

Accepted Manuscript

Title: Raman Rapid Detection of Environmental Hormone

Authors: Yuan Xiang, Menghua Li, Xiaoyu Guo, Yiping Wu, Ye Ying, Ying Wen, Haifeng Yang

PII: S0925-4005(18)30220-X
DOI: <https://doi.org/10.1016/j.snb.2018.01.196>
Reference: SNB 24045

To appear in: *Sensors and Actuators B*

Received date: 14-8-2017
Revised date: 19-1-2018
Accepted date: 25-1-2018



Please cite this article as: Yuan Xiang, Menghua Li, Xiaoyu Guo, Yiping Wu, Ye Ying, Ying Wen, Haifeng Yang, Raman Rapid Detection of Environmental Hormone, Sensors and Actuators B: Chemical <https://doi.org/10.1016/j.snb.2018.01.196>

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.

Raman Rapid Detection of Environmental Hormone

Yuan Xiang, Menghua Li, Xiaoyu Guo, Yiping Wu*, Ye Ying, Ying Wen, Haifeng

Yang*

The Education Ministry Key Lab of Resource Chemistry, Shanghai Key Laboratory of Rare Earth Functional Materials, Shanghai Municipal Education Committee Key Laboratory of Molecular Imaging Probes and Sensors and Department of Chemistry, Shanghai Normal University, Shanghai, 200234, P. R. China.

*Corresponding Authors

Telephone: +86-21-64321701. E-mail: hfyang@shnu.edu.cn (Haifeng Yang), yipingwu@shnu.edu.cn (Yiping Wu)

Highlights

- Two-step approach is used to make hydrophobic core-shell Au@Ag@IP₆/DT.
- Au@Ag@IP₆/DT NPs shows great SERS effect for detecting DEHP in energy drinks.
- This assay has merit of rapidness, simplicity and on-site with portable Raman system.

Abstract

Diethylhexyl phthalate(DEHP) is a kind of plasticizer, which is regarded as environmental hormone due to reproductive toxicity to human body and also has the risk of breast cancer, endometrial cancer and liver cancer after long-term intake. In this work, a rapid surface enhanced Raman scattering (SERS) technique to detect the DEHP residue level in food products is developed by optimizing the synthesis of a hexakisphosphate (IP₆) stabilized Au@Ag@IP₆ nanoparticles. For further improvement of detection sensitivity, such SERS substrate is treated by using 1-dodecanethiol (DT) to enable its capability of capturing more DEHP molecules into

Download English Version:

<https://daneshyari.com/en/article/7140377>

Download Persian Version:

<https://daneshyari.com/article/7140377>

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