INFRARED RESONANCE ENHANCED PHOTODISSOCIATION SPECTROSCOPY OF Si^+(Benzene)$_n$ CLUSTERS

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Silicon cation-benzene complexes are produced by laser vaporization in a pulsed supersonic expansion. Ions of interest are mass selected in a reflectron time-of-flight mass spectrometer where they photodissociate after excitation from a tunable infrared OPO/OPA laser system. Infrared Resonance Enhanced Photodissociation (IR-REPD) spectra are obtained by monitoring the fragment ion intensity while scanning the infrared laser system in the region from 2700-3300 cm^{-1}. Vibrational bands in this region lie near to, but shifted from, free benzene vibrational modes due to the perturbation from the silicon cation. Interpretation of the observed infrared spectra will be discussed.