Supporting Information

For

Lewis Base Mediated Autoionization of $GeCl_2$ and $SnCl_2$

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Content:

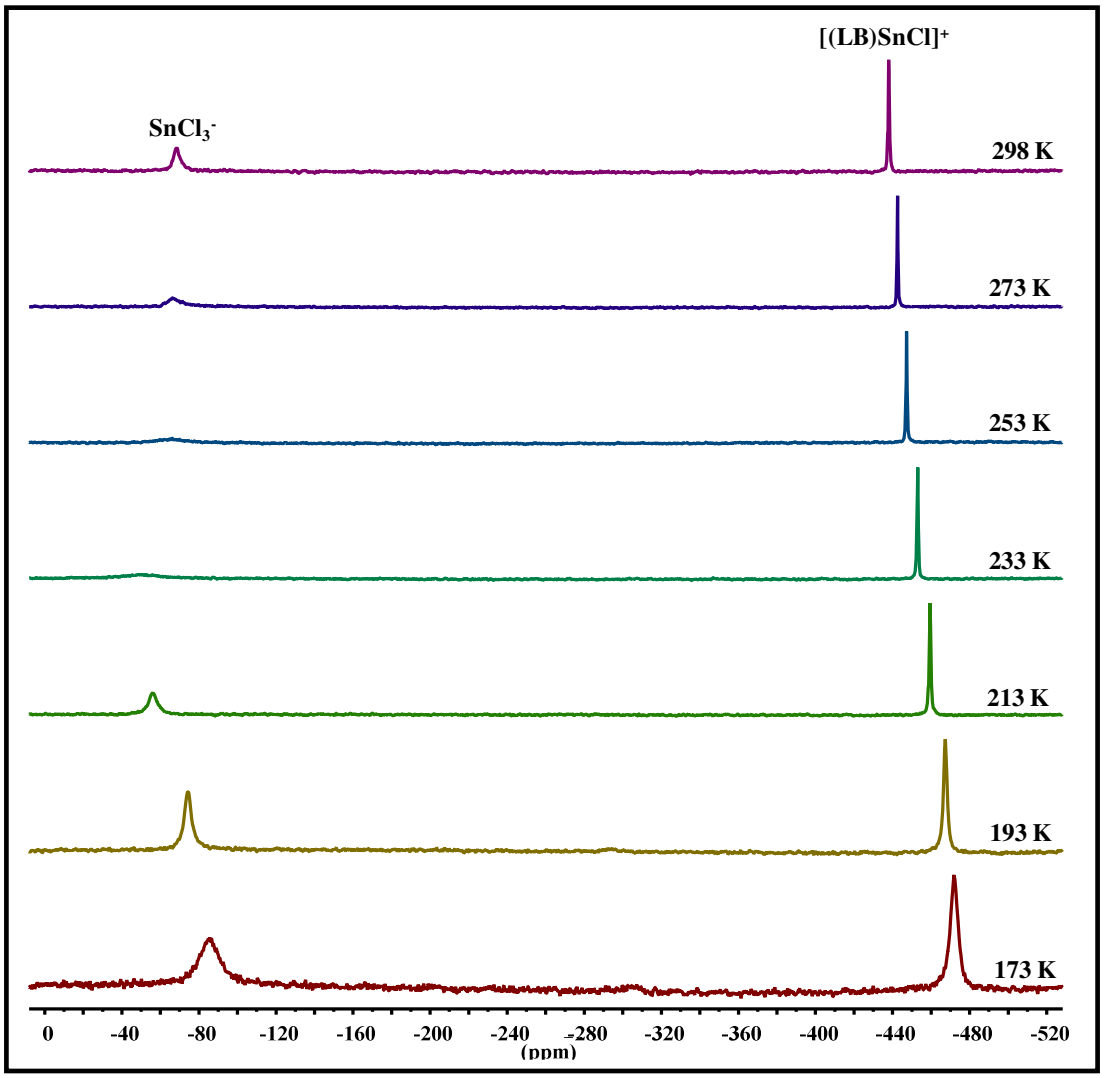


Figure S1: Comparative solution-state ^{119}Sn NMR of compound **2** recorded in THF-d_8

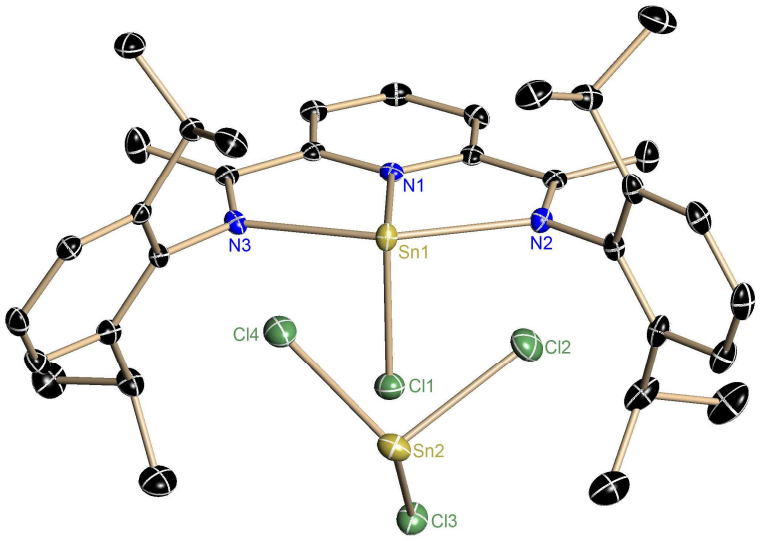


Figure S2. Molecular structure of $[(LB)Sn^{II}Cl]^{+}[Sn^{II}Cl_3]^{-}$ **2**. Anisotropic displacement parameters are depicted at the 50% probability level. Hydrogen atoms are omitted for clarity.

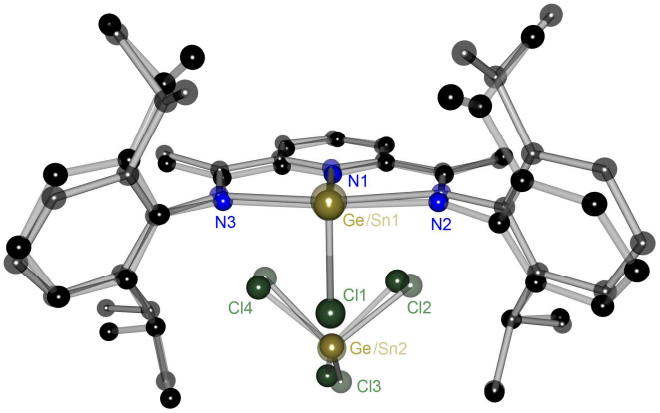
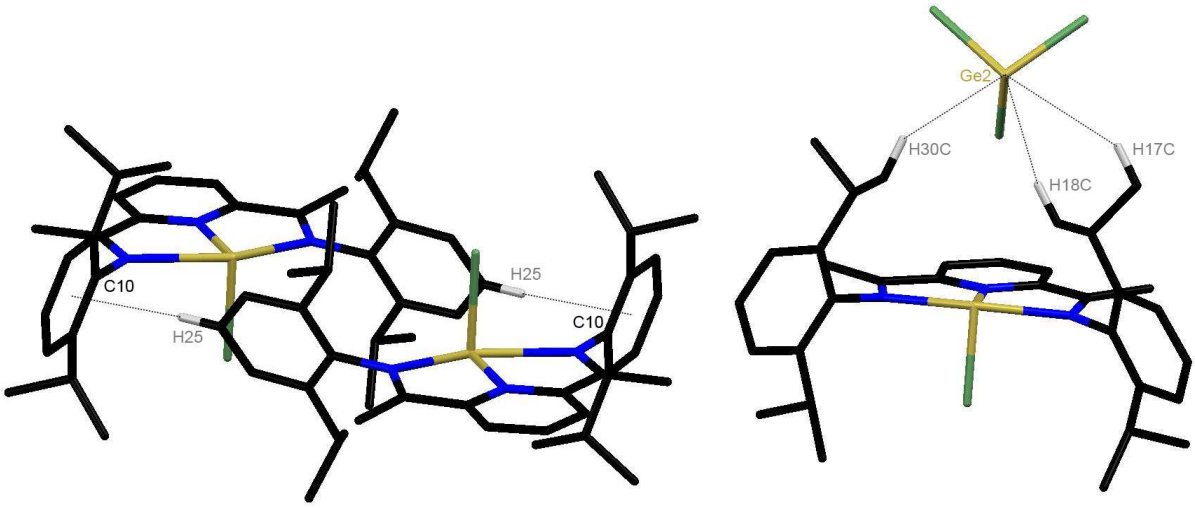


Figure S3. The superposition of **1** and **2** was done with *ofit* in XP.[S1] The deviation of the overlay is 0.1268 Å.

Weak interactions:

The aromatic para hydrogen of one cation is forming CH–□ interaction[S2] with the aromatic ring of another unit and vice versa while the metal center of the anion MCl_3^{-} also takes part in weak M–H interactions with different methyl protons (Figure S4).



(a) **(b)**

Figure S4. Weak CH-□- and M-H interactions for compounds **1** and **2**. The bond lengths [Å] for **1**: H25–aromatic system 2.885, Ge2–H17 3.082, Ge2–H18C 3.191, Ge2–H30C 2.860. For **2**: H25–aromatic system 2.752, Sn2–H17 3.186, Sn2–H18C 3.181, Sn2–H30C 2.954.

References:

S1. Sheldrick, G. M. *in XP in SHELXTL* v2008/2, Madison, Wisconson USA **2008**.

S2. Desiraju, G. R.; Steiner, T. *The Weak Hydrogen Bond in Structural Chemistry and Biology*, Oxford University Press, Oxford, **1999**.