

5. Conclusions

One of the main targets of this thesis was to detect a split of electric charge in substituted 1,2-dicarba-*closo*- and 1,12-dicarba-*closo*-dodecaboranes(12) in their elemental level through a dipole moment measurement method and also to examine interactions between substituents through a carbon skeleton. Within this thesis there were structured rows of following matters prepared for a measurement of the dipole moments through a series of substituted 1,2-dicarba-*closo*-dodecaborane(12) molecules, whose characteristic structure motives are: 1-(4-X-phenyl)-1,2-dicarba-*closo*-dodecaborane(12), 1-(4-X-phenyl)-2-phenyl-1,2-dicarba-*closo*-dodecaborane(12), 1-halogen-2-phenyl-1,2-dicarba-*closo*-dodecaborane(12) a 1-phenyl-2-(YQ₃)-1,2-dicarba-*closo*-dodecaborane(12).

Substituent X represents groups from the following listing: fluor, chlorine, bromine, iodine, methyl, nitro, amino, dimethylamino, hydroxyl, methoxyl and hydrogen. Q stands for methyl or hydrogen and Y represents silicon or carbon.

The results of the thesis are newly recognized dipole moments values of above mentioned compounds and series of monosubstituted 1-(4-A-phenyl)-1,12-dicarba-*closo*-dodecaborane(12) and disubstituted (4-A-phenyl)-12-(4-B-phenyl)-1,12-dicarba-*closo*-dodecaborane(12), where substituents A and B stand for groups of the following listing: dimethylamino, nitro, hydroxyl, trifluormethyl, hydroxyl, methoxyl.

Also series of substituted 4-A-4'-B-biphenyls and 4-A-4''-B-*p*-terphenyls donor-acceptor systems was synthesized and measured in this thesis to study an interaction of donor-acceptor substituents where A is -NO₂ and B is either -NH₂ or -NMe₂ group connected in *para*-positions of both phenyls.

For a preparation of precursors necessary for another preparation of the three mentioned compounds was also a new method of oxidative iodination of activated and deactivated aromatic compounds started up by a compound of iodine and pyridiniumdichromate in milieu acetic acid and sulphuric acid affect. In the same time there was a new method of permethylated slightly basic nitroanilins preparation started by the dimethyl sulphate introduction under a microwave irradiation conditions.

The result of the measurement study is an interpretation of measured values that summarizes the behavior of *ortho*- and *para*-carbonyl group from the perspective of electron density redistribution evoked from substitution. Discovered data have fundamental significance for usage of these relatively stable molecules in electric elements modeling – either in the construction of “linear” molecule or the two- or three-dimensional nets - on the molecular level.