



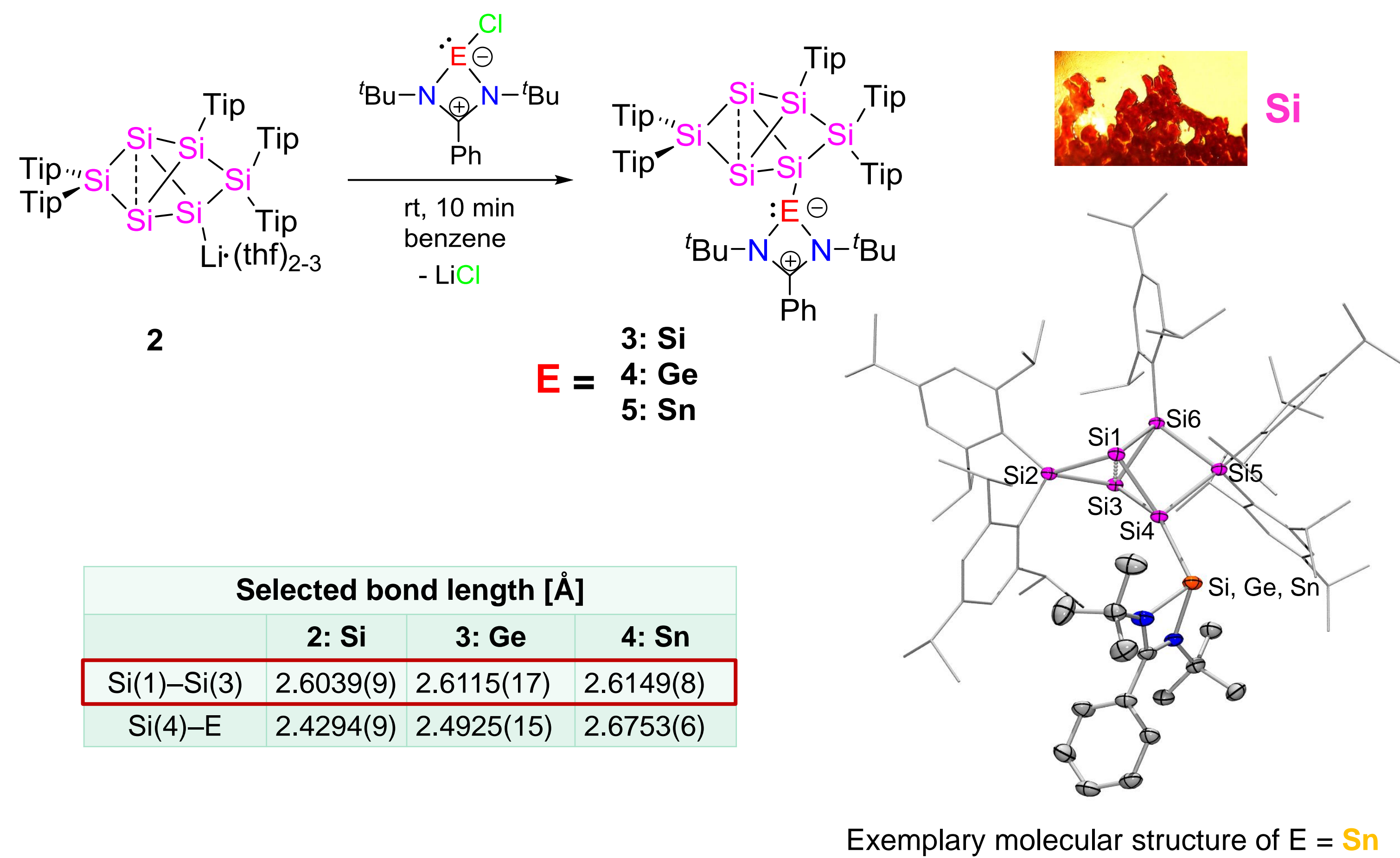
The Unprecedented Chemistry of Siliconoids

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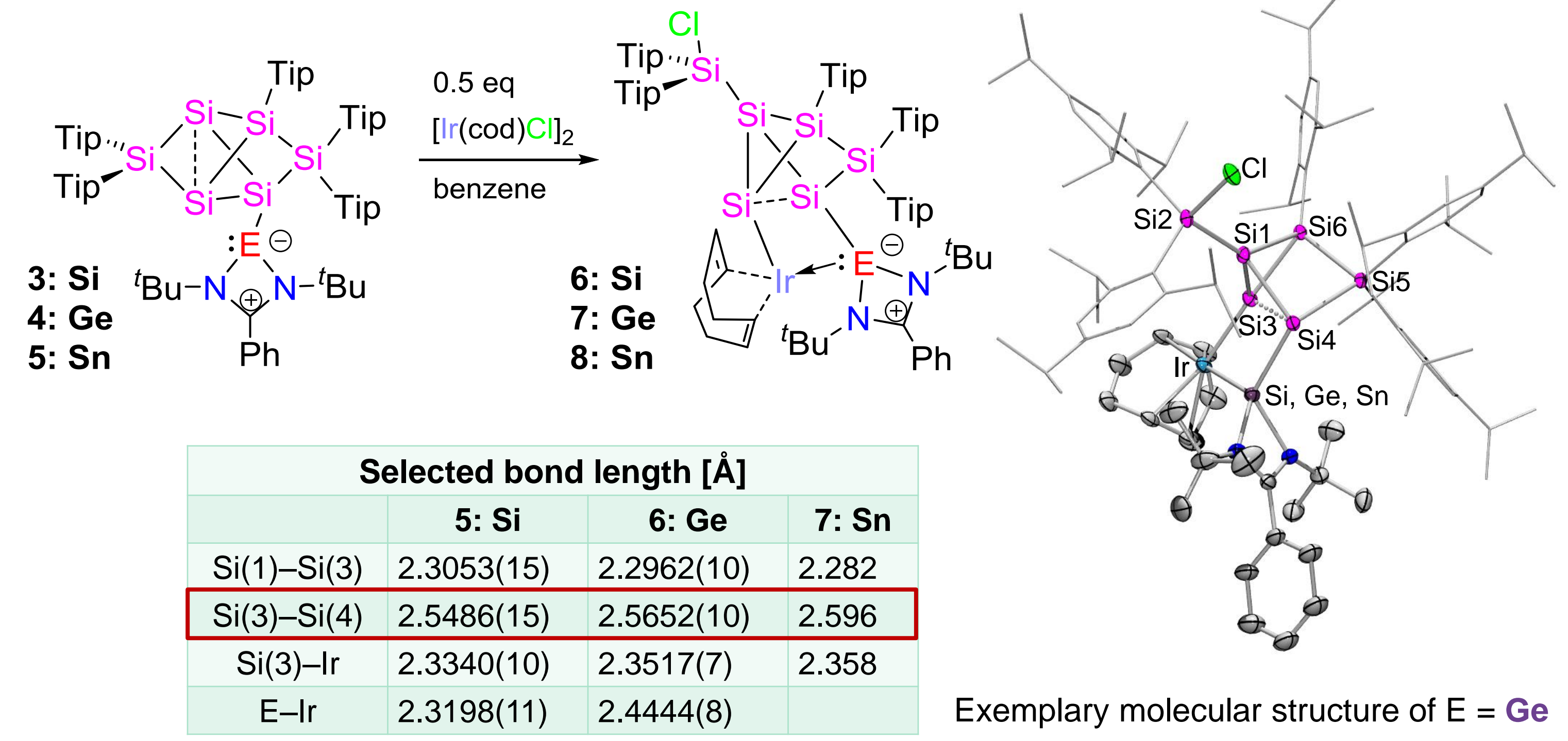
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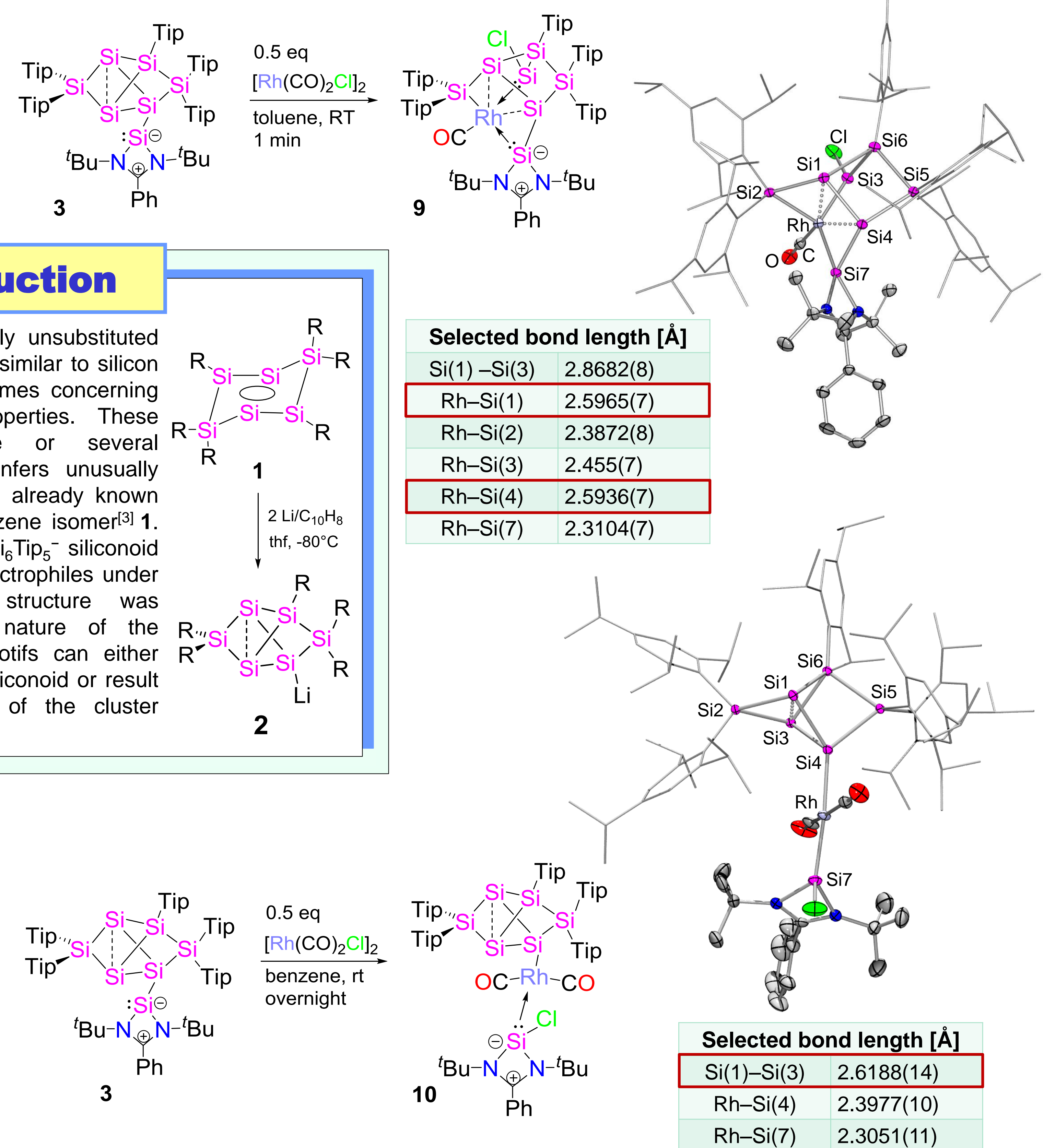
Tetrylene-Si₆ siliconoids



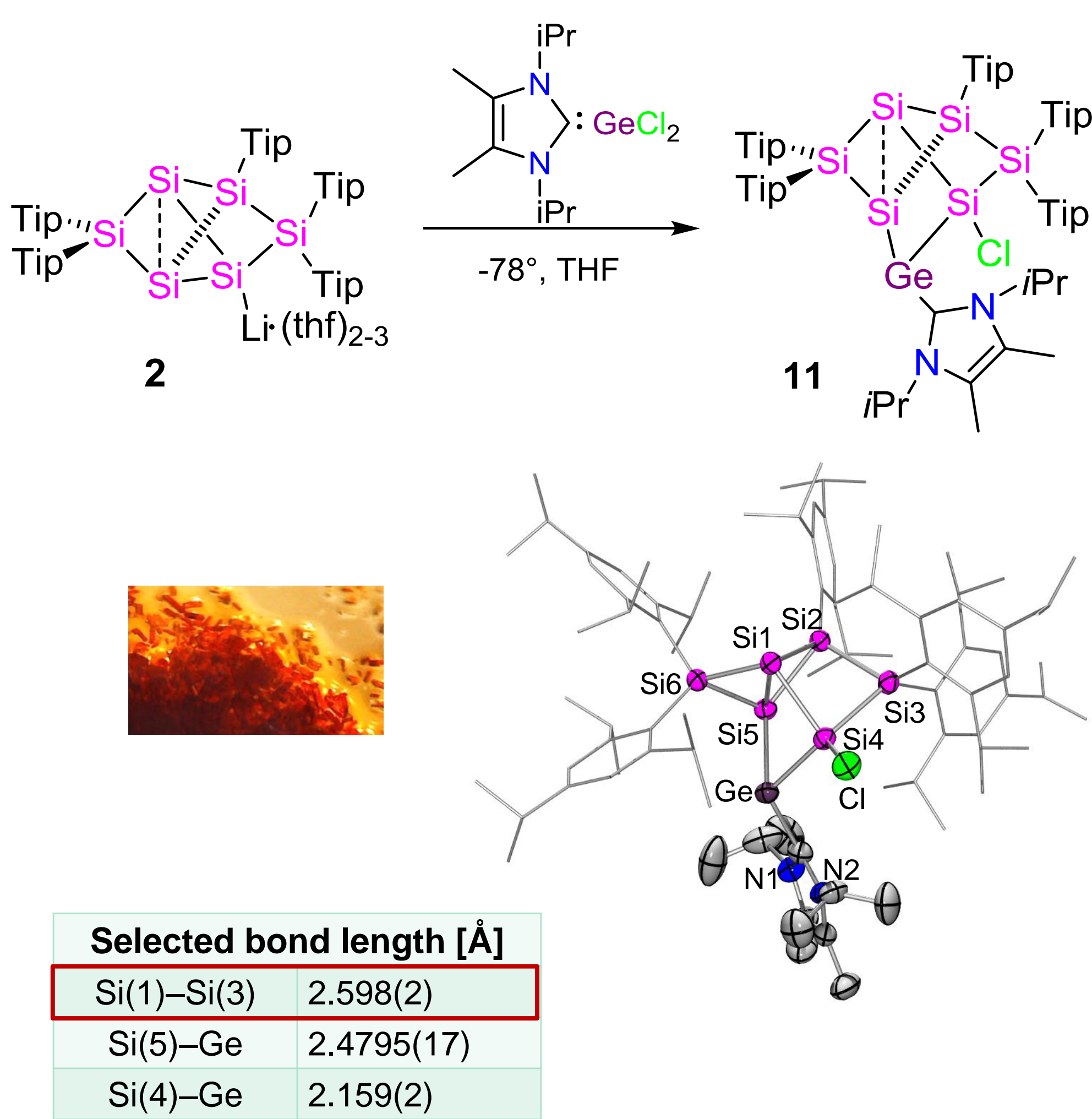
Reactivity towards [Ir(cod)Cl]₂



Reactivity towards [Rh(CO)₂Cl]₂



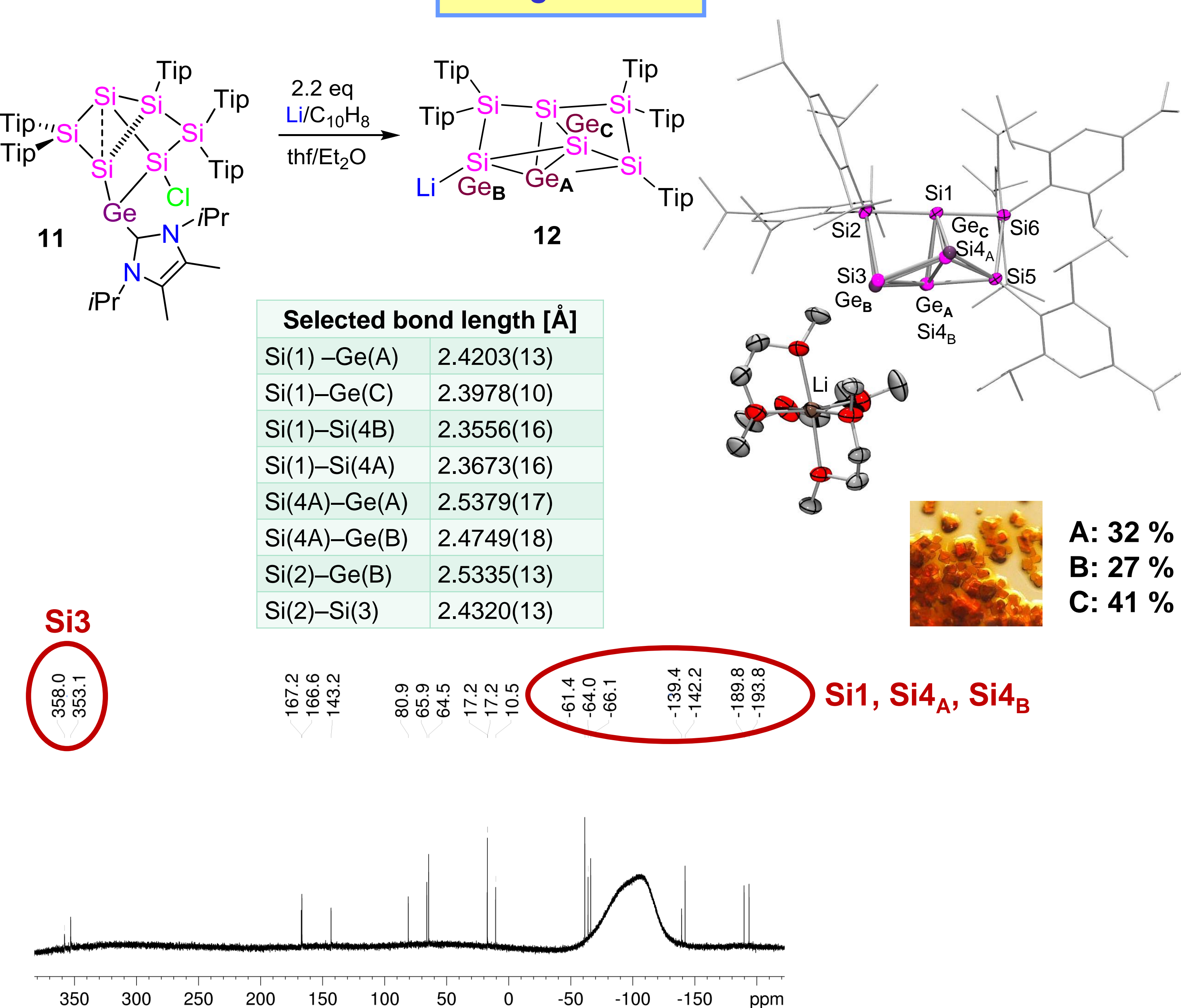
Si₆Li + ⁱPrNHC:GeCl₂



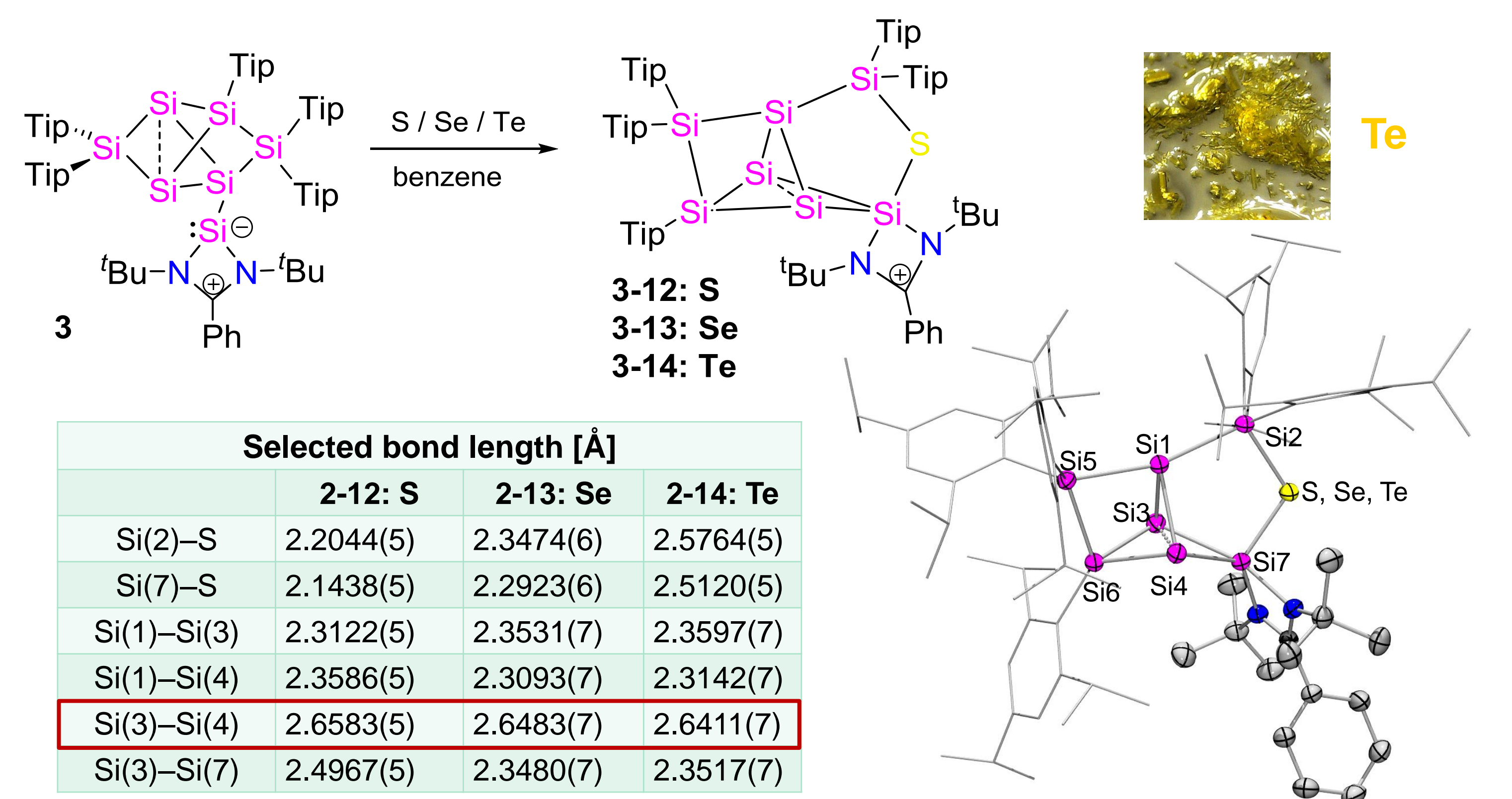
Introduction

Siliconoids are unsaturated, partially unsubstituted neutral silicon clusters^[1], which are similar to silicon surface materials at molecular regimes concerning their characteristic structural properties. These clusters typically contain one or several unsubstituted vertices^[2], which confers unusually pronounced electronic anisotropies, already known from the dismutational hexasilabenzene isomer^[3] 1. Recently, the synthesis of anionic Si₆Tip₆⁻ siliconoid 2 and the reaction with different electrophiles under preservation of the cluster's structure was reported.^[4,5] Depending on the nature of the substituents, different structural motifs can either occur in the side-chain of the Si₆ siliconoid or result in the expansion or contraction of the cluster scaffold.

Si₆GeLi

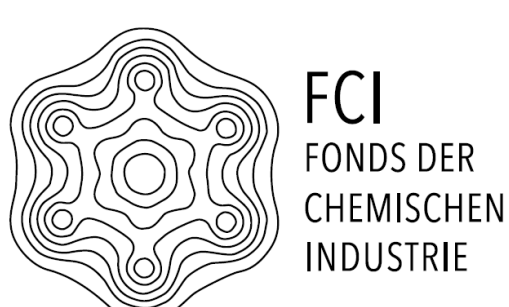


Reactivity towards Chalcogens



Acknowledgements

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References

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- [2] N. H. Waltenburg, T. J. Yates, *Chem. Rev.* **1995**, *95*, 1589–1673.
- [3] K. Abersfelder, A. J. P. White, H. S. Rzepa, D. Scheschkewitz, *Science* **2010**, *327*, 564–566.
- [4] P. Willmes, K. Leszczyńska, Y. Heider, K. Abersfelder, M. Zimmer, V. Huch, D. Scheschkewitz, *Angew. Chemie* **2016**, *128*, 2959–2963.
- [5] Y. Heider, N. E. Poitiers, P. Willmes, K. Leszczyńska, V. Huch, D. Scheschkewitz, *Chem. Sci.* **2019**, *10*, 4523–4530.