

## Seminar

9:45 a.m. Thursday, October 4, 2012 • 331 Smith Hall



Associate Professor

**Jeffrey Pyun**

Department of Chemistry and Biochemistry  
University of Arizona

### *Polymerizing Goblins and Brimstone for Energy Applications*

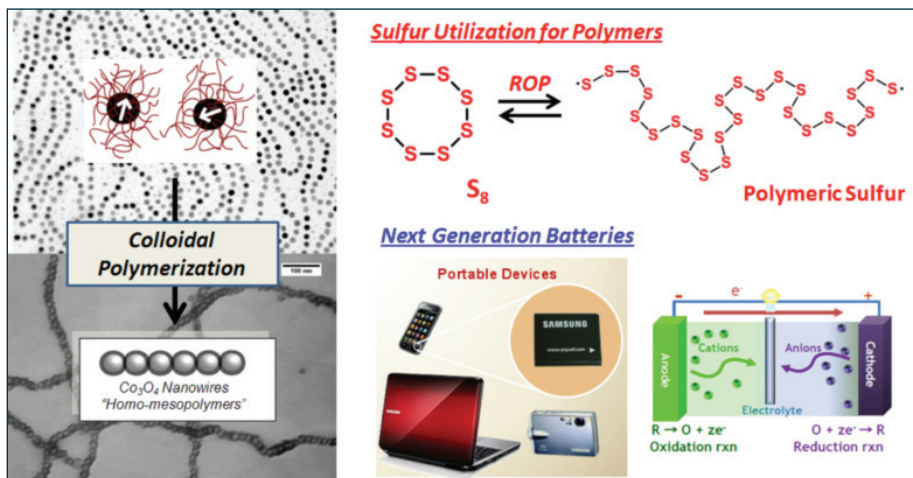
Research is focused on the synthesis and characterization of novel polymeric and composite materials, with an emphasis on the control of nanoscale structure.

Website: [http://www.biochem.arizona.edu/facultyprofile?fid\\_call=Pyun](http://www.biochem.arizona.edu/facultyprofile?fid_call=Pyun)

#### Abstract

We will present our recent efforts in the polymerization of unconventional monomers to prepare novel polymeric and nanocomposite materials. We will discuss our recent efforts the polymerization of a novel class of polymer-nanoparticle hybrid materials on dipolar cobalt nanoparticles, which were used as “colloidal monomers” in a process termed Colloidal Polymerization. From this process, we have been able to synthesis electroactive cobalt oxide nanowires and heterostructured nanocomposites with either noble metal, or semiconductor inclusions.

We will discuss our recent efforts on the synthesis and characterization of these materials along with relevance to photocatalysis for water splitting and solar hydrogen generation. In the area of electrochemical energy storage, we will discuss our recent efforts on the polymerization of elemental sulfur to prepare novel polymeric and nanocomposite materials which we are exploring for utilization in next generation Li-S batteries.



Host: Professor Theresa Reineke  
Refreshments will be served prior to the seminar.