

"Nanocomposites and nanomaterials"

Schiff Bases Derived Palladium Complex: New Precursor For Supercritical Fluid

Deposition Technique

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A novel *N,O* bidentate Schiff base ligand derived from 2-fluoro-6-(trifluoromethyl)aniline with 2-hydroxy-4-methylbenzaldehyde and its palladium complex has been successfully synthesized. The synthesized compounds characterized via spectral (FT-IR, ¹H NMR and ¹³C NMR) analyses. The obtained Pd-Schiff base complex was employed as a precursor in Supercritical Fluid Deposition Technique. For this purpose, SBA-15 was elected as support material due to the stability and high surface area. SBA-15 supported palladium nanoparticle surfaces were characterized by XRD, FE-SEM and TEM (fig. 1). The synthesized palladium nanoparticles act as catalyst during Suzuki-Miyaura cross coupling reactions (table 1).

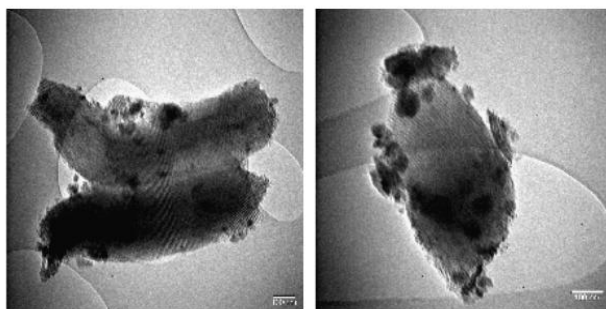
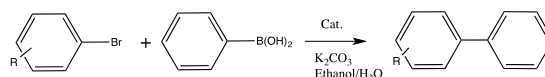


Figure 1. TEM micrograph of SBA-15 supported palladium nanoparticles

Table 1. Conversions of Suzuki-Miyaura reaction products



Entry	R	% Conversion
1	4-NO ₂	83%

a: conditions: 0,1 mmol ArBr, 0,12 mmol PhB(OH)₂, 0,12 mmol base, catalyst/ substrate ratio: 1/ 200(0.5 mol % Pd)

1. Bozbag, S. E., N. S. Yasar, L. C. Zhang, M. Aindow and C. Erkey (2011). **56**(1): 105-113.
2. Jin, L., E. Kondoh, T. Oya and B. Gelloz (2013). **545**: 357-360.