## Synthesis of Indanes by Enantioselective Direct Arylation

## Key words

## direct arylation

palladium
desymmetrization

Significance: Transition-metal-catalyzed C-H functionalization reactions are becoming increasingly practical; however, highly enantioselective variants are rare (see Review below). The authors have identified a catalytic system which allows for the desymmetrization of enantiotopic aryl C-H bonds using a palladium-catalyzed direct arylation.

Review: R. Giri, B.-F. Shi, K. M. Engle, N. Mangel, J.-Q. Yu Chem. Soc. Rev. 2009, 38, 3242-3272.

Comment: The key step in the catalytic cycle is proposed to involve a concerted metalationdeprotonation (CMD) reaction. The use of a chiral monodentate ligand is required to induce enantioselectivity, and bulky taddol-based phosphoramidite ligands were optimal. The reaction is performed at room temperature using $\mathrm{NaHCO}_{3}$ as a base, making the process exceptionally mild.

