ABSTRACT

We report on the synthesis of Ni nanoparticles (NiNPs) and their application in electrocatalysis in comparison with nickel phthalocyanine (NiPc). UV-vis spectroscopy, powder X-ray diffraction, transmission electron microscopy and electron paramagnetic resonance were used in the characterization of NiNPs. Cyclic voltammetry and electrochemical impedance spectroscopy were used in electrocatalytic studies of amitrole on the glassy carbon electrode modified with NiNPs. The apparent and catalytic rate constants for amitrole on the NiNP-GCE were found to be 2.58 x 10- 5 cm s -1 and 1.11 x 103 s `, respectively.