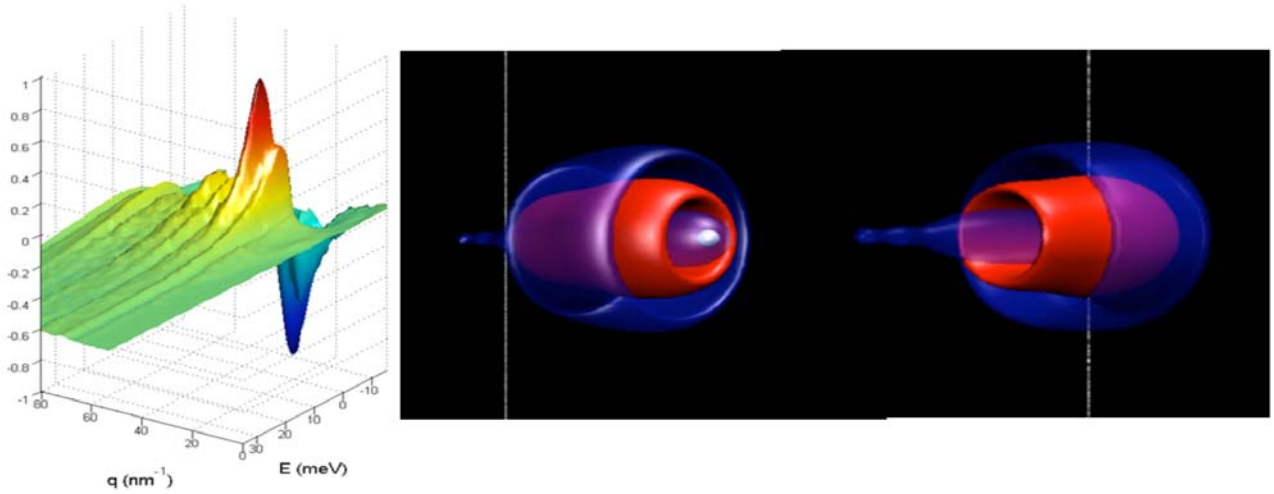
NANOHOUR

Wednesday, November 5, 2008
3:00 pm - Beckman Institute - Room 3269

Reconstructing the dynamical hydration structure of the hydrated electron using Inelastic X-Ray Scattering

Robert Coridan – Department of Materials Science and Engineering



Water-mediated interactions drive a number of chemical, physical and biological processes in solution. Examples of this span from aqueous chemical reactions to self-assembly of biomolecular structures, all of which are affected by local density fluctuations in the surrounding hydration structure. We have developed a novel technique to image the dynamical density fluctuations in liquid water around atomic-scale charge densities. We combine the ability of inelastic x-ray scattering measurements to map out the spatio-temporal dynamics of bulk water with linear response theory to calculate the hydration structure around arbitrary dynamical charge densities. Further, we use this technique to investigate the dynamics of water around a hydrated electron, which to this point has only been simulated. Future applications of this technique will also be discussed.

Coffee, tea and cookies will be served.

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