Transition-metal-like behavior of Base-stabilized Silylenes and Germylenes: Potential Applications in Catalysis

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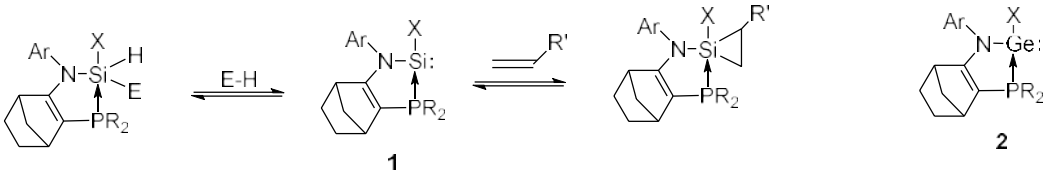
Phosphine stabilized silylenes display a unique ability to reversibly react with alkenes and □-bonds demonstrating that oxidative addition and reductive elimination processes can proceed at the silicon center in mild conditions.[1] In the same vein, the related phosphine-stablized germylenes 2 also behave as transition metals, and more interestingly they are efficient organocatalysts for the hydrosilylation of ketones.[2]



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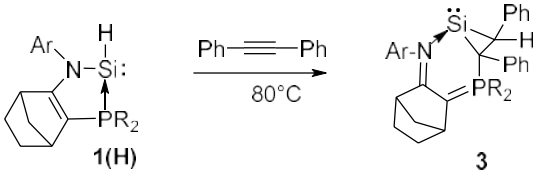
In contrast, the original sila-cyclopropylidene 3, readily obtained by reaction of 1(H) with diphenyl acetylene, does not present a silylene-like reactivity, but it appears to be a robust and versatile ligand for transition metals.[3] Of special interest, the corresponding □^{1}-silacyclopropylidene-Pt^0 complex, is an efficient catalyst for the hydrosilylation reaction of alkenes. [4]



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