



Organosilicon derivatives for radical chemistry and organometallic catalysis

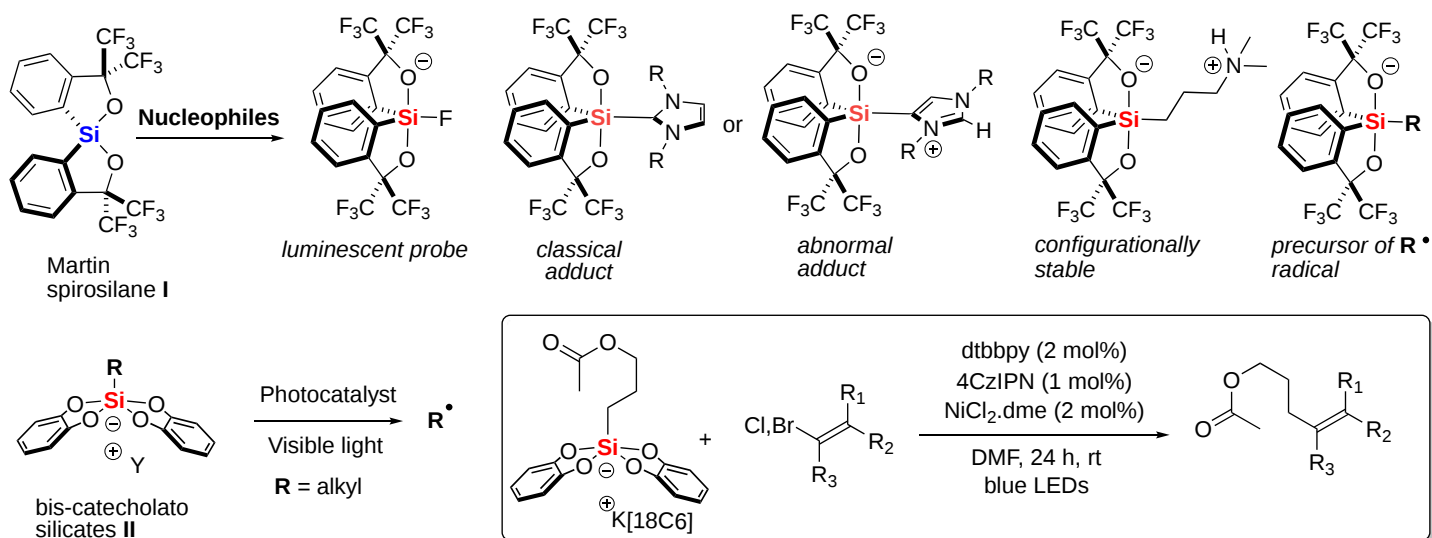
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Over the last two decades, we have been involved in the development of new reactivities of organosilicon derivatives. Most of our work has involved Martin spiroasilane **I** or its derivatives as starting materials. These substrates are Lewis acids and therefore can easily undergo nucleophilic attack to provide very stable pentacoordinated species. Based on this principle, we have developed new fluoride probes,¹ examined the reactivity towards Lewis bases (NHCs) with varied steric hindrance leading to either classical Lewis adducts or abnormal adducts.² The addition of alkyl carbanions gives silicates prone to oxidation to release diverse alkyl radicals including the methyl radical that can be engaged in a nickel catalytic cycle.³

In the same vein, alkyl bis-catecholatosilicates **II** have been devised to be alkyl radical precursors with the lowest oxidation potentials giving rise to multicomponent transformations in photoredox conditions.⁴

We have also interest in the development of new chiral anions and we have shown that some alkyl Martin silicates can be configurationally stable.⁵



dual photoredox/Ni catalysis

References

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