

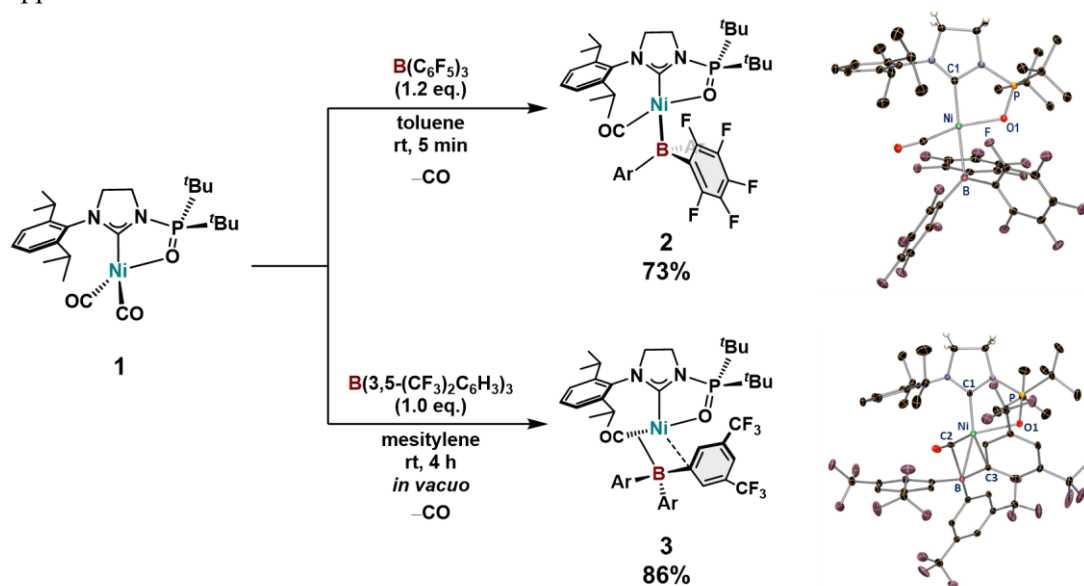
Monodentate Borane Ligands for Square-Planar Nickel(0) Complexes

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Transition metals are known to work as electron donors toward electron-accepting heavier-group-13 elements (Al, Ga, and In), called Z-type ligands.¹⁻⁴ However, complexes with boron-based monodentate Z-type ligands have never been reported.² Herein, we report the synthesis of Ni(0) complexes that bear N-phosphine-oxide-substituted imidazolinyldenes (SPoxIm)s⁵ and boranes as a monodentate Z-type ligand.

Reaction of **1** with B(C₆F₅)₃ yielded a square-planar nickel(0) complex (**2**) including Ni–B(C₆F₅)₃ bond with dissociation of CO. On the other hand, B(3,5-(CF₃)₂C₆H₃)₃ without the *ortho*-F atoms in *B*-aryl group afforded a tetrahedral Ni(0) complex (**3**) via Ni–CO bond coordination to the boron atoms. In this work, a combined theoretical and experimental approach revealed a mixed covalent/dative character for the Ni–B bonds.



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