Supporting information

On the nature of carriers relaxation and ion-ion interactions in ultrasmall β-$NaYF_4$: Eu^{3+} nanocrystals – effect of the surface

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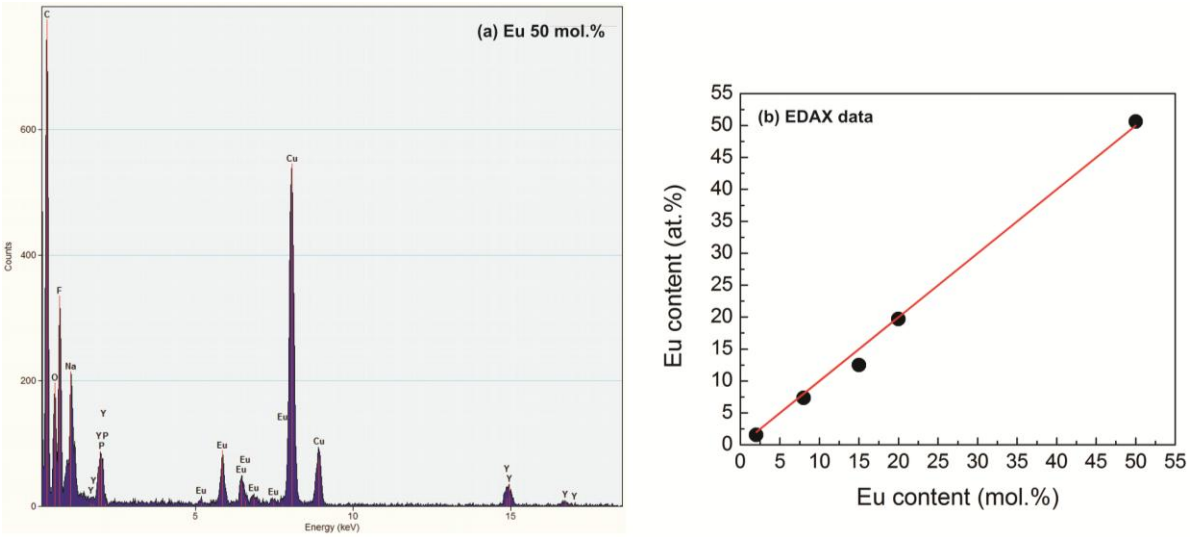

Figure S1. EDXS spectra for β-$NaYF_4$ NCs obtained with different Eu concentration.

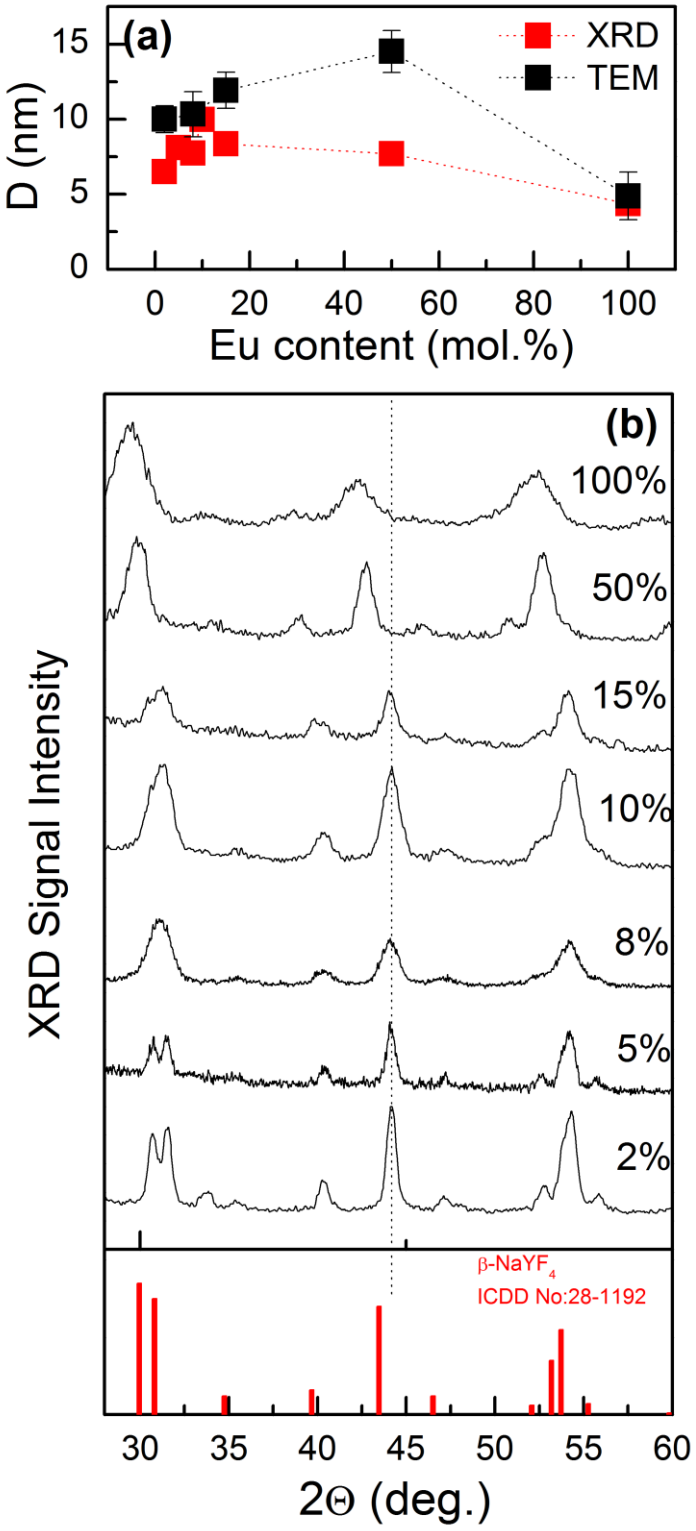

Figure S2. XRD spectra of Eu^{3+} doped β-$NaYF_4$ NCs with (a) different Eu^{3+} molar fraction and (b) obtained at different synthesis times.

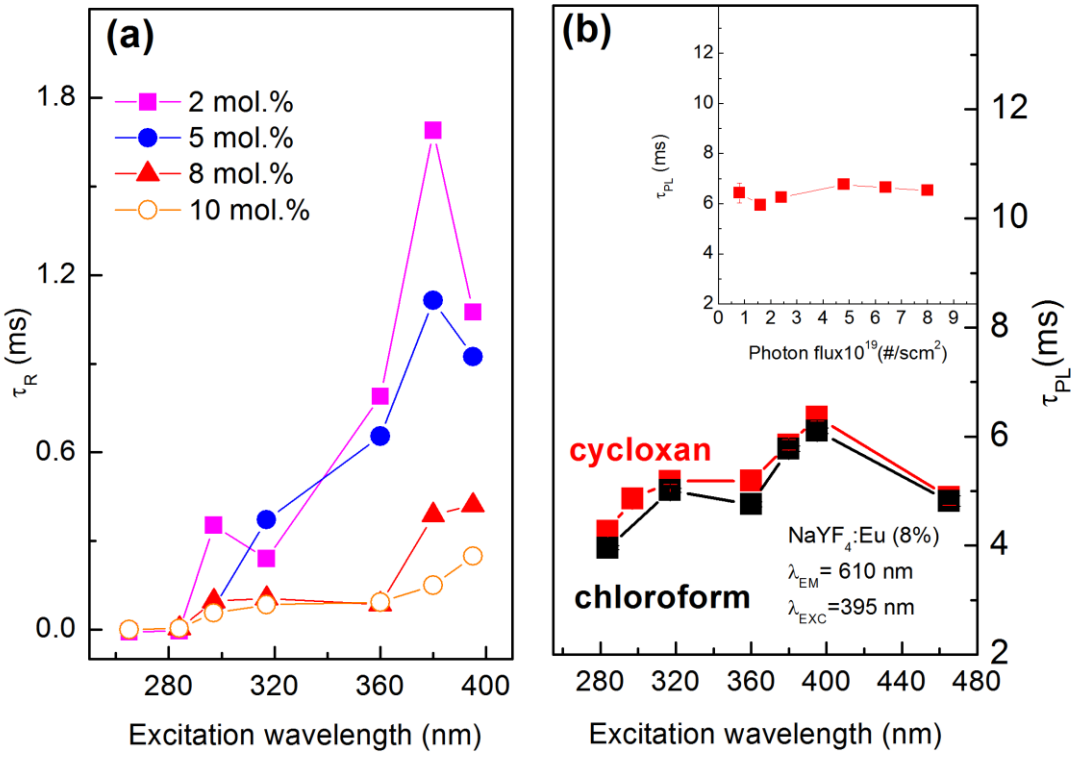

Figure S3. (a) Emission rise times vs. excitation wavelengths obtained for β-$NaYF_4$ NCs obtained with different Eu concentration. (b) Emission decay times vs. excitation wavelengths obtained for sample with 8 mol.% of Eu recorded in two different in polarity solvents. Inset: Emission decay time recorded as function of excitation flux.