

Job Advertisement

Post-Doc opening (full position)

Assembling of a fluorescence spectrometer at the university of Kassel for experiments at the free-electron-laser facility FLASH at DESY in Hamburg and at the synchrotron radiation facility BESSY II at Berlin

We have a postdoctoral opening for the period of three years (from July 1st 2007 to June 30th 2010) to realize the BMBF financed project „Fluorescence spectrometer with time and polarisation analysis and spin resolved photoelectron spectrometer for the combined use at FEL- and synchrotron radiation facilities“. The assignment of the candidate will be to develop and assemble a fluorescence spectrometer at the university of Kassel in own responsibility. This assignment is a particular project for the assembling of a combined fluorescence and photo electron spectrometer including the Fritz-Haber-Institut, Berlin, the university of Frankfurt and the university of Kassel. Further the assignment will be to plan and carry out the experiments at the free-electron-laser FLASH at DESY in Hamburg and at BESSY II in Berlin solving up to date problems in molecular and atomic physics.

Assignments in the project

Assembling of a 1m-normal-incidence fluorescence spectrometer to detect polarization resolved fluorescence lines in the spectral range from the vacuum ultra violet (VUV) up to the visible range of the electromagnetic spectrum for experiments in the gas phase. Integration of this fluorescence spectrometer with the spin resolved photo electron spectrometer assembled by the partner groups and carrying out the first coincidence experiments with both spectrometers. Planning, applying for, and carrying out the experiments during the beam times at the free-electron-laser FLASH in Hamburg and at BESSY II in Berlin in field of molecular and atomic physics.. These experiments include topics like inter coulombic decay, entanglement of photons with electrons in a coherently excited state, quantum mechanically interference effects of coherently excited molecular states, and correlative processes of electrons in atoms. Managing of the project reports ~~together with the project leader~~. Writing of proposal of own projects. The offered position is meant as a chance to get a postdoctoral lecture qualification. Supervision of a PhD-student working in the same project.

The applicant should have a background in one or more of the following fields of research

Planning and carrying out of beam times at a synchrotron radiation or free-electron-laser facility. Knowledge in the field of fluorescence spectroscopy in the spectral range from the VUV up to the visible range, especially knowledge to handle spectrometers, position-sensitive detectors, optics in general, data acquisition with modern hard- and software tools, and electronics in general.

Knowledge in optical fibers.

Excellent knowledge in the latest theories in molecular and atomic physics.

Knowledge in assembling or participation in assembling a beam line for the use of synchrotron radiation. Applying for funds in research.

Environment of research

The chosen candidate will be a part of a group of 6 PhD-students, 5 master students, and 1 further post doc. Of this research team 3 PhD-students and two master students will work in the same field of physics and project. The tight cooperation with of the Fritz-Haber-Institute and the university of Frankfurt will give opportunities not only to study the experimental technics of the home university, but also the technics of the partner groups as well, which include state of the art technics like photo electron spectroscopy, coincidence technics, and COLTRIMS. Through the beam times in Berlin and Hamburg it will be possible to get in contact to a various number of scientists.