Enantioselective Fluoroarylation Catalyzed by Palladium

Selected examples:

Possible reaction pathway:

Significance: The authors developed a highly enantioselective palladium-catalyzed fluoroarylation of styrenes bearing an amide-based directing group. The proposed reaction mechanism involves a palladium(IV) intermediate as shown above.

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Comment: In this reaction, N,N-ligands play a crucial role to afford the fluoroarylated products. Without these ligands only Heck products were obtained. Organic phosphate was added as phase-transfer catalyst to increase the chemical yield.