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Asymmetric Palladium-Catalyzed Directed Intermolecular Fluoroarylation of Styrens J. Am. Chem. Soc. 2014, 136, 4101-4104.

## Enantioselective Fluoroarylation Catalyzed by Palladium



Selected examples:


$74 \%$ yield
96\% ee





Metal-Catalyzed Asymmetric
Synthesis and
Stereoselective
Reactions

## Key words

fluoroarylation
styrenes
palladium

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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Synfacts 2014, 10(6), 0617 Published online: 16.05.2014
DOI: 10.1055/s-0033-1339002; Reg-No.: H05214SF

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.

