FEMTOSECOND TIME AND ANGLE-RESOLVED PHOTOELECTRON SPECTROSCOPY OF AQUEOUS SOLUTIONS

TOSHINORI SUZUKI, Graduate School of Science, Kyoto University, Kyoto, Japan.

We present the femtosecond time- and angle-resolved photoemission spectroscopy of a liquid beam of aqueous solution. A liquid laminar flow 25 micron in diameter is introduced into a high-vacuum photoelectron spectrometer and interrogated using the pump-probe method. The photoelectron kinetic energy distribution is measured by rotating the probe laser polarization with respect to an electron detection axis with a small detection solid angle. The observed time- and angle-resolved photoelectron kinetic energies exhibit electron binding energies and characters of transient electronic states of solutes near the liquid surface. The method provides novel information for understanding solution chemistry.