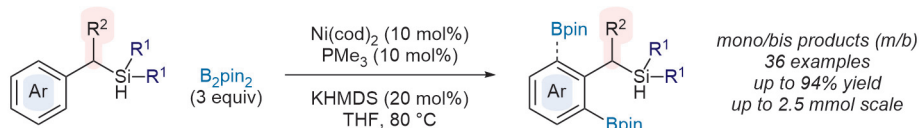


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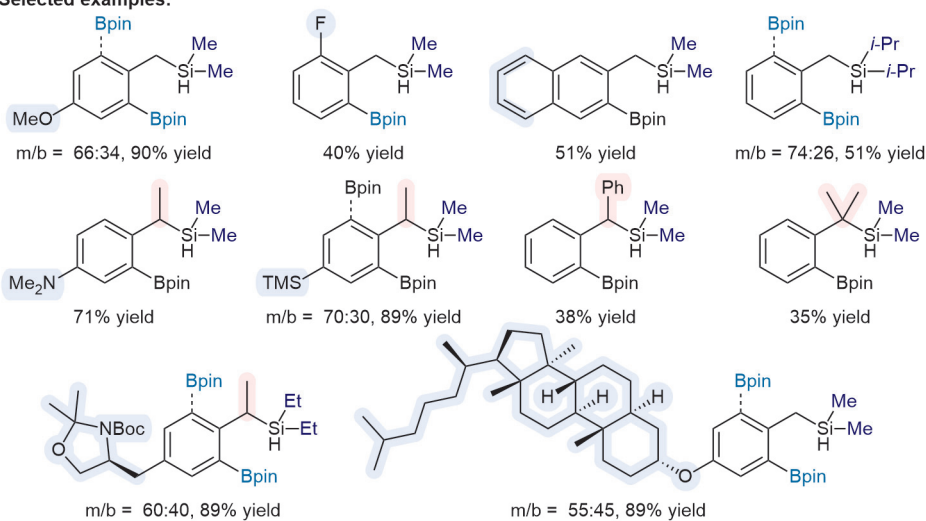
Nickel-Catalyzed, Silyl-Directed, *ortho*-Borylation of Arenes via an Unusual Ni(II)/Ni(IV) Catalytic Cycle

Nat. Commun. 2024, 15, 7549 DOI: 10.1038/s41467-024-51997-0.

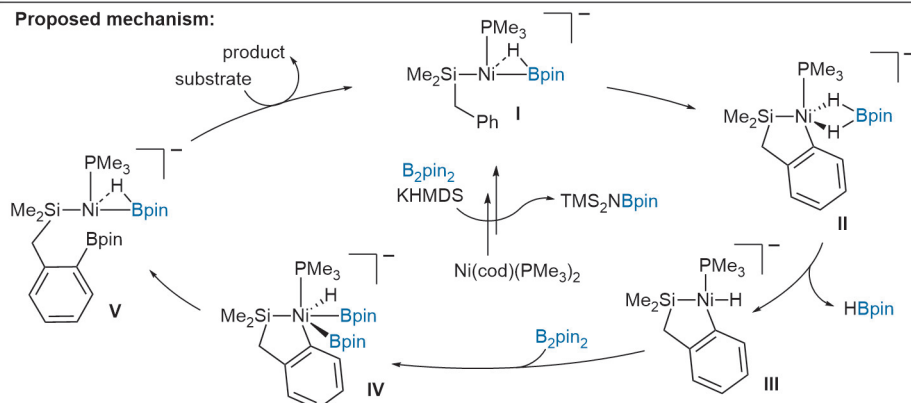
## Silyl-Directed Borylative C–H Functionalization of Arenes



Selected examples:



Proposed mechanism:



**Significance:** A nickel-catalyzed silyl-directed *ortho*-C(sp<sup>2</sup>)-H borylation of substituted arenes is reported. The reaction utilizes readily accessible reagents, and the products contain both a hydro-silane and a boronate moiety, allowing for further functionalization.

**Comment:** The methodology can be applied to a range of arenes, including drug-relevant substrates. Experimental and computational studies support a two-electron pathway, involving the generation of a reactive Ni(II)–Bpin–ate intermediate (I). Oxidative addition of B<sub>2</sub>pin<sub>2</sub> forms the six-membered nickel species IV.

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