Lecture Theatre **Session title:** TC 5 - HPEM System Level Protection and Testing - HPEM Hardening **Session Chair:** A Kaelin, *EMProtec, Switzerland* **Session Co-Chair:** Y Xie, *Xi'an Jiao tong University, China*	**Room:** Read Lecture Theatre **Session title:** TC 7 - HPEM Analytic and Numerical Modelling - Analytical Modelling (2) **Session Chair:** S Tkachenko, *University of Magdeburg, Germany* **Session Co-Chair:** S Zheng, *Science and Technology on Electromagnetic Compatibility Laboratory, China*
09:00	**8.a.1** **Investigating thermal breakdown and immunity analysis on a silicon-based low-noise amplifier under HPM pulses** L Zhou[1], S Zhang[1], W-Y Yin[2], *[1]Shanghai Jiao tong University,*	**8.b.1** **Aircraft EMP hardening in the 21st century - EMP hardening as a part of an integrated E3 design** W D Prather[1], *[1]Air Force Research Laboratory, USA*	**8.c.1** **Semi-analytical model for predicting the electromagnetic field around a NEMP simulator** N Mora[1], B Daout[1], M Sallin[1], F Trotti[1], C Romero[1], *[1]Montena Technology, Switzerland*

	China,[2]Zhejiang University, China		
09:20	**8.a.2** **Transient thermal analysis of MOSFET in metallic enclosure illuminated by electromagnetic pulse** Y N Kim[1], J W Lee[2], J S Choi[2], D S Kim[2], J G Yook[1], *[1]Yonsei University, South Korea, [2]Agency of Defence Development, Republic of Korea*	**8.b.2** **Mission-critical systems electromagnetic pulse immunity testing for MIL-STD-4023 shipboard applications** W J Scott[1], M R Rooney[2], *[1]Engility Corporation, USA, [2]Defense Threat Reduction Agency, USA*	**8.c.2** **Analytical iterative solution of the EMP coupling to lossless multi-conductor transmission lines in time domain** J Guo[1], Y Z Xie[1], Y M Li[1], *[1]Xi'an Jiao tong University, China*
09:40	**8.a.3** **Car-stopping concept based on an airborne HPM source** F Christophe[1], D Prost[1], L Guibert[1], C Martel[1], J-P Parmantier[1], *[1]ONERA, France*	**8.b.3** **Protection of commercial infrastructure against HEMP and IEMI** A J Nalborczyk[1], D J Rimmer[1], W Turner[1], *[1]MPE Ltd, UK*	**8.c.3** **Application of Singularity Expansion Method (SEM) to non-uniform transmission lines** S V Tkachenko[1], J B Nitsch[1], F Middelstaedt[1], M Magdowski[1], D Hellge-Theune[1], H-J Sheibe[1], R Rambousky[1], R Vick[1], *[1]Otto-von-Guericke University, Germany*
10:00	**8.a.4** **Generation dependence of ICT device IEMI vulnerability** C Adami[1], B Jörres[1], M Jöster[1], T Pusch[1], M Suhrke[1], A Taenzer[1], *[1]Fraunhofer INT, Germany*	**8.b.4** **Electromagnetic Pulse (EMP) mitigation devices in short-pulse laser experiments** M Bardon[1], F Lubrano[1], J L Dubois[3], J Ribolzi[1], D Gontier[2], S Depierreux[2], A Compant la Fontaine[2], C Rubbelynck[2], S Champeaux[2], O Cessenat[1], S Hulin[3], V Tikhonchuk[3], *[1]CEA/CESTA, France, [2]CEA/DIF, France, [3]CELIA, France*	**8.c.4** **Propagation of high-frequency current waves along transmission lines with stochastic geometry** S V Tkachenko[1], J B Nitsch[1], R Vick[1], *[1]Otto-von-Guericke University, Germany*
10:20	**8.a.5** **E-Learning tool for introduction to IEMI risk and techniques for mitigation** J Godø[1], I Junqua[2], *[1]Forsvarsbygg, Norway, [2]ONERA, France*	**8.b.5** **High performance conducted filtering to 50GHz** W H Turner[1], *[1]MPE Ltd, UK*	**8.c.5** **Bianisotropic scalar potential formulation and depolarizing dyad anomaly** *M J Havrilla[1], [1]Air Force Institute of Technology, USA*
10.40		**8.b.6** **Cost-effectively managing Functional Safety and other risks which could be caused by electromagnetic disturbances** K Armstrong[1], [1]Cherry Clough Consultants Ltd, UK	
11:00	**Refreshments**		
	Room: Great Hall **Session title:** TC 4 - HPEM-IEMI Threats, Effects and Protection - HPEM Impact Evaluations **Session Chair:** W Radasky, *Metatech Corp., USA* **Session Co-Chair:** R Hoad, *QinetiQ, UK*	**Room:** Pippard Lecture Theatre **Session title:** TC 5 - HPEM System Level Protection and Testing - HPEM Testing **Session Chair:** Y Xie, *Xi'an Jiao tong University, China* **Session Co-Chair:** M Backstrom, *Saab Group, Sweden*	
11:30	**9.a.1**	**9.b.1**	

	Impact evaluation of conducted UWB transients on terminal loads in a network B Li[1], D Månsson[1], *[1]KTH Royal Institute of Technology, Sweden*	**Quality criteria for NEMP test environments** F Sabath[1], S Potthast[1], *[1]Bundeswehr Research Institute for Protective Technologies and NBC-Protection (WIS), Germany*	
11:50	**9.a.2** **Intentional EMI mechanisms on a wireless receiver** S van de Beek[1], H Schipper[2], F Leferink[1,2], *[1]University of Twente, Netherlands, [2]Thales, Netherlands*	**9.b.2** **Alternative treatments of shielded cables entering a shielded building** E B Savage[1], W A Radasky[1], *[1]Metatech Corporation, USA*	
12:10	**9.a.3** **Predicting and modelling high power electromagnetic effects on electronics** T J Clarke[1], J Lawrance[1], H Pohle[1], J MacGillivray[1], D Guillette[1], E Landreth[1], *[1]Air Force Research Laboratory, USA*	**9.b.3** **UWB-IEMI laboratory tests of single-stage and multi-stage lightning and HEMP-protection devices** A W Kaelin[1], M Nyffeler[2], *[1]EMProtec GmbH, Switzerland, [2]armasuisse Science + Technology, Switzerland*	
12:30	**9.a.4** **Developing predictive capability for upset of digital systems in HPEM environments** J Lawrance[1], T Clarke[1], H Pohle[1], J MacGillivray[1], D Guillette[1], E Landreth[1], *[1]Air Force Research Laboratory, USA*		
12:50	**Lunch**		
		Room: Pippard Lecture Theatre **Session title:** TC 5 - HPEM System Level Protection and Testing - HPEM Threat Analysis **Session Chair:** M Backstrom, *Saab Group, Sweden* **Session Co-Chair:** A Kaelin, *EMProtec, Switzerland*	**Room:** Read Lecture Theatre **Session title:** SS 02 - Transformative EM Materials & Structures - Applications and Effects **Session Chair:** R Seviour, *Huddersfield University, UK* **Session Co-Chair:** E Schamiloglu, *University of New Mexico, USA*
13:50		**10.b.1** **Lessons learnt from IEMI detector deployments** D L Herke[1], L Chatt[1], B J Petit[1], R Hoad[1], *[1]QinetiQ Ltd, UK*	**10.c.1** **Double-positive metamaterials composites with high dielectric strength** R D Curry[1], K M Noel[1], A M Pearson[1], *[1]University of Missouri, USA*
14:10		**10.b.2** **The IEMI threat and a practical response** W H Turner[1], *[1]MPE Ltd, UK*	**10.c.2** **Artificial material design for high power microwave applications** A Hopper[1], R Seviour[1], *[1]University of Huddersfield, UK*
14:30		**10.b.3** **PROGRESS project:**	**10.c.3** **Effects of RF electromagnetic**

		Vulnerability and protection of GNSS ground-based infrastructures N Ribiere-Tharaud[1], J C Joly[1], A Rouquand[1], S Schopferer[2], C Michalski[2], M Schimmerohn[2], S Crabbe[3], *[1]CEA, France, [2]Fraunhofer EMI, Germany, [3]Crabbe Consulting Ltd, Germany*	**fields on optically non-linear nanostructured plasmonic surfaces** A J Waddie[1], A Dzipalski[1], I Thurston[2], M Moutrie[2], M R Taghizadeh[1], *[1]Heriot-Watt University, UK, [2]Atomic Weapons Establishment, UK*
14:50		**10.b.4** **Validation of a simple propagation model for high power mesoband pulsed sources** B Petit[1], L Chatt[1], R Hoad[1], *[1]QinetiQ, UK*	
15:10	**Refreshments**		
	Room: Great Hall **Session title:** TC 9 - UWB Antenna Design, Radiation - Measurements and Propagation **Session Chair:** D V Giri, *Pro-Tech, US* **Session Co-Chair:** E Farr*, Farr Research, US*	**Room:** Pippard Lecture Theatre **Session title:** TC 5 - HPEM System Level Protection and Testing - HPEM Standardisation **Session Chair:** Y Xie*, Xi'an Jiao Tong University, China* **Session Co-Chair:** M Backstrom*, Saab Group, Sweden*	**Room:** Read Lecture Theatre **Session title:** SS 02 - Transformative EM Materials & Structures - Structures and Properties **Session Chair:** R Seviour*, Huddersfield University, UK* **Session Co-Chair:** E Schamiloglu, *University of New Mexico, USA*
15:30	**11.a.1** **Single helical antenna and linear arrays excited by nanosecond bipolar pulses** V I Koshelev[1], Y A Andreev[1], A A Petkun[1], M Y Zorkaltseva[1], *[1]Institute of High Current Electronics SB RAS, Russia*	**11.b.1** **Development of an IEC HEMP/IEMI installation hardening guideline document** W A Radasky[1], *[1]Metatech Corporation, USA*	**11.c.1** **Advances in all-metal metamaterial slow wave structure design for high power microwave generation** E Schamiloglu[1], S C Yurt[1], S D Prasad[1], M I Fuks[1], *[1]University of New Mexico, USA*
15:50	**11.a.2** **Development of an impulse radiating antenna** S Wang[1], Y Xie[1], M Gao[1], *[1]Xi'an Jiao tong University, China*	**11.b.2** **An overview: MIL-STD-4023 HEMP protection for military surface ships** M R Rooney[1], *[1]Defense Threat Reduction Agency, USA*	**11.c.2** **Measurements and modelling of planar periodic lattices for electromagnetic applications** A J MacLachlan[1], A R Phipps[1], C W Robertson[1], I V Konoplev[2], A W Cross[1], A D R Phelps[1], *[1]University of Strathclyde, UK, [2]University of Oxford, UK*
16:10	**11.a.3** **The effect of rounding the corners on the transient response of scattering structures** P D Smith[1], A J Markowskei[1], *[1]Macquarie University, Australia*		**11.c.3** **Dielectric characteristics of as-prepared carbon black-epoxy nanocomposites in medium frequency range** R Jan[1,2], A Hussain[2], *[1]National University of Sciences and Technology, Pakistan, [2]Centre for Excellence in Science and Technologies, Pakistan*
16:30	**Close of conference**		