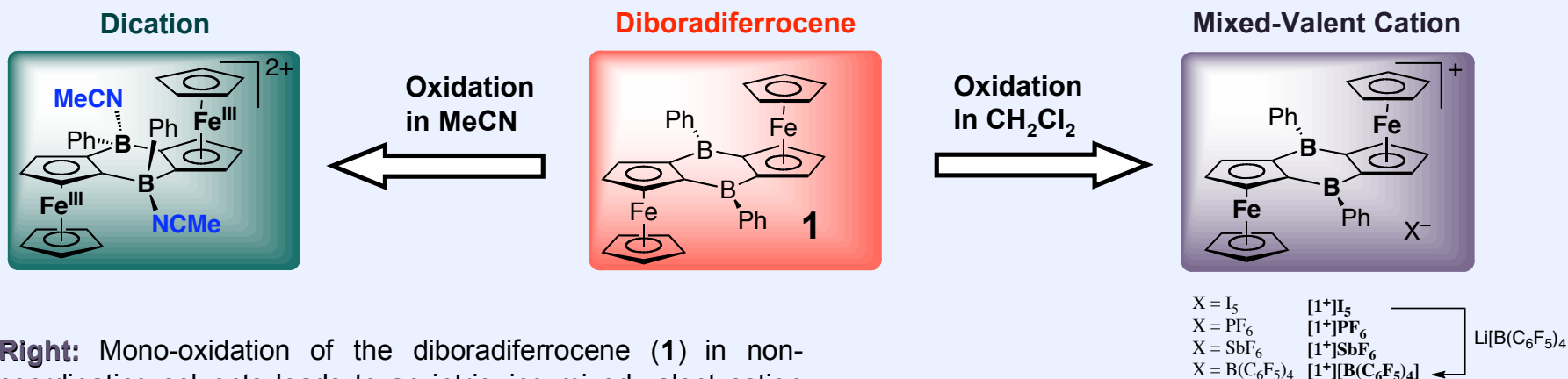


Lewis Acid Chemistry at the Edge of Ferrocene

Frieder Jäkle, Department of Chemistry
Rutgers University, Newark, NJ 07102

Ferrocene-based bidentate Lewis acids have been investigated as three-dimensional, redox-active analogs of more well-established bidentate Lewis acids that utilize phenylene and naphthalene scaffolds.



Right: Mono-oxidation of the diboradiferrocene (**1**) in non-coordinating solvents leads to an intriguing mixed-valent cation (**1⁺**), which shows distinct NIR bands in solution and, with $B(C_6F_5)_4$ as the counterion, Mössbauer data that are consistent with rapid electron transfer (one set of averaged signals).

Left: In the presence of donor solvents dioxidation is observed. The dication is highly Lewis acidic as evident from the formation of stable complexes with acetonitrile - *in sharp contrast to the neutral diboradiferrocene* !

These observations suggest applications in anion recognition and Lewis acid catalysis - studies that are currently under way.

