Novel Scintillating Nanoparticles for Potential Application in Photodynamic Cancer Therapy

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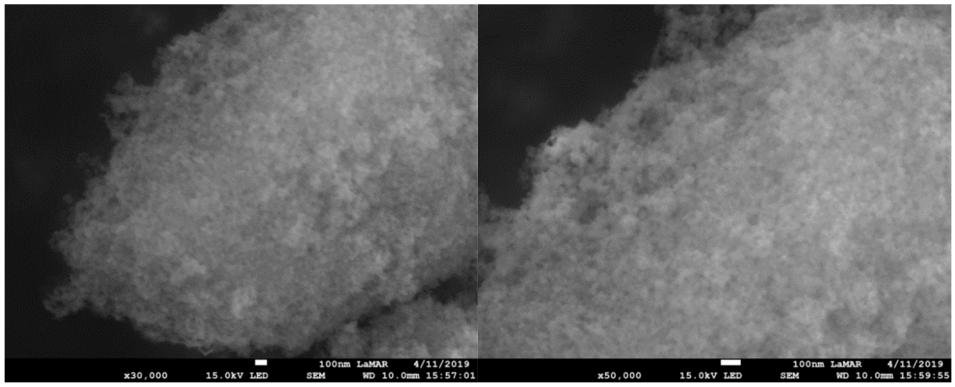
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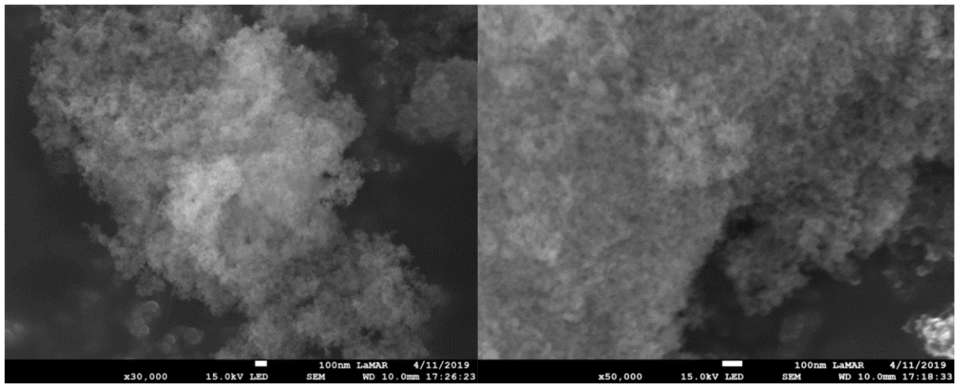
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Scanning Electron Microscopy



(a)



(b)

Figure S1: SEM images of (a) SiO_2-Gd_2O_3:Eu^{3+}(3%) and (b) SiO_2-Gd_2O_3:Eu^{3+}(5%).

Transmission Electron Microscopy

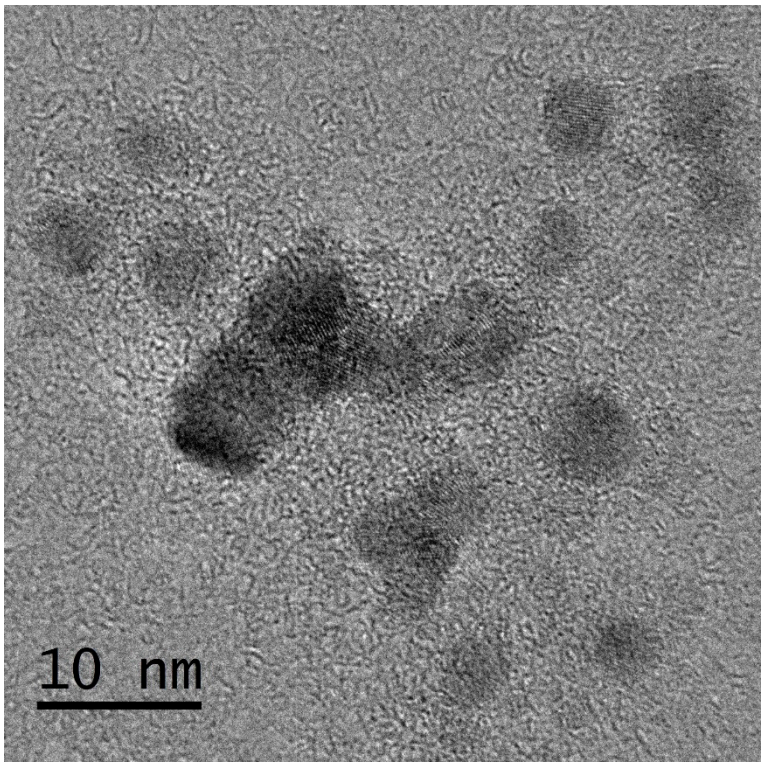


Figure S2: TEM image of SiO_2-Gd_2O_3:Eu^{3+}(1%), showing the crystallinity of the rare earth oxides.

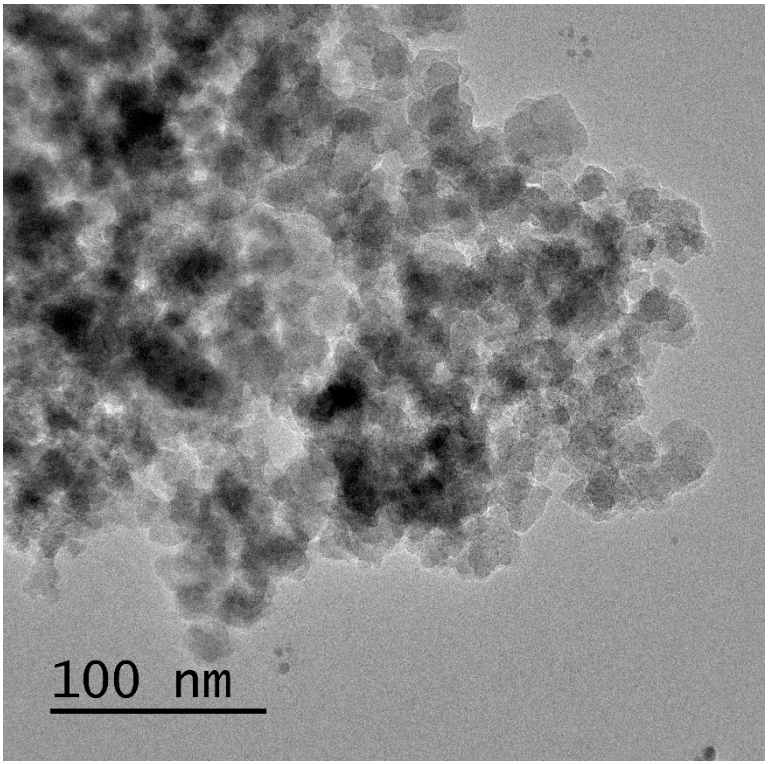


Figure S3: Low magnification TEM image showing the overall morphology of SiO_2-Gd_2O_3:Eu^{3+}(1%).

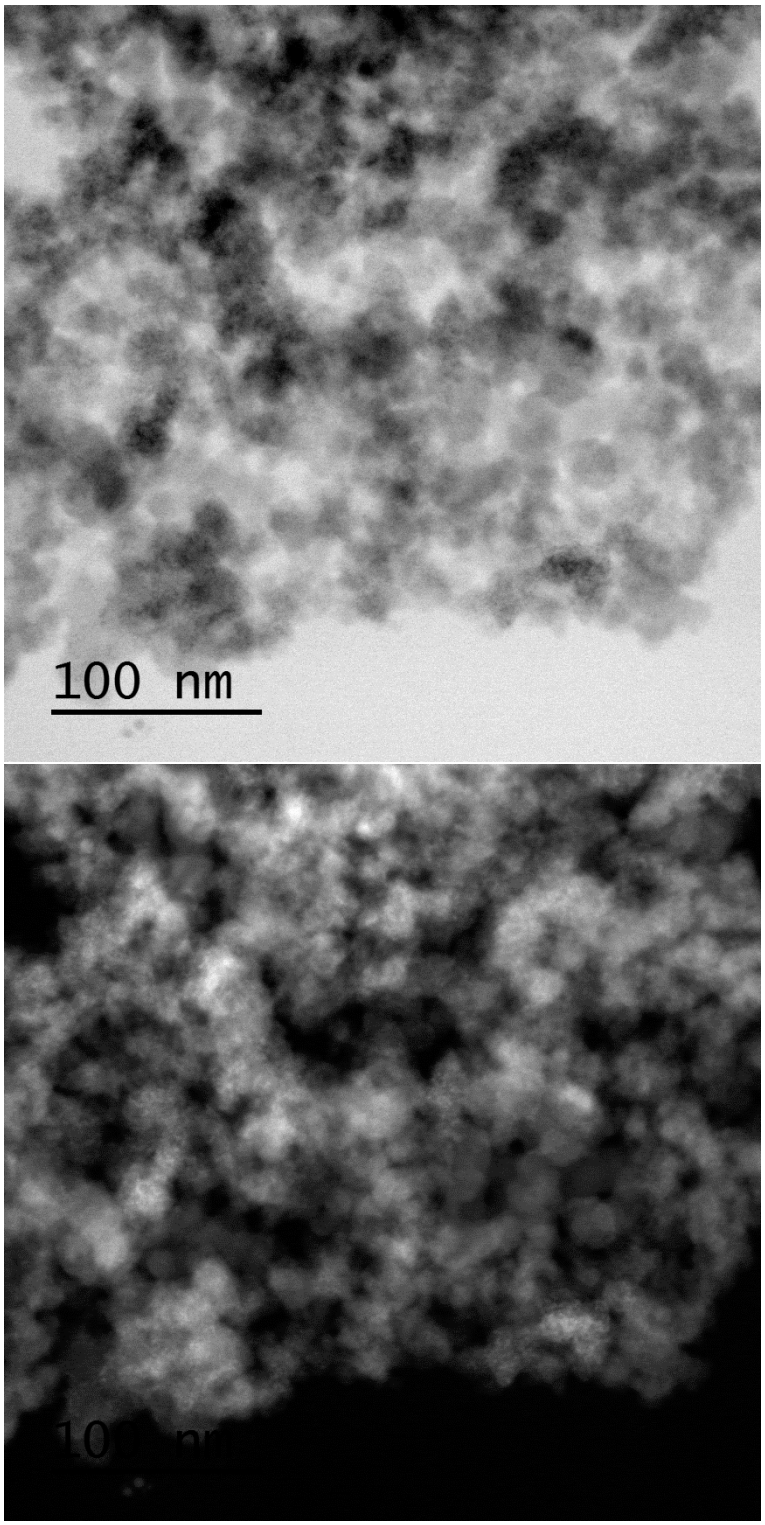


Figure S4: Upper: bright-field and lower: HAADF STEM images of SiO_2-Gd_2O_3:Eu^{3+}(1%). The atomic number contrast shows that the RE metal oxides are on the surface of the silica nanoparticles.

Luminescence Property



Figure S5: Scintillating effect of the $Gd_2O_3:Eu^{3+}$ nanoparticles emitting red light under X-ray irradiation.

Dynamic Light Scattering

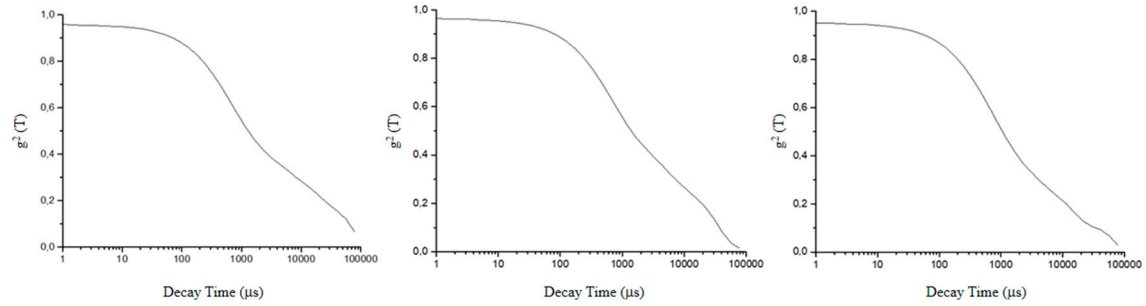


Figure S6: Autocorrelation functions referring to DLS measurements of $Gd_2O_3:Eu^{3+}$ nanoparticles.

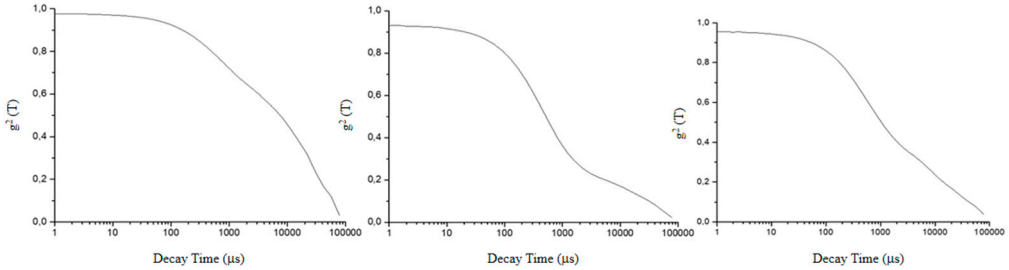


Figure S7: Autocorrelation functions referring to DLS measurements of SiO_2-$Gd_2O_3:Eu^{3+}$ nanoparticles.