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Facile preparation of graphitic-C_3N_4 quantum dots for application in two-photon imaging

Lingyan Yang,[1,2] Xiaoxia Wu,[1,2] Liang Luo,[3] Yong Liu,[4] Fu Wang[1*]

[1] Laboratory of Environmental Sciences and Technology, Xinjiang Technical Institute of Physics & Chemistry, Chinese Academy of Sciences, Urumqi, Xinjiang 830011, China

[2] University of Chinese Academy of Sciences, No. 19 Yuquan Road, Beijing 100049, China

[3] Grirem advanced materials Co., Ltd., 43 North Third Ring Road, 100000 Beijing, China

[4] Department of Radiation Oncology, Shanghai General Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai 201620, China

S1. The Raman spectra of g-C_3N_4 quantum dots

In order to further study the structure of g-C_3N_4 QDs (quantum dots), the Raman spectra were carried out. We measured the Raman spectra of g-C_3N_4 QDs in the aqueous solution. From the result shown in the Figure S1, we can see the band at about 1637 cm^{-1} which was attributable to C=N stretching vibration [1-3]. Apart from this band, we can't find another one, even if we change the wavelength of laser in Confocal Raman spectrometer from 534nm to 780nm. In part, this result was due to the size of g-C_3N_4 QDs that is too small [4].

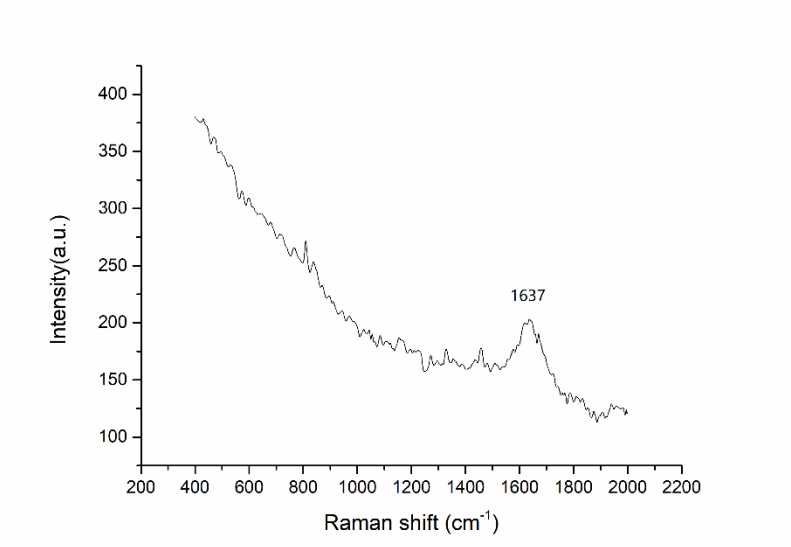

Figure S1 The Raman spectra of g-C_3N_4 QDs

S2. The water stability of nanoparticles in PBS and dulbecco's modified eagle medium

The fluorescence intensity of the g-C_3N_4 QDs in PBS and DMEM (dulbecco's modified eagle medium) at 0, 2, 6, 8, 12, 24 h was measured to study the water stability of nanoparticles. It showed no significant change within 24 h, and the fluorescence intensity of the g-C_3N_4 QDs was more than 90% after 8 h which indicated that g-C_3N_4 QDs were stable in the experimental process.

*Corresponding authors Email: wangfu@sjtu.edu.cn

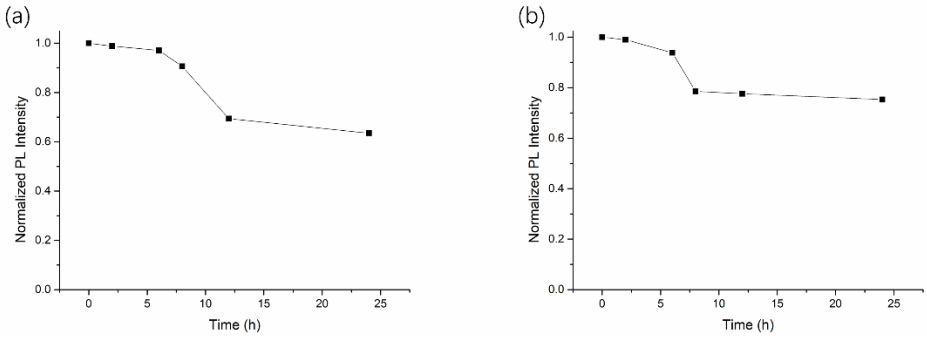

Figure S2 Fluorescence intensity of the g-C_3N_4 QDs in PBS (a) and DMEM (b) in 24 h.

S3. Toxicity studies

To measure the toxicity of the g-C_3N_4 QDs in longer time, an MTT assay was used on the MCF-7 cells. Viability of MCF-7cells after 48 and 72 h of incubation with different concentrations of g-C_3N_4 QDs in vitro is shown in Figure S3. As we can see, g-C_3N_4 QDs have little effect on cell viability which confirmed non-toxic g-C_3N_4 QDs.

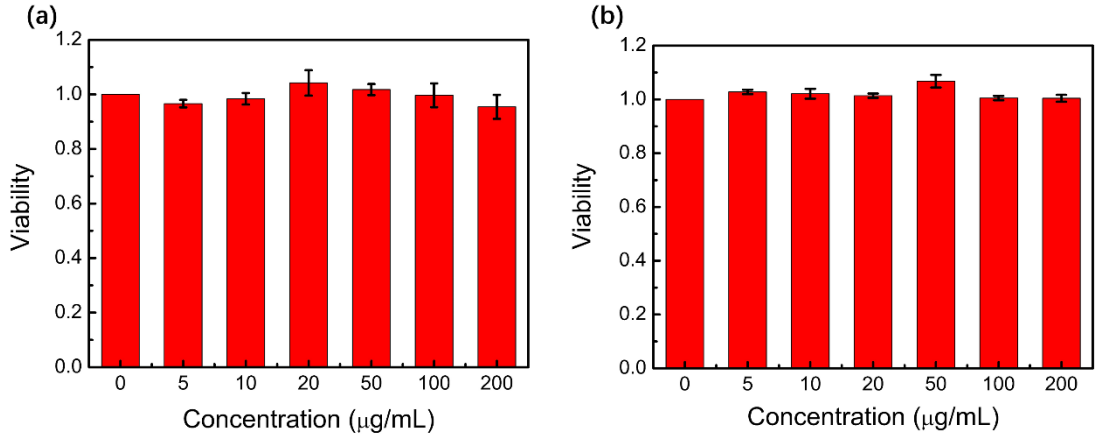

Figure S3 Viability of MCF-7 cells after 48 h (a) and 72 h (b) of incubation with different concentrations of g-C_3N_4 QDs.

References

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*Corresponding authors Email: wangfu@sjtu.edu.cn