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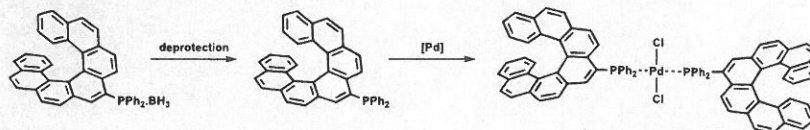
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Transition-Metal Complexes Bearing Helical Phosphines and their Catalytic Activity

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Helicenes represent polyaromatic molecules with unique optical and electronic properties. Due to them they can be applied in many fields of research.¹ Surprisingly, the coordination chemistry of helicenes and their use as chirality inducers is still strongly under-developed.² Among privileged ligands exhibiting central, axial or planar chirality, the use of helically chiral ligands in transition metal catalysis is still very rare. Herein, we are focusing on helical phosphines potentially usable in homogeneous asymmetric catalysis. Based on previous results,³ a methodology for preparation of transition metal complexes bearing helical phosphine ligands in their racemic form was developed and such compounds were fully characterized. (Scheme 1).



Scheme 1

Prepared palladium complex was successfully tested in series of Suzuki reactions. Course of the reactions was studied depending on electronic and steric effects of substrates. The preparation of other helicene ligands in their racemic and non-racemic forms is in progress in our lab.

References

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