

Accepted Manuscript

Title: Sensitive Fiber Microelectrode Made of Nickel Hydroxide Nanosheets Embedded in Highly-Aligned Carbon Nanotube Scaffold for Nonenzymatic Glucose Determination

Authors: Qianqian Qian, Qiong Hu, Li Li, Peipei Shi, Jinyuan Zhou, Jinming Kong, Xueji Zhang, Gengzhi Sun, Wei Huang



PII: S0925-4005(17)32012-9
DOI: <https://doi.org/10.1016/j.snb.2017.10.110>
Reference: SNB 23414

To appear in: *Sensors and Actuators B*

Received date: 14-8-2017
Revised date: 5-10-2017
Accepted date: 18-10-2017

Please cite this article as: Qianqian Qian, Qiong Hu, Li Li, Peipei Shi, Jinyuan Zhou, Jinming Kong, Xueji Zhang, Gengzhi Sun, Wei Huang, Sensitive Fiber Microelectrode Made of Nickel Hydroxide Nanosheets Embedded in Highly-Aligned Carbon Nanotube Scaffold for Nonenzymatic Glucose Determination, *Sensors and Actuators B: Chemical* <https://doi.org/10.1016/j.snb.2017.10.110>

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 proof before it is published in its final 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.

Sensitive Fiber Microelectrode Made of Nickel Hydroxide Nanosheets Embedded in Highly-Aligned Carbon Nanotube Scaffold for Nonenzymatic Glucose Determination

Qianqian Qian,^{a†} Qiong Hu,^{b†} Li Li,^a Peipei Shi,^a Jinyuan Zhou,^c Jinming Kong,^{b*} Xueji Zhang,^d Gengzhi Sun,^{a*} Wei Huang^{ae*}

[†] These authors contributed equally to this work.

^a Key Laboratory of Flexible Electronics (KLOFE) & Institute of Advanced Materials (IAM), Jiangsu National Synergetic Innovation Center for Advanced Materials (SICAM), Nanjing Tech University (NanjingTech), 30 South Puzhu Road, Nanjing 211816, China. Email: iamgzsun@njtech.edu.cn; iamwhuang@njtech.edu.cn

^b School of Environmental and Biological Engineering, Nanjing University of Science and Technology, Nanjing 210094, China. Email: j.kong@mail.njust.edu.cn

^c School of Physical Science and Technology, Lanzhou University, 222 South Tianshui road, Lanzhou 730000, China.

^d Chemistry Department, College of Arts and Sciences, University of South Florida, East Fowler Ave, Tampa, Florida 33620-4202, United States.

^e Shaanxi Institute of Flexible Electronics (SIFE), Northwestern Polytechnical University (NPU), 127 West Youyi Road, Xi'an 710072, Shaanxi, China.

Abstract

A sensitive fiber microelectrode for nonenzymatic glucose determination was fabricated by incorporating nickel hydroxide nanosheets into highly-aligned carbon nanotube scaffold. The as-prepared microelectrode featured a detection limit of 0.645 μM , high sensitivity of 12.2 $\text{mA cm}^{-2} \text{mM}^{-1}$, wide linear-detection range from 20 μM to 10.5 mM , as well as an excellent anti-interference ability and repeatability.

Keywords: microelectrode; fiber; nickel hydroxide nanosheet; carbon nanotube; glucose sensor.

1. Introduction

Download English Version:

<https://daneshyari.com/en/article/7141084>

Download Persian Version:

<https://daneshyari.com/article/7141084>

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