METAL-MOLECULE INTERACTIONS IN In^+-$NH_2(CH_3)$, In^+-$NH(CH_3)_2$, In^+-$N(CH_3)_3$ and THEIR NEUTRAL RADICALS

GRETCHEN K. ROTHSCHOPF, SHENGGANG LI AND DONG-SHENG YANG, *Department of Chemistry, University of Kentucky, Lexington, KY 40506-0055*.

The indium-amine radicals were produced by reactions of laser-vaporized metal atoms with methylamines seeded in helium gas and identified with time-of-flight mass spectrometry. Metal-ligand interactions of the positive ion and neutral species were probed using ZEKE spectroscopy. From the ZEKE spectra, ionization energies and metal-ligand stretching frequencies were determined for the three complexes, and bending frequencies were obtained for the monomethylamine and dimethylamine species. In comparison with $InNH_3$,[a] these methylated complexes have lower ionization energies and stronger metal-ligand binding.

[a] G. K. Rothschopf, J. S. Perkins, S. Li and D. -S. Yang, *J. Phys. Chem. A* **104**, 8178 (2000).