POSTDOCTORAL SCHOLAR POSITIONS
THEORETICAL AND COMPUTATIONAL CHEMICAL PHYSICS

RESEARCH TOPICS:

(A)  Computational Biophysics
Simulation of amyloid fibril structures and aggregation kinetics, lipid-protein complexes and antibody interactions and how they can be probed by novel multidimensional spectroscopy ranging from the infrared to the ultraviolet.

(B)  Attosecond X-ray Spectroscopy of Molecules
Developing time-dependent many-body approaches to nonlinear x-ray core-electron spectra and their description in terms of real-space and real-time wavepackets of electrons and nuclei. Computational tools will be implemented for the design and analysis of measurements involving multiple ultrafast optical and x-ray pulses.

(C)  Energy and charge separation in photosynthetic complexes studied by nonlinear spectroscopy
Developing and applying time-dependent density functional, nonequilibrium Green's Function techniques and exciton models for computing electronic excitations of molecular assemblies, light harvesting complexes and current-carrying molecules. Connection is made to quantum information processing and manipulation.

Ph.D. is required. Salary will commensurate with experience. Send a curriculum vitae, publication list and arrange for three letters of recommendation to be sent to:

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Post November, 2010: close December 31, 2010