

Supporting Information

NaYF₄ nanocrystals with TOPO ligands: synthesis-dependent structural and luminescent properties

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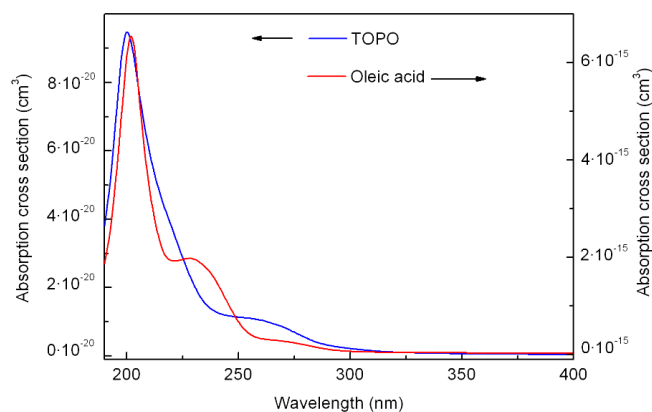


Fig. S1 Absorption cross section spectra of ligands molecules TOPO and oleic acid.

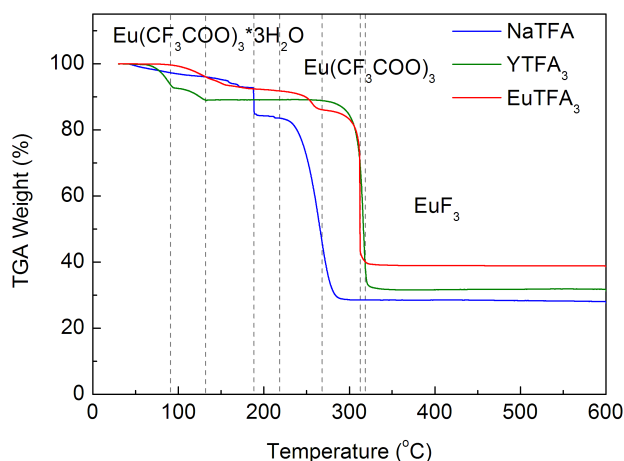


Fig. S2 TGA curves of Na, Y and Eu TFA salts used as a precursors in NaYF₄ nanocrystal synthesis. The products of thermal decompositions determined on TGA curves are indicated in the figure.

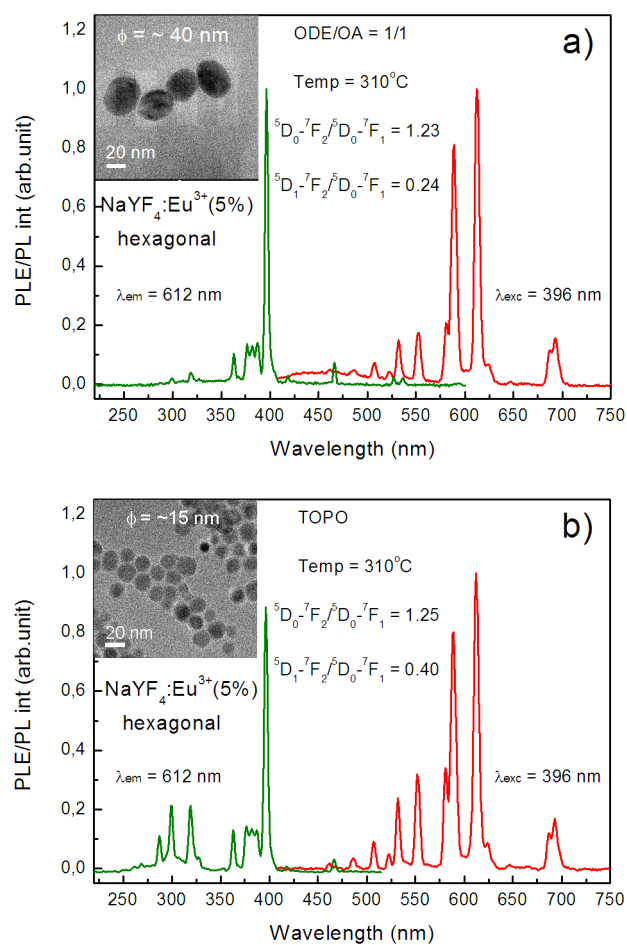


Fig. S3 PLE and PL spectra of NaYF₄:Eu³⁺ NCs synthesized in a) OA/ODE mixture and b) TOPO. Insets show the TEM images of NCs.

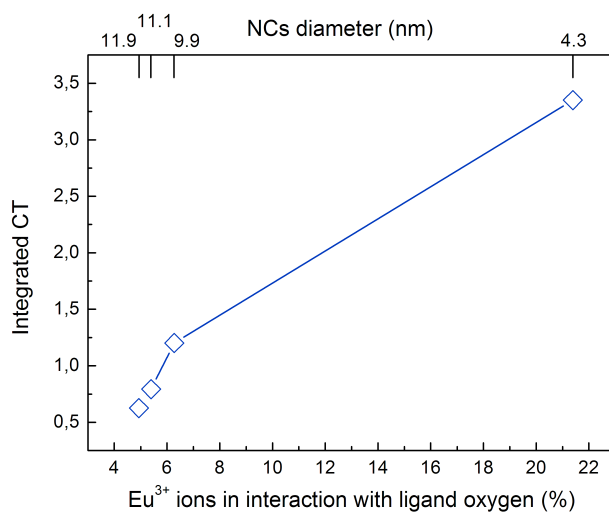


Fig. S4 The relation between the integrated intensity of CT absorption band and percentage of Eu^{3+} bound to oxygen from the surface ligands.

Table S1 NaTFA and YTFA₃ precursors composition ratio in set of NaYF₄ NCs.

| Na^+ | Y^{3+} | Eu^{3+} | $\text{Na}^+/\text{Y}^{3+}$ | Y^{3+} | F^-/Y^{3+} |
|---------------|-----------------|------------------|-----------------------------|-------------------|----------------------------|
| [mmol] | [mmol] | [mmol] | | % of total cation | |
| 0.50 | 0.475 | 0.025 | 1.00 | 50 | 4.00 |
| 0.75 | 0.475 | 0.025 | 1.50 | 40 | 4.50 |
| 1.00 | 0.475 | 0.025 | 2.00 | 33 | 5.00 |
| 1.25 | 0.475 | 0.025 | 2.50 | 28 | 5.50 |