New

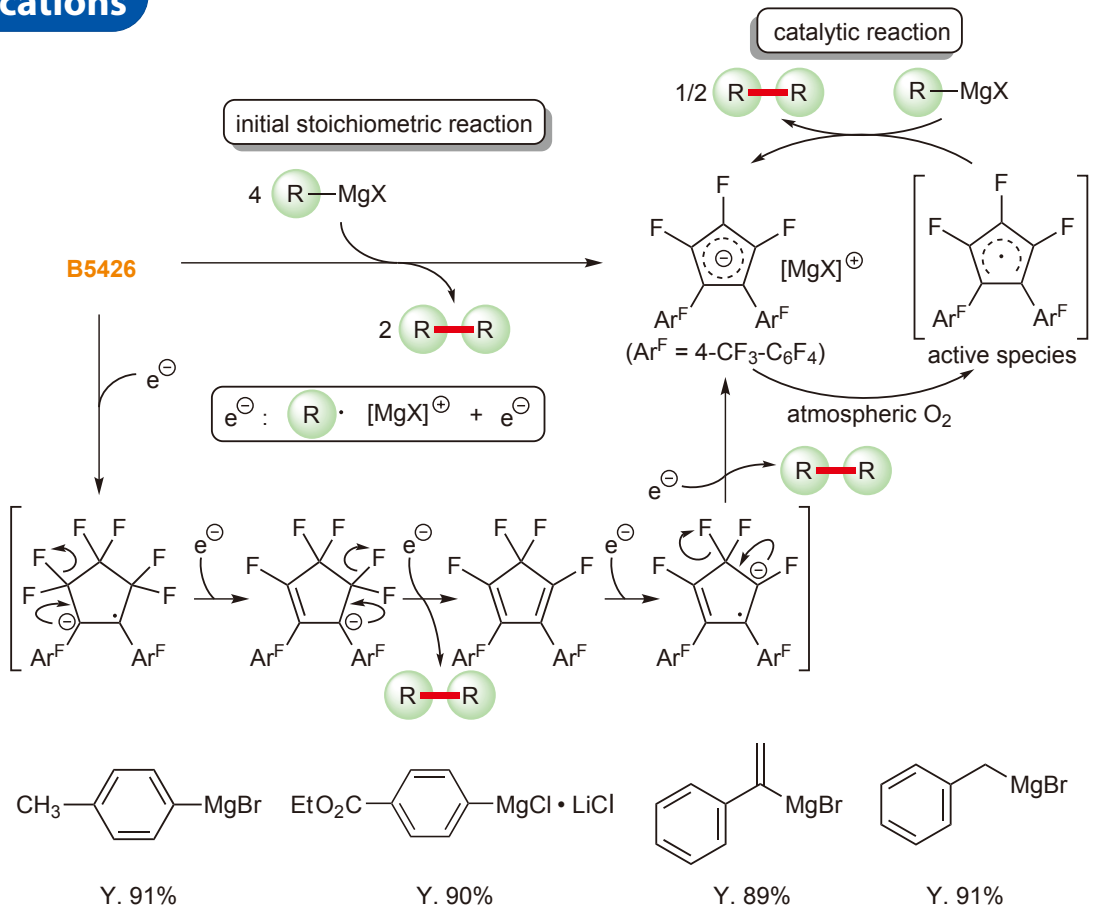
Organocatalyst Usable in the Oxidative Dimerization of Grignard Reagents

[B5426]

Advantages

- Four-electron Oxidant Transitions from Stoichiometric to Catalytic
- Effective for the Dimerization of Grignard Reagents Using Air as a Co-oxidant

Applications



T. Korenaga, K. Nitatori, H. Muraoka, S. Ogawa, K. Shimada, *Org. Lett.* **2015**, *17*, 5500.

1,2-Bis[2,3,5,6-tetrafluoro-4-(trifluoromethyl)phenyl]-3,3,4,4,5,5-hexafluoro-1-cyclopentene

500mg [B5426]

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Introduction of the Researcher

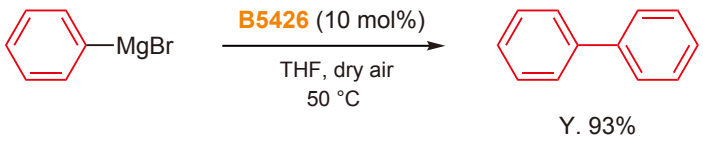
Organic Synthetic Chemistry Laboratory
(The Korenaga Group)

Department of Chemistry and Biological Sciences, Faculty of Science and Engineering, Iwate University

Research Description

The Korenaga research group focuses on the strategy and development of homogeneous catalysis. Their group has developed fluorinated arylphosphine ligands to reduce catalytic loading in transition-metal catalysis. In addition, they have developed organocatalysts for traditionally transition-metal catalyzed reactions. The Korenaga group takes advantage of computational quantum chemistry to develop and refine novel catalysts, and collaborates with their quantum calculations with other laboratories.

Experimental Procedure



Y. 93%

B5426 (60.8 mg, 0.1 mmol), THF (1.0 mL) and PhMgBr in THF (1.0 mol/L, 1.0 mmol) is added to a flame-dried Schlenk flask under argon atmosphere. The reaction mixture is stirred at 50 °C for 6 h under the dry air. After addition of saturated NH_4Cl solution, the reaction mixture is extracted with EtOAc. The organic layer is dried over Na_2SO_4 and is concentrated under reduced pressure. The resulting mixture is purified by silica gel column chromatography to give biphenyl in 93% yield as a white solid.