PFI-ZEKE SPECTROSCOPY OF $MN(CH_3)_3$, (M=Sc, Y, La)

JASON F. FULLER, GRETCHEN K. ROTHSCHOPF, SHENGGANG LI and DONG-SHENG YANG, *Department of Chemistry, University of Kentucky, Lexington, Kentucky 40506-0055*.

Pulsed field ionization-zero electron kinetic energy (PFI-ZEKE) photoelectron spectroscopy was used to study Group III-trimethylamine association complexes. The M-$N(CH_3)_3$ complexes (M=Sc, Y, La) were produced in a pulsed molecular jet by laser ablation of the metal rod in the presence of a trimethylamine/helium mixture. Photoelecton spectra of the complexes were measured, allowing for the determination of the adiabatic ionization potential of the neutral radicals and the intermolecular vibrational frequencies for the neutrals and their ions. Spectral assignments were aided by *ab initio* and Franck-Condon factor calculations.