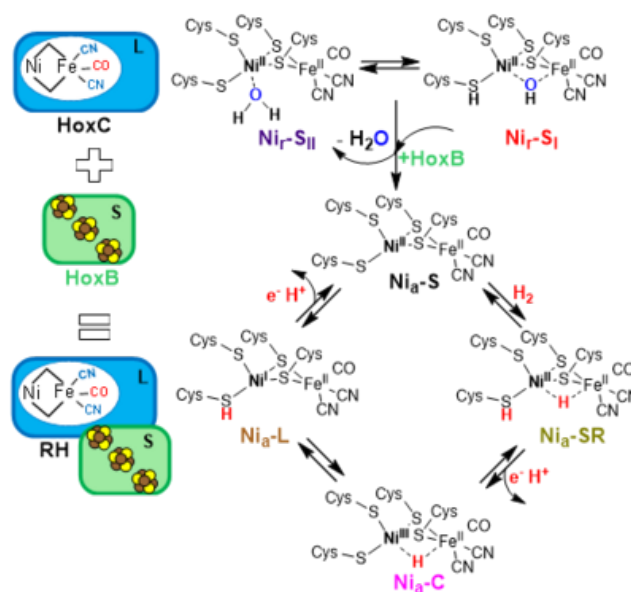


Unraveling details of the catalytic cycle of [NiFe]-hydrogenase

Start Time: Sunday, December 13, 2020

End Time:



In Vitro Assembly as a Tool to Investigate Catalytic Intermediates of [NiFe]-Hydrogenase

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UniSysCat researchers succeeded for the first time to assemble a generic [NiFe]-hydrogenase from the two individually purified, metal cluster-containing subunits ([ACS Catal. 2020, 10, 13890–13894](#)). The heterodimeric construct showed the identical catalytic and spectroscopic properties to the native enzyme. The new assembly strategy allows individual isotopic labeling of the cofactors, which in turn provides an unbiased view of the metal ions of the catalytic center. This publication is part of three studies ([Chem. Sci., 2020,11, 5453-5465](#); [ACS Catal. 2020, 10, 13890–13894](#); [Chem. Sci., 2021,12, 2189-2197](#)) on catalytic subunit characteristics of hydrogenases conducted in a collaborative approach involving all in all 5 UniSysCat groups, namely, Christian Limberg, Vladimir Pelmenschikov/Martin Kaupp, Peter Hildebrandt, Ingo Zebger, Oliver Lenz, as well as former Einstein Visiting Fellow Stephen P. Cramer and UniCat researcher Claudio Greco.