

JEFFREY I. ZINK INORGANIC CHEMISTRY SEMINAR SERIES



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“Ge(0) compound with ambiphilic reactivity”

Abstract: Group 14 compounds in the zero-oxidation state, $L \rightarrow E \leftarrow L$ (L = a two-electron donor), were discovered only a decade ago.[1-3] These compounds are cumulatively called tetrylones and are now known for all tetreles. They possess two lone pairs centered on the group 14 element and exhibit nucleophilic properties.[4,5] We have recently succeeded in preparing a new germylone compound **1** supported by a diimino-carbene pincer (dimNHC), which exhibits ambiphilic reactivity in the oxidative addition of HCl, MeI, PhI and oxidative cyclization with a quinone.[6] Interestingly, the oxidative addition reactions are accompanied by the little known migration of the R group from germanium to the NHC ligand to afford halo-alkyl germylenes. Further development of this chemistry will be also discussed.[7,8]

References:

1. Stalke, D. et al. Angew. Chem. Int. Ed. 2013, 52, 2963.
2. Driess, M. et al. Angew. Chem. Int. Ed. 2013, 52, 7147.
3. Nikonov, G. I. et al. Angew. Chem. Int. Ed. 2014, 53, 2711.
4. Majhi, P. K.; Sasamori, T. Chem. Eur. J. 2018, 24, 9441.
5. Driess, M. et al. Acc. Chem. Res. 2017, 50, 2026.
6. Nikonov, G. I. et al. J. Am. Chem. Soc. 2020, 142, 5852.
7. Nikonov, G.I. et al. Chem. Eur. J. 2023, 29, e202301981.
8. Nikonov, G.I. et al., Chem. Eur. J. 2024, 30, e202400613.

Meet the Speaker

11:45 a.m. | YH 3096

Wednesday, April 8th, 2026

4:00 p.m. | YH4222 - Collaboratory

Dongwon Yoo Seminar & Conference Hall

UCLA College | Physical Sciences
Chemistry & Biochemistry

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