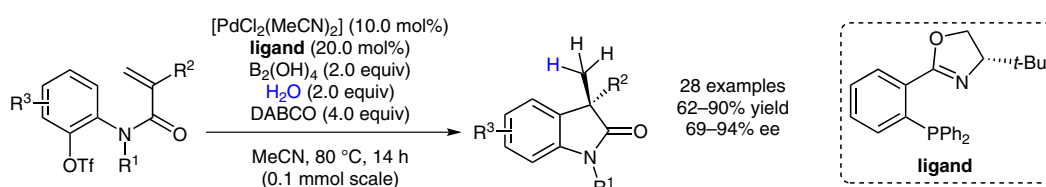
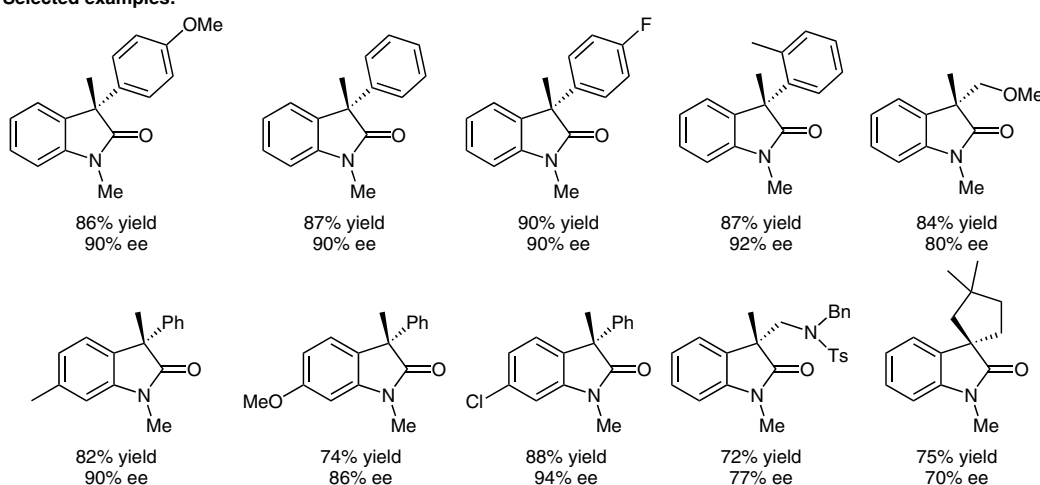


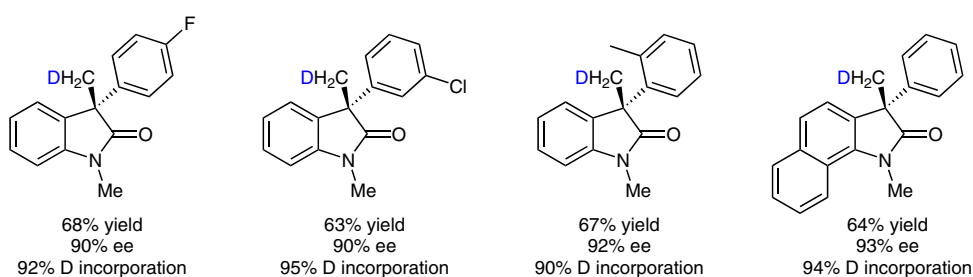
Palladium-Catalyzed Reductive Heck Reaction



Selected examples:



Reactions performed with D₂O and B₂Cat₂:



Significance: Water represents the cheapest and most environmentally benign source of hydrogen or hydride; therefore, its use in combination with transition-metal catalysis is very appealing. In the present work, the authors present a palladium-catalyzed enantioselective reductive Heck reaction using water as final hydride donor.

Comment: *N*-Aryl acrylamides reacted in the presence of a [PdCl₂(MeCN)₂] catalyst and (*S*)-*t*-BuPHOX ligand to generate the corresponding products in good yields and good enantioselectivities using water as hydride source. The use of DABCO as a base and a catalytic amount of B₂(OH)₄ was found to be crucial for the success of the transformation. The use of deuterium oxide allowed the synthesis of D-labeled oxindoles with >90% D incorporation.