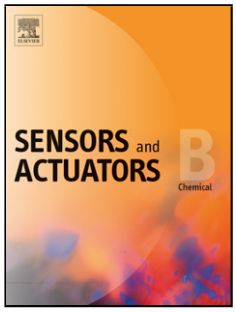


Title: Fluorescent Polymer Nanotubes as Bifunctional Materials for Selective Sensing and Fast Removal of Picric Acid

Authors: Meng Wang, Haitao Zhang, Lin Guo, Dapeng Cao

PII: S0925-4005(18)31379-0
DOI: https://doi.org/10.1016/j.snb.2018.07.132
Reference: SNB 25101

To appear in: *Sensors and Actuators B*

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

Please cite this article as: Wang M, Zhang H, Guo L, Cao D, Fluorescent Polymer Nanotubes as Bifunctional Materials for Selective Sensing and Fast Removal of Picric Acid, *Sensors and amp; Actuators: B. Chemical* (2018), https://doi.org/10.1016/j.snb.2018.07.132

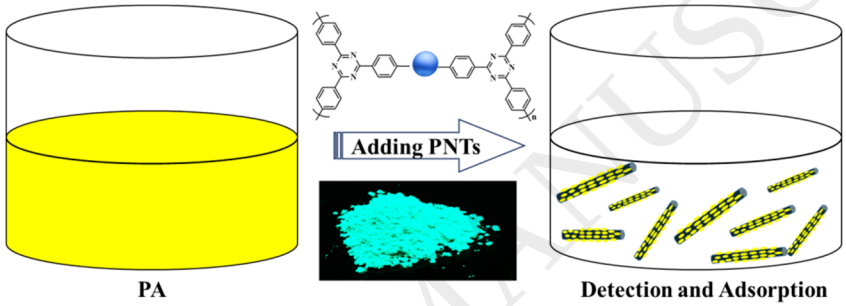
Fluorescent Polymer Nanotubes as Bifunctional Materials for Selective Sensing and Fast Removal of Picric Acid

Meng Wang, Haitao Zhang, Lin Guo, Dapeng Cao*

State Key Laboratory of Organic-Inorganic Composites, and Beijing Advanced Innovation Center for Soft Matter Science and Engineering, Beijing University of Chemical Technology, Beijing 100029, People's Republic of China

Graphical Abstract

TOC Graphics



Highlights

- We have synthesized three porous organic polymer nanotubes (PNTs) with bifunctional applications
- The PNTs exhibit extremely high sensitivity and selectivity for fluorescent sensing picric acid (PA).
- The PNTs can adsorb PA rapidly, and the saturated capacity reaches 260 mg/g.
- The PNTs are excellent bifunctional materials for simultaneously sensing and removing PA.

Abstract

It is an urgent need to develop a bifunctional material for simultaneously sensing and removing explosives, because it is closely related to safety, environmental pollution and the health of human beings. Here, we have synthesized three porous organic polymer nanotubes (PNTs, PNT-4, PNT-5 and PNT-6) through Yamamoto coupling reaction. Results indicate that the three PNTs can be used not only as a fluorescent probe for high