



Novel Materials and Concepts for Next-Generation Energy Technology

February 25 - 26, 2017

Chairs

Kannatassen Appavoo and Mimi N. Hang

Ventura Beach Marriott

2055 Harbor Boulevard

Ventura, CA, US

Conference Description

The Gordon Research Seminar on Nanomaterials for Applications in Energy Technology is a unique forum for graduate students, post-docs, and other scientists with comparable levels of experience and education to present and exchange new data and cutting edge ideas.

The focus of this seminar is to explore physical and chemical processes that span multiple length and time scales, and are critical for novel energy-conversion and storage applications. Topics include, but are not limited to, the following research fields: photovoltaics (e.g. hybrid perovskites, fission-based nanomaterials), fuel production and storage (e.g. hydrogen evolution using water-splitting photocatalysts), batteries and thermoelectrics – with discussions spanning from charge transfer and hot-carrier generation to photon management / recycling schemes.

The seminar is designed to be highly interactive, providing ample opportunity to network and socialize with peers; setting the stage for young researchers to be fully engaged in the associated Gordon Research Conference. The seminar includes a mentorship session, bringing in scientists from academia, national laboratories and industry to share their experience and vision for the future of nanotechnology in the energy sector.

Related Meeting



This GRS will be held in conjunction with the "Nanomaterials for Applications in Energy Technology" Gordon Research Conference (GRC). Those interested in attending both meetings must submit an application for the GRC in addition to an application for the GRS. Refer to the [associated GRC program page](#) for more information.

Conference Program

Saturday	
2:00 pm - 5:00 pm	Arrival and Check-in
3:30 pm - 3:45 pm	Introductory Comments by GRC Site Staff / Welcome from the GRS Chair
3:45 pm - 4:30 pm	Keynote Session: Fundamentals and Applications of Nanomaterials in Energy Technology Discussion Leader: Mimi Hang (University of Wisconsin-Madison, USA)
3:45 pm - 4:15 pm	Vanessa Wood (ETH Zurich, Switzerland) "Fundamentals and Applications of Nanomaterials in Energy Technology"
4:15 pm - 4:30 pm	Discussion
4:30 pm - 6:00 pm	Poster Session
6:00 pm - 7:00 pm	Dinner
7:30 pm - 9:30 pm	Energy Storage Discussion Leader: Isvar Cordova (Advanced Light Source, Lawrence Berkeley National Laboratory, USA)
7:30 pm - 7:50 pm	James Thostenson (Duke University, USA) "Integrated Flexible Control Circuit Between an Organic Photovoltaic and Flexible Supercapacitors for Powering Wearable Sensor"
7:50 pm - 8:00 pm	Discussion
8:00 pm - 8:20 pm	Yayuan Liu (Stanford University, USA) "Stabilization of Lithium Metal Anode via Three-Dimensional Composite Structure and Interfacial Engineering"
8:20 pm - 8:30 pm	Discussion



8:30 pm - 8:50 pm	Linghong Zhang (Argonne National Laboratory, USA) "The Effect of Oxidation on the Electrochemical Performance of Silicon Anodes for Lithium Ion Batteries"
8:50 pm - 9:00 pm	Discussion
9:00 pm - 9:20 pm	Christian Prehal (Montanuniversitat Leoben, Austria) "Combining Modeling and <i>In Situ</i> X-Ray Scattering to Quantify Ion Charge Storage in Supercapacitor Nanopores"
9:20 pm - 9:30 pm	Discussion
Sunday	
7:30 am - 8:30 am	Breakfast
9:00 am - 11:00 am	Energy Harvesting Discussion Leader: Ognjen Ilic (California Institute of Technology, USA)
9:00 am - 9:20 am	In Soo Kim (Argonne National Laboratory, USA) "Water- and Heat-Resistant Halide Perovskite Photovoltaics via Hybrid Electron Extraction Layers"
9:20 am - 9:30 am	Discussion
9:30 am - 9:50 am	Samantha Ehrenberg (University of Minnesota, USA) "Silicon Quantum Dots for Luminescent Solar Concentrators"
9:50 am - 10:00 am	Discussion
10:00 am - 10:20 am	Jonathan De Roo (Columbia University, USA) "Colloidal Metal Oxide Nanocrystal Catalysis by Sustained Ligand Displacement"
10:20 am - 10:30 am	Discussion
10:30 am - 10:50 am	Kelly Mauser (California Institute of Technology, USA) "Resonant Thermoelectric Nanophotonics"
10:50 am - 11:00 am	Discussion
11:00 am - 12:30 pm	Poster Session <i>Coffee will be served in the poster area from 11:00 am - 11:30 am</i>



12:30 pm - 1:30 pm	Lunch
1:30 pm - 2:30 pm	<p>Mentorship Component: A Discussion About Post-Graduation Career</p> <p><i>Young scientists currently in academia, national laboratories and industry will share their experience about life beyond their post-doctoral positions.</i></p> <p>Discussion Leader: Alexandr Simonov (Monash University, Australia)</p>
1:30 pm - 2:30 pm	<p>Panel Discussion</p> <p><i>Post-Graduation Career Discussions</i></p> <ul style="list-style-type: none"> • Sai Konda (American Chemical Society, USA) • Feng Lin (Virginia Tech, USA) • Matthew McDowell (Georgia Institute of Technology, USA)
2:30 pm - 3:00 pm	<p>Evaluation Period</p> <p><i>Fill in GRS Evaluation Forms</i></p>
3:00 pm	Seminar Concludes

Contributors

		
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