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Palladium nanocatalyst supported on chitosan and its catalytic performance in Suzuki–Miyaura coupling reactions

Hamad M. Al-Matar*, Wael Tohamy
University of Kuwait, Kuwait

Abstract

The Biopolymers were used as supports for the preparation of palladium-based nanoparticles (pd- NPs). The chitosan-based Pd (II) catalyst (non-toxic, cheap, eco-friendly) were structurally characterized using a range of methods such as Fourier transform infrared (FTIR) spectroscopy, X-ray diffraction (XRD), Differential scanning calorimetry (DSC), Differential thermal analysis (DTA), Xray photoelectron spectroscopy (XPS), transmission electron microscopy (TEM), scanning electron microscopy (SEM).(Fig 1,2) palladium is commonly known as best catalyst in the Suzuki–Miyaura coupling reactions due to its very high efficiency therefore, using the recently chitosanbased Pd (II) catalyst in the Suzuki–Miyaura coupling reactions, will be described. The reaction optimization and substrate scope will be discussed, and role of rapid catalyst activation in achieving mild reaction conditions will be emphasized.

Biography:

Hamad Al-Matar is Associate Professor in Organic Chemistry at Kuwait University, Kuwait. In the year 2009, he completed PhD in Organic Chemistry from University of Sussex, Brighton, UK. In the year 1997, he completed his MSc in Organic Chemistry from Howard University, Washington DC, USA. he has published more than 25 research articles in SCI(E) journals.

Speaker Publications:

1. "Studies with Enaminals. New Efficient Synthetic Route to Functionally Substituted Pyridines, Pyrazoles, and Pyrimidines"; Current Organic Synthesis / Vol 11, 2014.
2. "Chitosan Based Heterogeneous Catalyses: Chitosan-Grafted-Poly(4-Vinylpyridne) as an Efficient Catalyst for Michael Additions and Alkylpyridazinyl Carbonitrile Oxidation"; Molecules / Vol 18, 2013, 5288-5305
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