

LOW-COORDINATE CATIONIC LEWIS ACIDS AS CATALYSTS IN  
HYDROAMINATION AND HYDROSILYLATION REACTIONS. Rudolf J. Wehmschulte,  
Department of Chemistry, Florida Institute of Technology, 150 W. University Blvd., Melbourne,  
FL 32909

The quasi-cationic Lewis Acids  $[\text{Et}_2\text{Al}][\text{CH}_6\text{B}_{11}\text{I}_6]$  and  $[\text{EtZn}(\eta^3\text{-C}_6\text{H}_6)][\text{CHB}_{11}\text{Cl}_{11}]$  have been investigated as catalysts in intramolecular hydroamination reactions and in hydrosilylation/reduction reactions of olefins and carbonyl compounds. Whereas cationic aluminum compounds show some catalytic activity in intramolecular hydroamination reactions of 1-amino-4-pentenes, the  $[\text{EtZn}(\eta^3\text{-C}_6\text{H}_6)]^+$  cation is rather unreactive and is eventually converted into an inert compound. Both types of compounds display good activity in hydrosilylation reactions of olefins, and they catalyze the reduction of benzophenone to diphenylmethane. Furthermore, both compounds catalyze the reduction of  $\text{CO}_2$  to methane and other products dependent on the solvent.