Janus Head Type Diphosphorus Trication for the Activation of Small Molecules

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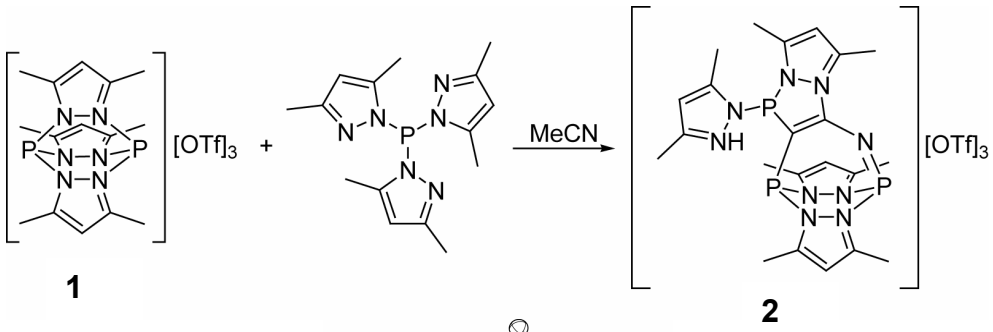
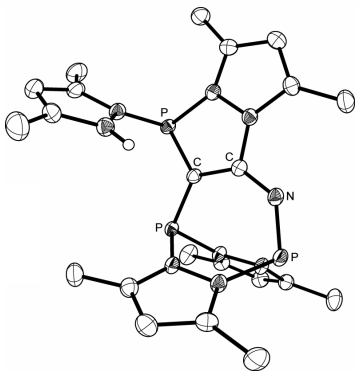
The activation of small molecules using main group element compounds represents a new and fast growing field of research. Commonly Lewis acidic elements of group 13 nd varying Lewis bases are arranged to cooperatively act upon otherwise usually inert substrates.[1] We have developed a readily available, highly reactive and Lewis acidic ligand-stabilized diphosphorous trication **1**[2]. Cleavage of one of the P-N bonds results in the formation of a basic pyrazole moiety next to the strongly Lewis acidic P-centres. This renders trication **1** a suitable complex for the activation of small molecules. In this context, we have suceeded in a first triple C-H deprotonation of acetonitrile and formation of a new trication **2**.



1 **2**



2

This poster presents an unprecedented C-H activation reaction of acetonitrile. The reaction of **1** with acetonitrile in the presence of a base to **2** as well as a suitable reaction-mechanism is discussed.

References:

[1] Douglas W Stephan, *J. Chem. Soc., Dalton Trans.* **2009**, 3113. [2] Jan J. Weigand, Kai-Oliver Feldmann, Antje K. C. Echterhoff, Andreas W. Ehlers, Koop Lammertsma, *Angew. Chem*. **2010**, 112, DOI: 10.1002/ange.2010013632.