

# OSA Subwavelength Photonics Incubator

21-23 September 2016

Washington, DC USA

HOSTED BY:

**Pavel Cheben**, National Research Council, Canada

**Iñigo Molina Fernandez**, University of Malaga, Spain

**David Smith**, Duke University, United States

**Weidong Zhou**, University of Texas at Arlington, United States

## Agenda

### Wednesday, 21 September 2016

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- Afternoon      Arrival/Hotel Check-in  
Washington Hilton, 1919 Connecticut Ave NW, Washington, DC
- 18:00            Welcome Dinner  
Madrid, 1714 Connecticut Ave NW, Washington, DC

### Thursday, 22 September 2016

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- 8:00            Breakfast  
AGU Building, 2000 Florida Ave NW, Washington, DC
- 8:30            **Welcome**  
*Liz Rogan, The Optical Society*
- 8:45            **Program Overview and Goals**  
*Hosts*
- 9:00            **Photonic Crystal Waveguides, Bloch Waves & Subwavelength Photonics**  
*Philip Russell, Former OSA President*  
*Max Planck, Institute for the Science of Light, Germany*
- 9:40            **Discussion**
- 9:50            **Subwavelength Silicon Photonics**  
*Siegfried Janz, National Research Council, Canada*
- 10:30          **Discussion**

10:40 Coffee Break

**SESSION 1: Optical Metamaterials and Metasurfaces, David Smith, Duke University, United States**

**11:00 Few-Layer Terahertz Metasurfaces for Antireflection, Polarization Conversion & Flat Lens**

*Houtong Chen, Los Alamos National Lab, United States*

**11:20 Electronically Tunable Metasurface Phased Arrays**

*Harry Atwater, Caltech, United States*

**11:40 Dielectric Metasurfaces**

*Mohammadreza Khorasaninejad, Harvard University, United States*

**12:00 Discussion – Metamaterials: Challenges and Promises**

*Lead: David Smith, Duke University, United States*

12:20 Lunch, provided

**SESSION 2: Nanoscale Structures in Dielectric Waveguides I, Miloš Popović, Boston University, United States**

**13:20 Ultra High Confinement in Silicon Photonics**

*Michal Lipson, Columbia University, United States*

**13:40 Metamaterial Interfaces for Coupling Standard Fibers to Nanophotonic Waveguides**

*Tymon Barwicz, IBM, United States*

**14:00 Subwavelength Index Engineering for SOI Waveguides**

*Robert Halir, University of Malaga, Spain*

**14:20 Discussion – Subwavelength Engineered Waveguides: Challenges & Promises**

*Lead: Miloš Popović, Boston University, United States*

14:40 Coffee Break

**SESSION 3: Nanoscale Structures in Dielectric Waveguides II, Tymon Barwicz, IBM, United States**

**15:00 Subwavelength Structures for CMOS Electronics-Photonics Integration**

*Miloš Popović, Boston University, United States*

**15:20 Subwavelength Engineered Surface Grating Couplers**

*Carlos A. Ramos, Université Paris Saclay, France*

## Thursday, 22 September 2016, continued

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**15:40**      **Photonic Crystal Microcavity Devices in SOI Waveguides**  
*Jeff Young, University of British Columbia, Canada*

**16:00**      **Discussion – Industrial Applications, Manufacturability & Markets**  
*Lead: Tymon Barwicz, IBM, United States*

### **SESSION 4: Light Interaction with Metal Nanostructures, Pierre Berini, University of Ottawa, Canada**

**16:20**      **Metallic Nanostructures for Active Control of Light**  
*Alexey Krasavin, King's College London, UK*

**16:40**      **Surface Plasmon Enhanced Optoelectronics: Application to Contactless Si Wafer Probing**  
*Pierre Berini, University of Ottawa, Canada*

**17:00**      **Photonics at the Atomic Scale**  
*Javier Aizpurua, Center for Materials Physics & DIPC, Spain*

**17:20**      **Discussion – Plasmonics: Challenges & Promises**  
*Lead: Pierre Berini, University of Ottawa, Canada*

**17:40**      **DAY 1 Wrap-Up**

**18:00**      Network Dinner  
Bistro Bistro, 1727 Connecticut Ave NW, Washington

## Friday, 23 September 2016

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**8:00**      Breakfast  
AGU Building, 2000 Florida Ave NW, Washington, DC

**8:30**      **Metamaterial and Plasmonic Components for Subwavelength Photonic Devices**  
*David Smith, Duke University, United States*

**9:10**      **Discussion**

**9:20**      **Subwavelength Plasmonic Structures**  
*Vladimir M. Shalaev, Purdue University, United States*

**10:00**      **Discussion**

**10:10**      Coffee Break

**SESSION 5: Exploring Frontiers: Photonics Crystals, Subwavelength Engineered Nanostructures and Metamaterials, David A.B. Miller, Stanford University, United States**

- 10:50**            **Modeling Nanoresonators with Their Resonance Modes**  
*Philippe Lalanne, L'Institut D'Optique, CNRS, France*
- 11:10**            **High Index Dielectric Optical Meta-surfaces with Broken Vertical Symmetry**  
*Pierre Viktorovitch, Ecole Centrale de Lyon, France*
- 11:30**            **Deep Sub-Wavelength Photonics: Persistent Heat Current, and Multi-Resonant Antenna**  
*Shanhui Fan, Stanford University, United States*
- 11:50**            **Discussion - Subwavelength Photonics: Future Prospects**  
*Lead: David A. B. Miller, Stanford University, United States*
- 12:10            Final Wrap-Up
- 12:30            Lunch, provided
- 13:30            Adjournment