Suzuki–Miyaura Reaction with NHC-Cu-Pd MOF Catalysts

Significance: A metal–organic framework (MOF) catalyst \(2\) was prepared from dicarboxylic acid \(H_2L\Cl_2\) bearing two azolium components through the MOF formation with \(Cu(NO_3)\Cl_2\) followed by the modification with \(Pd(OAc)_2\). The Suzuki–Miyaura reaction of aryl halides and arylboronic acids was carried out with \(2\) (10 mol%) in toluene to give the corresponding biaryl products in 81–99% yield.

Comment: MOF catalyst \(2\) was recovered by filtration and reused five times without loss of catalytic activity. A catalyst prepared from \(H_2L\Cl_2\), \(CuCl_2\), and \(Pd(OAc)_2\), which has a different MOF structure, exhibited much lower catalytic activity (4-methoxybiphenyl: 43%) than \(2\), highlighting the important roles of the framework structures in determining the catalytic performance.

SYNFACTS Contributors: Yasuhiro Uozumi, Yoichi M. A. Yamada, Yoshinari Yuyama

Synfacts 2011, 12, 1373-1373  Published online: 18.11.2011
DOI: 10.1055/s-0031-1289413; Reg-No.: Y12511SF