ABSTRACT

SYNTHESIS OF AMINOBORANES AND HETEROCYCLIC BORON COMPOUNDS

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Compounds featuring main group elements within the nitrogen-containing heterocyclic framework have been attracted both as reactive entities in their own right, and as potential two electron donor ligands towards transition metals. While this field has been dominated by N-heterocyclic carbenes (NHC), there have been extensive efforts to isolate and characterize the isovalent p-block analogues ofcarbene. In this way, N,N-chelated ligands containing boron heterocycles are more important compounds.

In this thesis, a series of novel amidinate and β-diketiminatehaloboryl complexes were synthesized as precursor of iron complexes containing four and six membered N-heterocyclic boron analogue of carbene. The iron complexes, which containing four and six membered N-heterocyclic boron, were synthesized by the abstraction of halide from the corresponding haloboryl by $Na[BAr^{F}{}_{4}]$. The synthesized complexes were characterized by IR, MS, NMR, X-ray and DFT techniques.

Key words: Boron heterocycles, complexes of amidinate and β-diketiminatehaloboryl, boron analogues of four and six membered NHC.