

## Reactivity of Diiron Complexes Inspired by the Active Site of [FeFe]-Hydrogenases with Boron-Based Lewis Acid

Hydrogen (H<sub>2</sub>) is increasingly regarded as a green energy vector. In nature, the metalloenzymes [FeFe]-hydrogenases can reversibly convert H<sup>+</sup> to H<sub>2</sub>.<sup>[1]</sup> With the aim of developing efficient catalysts based on earth-abundant metals, complexes inspired by the active site of [FeFe]-hydrogenase are currently developed. Most of these [FeFe]-complexes focus on H<sub>2</sub> production.<sup>[2]</sup> Only a few examples have achieved H<sub>2</sub> oxidation,<sup>[3]</sup> where the H-H bond cleavage step is accomplished by a Fe--N Frustrated Lewis Pair (FLP), with the amine being in the second coordination sphere of the diiron site.

A novel approach to activating H<sub>2</sub> has been proposed using [Fe<sup>I</sup>Fe<sup>I</sup>] molecules as rare bimetallic Lewis bases combined with a boron-based Lewis acid, forming FLPs. This concept has been successfully applied in an intermolecular approach.<sup>[4]</sup> On an intramolecular level, a synthetic strategy for functionalizing a diiron dithiolate complex with a Lewis acidic group has been developed and will be presented.

### References

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