



Showcasing research from Professor Emslie's laboratory,
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Interconversion and reactivity of manganese silyl, silylene,
and silene complexes

This work involves the reaction of a monosubstituted manganese silylene complex ($L_xHMn=SiHR$) with ethylene to afford the first transition metal silene complex with an SiH substituent ($L_xHMn(RHSi=CHMe)$), unprecedented isomerization to a silylene isomer ($L_xHMn=SiEtR$), and further reaction with ethylene to afford a new silene complex ($L_xHMn(RETsi=CHMe)$). Reaction mechanisms were elucidated through reactions with C_2D_4 , and we report the involvement of the aforementioned silene complexes in catalytic ethylene hydrosilylation. The image shows Mn atoms traversing 4 mountain peaks representing the stepwise silylene \rightarrow silene \rightarrow silylene \rightarrow silene transformations in the research.

As featured in:



See Jeffrey S. Price and
David J. H. Emslie, *Chem. Sci.*,
2019, 10, 10853.