

Accepted Manuscript

Title: Carbon Quantum Dots-Ag Nanoparticle Complex as a Highly Sensitive “Turn-On” Fluorescent Probe for Hydrogen Sulfide: A DFT/TD-DFT Study of Electronic Transitions and Mechanism of Sensing

Authors: Chao Wang, Yongqi Ding, Xinyu Bi, Jingxuan Luo, Guo Wang, Yuqing Lin



PII: S0925-4005(18)30474-X
DOI: <https://doi.org/10.1016/j.snb.2018.02.186>
Reference: SNB 24281

To appear in: *Sensors and Actuators B*

Received date: 29-12-2017
Revised date: 26-2-2018
Accepted date: 27-2-2018

Please cite this article as: Chao Wang, Yongqi Ding, Xinyu Bi, Jingxuan Luo, Guo Wang, Yuqing Lin, Carbon Quantum Dots-Ag Nanoparticle Complex as a Highly Sensitive “Turn-On” Fluorescent Probe for Hydrogen Sulfide: A DFT/TD-DFT Study of Electronic Transitions and Mechanism of Sensing, *Sensors and Actuators B: Chemical* <https://doi.org/10.1016/j.snb.2018.02.186>

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.

**Carbon Quantum Dots-Ag Nanoparticle Complex as a Highly Sensitive “Turn-On”
Fluorescent Probe for Hydrogen Sulfide: A DFT/TD-DFT Study of Electronic Transitions
and Mechanism of Sensing**

Chao Wang[†], Yongqi Ding[†], Xinyu Bi, Jingxuan Luo, Guo Wang*, Yuqing Lin*

Department of chemistry, Capital Normal University, Beijing 100048, China.

[†] These authors contributed equally.

*Corresponding author: Yuqing Lin; Guo Wang

E-mail: linyuqing@cnu.edu.cn; wangguo@mail.cnu.edu.cn

Carbon Quantum Dots-Ag Nanoparticle Complex as a Highly Sensitive “Turn-On” Fluorescent
Probe for Hydrogen Sulfide: A DFT/TD-DFT Study of Electronic Transitions and Mechanism of
Sensing

Chao Wang[†], Yongqi Ding[†], Xinyu Bi, Jingxuan Luo, Guo Wang, Yuqing Lin*

Department of chemistry, Capital Normal University, Beijing 100048, China.

Scheme. 1. Proposed mechanism of the CQDs-AgNPs nanoprobe for H₂S sensing.

Highlights:

- A fluorescent nanoprobe based on efficient carbon quantum dots (CQDs)-modified silver nanoparticles (AgNPs) (CQDs-AgNPs) for effective monitoring of H₂S is presented.
- DFT/TD-DFT investigations were conducted on the electronic structures, absorption and emission spectra of CQDs-AgNPs complex as well as the sensing mechanism.

Download English Version:

<https://daneshyari.com/en/article/7140340>

Download Persian Version:

<https://daneshyari.com/article/7140340>

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