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

## Gategory

Polymer-Supported Synthesis

## Key words

N -heterocyclic carbenes
palladium
cross-coupling

Preparation of NHC-based Pd catalyst:


Suzuki-Miyaura reaction:



Significance: A metal-organic framework (MOF) catalyst $\mathbf{2}$ was prepared from dicarboxylic acid $\mathrm{H}_{2} \mathbf{L C l} l_{2}$ bearing two azolium components through the MOF formation with $\mathrm{Cu}\left(\mathrm{NO}_{3}\right)_{2} \cdot 3 \mathrm{H}_{2} \mathrm{O}$ followed by the modification with $\mathrm{Pd}(\mathrm{OAc})_{2}$. The SuzukiMiyaura reaction of aryl halides and arylboronic acids was carried out with $\mathbf{2}$ ( $10 \mathrm{~mol} \%$ ) in toluene to give the corresponding biaryl products in 8199\% yield.

Comment: MOF catalyst $\mathbf{2}$ was recovered by filtration and reused five times without loss of catalytic activity. A catalyst prepared from $\mathrm{H}_{2} \mathbf{L C l}{ }_{2}$, $\mathrm{CuCl}_{2}$, and $\mathrm{Pd}(\mathrm{OAc})_{2}$, 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.

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[^0]:    synfacts Contributors: Yasuhiro Uozumi, Yoichi M. A. Yamada, Yoshinari Yuyama
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