



Mar 16th, 12:10 PM - 1:00 PM

# Powering the Planet: The Role Chemistry Plays in Solar Energy Technology

Amy M. Scott
*University of Miami*

# Climate-Sustainability Lecture Series

NOVA SOUTHEASTERN UNIVERSITY

Halmos College of Natural Sciences and Oceanography

## Powering the Planet: The Role Chemistry Plays in Solar Energy Technology

**Dr. Amy M. Scott, Assistant Professor**

**Department of Chemistry, University of Miami**

**Wednesday, March 16, 2016, 12:10p.m-1:00p.m. Mailman-Hollywood Second Floor Auditorium**

Global energy demands are projected to double by 2050, according to the U.S. Department of Energy, and solar energy has the greatest potential as the most benign, universal resource for generating electricity. However, harnessing the solar energy efficiently and converting it towards useful forms of power that are compatible with our current infrastructure remains an elusive goal. Today's solar energy utilization relies on silicon-based photovoltaic (PV) technology, which converts photon energy to electrical energy. The efficiency of these devices remains low (< 30%) and the cost of processing silicon and installing solar panels in homes makes PV uneconomical compared to the current price of electricity. Research efforts towards developing new inorganic and organic materials for thin film PV to replace silicon are currently underway. Organic materials are particularly interesting from the standpoint of developing simple, cheap materials that can be easily tailored for future PV devices. The future of solar energy utilization relies on developing solar paints for vehicles, solar shingles for rooftops, and spray-on solar ink for small device applications, but continued *fundamental* research is needed for decreasing cost and improving efficiency for next generation devices.



Presented by Halmos College of Natural Sciences and Oceanography, Department of Chemistry and Physics, the Climate-Sustainability Lecture Series aims to increase the understanding of the science, technology, and policies relating to climate change and sustainable development. For more information, contact Song Gao, Ph.D., Associate Professor at the college, at sg1002@nova.edu.