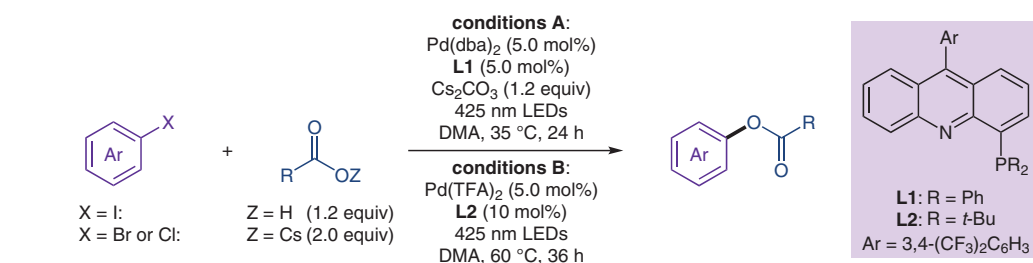
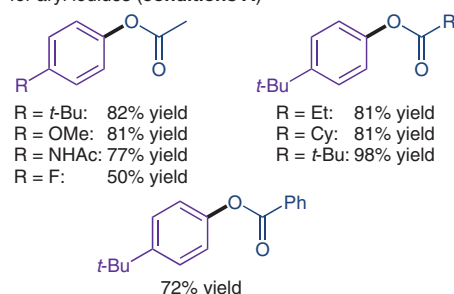


Palladium-Catalyzed Cross-Coupling of Aryl Halides with Carboxylic Acids by Photoinduced Reductive Elimination

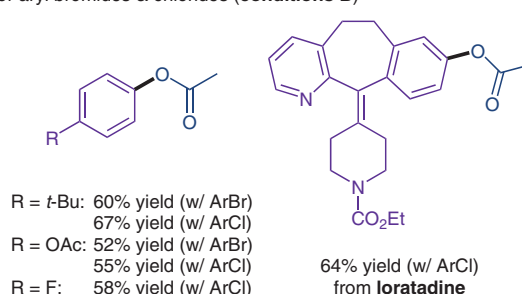


Selected examples:

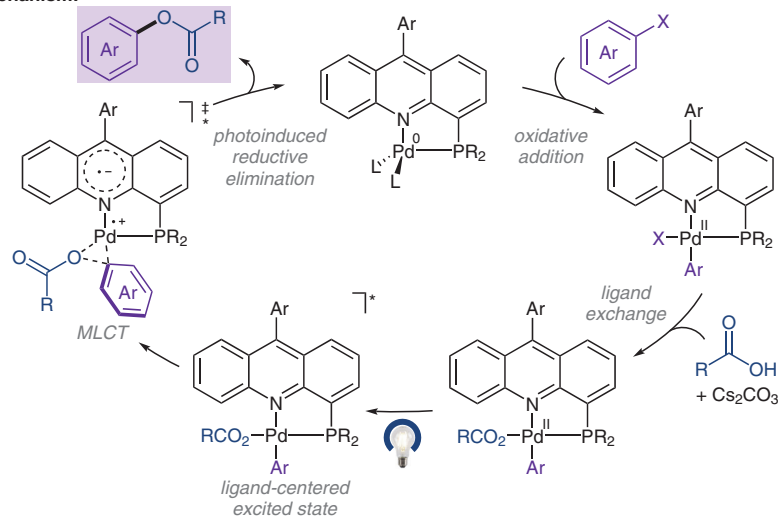
for aryl iodides (**conditions A**)



for aryl bromides & chlorides (**conditions B**)



Proposed mechanism:



Significance: A palladium-catalyzed cross-coupling of aryl halides with carboxylic acids under visible-light irradiation is disclosed. The reaction affords aryl esters in moderate to good yields. Key to success is the design and use of a non-innocent phosphinoacridine ligand.

Comment: Experimental mechanistic studies revealed that the palladium(II) species undergoes a photoinduced reductive elimination, which is promoted by a metal-to-ligand charge transfer (MLCT) in the excited state.