Electronic Supporting Information (ESI)

p-amino benzoic acid (pABA) sensitization of $LaF_3:Tb^{3+}$ nanoparticles and its applications in detection of explosive materials

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Histogram showing the particle size distribution (DLS measurement) of $LaF_3:Tb^{3+}$@pABA nanoparticles. Absorption spectra of of $LaF_3:Tb^{3+}$@pABA nanoparticles at different pH, Emission spectra of $LaF_3:Tb^{3+}$@pABA nanoparticles at different concentration of Tb^{3+} ions, Emission spectra of $LaF_3:Tb^{3+}$@pABA nanoparticles at λ_{ex} = 265 nm with the change in concentration of TNT (ppb level). Inset shows their respective Stern-Volmer plots. Energy level diagramme of all the selected nitro compounds along with the decay profile for $LaF_3:Tb^{3+}$@pABA nanoparticles at varying concentration of (a) PA and (b) TNT.

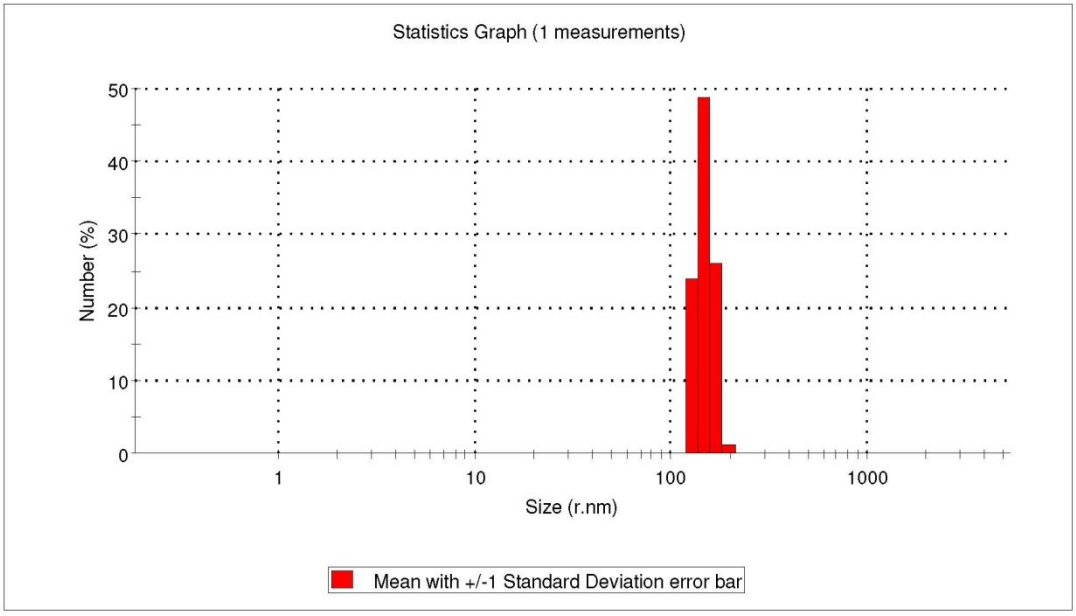

Figure S1: Histogram showing the particle size distribution (DLS measurement) of LaF_3:Tb^{3+}@pABA nanoparticles.

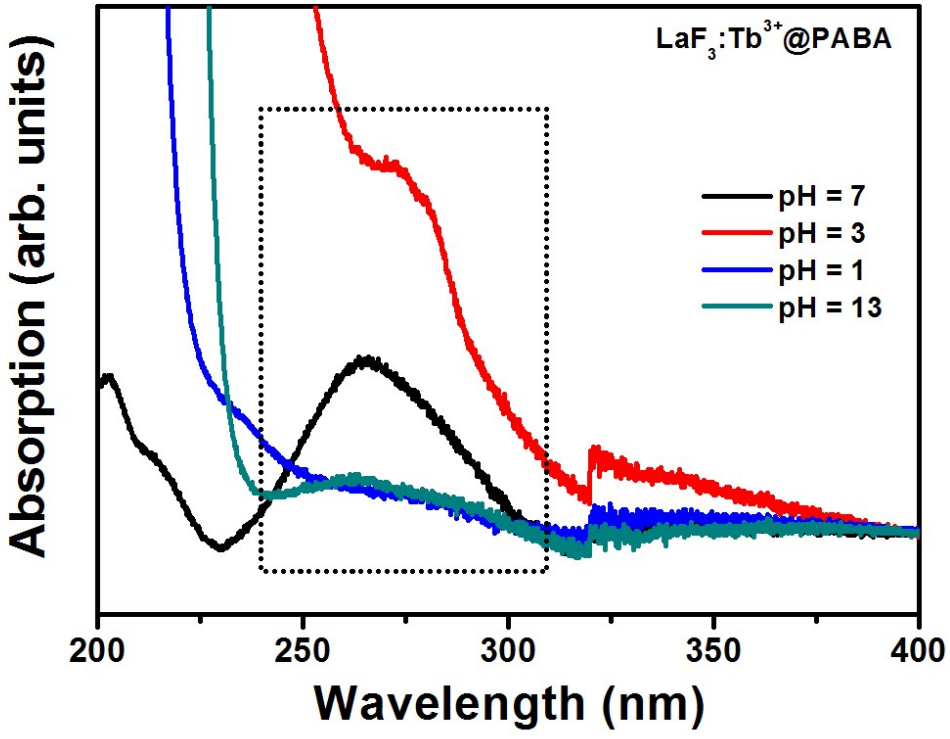

Figure S2: Absorption spectra of of LaF_3:Tb^{3+}@pABA nanoparticles at different pH.

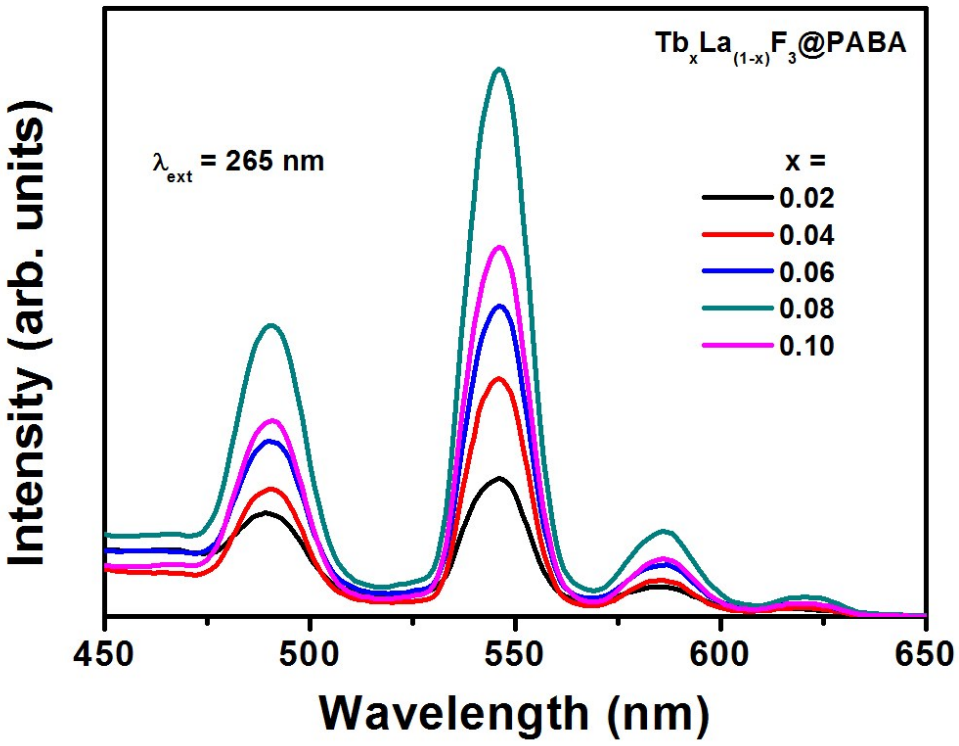

Figure S3: Emission spectra of LaF_3:Tb^{3+}@pABA nanoparticles at different concentration of Tb^{3+} ions.

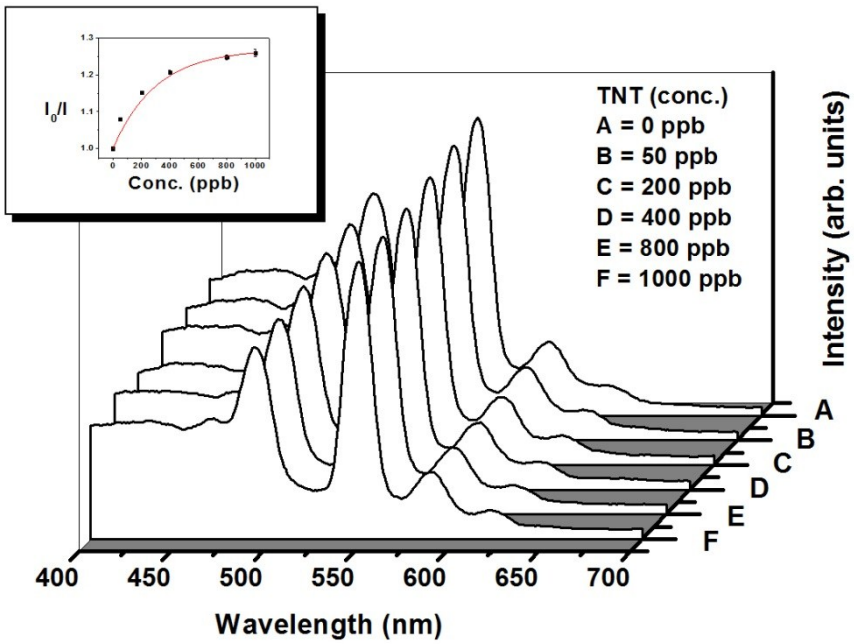

Figure S4: Emission spectra of LaF_3:Tb^{3+}@pABA nanoparticles at λ_{ex} = 265 nm with the change in concentration of TNT (ppb level). Inset shows their respective Stern-Volmer plots.

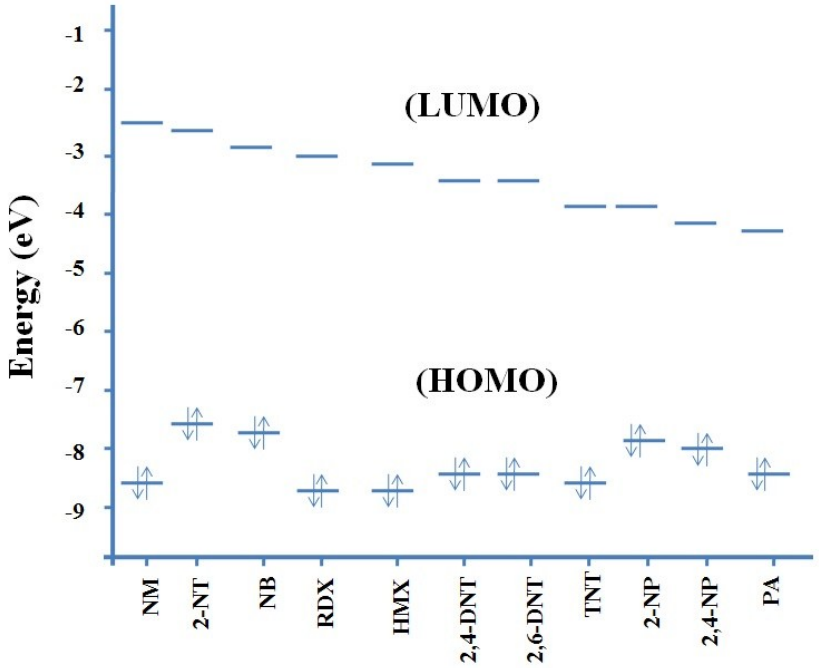

Figure S5: Energy level diagramme of all the selected nitro compounds.

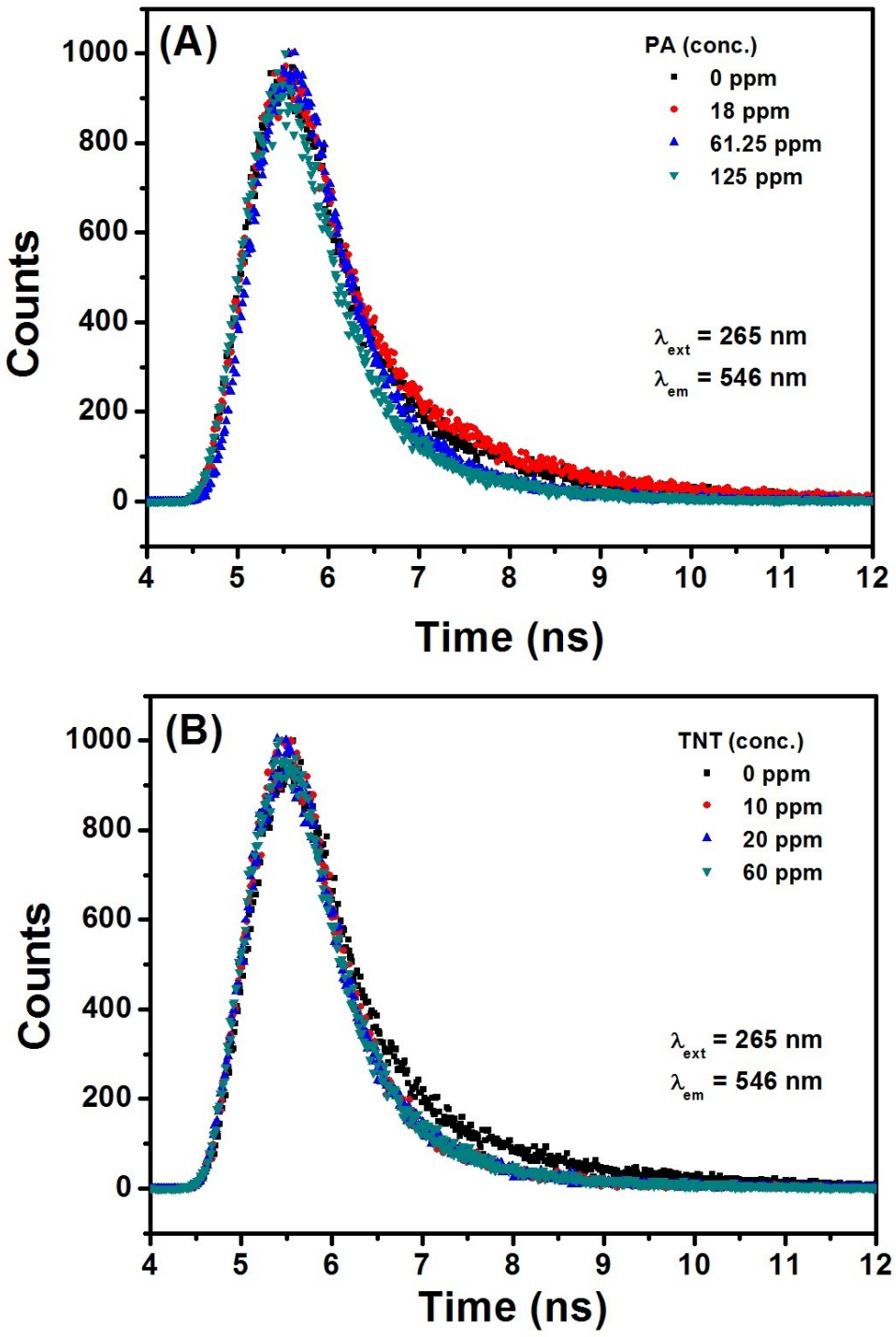

Figure S6: Decay profile for $LaF_3:Tb^{3+}$@pABA nanoparticles at varying concentration of (a) PA and (b) TNT.