Diastereoselective [4+4] Cycloadditions

Significance: Chirik and co-workers report a regio- and diastereoselective iron-catalyzed [4+4]-cycloaddition of 1,3-dienes, leading to various substituted cyclooctadienes in excellent yields.

Comment: Remarkably, with the choice of the iron catalyst, the cyclodimerization can be controlled in a diastereoselective fashion. Extensive mechanistic studies were performed and catalytically relevant iron complexes were isolated and characterized.

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Synfacts 2019, 15(08), 0879 Published online: 18.07.2019 DOI: 10.1055/s-0039-1689843; Reg-No.: P08519SF