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Main-Chain Organometallic Microporous Polymers Based on Triptycene: Synthesis and Catalytic Application in the Suzuki–Miyaura Coupling Reaction

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Suzuki–Miyaura Coupling with Main-Chain Organometallic Polymer

Category

Polymer-Supported Synthesis

Key words

main-chain organometallic polymers

palladium

Suzuki–Miyaura coupling

SYNFACT
of the month

Scheme 1: Preparation of triptycene-based MOMP-1:

Scheme 2: Suzuki–Miyaura coupling catalyzed by MOMP-1:

Significance: A triptycene-based NHC-Pd main-chain organometallic microporous polymer (MOMP-1) was prepared from 2,6,14-triiodotriptycene according to Scheme 1. MOMP-1 catalyzed the Suzuki–Miyaura coupling of aryl halides with phenylboronic acid in water to give the corresponding biaryls in 88–97% yield (Scheme 2, 9 examples).

Comment: The characterization of MOMP-1 was performed by NMR, SEM, TEM, EDS, XRPD, TGA, nitrogen sorption, and elemental analyses. In the coupling of bromobenzene with phenylboronic acid, the catalyst was recovered by filtration and re-used twice without loss of its catalytic activity (2nd run: 96% yield, 3rd run: 96% yield).

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