

عنوان مقاله:

Electrodeposition of carbon nitride nanosheets on the graphanized pencil lead as an effective SPME fiber for extraction of PAHs in edible samples

محل انتشار:

بیستمین کنگره شیمی ایران (سال: 1397)

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نویسنده:

Elnaz Marzi Khosrowshahi - *Department of chemistry, Faculty of basic sciences, Azarbaijan Shahid Madani University, Tabriz, Iran*

خلاصه مقاله:

This study introduce a green, cheap, easy to prepare and powerful SPME sorbent for environmental monitoring applications. Here, graphitic carbon nitride (g-C₃N₄) nanosheet has been prepared on graphenized pencil lead (GPL) as a sorbent by one-step electrochemical reduction for the first time. Carbon nitride (CN) is a kind of metal-free polymer with many advantages, such as non-toxic nature, high stability, low cost, suitable band structure and easy preparation [1]. Graphitic carbon nitride (g-C₃N₄: as an analogue of graphne) has attracted many interests recently. It can be as the best candidate to complement carbon materials [2]. It had been reported as a new sorbent for the extraction or removal of metal ions and aromatic compounds with high sorption capacity [3]. GPL not only serves as fiber platform for g-C₃N₄, but also significantly enhances the immobilization of g-C₃N₄ by π - π interaction, also significantly enhances the adsorption ability of g-C₃N₄ (~2 times); additionally. Moreover, due to the study of adsorption capacity of g-C₃N₄, the PAHs as model analytes were chosen. After SPME procedure, the extraction phase was injected to HPLC-UV for determination of PAHs. The prepared fiber with g-C₃N₄ green sorbent has been showed the ultrasensitive and rapid detection of with a wide linear range. In addition to, the real samples analysis showed satisfactory recovery.

کلمات کلیدی:

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