

## Supporting information

### Crystal phase transition in $\text{Li}_x\text{Na}_{1-x}\text{GdF}_4$ solid solution nanocrystals - tuning of optical properties

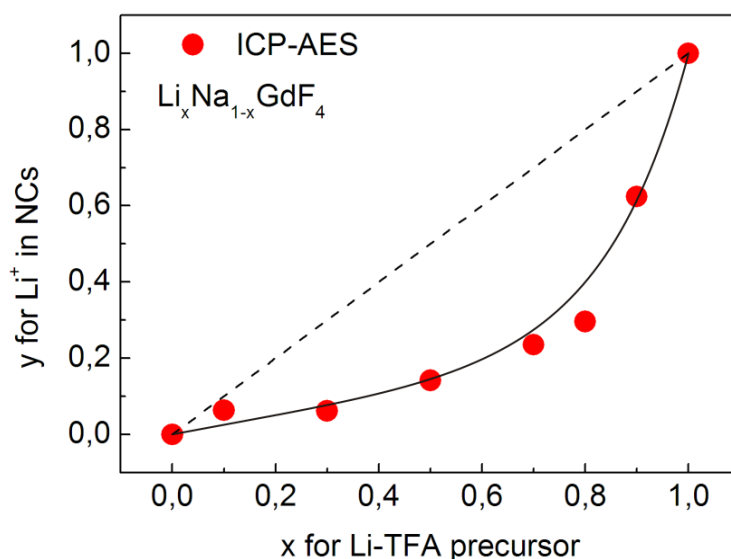
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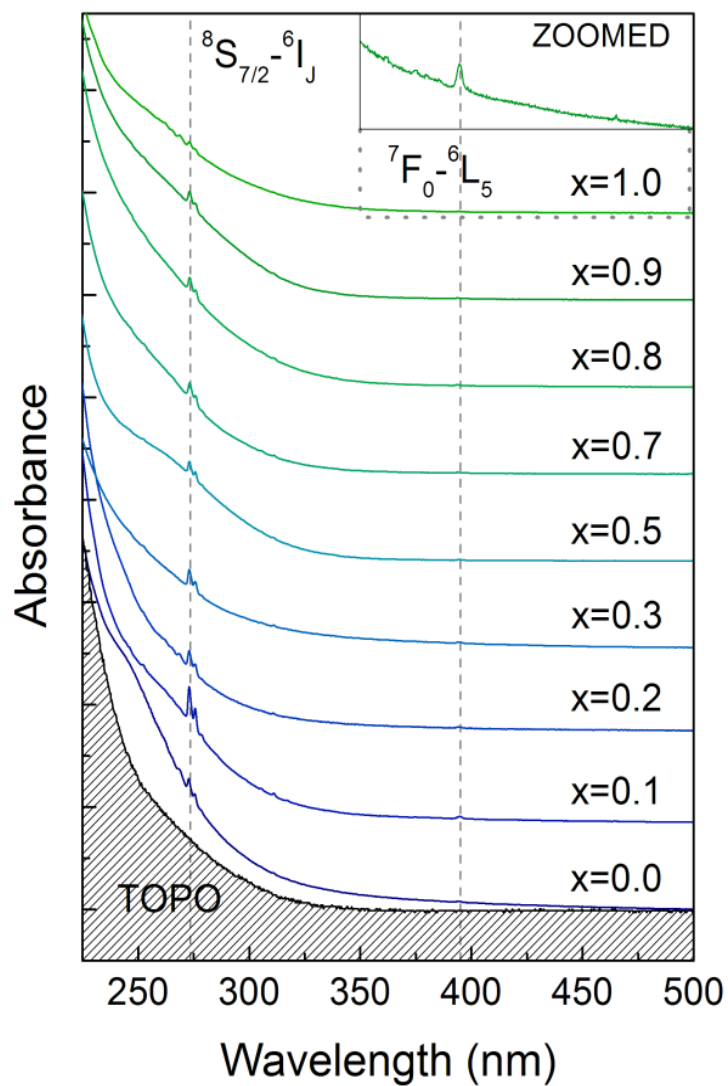
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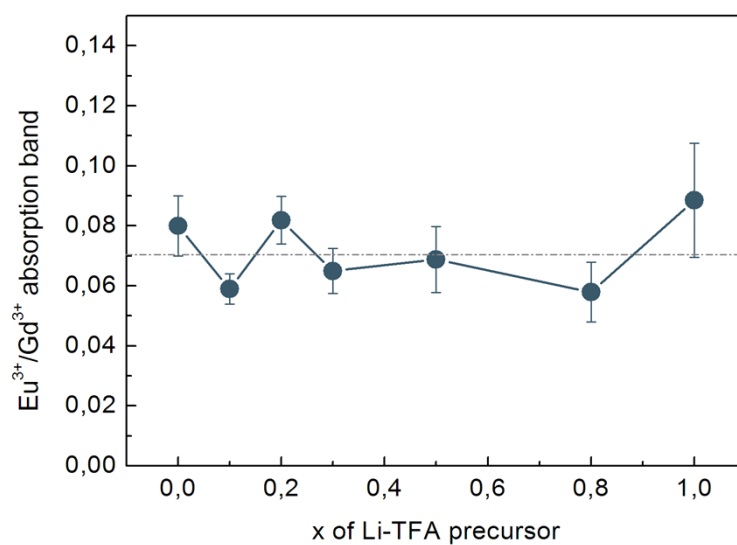
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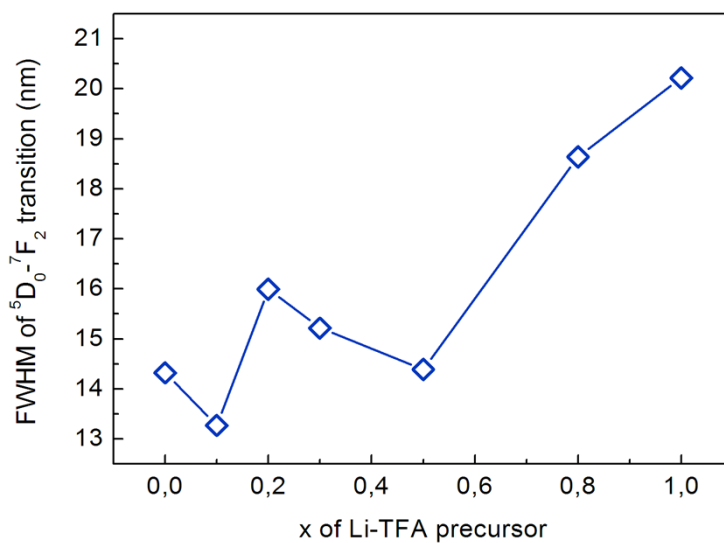
**Fig. S1** ICP-AES analysis of  $\text{Li}^+$  ions incorporated in  $\text{Li}_y\text{Na}_{1-y}\text{GdF}_4$  NCs depending on the fraction of  $\text{Li}^+$  precursors used in synthesis,  $x = [\text{Li-TFA}]/([\text{Li-TFA}] + [\text{Na-TFA}])$ ,  $y = [\text{Li}^+]/([\text{Li}^+] + [\text{Na}^+])$ .



**Fig. S2** Absorbance spectra of  $\text{Li}_x\text{Na}_{1-x}\text{GdF}_4$  nanocrystals. Absorption of TOPO is marked as striped area.



**Fig. S3** Ratio of integrated absorbance peaks of Eu<sup>3+</sup> (394 nm) and Gd<sup>3+</sup> (272 nm) ions in a function of Li<sup>+</sup> precursors used in synthesis (x).



**Fig. S4** Full width at high maximum of <sup>5</sup>D<sub>0</sub>-<sup>7</sup>F<sub>2</sub> transition peaks.