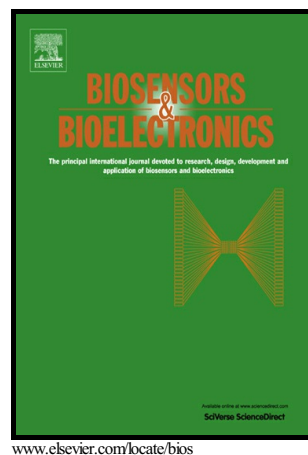


Facile one-pot synthesis of visible light-responsive BiPO₄/nitrogen doped graphene hydrogel for fabricating label-free photoelectrochemical tetracycline aptasensor

Lan Ge, Henan Li, Xiaojiao Du, Mingyue Zhu, Wei Chen, Tingyan Shi, Nan Hao, Qian Liu, Kun Wang



PII: S0956-5663(18)30270-7
DOI: <https://doi.org/10.1016/j.bios.2018.04.008>
Reference: BIOS10404

To appear in: *Biosensors and Bioelectronics*

Received date: 1 February 2018
Revised date: 29 March 2018
Accepted date: 6 April 2018

Cite this article as: Lan Ge, Henan Li, Xiaojiao Du, Mingyue Zhu, Wei Chen, Tingyan Shi, Nan Hao, Qian Liu and Kun Wang, Facile one-pot synthesis of visible light-responsive BiPO₄/nitrogen doped graphene hydrogel for fabricating label-free photoelectrochemical tetracycline aptasensor, *Biosensors and Bioelectronics*, <https://doi.org/10.1016/j.bios.2018.04.008>

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.

Facile one-pot synthesis of visible light-responsive BiPO₄/nitrogen doped graphene hydrogel for fabricating label-free photoelectrochemical tetracycline aptasensor

Lan Ge^a, Henan Li^a, Xiaojiao Du^a, Mingyue Zhu^a, Wei Chen^a, Tingyan Shi^a, Nan Hao^a, Qian Liu^{a*} and Kun Wang^{a,b*}

^aKey Laboratory of Modern Agriculture Equipment and Technology, School of Chemistry and Chemical Engineering, Jiangsu University, Zhenjiang 212013, PR China

^bKey Laboratory of Sensor Analysis of Tumor Marker, Ministry of Education, College of Chemistry and Molecular Engineering, Qingdao University of Science and Technology, Qingdao 266042, PR China

liuqian@ujs.edu.cn

wangkun@ujs.edu.cn

Abstract

It is fundamental to develop highly efficient visible light-responsive photoelectrochemical (PEC) performance material for fabricating PEC biosensor. Herein, BiPO₄/three-dimensional nitrogen doped graphene hydrogel (3DNGH) nanocomposites were prepared for the first time via a facile one-pot hydrothermal route. In this nanoarchitecture, the BiPO₄ nanorods were anchored onto the porous structure of 3DNGH. Compared with pristine BiPO₄, the absorption of BiPO₄/3DNGH has been extend to visible-light region, and the energy band gap of BiPO₄/3DNGH was calculated to be 2.10 eV, which was greatly narrower than that of pristine BiPO₄ with a band gap of 3.85 eV. Under visible light irradiation, the

Download English Version:

<https://daneshyari.com/en/article/7229355>

Download Persian Version:

<https://daneshyari.com/article/7229355>

[Daneshyari.com](https://daneshyari.com)