

Supplementary Information

### Morphology controlled synthesis of Fe<sup>3+</sup>-doped upconversion nanomaterials

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### Supplementary Figures

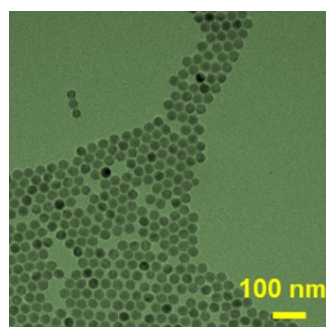


Fig. S1 TEM image of NaYF<sub>4</sub>: 20%Yb, 2%Er nanoparticles, synthesized with OA/ODE=0.4/1.

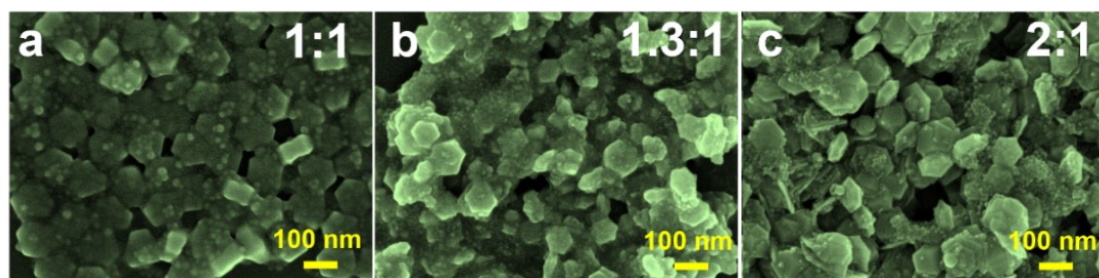


Fig. S2 SEM images of NaYF<sub>4</sub>: 20% Yb, 2% Er, 20% Fe nanoparticles, synthesized with (a) OA/ODE=1/1, (b) OA/ODE=1.3/1, and (c) OA/ODE=2/1.

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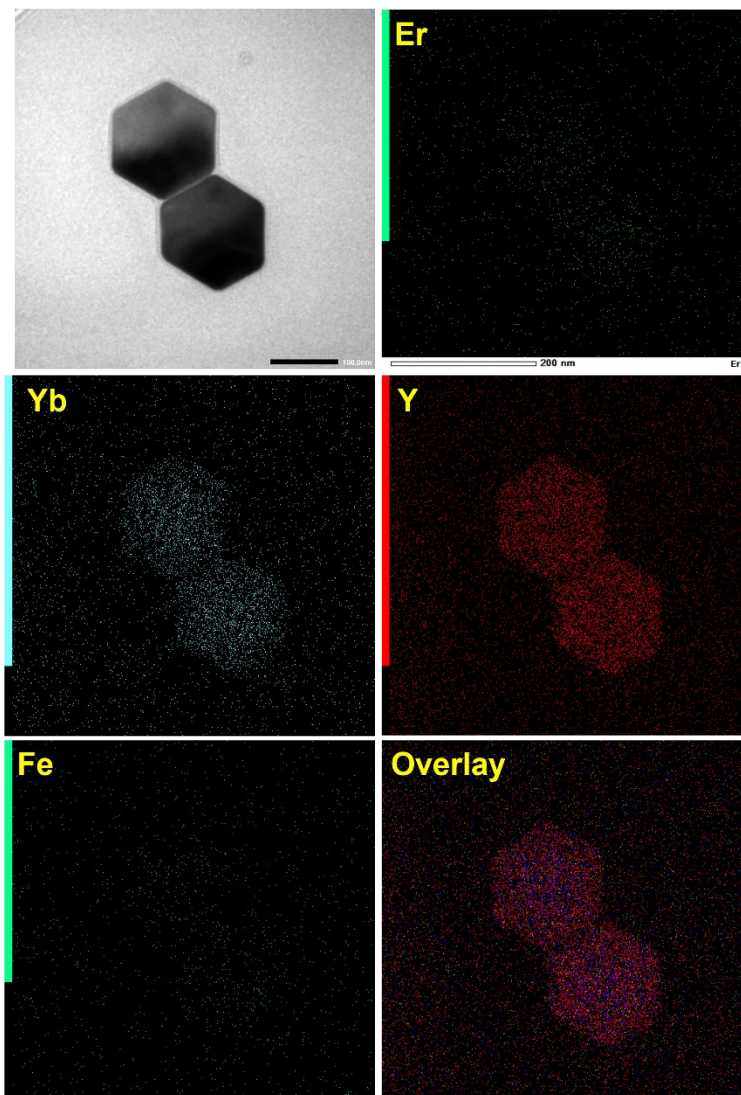


Fig. S3 Elemental analysis chart of NaYF<sub>4</sub>: 20% Yb, 2% Er, 20% Fe nanocrystals.

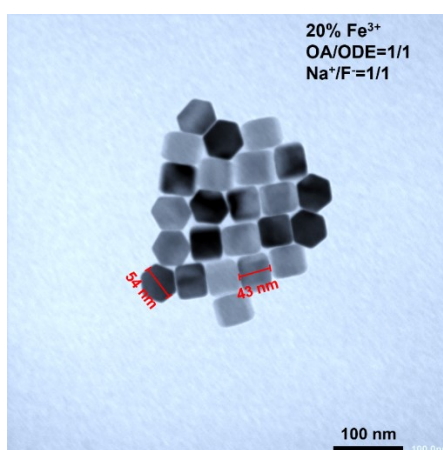


Fig. S4 TEM image of NaYF<sub>4</sub>: 20% Yb, 2% Er, 20% Fe nanoparticles, synthesized with OA/ODE=1/1 and Na<sup>+</sup>/F<sup>-</sup>=0.625/1.

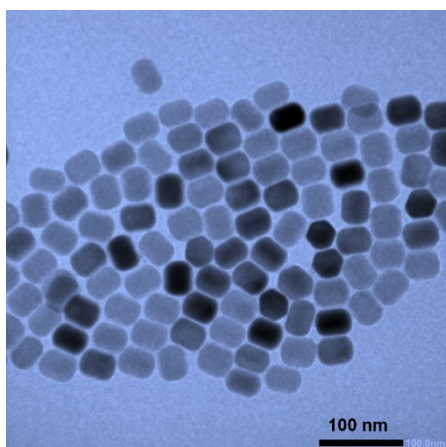


Fig. S5 TEM image of NaYF<sub>4</sub>: 20% Yb, 2% Er, 20% Fe nanoparticles, synthesized with OA/ODE=1.3/1 and Na<sup>+</sup>/F<sup>-</sup>=1.5/1.