

## Ultrafast Bandgap Photonics III

Monday - Thursday 16 - 19 April 2018

### Conference Sessions At A Glance

SHOW | HIDE

- 1: Metastability of Transient States
- 2: Ultrafast Carrier Dynamics
- 3: Ultrafast Carrier Dynamics: Quantum Dots
- 4: Ultrafast Dynamics: Lowering the Dimensions
- 5: Ultrafast Dynamics of Solar Materials
- 6: Ultrafast Dynamics: 2D
- 7: Transient Metamaterials
- 8: Transient Optic Effects
- 9: Ultrafast Magnetism: Spin and Orbital Control
- 10: Optical Control of Spin in Solids
- 11: Optics of Topological Materials
- 12: Lasers for Ultrafast Dynamic Control
- 13: Propagation of Intense Ultrashort Pulses: Atmosphere
- 14: Propagation of Intense Ultrashort Pulses: Solids
- 15: Frequency Comb: Concurrent-Joint Session with conferences 10639 and 10638

### 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 Chair

[Michael K. Rafailov](#), Univ. of Alberta (Canada)

#### Program Committee

[Jason M. Auxier](#), U.S. Naval Research Lab. (United States)  
Sophia Economou, Virginia Polytechnic Institute and State Univ. (United States)  
[Matt W. Graham](#), Oregon State Univ. (United States)  
[Stefan Kaiser](#), Max-Planck-Institut für Festkörperforschung (Germany)

Program Committee continued...

[Stefan Mathias](#), Georg-August-Univ. Göttingen (Germany)  
[Igor Pastirk](#), Coherent, Inc. (United States)  
[Joseph R. Peñano](#), U.S. Naval Research Lab. (United States)

#### MONDAY 16 APRIL

[Show All Abstracts](#)

### Session 1: Metastability of Transient States

Monday 16 April 2018

8:00 AM - 9:15 AM

Location: Ballroom Level, Tallahassee 3

Session Chair: [Rolf Binder](#), College of Optical Sciences, The Univ. of Arizona (United States)

#### Ultrafast bandgap photonics: metastability of transient states (Conference Presentation) (Invited Paper)

Paper 10638-1

Time: 8:00 AM - 8:25 AM


Author(s): [Michael K. Rafailov](#), Univ. of Alberta (Canada)
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#### Ultrafast dynamics and coherent order parameter oscillations under photo-excitation in the excitonic insulator Ta<sub>2</sub>NiSe<sub>5</sub> (Invited Paper)

Paper 10638-2

Time: 8:25 AM - 8:50 AM

Author(s): [Daniel Werdehausen](#), [Steinn Agustsson](#), [MinJae Kim](#), [Parmida Shabestari](#), [Emily Huang](#), [Amrit Pokharel](#), [Timofei Larkin](#), [Alexander Boris Tomohiro Takayama](#), [Max-Planck-Institut für Festkörperforschung \(Germany\)](#); [Yangfan Lu](#), University of Tokyo (Japan); [Andreas W. Rost](#), [Hao Chu](#), [Alexander Yaresko](#), [Marc Höppner](#), [Armin Schulz](#), [Dirk Manske](#), [Bernhard Keimer](#), [Hidenori Takagi](#), [Stefan Kaiser](#), [Max-Planck-Institut für Festkörperforschung \(Germany\)](#)


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#### A momentum-space view on ultrafast band-gap dynamics using HHG time-, spin-, and angle-resolved photoemission spectroscopy (Invited Paper)

Paper 10638-3

Time: 8:50 AM - 9:15 AM

Author(s): Stefan Mathias, Georg-August-Univ. Göttingen (Germany)

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## Session 2: Ultrafast Carrier Dynamics

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Monday 16 April 2018

9:15 AM - 11:45 AM

Location: Ballroom Level, Tallahassee 3

Session Chair: [Stefan Kaiser](#), Max-Planck-Institut für Festkörperforschung (Germany)

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**Ultrafast structural dynamics in topological Weyl semimetals** (*Keynote Presentation*)

**(Canceled)**

Paper 10638-4

Time: 9:15 AM - 9:45 AM


Author(s):

**From stripes to excitons: ultrafast snapshots of emergent electronic and vibrational order** (*Invited Paper*)

Paper 10638-5

Time: 9:45 AM - 10:10 AM

Author(s): Robert A. Kaindl, Lawrence Berkeley National Lab (United States)

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**Coffee Break 10:10 AM - 10:30 AM**


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**Nonresonant pump/probe electronic Raman scattering within nonequilibrium dynamical mean-field theory** (*Invited Paper*)

Paper 10638-6

Time: 10:30 AM - 10:55 AM

Author(s): James Freericks, Georgetown Univ. (United States); Oleh Matveev, Andriy Shvaika, Institute for Condensed Matter Physics (Ukraine); Thomas Devereaux, Stanford Univ. (United States), SLAC National Accelerator Lab. (United States)


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**Ab-initio simulations for ultrashort laser-pulse irradiation on nanomaterials** (*Invited Paper*)

Paper 10638-7

Time: 10:55 AM - 11:20 AM

Author(s): Kazuhiro Yabana, Univ. of Tsukuba (Japan)


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**Quantum chaos and quantum Lyapunov exponent in optically driven "Floquet Materials"** (*Invited Paper*)

Paper 10638-8

Time: 11:20 AM - 11:45 AM

Author(s): Victor Galitski, Univ. of Maryland, College Park (United States)

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**Lunch Break 11:45 AM - 12:45 PM**

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## Session 3: Ultrafast Carrier Dynamics: Quantum Dots

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Monday 16 April 2018

12:45 PM - 2:05 PM

Location: Ballroom Level, Tallahassee 3

Session Chair: [Jason M. Auxier](#), U.S. Naval Research Lab. (United States)


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**Auger interactions and solar photoconversion with engineered quantum dots** (*Keynote Presentation*)

Paper 10638-9

Time: 12:45 PM - 1:15 PM

Author(s): Victor I. Klimov, Los Alamos National Lab. (United States)


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**Time-resolved optical studies of Perovskite polycrystalline films, single crystals, and their surfaces** (*Invited Paper*)

Paper 10638-10

Time: 1:15 PM - 1:40 PM

Author(s): Matthew C. Beard, National Renewable Energy Lab. (United States)


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**Electronic and optical properties of lead halide perovskite nanocrystals** (*Conference Presentation*) (*Invited Paper*)

Paper 10638-11

Time: 1:40 PM - 2:05 PM

Author(s): Alexander L. Efros, U.S. Naval Research Lab. (United States)

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## Session 4: Ultrafast Dynamics: Lowering the Dimensions

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Monday 16 April 2018

2:05 PM - 4:30 PM

Location: Ballroom Level, Tallahassee 3

Session Chairs: [Jason M. Auxier](#), U.S. Naval Research Lab. (United States) ; [Igor Pastirk](#), Sydor Technologies (United States)**Ultrafast photocurrent generation in van der Waals heterostructures (Invited Paper)**  
**(Canceled)**

Paper 10638-13

Time: 2:05 PM - 2:30 PM


Author(s):

**Metastable interlayer electrons in twisted and stacked van der Waals materials (Conference Presentation) (Invited Paper)**

Paper 10638-14

Time: 2:30 PM - 2:55 PM

Author(s): Matt W. Graham, Oregon State Univ. (United States)

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**Coffee Break 2:55 PM - 3:15 PM**


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**Hydrogen-assisted graphene transfer: surface engineering for chemical, electronic, and biological applications (Invited Paper)**

Paper 10638-15

Time: 3:15 PM - 3:40 PM


Author(s): Keith Whitener, Woo-Kyung Lee, Thomas O'Shaughnessy, Jeremy T. Robinson, Paul E. Sheehan, U.S. Naval Research Lab. (United States)

[Add To My Schedule](#) **Growth, characterization, and ultrafast carrier dynamics of WS<sub>2</sub>/graphene heterostructures (Conference Presentation) (Invited Paper)**

Paper 10638-16

Time: 3:40 PM - 4:05 PM


Author(s): Stiven Forti, Center for Nanotechnology Innovation IIT@NEST (Italy); Antonio Rossi, Ctr. for Nanotechnology Innovation IIT@NEST (Italy); Camilla Coletti, Center for Nanotechnology Innovation IIT@NEST (Italy); Isabella Gierz, Sven Aeschlimann, Razvan Krause, Max Planck Institute for the Structure and Dynamics of Matter (Germany)

[Add To My Schedule](#) **Ultrafast photonics in coherently coupled III-V semiconductor nanostructures (Invited Paper)**

Paper 10638-17

Time: 4:05 PM - 4:30 PM

Author(s): Mirco Kolarczik, Kevin Thommes, Bastian Herzog, Sophia Helmrich, Nina Owschimikow, Ulrike Woggon, Technische Univ. Berlin (Germany)

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**TUESDAY 17 APRIL**[Show All Abstracts](#)

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## Session 5: Ultrafast Dynamics of Solar Materials

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Tuesday 17 April 2018

8:00 AM - 10:10 AM


Location: Ballroom Level, Tallahassee 3

Session Chair: [Matt W. Graham](#), Oregon State Univ. (United States)**Ultrafast dynamics in lead halide perovskites probed via two-dimensional electronic spectroscopy (Keynote Presentation)**

Paper 10638-18

Time: 8:00 AM - 8:30 AM

Author(s): Carlos Silva, Georgia Tech Research Institute (United States)

[Add To My Schedule](#) **Influence of Rashba splitting on carrier dynamics in organic-inorganic perovskites (Conference Presentation) (Invited Paper)**

Paper 10638-19

Time: 8:30 AM - 8:55 AM

Author(s): Kimberley C. Hall, Seth B. Todd, Ajan Ramachandran, Charlotte Clegg, Drew B. Riley, Ali Binai-Motlagh, Dalhousie Univ. (Canada); Constantinos C. Stoumpos, Northwestern Univ. (United States); Samuel A. March, Dalhousie Univ. (Canada); Mercuri G. Kanatzidis, Northwestern Univ. (United States); Ian G. Hill, Dalhousie Univ. (Canada)


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**Nonlinear spectroscopy in perovskite quantum dots** *(Invited Paper)*

Paper 10638-20

Time: 8:55 AM - 9:20 AM


Author(s): Gabriel Nagamine, Luiz Gustavo Bonato, Juan Andrés Castañeda, Emre Yassitepe, Ana Flavia Nogueira, Carlos H. Brito Cruz, Lazaro Padilha, Univ. Estadual de Campinas (Brazil)

[Add To My Schedule](#) **Probing the emerging self-organizing behavior and meta-stability in ultrafast photoinduced phase transitions in correlated electron crystals** *(Conference Presentation)* *(Invited Paper)*

Paper 10638-21

Time: 9:20 AM - 9:45 AM


Author(s): Chong-Yu Ruan, Faran Zhou, Joseph Williams, Michigan State Univ. (United States)

[Add To My Schedule](#) **Shedding light on surface effects: nonlinear probes of complex materials** *(Invited Paper)*

Paper 10638-22

Time: 9:45 AM - 10:10 AM

Author(s): Brianna R. Watson, The Univ. of Tennessee Knoxville (United States); Benjamin Doughty, Oak Ridge National Lab. (United States); Tessa R. Calhoun, The Univ. of Tennessee Knoxville (United States)

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**Coffee Break and Dedicated Exhibition Time 10:10 AM - 11:00 AM**

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**Session 6:  
Ultrafast Dynamics: 2D**

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Tuesday 17 April 2018

11:00 AM - 12:20 PM

Location: Ballroom Level, Tallahassee 3

Session Chair: [Matt W. Graham](#), Oregon State Univ. (United States)


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**Ultrafast carrier transport in van der Waals heterostructures** *(Conference Presentation)* *(Keynote Presentation)*

Paper 10638-23

Time: 11:00 AM - 11:30 AM


Author(s): Hui Zhao, The Univ. of Kansas (United States)

[Add To My Schedule](#) **Optical 2D coherent spectroscopy of valley dynamics in monolayer transition metal dichalcogenide** *(Invited Paper)*

Paper 10638-24

Time: 11:30 AM - 11:55 AM


Author(s): Michael Titze, Hebin Li, Florida International Univ. (United States)

[Add To My Schedule](#) **Long-lived spin/valley dynamics of resident electrons and holes in 2D semiconductors** *(Conference Presentation)* *(Invited Paper)*

Paper 10638-25

Time: 11:55 AM - 12:20 PM

Author(s): Luyi Yang, Univ. of Toronto (Canada)

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**Lunch/Exhibition Break 12:20 PM - 1:20 PM**

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**Session 7:  
Transient Metamaterials**

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Tuesday 17 April 2018

1:20 PM - 3:35 PM

Location: Ballroom Level, Tallahassee 3

Session Chair: [Matt W. Graham](#), Oregon State Univ. (United States)


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**Theory of ultrafast spin-charge quantum dynamics in strongly correlated systems controlled by femtosecond photoexcitation: an application to insulating antiferromagnetic manganites** *(Keynote Presentation)*

Paper 10638-26

Time: 1:20 PM - 1:50 PM


Author(s): P. C. Lingos, Department of Physics, University of Crete &amp; IESL/FORTH (Greece); M. D. Kapetanakis, The Univ. of Alabama at Birmingham (United States); Martin Mootz, The Univ. of Alabama (United States); Jigang Wang, Iowa State Univ. of Science and Technology (United States), Ames Lab. (United States); Ilias E. Perakis, The Univ. of Alabama at Birmingham (United States)

[Add To My Schedule](#) **Quantum Terahertz lightwave electronics** *(Invited Paper)*

Paper 10638-27

Time: 1:50 PM - 2:15 PM


Author(s): Jigang Wang, Iowa State Univ. of Science and Technology (United States)

[Add To My Schedule](#) **Depth-dependent studies of electron and phonon ultrafast dynamics in femtosecond laser induced transient states of matter** (*Keynote Presentation*)

Paper 10638-28

Time: 2:15 PM - 2:45 PM

Author(s): Norman Tolk, Halina Krzyzanowska, Zina J. Cinker, Joy Garnett, Andrey Baydin, Jimmy L. Davidson, Vanderbilt Univ. (United States)

[Add To My Schedule](#) **Strained relations: optical tuning of electronic dynamics in nanoparticle and molecular systems using ultrafast spectroscopy** (*Invited Paper*)  
**(Canceled)**

Paper 10638-29

Time: 2:45 PM - 3:10 PM


Author(s):

**Time-resolved near-field investigation of the insulator to metal transition in vanadium dioxide** (**Conference Presentation**) (*Invited Paper*)

Paper 10638-30

Time: 3:10 PM - 3:35 PM

Author(s): Aaron Sternbach, Columbia University (United States)

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**Coffee Break 3:35 PM - 4:05 PM**

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## Session 8: Transient Optic Effects

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Tuesday 17 April 2018

4:05 PM - 6:40 PM

Location: Ballroom Level, Tallahassee 3

Session Chair: [Jason M. Auxier](#), U.S. Naval Research Lab. (United States)


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**Spin and orbital-angular momentum effects in controllable polariton patterns** (*Keynote Presentation*)

Paper 10638-31

Time: 4:05 PM - 4:35 PM


Author(s): Rolf Binder, College of Optical Sciences, The Univ. of Arizona (United States); Samuel M. H. Luk, The Univ. of Arizona (United States); Nai H. Kwong, College of Optical Sciences, The Univ. of Arizona (United States); Przemyslaw Lewandowski, Stefan Schumacher, Univ. Paderborn (Germany); Omblin Lafont, Ctr. National de la Recherche Scientifique (France), Ecole Normale Supérieure (France); Emmanuel Baudin, Ecole Normale Supérieure (France), Ctr. National de la Recherche Scientifique (France); Jerome Tignon, Ecole Normale Supérieure (France), Ctr. National de la Recherche Scientifique (France); Chris K. P. Chan, Pui-tang Leung, The Chinese Univ. of Hong Kong (Hong Kong, China)

[Add To My Schedule](#) **Extremely nondegenerate nonlinear refraction and dispersion in semiconductors** (**Conference Presentation**) (*Invited Paper*)

Paper 10638-32

Time: 4:35 PM - 5:00 PM


Author(s): Peng Zhao, David Hagan, Eric Van Stryland, CREOL, The College of Optics and Photonics, Univ. of Central Florida (United States)

[Add To My Schedule](#) **Measurement of the ultrafast dynamics of nonlinear refraction and absorption of highly doped semiconductors at epsilon-near-zero** (**Conference Presentation**) (*Invited Paper*)

Paper 10638-33

Time: 5:00 PM - 5:25 PM


Author(s): Sepehr Benis, Peng Zhao, David J. Hagan, Eric W. Van Stryland, CREOL, The College of Optics and Photonics, Univ. of Central Florida (United States)

[Add To My Schedule](#) **Nonlinear chirped soliton: self-formation at Gaussian pulse propagation in a medium with non-instantaneous nonlinear response** (*Invited Paper*)

Paper 10638-34

Time: 5:25 PM - 5:50 PM


Author(s): Vyacheslav A. Trofimov, Tatiana Lysak, Irina Zakharova, M.V. Lomonosov Moscow State Univ. (Russian Federation)

[Add To My Schedule](#) **Ultrafast carrier dynamics and reststrahlen band tuning in wide bandgap semiconductors** (*Invited Paper*)

Paper 10638-35

Time: 5:50 PM - 6:15 PM


Author(s): Jeffrey C. Owrutsky, Roderick Davidson, Adam D. Dunkelberger, Ioannis Chatzakis, David Storm, Scott Katzer, Brad B. Pate, Tatyana Feygelson, Daniel Ratchford, U.S. Naval Research Lab. (United States); Joshua D. Caldwell, Vanderbilt Univ. (United States)

[Add To My Schedule](#) **Ultrafast dynamics of semiconductor quantum dots relevant to solar fuels production** (**Conference Presentation**) (*Invited Paper*)

Paper 10638-12

Time: 6:15 PM - 6:40 PM

Author(s): Todd D. Krauss, Nicole Cogan, Cunming Liu, Fen Qiu, Rebeckah Burke, Univ. of Rochester (United States)

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**WEDNESDAY 18 APRIL**[Show All Abstracts](#)

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## Session 9: Ultrafast Magnetism: Spin and Orbital Control

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Wednesday 18 April 2018

8:00 AM - 10:10 AM

Location: Ballroom Level, Tallahassee 3

Session Chair: [Rolf Binder](#), College of Optical Sciences, The Univ. of Arizona (United States)


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**Non-equilibrium magnon condensation and magnetic pattern formation** (*Keynote Presentation*)

Paper 10638-36

Time: 8:00 AM - 8:30 AM


Author(s): Hermann A. Dürr, SLAC National Accelerator Lab. (United States), Uppsala Univ. (Sweden)

[Add To My Schedule](#) **Terahertz magnon-polaritons in antiferromagnets** (*Invited Paper*)

Paper 10638-37

Time: 8:30 AM - 8:55 AM


Author(s): Rostislav V. Mikhaylovskiy, Radboud Univ. (Netherlands)

[Add To My Schedule](#) **Ultrafast laser-induced spin dynamics in ultrathin metallic films in vicinity of spin reorientation transition** (*Invited Paper*)

Paper 10638-39

Time: 9:20 AM - 9:45 AM


Author(s): Alexandra Kalashnikova, Ioffe Institute (Russian Federation)

[Add To My Schedule](#) **Spin-dependent electronic scattering dynamics in a ferromagnetic model system: numerical aspects** (*Invited Paper*)

Paper 10638-40

Time: 9:45 AM - 10:10 AM

Author(s): Kai Leckron, Hans Christian Schneider, TU Kaiserslautern (Germany)

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**Coffee Break and Dedicated Exhibition Time 10:10 AM - 10:40 AM**

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## Session 10: Optical Control of Spin in Solids

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Wednesday 18 April 2018

10:40 AM - 12:25 PM

Location: Ballroom Level, Tallahassee 3

Session Chair: [Ajit Srivastava](#), Emory Univ. (United States)


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**Picosecond pulse shaping of single photons using quantum dots** (*Keynote Presentation*)

Paper 10638-41

Time: 10:40 AM - 11:10 AM


Author(s): Sam G. Carter, Brennan C. Pursley, Bumsu Lee, U.S. Naval Research Lab. (United States); Sophia E. Economou, Virginia Polytechnic Institute and State Univ. (United States); Michael K. Yakes, Allan S. Bracker, Dan Gammon, U.S. Naval Research Lab. (United States)

[Add To My Schedule](#) **Coherent optical control of single spin qubits in diamond** (*Invited Paper*)

Paper 10638-42

Time: 11:10 AM - 11:35 AM


Author(s): Brian Zhou, The Univ. of Chicago (United States); Christopher Yale, The Univ. of Chicago (United States), Sandia National Labs. (United States); F. J. Heremans, Paul Jerger, The Univ. of Chicago (United States); Alexandre Baksic, Hugo Ribeiro, McGill Univ. (Canada); Aashish Clerk, The Univ. of Chicago (United States), McGill Univ. (Canada); Adrian Auer, V. O. Shkolnikov, Guido Burkard, Univ. Konstanz (Germany); David Awschalom, The Univ. of Chicago (United States)

[Add To My Schedule](#) **HD quantum optics** (*Rising Researcher Presentation*) (*Invited Paper*)

Paper 10638-43

Time: 11:35 AM - 12:00 PM

Author(s): Matthew Reichert, Hugo Defienne, Jason W. Fleischer, Princeton Univ. (United States)

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**Generating parametric oscillation with third-order nonlinear media** *(Invited Paper)***(Canceled)**

Paper 10638-44

Time: 12:00 PM - 12:25 PM

Author(s):

**Lunch/Exhibition Break 12:25 PM - 1:25 PM****Session 11:  
Optics of Topological Materials**

Wednesday 18 April 2018

1:25 PM - 3:25 PM

Location: Ballroom Level, Tallahassee 3


Session Chair: Sam G. Carter, U.S. Naval Research Lab. (United States)

**Field effect photoconductivity in graphene on undoped semiconductor substrates** *(Invited Paper)*

Paper 10638-45

Time: 1:25 PM - 1:45 PM


Author(s): B. K. Sarker, Purdue Univ. (United States); E. Cazalas, The Pennsylvania State Univ. (United States); I. Childres, Ting-Fung Chung, Purdue Univ. (United States); Igor Jovanovic, University of Michigan (United States); Yong P. Chen, Purdue Univ. (United States)

[Add To My Schedule](#) **Plasmonic nanocavities for ultrafast photonics** *(Invited Paper)*

Paper 10638-46

Time: 1:45 PM - 2:10 PM


Author(s): Maiken H. Mikkelsen, Duke Univ. (United States)

[Add To My Schedule](#) **Optically active quantum dots in atomically thin FETs** *(Invited Paper)*

Paper 10638-47

Time: 2:10 PM - 2:35 PM


Author(s): Ajit Srivastava, Xin Lu, Xiaotong Chen, Sudipta Dubey, Qiang Yao, Emory Univ. (United States)

[Add To My Schedule](#) **Tuning properties of deep defects in hexagonal boron nitride layers: an ab-initio study** *(Invited Paper)*

Paper 10638-48

Time: 2:35 PM - 3:00 PM


Author(s): Pratibha Dev, Olasunbo Z. Farinre, Howard Univ. (United States); Evan C. Folk, Univ. of Nebraska at Kearney (United States)

[Add To My Schedule](#) **Harmonic generation via excitation of surface states formed from spatially separated electrons and holes in nanocomposites** *(Invited Paper)*

Paper 10638-49

Time: 3:00 PM - 3:25 PM

Author(s): Oleg Khasanov, Scientific-Practical Materials Research Ctr. (Belarus); Tatiana Smirnova, International Sakharov Environmental Univ. (Belarus); Olga M. Fedotova, Grigory Rusetsky, Scientific-Practical Materials Research Ctr. (Belarus); Vladimir Gayvoronsky, Institute of Physics (Ukraine); Sergey Pokutnyi, The National Academy of Sciences of Ukraine (Ukraine); Eugenijus Gaižauskas, Vilnius Univ. (Lithuania)

[Add To My Schedule](#) **Coffee Break 3:25 PM - 3:55 PM****Session 12:  
Lasers for Ultrafast Dynamic Control**

Wednesday 18 April 2018

3:55 PM - 6:40 PM


Location: Ballroom Level, Tallahassee 3

Session Chair: [Igor Pastirk](#), Sydor Technologies (United States)**Singly and doubly resonant femtosecond optical parametric oscillators for precision spectroscopy from the near-to mid-infrared** *(Keynote Presentation)*

Paper 10638-50

Time: 3:55 PM - 4:25 PM


Author(s): Derryck T. Reid, Richard A. McCracken, Yuk Shan Cheng, Oguzhan KARA, Jake Charsley, Heriot-Watt Univ. (United Kingdom); Luke Maidment, Chromacity Ltd., Livingstone House, 43C Discovery Terrace, Riccarton EH14 4AP (United Kingdom)

[Add To My Schedule](#) **Femtosecond mid-IR laser sources based on Cr<sup>2+</sup>:ZnS oscillators and sub-harmonic OPOs** *(Invited Paper)*

Paper 10638-51

Time: 4:25 PM - 4:50 PM

Author(s): Sergey B. Mirov, The Univ. of Alabama at Birmingham (United States), IPG Photonics Corp. (United States); Sergey Vasilyev, IPG Photonics - Mid-Infrared Lasers (United States); Viktor Smolski, Jeremy Peppers, Mike Mirov, IPG Photonics Corp. (United States); Andrey Muraviev, Konstantin Vodopyanov, Univ. of Central Florida (United States); Valentin Gapontsev, Igor Moskalev, IPG Photonics Corp. (United States)


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**Mode-locked thin-disk lasers and their application for high-power THz generation** (Keynote Presentation)

Paper 10638-52

Time: 4:50 PM - 5:20 PM

Author(s): Frank Meyer, Negar Hekmat, Felix Fobbe, Samira Mansourzadeh, Clara J. Saraceno, Ruhr-Univ. Bochum (Germany)


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**Novel applications of tabletop-scale extreme-UV and x-ray sources** (Keynote Presentation)

Paper 10638-53

Time: 5:20 PM - 5:50 PM

Author(s): Henry C. Kapteyn, Margaret M. Murnane, JILA, Univ. of Colorado Boulder (United States), Kapteyn-Murnane Labs., Inc. (United States)

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**Nonlinear spectroscopy in the extreme ultraviolet region** (Invited Paper)

(Canceled)

Paper 10638-54

Time: 5:50 PM - 6:15 PM


Author(s):

**Solid state high-order harmonics driven by long-wavelength lasers** (Invited Paper)

Paper 10638-55

Time: 6:15 PM - 6:40 PM

Author(s): Shima Gholam-Mirzaei, Erin Crites, John E. Beetar, Michael Chini, Univ. of Central Florida (United States)

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**THURSDAY 19 APRIL**

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## Session 13: Propagation of Intense Ultrashort Pulses: Atmosphere

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Thursday 19 April 2018

8:00 AM - 10:20 AM

Location: Ballroom Level, Tallahassee 3

Session Chair: [Joseph R. Peñano](#), U.S. Naval Research Lab. (United States)


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**Simulation of LWIR TW ultrashort pulses over kilometer ranges in the atmosphere** (Keynote Presentation)

Paper 10638-56

Time: 8:00 AM - 8:30 AM

Author(s): Paris Panagiotopoulos, Phil Rosenow, College of Optical Sciences, The Univ. of Arizona (United States); K. Schuh, College of Optical Sciences, Univ. of Arizona (United States); Miroslav Kolesik, E. W. Wright, College of Optical Sciences, The Univ. of Arizona (United States); Stephan W. Koch, Philipps-Univ. Marburg (Germany); Jerome V. Moloney, College of Optical Sciences Univ of Arizona (United States)


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**Atmospheric propagation and impact on solids of short-intense laser pulses** (Keynote Presentation)

Paper 10638-57

Time: 8:30 AM - 9:00 AM

Author(s): Jean-Claude M. Diels, Ali Rastegari, Brian Kamer, The Univ. of New Mexico (United States); Matthias Lenzner, Lenzner Research, LLC (United States); Kristen Peterson, Southwest Sciences, Inc. (United States); Ladan Arissian, The Univ. of New Mexico (United States)


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**Generation of a centimeter diameter self-guided light channel in air using a TW CO<sub>2</sub> laser** (Invited Paper)

Paper 10638-58

Time: 9:00 AM - 9:20 AM

Author(s): Sergei Tochitsky, Eric Welch, Chan Joshi, Univ. of California, Los Angeles (United States); Misha Polynskiy, Igor Pogorelsky, Brookhaven National Lab. (United States); Jerome Moloney, The Univ. of Arizona (United States)


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**The effect of laser noise on the propagation of laser radiation in dispersive and nonlinear media** (Invited Paper)

Paper 10638-59

Time: 9:20 AM - 9:40 AM

Author(s): Joshua Isaacs, Phillip Sprangle, Univ. of Maryland, College Park (United States)

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**Self-channeling of ultrashort laser pulses in distributed, long-range atmospheric turbulence** (Invited Paper)

Paper 10638-60

Time: 9:40 AM - 10:00 AM

Author(s): Michael H. Helle, Gregory DiComo, U.S. Naval Research Lab. (United States); Samantha Gregory, The Univ. of Alabama in Huntsville (United States); Aliaksandr Mamonau, U.S. Naval Research Lab. (United States); Scott Melis, Georgetown Univ. (United States); Richard Fischer, Dmitri Kaganovich, U.S. Naval Research Lab. (United States); Joseph Penano, U. S. Naval Research Lab. (United States)




[Add To My Schedule](#) **Ultrafast high-power mid-IR OPCPA** (*Invited Paper*)

Paper 10638-72

Time: 10:00 AM - 10:20 AM

Author(s): Robert Max Schwartz, Daniel Woodbury, Howard M. Milchberg, Univ. of Maryland, College Park (United States)

[Add To My Schedule](#) **Coffee Break 10:20 AM - 10:45 AM****Session 14:  
Propagation of Intense Ultrashort Pulses: Solids**

Thursday 19 April 2018

10:45 AM - 12:55 PM


Location: Ballroom Level, Tallahassee 3

Session Chair: [Joseph R. Peñano](#), U.S. Naval Research Lab. (United States)**Laser beam filamentation: Overview and recent results** (*Keynote Presentation*)

Paper 10638-61

Time: 10:45 AM - 11:15 AM


Author(s): Robert W. Boyd, Univ. of Ottawa (Canada)

[Add To My Schedule](#) **Spatio-temporal localization of powerful femtosecond pulses in Kerr media and light bullet regimes** (*Invited Paper*)

Paper 10638-62

Time: 11:15 AM - 11:40 AM


Author(s): Olga M. Fedotova, National Academy of Sciences of Belarus (Belarus); Oleg Khasanov, Scientific-Practical Materials Research Ctr. (Belarus); Tatiana Smimova, International Sakharov Environmental Univ. (Belarus); Grigory Rusetsky, National Academy of Sciences of Belarus (Belarus); Eugenijus Gaižauskas, Vilnius Univ. (Lithuania); Viktor Kadan, The Institute of Physics (Ukraine)

[Add To My Schedule](#) **Ultrafast laser induced hot carriers from metallic tip** (*Invited Paper*)

Paper 10638-63

Time: 11:40 AM - 12:05 PM


Author(s): Lay Kee Ang, Singapore Univ. of Technology &amp; Design (Singapore); Y. B. Zhu, South China Univ. of Technology (China)

[Add To My Schedule](#) **Surface structuring with mid-IR femtosecond laser pulses** (*Invited Paper*)

Paper 10638-64

Time: 12:05 PM - 12:30 PM


Author(s): Enam A. Chowdhury, Noah Talisa, Kevin Werner, Shier Irani, Drake Austin, The Ohio State Univ. (United States)

[Add To My Schedule](#) **High-average power ultra-broadband infrared radiation generation** (*Invited Paper*)

Paper 10638-65

Time: 12:30 PM - 12:55 PM

Author(s): Zachary Epstein, Univ. of Maryland, College Park (United States); Bahman Hafizi, Joseph Peñano, U.S. Naval Research Lab. (United States); Phillip Sprangle, Univ. of Maryland, College Park (United States)

[Add To My Schedule](#) **Lunch Break 12:55 PM - 2:00 PM****Session 15:  
Frequency Comb: Concurrent-Joint Session with conferences 10639 and 10638**

Thursday 19 April 2018

2:00 PM - 5:35 PM

Location: Ballroom Level, Tallahassee 3

Session Chair: [Michael K. Rafailov](#), Univ. of Alberta (Canada)**Massively parallel sensing of trace molecules and their isotopologues with broadband mid-IR frequency combs produced via optical subharmonic generation** (*Invited Paper*)

Paper 10639-102

Time: 2:00 PM - 2:30 PM

Author(s): Konstantin L. Vodopyanov, Andrey Muraviev, CREOL, The College of Optics and Photonics, Univ. of Central Florida (United States); Zachary Loparo, Univ. of Central Florida (United States); Sergey Vasilyev, IPG Photonics - Mid-Infrared Lasers (United States); Sergey B. Mirov, The Univ. of Alabama at Birmingham (United States)


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**Optical frequency comb stabilization of a gigahertz semiconductor disk laser (Keynote Presentation)**

Paper 10638-71

Time: 2:30 PM - 3:00 PM


Author(s): Nayara Jornod, Kutun Gürel, Valentin J. Wittwer, Pierre Brochard, Sargis Hakobyan, Stéphane Schilt, Univ. de Neuchâtel (Switzerland); Dominik Waldburger, Ursula Keller, ETH Zurich (Switzerland); Thomas Südmeyer, Univ. de Neuchâtel (Switzerland)

[Add To My Schedule](#) **Towards independent controls of optical comb frequencies and comb spacing of 3-section AlGaInAs multiple quantum-well laser diodes (Invited Paper)**

Paper 10638-66

Time: 3:00 PM - 3:25 PM

Author(s): Abdullah M. Zaman, Univ. of Central Florida (United States); Peter J. Delfyett, Mina Bayat, CREOL, The College of Optics and Photonics, Univ. of Central Florida (United States)

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**Coffee Break 3:25 PM - 3:55 PM**


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**Stable electro-optic frequency comb generation using an ultrahigh finesse etalon filtered optoelectronic oscillator (Invited Paper)**

Paper 10638-67

Time: 3:55 PM - 4:20 PM


Author(s): Michael E. Plascak, Ricardo Bustos Ramirez, Peter J. Delfyett, CREOL, The College of Optics and Photonics, Univ. of Central Florida (United States)

[Add To My Schedule](#) **Reduction of axial mode linewidth and stabilization of the repetition rate of a chip-scale high-speed MLL via COEO multi-tone injection locking (Invited Paper)**

Paper 10638-68

Time: 4:20 PM - 4:45 PM

Author(s): Ricardo Bustos Ramirez, Michael E. Plascak, Kristina Bagnell, CREOL, The College of Optics and Photonics, Univ. of Central Florida (United States); Ashish Bhardwaj, James Ferrara, Gloria E. Hoefler, Fred A. Kish, Infinera Corp. (United States); Ming C. Wu, Univ. of California, Berkeley (United States); Peter J. Delfyett, CREOL, The College of Optics and Photonics, Univ. of Central Florida (United States)

[Add To My Schedule](#) **Standoff detection from diffusely scattering surfaces using dual quantum cascade laser comb spectroscopy (Invited Paper)**

Paper 10638-69

Time: 4:45 PM - 5:10 PM

Author(s): Joel M. Hensley, Justin M. Brown, Mark G. Allen, Physical Sciences Inc. (United States); Markus Geiser, Pitt Allmendinger, Markus Mangold, Andreas Hugi, IRsweep GmbH (Switzerland); Pierre Juoy, Jérôme Faist, ETH Zurich (Switzerland)

[Add To My Schedule](#) **Self-starting harmonic frequency comb generation in quantum cascade lasers (Invited Paper)**

Paper 10638-70

Time: 5:10 PM - 5:35 PM

Author(s): Marco Piccardo, Dmitry Kazakov, Harvard Univ. (United States); Yongrui Wang, Texas A&amp;M Univ. (United States); Paul Chevalier, Harvard Univ. (United States); Tobias S. Mansuripur, Pendar Technologies (United States); Kevin Lascola, Thortabs Quantum Electronics (United States); Henry Yuan, Joseph Kimchi, Teledyne Judson Technologies (United States); Alexey Belyanin, Texas A&amp;M Univ. (United States); Federico Capasso, Harvard Univ. (United States)

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