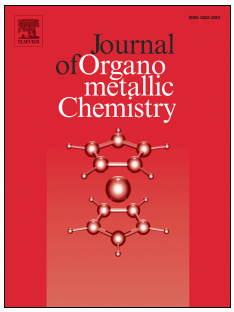
Accepted Manuscript



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

S. Ganesamoorthy, M. Muthu Tamizh, K. Shanmugasundaram, R. Karvembu

PII: S0022-328X(18)30129-3

DOI: 10.1016/j.jorganchem.2018.02.030

Reference: JOM 20329

To appear in: *Journal of Organometallic Chemistry*

Received Date: 11 September 2017

Revised Date: 10 February 2018

Accepted Date: 21 February 2018

Please cite this article as: S. Ganesamoorthy, M. Muthu Tamizh, K. Shanmugasundaram, R. Karvembu, A sustainable heterogenized palladium catalyst for Suzuki-Miyaura cross coupling reaction of azaheteroaryl halides in aqueous media, *Journal of Organometallic Chemistry* (2018), doi: 10.1016/j.jorganchem.2018.02.030.

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

S. Ganesamoorthy[a,b], M. Muthu Tamizh[c], K. Shanmugasundaram[b] and R. Karvembu*[a]

[a]*Department of Chemistry, National Institute of Technology, Tiruchirappalli 620015, India*

[b]*Discovery Chemistry, Syngene International Ltd., Biocon Park, Bommasandra Industrial Area, Bommasandra-Jigani Link Road, Bangalore 560099, India*

[c]*Department of Chemistry, Siddha Central Research Institute, Central Council for Research in Siddha, Arumbakkam, Chennai 600106, India*

ABSTRACT

A unique recyclable Pd catalyst ('SiO_2'-NH_2-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