Supplementary Information

Application of nanodiamonds in Cu(II)-based rhodamine B probes for NO detection and cell imaging

Bin Liu[a], Xiangquan Hu[a], Jie Chai[a], Junyao Zhu[b], Binsheng Yang[a]* and Yingqi Li[a,b]*

[a](*Institute of Molecular Science, Key Laboratory of Chemical Biology of Molecular Engineering of Education Ministry, Shanxi University, Taiyuan 030006*)

[b]*Department of Chemistry, College of Chemistry and Chemical Engineering, Shanxi University, Taiyuan 030006, PR China*

*Corresponding author. Tel.: +86-351-7016358

E-mail address: yangbs@sxu.edu.cn, wkyqli@sxu.edu.cn

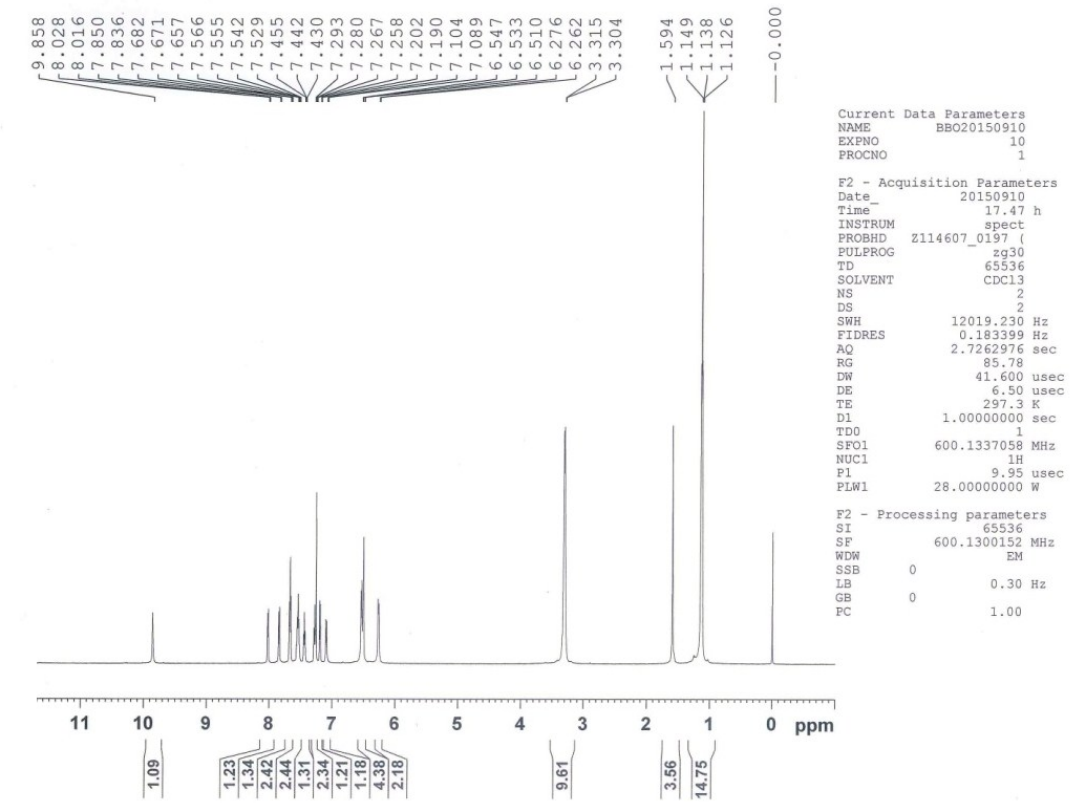

Fig. S1 ^{1}H NMR spectrum of **2**

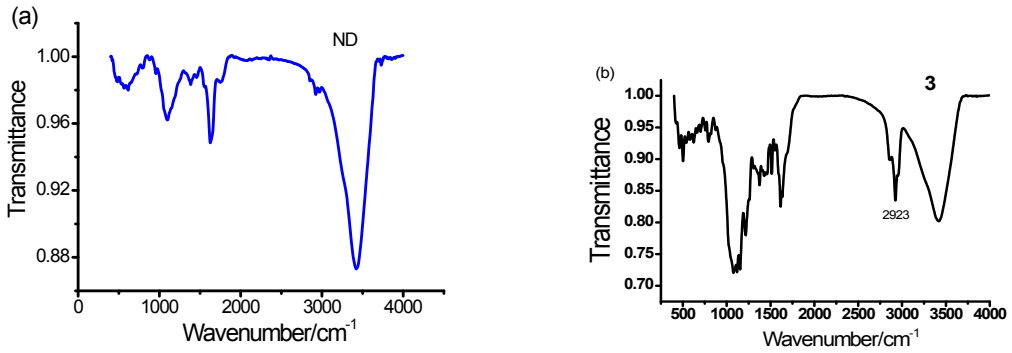

Fig. S2 The FTIR spectrum of **ND** and **3** nanoparticles. The strong peak at 2923 indicates the presence of **2** on ND

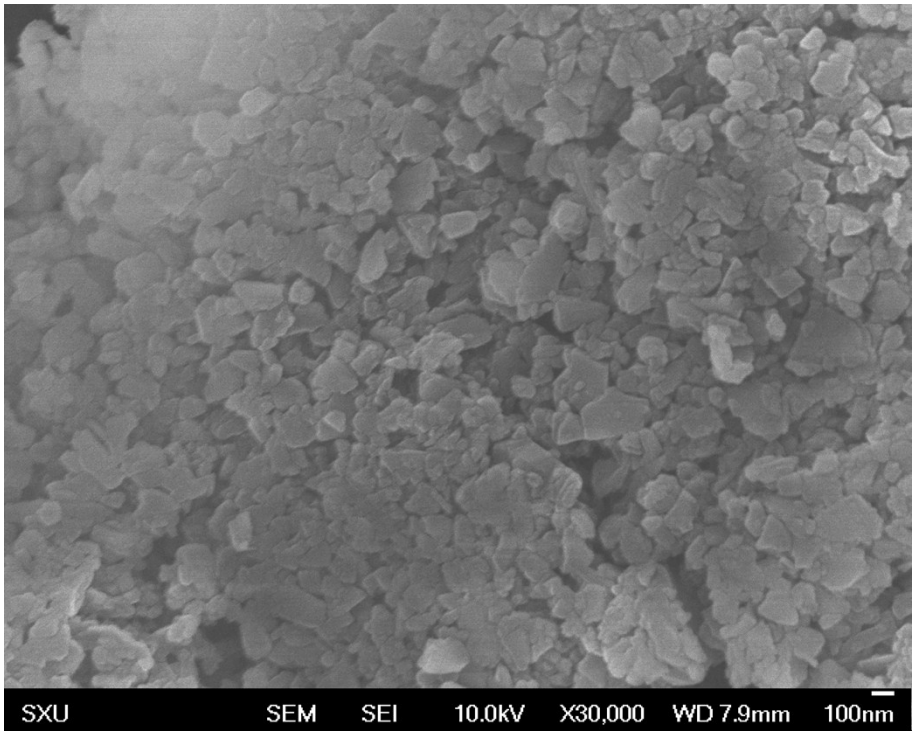

Fig. S3 The SEM images of **3** nanoparticles.

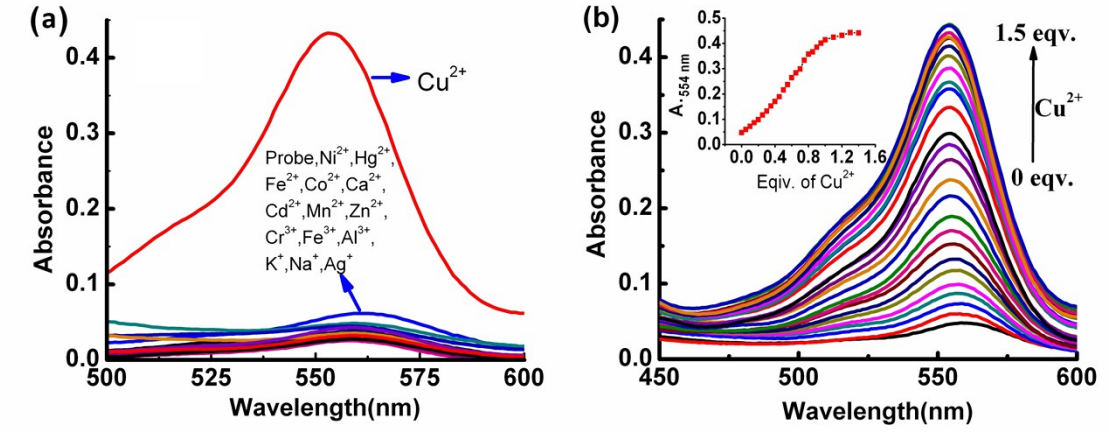

Fig. S4 UV–Vis spectra of **3** (0.12 mg/mL, equals 10 μM **2**) upon addition of 2.0 equiv. Cu^{2+} and other metal ions in 1:1 CH_3CN–HEPES buffer solution (10.0 mM HEPES, pH 7.0).

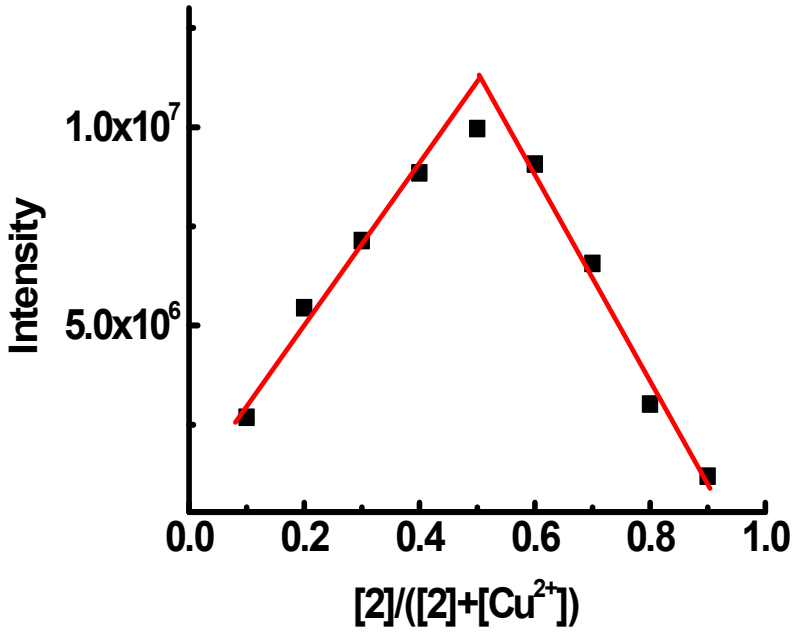

Fig. S5 Job's plot of the [**2**] with [Cu^{2+}], total concentration of [**2**+Cu^{2+}] was kept constant at 20.0 μM in H_2O/CH_3CN (*v*/*v*, 1:1). Where [**2**] refers to the concentration of **2** coated on the surface of **3**.

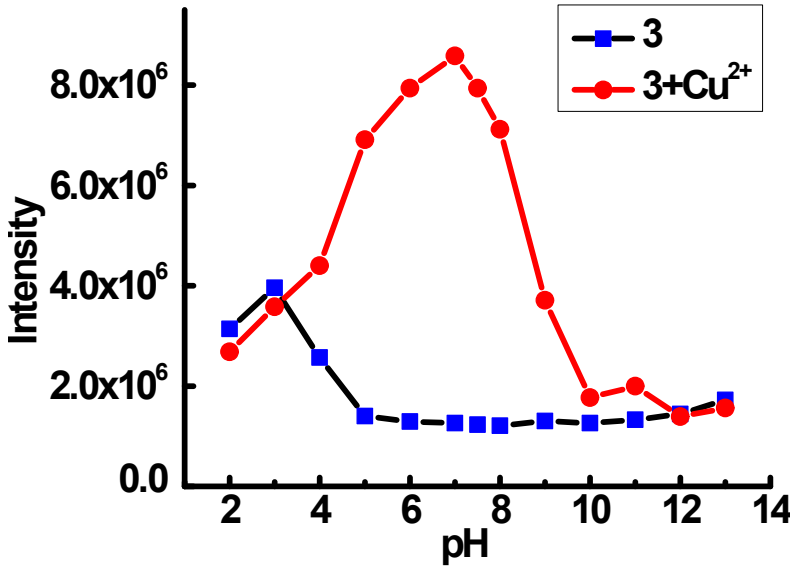

Fig. S6. The changes of emission intensity at 575 nm of **3** (0.12 mg/mL, equals 10 μM **2**) in the absence and presence of 2.0 equiv. **Cu^{2+}** in HEPES/CH_3CN (*v*/*v*, 1/1) at different pH conditions.

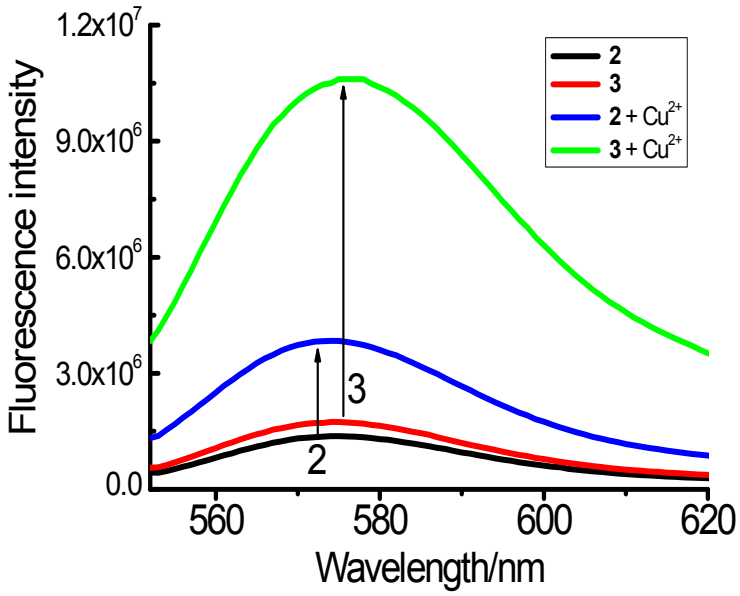

Fig. S7 Fluorescence spectra of 10 μM **2** and 0.12 mg/mL **3** upon addition of 1.0 equiv. Cu^{2+} with the excitation at 540 nm in 1:1 CH_3CN–HEPES buffer solution (10.0 mM HEPES, pH 6.8).

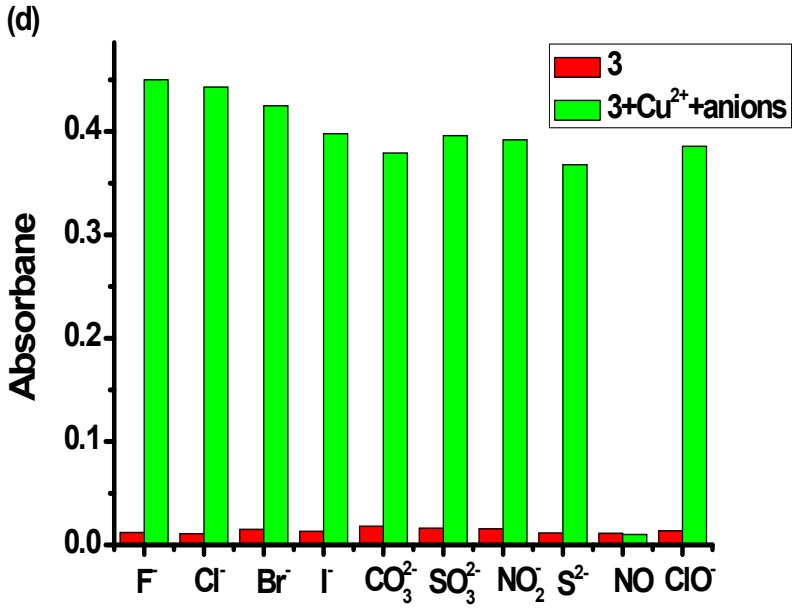

Fig. S8 Absorbance changes of **3**+Cu^{2+} (50 μM) system upon the addition of various anion ions in CH_3CN/HEPES (pH 7.0, *v*/*v*=1:1, λ_{ex}=540 nm, slit: 2.5/2.5 nm).