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# Supporting information

## Synthesis of graphene quantum dot/metal-organic framework nanocomposite as yellow phosphor for white light-emitting diodes

Dengyu Pan,[a,*] Lijun Wang,[a] Zhen Li,[a] Bijiang Geng,[a] Chen Zhang[a], Jing Zhan,[a] Luqiao Yin,[b,*] Liang Wang[c,*]

[a] School of Environmental and Chemical Engineering, Shanghai University, Shanghai 200444, P.R. China

[b] Key Laboratory of Advanced Display and System Applications, Shanghai University, Shanghai, 200072, P.R. China

[c] Institute of Nanochemistry and Nanobiology, Shanghai University, Shanghai 200444, P.R. China

Correspondence and requests for materials should be addressed to D.P., L.Y. and L.W. (email: dypan617@shu.edu.cn, lqyin@shu.edu.cn, wangl@shu.edu.cn).

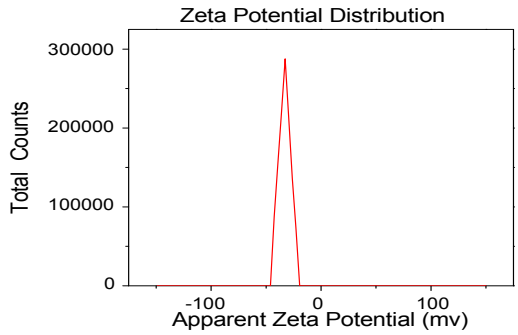



**Figure. S1** Zeta potential of GQDs under the condition of pH 7

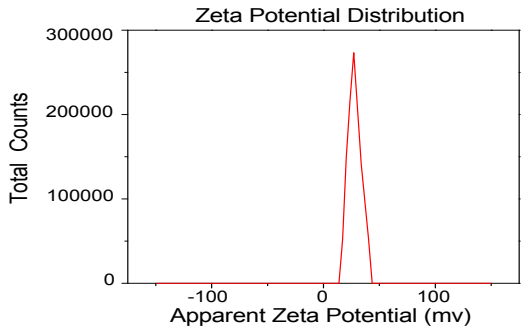



**Figure. S2** Zeta potential of ZIF-8 under the condition of pH 7

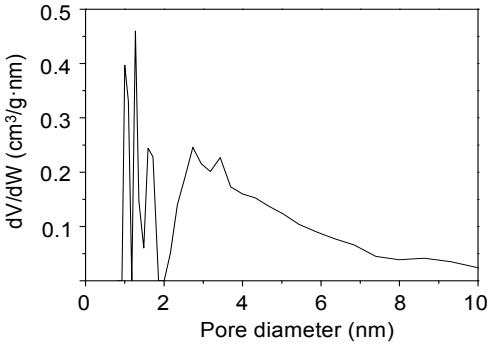



**Figure. S3** Microporous and mesoporous size distribution of ZIF-8

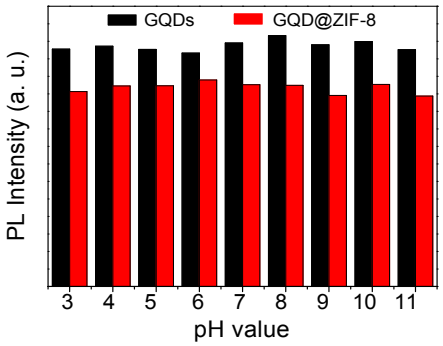



**Figure. S4** Dependence of PL intensity of GQDs and GQD@ZIF-8 on pH values

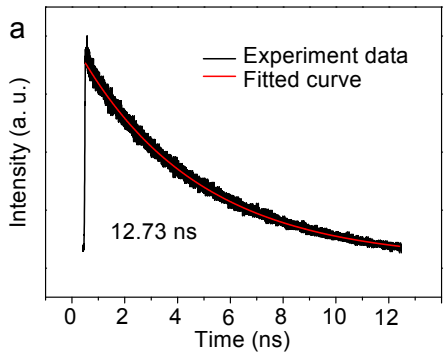
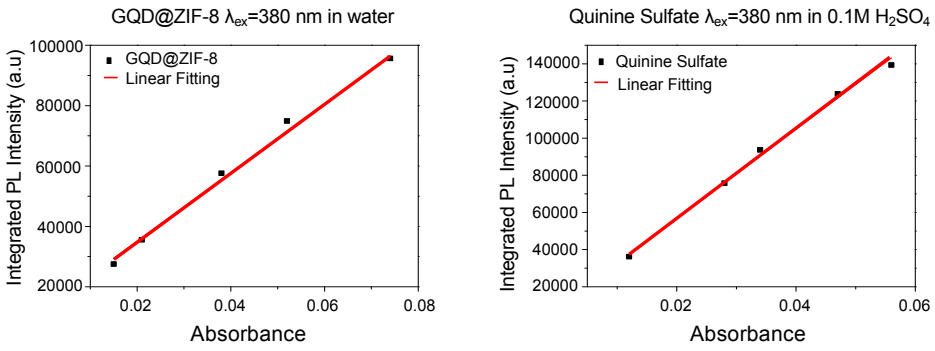



**Figure. S5** Fluorescence decay curves for the GQD@ZIF-8




| | GQD@ZIF-8 | | | | | Quinine Sulfate | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Abs | 0.074 | 0.052 | 0.038 | 0.021 | 0.015 | 0.056 | 0.047 | 0.034 | 0.028 | 0.012 |
| Integrated PL | 95627 | 74896 | 57605 | 35552 | 27508 | 139361 | 123759 | 93633 | 75771 | 36187 |
| Slope | $1.14\times10^6$ | | | | | $2.4\times10^6$ | | | | |
| QY | 26.1% | | | | | 55% | | | | |

**Figure. S6** Plots of integrated PL intensity of GQD@ZIF-8 and Quinine Sulfate (referenced dye) as a function of optical absorbance at 380 nm and relevant data

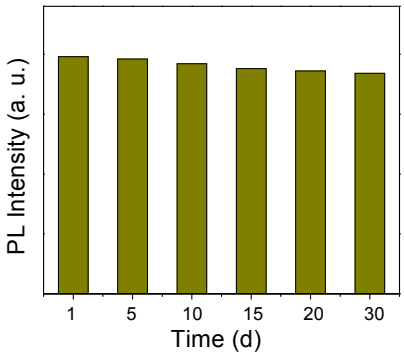



**Figure. S7** Dependence of PL intensity of GQD@ZIF-8 within a month in solid state

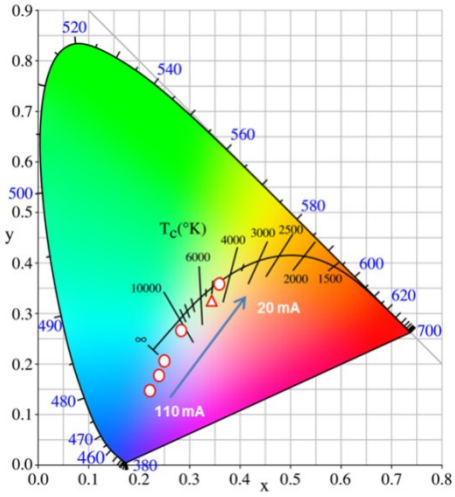



**Figure. S8** The different current of color coordinates of GQD@ZIF-8 from 20mA to 110 mA

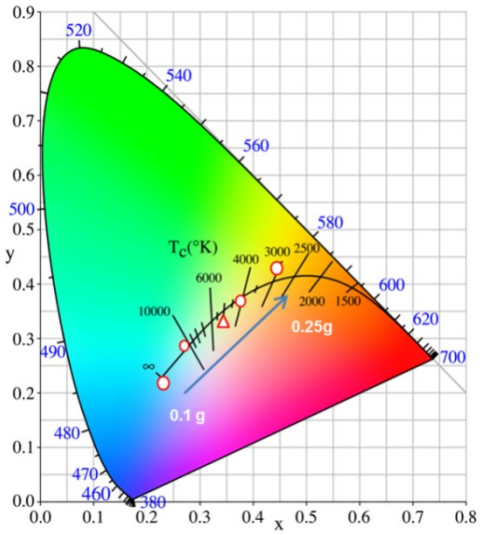



**Figure. S9** The different quality of color coordinates of GQD@ZIF-8 from 0.1 g to 0.25 g

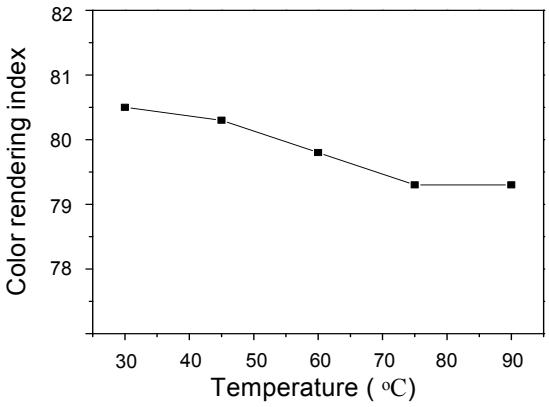



**Figure. S10** The relationship between the temperature and color rendering index of GQD@ZIF-8

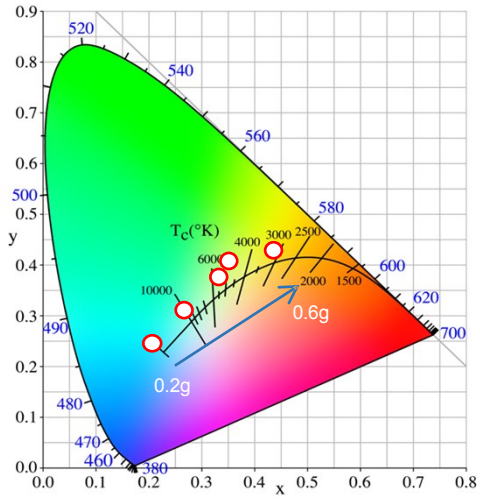



**Figure. S11** The different current of color coordinates of the composite layer from 0.2 g to 0.6 g

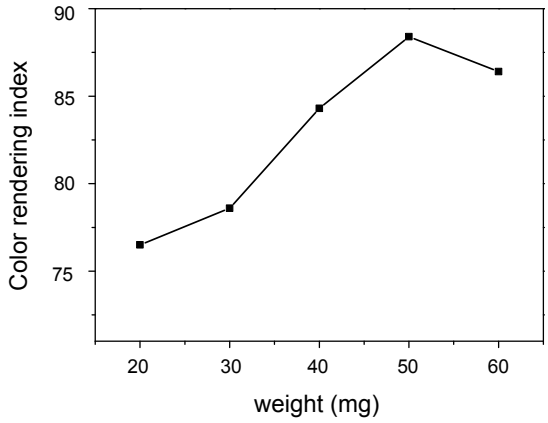



**Figure. S12** The relationship between the weight and color rendering index of the composite layer