

Synthetic Polymer Chemist Postdoctoral Fellowship Opportunity

As part of an NSF Center on additive manufacturing we seek a highly motivated organic/polymer chemist for a postdoctoral fellowship position. Current research aims at the synthesis, characterization, and processing of polymer-based architectures used in a variety of technologies and devices ranging from aerospace to medical devices using additive manufacturing techniques. Present research problems include gaining a fundamental understanding of different mechanisms of self-assembly and microstructure and how it contributes to properties on the macroscale. Responsibilities will include initial material synthesis for **additive manufacturing**, creation/standardization of analysis processes/characterization for these novel materials, high impact journal publications and mentoring students.

Initial appointment is for one year which is renewable based on satisfactory performance. The work involves synthesis of nanoparticles and grafting of polymers with controlled graft density and molecular weight to the particle surface. The resultant structure, dynamics and macroscopic properties (rheology, dielectric, thermal behavior) of the polymer grafted nanoparticles will be characterized at Argonne National Labs (ANL), Air Force Research Labs (AFRL) and the National High magnetic Field Laboratory (NHMFL). The position is through Florida A&M University-Florida State University (FAMU-FSU) Department of Chemical and Biomedical Engineering. The work will mainly be performed at the FAMU-FSU College of Engineering and satellite labs that include the NHMFL, but also in collaboration with Harvard University, ANL and AFRL. Experimental work will be complemented with theoretical efforts in collaboration with Dr. James Swan at MIT.

Skills and Requirements

- Polymer synthesis and grafting of polymer chains to particle surfaces (for example controlled polymerizations and “click” chemistry).
- Purification and characterization of synthesized particles and polymers.
- Knowledge of scattering and rheological methods to characterize the resultant nanocomposites properties is a plus.
- Excellent written English and oral communication skills are required.
- Ability to work independently and mentor graduate and undergraduate students.

Applicants should contact Dr. S. Ramakrishnan by email with a CV and contact information of 3 references. Selected candidates will be interviewed for the final position.

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<http://ww2.eng.famu.fsu.edu/nsfscholars/>