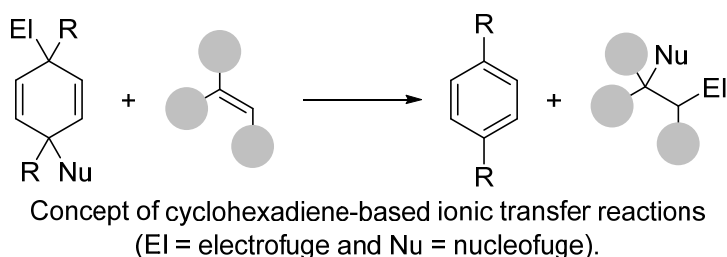


TRANSFER OF REACTIVE GASES FROM ONE MOLECULE TO ANOTHER

Martin Oestreich

Institut für Chemie, Technische Universität Berlin,
Straße des 17. Juni 115, 10623 Berlin, Germany

This talk tells the story of how our work on tamed silicon cations [1–3] led us to introduce the new concept of ionic transfer hydrosilylation[4], even with monosilane [5]! The electron-deficient boron Lewis acid tris(pentafluorophenyl)borane catalyzes the release of hydrosilanes from cyclohexa-2,5-dien-1-yl-substituted silanes. The same boron catalyst will then activate the Si–H bond for the reaction with representative π - and σ -donating substrates. The net transformation is a transfer hydrosilylation. That strategy also enables the related hydrogenation[6] and even transfer hydrocyanation [7], and has been extended to Brønsted acid-catalyzed transfer hydrohalogenation processes [8].



- [1] (a) H. F. T. Klare, K. Bergander, M. Oestreich, *Angew. Chem. Int. Ed.* **2009**, *48*, 9077–9079. (b) R. K. Schmidt, K. Müther, C. Mück-Lichtenfeld, S. Grimme, M. Oestreich, *J. Am. Chem. Soc.* **2012**, *134*, 4421–4428.
- [2] K. Müther, R. Fröhlich, C. Mück-Lichtenfeld, S. Grimme, M. Oestreich, *J. Am. Chem. Soc.* **2011**, *133*, 12442–12444.
- [3] A. Simonneau, T. Biberger, M. Oestreich, *Organometallics* **2015**, *34*, 3927–3929.
- [4] (a) M. Oestreich, *Angew. Chem. Int. Ed.* **2016**, *55*, 494–499. (b) S. Keess, M. Oestreich, *Chem. Sci.* **2017**, *8*, 4688–4695.
- [5] (a) A. Simonneau, M. Oestreich, *Angew. Chem. Int. Ed.* **2013**, *52*, 11905–11907. (b) A. Simonneau, M. Oestreich, *Nat. Chem.* **2015**, *7*, 816–822.
- [6] (a) I. Chatterjee, M. Oestreich, *Angew. Chem. Int. Ed.* **2015**, *54*, 1965–1968. (b) I. Chatterjee, Z.-W. Qu, S. Grimme, M. Oestreich, *Angew. Chem. Int. Ed.* **2015**, *54*, 12158–12162. (c) I. Chatterjee, M. Oestreich, *Org. Lett.* **2016**, *18*, 2463–2466.
- [7] P. Orecchia, W. Yuan, M. Oestreich, *Angew. Chem. Int. Ed.* **2019**, *58*, 3579–3583.
- [8] W. Chen, J. C. L. Walker, M. Oestreich, *J. Am. Chem. Soc.* **2019**, *141*, 1135–1140.