INFRARED AND ELECTRONIC SPECTROSCOPY OF $[C_6H_6(NH_3)_n]^+$: THE IDENTIFICATION OF THE NUCLEOPHILIC SUBSTITUTION INTERMEDIATE HAVING A NEWLY FORMED C-N VALENCE BOND

KENTA MIZUSE, ASUKA FUJII, and NAOHIKO MIKAMI, *Department of Chemistry, Graduate School of Science, Tohoku University, Sendai 980-8578,Japan*.

Infrared and electronic photodissociation spectra of $[C_6H_6(NH_3)_n]^+$ (n=1-5) are measured in the X-H stretch (X=N and C) and the visible regions , respectively. For the n=1 cluster, both spectra indicate that a new C-N bond is formed resulting in the cyclohexadienyl type structure, which can be regarded as the intermediate form of aromatic nucleophilic substituion. For the higher clusters, the geometric structures will be discussed on the basis of the spectral features.