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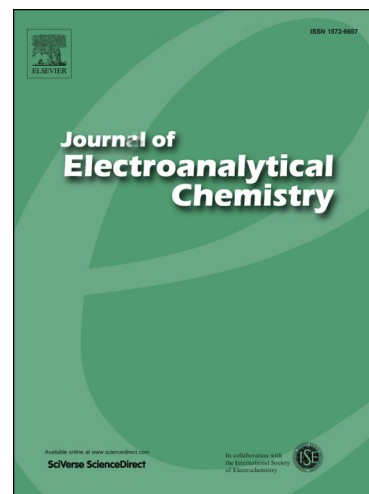
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Glycerol oxidation on nickel based nanocatalysts in alkaline medium - identification of the reaction products

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Abstract

In this work, carbon supported nickel based nanoparticles were prepared by impregnation method and used as anode electrocatalysts for the glycerol conversion. These metallic powders were mixed with a suitable amount of a Nafion/water solution to make catalytic inks which were then deposited onto the surface of carbon Toray used as a conductive substrate. Long-term electrolyses of glycerol were carried out in alkaline medium by chronoamperometry experiments. Analysis of the oxidation products was performed with ion-exclusion liquid chromatography which separates the analytes by ascending pKa. The spectroscopic measurements have shown that the cobalt content in the anode composition did contribute to the C-C bond cleavage of the initial molecule of glycerol.

Keywords: Glycerol electrooxidation; Nickel; Cobalt; Chromatographic analysis; Spectroscopic measurements.

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