

## A new paper in *Angewandte Chemie International Edition* describing the efficient reduction of water to dihydrogen with diboron compounds

In this paper, Mathias Flinker Dr. Hongfei Yin, René W. Juhl, Dr. Espen Z. Eikeland, Senior Researcher Jacob Overgaard, Dr. Dennis U. Nielsen and Prof. Troels Skrydstrup report on the preparation of a series of crystalline  $sp^3$ - $sp^3$  diboron(4) compounds, which are capable of reducing water to dihydrogen without the need for additives or transition metal complexes for activation. The role of the pendant nitrogen atoms and the  $sp^3$ -hybridization of both boron atoms were shown to be crucial for obtaining the desired reactivity. The applicability of these compounds in synthesis as a simple and stoichiometric  $H_2$  or  $D_2$  source was demonstrated in a range of hydrogenations of olefins, semi-hydrogenations of alkynes and hydrogen-deuterium exchange reactions in combination with our two-chamber technology. Add the diboron compound to water or  $D_2O$  and within a few seconds  $H_2$  or  $D_2$  is formed. In addition, the intermediacy of a borohydride species could be exploited for aldehyde/ketone reductions with the hydride source originating from water.

For direct access to the paper:

<http://onlinelibrary.wiley.com/doi/10.1002/anie.201709685/full>

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