



**LIGHT-MATERIAL INTERACTIONS
IN ENERGY CONVERSION**



**Approaches to Ultrahigh Efficiency
Solar Energy Conversion**

LMI-EFRC Annual Meeting and Webinar
California Institute of Technology
March 7-8, 2013

Thursday, March 7, 2013

Cahill Center and Winnett Lounge

7:30-8:15 **Breakfast** *Cahill Center, Back Patio*

8:30-10:30 Approaches to Ultrahigh Efficiency Solar Energy Conversion

Public Webinar, Hameetman Auditorium at the Cahill Center

- 8:30-9:00 **Harry Atwater**, "Photonic Design Principles for Ultrahigh-Efficiency Photovoltaics"
- 9:00-9:30 **John Rogers**, "Microscale Solar Cells for Macroscale Power Generation"
- 9:30-10:00 **Eli Yablonovitch**, "The Multi-Spectral Opto-Electronic Physics of Solar Cells, Efficiencies >30%"
- 10:00 -10:30 **Panel Discussion**: "Future Directions for Light-Material Interactions in Photovoltaics" (Nate Lewis, Paul Alivisatos, Paul Braun)

10:30-11:00 **Break**
Move to Winnett Lounge, continue Annual Meeting with LMI personnel only

11:00-11:15 **Welcome and Introductions** *Winnett Lounge*
(Harry Atwater and Carrie Hofmann)

11:15-12:15 **Brainstorm Session 1: Full spectrum photovoltaics** *Winnett Lounge*
(Facilitators Emily Kosten, Korok Chatterjee, and Neil Krueger)

12:15-2:00 **Lunch and Poster Session** *Jorgensen*

2:00-3:00 **Brainstorm Session 2: Light management in multijunction solar cells**
(Facilitators Carissa Eisler, Chi-Sing Ho, and Xing Sheng) *Winnett Lounge*

3:00-3:30 **Break**

3:30-4:30 **Brainstorm Session 3: Graphene photonics** *Winnett Lounge*
(Facilitators Victor Brar, Noah Bronstein, and Runyu Zhang)





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5:30-7:00	Dinner	<i>Main Lounge, Athenaeum</i>
7:00-8:00	Brainstorm Session 4: Laser and light processing of materials for energy (Facilitators Dave Carlson, Bryce Sadtler, and David Barth)	<i>Main Lounge, Athenaeum</i>

Friday, March 8, 2013

Winnett Lounge

8:00-8:30	Breakfast	
8:30-9:30	Brainstorm Session 5: New conversion mechanisms: plasmonics, hot-carriers, and upconversion, etc. (Facilitators Matt Sheldon, Vivian Ferry, and Lanfang Li)	
9:30-10:30	Brainstorm Session 6: Unconcentrated solar thermal energy generation (Facilitators Austin Minnich and Hailong Ning)	
10:30-11:00	Break	
11:00-11:30	2012-2013 Annual Report Preparations and Acknowledgements	
11:30-12:00	Additional discussion time	
12:00-1:00	Lunch	
1:00-5:00	Lab tours (Atwater, Lewis, Minnich labs; JCAP; KNI) and opportunities for small group discussion	

