عنوان مقاله:

An electrochemical acetaminophen sensor based on La۳+/Co۳O۴ nanoflowers modified graphite screen printed electrode architecture

محل انتشار:

مجله بین المللی ابعاد نانو, دوره 10, شماره 2 (سال: 1398)

تعداد صفحات اصل مقاله: 9

نویسندگان:

Iran Sheikhshoaie - *Department of Chemistry, Shahid Bahonar University, Kerman, Iran*.

Fariba Garakani Nejad - *Department of Chemistry, Shahid Bahonar University, Kerman, Iran*.

Hadi Beitollai - *Environment Department, Institute of Science and High Technology and Environmental Sciences, Graduate University of Advanced Technology, Kerman, Iran*.

خلاصه مقاله:

In this study, the La۳+/Co۳O۴ nanoflowers were synthesized by co-precipitation method. The morphology of the La۳+/Co۳O۴NFs were characterized using scanning electron microscopy (SEM), and were further used to modify the graphite screen printed electrode (GSPE). The electrochemical behavior of acetaminophen at La۳+/Co۳O۴NFs/GSPE has been studied in aqueous solutions. Experimental results showed that the La۳+/Co۳O۴NFs modified GSPE possess excellent electrocatalytic activity toward the detection of acetaminophen. Under optimum conditions, the La۳+/Co۳O۴NFs modified electrode exhibited high sensitivity and stability to acetaminophen over a wide linear range of concentrations from ۰.۵μM to ۲۵۰.۰μM, with a detection limit of ۰.۰۹μM. Finally, the proposed sensor was successfully applied to the detection of acetaminophen in real samples.

کلمات کلیدی:

Acetaminophen, Electrocatalytic activity, Graphite screen printed electrode, La۳+/Co۳O۴ nanoflowers, Modified electrode