Supplementary Information

DNA-guided interparticle energy transfer between rare earth doped nanoparticles

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Keywords: rare earth elements, upconverting nanoparticles, energy transfer, sensing

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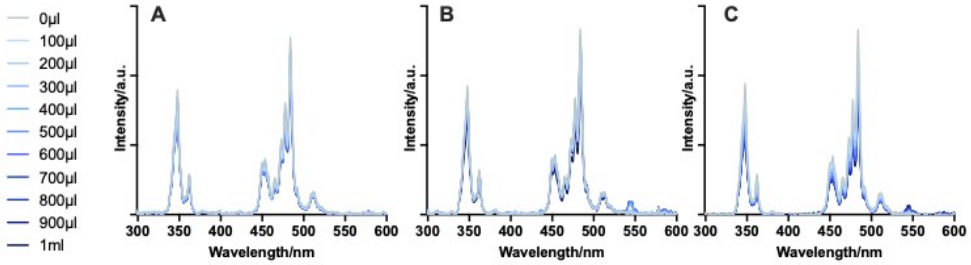

Figure S1. Emission spectra in the range of 300 nm to 600 nm collected during the (A) dilution, (B) mixing and (C) hybridization experiments (λ_{ex} = 980nm), corresponding to the $^1I_6 \rightarrow {}^3F_4$ (345 nm) and $^1G_4 \rightarrow {}^3H_6$ (475 nm) transitions.

Comment [VT]: Wondering if these spectra add any value - it's quite hard to see the differences between them. Also it make sit confusing since B, C and D refer to dilution, mixing and hybridization whereas E, F, and G are each referring to different peaks…

Comment [MC]: Remove blue frames (make them black) and add legend with what the spectra are

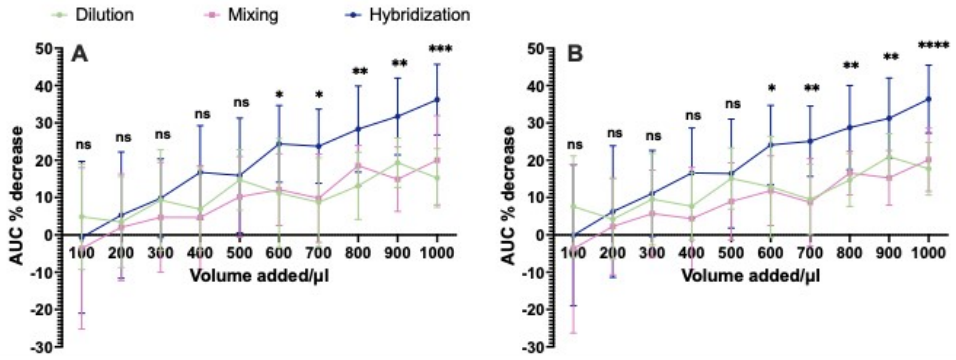

Figure S2. Cumulative % decrease of area under the curve (AUC) for the Tm^{3+} emission peaks corresponding to the transitions (A) $^1I_6 \rightarrow {}^3F_4$ (345 nm) and (B) $^1G_4 \rightarrow {}^3H_6$ (475 nm) as a function of the volume of solution added in the dilution, mixing and hybridization experiments. * Indicates $p < 0.05$, ** indicates $p < 0.01$, *** indicates $p < 0.001$, **** indicates $p < 0.0001$, as measured using an unpaired t-test between the dilution and hybridization experiments.

Comment [VT]: What are the wavelengths for which you calculated the AUC? Did you normalize it to another AUC (e.g. in the UV or visible) that you didn't expect to change as a result of the hybridization?

Comment [MC]: Like in main text. Remove zero dashed line, put legend outside without box, make lines thicker, and increase size for stat sig different symbols

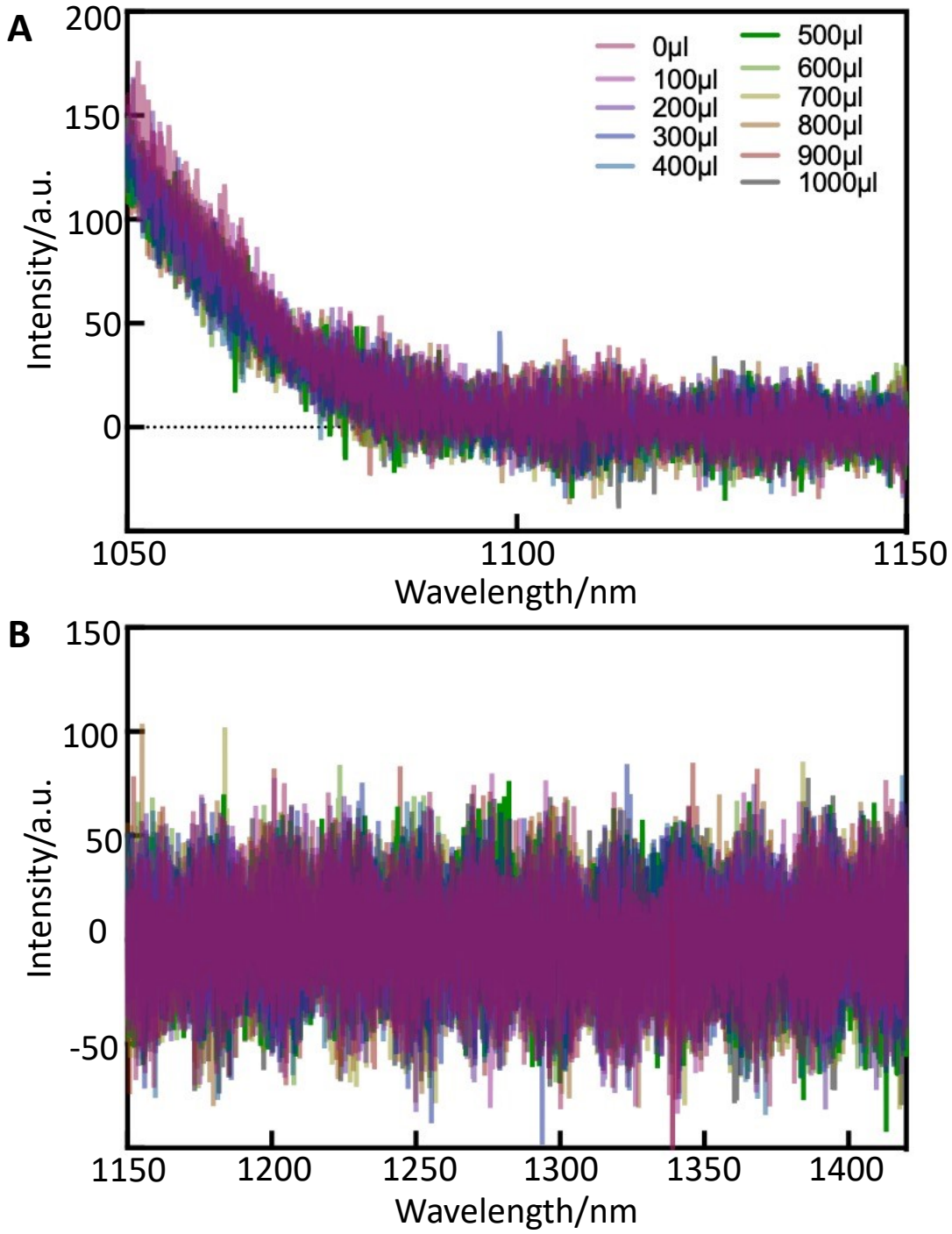

Figure S3. Emission spectra in the range of (A) 1050 nm to 1150 nm and (B) 1150 nm to 1420 nm collected during the hybridization experiments where the 1060 nm and 1340 nm emissions from Nd^{3+} ions would be expected to occur.