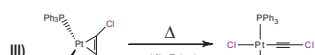
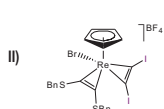
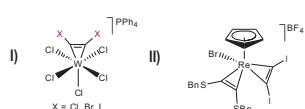


# Tungsten coordinated halogenalkynes acting as precursor for heterodonor substituted complex ligands

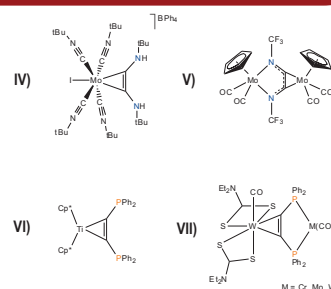
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## Introduction

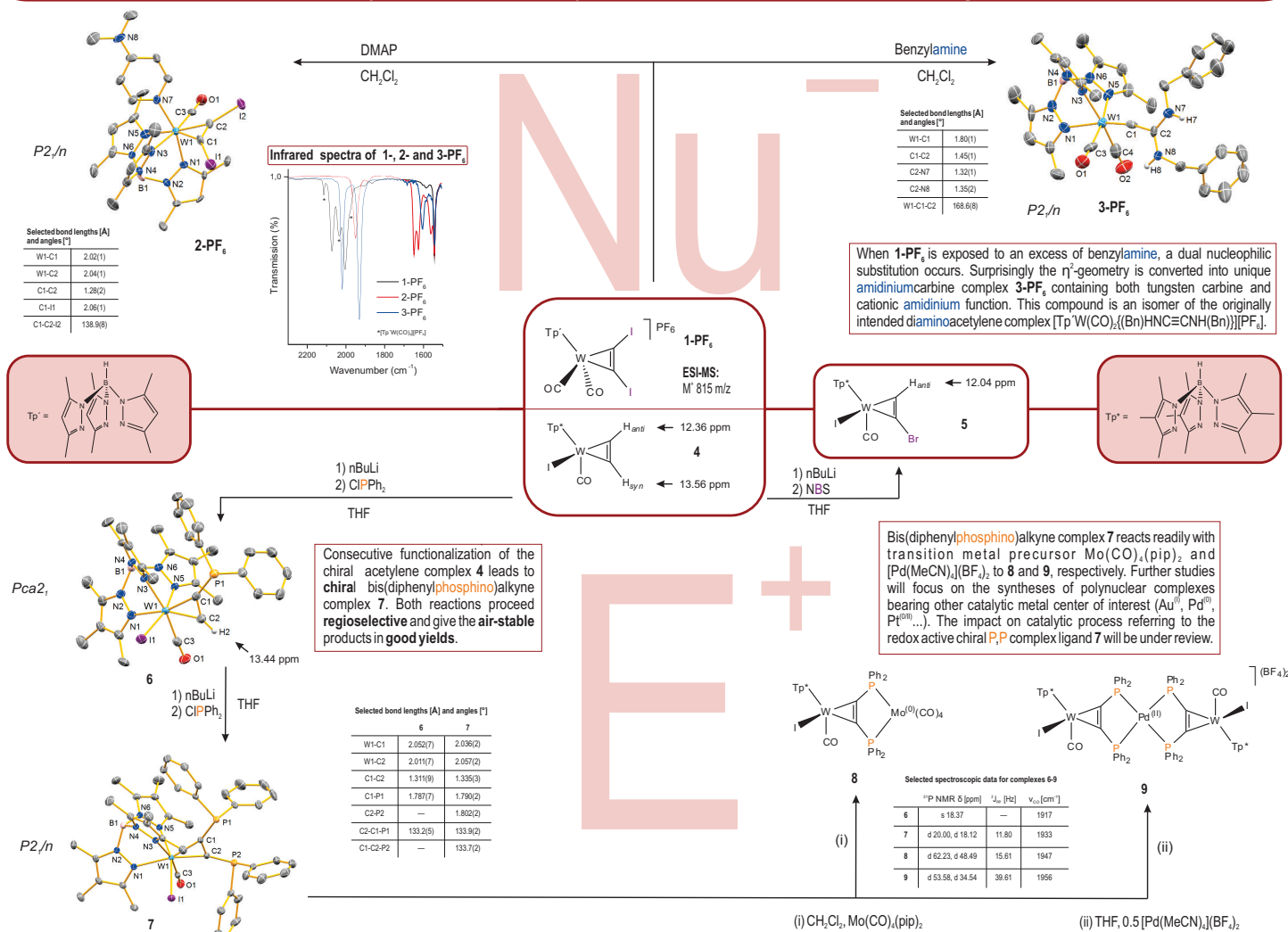


With the exception of  $C_2F_2$ , dihalogenalkynes are known for over 100 years. Because of their explosive character, coordination chemistry is only sporadically explored. Hardly any unequivocal structures are known till today, although their possible potential as a versatile building block for new heterodonoralkyne complexes is obvious. However, *Dehnicke* could isolate a number of complexes with a W(IV) center (I). Most recently our group succeeded in isolating a bis(alkyne) rhenium complex bearing  $C_2$  (II). It is important to note that dihalogenalkynes often tend to form their oxidative addition products as demonstrated by *Suenkel* (III).

Despite thousands and thousands of polynuclear complexes, bridging heterodonoralkynes with 5th group (N, P) donor atoms are a very uncommon feature. Coupling of two isocyanides led to diaminoalkyne complexes (IV) by *Lippard* and (V) by *Lentz*. Because the coordination behaviour of phosphor substituted alkynes is dominated by the P-donor,  $\eta^2$ -coordination of diphosphinoalkynes was just rarely attained. Evident structures were contributed amongst others by *Rosenthal* (VI) and by *Went* (VII). The latter shows a  $\mu$ - $\eta^2$ -C,C'- $\kappa^2$ -P,P' binding mode for the alkyne bridging two metal center.



## New Synthetic Pathways to Heterodonor Complex Ligands



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