

Supporting information for

Improved Up-Conversion Luminescence from $\text{Er}^{3+}:\text{LaF}_3$ Nanocrystals Embedded in Oxyfluoride Glass Ceramics via Simultaneous Triwavelength Excitation

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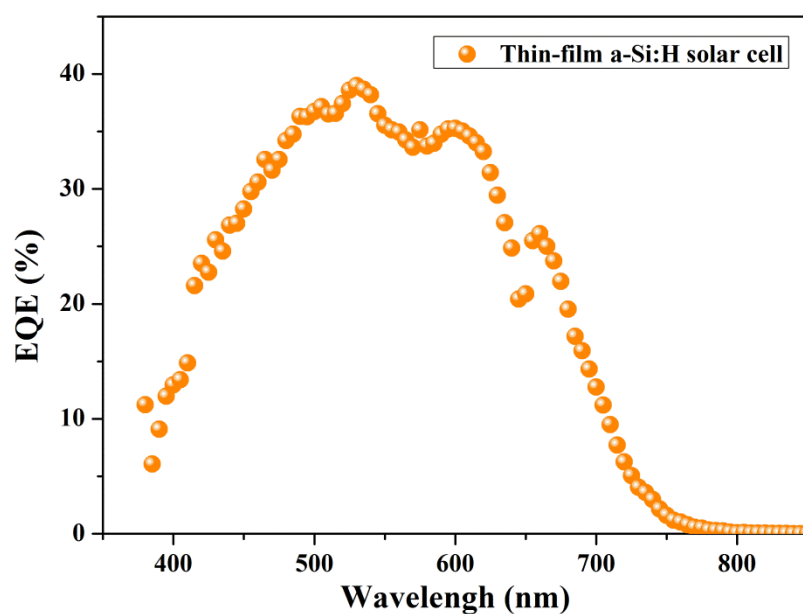


Figure S1: The external quantum efficiency (EQE) spectrum of the thin-film a-Si:H solar cell. The spectrum response of the thin-film a-Si:H solar cell is ranging from 380 to 750 nm.

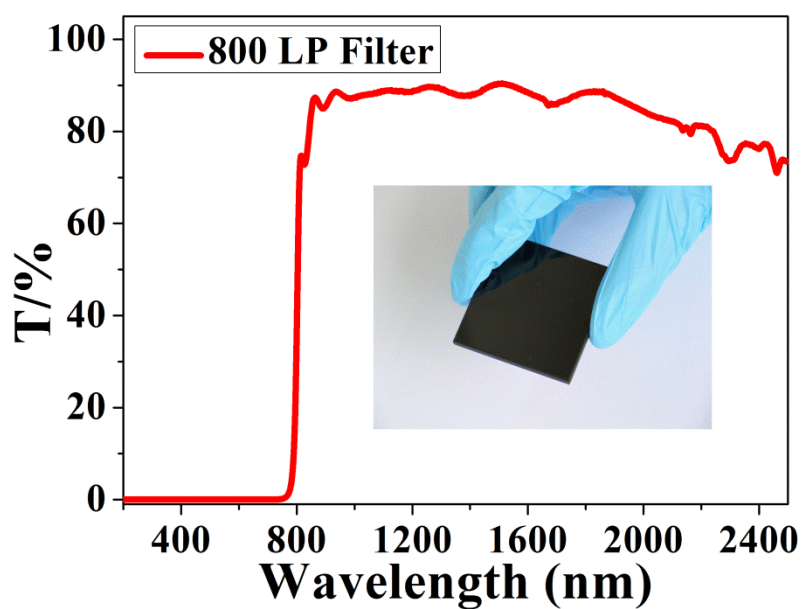


Figure S2: Transmission spectrum of an 800 nm long-pass (LP) filter (The inset shows the photograph of the filter).

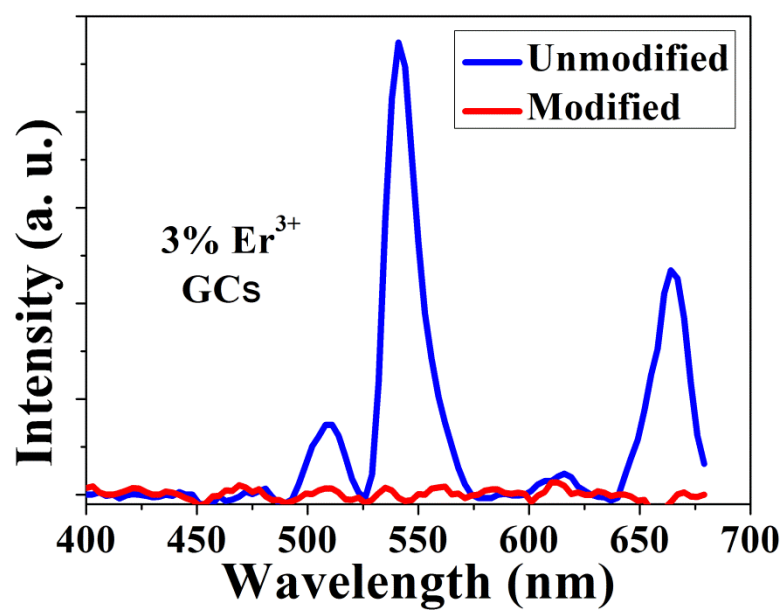


Figure S3: UC luminescence spectra of 3% Er^{3+} -doped GCs modified with and without thin-film a-Si:H solar cell upon irradiation of concentrated incoherent NIR sunlight with wavelength $\lambda > 800$ nm.