Abstract

Stable divalent silicon species (silylenes, silicon analogues of carbenes) have received much attention as intriguing low-coordinate silicon species in main group element chemistry over the past three decades. Various different types of isolable silylenes have been isolated by using kinetic and thermodynamic stabilizations, and the electronic structures and reactivity of silylenes substantially depend on the substituents on the divalent silicon center. Recently, we have reported isolable a two-coordinate cyclic (alkyl)(amino)silylene (CAASi, 1) as the silicon version of CAAC. While 1 is thermally very stable: it remains intact after heating at 150 °C for two days, 1 exhibits high reactivity. In this presentation, we would like to talk about recent progress of the chemistry of CAASi, i.e. dehydrogenation reactions of 1 and cycloalkenes providing the corresponding aromatic compounds, synthesis of a push-pull-type Si=Si double bond compound (disilene) derived from 1, and hydrosilylation of terminal alkenes with several functional groups catalyzed by a platinum complex ligated by 1, etc.

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