

ABSTRACT

SYNTHESIS AND CHARACTERIZATION OF CARBOXYLIC ACID DERIVATIVES BORANES

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In this study new borinate compounds derived from several carboxylic acids (which include 2,3- pyridinecarboxylic acid, 2,5- pyridinecarboxylic acid, 2- pyridinecarboxylic acid, 2-furancarboxylic acid, 2-tiyofenecarboxylic acid) and boranes were synthesized and fully characterized by ^1H , ^{13}C and ^{11}B NMR spectroscopy.

The second part of this **thesis** focused on the **synthesis** and characterization of Dibromomethyl(dipyrrolidino)borane which is thought an intermediate in synthesis of aminoboryliminium salts. This compound prepared by reaction of Dibromomethyldimetoxyborane and trimethylsilylpyrrolidine. They were characterized by various spectroscopic techniques, which include ^1H , ^{13}C and ^{11}B NMR spectroscopy.

The third part of this **thesis** deals with new boron and nitrogen based heterocycles. For this purpose N,N'-2,6- dimethylphenylethylenediamine and N,N'-bis(2,4-dimethylphenyl)-1,2- ethanediimine reacted with aminodiborane(4) in toluene. They were characterized by various spectroscopic techniques, which include ^1H , ^{13}C and ^{11}B NMR spectroscopy.

Because of the oxygen and moisture sensitivity of compounds, all experiments were carried out under dry argon using standard Schlenk techniques. Structural characterizations of new compounds were made with ^1H , ^{13}C and ^{11}B NMR spectroscopy. Moreover, crystal structure of Diphenyl [(2-pyridyl)-carbonyloxy-O, N] borane, 2,3-Bis (Dimethylamino) - 1,4- 2,6 - Dimethylphenyl - 1, 4, 2, 3-Diazadiboriran, 1, 1', 4, 4' - tetrakis (2,6 - dimethylphenyl) - bis [1,1',4,4',2,3] diazadiborinan ve 2, 3 - bis (dimethylamino) - 1,4 - bis (2,4 - dimethylphenyl) - 1, 4, 2, 3 diazadiborinen were determined by single-crystal X-ray diffraction.

Keywords: Borinate, Aminoboryliminium salts, Boranes