Supplementary Material

Facile Preparation of Highly Luminescent Nitrogen-Doped Carbonaceous Nanospheres and Potential Application in Intracellular Image of Quercetin

Buhong Gao,[A] Yu Sun,[B] Yingchun Miao,[A] Huihua Min,[A] Li Xu,[B,D] and Chaobo Huang[C,D]

[A]Advanced Analysis and Testing Center, Nanjing Forestry University, Nanjing 210037, China.

[B]College of Science, Nanjing Forestry University, Nanjing 210037, China.

[C]College of Chemical Engineering, Nanjing Forestry University, Nanjing 210037, China.
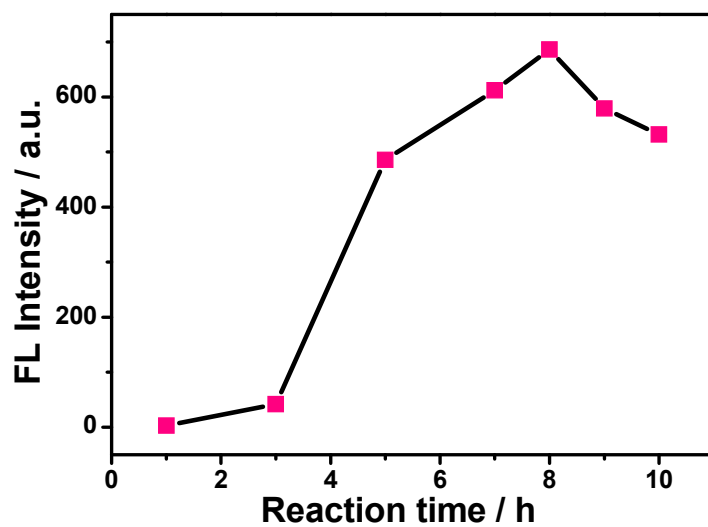[D]Corresponding authors. Email: xuliby@njfu.edu.cn; 1377655972@qq.com

Fig. S1. Effect of the reaction time (the mass of BPEI was 0.048 g in all samples) on the FL maximum emission intensity of the LNCNs at 480nm.
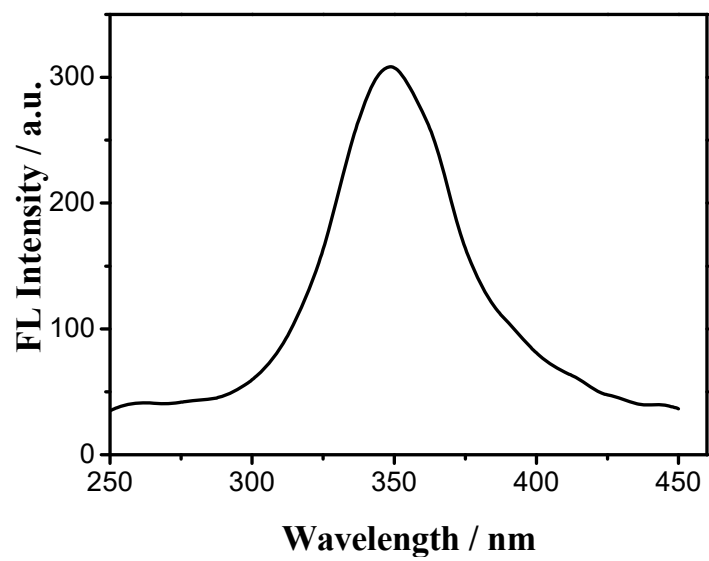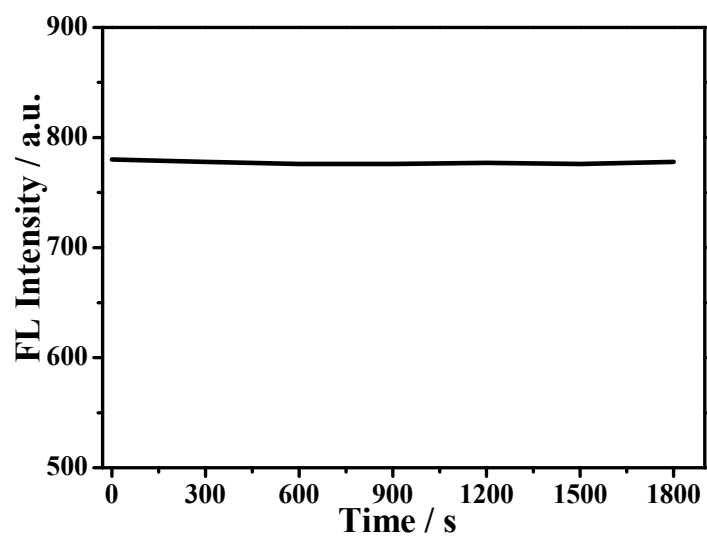
Fig. S2. The excitation spectra of the LNCNs.

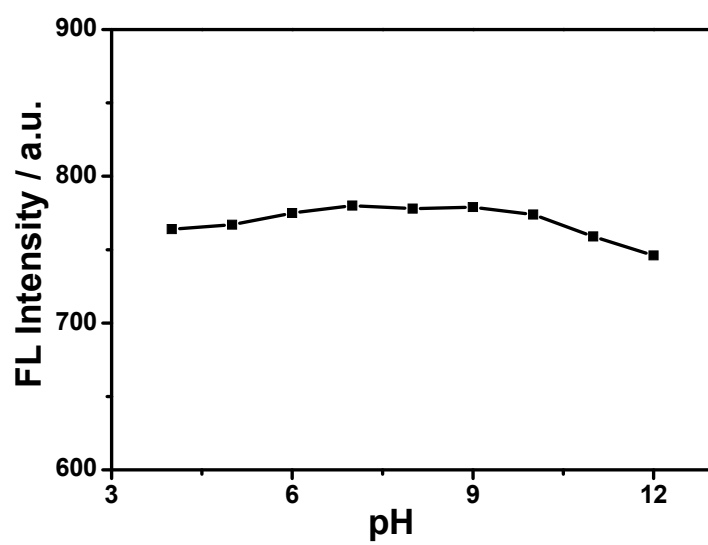Fig. S3. Effect of time under illumination on the FL intensity of of LNCNs.

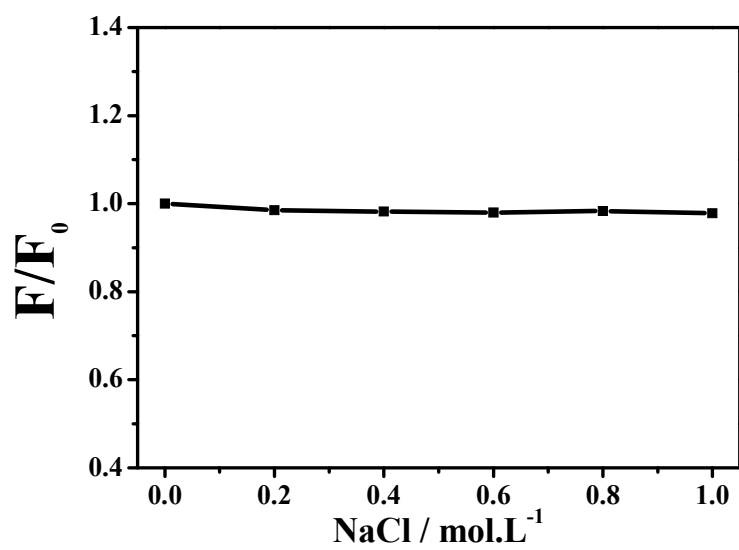Fig. S4. Effect of pH value on the FL intensity of of LNCNs.

Fig. S5. Effect of ionic strength on the FL intensity of LNCNs.

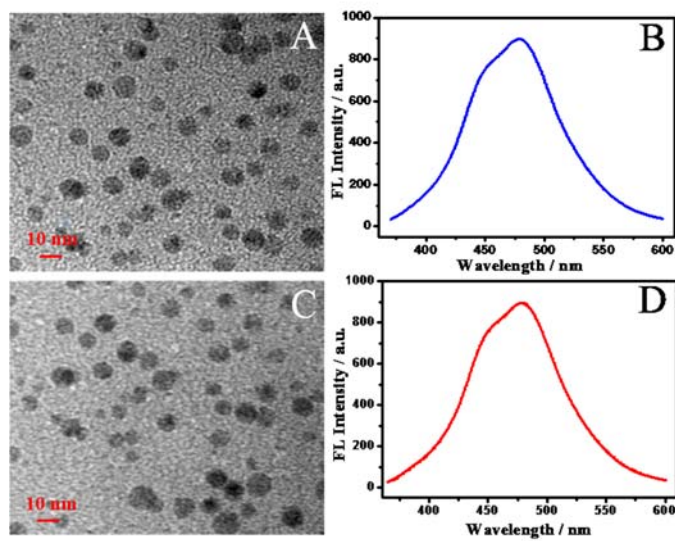Fig. S6. The TEM images and FL spectras of the LNCNs before (A and B) and after three days (C and D).

Table. S1. Effect of the mass of BPEI in the precursor solution on the PL QY of obtained LNCNs.

m_{BPEI}	LNCNs 0	LNCNs 6mg	LNCNs 12mg	LNCNs 24mg	LNCNs 36mg	LNCNs 48mg	LNCNs 60mg	LNCNs 72mg
QY	0.87%	7.9%	10.5%	14.6%	17.9%	19.9%	18.7%	18.5%

Table. S2. Comparison of different probes for Qc detection.

Methods	Linear range (μM)	LOD (μM)	Recovery (%)	Re.
Electrochemical detction	0.005-7	0.0064	101.3-103.3	1
HPLC detection	0.33-82.7			2
Resonance rayleigh scattering	3.2-23.1	0.097	97.1-102.6	3
Fluorescent detection	2.87-31.5	0.098	93.3-105.1	4
This method	1.6-264	0.069	99.7-100.2	

Table. S3. FL lifetimes of the LNCNs and the LNCNs-Qc.

Sample	τ_1/ns(%)	τ_2/ns(%)
LNCNs	3.16(18.95)	7.95(81.05)
LNCNs -Qc	3.16(19.02)	8.04(80.98)

Table. S4. Analytical results for the determination of Qc in Xuan Wu river samples using the proposed LNCNs probe.

Samples	Target	Added(μM)	Measured (μM)	Recovery (%)	RSD (n=3,%)
1	Qc	10	10.15	100.15	4.78
2	Qc	10	10.24	100.24	4.65
3	Qc	10	9.97	99.70	5.06

References

1. X. W. Kan, T. T. Zhang, M. Zhong, X. J. Lu, Biosens. Bioelectron. 2016, 77, 638. doi:10.1016/J.BIOS.2015.10.033

2. K. S. Abdelkawy, M. E. Balyshev, F. Elbarbry, Biome. Chromatogr. 2017, 31, 3819. doi:10.1002/bmc.3819

3. J. Yan, Z. F. Liu, S. P. Liu, Chin. J. Anal. Chem. 2007, 35, 123. doi: 10.1016/S1872-2040(07)60030-9

4. Z. G. Chen, S. H. Qian, J. H. Chen, X. Chen, J. Nanopart. Res. 2012, 14, 1264. doi:10.1007/s11051-012-1264-z