

## Bifunctional upconverting luminescent-magnetic FeS<sub>2</sub>@NaYF<sub>4</sub>:Yb<sup>3+</sup>, Er<sup>3+</sup> core@shell nanocomposites with tunable luminescence for temperature sensing

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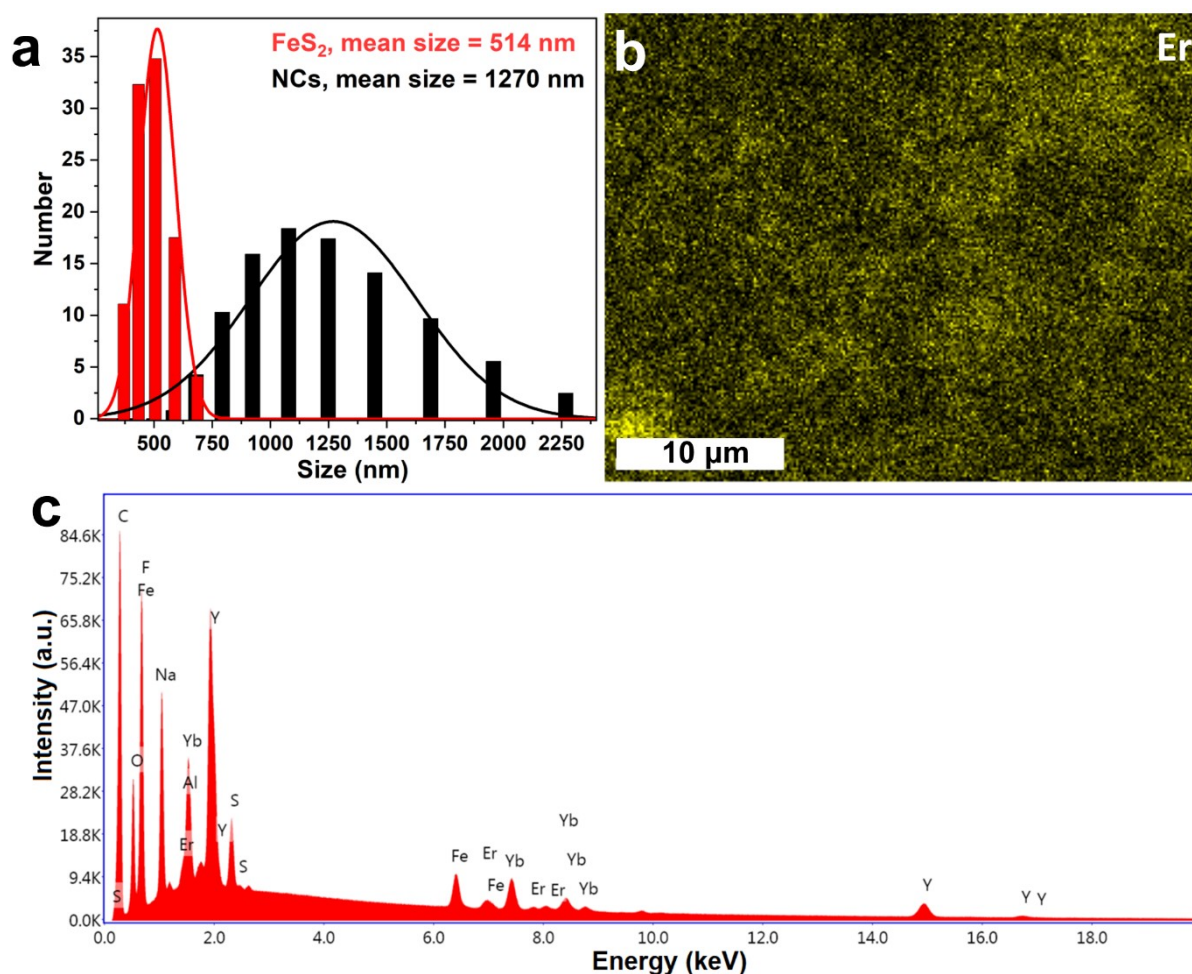


Fig. S1 The DLS hydrodynamic size of FeS<sub>2</sub> core nanoparticles and FeS<sub>2</sub>@NaYF<sub>4</sub>:Yb<sup>3+</sup>, Er<sup>3+</sup> nanocomposite (a), elemental mapping of the Er<sup>3+</sup> ions (b), and the EDX spectrum of the FeS<sub>2</sub>@NaYF<sub>4</sub>:Yb<sup>3+</sup>, Er<sup>3+</sup> nanocomposite (c).

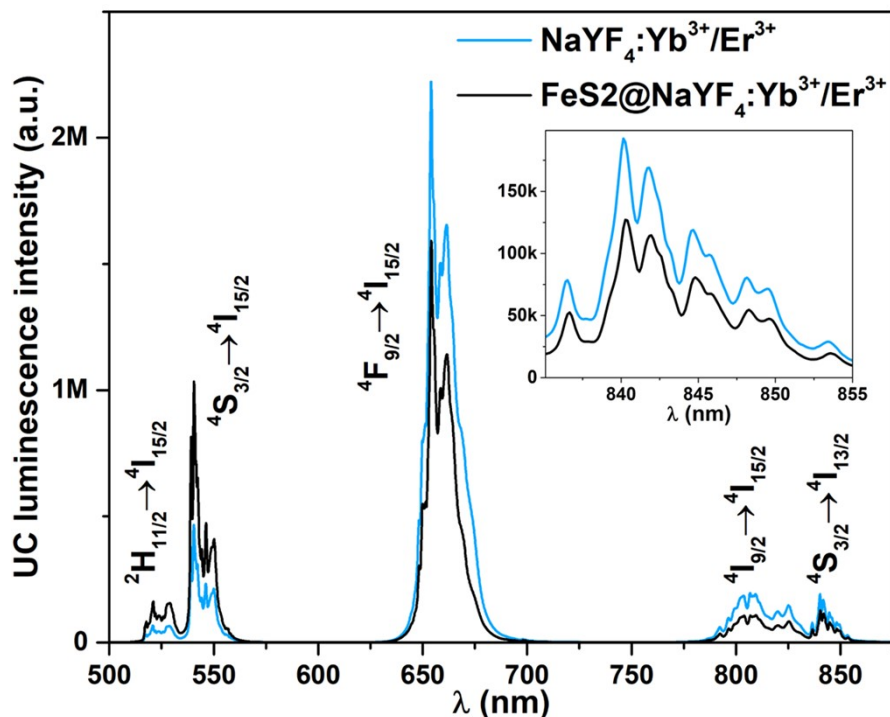


Fig. S2 Non-normalized emission spectra of NaYF<sub>4</sub>:Yb<sup>3+</sup>,Er<sup>3+</sup> NPs and FeS<sub>2</sub>@NaYF<sub>4</sub>:Yb<sup>3+</sup>,Er<sup>3+</sup> NC, recorded at the same setting parameters.

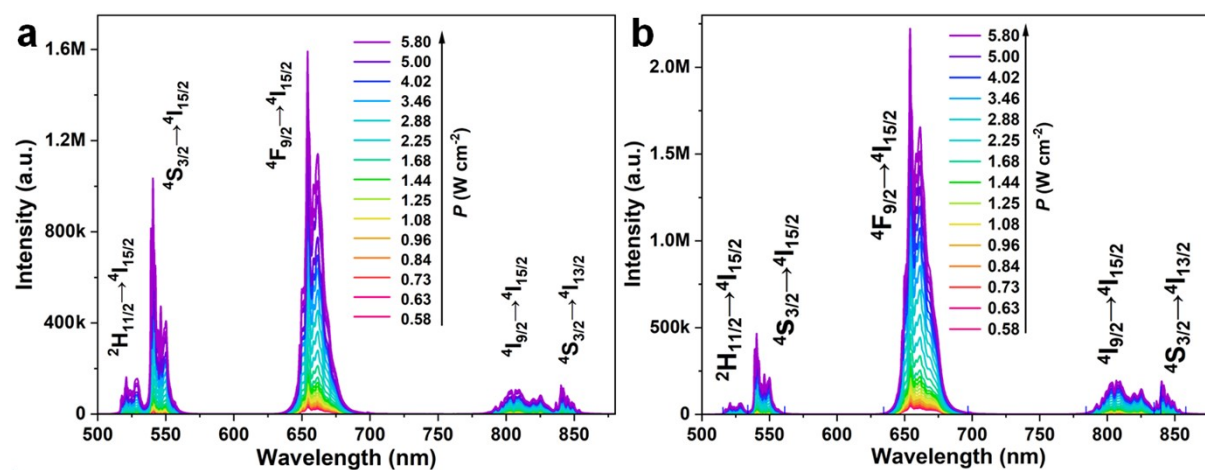


Fig. S3 UC Emission spectra of the NaYF<sub>4</sub>:Yb<sup>3+</sup>,Er<sup>3+</sup> NPs (a) and FeS<sub>2</sub>@NaYF<sub>4</sub>:Yb<sup>3+</sup>,Er<sup>3+</sup> NC (b), recorded with the use of different pump power densities.