

## SUPPORTING INFORMATION

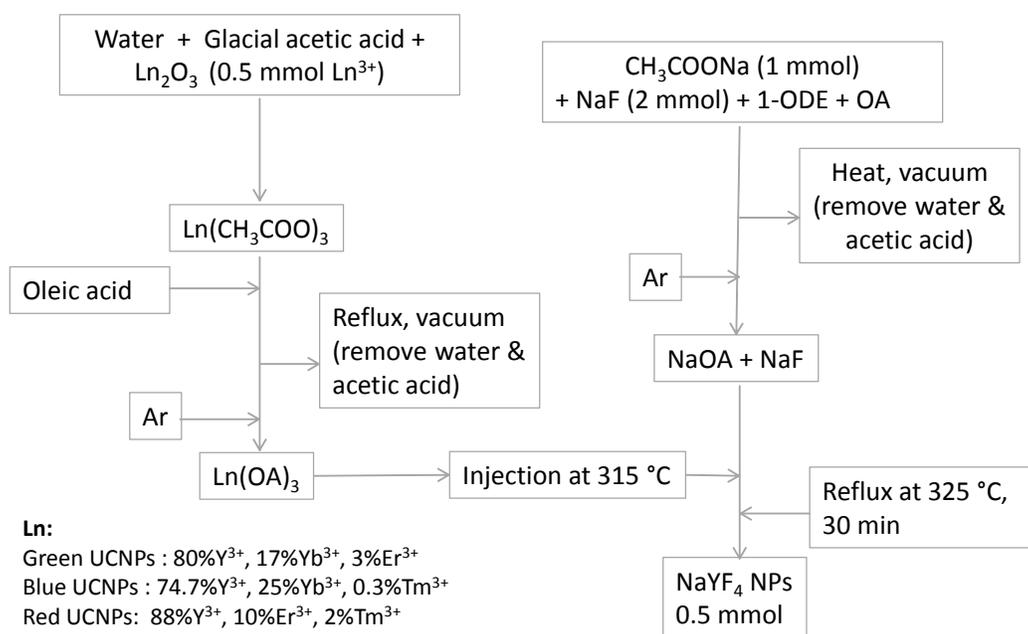
### Red-Green-Blue Printing using Luminescence-Upconversion Inks

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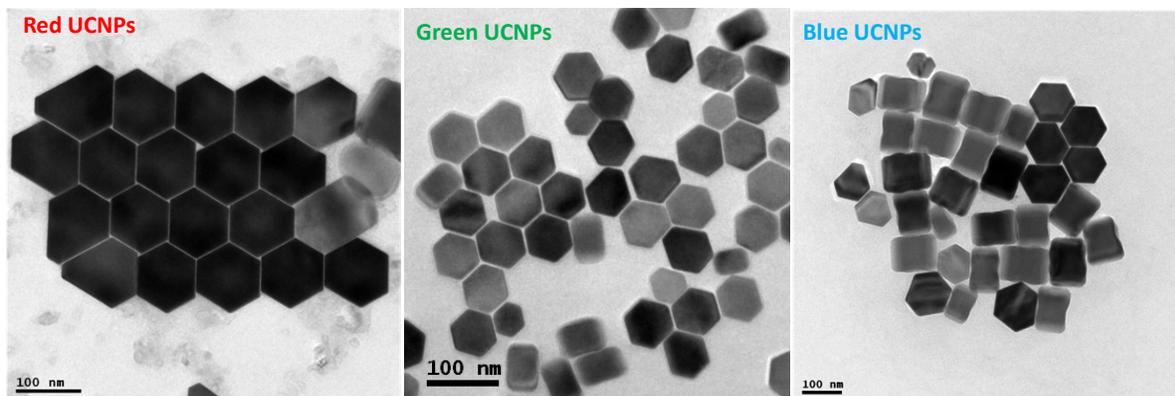
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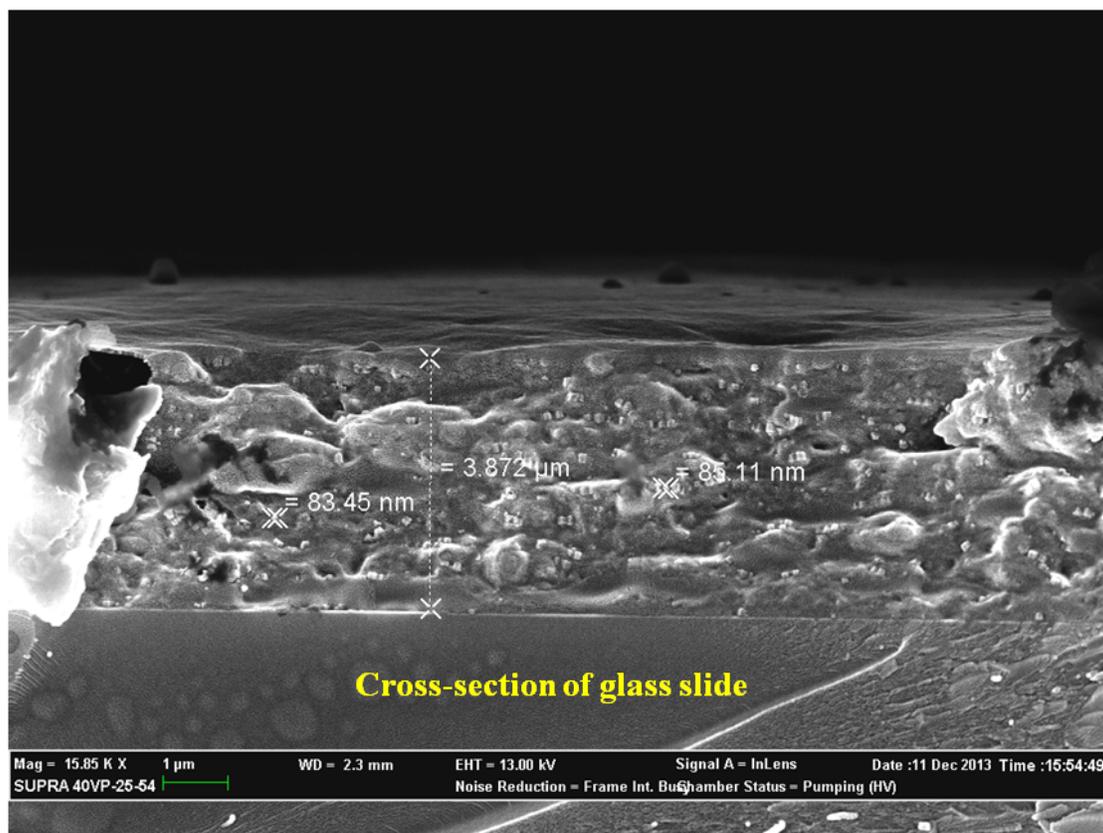
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**Figure S1.** Schematic representation of synthetic route used to produce doped  $\beta$ - $\text{NaYF}_4$  nanocrystals.



**Figure S2.** TEM images of nanocrystals used to activate red ( $\beta\text{-NaYF}_4\text{:10\%Er}^{3+}$ , 2%\text{Tm}^{3+}), green ( $\beta\text{-NaYF}_4\text{:17\%Yb}^{3+}$ , 3%\text{Er}^{3+}), and blue ( $\beta\text{-NaYF}_4\text{:25\%Yb}^{3+}$ , 0.3%\text{Tm}^{3+}) inks.



**Figure S3.** High-resolution scanning electron microscope (HRSEM) micrograph of the cross section of three passes of blue ink on glass slide with a thickness of  $\sim 4 \mu\text{m}$ . The UCNC can be clearly seen to be homogeneously distributed throughout the cross-section.