

# Size Tunable Fluorescent Nano-graphite oxides: Preparation and Cell Imaging Applications

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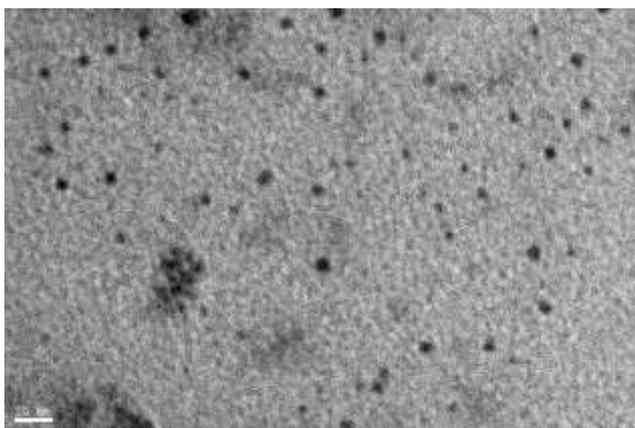
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\* Corresponding authors

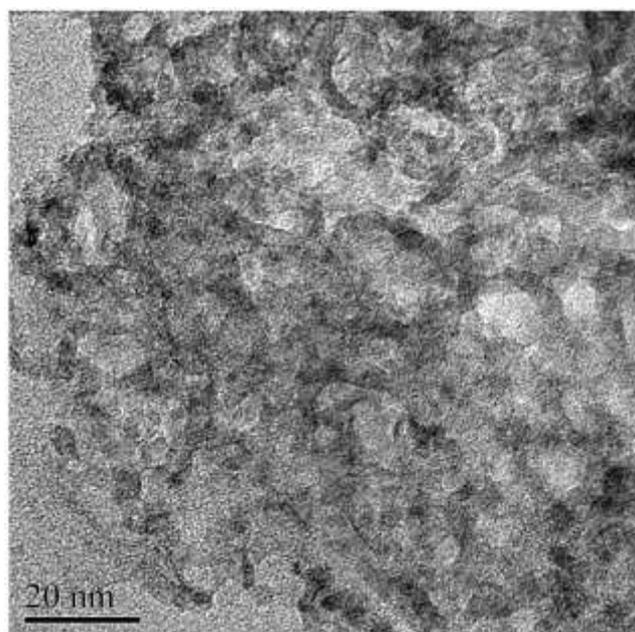
### Preparation of NGO

NGO were prepared by hydrothermal oxidation of graphite powder using modified hummer's method.<sup>1-3</sup> Briefly, graphite powder (1.5 g), NaNO<sub>3</sub> (9.0 g), and KMnO<sub>4</sub> (4.5 g) were added to concentrated sulfuric acid (64 mL) successively under stirring in ice bath. Then 150 mL of deionic water was poured into the mixture. And the mixture was refluxed for 7 days. For obtained the fluorescent particles, the dialysis tube against with ethanol, the mixture were separated into three parts using dialysis tubes with different molecular weight (MW) cutoff (1000, 3500 and 7000 Da), the MW between 1000-3500, 3500-7000, >7000 Da were collected and denoted as NGO-1, NGO-2, and NGO-3, respectively.

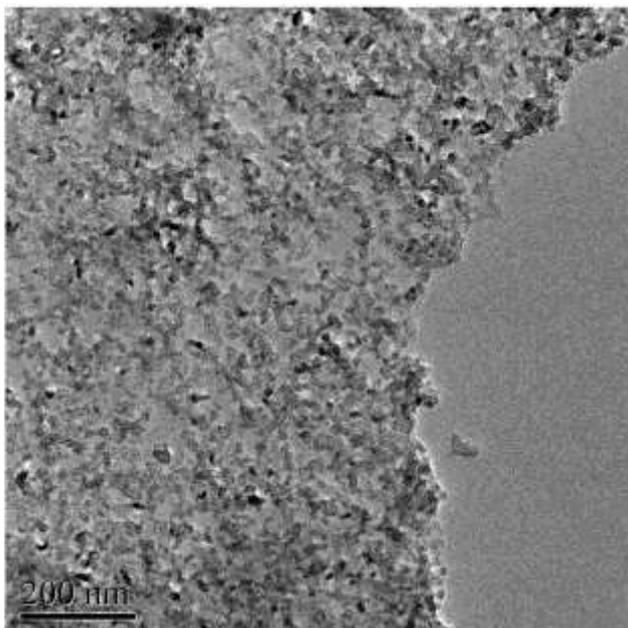
### Results and discussion



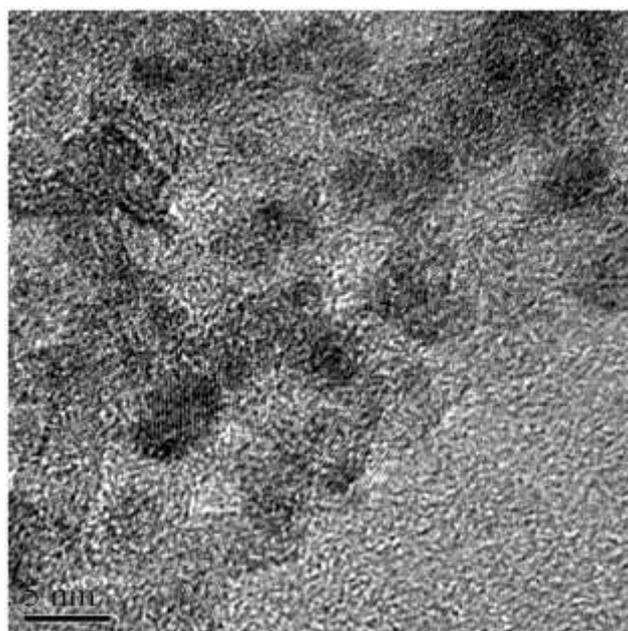
**SFig. 1** Representative TEM images of NGO-1, scale bar = 10 nm.



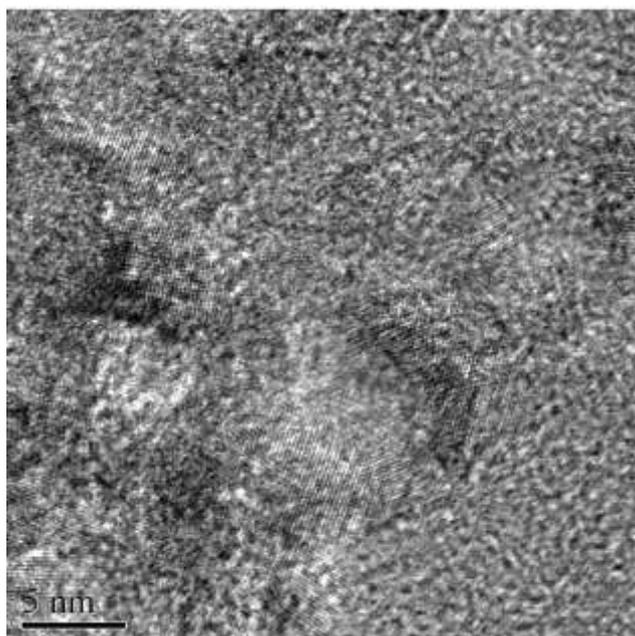
**SFig. 2** Representative TEM images of NGO-2, scale bar = 20 nm.



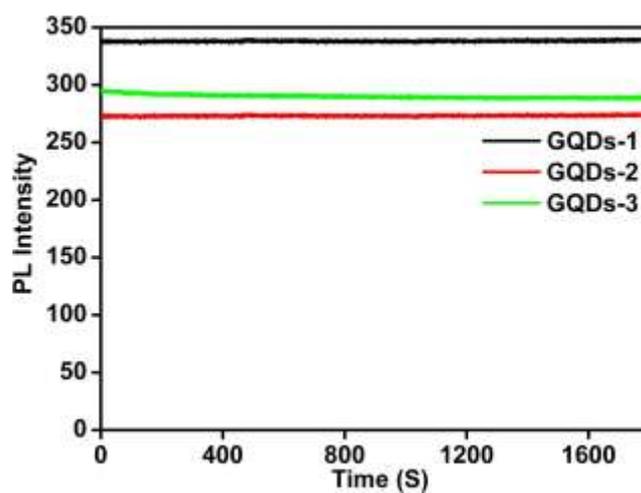
**SFig. 3** Representative TEM images of NGO-3, scale bar = 200 nm.



**SFig. 4** High resolution TEM images of NGO-2, scale bar = 5 nm.



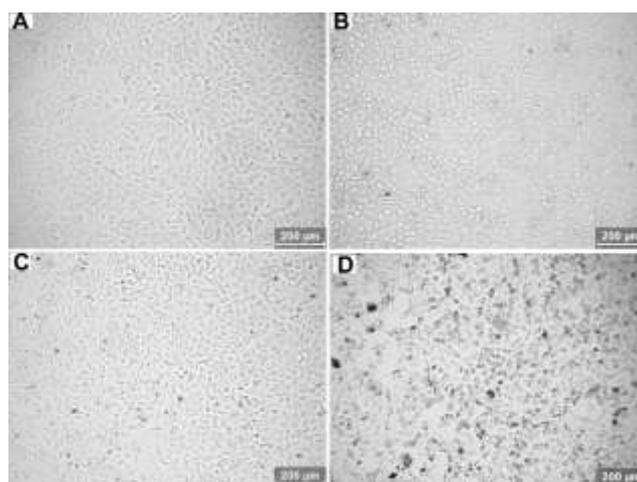
**SFig. 5** High resolution TEM images of NGO-3, scale bar = 5 nm.



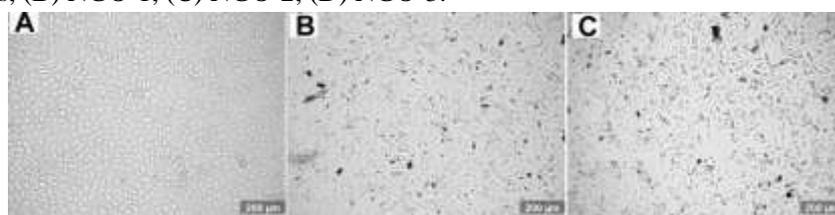
**SFig. 6** Emission intensity of NGO dispersion in water during continuous excitation at 365 nm.



**SFig. 7** Optical microscopy images of A549 cells incubated with  $100 \mu\text{g mL}^{-1}$  of NGO for 24 h, (A) NGO-1, (B) NGO-2, (C) NGO-3.



**SFig. 8** Optical microscopy images of A549 cells incubated with  $50 \mu\text{g mL}^{-1}$  of NGO for 48 h, (A) control cells, (B) NGO-1, (C) NGO-2, (D) NGO-3.



**SFig. 9** Optical microscopy images of A549 cells incubated with  $100 \mu\text{g mL}^{-1}$  of NGO for 48 h, (A) NGO-1, (B) NGO-2, (C) NGO-3.

#### Reference

1. X. Zhang, J. Li, Y. Zhu, Y. Qi, Z. Zhu, W. Li and Q. Huang, *Nucl Sci Tech*, 2011, **22**, 99-104.
2. X. Zhang, J. Yin, C. Peng, W. Hu, Z. Zhu, W. Li, C. Fan and Q. Huang, *Carbon*, 2011, **49**, 986-995.
3. S. Park, J. An, J. R. Potts, A. Velamakanni, S. Murali and R. S. Ruoff, *Carbon*, 2011, **49**, 3019-3023.