

Supplementary data

Use of curcumin-modified diamond nanoparticles in cellular imaging and the distinct ratiometric detection of Mg^{2+}/Mn^{2+} ions

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DLS analysis of **ND-Cur** in deionized water. **(Table S1)**

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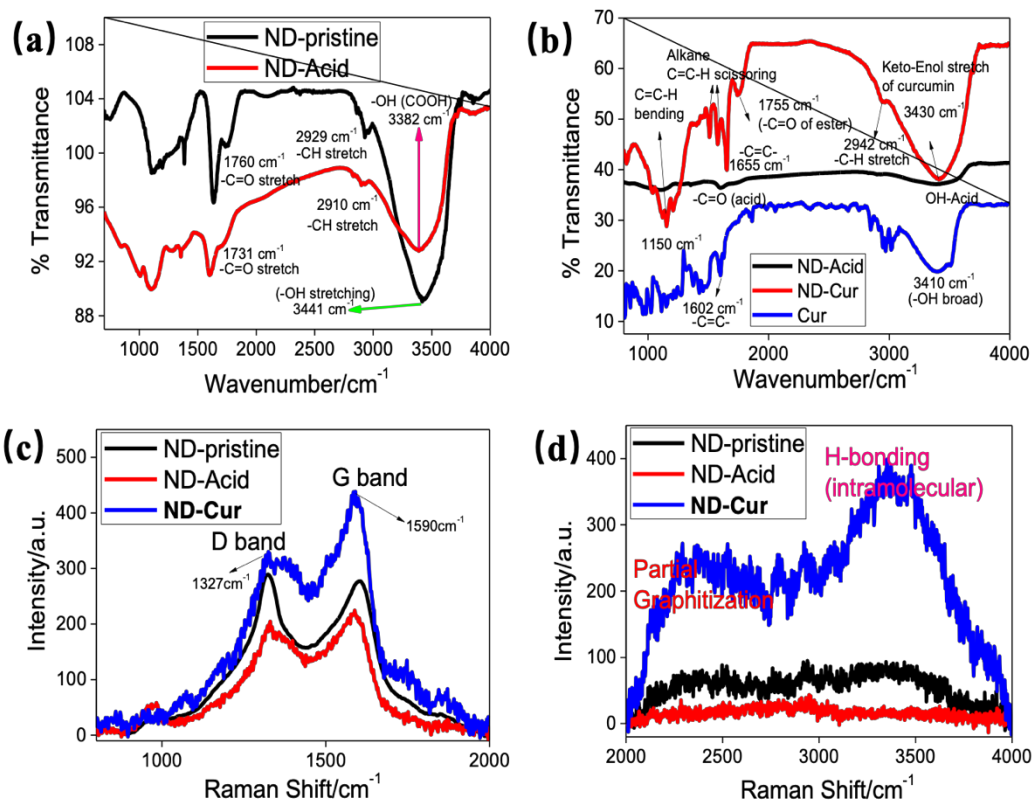


Fig S1. (a) FTIR of ND pristine and ND-Acid and (b) ND-acid, Curcumin and ND-Cur. (c) and (d) Raman spectrum of ND, ND-acid, ND-Cur particles.

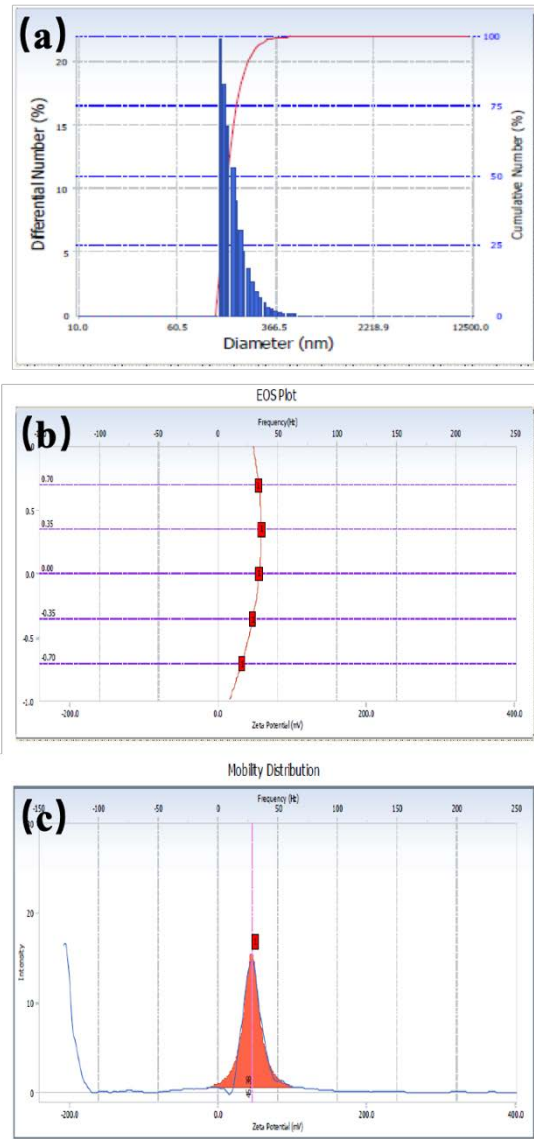


Fig S2. DLS analysis of **ND-Cur** in water. **(a)** size analysis of **ND-Cur** in water (100 $\mu\text{g}/\text{mL}$ in water). **(b)** and **(c)** Zeta potential of **ND-Cur** (100 $\mu\text{g}/\text{mL}$ in water).

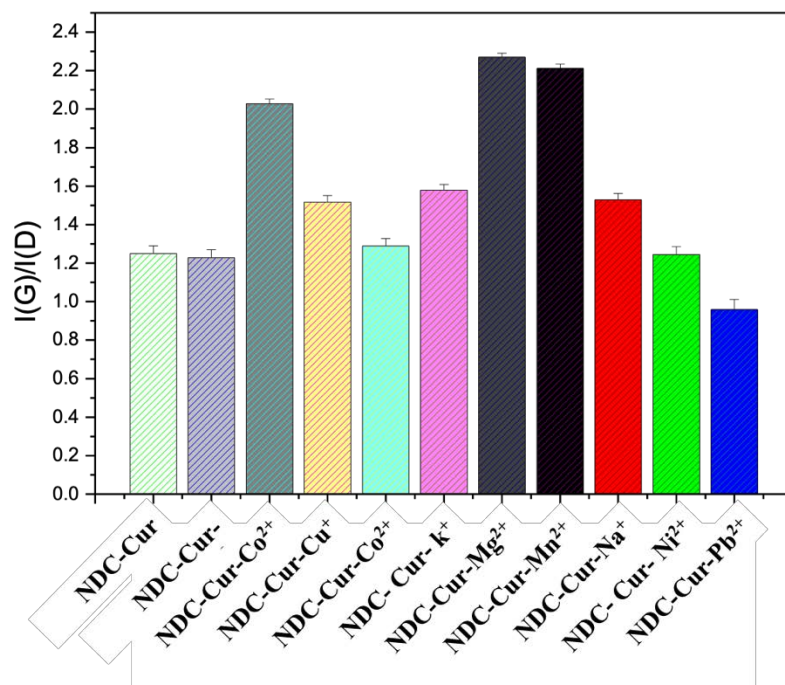


Fig S3. D and G bands and I (G)/ I (D) of ND-Cur in presence of different metal ions.

Table S1. DLS analysis of ND-Cur in deionized water.

Compound	Zeta potential (mV)	Size (nm)
ND-acid	-28.44	66.6 ± 18.6
ND-Cur	+45.38	170.6 ± 46.8

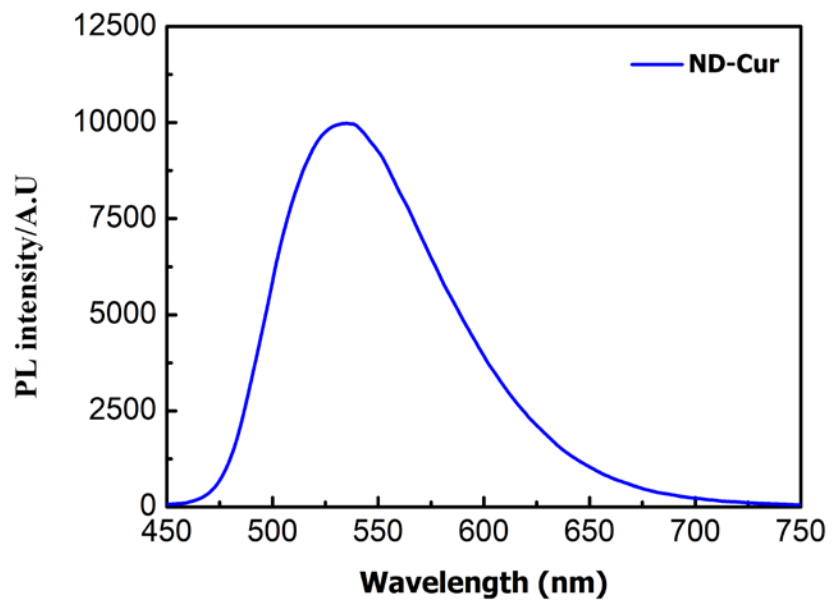


Fig S4. PL spectrum ($\lambda_{\text{ex}} = 365 \text{ nm}$) of ND-Cur (100 $\mu\text{g}/\text{mL}$).

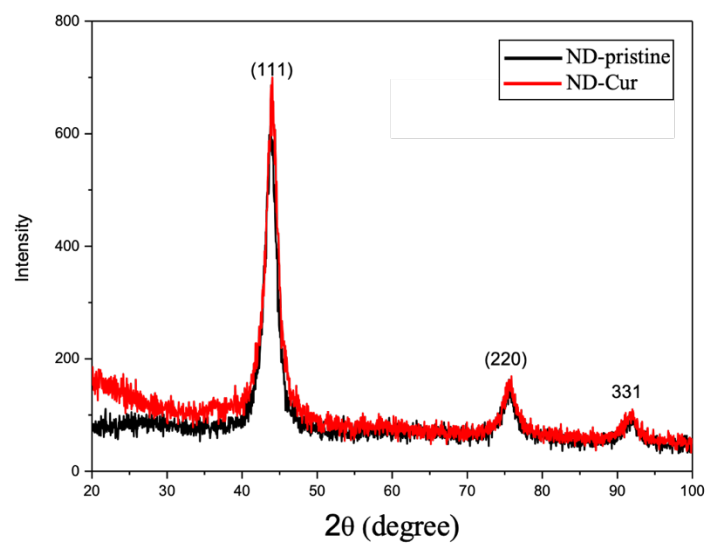


Fig S5. XRD spectrum of ND and ND-Cur.

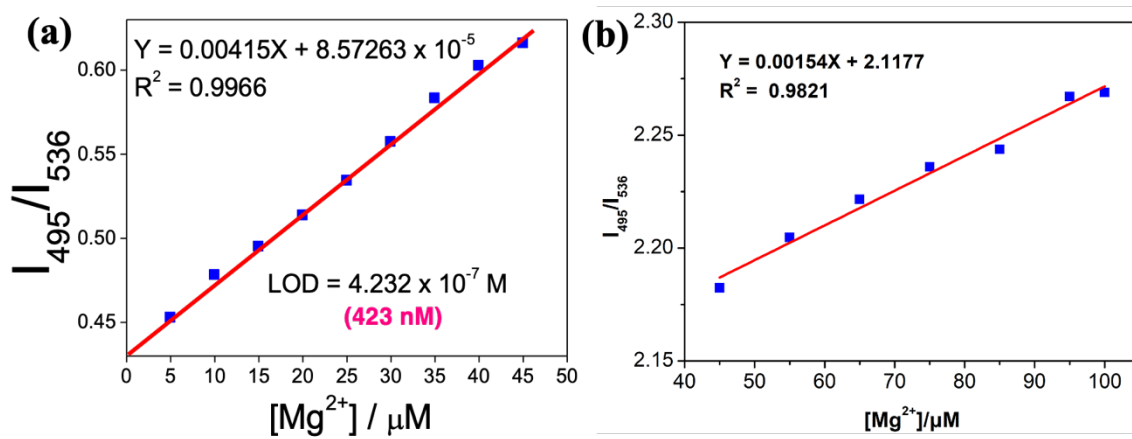


Fig S6. Linear correlation diagrams of Mg^{2+} , located in (a) 0 to 45 μM and (b) 45-100 μM , respectively.

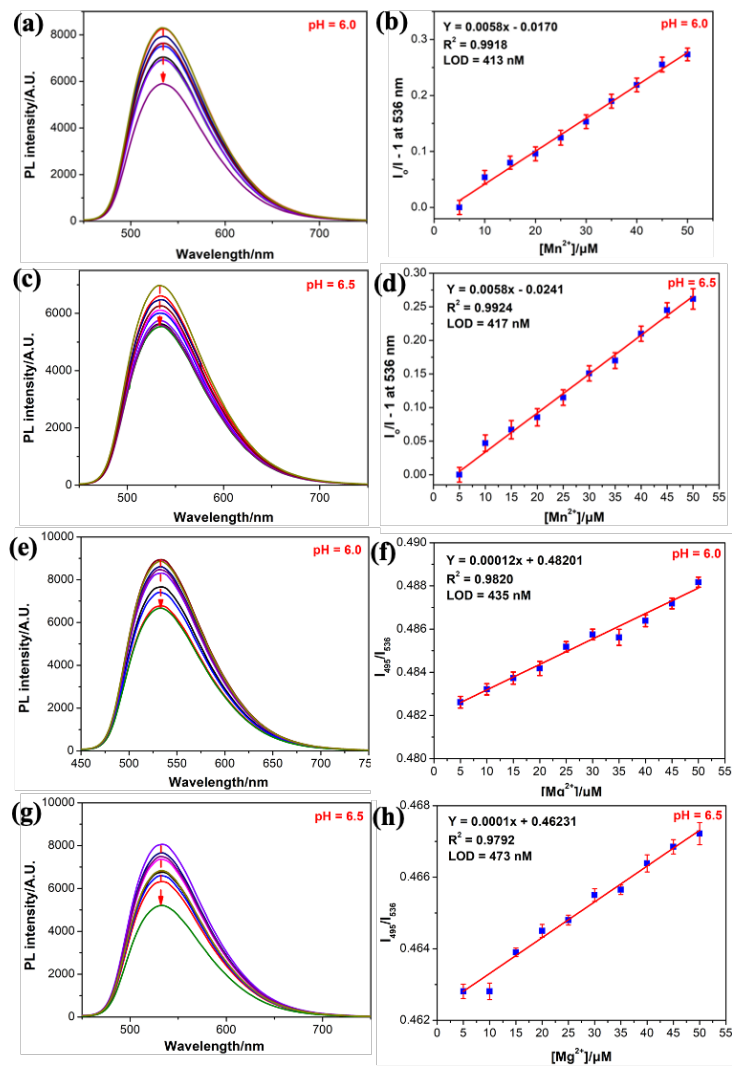


Fig S7. Fluorescence spectral changes ($\lambda_{ex} = 365$ nm) of **ND-Cur** in the presence of various concentrations of (a), (c) Mn^{2+} and (e), (g) Mg^{2+} and detection limit calculated by standard deviation and linear fitting of (b), (d) Mn^{2+} and (f), (h) Mg^{2+} at pH 6.0 and 6.5, respectively.