PHOTOELECTRON IMAGING OF COPPER-METHANOL ANION COMPLEXES

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We report anion photoelectron imaging spectra for several copper-methanol complexes. The complexes are formed in a pulsed sputtering discharge source near the origin of a pulsed supersonic exspansion. Anion complexes are mass-selected in a Wiley-Mclauren time-of-flight mass spectrometer and electrons are photodetached using pulsed laser sources tunable between 300 nm and 800 nm. The photoelectron kinetic energy distributions are obtained using a photoelectron imaging spectrometer operated in the velocity map imaging mode, with an energy resolution of 2.5 percent of the electron kinetic energy. The vertical detachment energy and the electron binding energy shifts of the ground and first two excited states (all essentially atomic Cu $^2S_{1/2}$, $^2D_{5/2}$, and $^2D_{3/2}$ excitation) of the neutral complex are reported, as a function of the number of methanol molecules. Comparisson will be made with previous results on similar copper-water complexes.
Supported by NSF and AFOSR