

Advanced Optics for Defense Applications: UV through LWIR III

Sunday - Monday 15 - 16 April 2018

Conference Sessions At A Glance

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- 1: Optical System Design I
- 2: Optical System Design II
- 3: GRIN
- 4: Coatings, Filters, and Metasurfaces I
- 5: Coatings, Filters, and Metasurfaces II
- 6: Materials and Manufacturing I
- 7: Materials and Manufacturing II

Important Dates

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Abstract Due:
9 October 2017

Author Notification:
11 December 2017
Notifications will be sent no later than 12/15/17

Manuscript Due Date:
21 March 2018

Conference Committee

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Conference Chairs

[Jay N. Vizgaitis](#), optX imaging systems (United States)
[Bjorn F. Andresen](#), Consultant, Infrared Technologies & Applications (Israel)
[Peter L. Marasco](#), Air Force Research Lab. (United States)
[Jasbinder S. Sanghera](#), U.S. Naval Research Lab. (United States)
[Miguel P. Snyder](#), U.S. Army RDECOM CERDEC NVESD (United States)

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[Guy Beadie](#), U.S. Naval Research Lab. (United States)
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[Jue Wang](#), Coming Specialty Materials, Inc. (United States)
[Stephen T. Lee](#), Thales UK Ltd. (United Kingdom)

SUNDAY 15 APRIL

[Show All Abstracts](#)

Session 1: Optical System Design I

Sunday 15 April 2018

9:00 AM - 10:30 AM

Location: Ballroom Level, Tallahassee 2


Session Chairs: [Kyle R. Bryant](#), U.S. Army Aviation & Missile Research, Development & Engineering Ctr. (United States) ; [Craig Olson](#), L-3 Sonoma EO (United States)

Refractive optically multiplexed LWIR imaging system (Invited Paper)

Paper 10627-1

Time: 9:00 AM - 9:30 AM

Author(s): Emma Landsiedel, Corrie J. Smeaton, Vinay Shah, Yaron Rachlin, R. Hamilton Shepard, MIT Lincoln Lab. (United States)


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Design study of a MWIR/LWIR multiple FOV lens

Paper 10627-2

Time: 9:30 AM - 9:50 AM

Author(s): Jamie L. Ramsey, Blair Unger, George Lindberg, Rochester Precision Optics, LLC (United States)


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The relation between uncooled arrays pixel size and optics in the long-wave infrared

Paper 10627-3

Time: 9:50 AM - 10:10 AM

Author(s): Thomas Hingant, Umicore IR Glass (France); Paul Vervoort, Umicore Electro-Optic Materials (Belgium); John W. Franks, Umicore Electro-Optic Materials (United Kingdom)

[Add To My Schedule](#) **Additive manufacturing volume optimization for athermal optics**

Paper 10627-4

Time: 10:10 AM - 10:30 AM

Author(s): Kyle R. Bryant, U.S. Army Aviation & Missile Research, Development & Engineering Ctr. (United States); Devin Hayduke, Materials Sciences Corp. (United States)

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Coffee Break 10:30 AM - 11:00 AM

**Session 2:
Optical System Design II**

Sunday 15 April 2018

11:00 AM - 12:20 PM

Location: Ballroom Level, Tallahassee 2

Session Chairs: [Kyle R. Bryant](#), U.S. Army Aviation & Missile Research, Development & Engineering Ctr. (United States) ; [Craig Olson](#), L-3 Sonoma EO (United States)

NRL glasses for multispectral optics designs (Conference Presentation)

Paper 10627-5

Time: 11:00 AM - 11:20 AM


Author(s): Shyam Bayya, Daniel Gibson, Vinh Nguyen, Jasbinder Sanghera, U.S. Naval Research Lab. (United States); Mikhail Kotov, Sotera Defense Solutions, Inc. (United States); Collin McClain, Univ. Research Foundation (United States)

[Add To My Schedule](#) **Freeform based lateral-shift compact zoom system: theory and computer simulations**

Paper 10627-6

Time: 11:20 AM - 11:40 AM


Author(s): Stan Szapiel, Catherine Greenhalgh, Raytheon ELCAN Optical Technologies (Canada)

[Add To My Schedule](#) **An optical system design with duo-lateral effect detector and finding position of light sources with operational utilisation of this system**

Paper 10627-7

Time: 11:40 AM - 12:00 PM


Author(s): Hande Soykuvet, Roketsan A.S. (Turkey); Şengül Kuru, Ankara Univ. (Turkey)

[Add To My Schedule](#) **Wide bandwidth, achromatic, planar silicon lenses for long-wave infrared imaging**

Paper 10627-8

Time: 12:00 PM - 12:20 PM

Author(s): Gregory J. Kintz, Phil Stephanou, Invis Technologies Corp. (United States)

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Lunch Break 12:20 PM - 1:50 PM

**Session 3:
GRIN**

Sunday 15 April 2018

1:50 PM - 3:20 PM

Location: Ballroom Level, Tallahassee 2


Session Chairs: [Clara Rivero-Baleine](#), Lockheed Martin Missiles and Fire Control (United States) ; [Jasbinder S. Sanghera](#), U.S. Naval Research Lab. (United States)

Advances in infrared GRIN: a review of novel materials towards components and devices (Invited Paper)

Paper 10627-9

Time: 1:50 PM - 2:20 PM

Author(s): Kathleen Richardson, Myungkoo Kang, Laura Siskin, Anupama Yadav, Cesar Blanco, Michael Antia, Spencer Novak, CREOL, The College of Optics and Photonics, Univ. of Central Florida (United States); Charmayne Smith, Pacific Northwest National Laboratory (United States); Andy Buff, IR Flex (United States); Antoine Lepicard, Marc Dussauze, Institut des Sciences Moléculaires, Univ. de Bordeaux 1 (France); Casey M. Schwarz, Ursinus College (United States); Stephen Kuebler, Chris Grabill, CREOL, The College of Optics and Photonics, Univ. of Central Florida (United States); Carlo Pantano, The Pennsylvania State Univ. (United States); Theresa Mayer, Virginia Polytechnic Institute and State Univ. (United States); Alexej V. Pogrebnyakov, The Pennsylvania State Univ. (United States); Clara Baleine, Lockheed Martin Missiles and Fire Control (United States); Andrew Kirk, Samantha Mensah, Megan Driggers, Lockheed Martin Corp. (United States); Juejun Hu, Massachusetts Institute of Technology (United States); Pao-Tai Lin, Texas A&M University (United States); Anuradha Agarwal, Massachusetts Institute of Technology (United States); Cheng Li, CREOL, The College of Optics and Photonics, Univ. of Central Florida (United States); Weiwei Deng, Southern University of Science and Technology (China)

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SWaP advantage of replacing high performance glass achromatic doublet with a polymeric nanolayer GRIN achromatic singlet

Paper 10627-10

Time: 2:20 PM - 2:40 PM


Author(s): Howard Fein, Michael Ponting, Peak Nano Optics (United States)

[Add To My Schedule](#) **Raman and CT scan mapping of chalcogenide glass diffusion generated gradient index profiles**

Paper 10627-11

Time: 2:40 PM - 3:00 PM


Author(s): George Lindberg, Josh Cruz, Blair Unger, John P. Deegan, Robert Benson, Rochester Precision Optics, LLC (United States); Daniel Gibson, Shyam Bayya, Jasbinder Sanghera, Vinh Nguyen, U.S. Naval Research Lab. (United States); Mikhail Kotov, Sotera Defense Solutions, Inc. (United States)

[Add To My Schedule](#) **GRIN optics for dual-band IR sensors (Conference Presentation)**

Paper 10627-12

Time: 3:00 PM - 3:20 PM

Author(s): Daniel Gibson, Shyam Bayya, Jasbinder Sanghera, Vinh Nguyen, U.S. Naval Research Lab. (United States); Mikhail Kotov, Sotera Defense Solutions, Inc. (United States); Collin McClain, Univ. Research Foundation (United States); Jay Vizgaitis, optX Imaging Systems (United States)

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Coffee Break 3:20 PM - 3:50 PM

**Session 4:
Coatings, Filters, and Metasurfaces I**

Sunday 15 April 2018

3:50 PM - 5:10 PM

Location: Ballroom Level, Tallahassee 2


Session Chair: [Clara Rivero-Baleine](#), Lockheed Martin Missiles and Fire Control (United States)

Up converting as a tool for laser protecting smart filters

Paper 10627-13

Time: 3:50 PM - 4:10 PM


Author(s): Ariela Donval, Noam Gross, Eran Partouche, Tali Fisher Masliah, Moshe Oron, KiloLambda Technologies, Ltd. (Israel)

[Add To My Schedule](#) **Characterization of glancing angle deposited (GLAD) optical coatings for UV applications**

Paper 10627-14

Time: 4:10 PM - 4:30 PM


Author(s): Christopher J. Chinhong, Corning Specialty Materials, Inc. (United States); James E. Platten, Corning Speciality Materials, Inc. (United States); Michael J. D'Lallo, Thomas E. Gebo, Corning Specialty Materials, Inc. (United States)

[Add To My Schedule](#) **Silicon oxynitride based scratch resistant anti-reflective coatings**

Paper 10627-15

Time: 4:30 PM - 4:50 PM


Author(s): Jue Wang, Jonathan P. Bouchard, Gary A. Hart, Jean Francois Oudard, Charles A. Paulson, Paul A. Sachenik, James J. Price, Corning Incorporated (United States)

[Add To My Schedule](#) **Long-duration CW laser testing of optical windows with random antireflective surface structures on both interfaces: preliminary results**

Paper 10627-29

Time: 4:50 PM - 5:10 PM

Author(s): Christopher R. Wilson, Thomas C. Hutchens, The Univ of North Carolina at Charlotte (United States); Lynda E. Busse, Jesse A. Frantz, L. Brandon Shaw, Jasbinder S. Sanghera, U.S. Naval Research Lab. (United States); Ishwar D. Aggarwal, Sotera Defense Solutions (United States), The Univ of North Carolina at Charlotte (United States)

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MONDAY 16 APRIL[Show All Abstracts](#)

**Session 5:
Coatings, Filters, and Metasurfaces II**

Monday 16 April 2018

8:40 AM - 10:10 AM

Location: Ballroom Level, Tallahassee 2


Session Chair: [Jue Wang](#), Corning Incorporated (United States)

Spectral performance and durability of dual-band infrared antireflection coatings on 3rd Gen lens substrates

Paper 10627-16

Time: 8:40 AM - 9:00 AM


Author(s): Chris Piazza, Alexis Weckel, Karen D. Hendrix, Mark Kozlowski, Viavi Solutions Inc. (United States)

[Add To My Schedule](#) **Low auto-fluorescence broadband antireflection coatings for human genome sequencing optical platform**

Paper 10627-17

Time: 9:00 AM - 9:20 AM


Author(s): Jing Du, Jue Wang, Horst Schreiber, Jean Francois Oudard, Corning Incorporated (United States)

[Add To My Schedule](#) **Densification of SiO₂ and Nb₂O₅ films for protective silver mirrors**

Paper 10627-18

Time: 9:20 AM - 9:40 AM


Author(s): Jue Wang, Leonard Wamboldt, Jason S. Ballou, Timothy Soucy, Corning Incorporated (United States)

[Add To My Schedule](#) **Micro-structured optical coatings: periodic-array enhanced functionalities** *(Invited Paper)*

Paper 10627-19

Time: 9:40 AM - 10:10 AM

Author(s): Tao He, Tongji Univ. (China); Zhanyi Zhang, MOE Key Lab. of Advanced Micro-Structured Materials (China), Tongji Univ. (China); Jinlong Zhang, Zhanshan Wang, Xinbin Cheng, Tongji Univ. (China)

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Coffee Break 10:10 AM - 10:40 AM

**Session 6:
Materials and Manufacturing I**

Monday 16 April 2018

10:40 AM - 12:00 PM


Location: Ballroom Level, Tallahassee 2

Session Chairs: [Alan Symmons](#), LightPath Technologies, Inc. (United States) ; John P. Deegan, Rochester Precision Optics, LLC (United States)**Development in EFG sapphire at II-VI Optical Systems**

Paper 10627-20

Time: 10:40 AM - 11:00 AM


Author(s): Melissa Seitz, Greg Peterson, II-VI Optical Systems (United States)

[Add To My Schedule](#) **Advantages of plastic optical systems**

Paper 10627-31

Time: 11:00 AM - 11:20 AM


Author(s): Alan Symmons, LightPath Technologies, Inc. (United States)

[Add To My Schedule](#) **Optical and crystal growth studies of ZnO-Bi₂O₃-B₂O₃ glass**

Paper 10627-22

Time: 11:20 AM - 11:40 AM


Author(s): Casey M. Schwarz, Ursinus College (United States); Myungkoo Kang, CREOL, The College of Optics and Photonics, Univ. of Central Florida (United States); Carlo Pantano, The Pennsylvania State Univ. (United States); Kathleen Richardson, CREOL, The College of Optics and Photonics, Univ. of Central Florida (United States); Clara Rivero-Baleine, Lockheed Martin Missiles and Fire Control (United States); Stephen Kuebler, Univ. of Central Florida (United States); Chris Grabill, CREOL, The College of Optics and Photonics, Univ. of Central Florida (United States); Jarrett Rice, The Pennsylvania State Univ. (United States); Quentin Altemose, Katie Raichle, Brittani Schnable, Ursinus College (United States); Ian Wietecha-Reiman, The Pennsylvania State Univ. (United States); Ethan Haldeman, Ursinus College (United States)

[Add To My Schedule](#) **Thermal conductivity of chalcogenide glasses measured by Raman spectroscopy**

Paper 10627-23

Time: 11:40 AM - 12:00 PM

Author(s): Anupama Yadav, CREOL, The College of Optics and Photonics, Univ. of Central Florida (United States); Derek Kita, Peter Su, Massachusetts Institute of Technology (United States); Antoine Lepicard, Univ. Bordeaux 1 (France); Anuradha Agarwal, Juejun Hu, Massachusetts Institute of Technology (United States); Marc Dussauze, Univ. Bordeaux 1 (France); Kathleen Richardson, CREOL, The College of Optics and Photonics, Univ. of Central Florida (United States)

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Lunch Break 12:00 PM - 1:30 PM

**Session 7:
Materials and Manufacturing II**

Monday 16 April 2018

1:30 PM - 3:20 PM

Location: Ballroom Level, Tallahassee 2


Session Chairs: [Alan Symmons](#), LightPath Technologies, Inc. (United States) ; John P. Deegan, Rochester Precision Optics, LLC (United States)

Precision glass molding versus diamond turning: Determining the crossover point that maximizes the benefits of each manufacturing method for infrared applications (*Invited Paper*)

Paper 10627-24

Time: 1:30 PM - 2:00 PM

Author(s): Jeremy Huddleston, Alan Symmons, LightPath Technologies, Inc. (United States)


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Chalcogenide molded freeform optics for QCL

Paper 10627-25

Time: 2:00 PM - 2:20 PM

Author(s): Francois Chenard, Oseas Alvarez, Andrew Buff, IRflex Corporation (United States); Allen Yi, The Ohio State Univ. (United States)


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Lightweight mechanically alloyed aluminum metal matrix composites (Conference Presentation)

Paper 10627-26

Time: 2:20 PM - 2:40 PM

Author(s): Martyn Acreman, Don H. Hashiguchi, Materion Brush Beryllium & Composites (United States); David Tricker, Andrew Tarrant, Materion Aerospace Metal Composites (United Kingdom)


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Infrared plasmon polaritons in high-mobility graphene

Paper 10627-30

Time: 3:00 PM - 3:20 PM

Author(s): Andre U. Sokolnikov, Visual Solutions and Applications (United States)

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Conference Ends

Monday 16 April 2018

4:00 PM - 4:00 PM

Location: Ballroom Level, Tallahassee 2

For the latest in...

- Infrared Technology
- IR Company News
- New IR Applications

(Commercial & Military)

- Government Contracts

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