SEMINAR

DEPARTMENT OF PHYSICS

Ionic Liquids for Processing of Macromolecules and Carbon Nanomaterials – Fundamental Interactions and Applications

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2:00 P.M.

Tuesday, February 3rd, 2014

Room 146 Science Center

ABSTRACT

Room temperature ionic liquids (ILs) are defined as salts with melting points at or below 373 K. A typical IL is comprised of a bulky organic cation and an inorganic or organic anion. The ability to tune the physicochemical properties of ILs by changing the structure of the ions has led to their being called "designer" solvents. Because of their unique properties and potential use in a variety of areas such as synthesis, chemical separations, biocatalysis, electrochemistry, solar cells, tribology, and ion-gel technology, ILs have recently been the subject of a large amount of research. The use of ILs in processing macromolecules and carbon nanomaterials is of particular interest because of potential technological applications. This talk will focus on our recent work in the use of ILs in dispersing cellulose and graphene in solution. Finally, opportunities for underrepresented minority students to participate in this research through a National Science Foundation summer research program will be described.