

Enantioselective Construction of Quaternary Stereogenic Carbons by the Lewis Base Catalyzed Additions of Silyl Ketene Imines to Aldehydes

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The catalytic, enantioselective construction of quaternary centers *via* the aldol-type additions of α,α -disubstituted silyl ketene imines to aldehydes has been investigated. In the presence of silicon tetrachloride and a catalytic amount of chiral bis-phosphoramidate (*R,R*)-1, silyl ketene imines undergo extremely rapid addition to a wide variety of aromatic aldehydes with excellent diastereo- and enantioselectivity. Of particular note are the high yields and selectivities observed in the addition to electron rich, electron poor and hindered aromatic aldehydes, as well as the ability to employ both di-alkyl and alkyl-aryl substituted silyl ketene imines. Manipulation of the nitrile group allows access to a wide range of functionality, which further highlights the synthetic utility of these products.

