

放射光原子分子分光における基礎物理

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In this presentation, I will talk about two projects conducted by my group, utilizing relatively conventional experimental methodologies, namely, time resolved vuv fluorescence spectroscopy, and high resolution photoelectron spectroscopy. Actually, the vuv time resolved fluorescence spectroscopy, however is not all that conventional especially since it requires high quality, timing operation of synchrotron radiation. In addition, it is now realized that spectroscopy in the time domain can reveal information regarding electron correlation that are hard to obtain from energy-level based spectroscopy. Likewise, electron spectroscopy itself has also made great progress in terms of resolution and efficient measurement capabilities. We are now on the verge of revealing dynamic correlational processes very close to the photoionization threshold region, uncovering fundamental quantum mechanics problems in the region where classical physics meets quantum mechanics.

Last but not least, I will touch on a few issues regarding the importance of better “operation” of facilities over the “building” of new facilities.