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Nano crystalline palladium disposable electrode development for electrochemical spectroscopy application[1] WEI CHEN, Natl Chiao Tung Univ, CHIEN-HAO SU, Cheeshin Technology Co., PENG-JEN CHEN, Natl Chiao Tung Univ, KUO-CHEN HSU, Cheeshin Technology Co., CHIA-CHING CHANG, Natl Chiao Tung Univ, CHEESHIN TECHNOLOGY CO. COLLABORATION — Electrochemical spectroscopy is a highly sensitive and selective detection method to revealing the intermolecular interaction. Gold electrode provides excellent charge transfer property and has been widely used in electrochemical analysis. However, gold electrode is expensive. Moreover, it is time consuming and complicated to regenerate a reaction active gold electrode. Therefore, a ready-to-use electrode is highly desired for electrochemical analysis. In this study, we have developed a novel nano-crystalline palladium (Pd) film electrode which is deposited on flexible polyethylene terephthalate (PET) by sputtering. This Pd electrode is as good as well prepared gold electrode both in cyclic voltammetry (CV) and electric impedance spectroscopy (EIS) due to its highly dispersive {1 1 1}facets-exposed nanocrystalline Pd on high quality. By using this ready-to-use Pd film electrode, the interactions between DNA and drugs can be detected at sub-nanogram level.

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