Fakultät für Naturwissenschaften

Institut für Chemie

lädt ein

gemeinsam mit der Gesellschaft Deutscher Chemiker zum

Vortrag

von Herrn

Prof. Dr. Marcus W. Drover

Chemistry Department
Western University
London, Ontario, Canada

“Exterior Decorating: Harnessing Non-Covalent Interactions for Cooperative Chemistry”

am: 08. Mai 2026 (Freitag)

um: 09:00 Uhr

wo: im Raum A12.232

Gäste sind herzlich willkommen!

TECHNISCHE UNIVERSITÄT
IN DER KULTURHAUPTSTADT EUROPAS
CHEMNITZ

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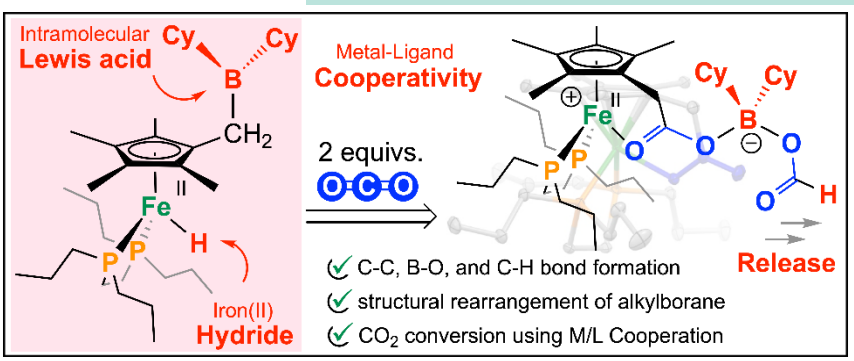
GDCh

Exterior Decorating: Harnessing Non-Covalent Interactions for Cooperative Chemistry

Developing sustainable chemical transformations requires new strategies to control the reactivity of Earth-abundant elements. Our research program focuses on designing multifunctional ligand frameworks that promote cooperative interactions between first-row transition metals and main-group elements. By leveraging the complementary properties of metals such as iron and Lewis acidic centers (e.g., boron), we aim to unlock new pathways for selective and efficient catalysis relevant to sustainability-driven chemistry. Our group develops modular hybrid ligands with multifunctional coordination environments that engage both transition-metal and main-group reactivity. These systems are engineered to enable cooperative behavior between metal centers and proximal Lewis acids, facilitating unusual bond activation and transformation processes. A central objective is to understand how strategically positioned Lewis acidic sites influence key metal-centered properties, including redox potential, substrate binding, and catalytic turnover. By systematically varying ligand architectures, we investigate how the proximity and strength of internal Lewis acids modulate reactivity with heteroatom-containing substrates and small molecules such as CO_2. Ultimately, this work aims to create catalytic platforms capable of converting abundant or waste carbon sources into value-added chemicals. By integrating ligand design with mechanistic insight, our research expands strategies for transforming simple feedstocks into products ranging from specialty chemicals to carbon-based fuels.



For relevant contributions, see:

1) Drover, M.W. *Chem. Soc. Rev.* **2022**, *51*, 1861-1880.
2) Zurakowski, J. A.; Austen, B. J. H.; Drover, M.W. *Trends Chem.* **2022**, *4*, 331-346.
3) Zurakowski, J. A.; Drover, M. W. *Chem. Commun.* **2023**, *59*, 11349-11352.
4) Durfy, C. S.; Zurakowski, J. A.; Jobin, G.; Drover, M. W. *Chem. -Eur. J.* **2023**, *29*, e202302721.
5) Zurakowski, J. A.; Durfy, C. S.; Stocek, N. B.; Fanchini, G.; Drover, M. W. *Chem Sci.* **2024**, *15*, 10359-10365.
6) Zurakowski, J. A.; Durfy, C. S.; Drover, M. W. *Angew. Chem. Int. Ed.* **2025**, 64, e202512684.

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