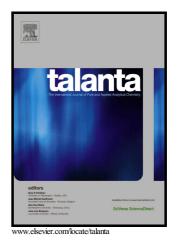
Author's Accepted Manuscript

Biosensing based on pencil graphite electrodes

Álvaro Torrinha, Célia G. Amorim, Maria C.B.S.M. Montenegro, Alberto N. Araújo



 PII:
 S0039-9140(18)30796-3

 DOI:
 https://doi.org/10.1016/j.talanta.2018.07.086

 Reference:
 TAL18915

To appear in: Talanta

Received date:20 April 2018Revised date:24 July 2018Accepted date:27 July 2018

Cite this article as: Álvaro Torrinha, Célia G. Amorim, Maria C.B.S.M. Montenegro and Alberto N. Araújo, Biosensing based on pencil graphite electrodes, *Talanta*, https://doi.org/10.1016/j.talanta.2018.07.086

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

Biosensing based on pencil graphite electrodes

Álvaro Torrinha, Célia G. Amorim, Maria C. B. S. M. Montenegro and Alberto N. Araújo* LAQV-REQUIMTE, Laboratório Química Aplicada, Faculdade Farmácia da Universidade do Porto, Porto, Portugal

*Corresponding author e-mail: anaraujo@ff.up.pt

Abstract

Pencil leads have been increasingly used as electrode material in electrochemical applications. Commonly denominated as pencil graphite electrodes (PGE), they represent a viable alternative to other standard electrodes due to their comparable electrical properties but mainly for their low cost and availability, enabling disposable applications. In order to achieve the best analytical performance literature evidences the type of lead (hardness level) and electrode surface pre-treatment are critical to the envisaged application. The present review describes the use of PGE in biosensing analysis, more specifically those sensors comprising immobilized enzymes but also briefly referring nucleic acids and other biological entities. It lays an emphasis in the immobilization process of the biological entities while focusing in the analytical performance of each biosensor, mainly sensitivity, linear range and limit of detection as comparative criteria. This review also addresses the main characteristics and properties of PGEs as transducer material in the electrochemical field.

Graphical abstract:

Download English Version:

https://daneshyari.com/en/article/7675265

Download Persian Version:

https://daneshyari.com/article/7675265

Daneshyari.com