Enantioselective Fluoroarylation Catalyzed by Palladium

**Selected examples:**

- 74% yield, 96% ee
- 83% yield, 91% ee
- 71% yield, 87% ee
- 77% yield, 94% ee

**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.

**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.