Accepted Manuscript

Title: A sensing approach for dopamine determination by boronic acid-functionalized molecularly imprinted graphene quantum dots composite

Authors: Xi Zhou, Xuexia Gao, Fengyan Song, Chunpeng Wang, Fuxiang Chu, Shishan Wu

PII: S0169-4332(17)31854-8

DOI: http://dx.doi.org/doi:10.1016/j.apsusc.2017.06.199

Reference: APSUSC 36399

To appear in: APSUSC

Received date: 26-4-2017 Revised date: 15-6-2017 Accepted date: 20-6-2017

Please cite this article as: Xi Zhou, Xuexia Gao, Fengyan Song, Chunpeng Wang, Fuxiang Chu, Shishan Wu, A sensing approach for dopamine determination by boronic acid-functionalized molecularly imprinted graphene quantum dots composite, Applied Surface Sciencehttp://dx.doi.org/10.1016/j.apsusc.2017.06.199

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.



A sensing approach for dopamine determination by boronic acid-functionalized molecularly imprinted graphene quantum dots composite

Xi Zhou ^a, Xuexia Gao ^a, Fengyan Song ^b, Chunpeng Wang ^a, Fuxiang Chu ^{a,*}, Shishan Wu ^{c,*}

- ^a Institute of Chemical Industry of Forestry Products, CAF; National Engineering Laboratory on Biomass Chemical Utilization; Key and Open Laboratory of Forest Chemical Engineering, SFA; Key Laboratory of Biomass Energy and Material, Nanjing 210042, Jiangsu Province, China
- ^b State Key Laboratory of High Performance Civil Engineering Materials (HPCEM), Jiangsu Research Institute of Building Science, Nanjing 210008, China
- ^c School of Chemistry and Chemical Engineering, Nanjing University, Nanjing 210023, China

*Corresponding authors. Tel. /Fax: +86 85482519. E-mail address: chufxg@163.com (Fuxiang Chu); shishanwu@nju.edu.cn (Shishan Wu)

Highlights

- Novel strategy to improve the specificity of GQDs towards dopamine was developed.
- Molecularly imprinted graphene quantum dots composites with boronic acid groups were facilely synthesized.
- The dopamine could lead to fluorescence quenching of MIPs@ PIn-BAc/GQDs selectively.
- MIPs@ PIn-BAc/GQDs sensor offered a millimicromole level detection for dopamine in biological systems.

Abstract:

A novel fluorescence sensor was developed for dopamine (DA) determination based on

Download English Version:

https://daneshyari.com/en/article/5349973

Download Persian Version:

https://daneshyari.com/article/5349973

<u>Daneshyari.com</u>