

# OSA Materials for Optomechanical Actuation Incubator

25-27 June 2017  
Washington, DC USA

HOSTED BY:

**Chris Bardeen**, University of California Riverside, United States; **Antti Mäkinen**, Office of Naval Research, United States; **Peter Morrison**, Office of Naval Research, United States; **Ravi Shankar**, University of Pittsburgh, United States

## DRAFT AGENDA

### Sunday 25 June 2017

---

- Afternoon            Arrival/Hotel Check-in  
                                Fairfax Hotel, 2100 Massachusetts Ave NW, Washington, DC
- 18:00                 Welcome Dinner  
                                Ezme, 2016 P St NW, Washington, DC

### Monday 26 June 2017

---

- 8:00                  Breakfast  
                                The Optical Society, 2010 Massachusetts Ave, NW, Washington, DC
- 8:30                  Welcome  
                                Elizabeth Nolan, Deputy Executive Director/Chief Publishing Officer, OSA
- 8:45                  Brief Incubator Overview & Goals  
                                Hosts

### SESSION 1: Talks on current research topics: Photochemical, Photothermal & Plasmonics

- 9:00                  Metamaterial Enhanced Photothermal Forces for Phonon Lasing  
                                Ertugrul Cubukcu, University of California, San Diego, United States
- 9:30                  Responsive Polymer Nanocomposites with Optically Reconfigurable 3D Shapes  
                                Ryan Hayward, University of Massachusetts Amherst, United States
- 10:00                 Macroscopic Photonastic (Photomechanical) Effects in Hybrid Materials  
                                Jeff Rack, University of New Mexico, United States

## Monday 26 June 2017, continued

---

- 10:30 Coffee Break
- 11:00 Quantification and Modelling of Dynamic Effects in Molecular Crystals  
Pance Naumov, New York University, Abu Dhabi, United Arab Emirates
- 11:30 Design and Development of Negative Photochromic Systems  
Javier Read de Alaniz, University of California, Santa Barbara,  
United States
- 12:00 Brillouin Optomechanics in Microresonators  
Gaurav Bahl, University of Illinois at Urbana-Champaign, United States
- 12:30 Lunch, provided
- 13:30 Optomechanical Metasurfaces  
Eric Plum, University of Southampton, United Kingdom
- 14:00 Actuating with Light: A Continuum Perspective  
Kaushik Bhattacharya, California Institute of Technology, United States
- 14:30 Session Wrap-up & Moderated Discussion
- 15:00 Coffee Break

## **SESSION 2: Challenges in Modeling of Functional Materials & Assessing the Potentials for Developing New Functional Photomechanical Materials**

- 16:00 Multi-physics and Multi-scale modeling to Enable Photomechanical Machines  
Kaushik Dayal, Carnegie Mellon University, United States
- 16:30 Leveraging Multi-scale Modeling Capabilities to Drive Innovation in  
Photoresponsive Materials  
Michael Makowski, PPG Industries, United States
- 17:00 Charge Separation in Semiconductor Nanostructures for Opto-mechanics  
Jacob Khurgin, Johns Hopkins University, United States
- 17:30 Day 1 Wrap-up & Moderated Discussion
- 18:10 Networking Dinner  
Grillfish, 1200 New Hampshire Ave NW, Washington, DC

8:00 Breakfast  
The Optical Society, 2010 Massachusetts Ave, NW

**SESSION 3: Measurements & Laboratory Experiments**

8:30 Photomechanical Effects in Materials, Composites, and Systems: Opportunities and Challenges  
Timothy White, US Air Force Research Laboratory, United States

9:00 NRL Perspectives on Optomechanical Materials and Applications  
Jason Myers, US Naval Research Laboratory, United States

9:30 Open Discussion: Photomechanical Material Classes

- Is it possible to understand and measure the contribution of phonon energy in terms of figures of merit, as well as the understanding the physics behind that contribution?
- Will this understanding lead to new materials and metamaterials?

10:30 Coffee Break

**SESSION 4: Material Architectures, Applications & Potential Uses**

11:00 Harnessing the Photomechanical Response of Dye-doped Polymers & Elastomers  
Mark Kuzyk, Washington State University, United States

11:30 Talk Title TBD  
Peter Morrison, US Office of Naval Research, United States

12:00 Lunch, provided

13:00 Open Discussion & Exchanges

14:00 Closing Remarks

14:20 Adjournment