Call for Papers

Infrared Systems
Remote Sensing
Biological and Chemical Sensing
Unmanned/Unattended Sensors
Imaging and Display Technologies
Optical Materials and Technologies
Millimetre Wave and Terahertz Sensors
Call for Papers

SPIE Europe
Security + Defence

Conferences + Courses: 15–18 September 2008
University of Wales Institute, Cardiff (UWIC)
Cardiff, UK

PRESENT YOUR RESEARCH — PUBLISH IN THE WORLD BODY OF SCIENTIFIC LITERATURE

Showcase your work in a major international forum for the security and defence industries.

Present your work
Share your latest research discoveries with colleagues and industry leaders. Bridge the divide between fundamental optical science and the application of the underpinning technologies in advanced defence and security systems. This Event will be co-located with SPIE Europe Remote Sensing allowing you to reach a prestigious interdisciplinary audience of top researchers from industry, academia, and the military.

Collaborate with colleagues
Meet potential co-authors or collaborators. Get immediate, face-to-face feedback from your colleagues in the SPIE Europe Security+Defence community, while benefiting from the presence of colleagues working in remote sensing.

Publish your research
Within days or weeks of presentation your work will be published in the SPIE Digital Library and be distributed through leading scientific databases and indexes. Become part of the scientific literature of the world. U.S. Patent literature cites over 40,000 SPIE publications, with 161 universities and 2,785 non-academic organizations from 43 different countries citing SPIE papers.
Critical Dates

Abstract Due Date: 10 March 2008

Manuscript Due Date: 18 August 2008

Please Note: Submissions imply the intent of at least one author to register, attend the symposium, present the paper as scheduled, whether it is an oral or poster presentation, and submit a full manuscript.

Papers from post-meeting Proceedings of SPIE are published in the SPIE Digital Library starting 2 to 4 weeks after the meeting. Print volumes are published and shipped starting 6 weeks after the meeting, and symposium CD-ROMs are shipped starting 8 weeks after the meeting.

Center cover image: Terahertz detection image courtesy of Thruvision LTD.
Plan now to participate

The Organising Committee of SPIE Europe Security and Defence invites you to submit papers to this exciting meeting: this event crosses the divide between fundamental optical science and the application of the underpinning technologies in advanced defence and security systems. This symposium will be co-located with SPIE Europe Remote Sensing, which enhances opportunities to identify new partners for collaboration from related fields of activity. Showcase your multi-disciplinary research in a major international forum.

New challenges continue to emerge as strategies such as network-enabled capability/network-centric warfare evolve. Similarly, the problems posed by asymmetric warfare, by military operations in the urban theatre and in peace-keeping are changing the way that the fundamental and emerging technology base is likely to be exploited in the future. This unique symposium will offer many opportunities to network with colleagues from a variety of disciplines in academia, industry, and government from all over the world, while still maintaining a distinctly European focus.

SPIE Europe Security and Defence will consider all aspects of this evolving field:

- Materials
- Optical devices
- Enabling technologies
- Advanced concepts
- Sensors (including their design, fabrication and exploitation)
- Silicon micro-systems
- Nanotechnology
- Bio-inspiration and biomimetics
- Signal processing and control
- Laser technologies and their application
- Electro-optic systems and concepts
- Modelling and simulation

Other relevant topics are also welcome to ensure a vibrant meeting. Engineers and researchers from government, military, academia and the commercial sector will discuss current status and future directions of a wide range of R&D projects.

Participation from academic institutes is especially encouraged; graduate and undergraduate student researchers are invited to submit their work and interact with international leaders. All papers presented at this event will appear in the SPIE Digital Library.

We look forward to seeing you at SPIE Europe Security and Defence, where opportunities abound for combining cutting-edge science and technology with the beauty of the historical capital of Wales, Cardiff.

Symposium Chair:
David H. Titterton, Defence Science and Technology Lab. (United Kingdom)
Unmanned/Unattended Sensors and Sensor Networks V (SD101)

Conference Chair: Edward M. Carapezza,
Univ. of Connecticut

Programme Committee: James S. Albus,

This conference will offer an opportunity to explore and promote advances in all aspects of unmanned and unattended sensors and their uses and benefits for peacetime and wartime scenarios. The objectives of this conference are to foster interest by the potential customer community, and partnerships, and technology sharing by the research, development, and acquisition communities.

Papers are solicited related to unattended ground and ocean sensors in the following areas:

- application concepts for unattended ground and ocean sensors (e.g. force protection, counter and nonproliferation, treaty verification, cooperative monitoring, drug/law enforcement, counter-terrorism, border protection, replacement for explosive mine systems, etc.)
- unattended and micro-unattended ground sensor technologies for both ground (built up and open terrain) and ocean/littoral environments including imaging (visible and IR), seismic, acoustic, magnetic, turbulence, chemical and biological sensors and related sensor systems.
- environmental models (seismic, acoustic, etc) and signal source models and characterizations (aircraft, ground vehicles, humans, animals, facilities, etc), unattended and micro-unattended ground sensor technologies for both ground (built up and open terrain) and littoral environments including imaging, seismic, acoustic, magnetic, turbulence, chemical and biological sensors and related sensor systems.
- smart sensor, computationally efficient signal and data processing algorithms (e.g. detection, classification, ID, tracking, data fusion, data compression, array initialization and organization, and power management) and related intelligent processing technologies mobile unattended and micro-unattended ground and ocean sensors
- sensor exfiltration and command and control technologies including communications and tag related technologies for systems of unattended ground sensors (e.g. mobile and implanted devices including control, information transmission, and multi-platform and sensor networking approaches and (technologies)
- ground and ocean sensor platform developments and system-level technologies and concepts (e.g. modularity, concealment, power management and storage, platform management, emplacement, countermeasures, and tamper proofing). unattended sensor deployment technologies (e.g. air delivery, wall attachment, wall climbing, submerged attachments)
- systems’ integration
- biologically inspired sensors
- novel power and energy conversion systems for sensors (e.g. solar, wind, ocean, microbial, motion parasitic).

Papers are solicited related to unmanned ground, air and ocean sensor systems, vehicles and associated sensor networks in the following topic areas:

- intelligent vehicle systems including embedded world and vehicle realtime control models and architectures
- machine perception, path planning and navigation
- intelligent vehicle collaboration and coordination with other vehicles and fixed sensor systems
- vehicle mobility, motion control, and novel mobility platforms
- sensor deployment and recovery technologies for unmanned vehicle operations
- vehicle payloads and mission execution
- operator interface, human-robot interactions, man/machine interface
- biologically inspired air, ground and underwater robotic and sensor systems
- vehicle sensor configurations for enhanced mobility, collaboration, and perception
- sensor fusion, sensor field management, and integration
- sensor and vehicle communication systems (e.g. underwater acoustic comms, RF, laser, etc)
- system performance modeling and simulation
- government Programmes: technical and performance challenges
- commercial and civilian UAVs, UGVs, and UUVs.

Your work is globally available to cutting-edge researchers

SPIEDigitalLibrary.org
Distributed through leading scientific databases and indexes.
Electro-optical and Infrared Systems: Technology and Applications (SD102)

Conference Chairs: David A. Huckridge, QinetiQ Ltd. (United Kingdom); Reinhard R. Ebert, Forschungsgesellschaft für Angewandte Naturwissenschaften e.V. (Germany)

Programme Committee: Christopher C. Alexay, Chris Alexay Optical Design; Jan Y. Andersson, Acreo AB (Sweden); Gordon A. Cain, Octec Ltd. (United Kingdom); David J. Clarke, SELEX Sensors and Airborne Systems Ltd. (United Kingdom); Stefania De Vito, Galileo Avionica Spa (Italy); Peter N. J. Dennis, QinetiQ Ltd. (United Kingdom); Per S. Fredin, Saab Bofors Dynamics AB (Sweden); Norman S. Kopeika, Ben-Gurion Univ. of the Negev (Israel); José M. López-Alonso, Univ. Complutense de Madrid (Spain); John F. Parsons, Thales Optronics Staines Ltd. (United Kingdom); Stanley R. Rotman, Ben-Gurion Univ. of the Negev; Christopher W. Slinger, QinetiQ Ltd. (United Kingdom)

Developments in electro-optic and infrared systems are key to providing enhanced capability to military forces. Advances in these technologies have been aimed not only at increasing system performance but also in making the systems accessible to more users through reductions in size, weight, and cost. These improvements will produce operational benefits in current applications as well as opening up new applications for E-O and IR systems in both the military and commercial environments.

E-O and IR systems are also likely to benefit from recent advances in material research, for example new carbon based materials, nano-materials and metamaterials. These new materials promise new EO properties that could significantly change the way E-O and IR systems are designed and built, e.g. new detector systems with enhanced properties or negative refractive index materials which could radically change the way optics are designed.

This conference is aimed at bringing together researchers in the fields of E-O and IR sensor technologies, including related materials technologies, and those developing systems for defence and dual-use applications. Systems and technologies of interest cover the wavebands for E-O and IR systems in both the military and commercial environments.


Programme Committee: Jeffrey W. Grantham, Northrop Grumman Corp.; Robert J. Grasso, BAE Systems; Dennis K. Killinger, Univ. of South Florida; Vasyl V. Molebny, National Technical Univ. of Ukraine (Ukraine); C. Russell Philbrick, The Pennsylvania State Univ.; Peter N. Randall, QinetiQ Ltd. (United Kingdom); Philippe Réfrégier, Institut Fresnel (France); Monte D. Turner, Defense Advanced Research Projects Agency; Maria J. Yzel, Univ. Autónoma de Barcelona (Spain)

Over the last half century, electro-optical remote sensing has developed into an essential military technology. The efficiency and efficacy of thermal imagers, light amplification sights, laser designators and rangefinders, and video trackers have been well established. New technologies now permit thermal imaging systems to operate in new spectral domains with improved efficiency. Passive RF devices can image through walls, and laser systems have moved past simple rangefinders to permit high-fidelity, three-dimensional imaging at extended ranges. Synthetic aperture optical radar has the potential to significantly extend the range of three-dimensional imaging. Laser Doppler vibrometry can now identify vehicles well beyond visual ranges. Passive hyperspectral imaging and remote laser spectroscopy can identify material types and even detect the presence of specific chemical species.

Meanwhile, fully automatic target detection, recognition, and identification have been highly desirable, but equally elusive objectives. The development of advanced and affordable signal and high-speed data processing, coupled with these new sensing technologies, now opens the opportunity for both automatic and autonomous target detection, recognition and identification. High-speed digital processing and advanced algorithms enable the fusion of the data from multiple sensors having different resolutions, perspectives and modes of operation at the pixel, feature or detection level to enhance the recognition and identification process. These advances are coming available at a very opportune time. Low-intensity conflicts, unconventional warfare, urban combat, border security and the continued rise in terrorism has created a need for new and innovative application of these technologies in very unconventional ways. As a result, these technologies are finding their way into civil defense, law enforcement and counterterrorism efforts.

This conference will focus on new and improved methods, techniques, and applications of electro-optical remote sensing. Recent advances which make electro-optical remote sensing technically or economically viable for an even wider variety of applications will be emphasised. However, the development of technology cannot be effective without serious consideration of the applications of that technology. Papers on military, industrial, and commercial applications are solicited, including:

Electro-optical Remote Sensing (SD103)
Technologies for Optical Countermeasures (SD104)

Conference Chairs: David H. Titterton, Defence Science and Technology Lab. (United Kingdom); Mark A. Richardson, Cranfield Univ. (United Kingdom)

Programme Committee: Brian Butters, Chenrring Countermeasures Ltd. (United Kingdom); Stuart S. Duncan, SELEX Sensors and Airborne Systems Ltd. (United Kingdom); Anton Kohlhe, FGAN-FOM (Germany); Stephen P. McGeoch, Thales Optronics Ltd. (United Kingdom); Julie Poupard, Délégation Générale pour l’Armement (France); Sandy J. Smith, European Office of Aerospace Research and Development (United Kingdom); Ove K. Steinvall, Swedish Defence Research Agency (Sweden); Mark R. Taylor, Defence Science and Technology Organisation (Australia); Jonathan A. Terry, Univ. of St. Andrews (United Kingdom); Hans D. Tholl, Diehl BGT Defence GmbH & Co. KG (Germany)

The purpose of this conference is to provide a technical forum to enable increased awareness of optical countermeasure techniques and technologies. Optical countermeasure techniques have been used for thousands of years to provide a force multiplier on the battlefield. The use of optical techniques is attractive as they often offer a simple and cost-effective method of defence.

The advent of the laser offered dramatic changes to all aspects of warfare, but other technologies have proved to be invaluable. This symposium offers the opportunity to consider the impact of laser technology and other optical techniques on operations on the battlefield. Moreover, this symposium brings together the optical community at large and enables a discussion of novel applications of emerging techniques and technologies.

The objective of this conference is to bring together engineers and scientists from academia, industry and government from around the world to exchange results and ideas for future advancement of electro-optical remote sensing. Oral papers may be from 5 to 20 minutes each. Authors should indicate the amount of time desired for their presentation with the submission of the abstract.

Submit your abstract today!
spie.org/esdcall
Call for Papers

Optically Based Biological and Chemical Detection for Defence (SD105)

Conference Chairs: John C. Carrano, Luminex Corp.; Arturas Zukauskas, Vilnius Univ. (Lithuania)


With the increasing threat of the use of biological and chemical weapons by either terrorist organizations or rogue states, there is renewed interest in the development of CWA and BWA sensors. There is a compelling need for fully integrated and networked environmental sensor solutions that provide for both early warning trigger type detectors coupled with sample collection, and finally confirmatory detectors that can provide accurate species identification. In particular, there is a pressing need for compact, reliable, and rapid biological and chemical agent sensors that are also economical and practical in their operation (e.g. continuous monitoring with limited use of consumables, and little or no operator involvement). In addition to environmental sensors, the development of easily deployable medical diagnostic instruments capable of determining whether an individual has been exposed to a biological pathogen, and the specific nature of the pathogen and its extent of infection, are equally critical to an overall biodefense architecture.

Optically based chemical and biological sensors afford a unique opportunity to address these mission critical needs. The defence of military forces in the field, or defence of the homeland will require special attributes for which optically-based sensors may be particularly well suited. The objective of this conference is to provide a forum for researchers, product engineers, military/government officials, and system developers to present and discuss the latest developments in optically-based biological and chemical sensor and diagnostic technologies and applications.

Papers are solicited on the following and related topics:
- spectroscopic techniques spanning the deep UV to the far IR
- advances in semiconductor optoelectronic devices applicable to biological and/or chemical sensing
- exploitation of the spectral and spatial characteristics of agent signatures
- Lab-on-Chip concepts and devices (New!)
- novel chemical agent sensor systems
- novel biological agent sensor systems
- automation solutions for medical diagnostics
- agent phenomenology
- trigger detectors
- confirmatory detectors
- diagnostic instruments
- stand-off and point detector systems
- total integrated sensor solutions
- new air sampling technologies
- algorithms for improved spectral discrimination
- simulation tools for modeling sensor performance
- sensor metrics and measurement protocols
- pathogen imaging techniques
- spectral characteristics of relevant backgrounds
- novel optical designs for bio/chem sensors
- techniques for false alarm rate (FAR) reduction.

Critical Dates

Abstract Due Date: 10 March 2008
Manuscript Due Date: 18 August 2008

Please Note: Submissions imply the intent of at least one author to register, attend the symposium, present the paper as scheduled, whether it is an oral or poster presentation, and submit a full manuscript.

Papers from post-meeting Proceedings of SPIE are published in the SPIE Digital Library starting 2 to 4 weeks after the meeting. Print volumes are published and shipped starting 6 weeks after the meeting, and symposium CD-ROMs are shipped starting 8 weeks after the meeting.

Two events—one registration fee!

SPIE Europe Security + Defence
is co-located with
SPIE Europe Remote Sensing
Advanced Free-Space Optical Communication Techniques and Applications (SD106)

Conference Chair: Vincent A. Handerek, Leslie C. Laycock, BAE Systems plc (United Kingdom)

Programme Committee: Shlomi Arnon, Ben-Gurion Univ. of the Negev (Israel); Aniceto M. Belmonte, Univ. Politécnica de Cataluña (Spain); G. Charmaine Gilbreath, Naval Research Lab.; Leslie C. Laycock, BAE Systems plc (United Kingdom); Jérôme J. D. Loicq, Univ. de Liège (Belgium); Bertrand Noharet, Acreo AB (Sweden); Andrew M. Scott, QinetiQ Ltd. (United Kingdom); Harald Weinfurter, Ludwig-Maximilians-Univ. München (Germany)

Free-space optical communication provides high-capacity data links in defence and security applications. This conference will provide a forum for all professionals involved with free-space optical communication technologies and systems. The conference will cover subjects related to research and technology advances in components and systems, and provide an overview useful to the laser communication specialists as well as communication and laser system engineers, scientists, and managers. Papers on government and commercial programmes, system requirements, technology and subsystem advancements, history of past free-space optical communication systems, and finally, analysis of present and future systems are encouraged.

Original papers are solicited on, but are not limited to, the following topics:

• space-based systems
• terrestrial and airborne links
• modulation techniques and formats
• pointing, acquisition, and tracking
• atmospheric effects and compensation techniques
• transmitters, receivers, and subsystems
• opto-electronic components supporting free-space optical communications
• laboratory demonstration hardware
• present and future systems
• modulated retroreflective communications
• history of past free-space optical communication systems
• quantum cryptography
• network of sensors
• miscellaneous applications, including identification friend or foe, integration with distributed ground sensors.
The area of microwave photonics is concerned with the control and processing of RF/microwave signals, but is closely related to the domain of high-bit-rate digital signal communication. The potential benefits afforded by the processing of signals in the optical domain by superimposition of RF signals on an optical carrier are well established. These emerge as a result of the parallelism of optical processes, which lend themselves, for example, to fast array processing. Optoelectronic systems can operate with instantaneous bandwidths beyond 40GHz whilst also providing infinitely programmable time delays. However, despite such promise, progress continues to be limited because of shortfalls in areas such as dynamic range, spurious noise effects and phase stability. Solutions are required to overcome such shortfalls, both at the system architecture and component level.

Improved active and passive components are required, including laser sources, modulators and photodetectors. The conference seeks papers ranging from the physics of photonic processing (e.g. exploiting the slowing of light, frequency comb generation etc.) and advanced component technologies, to key application areas. The latter include antenna remoting, frequency and impedance matching to arbitrary antenna structures, true time delay beam forming for advanced radars/millimetre wave systems (especially those working in high clutter environments), arbitrary waveform generation, RF front-ends, ultra wide band technologies, receiver channelising, accurate time references etc.

In the area of display technology, flat panel devices now underpin the human-machine interface. Liquid crystal devices and digital light projection engines are ubiquitous, but new formats are appearing notably those based on light emitting organic materials. The desire to develop flexible displays is driving new paper concepts. For handheld devices, there is need to reduce power consumption and new display architectures are emerging such as those based on zenithal bistable technologies.

Submit your abstract today!  
spie.org/esdcall
Original papers are solicited, in the following areas of activity:

- high-speed lasers, modulators, switches, and detectors
- advanced arrayed detector concepts, including on-chip optics and processing
- architectures and techniques for discriminative imaging, including active imaging and and imaging through turbulence
- optical amplifiers and nonlinear optics for microwave photonics
- optical interconnects, and the packaging and integration of high-speed components and hybrid sub-systems
- optoelectronic generation of microwave and millimeter wave signals, frequency comb generation
- optoelectronic signal processing, including slow light processes, time delay beam forming, programmable filtering, correlation, and spectrum analysis
- interface between photonics and digital electronics in RF systems, and areas of application, including advanced radar
- photonic crystals and fibers
- subwavelength optics, metallo-dielectric structures, metamaterials, and their application
- micro-optical-electro-mechanical systems
- novel approaches to micro- and nanophotonics
- display technologies including liquid crystal, plasma, OLED, EL displays, liquid crystal on silicon, flexible and paper displays
- novel low-power and 3D display technologies
- helmet mounted displays
- light sources including LEDs, lasers, backlight architectures, etc.
- optical components including coatings, films, polarisation control, and recovery systems
- viewing angle enhancement systems
- colour generation.

Millimetre Wave and Terahertz Sensors and Technology (SD108)

Conference Chairs: Keith A. Krapels, Office of Naval Research; Neil A. Salmon, QinetiQ Ltd. (United Kingdom)

Programme Committee: Amir Abromovich, The College of Judea and Samaria (Israel); Steve Gunderson, The US Naval Facilities Command Engineering Services Ctr. (USA); Markus Peichl, DLR Standort Oberpfaffenhofen (Germany); Douglas T. Petkie, Wright State Univ. (USA); Christopher A. Schuetz, Univ. of Delaware (USA)

This conference provides a technical forum for increased awareness of enabling component technology developments, new and novel sensors, signal and image processing, and specific applications in the spectral band from 30GHz to 10THz.

Heretofore, most imaging has been done at optical and infrared wavelengths. In those bands, there are practical, affordable technologies which have been available for many years. However, at longer wavelengths, in the mmW and Thz bands, components and systems architectures are still emerging, offering new and complementary sensing modalities in terms of radiation propagation characteristics and information content sensed.

Passive millimeter wave imaging (1 millimeter to 10 millimeters) offers the opportunity to image in both fair and poor weather conditions. Furthermore, the ability to penetrate dielectrics has given rise to new applications in security scanning where hidden weapons or contraband can be detected under clothing or hidden packages.

Terahertz sensing, in the range between 300 GHz to 10 THz (1 millimeter to 30 micrometers), is attracting increased interest from military and security fields. This has to a large degree been stimulated by developments in novel detector and source technologies. These have lead to many new potential applications. There has also been exciting progress and new results in THz chemical and biological signature sensing and in the field of medicine.

Papers are solicited in the following broad areas of component technologies, sensors and applications:

- component technology: receivers, amplifiers, detectors, heterodyne mixers, sources, transmission lines and the associated packaging
- enabling technology: compressive sensing, MEMS, nanostructure and nanotechnology and photonic and optoelectronic technologies
- modeling, simulation and phenomenology
- imaging systems
- aircraft landing in poor/no visibility and ground taxing
- concealed weapons and contraband detection
- handheld, portal and stand-off screening systems
- adverse weather intelligence, surveillance and reconnaissance imaging
- biomedical imaging
- driving/navigation on land and sea
- image and signal processing
- resolution enhancement/super-resolution
- spectroscopy and signatures
- non-imaging military applications
- ballistic missile (launch)/warhead detection/tracking
- stand off mmW threat warning systems
- mmW radar
- civil/commercial remote sensing
- oil spill detection/tracking
- earth observation
- natural disaster assessment.
Optical Materials in Defence Systems Technology (SD109)

Conference Chairs: James G. Grote, Air Force Research Lab.; Francois Kajzar, Univ. d'Angers (France); Mikael Lindgren, Norwegian Univ. of Science and Technology (Norway)

Programme Committee: Chantal Andraud, ENS Lyon (France); Antoni Mitus, Wroclaw Technical Univ. (Poland); Ileana Rau, Politehnika Univ. of Bucharest (Romania)

This conference will seek to form an overview of the role that new and established optical materials technologies can play in the development of new defence systems. The aim is to review optical materials R&D in progress in both Europe and the USA to promote closer collaboration and awareness of common objectives and potential advances. It will also seek to bring together researchers from different materials science areas and the design of novel hybrid materials. The conference should be of interest to materials project managers, senior scientific staff and materials producers in Europe and the USA.

Papers should focus on short technology reviews or recent results of new materials and processes, with particular application to photonic defence technology. The materials may be based on inorganics, organics, polymers, biological systems and hybrids of any of these. Papers may address theoretical or practical aspects of the subject. Particular prominence will be given to modeling or assessment of new classes of materials. Fields of study will include:

- solid state laser material
- nonlinear optical materials
- materials for displays and detectors
- ferroelectrics and spintronic materials
- modeling of materials growth processes
- modeling of materials parameters for specific applications
- electroluminescent materials
- photorefractive and photochromic materials and processes
- polymer optical waveguides and fibres
- multiphoton processes
- charge transport in organic materials
- polymer-based field effect transistors
- polymer laser and amplifier materials
- polymer solar cells and photodetectors
- nanophotonic structures
- photonic bandgap materials
- biomolecular recognition materials
- Biopolymer-based photonic and electronic materials.

The Exhibition

The SPIE Europe Security+Defence Exhibition features the enabling technologies and applications of the future. Co-located with SPIE Europe Remote Sensing, this event reaches two distinct yet relevant audiences. Make sure your company is represented at this international exhibition—exchange ideas with leaders in the industry, generate new business, and increase your visibility.

For more information:
In Europe, excluding Germany, Austria and Switzerland
Laurence Devereux
Tel: +44 (0)1372 451340
Fax: +44 (0)1372 750666
Email: laurence@spieeurope.org

In Germany, Austria and Switzerland
Hermann Doster
Tel: +49 (0)7025/841 806
Fax: +49 (0)7025/842 983
Email: hermann@spieeurope.org

In the Americas and Asia
Al Ragan
Tel: +1 360 676 3290
Fax: +1 360 647 1445
Email: spiesales@spie.org

Call for Papers

Critical Dates

Abstract Due Date: 10 March 2008

Manuscript Due Date: 18 August 2008

Please Note: Submissions imply the intent of at least one author to register, attend the symposium, present the paper as scheduled, whether it is an oral or poster presentation, and submit a full manuscript.

Papers from post-meeting Proceedings of SPIE are published in the SPIE Digital Library starting 2 to 4 weeks after the meeting. Print volumes are published and shipped starting 6 weeks after the meeting, and symposium CD-ROMs are shipped starting 8 weeks after the meeting.
Optics and Photonics for Counter-Terrorism and Crime-Fighting (SD110)

Conference Chairs: Gari Owen, Ministry of Defence SA/SD (United Kingdom)

Programme Committee: Joep W. Appels, microLAN B.V. (Netherlands); David J. Barrett, QinetiQ Ltd. (United Kingdom); Robert Bower, Ministry of Defence (United Kingdom); Howard J. Cummins, HMGCC (United Kingdom); Brian E. Foulger, Ministry of Defence SA/SD (United Kingdom); Michael C. Kemp, Iconal Technology Ltd. (United Kingdom); Colin Lewis, Ministry of Defence SA/SD (United Kingdom); Dennis E. Moelman, Consultant (USA)

This conference brings together emerging technologies in the field of optics and photonics applied to problems in counter-terrorism and crime-fighting. Evolving developments now make possible robust and affordable deployments of these technologies. The possibility of passive sensing in relatively small and lightweight systems is of great attraction to the defence and security field. Active sensing also has applications in characterisation of objects. A combination of optical systems with increased processing power on smaller platforms using advanced algorithms make pattern recognition on a large scale (eg face and iris recognition) in challenging environments a realistic possibility. The spectrum over which optical photonic techniques can be used is now extending to the terahertz regime. This provides a possibility for novel imaging systems that have interest resulting form the enhanced transmission of terahertz radiation through barriers. Associated spectroscopic techniques further allow characterisation of materials of interest. Optical signal processing is being used for secure data transmission. Optical quantum cryptography is already commercially available and other techniques such as chaos cryptography is under development.

Original papers are sought on, but not restricted to, the following topics:

- optical design, especially for lightweight and physically small systems
- system concepts for use of optical and photonic systems
- defence and security applications in various spectral regions and the fusing of these technologies (eg terahertz and thermal imaging)
- advanced components for optical and photonic systems
- active laser sensing
- optical communications and quantum cryptography
- imaging technology: optical, infrared, terahertz and millimetre wave
- protective security devices
- algorithms and processing for pattern recognition
- optical storage media
- optical tagging
- biometrics for security applications.
General Information

Venue
University of Wales Institute, Cardiff (UWIC)
200, Western Avenue, Llandaff Campus,
Cardiff, CFS 2YB, Wales, UK
http://www2.uwic.ac.uk/

SPIE Europe Security+Defence and Remote Sensing Conference and Exhibition will be taking place at the University of Wales Institute, Cardiff Llandaff Campus.

UWIC is located on one of the main roads in Cardiff, approximately 10 minutes from Cardiff Railway Station and 30 minutes from the airport by car. The main motorway is the M4 taking junction 29 and following the A48 into the city centre for 8 miles. Bus routes and taxi services are also available.

Technical Programme
Available online June 2008

The comprehensive Advance Technical Programme for this symposium will list conferences, paper titles, and authors in order of presentation; an outline of all planned special events; and hotel and registration information. All those who submit an abstract will receive a copy.

Registration Fee
All participants, including invited speakers, contributing authors, session chairs, co-chairs and committee members must pay a registration fee.

Estimated pre-registration fees for authors and technical participants range from €500 to €800 depending on attendee category and proceedings/CD choice. Estimated student pre-registration fees range from €150 to €220 depending on attendee category and do not include a Proceedings.

Final pre-registration fees will be available in June 2008 both online and in the printed advance technical programme. Fees will increase €75 after the preregistration deadlines (€20 for students).

Courses
Take advantage of educational opportunities by attending an SPIE course. Complete descriptions of related courses will be available in the technical program. To suggest a course topic or instructor, contact John Cain johnc@spie.org

Hotel Accommodation
Details concerning hotel accommodation and hotel reservation forms will be included in the Advance Technical programme.

Letters of Invitation for Visa Process
Authors requiring letters of invitation to obtain travel visas to present their papers may access and print an Invitation Letter Request Form found at this website: http://spie.org/forms/invitationrequest.pdf.

Please fill out a separate form for each person requesting a letter. All letters of invitation will be sent by airmail and PDF email attachment unless a courier account or credit card number with expiration date is provided with the original request. Please allow ample time for processing requests. SPIE is not able to contact embassies in support of an invitation attempting to gain entry to attend an SPIE Europe meeting. Because the application for a visa can be a lengthy process, we recommend that you start your visa application process as soon as you have been notified that your paper has been accepted. We also recommend that you secure your travel visa before registering for the symposium. Cancellations after the pre-registration cut-off can result in a cancellation fee.

SPIE Contingency Student Travel Grants
A limited amount of student travel contingency grants will be awarded based on need. Grant application can be found in the Resources for Students area of SPIE.org, under the Student Travel Grants section. Applications must be received no later than 10 weeks prior to the meeting. Eligible applicants must present an accepted paper at this meeting. Offer applies to undergraduate/graduate students who are enrolled full time and have not yet received their PhD.

Clearance Information
If government and/or company clearance is required to present and publish your presentation, start the process now to ensure that you receive clearance if your paper is accepted.

About Cardiff, Wales

The capital city of Wales for 100 years, Cardiff is a cosmopolitan city where history and culture are complimented by an impressive 21st Century city for visitors to explore and enjoy. Cardiff’s importance and prosperity was forged on Wales’ industrial heritage as one of the world’s busiest ports in the 19th Century exporting iron and coal across the world. Historical points of interest can be found throughout the city and surrounding areas up into the valleys and mountains beyond.

Many European destinations have flight services (including some budget airline operators) into Cardiff Wales International Airport and Bristol Airport with direct links into hubs such as Amsterdam, Paris, Brussels and Berlin. Rail and coach services from London and London Heathrow, Manchester, Birmingham and other locations in the UK can be used to travel to Cardiff.
1. By submitting an abstract, I agree to the following conditions:

- An author or coauthor (including keynote, invited, and solicited speakers) will register at the reduced author registration rate, attend the meeting, and make the presentation as scheduled. (Current SPIE Members receive an additional discount on the registration fee.)
- Authors and coauthors attending the meeting will obtain funding for their registration fees, travel, and accommodations, independent of SPIE, through their sponsoring organizations before submitting abstracts.
- All clearances, including government and company clearance, have been obtained to present and publish. If you are a DoD contractor, allow at least 60 days for clearance.
- SPIE is authorized to circulate your 250-word Abstract for Review to conference committee members for review and selection purposes.
- Accepted 100-word text abstracts may be published in printed and web programs promoting the conference. Please submit only 100-word abstracts that are suitable for publication.
- A full-length manuscript (8-12 pages) for any accepted oral or poster presentation will be submitted for publication in the SPIE Digital Library and conference Proceedings.

2. Prepare to submit:

- Have all contact information (full names, affiliations, addresses, phone numbers, and emails) for your coauthors ready.
- Only original material should be submitted.
- Abstracts should contain enough detail to clearly convey the approach and the results of the research.
- Commercial papers, papers with no new research/development content, and papers where supporting data or a technical description cannot be given for proprietary reasons will not be accepted for presentation in this conference.

3. Submit your abstract online at:

spie.org/esdcall

Browse to locate the conference to which you are submitting or review all conference calls to find the right fit for your abstract.

You will be prompted to sign in to the MySPIE system. If you have a MySPIE account, sign in using your username and password. First-time users of MySPIE can create a new account by clicking on the create new account link.

Review, Notification, Programme Placement

- To ensure a high-quality conference, all abstracts and Proceedings manuscripts will be reviewed by the Conference Chair/Editor for technical merit and suitability of content. Conference Chair/Editors may require manuscript revision before approving publication, and reserve the right to reject for presentation or publication any paper that does not meet content or presentation expectations. SPIE's decision on whether to accept a presentation or publish a manuscript is final.
- The contact author will be notified of abstract acceptance by e-mail no later than 24 April 2008. Manuscript instructions will be included in acceptance notifications.
- Final placement in an oral or poster session is subject to the Chairs' discretion. Instructions for oral and poster presentations will be sent via email to the contact authors of accepted submissions.

Proceedings of SPIE and SPIE Digital Library

- Full-manuscripts will be Chair/Editor-reviewed and published in the Proceedings of SPIE and in SPIE Digital Library.
- Manuscript instructions will be e-mailed to the contact author and are also available from the "Authors and Presenters" link on the conference website.
- Authors must be authorized to transfer copyright of the manuscript to SPIE, or provide a suitable publication license.
- Only papers presented at the conference and received according to publication guidelines and timelines will be published in the conference Proceedings and SPIE Digital Library.
- Published papers are indexed in leading scientific databases including INSPEC, Ei Compendex, Chemical Abstracts, International Aerospace Abstracts, ISI Index to Scientific and Technical Proceedings and NASA Astrophysical Data System, and are searchable in the SPIE Digital Library. Full manuscripts are available to SPIE Digital Library subscribers.

Publish Your Work

Publish your work—fast. Your work will appear in SPIE Digital Library 2 to 4 weeks after the meeting. Contribute to and gain visibility in the most extensive resource available for optics and photonics content containing nearly 246,000 journal articles and proceedings manuscripts. Proceedings of SPIE are referenced in leading scientific databases and indexes. SPIE Digital Library has the highest number of citations for patent applications in optics and photonics.