

Exploring the reactivity of unsaturated organoboron compounds in cycloadditions and related reactions

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Organoboron compounds show remarkable reactivity and selectivity and have been successfully used in diverse reactions in organic synthesis. We have contributed to the study and the development of cycloadditions and related reactions of unsaturated organoboron compounds. In particular, we have investigated and rationally designed varied Diels-Alder reactions of boron-substituted dienophiles and dienes. Also, the cycloadducts have been submitted to useful chemical transformations. Theoretical calculations have been performed to shed light into the reaction mechanisms and to further develop new reactions.