Electrochemical sensors for the detection of cadmium (II) based on calix [4] arene

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ABSTRACT

In the present work, we report on the elaboration of a polymeric membrane including calix [4] arene as an ionophore to functionalise cadmium (II) ion-sensitive electrode. The phenomena occurring at the electrode/solution interface have been investigated by electrochemical impedance spectroscopy and cyclic voltammetry methods. Several conditions were optimised to enhance the sensitivity of the ion sensor; in particular, polarisation was adjusted to 0.2 V/SCE. The cadmium concentrations that can be detected are in the range 10^{-8}–10^{-3} M and the low detection limit is about 10^{-6} M.

Keywords: Calix [4] arene; Modified electrode; Electrochemical impedance; Electrochemical sensor

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