

Electro-Optical Remote Sensing

Wednesday 12 September 2018

Conference Sessions At A Glance

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- 1: Active Sensing I
- 2: Active Sensing II
- 3: Active Sensing III
- 4: Measurement Techniques
- Posters-Wednesday
- 5: Signal Processing

Important Dates

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Abstract Due:
21 March 2018

Author Notification:
28 May 2018

Manuscript Due Date:
15 August 2018

Conference Committee

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Conference Chairs

[Gary Kamerman](#), FastMetrix, Inc. (United States)
[Ove Steinvall](#), Swedish Defence Research Agency (Sweden)

Program Committee

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[Laurent Hespel](#), ONERA (France)
[Dennis K. Killinger](#), Univ. of South Florida (United States)
[Martin Laurenzis](#), Institut Franco-Allemand de Recherches de Saint-Louis (France)
[Peter Lutzmann](#), Fraunhofer-Institut für Optronik, Systemtechnik und Bildauswertung (Germany)

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[Monte D. Turner](#), Air Force Research Lab. (United States)

WEDNESDAY 12 SEPTEMBER

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Opening Remarks

Wednesday 12 September 2018
8:55 AM - 9:00 AM

Session 1: Active Sensing I

Wednesday 12 September 2018
9:00 AM - 10:30 AM


Session Chair: [Ove Steinvall](#), FOI-Swedish Defence Research Agency (Sweden)

Lasers for remote sensing and tactical applications *(Invited Paper)*

Paper 10796-1

Time: 9:00 AM - 9:30 AM

Author(s): Eric D. Park, Kevin F. Wall, Wenyan Tian, Bhabana Pati, Jeffrey J. Perkins, Logan R. Chieffo, Q-Peak, Inc. (United States)


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Influence of the obscurants and the illumination wavelengths on a range-gated active imaging system performance

Paper 10796-2

Time: 9:30 AM - 9:50 AM

Author(s): Frank M. Christnacher, Jean-Michel Poyet, Emmanuel Bacher, Nicolas Metzger, Stephane Schertzer, Institut Franco-Allemand de Recherches de Saint-Louis (France); Jean-Robert Simard, Defence Research and Development Canada, Valcartier (Canada)


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Mitigation of crosstalk effects in multi-LiDAR configurations

Paper 10796-3

Time: 9:50 AM - 10:10 AM

Author(s): Axel L. Diehm, Marcus Hammer, Marcus Hebel, Michael Arens, Fraunhofer-Institut für Optronik, Systemtechnik und Bildauswertung (Germany)

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Novel high-energy short-pulse laser diode source for 3D lidar systems

Paper 10796-4

Time: 10:10 AM - 10:30 AM

Author(s): Celine Canal, Amaud Laugustin, Andreas Kohl, Olivier Rabot, Quantel Laser (France)

[Add To My Schedule](#) **Coffee Break 10:30 AM - 11:00 AM****Session 2:
Active Sensing II**

Wednesday 12 September 2018


11:00 AM - 12:50 PM

Session Chair: [Robert J. Grasso](#), EOIR Technologies (United States)**Panoramic single-photon counting 3D lidar (Invited Paper)**

Paper 10796-5

Time: 11:00 AM - 11:30 AM


Author(s): Markus Henriksson, Lars Allard, Per Jonsson, FOI-Swedish Defence Research Agency (Sweden)

[Add To My Schedule](#) **Compressive sensing for active imaging in SWIR spectral range**

Paper 10796-6

Time: 11:30 AM - 11:50 AM


Author(s): Gabriela Paunescu, Peter Lutzmann, Daniel Wegner, Fraunhofer-Institut für Optronik, Systemtechnik und Bildauswertung (Germany)

[Add To My Schedule](#) **A dual-frequency coherent noise lidar for robust range-Doppler measurements**

Paper 10796-7

Time: 11:50 AM - 12:10 PM


Author(s): Daniel Onori, José Azaña, Institut National de la Recherche Scientifique (Canada)

[Add To My Schedule](#) **Portable bi-A SWIR/NIR gated viewing system for surveillance and security applications**

Paper 10796-8

Time: 12:10 PM - 12:30 PM


Author(s): Frank M. Christnacher, Emmanuel Bacher, Nicolas Metzger, Stephane Schertzer, Yves Lutz, Jean-Michel Poyet, Martin Laurenzis, Institut Franco-Allemand de Recherches de Saint-Louis (France)

[Add To My Schedule](#) **Shadows in laser imaging and mapping**

Paper 10796-9

Time: 12:30 PM - 12:50 PM

Author(s): Ove Steinvall, Lars Sjöqvist, Per Jonsson, FOI-Swedish Defence Research Agency (Sweden); Sten Edström, Försvarets Materielverk (Sweden)

[Add To My Schedule](#) **Lunch/Exhibition Break 12:50 PM - 2:00 PM****Session 3:
Active Sensing III**

Wednesday 12 September 2018

2:00 PM - 3:20 PM


Session Chair: Kenneth J. McEwan, Defence Science and Technology Lab. (United Kingdom)

Software defined multifunction LIDAR (Invited Paper)

Paper 10796-10



Time: 2:00 PM - 2:30 PM

Author(s): Peter D. Kightley, Matthew J. Croydon, QinetiQ Ltd. (United Kingdom)

[Add To My Schedule](#) **Comparative assessment of different active imaging technologies for imaging through obscurants (Conference Presentation) (Invited Paper)**

Paper 10796-11

Time: 2:30 PM - 3:00 PM


Author(s): Philip Soan, Defence Science and Technology Lab. (United Kingdom); Gerald Buller, Heriot-Watt Univ. (United Kingdom); Mark Silver, Thales Optronics Ltd. (United Kingdom); Ken McEwan, Defence Science and Technology Lab. (United Kingdom); John Parsons, Thales Ltd (United Kingdom); Patrick Feneyrou, Aude Martin, Thales Ltd (France); Rachael Tobin, Aongus McCarthy, Abderrahim Halimi, Susan Chan, Jonathan Leach, Heriot-Watt Univ (United Kingdom) [Add To My Schedule](#) 

Extending the 3D range of a short-wave infrared laser-gated viewing system capable of correlated double sampling

Paper 10796-12

Time: 3:00 PM - 3:20 PM

Author(s): Benjamin Göhler, Peter Lutzmann, Fraunhofer-Institut für Optronik, Systemtechnik und Bildauswertung (Germany)

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Coffee Break 3:20 PM - 3:50 PM

**Session 4:
Measurement Techniques**

Wednesday 12 September 2018


3:50 PM - 4:50 PM

Session Chair: [Martin Laurenzis](#), Institut Franco-Allemand de Recherches de Saint-Louis (France)**Development of inkjet-deposited test standards for optical sensors**

Paper 10796-13

Time: 3:50 PM - 4:10 PM


Author(s): Raphael Moon, U.S. Army (United States); Kevin Hung, Hung Technology Solutions LLC (United States); Erik Roese, Ashish Tripathi, Erik Emmons, Augustus W. Fountain, Joy Ginter, Amanda Dubbs, Jason Guicheteau, U.S. Army (United States)

[Add To My Schedule](#) **Application of nonlinear voxel distribution grid for computational speed-up for linear tomosynthesis reconstruction**

Paper 10796-36

Time: 4:30 PM - 4:50 PM

Author(s): Danil G. Kovtun, Ekaterina B. Gorbunova, Southern Federal Univ. (Russian Federation); A. A. Alikhanov, A. M. Aperkov, Mathematics and Automation Institute of the Russian Academy of Sciences (Russian Federation); A. O. Belyaev, Southern Federal Univ. (Russian Federation); Anton S. Boldyrev, Southern Federal University (Russian Federation); A. V. Ugolkov, Southern Federal Univ. (Russian Federation)

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**Session PS:
Posters-Wednesday**

Wednesday 12 September 2018

5:40 PM - 7:30 PM

Location: Estrel Hall Foyer


Conference attendees are invited to attend the Security + Defence poster session held on Wednesday 17:40 to 19:30. Posters will be on display after 13:00 hrs on Monday in the conference area hallway. Authors of poster papers will be present to answer questions concerning their papers during the Wednesday Poster Session.. Come view the posters, enjoy light refreshments, ask questions, and network with colleagues in your field. Attendees are required to wear their conference registration badges to the poster sessions. Poster authors, view poster presentation guidelines and set-up instructions at <http://spie.org/x32234.xml>.

Visual tracker fusion and outlier detection on thermal image sequences

Paper 10796-23

Time: 5:40 PM - 7:30 PM


Author(s): Sebastian Thome, Norbert Scherer-Negenborn, Michael Arens, Fraunhofer-Institut für Optronik, Systemtechnik und Bildauswertung (Germany)

[Add To My Schedule](#) **A novel jamming suppression method for spaceborne multi-channel synthetic aperture radar**

Paper 10796-25

Time: 5:40 PM - 7:30 PM


Author(s): Xingji Tang, Xianbin Li, Li Zhang, Zhongwei Chen, Naval Research Institute (China); Xiaohong Lin, Naval Univ. of Engineering (China)

[Add To My Schedule](#) **Robust monocular model-based pose tracking of markerless rigid objects**

Paper 10796-26

Time: 5:40 PM - 7:30 PM


Author(s): Gang Wang, Hongliang Zhang, Xiaochun Liu, Zhang Li, National Univ. of Defense Technology (China)

[Add To My Schedule](#) **Fusion of IMU and structure from motion for MAV based photogrammetry**

Paper 10796-27

Time: 5:40 PM - 7:30 PM

Author(s): Xichao Teng, Qifeng Yu, Yang Shang, Xiaochun Liu, Xiaoliang Sun, National Univ. of Defense Technology (China)


[Add To My Schedule](#) **Numerical modeling and measurement of polydimethylsiloxane deformation with fiber Bragg grating sensor**

Paper 10796-28

Time: 5:40 PM - 7:30 PM

Author(s): Pavel Mec, Marcel Fajkus, Jan Nedoma, Martin Stolarik, Stanislav Žabka, Martin Novak, Radek Martinek, VŠB-Technical Univ. of Ostrava (Czech Republic)




[Add To My Schedule](#) **Application of FBG in the experimental measurements of structural elements deformation from cement composites**

Paper 10796-29

Time: 5:40 PM - 7:30 PM


Author(s): Pavel Mec, Martin Stolarik, Stanislav Žabka, Martin Novak, VŠB-Technical Univ. of Ostrava (Czech Republic)

[Add To My Schedule](#) **Fast multi-exposure image fusion based on camera response curve**

Paper 10796-30

Time: 5:40 PM - 7:30 PM


Author(s): Wenlong Zhang, Xiaolin Liu, Qifeng Yu, Xiaochun Liu, National Univ. of Defense Technology (China)

[Add To My Schedule](#) **Similarity-transform invariant similarity measure for robust template matching**

Paper 10796-31

Time: 5:40 PM - 7:30 PM


Author(s): Cong Sun, Shengyi Chen, National Univ. of Defense Technology (China); Mengna Jia, State Key Laboratory of Remote Sensing Science, Institute of Remote Sensing and Digital Earth (China); Haibo Liu, Xiangyi Sun, Qifeng Yu, National Univ. of Defense Technology (China)

[Add To My Schedule](#) **Research and development of a high-energy radiation imaging system based on SiPM and coding aperture**

Paper 10796-32

Time: 5:40 PM - 7:30 PM


Author(s): Anna V. Vasileva, Aleksandr S. Vasilev, ITMO Univ. (Russian Federation)

[Add To My Schedule](#) **Deformation sensor composed of fiber Bragg grating and the strain gauge for use in civil engineering**

Paper 10796-34

Time: 5:40 PM - 7:30 PM


Author(s): Marcel Fajkus, Jan Nedoma, Miroslav Pinka, Pavel Mec, Martin Novak, Stanislav Zabka, VŠB-Technical Univ. of Ostrava (Czech Republic)

[Add To My Schedule](#) **Influence analysis of the projection forming method on the reconstruction quality in the digital tomosynthesis**

Paper 10796-37

Time: 5:40 PM - 7:30 PM

Author(s): Alexey O. Belyaev, Anton S. Boldyrev, Ekaterina B. Gorbunova, Danil G. Kovtun, Southern Federal Univ. (Russian Federation)

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THURSDAY 13 SEPTEMBER[Show All Abstracts](#)

**Session 5:
Signal Processing**

Thursday 13 September 2018


9:00 AM - 11:40 AM

Session Chair: [Peter Lutzmann](#), Fraunhofer-Institut für Optronik, Systemtechnik und Bildauswertung (Germany)**Computational sensing approaches for enhanced active imaging** *(Invited Paper)*

Paper 10796-16

Time: 9:00 AM - 9:30 AM

Author(s): Martin Laurenzis, Institut Franco-Allemand de Recherches de Saint-Louis (France)

[Add To My Schedule](#) **Geospatial object detection using deep networks****(Canceled)**

Paper 10796-17

Time: 9:30 AM - 9:50 AM


Author(s):

Persistent surveillance with small Unmanned Aerial Vehicles (sUAV): a feasibility study


Paper 10796-19

Time: 9:50 AM - 10:10 AM

Author(s): Ohood Al Nuaimi, Omar AlMelhi, Abdulrahman Almarzooqi, Abdullah AlSaadi, Slim Sayadi, Issac Niwas Swamidoss, Emirates Technology and Innovation Ctr. (United Arab Emirates)

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Coffee Break 10:10 AM - 10:40 AM

**Error-free coding of range gates for super-resolution three-dimensional imaging**

Paper 10796-20

Time: 10:40 AM - 11:00 AM

Author(s): Martin Laurenzis, Emmanuel Bacher, Frank M. Christnacher, Institut Franco-Allemand de Recherches de Saint-Louis (France)

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Development and optimization of a range of laser scanning systems

Paper 10796-21

Time: 11:00 AM - 11:20 AM

Author(s): Virgil-Florin Duma, Aurel Vlaicu Univ. of Arad (Romania)

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