

## Accepted Manuscript

Title: Metal nanoparticles-grafted functionalized graphene coated with nanostructured polyaniline 'hybrid' nanocomposites as high-performance biosensors

Authors: Sanju Gupta, Romney Meek

PII: S0925-4005(18)31378-9  
DOI: <https://doi.org/10.1016/j.snb.2018.07.131>  
Reference: SNB 25100

To appear in: *Sensors and Actuators B*

Received date: 24-5-2018  
Revised date: 25-7-2018  
Accepted date: 27-7-2018

Please cite this article as: Gupta S, Meek R, Metal nanoparticles-grafted functionalized graphene coated with nanostructured polyaniline 'hybrid' nanocomposites as high-performance biosensors, *Sensors and amp; Actuators: B. Chemical* (2018), <https://doi.org/10.1016/j.snb.2018.07.131>

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.



## **Metal nanoparticles-grafted functionalized graphene coated with nanostructured polyaniline 'hybrid' nanocomposites as high-performance biosensors**

Sanju Gupta<sup>1</sup>, Romney Meek<sup>2</sup>

<sup>1</sup> Department of Physics and Astronomy and Biotechnology Center, Western Kentucky University, 1906 College Heights Blvd. Bowling Green, KY 42101, USA

<sup>2</sup> Department of Physics and Astronomy, Western Kentucky University, 1906 College Heights Blvd. Bowling Green, KY 42101, USA

\* **Author to whom the correspondence should be addressed.** E-mail: sanju.gupta@wku.edu

### **Highlights**

- Developed multilayered biosensing platform comprising graphene decorated noble metal nanoparticles with nanostructured conducting polymer.
- Quantitative detection of ascorbic acid was successfully elucidated with  $< 1$  pM limit of detection.
- Demonstrated specificity toward ascorbic acid by measuring the response curves interfered with glucose and uric acid for benchmarking the sensitive biosensor.
- Synergistic graphene and gold nanoparticles with nanostructured conducting polymer layer have great potential in deployment of next-generation electrochemical biosensors.

Download English Version:

<https://daneshyari.com/en/article/7138606>

Download Persian Version:

<https://daneshyari.com/article/7138606>

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