Donor-Acceptor Cyclopropanes as Sources of Gallium 1,2-Dipoles

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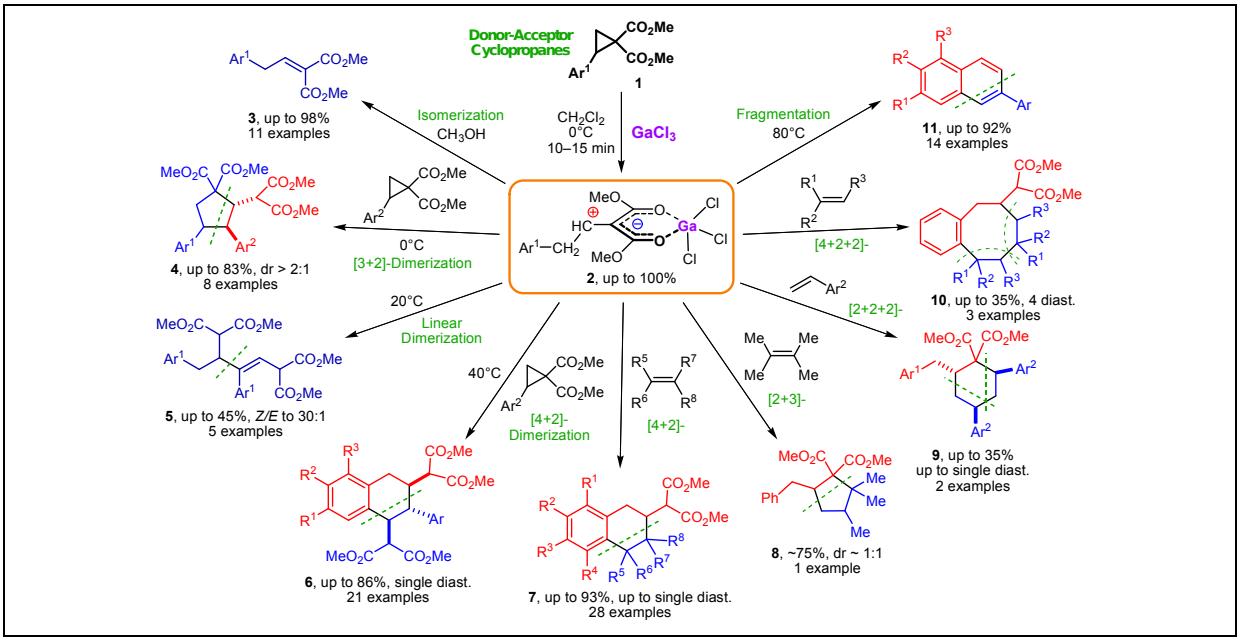
A new type of reactivity of donor-acceptor cyclopropanes has been discovered. On treatment with anhydrous $GaCl_3$, they react as sources of even-numbered 1,2- and formal 1,4-dipoles instead of the classical odd-numbered 1,3-dipoles due to migration of positive charge from the benzyl center. This type of reactivity has been excellent demonstrated for number of new reactions, *viz.*, isomerization, homo- and cross-dimerization, cycloaddition and annulation, with alkenes and second donor-acceptor cyclopropanes. Using this reactivity type it can be very easily and effective constructed different polysubstituted carbocyclic compounds, such as cyclopentanes, tetralines, naphthalenes, et al. The mechanisms of the discovered reactions involving the formation of a comparatively stable 1,2-ylide intermediate have been studied.



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