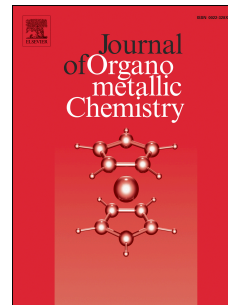


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## A sustainable heterogenized palladium catalyst for Suzuki-Miyaura cross coupling reaction of azaheteroaryl halides in aqueous media

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### ABSTRACT

A unique recyclable Pd catalyst ('SiO<sub>2</sub>'-NH<sub>2</sub>-Pd) for Suzuki-Miyaura coupling reaction of azaheteroaryl halides is developed. The catalytic system is working under mild aqueous condition with low Pd loading and without the use of phosphine ligand. The plausible mechanism is proposed based on the formation of undesired symmetrical biaryl from the coupling reaction of azaheteroaryl chlorides due to the oxidative homocoupling of nucleophilic arylboronic acid. This catalytic system represents an attractive and promising approach for the synthesis of azaheterobiaryls with high product yields. The catalyst has demonstrated an excellent recyclability.

**Keywords:** Palladium catalyst; Suzuki-Miyaura coupling reaction; Azaheteroaryl halides

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