ELECTRONIC PHOTODISSOCIATION SPECTROSCOPY OF GAS-PHASE $IrBr_n^{k-}$

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Iridium complex anions ($IrBr_6^{2-}$, $IrBr_5^-$ and $IrBr_4^-$) were studied using photodissociation spectroscopy in the photon energy range between 1.1 and 5.6 eV. These spectra probe the electronic structure of iridium bromide complexes as a function of the coordination number and metal oxidation state. The observed spectra for isolated $IrBr_6^{2-}$ contain similar features to its spectrum in aqueous solution. An analysis of the fragment channels reveals a tendency for formation of $IrBr_5^-$ fragment ions in the visible while formation of $IrBr_4^-$ fragment ions is favored in the ultraviolet. Spectra for $IrBr_5^-$ and $IrBr_4^-$ parent ions indicate that their preferred fragment channel is the loss of one or more neutral bromine atoms.