Cellulose Supported Pd(II) Complex Catalyzed Carbon–Carbon Bonds Formation

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ABSTRACT

Corn-cobs are an agro-industrial waste and composed of cellulose mostly. In this study cellu-lose was isolated from the waste corn-cobs and modified to polymeric hydroxamic acid palladium complex 1 and characterized by using a variety of spectroscopic methods such as field emission scanning electron microscopy (FE-SEM), energy-dispersive X-ray spectroscopy (EDX), transmis-sion electron microscopy (TEM), X-ray powder diffraction (XRD), X-ray photoelectron spectroscopy (XPS) and inductively coupled plasma atomic emission spectroscopy (ICP-AES). The complex 1 exhibited high catalytic activity towards Suzuki and Heck coupling reactions of activated and deacti-vated aryl halides to give the respective coupling products with high yield. Moreover, the complex 1 was recovered and recycled five times with no considerable loss of catalytic overall performance.

Keywords: Cellulose, Polymeric Hydroxamic Acid, Suzuki and Heck Reactions Palladium Complex.