

Supporting Information

Analysis of the Shell Thickness Distribution on NaYF₄/NaGdF₄ Core/Shell Nanocrystals by EELS and EDS

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Synthesis of NaYF₄/NaGdF₄ Nanocrystals

The synthesis and characterization of the NaYF₄/NaGdF₄ core/shell nanocrystals (NCs) used in this study were reported previously.¹

Supplementary Figures

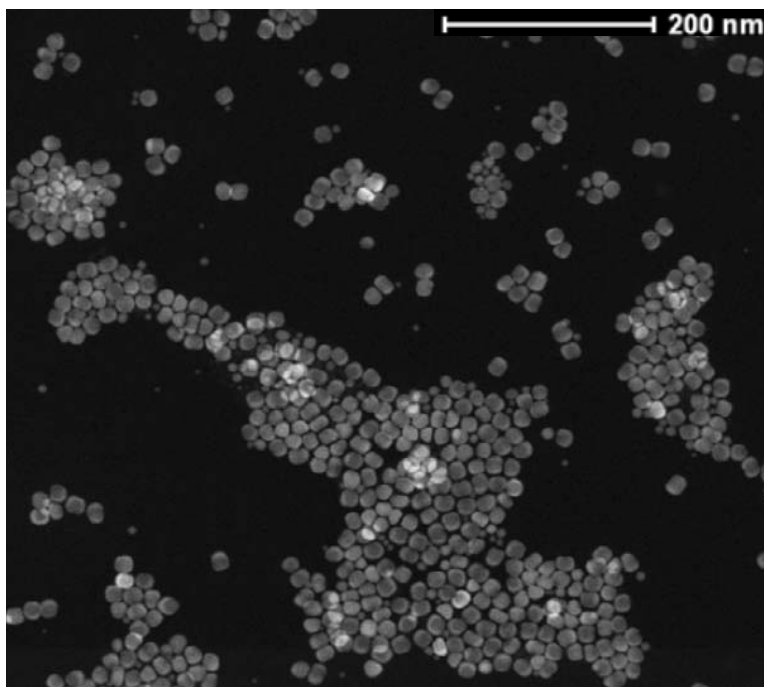


Figure S1. Low magnification HAADF image of NaYF₄/NaGdF₄ NCs.

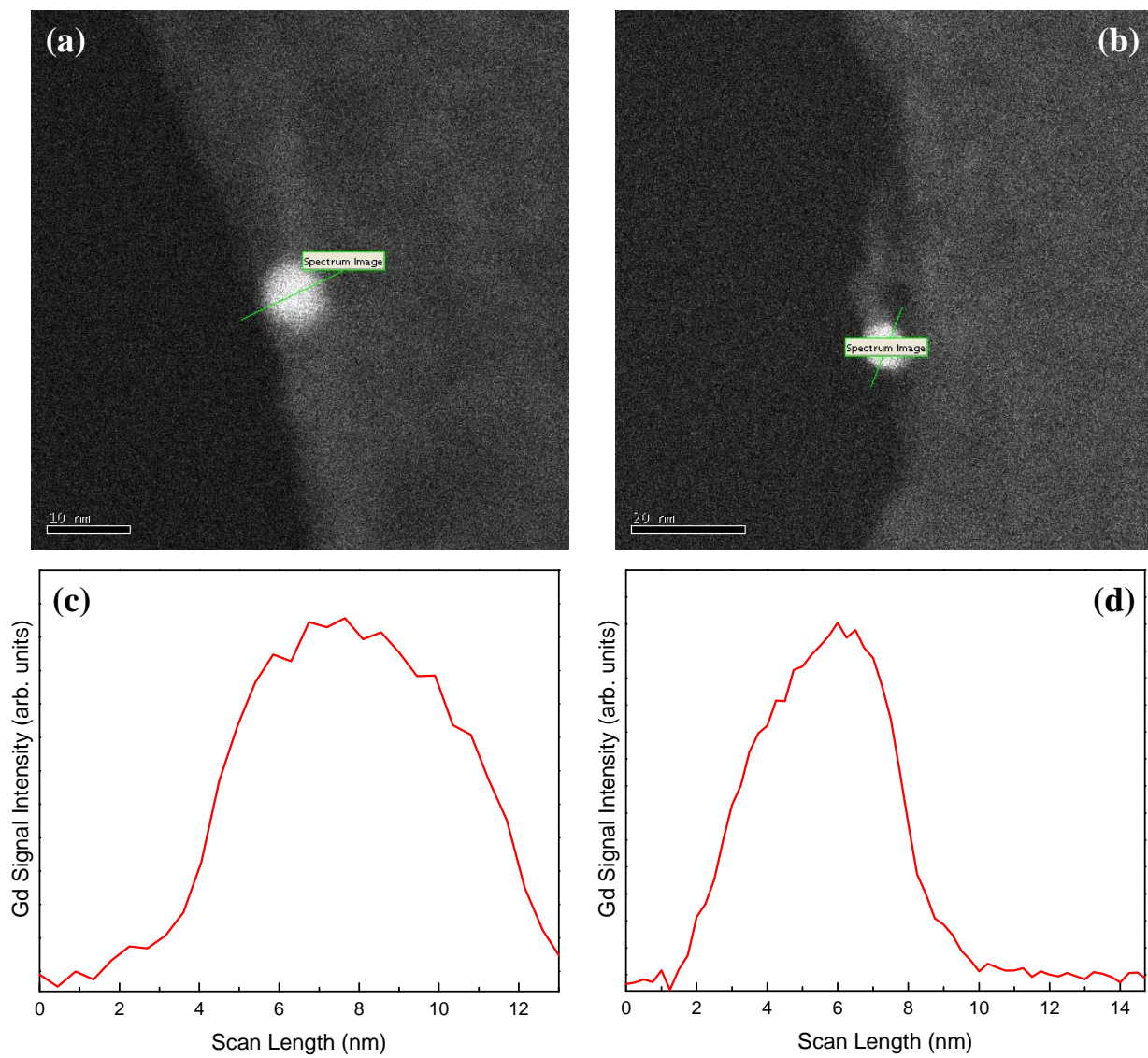


Figure S2. (a-b) Small individually nucleated NaGdF₄ NCs and the corresponding (c-d) EELS spectra (Gd N_{4,5} edge). The scale bar in (a) is 10 nm and the scale bar in (b) is 20 nm.

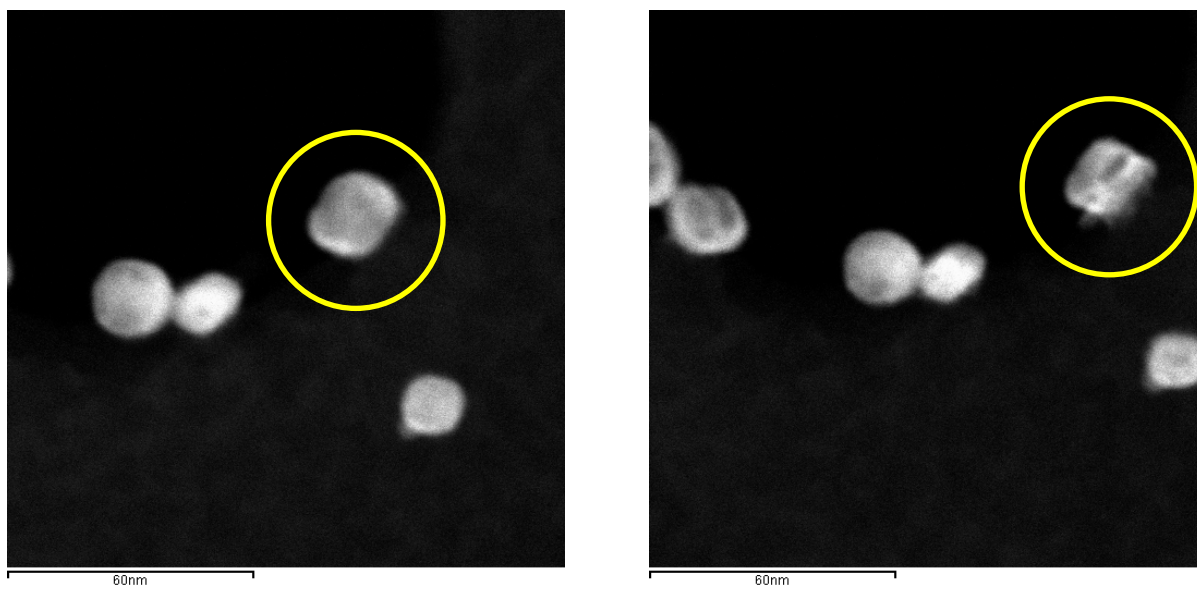
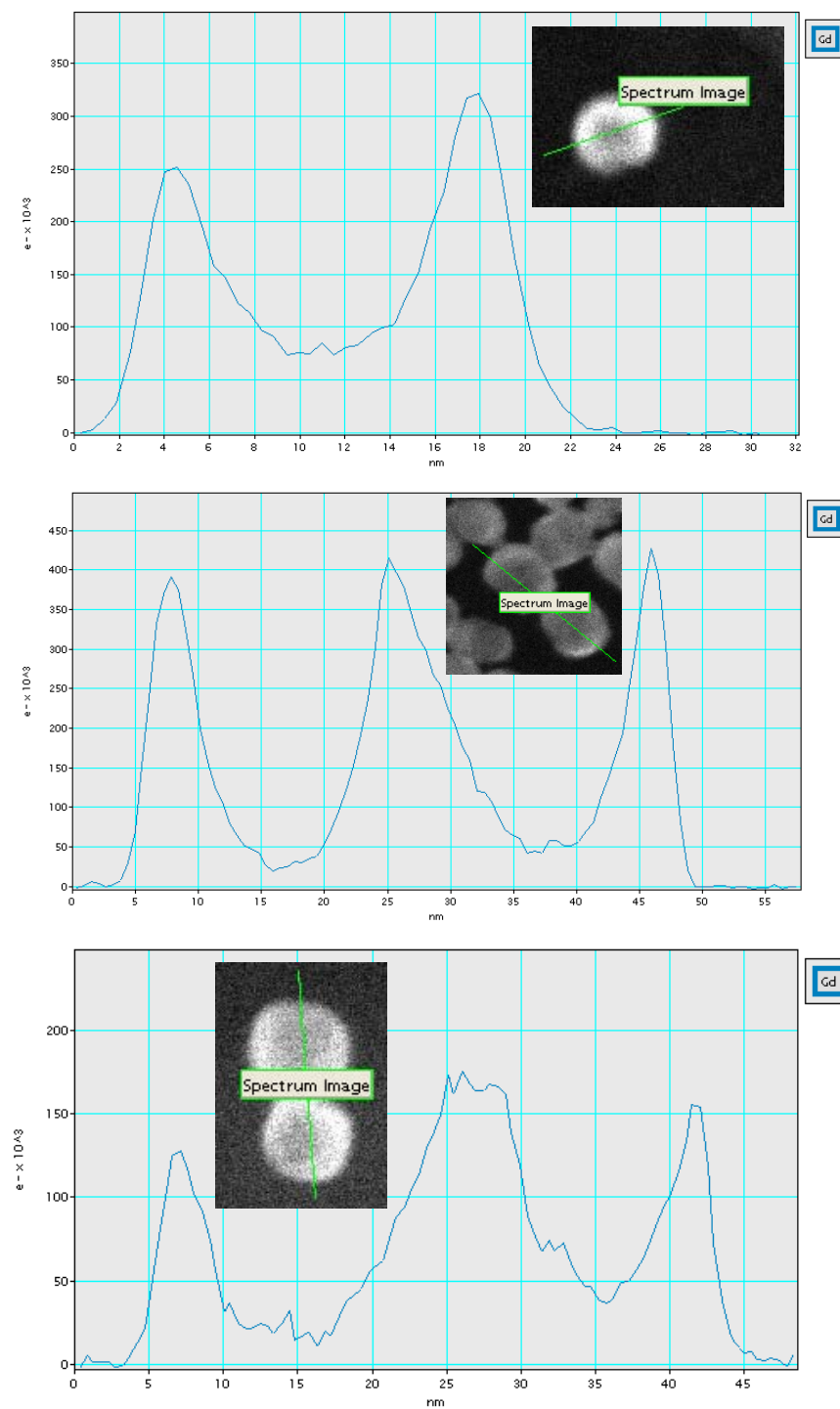
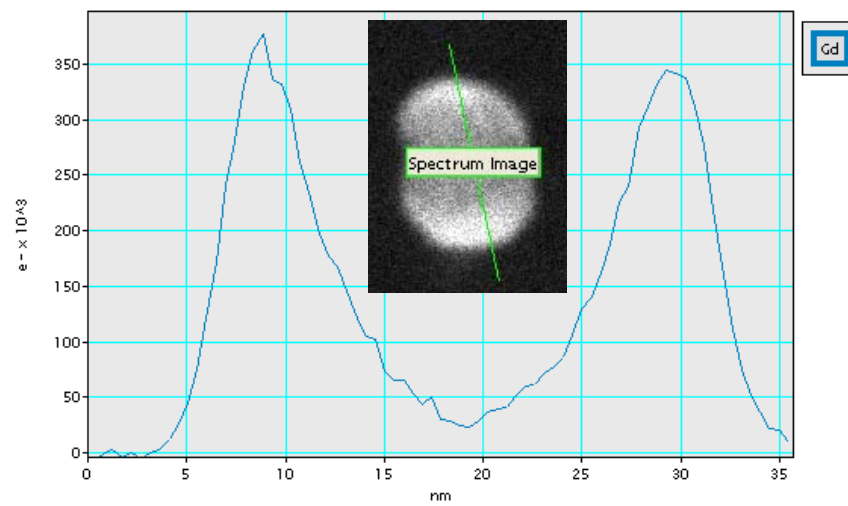
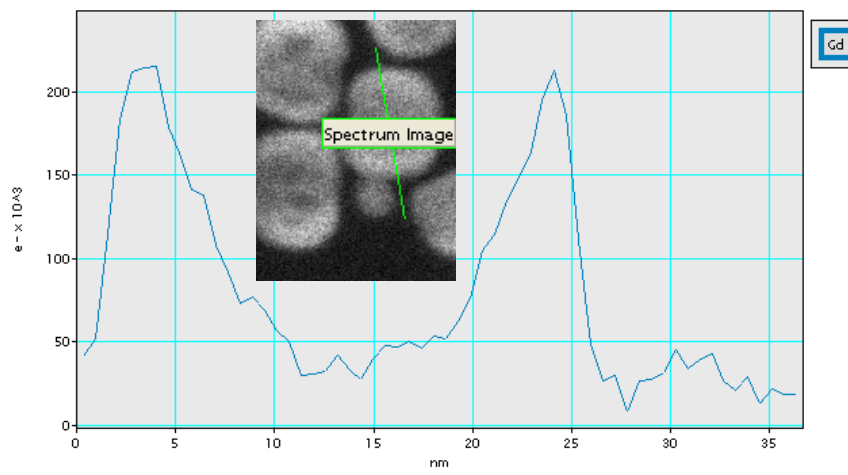
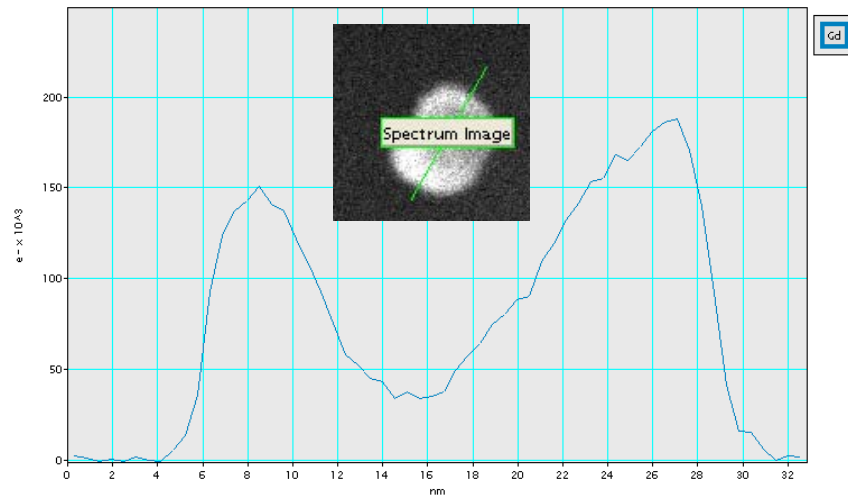
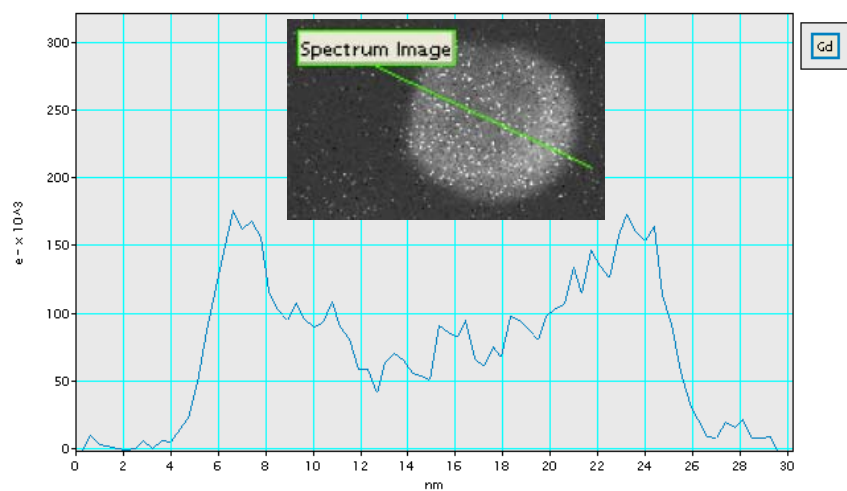
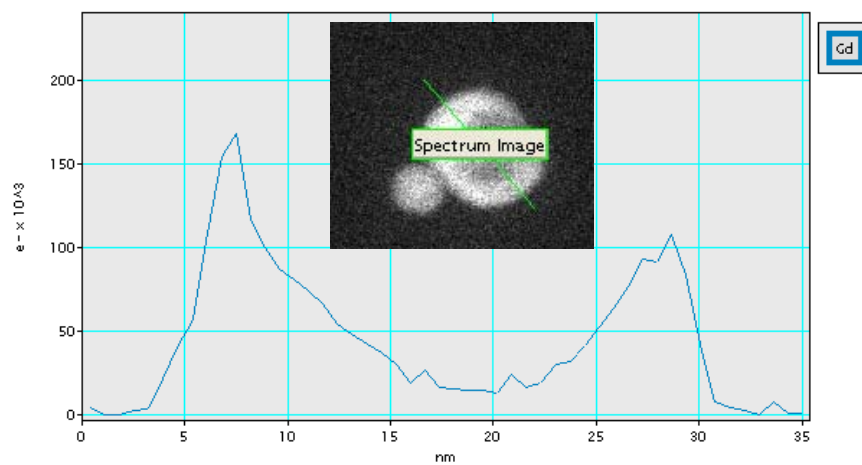
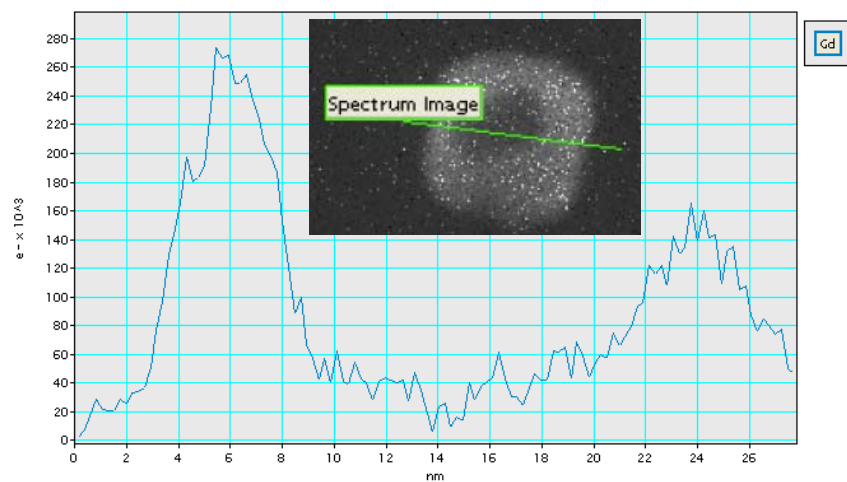


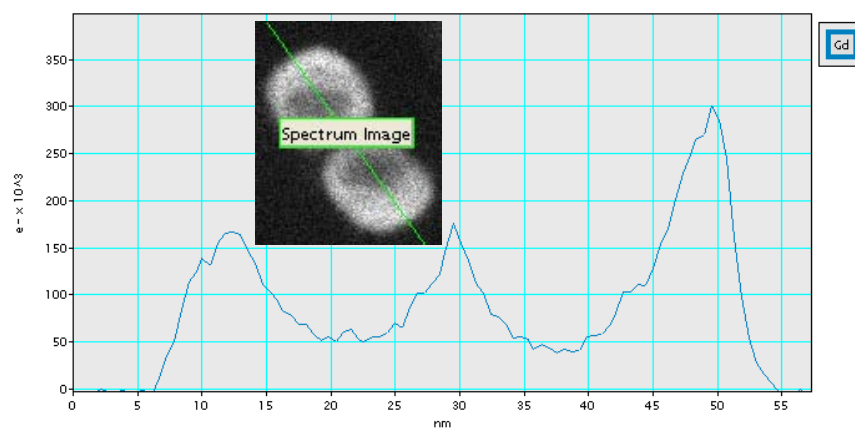
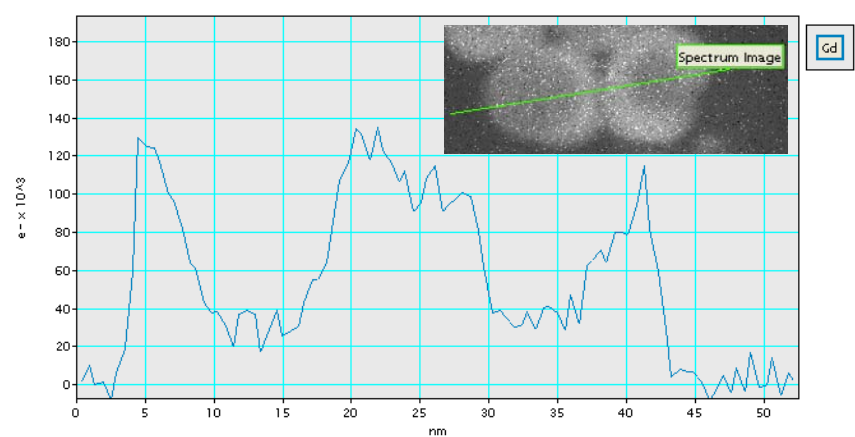
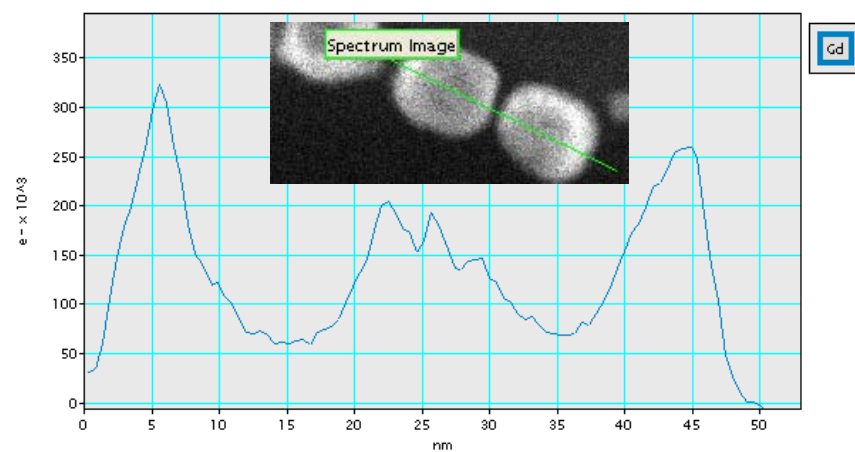
Figure S3. (left) HAADF image of a NaYF₄/NaGdF₄ core/shell NC before and (right) after an EDS line scan showing beam damage. EELS line scans resulted in minimal damage to the particles.

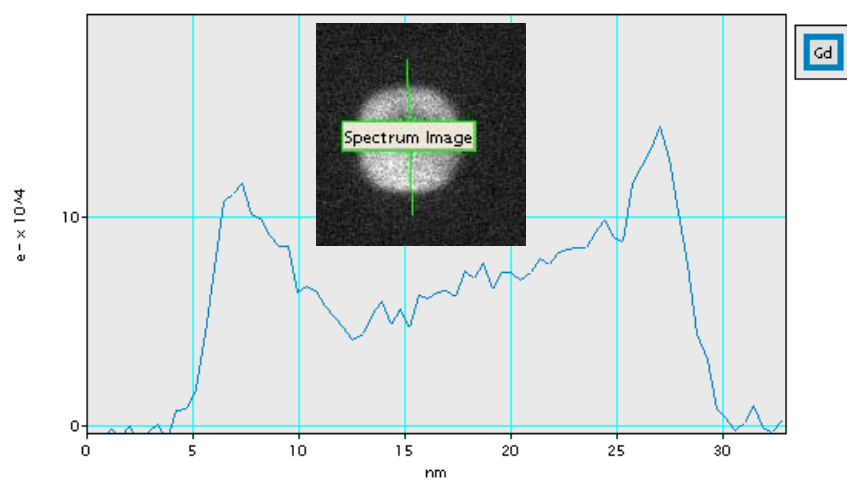
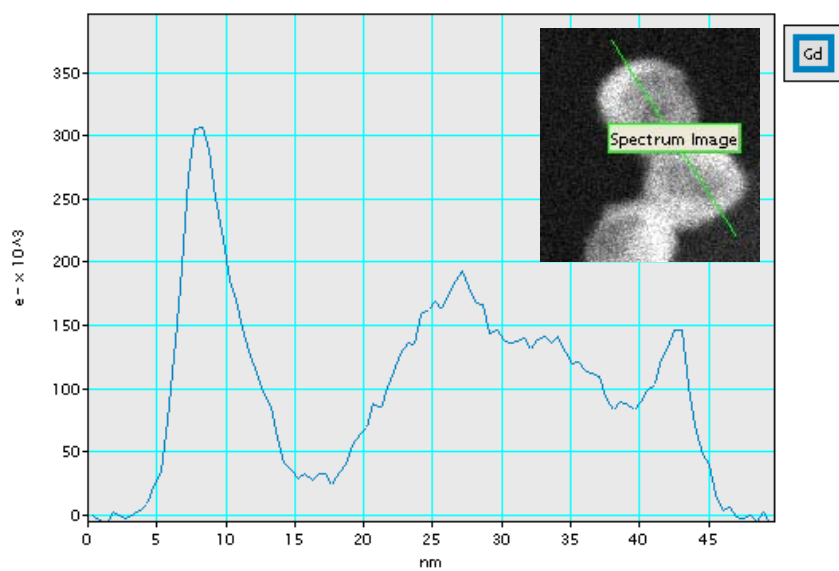
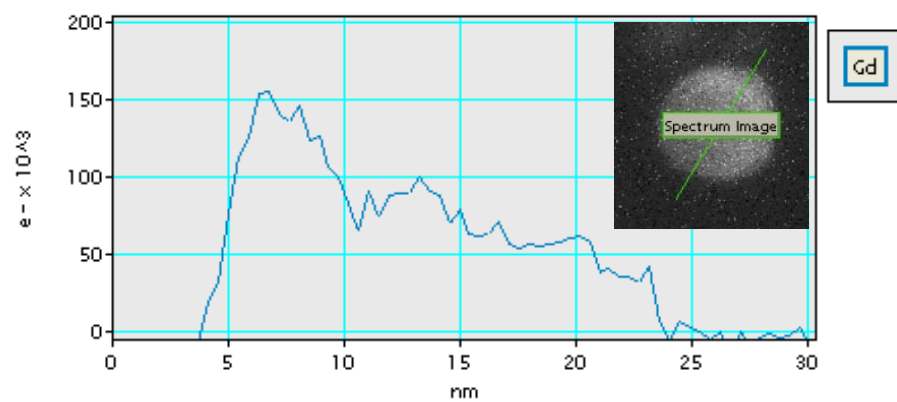
Figure S4. Additional HAADF images (**21-fold**) and corresponding EELS spectra for NaYF₄/NaGdF₄ core/shell NCs. The scale in the EELS spectra correspond to the green line in the TEM image insets.

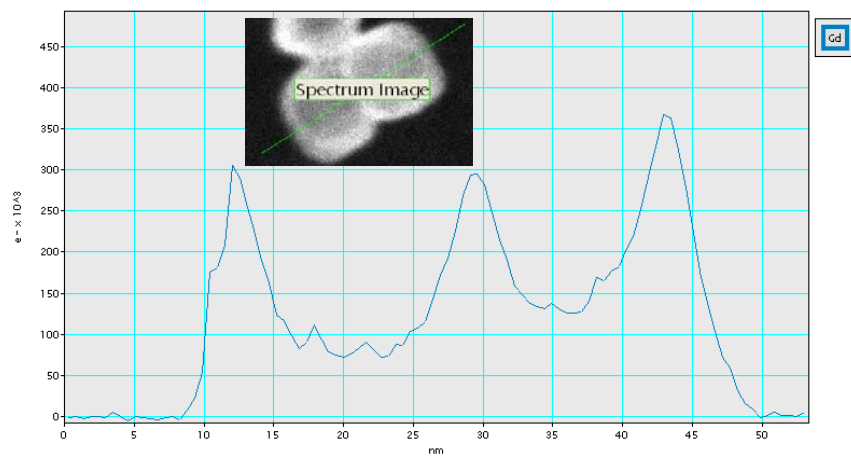
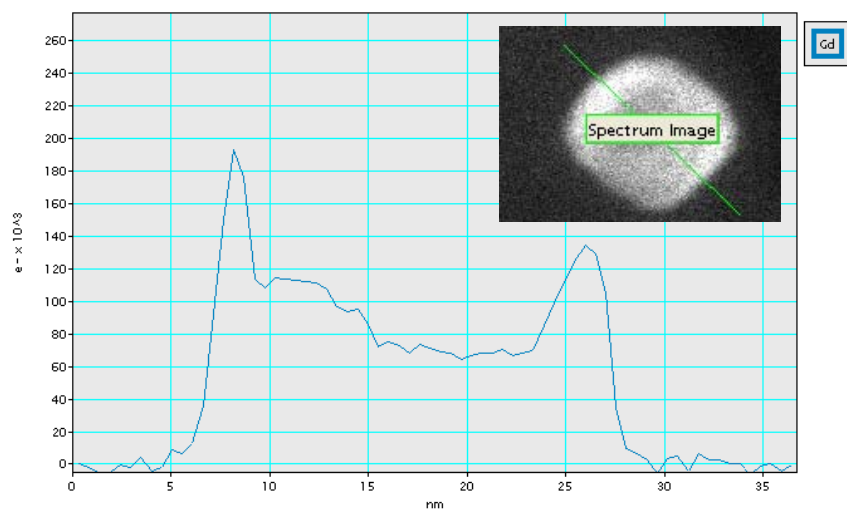
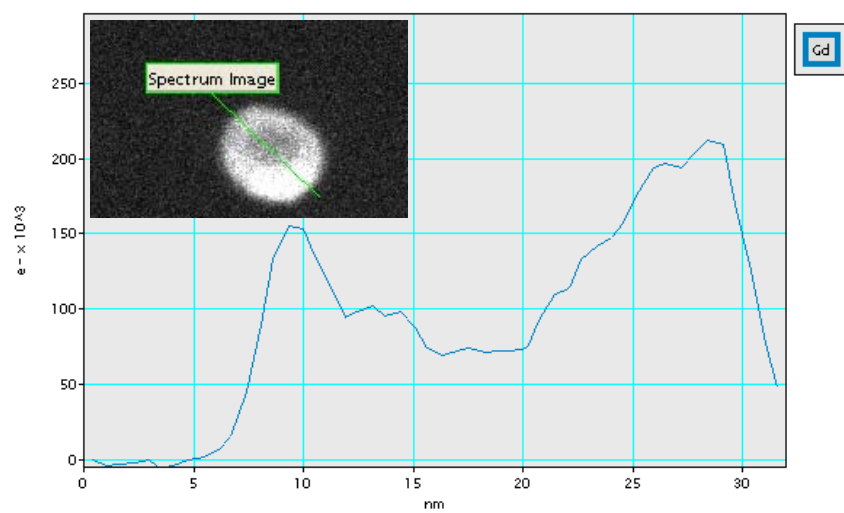


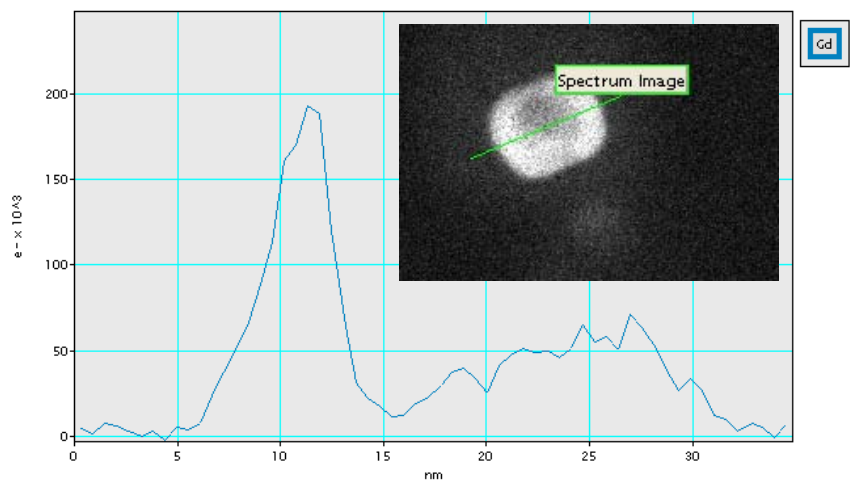
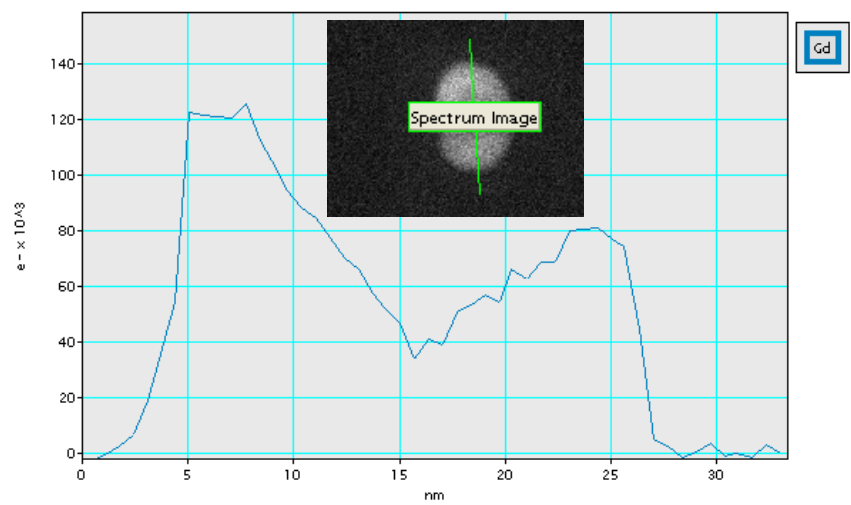
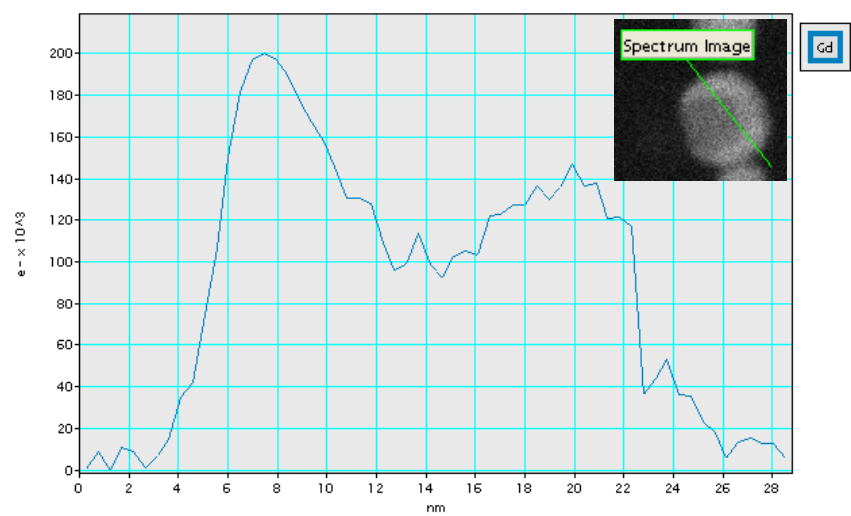












References for Supporting Information

- (1) Abel, K. A.; Boyer, J.-C.; van Veggel, F. C. J. M. Hard Proof of the NaYF₄/NaGdF₄ Nanocrystal Core/Shell Structure. *J. Am. Chem. Soc.* **2009**, *131*, 14644-14645.