

A Fast and Green Preparation of a Pd-Containing Mesoporous Carbon Catalysts. Applications in Fine Chemistry for the Synthesis of Pd-free Biaryls and Aromatic Amines

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A mesoporous carbon containing Pd nanoparticles (**C1**) was prepared by a fast, efficient and eco-friendly route from readily available and non-toxic carbon precursors (phloroglucinol, glyoxal), a porogen template (Pluronic F127) and a palladium salt. It was used as an heterogeneous catalyst in fine chemistry.

In particular we have shown that catalyst **C1** presents an outstanding reactivity for “green” Suzuki-Miyaura cross-couplings using only water as solvent and extremely low amounts of supported Pd ranging from 10 to 50 μequiv (Scheme 1). Catalyst **C1** was also successfully used for selective hydrogenations of nitrobenzene derivatives in ethanol at room temperature under an atmosphere of H_2 (1 atm) with 1 mequiv. of supported Pd (Scheme 2). In each reaction, almost Pd-free products (containing < 0.1 ppm of Pd for the Suzuki-Miyaura reaction and < 1 ppm of Pd the hydrogenation reaction) were obtained, avoiding therefore further purification steps. It is noteworthy that, compared to most of the heterogeneous Pd-catalysts described to date, **C1** presents an excellent reactivity for both Suzuki-Miyaura reactions in water and hydrogenations of nitrobenzene derivatives.

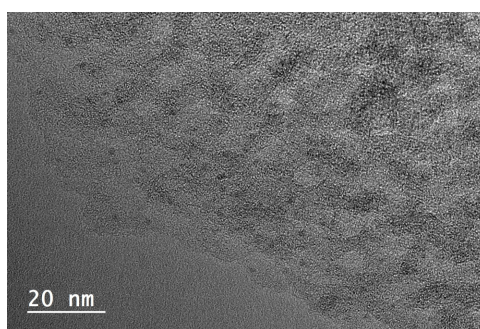
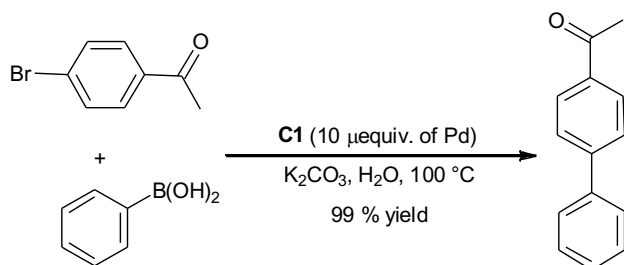
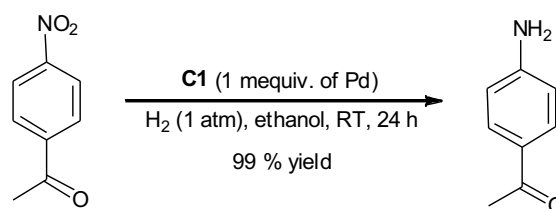


Figure. TEM image of catalyst **C1**



Scheme 1. Suzuki-Miyaura reaction



Scheme 2. Hydrogenation reaction

- [1] C. Peter, A. Derible, J.-M. Becht, J. Kiener, C. Le Drian, J. Parmentier, V. Fierro, M. Girleanu and O. Ersen, *J. Mater. Chem. A*, **2015**, *3*, 12297–12306.
[2] M. Enneimy, C. Le Drian, C. Matei Ghimbeu, J.-M. Becht, *RSC Adv.*, **2018**, *8*, 17176-17182.