

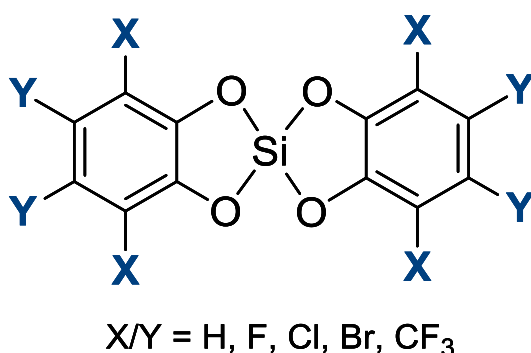
## Lewis-acidity and reactivity of bis(catecholato)silanes

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Catecholato silanes have been known since several decades and provoked an intense debate on the geometry of silicon(IV) in such and related compounds.<sup>[1]</sup> Furthermore, this structural motif can be found in a variety of penta- and hexacoordinate silicate species.<sup>[1a]</sup> However, the pronounced Lewis acidity of neutral, tetravalent bis(catecholato) silanes was realized only very recently.<sup>[2]</sup>

This work systematically scales the Lewis acidity of catecholato silanes by experiment and theory, and assesses various factors that are leading to such strong affinity. In addition, the reactivity of bis(catecholato)silanes and its potential in bond-activation and catalysis is demonstrated.



**Figure 1.** General structure of tetravalent bis(catecholato)silanes.

- [1] a) C. Y. Wong, J. D. Woollins, *Coord. Chem. Rev.* **1994**, *130*, 175-241; b) E.-U. Würthwein, P. von Ragué Schleyer, *Angew. Chem. Int. Ed.* **1979**, *18*, 553-554; c) H. Meyer, G. Nagorsen, *Angew. Chem. Int. Ed.* **1979**, *18*, 551-553; d) J. D. Dunitz, *Angew. Chem. Int. Ed.* **1980**, *19*, 1034-1034.
- [2] a) A. L. Liberman-Martin, R. G. Bergman, T. D. Tilley, *J. Am. Chem. Soc.* **2015**, *137*, 5328-5331; b) R. Maskey, M. Schadler, C. Legler, L. Greb, *Angew. Chem. Int. Ed.* **2018**, *57*, 1717-1720.