Infrared Technology and Applications XLV (SI204)

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Rapid advances are taking place today in infrared technologies. These are enabling the development of more capable sensor systems and subsystems that are expected to have improved performance with greater reliability, reduced weight, volume, power consumption, and lower cost. They also open up the application of the technology to new applications, such as self-driving cars. The emphasis in this conference is on the components used in infrared sensor systems. To demonstrate the degree of system performance improvement due to a better technology, the author may compare the performance of the system designed with and without the improved technology. In addition, general-purpose existing sub-systems and systems will be included. Selected applications will be covered, especially in military and security systems, so as to provide continuity between developers of components and systems. This conference will bring together researchers, engineers and students, as well as developers and users of infrared technologies, to discuss improvements in military and paramilitary sensors brought about by the incorporation of advanced technologies and/or new techniques.

Papers solicited for this conference may address infrared technologies such as:
- IR detector materials
- cooled and uncooled Focal Plane Arrays (FPAs)
- cooled and uncooled single element and linear array detectors
- monolithic and hybrid detectors
- two- and three-color detectors
- Quantum dots
- multiband and hyperspectral FPAs
- very large arrays for astronomy and situational awareness
- FPAs for 3D imaging and ranging
- integrated and fused sensors
- FPAs for simultaneous active and passive imaging
- scanning and staring imagers
- low-cost IR sensors for defense applications
- novel concepts for improved IR detection
- in- and behind-the focal plane signal processing electronics
- ROICs, including in-pixel digital ROICs (DROICs) and their use in sensors/systems such as:
  - thermal imagers and infrared search and track (IRST)?
  - microsensors
  - multispectral and hyperspectral imagers
  - image fusion such as combined thermal imaging/low-light-level imaging systems
  - sensors for micro air vehicles and UAVs (including commercial UAVs)
  - threat warning systems
  - airborne navigation, piloting, and precision targeting systems
  - thermal weapons sights (TWS)
  - driver’s vision enhancers (DVE)

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CALL FOR PAPERS

- smart munitions?
- space-based sensors
- missile seekers
- trackers with and without radiation hardening.
- Self-driving cars and other vehicles

SESSIONS BEING PLANNED FOR THE FOUR DAY CONFERENCE:
- cooled FPAs and applications
  - HgCdTe detectors and FPAs
  - InSb and epi-InSb FPAs
  - superlattice, barrier detectors and FPAs
  - high-operating temperature (HOT) detectors
  - QWIP and QDIP FPAs (including Colloidal Quantum Dots, CQDs) and applications
- reduced pixel pitch FPAs
- uncooled IRFPAs and applications
- emerging uncooled detector technologies
- on/near FPA smart image and signal processing
- advanced sensors, technologies, and techniques
- Army, Navy, Air Force and paramilitary infrared R&D
- combined uncooled IR and low-light level integrated sensors
- integrated and fused sensors
- thermal imagers
- development of 3rd generation thermal imagers
- NIR and SWIR imagers and applications
- range-gated imaging and 3D imaging
- IR seaborne, airborne, and ground-based sensor systems
- IR technologies in security.

A SPECIAL SESSION
planned on the use thermal imaging in driverless vehicles made possible by leading-edge military technologies.

Note 1: Only one paper on a given topic will be accepted from each company/institution.

Note 2: Papers should emphasize the technical nature of the topic. Product names and any type of product promotion should be avoided.

Note 3: Please address questions and comments concerning the conference to any one or all of the five Conference Chairs:
andresen@netvision.net.il ; gfulop@maxtech-intl.com; chanson@senseir.com; oainfrared@gmail.com;
mbnguyen@hrl.com

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- 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.
- Please do not submit the same, or similar, abstracts to multiple conferences.

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- The contact author will receive notification of acceptance and presentation details by e-mail no later than 10 December 2018.
- Final placement in an oral or poster session is subject to the Chairs’ discretion.

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Abstracts Due: **3 OCTOBER 2018**
Manuscript Due Date: **20 MARCH 2019**