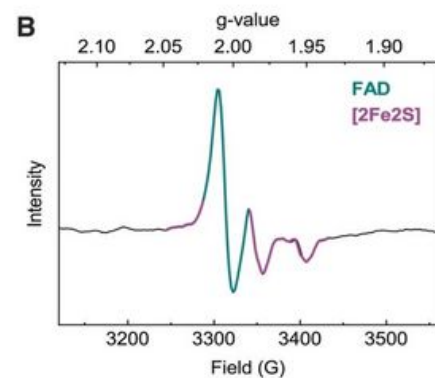
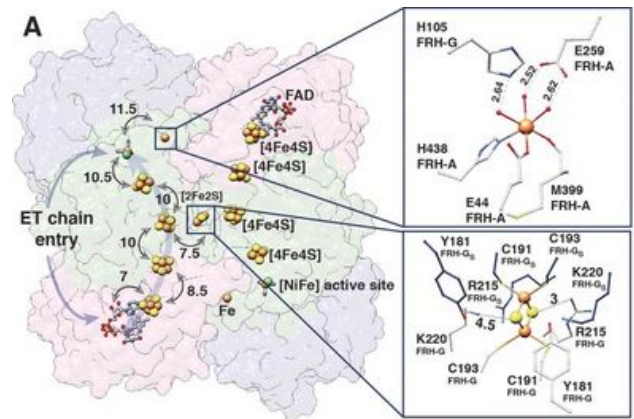


Where hydrogen goes

Start Time: Tuesday, October 29, 2019

End Time:



The UniSysCat groups of [Holger Dobbek](#) and [Ingo Zebger](#) present in cooperation with Marius Horch from the University of York and Seigo Shima from the MPI in Marburg crystallographic and vibrational-spectroscopic insights into the unexplored structure of the H₂-binding [NiFe] intermediate.

Using an F420-reducing [NiFe]-hydrogenase from *Methanosarcina barkeri* as a model enzyme, they show that the protein backbone provides a strained chelating scaffold which tunes the [NiFe] active site for efficient H₂ binding and conversion.

The protein matrix also directs H₂ diffusion to the [NiFe] site via two gas channels and allows the distribution of electrons between functional protomers through a subunit-bridging FeS cluster.

Their findings emphasize the relevance of an atypical Ni coordination, thereby providing a

blueprint for the design of bio-inspired H₂-conversion catalysts.

To find out more [click here](#) (Wiley Online Library).