Title: **Novel cyclometallated iridium catalysts for asymmetric hydrogenation of *N*-methyl and *N*-phenyl imines.**

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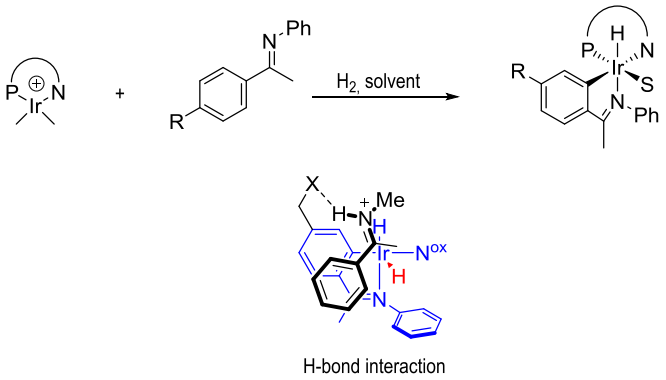
In this work, three acetophenone *N*-phenyl imine derivatives functionalized in the para position have been prepared and cyclometallated to Ir-MaxPHOX catalyst. One of the additives has a hydrogen bond acceptor group, while the others have bulky substituents. The behavior of these compounds in asymmetric hydrogenation of acetophenone *N*-methyl and *N*-phenyl imine substrates has been studied. The additive containing a hydrogen bond acceptor provided better enantioselectivity than the others. This reinforces the hypothesis that a hydrogen bond interaction between the catalyst and the substrate would increase the selectivity. Additives with bulky substituents provided worse results, probably due to steric hindrance, decreasing the selectivity.



Keywords: Iridium, cyclometallation, imine asymmetric hydrogenation, hydrogen bond.