INFRARED PHOTODISSOCATION SPECTROSCOPY OF METAL BENZENE CATION COMPLEXES

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$\mathrm{M^+ - Bz_n}$ complexes are produced in a laser vaporization/supersonic expansion source. These complexes are mass selected in a time-of-flight mass spectrometer, and their infrared spectra (700-4500 $\mathrm{cm^{-1}}$) are taken using infrared laser photodissociation spectroscopy via the argon tagging method. DFT on the $\mathrm{M^+ - Bz_n}$ complexes is carried out to obtain the structures and vibrational frequencies. The CH stretch and fingerprint regions of the complexes are compared to theory and the free benzene spectrum. The far infrared spectra of $\mathrm{Al^+ - Bz}$ and $\mathrm{V^+ - Bz}$ (700-1800 $\mathrm{cm^{-1}}$) are compared to the previous spectra collected using IR-MPD and significant differences in linewidth and line position are observed.