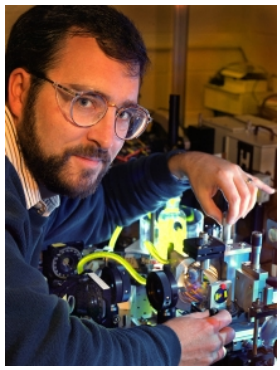
Special Lecture
by Prof. Dr. Ed. W. Castner, Jr.

Structure, Interactions and Chemistry in Ionic Liquids

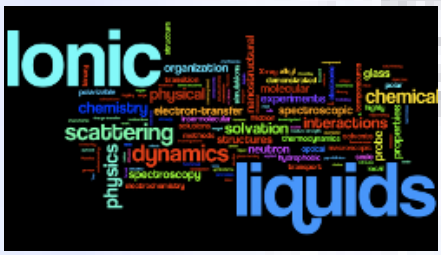
Time and Day: 10:00 – 12:00 Thurs. 27, June 2013
Lecture Room: 161-2 at the materials and production building



Prof. Dr. Edward. W. Castner, Jr. (Rutgers, The State University of New Jersey) is one of the worldwide leaders in physics and chemistry on Ionic liquids, which nowadays attracts much attention in the materials sciences. He will be invited to the 33rd International Conference on Solution Chemistry, which will be held in Kyoto in this summer. On this occasion, we also invited him to Niigata University, and kindly ask him to give special lecture on Ionic Liquids.

Abstract

Ionic liquids are becoming increasingly important for use in catalysis, energy storage technologies, and biotechnology. I will discuss how the interplay between ionic liquid structure, transport properties and dynamics affects the outcomes of chemical reactions in these novel solvents. I will present some of our recent results on photo-induced electron-transfer reactions in ionic liquids, as well as structural studies of the bulk fluids using a combination of high energy X-ray scattering and molecular dynamics simulations. To complement these structural studies, we are using 2D nuclear Overhauser effect NMR to study the interactions between ions. We are introducing these 2D NMR methods to study specific interactions with a molecular solute and the surrounding cations and anions.



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