

## Supplementary information

### **Persistent luminescence nanoparticles for plant imaging: Toward exploring distribution of nanoparticles in plants**

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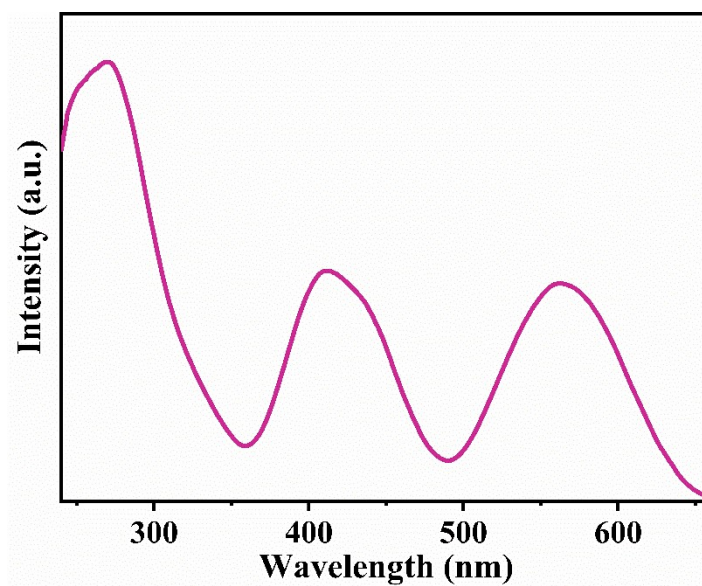
Figure S2. Photoluminescence emission spectrum

Figure S3. Emission spectrum of excitation light

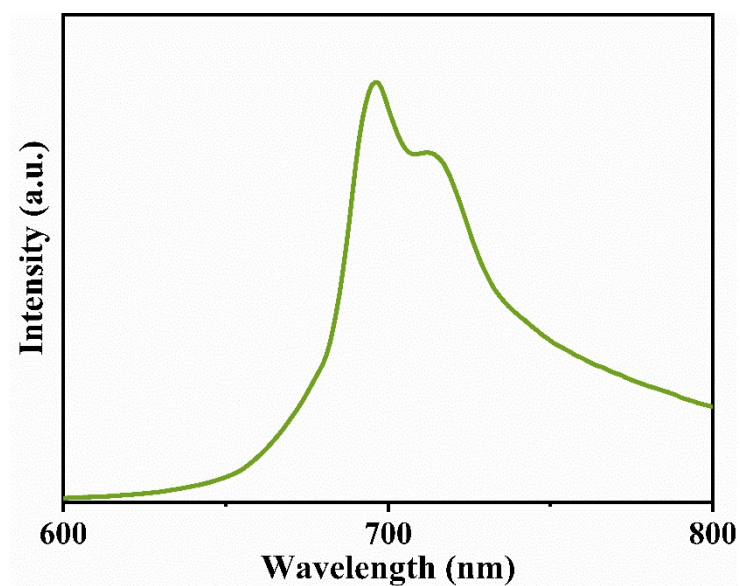
Figure S4. TEM images of ZGGC(+) and ZGGC(-) nanoparticles

Figure S5. TGA curves of ZGGC, ZGGC(+) and ZGGC(-)

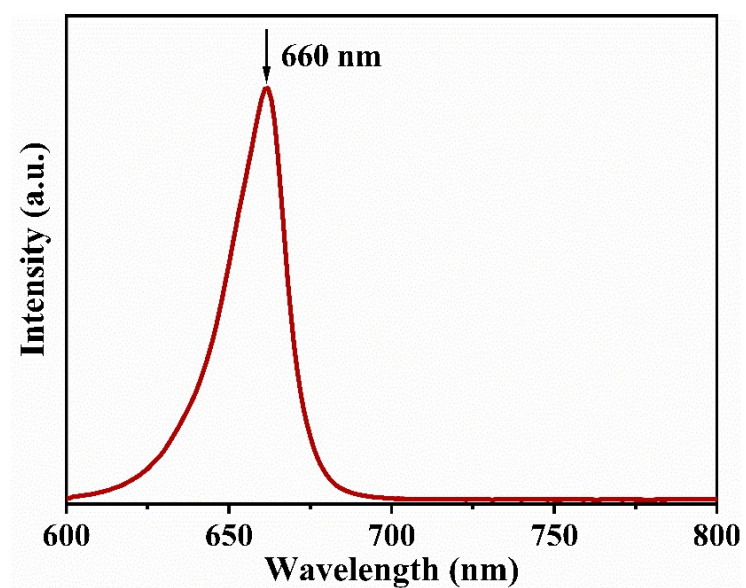
Figure S6. PersL images of ZGGC(+) and ZGGC(-) during the decay time



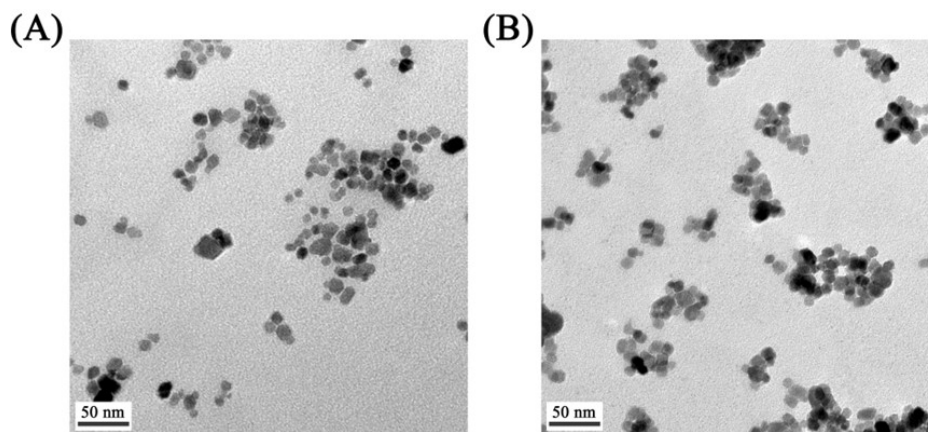
**Figure S1.** Photoluminescence excitation spectrum of ZGGC, monitored at 698 nm



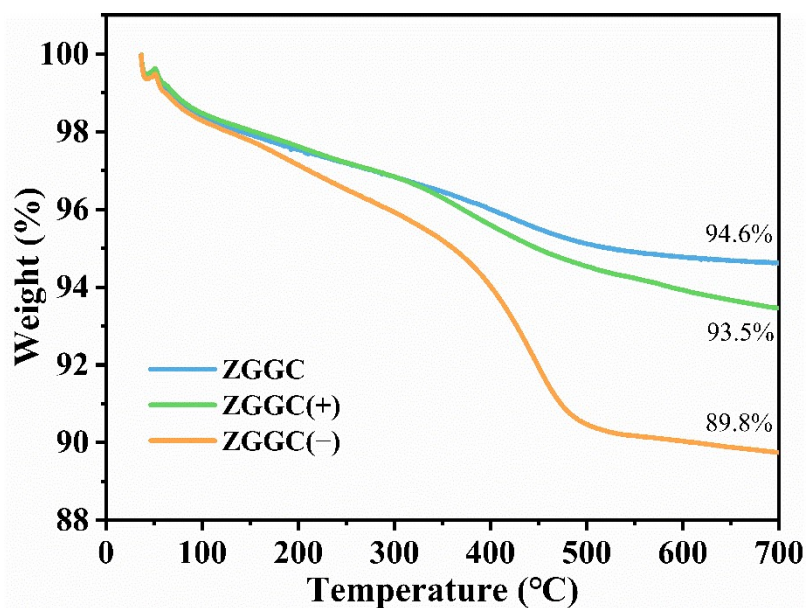
**Figure S2.** Photoluminescence emission spectrum of ZGGC, excitation at 265 nm



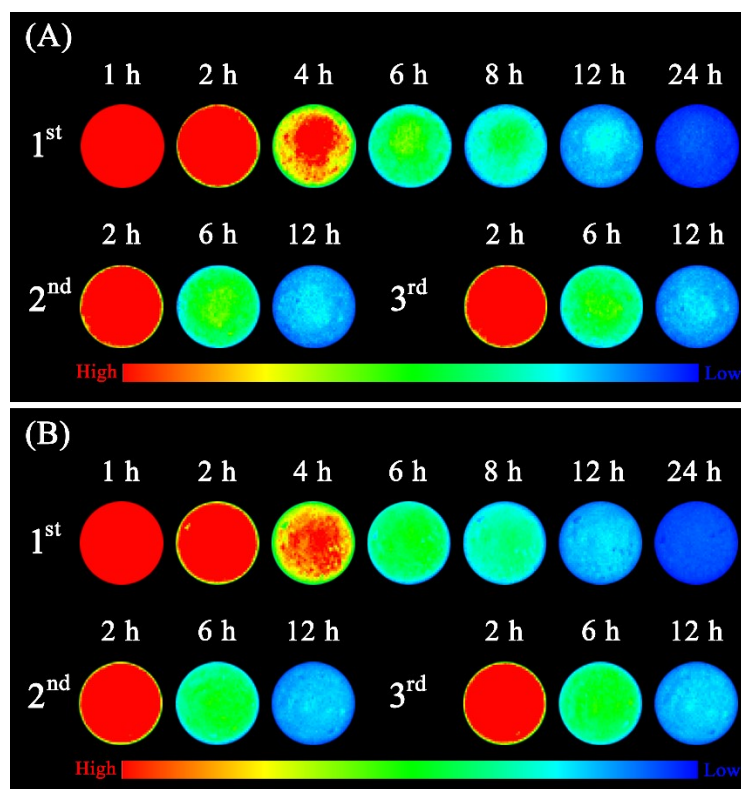
**Figure S3.** Emission spectrum of excitation light (LED lamp)



**Figure S4.** TEM images of ZGGC(+) nanoparticles (A) and ZGGC(-) nanoparticles (B).



**Figure S5.** TGA curves of ZGGC, ZGGC(+) and ZGGC(-)



**Figure S6.** PersL signals of ZGGC(+) powders (A) and ZGGC(-) powders (B) collected by a CCD camera at different intervals after receiving LED lamp (~660 nm) light irradiation for 5 min. The exposure time was 120 s.