

## Versatile PNP Based Catalytic Systems for Artificial Photosynthesis

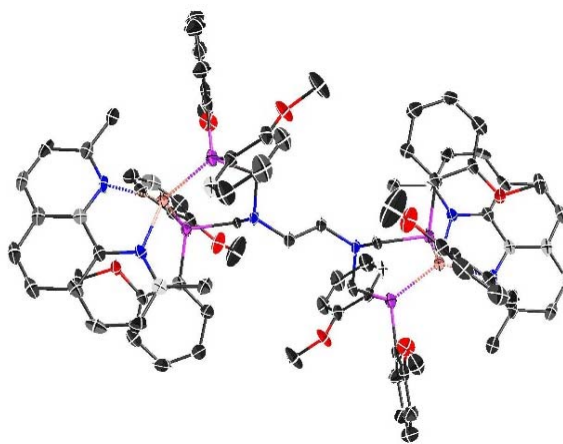
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In the workgroup of Prof. Peter Brüggeller, we are approaching Artificial Photosynthesis by designing versatile phosphorus and nitrogen based ligands for complexation of non-noble 3d metals, such as copper, nickel, cobalt and iron to be applied in the above mentioned catalytic system. The stem unit of those "PNP ligands" is a Bis-(bis-(2-methoxyphenyl)phosphinomethyl)amine, where residual groups on the methyl- and amine-functions can alter the stereo-electronic behaviour of the resulting metal complexes.

In this presentation the author presents novel systems based on the above mentioned PNP motif, its coordination chemistry, redox behaviour, photochemistry and catalysis properties.

The synthetic path towards complexes, especially the bi- and trinuclear systems based on propylene amine, are highlighted. (Figure 1) The goal to achieve a system where the amine function is designed to coordinate a harder metal centre, as opposed to the phosphines is presented. Different parts of the catalytic system are specifically chosen as constituent of an intramolecular system. [1]



*Fig. 1: Binuclear system*

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[1]Wolfgang Viertl, Johann Pann, Richard Pehn, Helena Roithmeyer, Marvin Bendig, Alba Rodríguez-Villalón, Raphael Bereiter, Max Heiderscheid, Thomas Müller, Xia Zhao, Thomas Hofer, Mark E. Thompson, Shuyang Shi and Peter Brüggeller; *Faraday Discussions*, 2019 advance article.