Electrooxidation of methanol on a carbon paste electrode modified by nickel phosphate VSB-5 and nanoparticles

Nickel phosphate VSB-5 (Versailles Santa Barbara-5) and spherical nickel phosphate nanoparticles with average diameter of 0.8 nm were synthesized in the presence of (β-hydroxyethyl) trimethylammonium and tetrapropylammonium hydroxide as template, respectively. Carbon paste electrodes were modified by nickel phosphate molecular sieves and the electrochemical behavior of the modified electrode were studied using cyclic voltammetry. The transition metal ions of Ni(II) were incorporated to the nickel phosphate molecular sieves by immersion of the modified electrode in 1.0 M nickel chloride solution for 0.5 min. The modified carbon paste electrode was used as anode for the electrocatalytic oxidation of methanol in alkaline medium.

Keywords:
Nickel phosphate VSB-5, Nanoparticles, Modified electrodes, Methanol Electrooxidation.

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