Biosynthesis of Pd Nanoparticle Using Onion Extract for Electrochemical Determination of Carbendazim

Dan Liu, Fengzhi Wu*

Department of Horticulture, Northeast Agricultural University, Harbin 150030, China
*E-mail: fzwu2006@aliyun.com
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Recently, nanomaterials through biosynthesis have attracted extensive attention, owing to their non-toxic approaches. Herein, an environmental-friendly chemical approach was proposed to photosynthesize palladium nanoparticles (Pd NPs) with the extract of onion. UV-Vis spectroscopy, FTIR, SEM and XRD were employed to analyze the bio-synthesized Pd NPs. According to SEM as well as dynamic light scattering instrument, the mean size of the bio-synthesized Pd NPs was measured to be 18.9 nm. Furthermore, the bio-synthesized Pd NPs was used to modify the surface of the screen-printed electrode, which exhibited an outstanding electro-catalytic activity for the determination of carbendazim in soil.

Keywords: Pd NPs; Biosynthesis; Onion; Electrochemistry; Sensing; Carbendazim

FULL TEXT

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