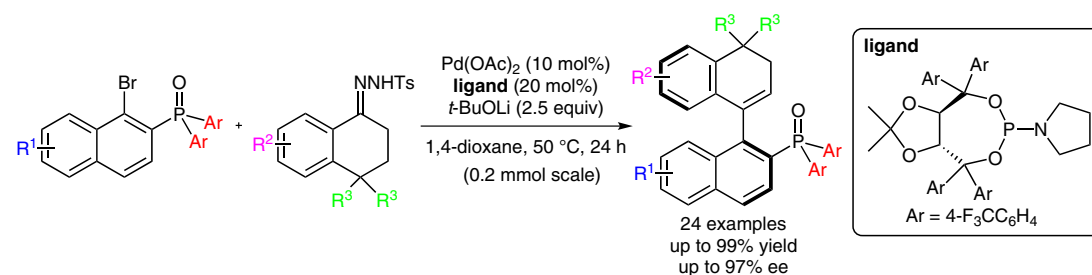
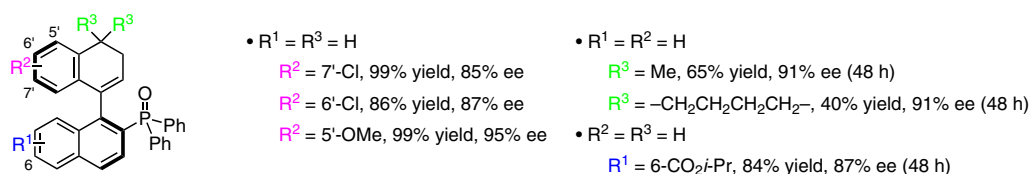
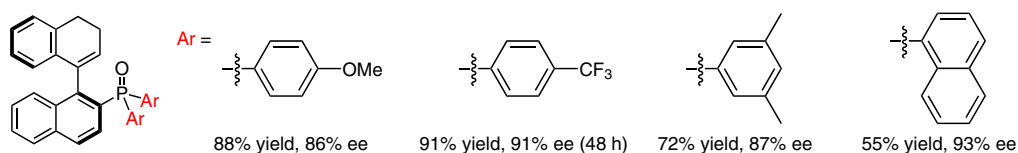


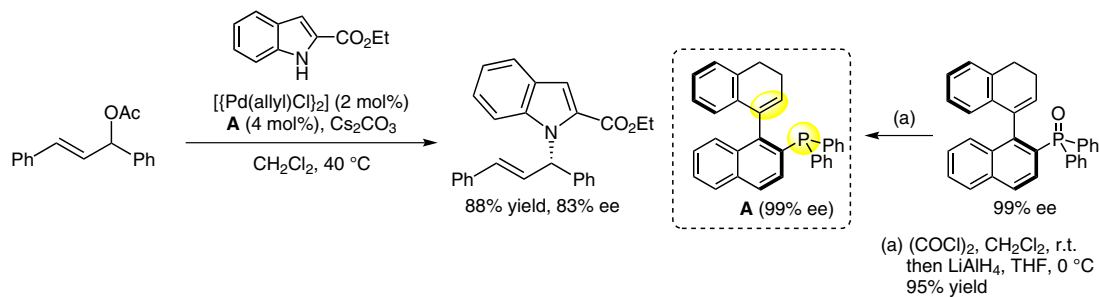
Synthesis of Axially Chiral Vinyl Arenes by Palladium(0) Catalysis



Selected examples:



Application as chiral ligand:



Significance: The authors report the highly enantioselective synthesis of various vinyl arenes via a palladium-catalyzed cross-coupling reaction. The vinyl-arene compounds were easily transformed into binaphthyl skeletons or phosphine compounds. The authors also demonstrate an application of the product as a chiral phosphine-olefin ligand in an allylic substitution reaction.

Comment: The reported coupling reaction involves oxidative addition of palladium(0) to bromoarenes, reaction with the diazo compound to generate a palladium-carbene species, migratory insertion and β -hydride elimination. A broad substrate scope was demonstrated and a range of chiral vinyl arenes were obtained. These products might be a new class of chiral phosphine-olefin ligands.