POSTDOCTORAL SCHOLAR POSITIONS
THEORETICAL AND COMPUTATIONAL CHEMICAL PHYSICS

RESEARCH TOPICS:

(A) 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.

(B) Nonlinear Spectroscopy with Quantum Optical Fields
Novel optical signals which use entangled photons, pulse shaping, and coherent control algorithms are designed and simulated for probing vibrational and exciton dynamics in molecular aggregates and semiconductor nanostructures.

(C) Many Body Theory of Nonlinear Response in the Condensed Phase
Developing and applying time-dependent density functional, nonequilibrium Green’s Function techniques and exciton models for computing electronic excitations of molecular assemblies, energy and charge separation in photosynthetic complexes and current-carrying molecules. Connection to quantum information processing and manipulation will be explored.

Recent Ph.D. is required (2012 or later). Salary will be commensurate with experience. Please apply online at: https://recruit.ap.uci.edu/apply/JPF02945 and send a curriculum vitae, publication list and arrange for three letters of recommendation to be sent to:

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Relevant Publications

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