

M. KELLER, V. COLLIÈRE, O. REISER, A.-M. CAMINADE,\* J.-P. MAJORAL,\* A. OUALI\*  
(LCC-CNRS, TOULOUSE AND UNIVERSITÉ DE TOULOUSE, FRANCE; UNIVERSITÄT  
REGENSBURG, GERMANY)

Pyrene-Tagged Dendritic Catalysts Noncovalently Grafted onto Magnetic Co/C Nanoparticles: An Efficient and Recyclable System for Drug Synthesis

*Angew. Chem. Int. Ed.* **2013**, *52*, 3626–3629.

## Suzuki Coupling Using Co/C MNPs-Immobilized Dendritic Phosphine–Pd

Category

Polymer-Supported  
Synthesis

Key words

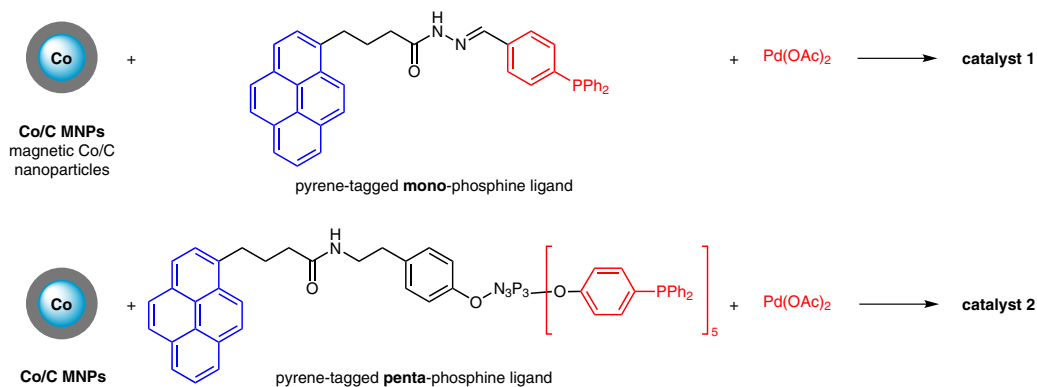
magnetic Co/C  
nanoparticles

palladium

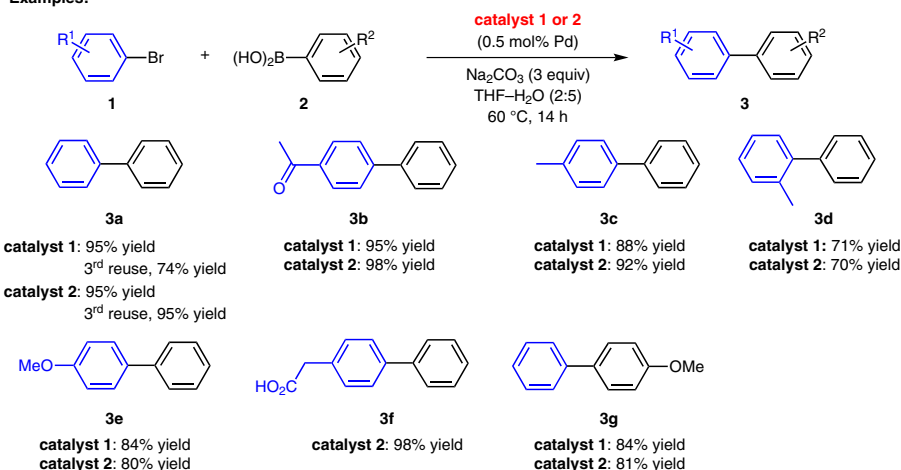
pyrene-tagged  
phosphine

Suzuki coupling

**SYNFACT**  
*of the month*



Examples:



**Significance:** Pyrene-tagged mono- and penta-phosphine–palladium complexes were immobilized on graphene layers of magnetic Co/C nanoparticles through  $\pi$ – $\pi$  interactions. The resulting catalysts **1** and **2** were applied to the Suzuki–Miyaura coupling of aryl bromides **1** and boronic acids **2** to afford the corresponding biaryls **3** in 70–98% yield (seven examples). These catalysts were separated from the reaction mixture by magnetic decantation.

**Comment:** Catalyst **2** was reused ten times without significant loss of catalytic activity (felbinac **3f**, 1<sup>st</sup> use: 100% GC yield; 11<sup>th</sup> use: 100% GC yield). ICP–MS analysis for the first cycle showed that about 6% of the introduced palladium leached out into the crude mixture (111 ppm palladium). After the extraction with CH<sub>2</sub>Cl<sub>2</sub>, the contamination of palladium became less than 5 ppm, and no traces of cobalt were detected.

**SYNFACTS Contributors:** Yasuhiro Uozumi, Yoichi M. A. Yamada, Aya Ohno

Synfacts 2013, 9(6), 0675 Published online: 16.05.2013

DOI: 10.1055/s-0033-1338761; Reg-No.: Y04513SF

2013 © THIEME STUTTGART • NEW YORK

This document was downloaded for personal use only. Unauthorized distribution is strictly prohibited.