

Solid State and Solution Studies of Germanium Coordination Complexes.

Germanium complexes are attractive as reagents for performing a variety of useful chemical transformations because they have redox properties similar to transition metals. Compared to highly-studied transition metal complexes, germanium also offers two electron oxidation/reduction chemistry that is important to a variety of catalytic reactions, but at a lower cost. To fully understand the potential of germanium complexes as reagents, fundamental studies into their structures are highly important. In this project, a series of germanium complexes with salicylaldiminato ligands was synthesized using inert atmosphere techniques. Homoleptic complexes containing two salicylaldiminato ligands and heteroleptic complexes containing one ligand and one amide were targeted. These complexes were characterized using nuclear magnetic resonance spectroscopy. A summary of the structural results and potential applications as catalysts will be presented.