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**NICKEL NANOWIRES-BASED COMPOSITE MATERIAL APPLIED TO THE
HIGHLY ENHANCED NON-ENZYMATIC ELECTRO-OXIDATION OF
ETHANOL**

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ABSTRACT

In this work, we report the building of a nanostructured platform with activity towards the non-enzymatic oxidation of ethanol. This nanostructured platform was obtained by including Ni nanowires (NiNWs) in a graphite matrix composite. The NiNWs were obtained by electrochemical synthesis using commercial aluminum oxide templates and characterized by scanning electronic microscopy (SEM), X-ray emission (EDS) and X-ray diffraction (XRD). The composite transducer (CPE-NiNWs) was studied by cyclic voltammetry, amperometry and electrochemical impedance spectroscopy (EIS) assays. CPE-NiNWs proved to be highly sensitive for the detection of ethanol in 0.10 M NaOH, demonstrating a wide linear range (1.0×10^{-4} - 1.1×10^{-2} M) and a detection limit of 3.10×10^{-7} M. CPE-NiNWs was used for the efficient quantification of

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