Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary Information

Molecular Architecture Control in Synthesis of Spherical Ln-Containing Nanoparticles

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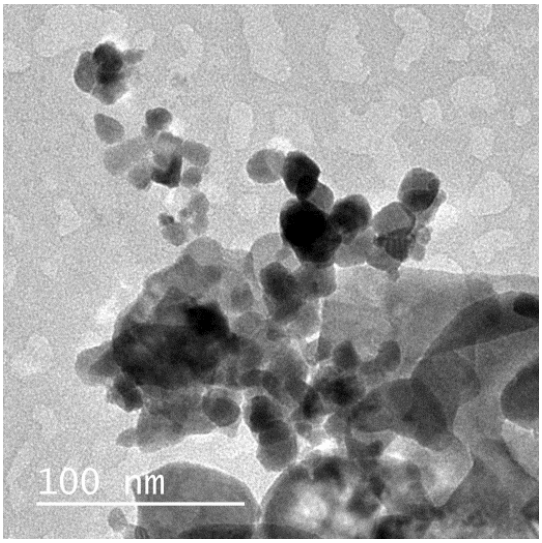

Figure S1. TEM image of solid $Ho_2O_2SO_4$ NPs obtained upon calcination of nanodroplets prepared in the presence of octadecane (Table 1, entry 1).

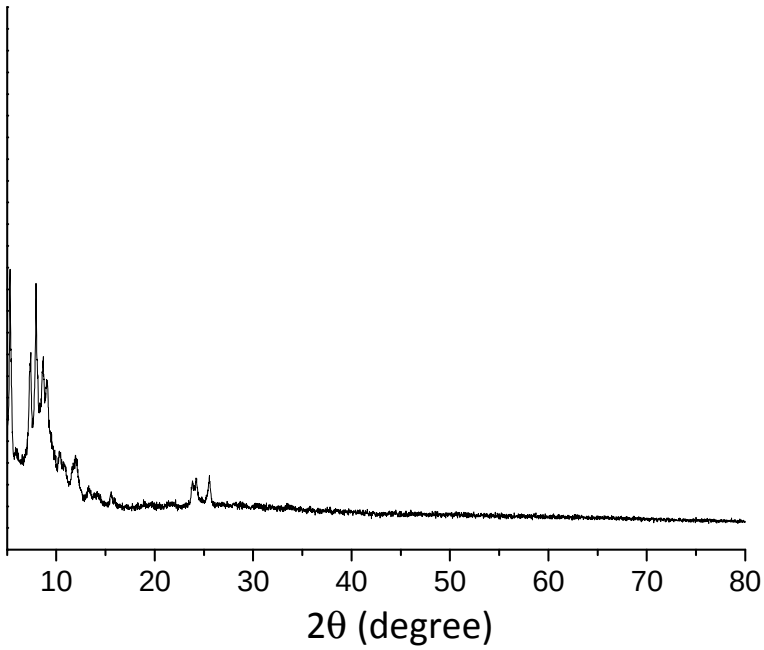

Figure S2. XRD pattern of dried Ho-nanodroplets before calcination.

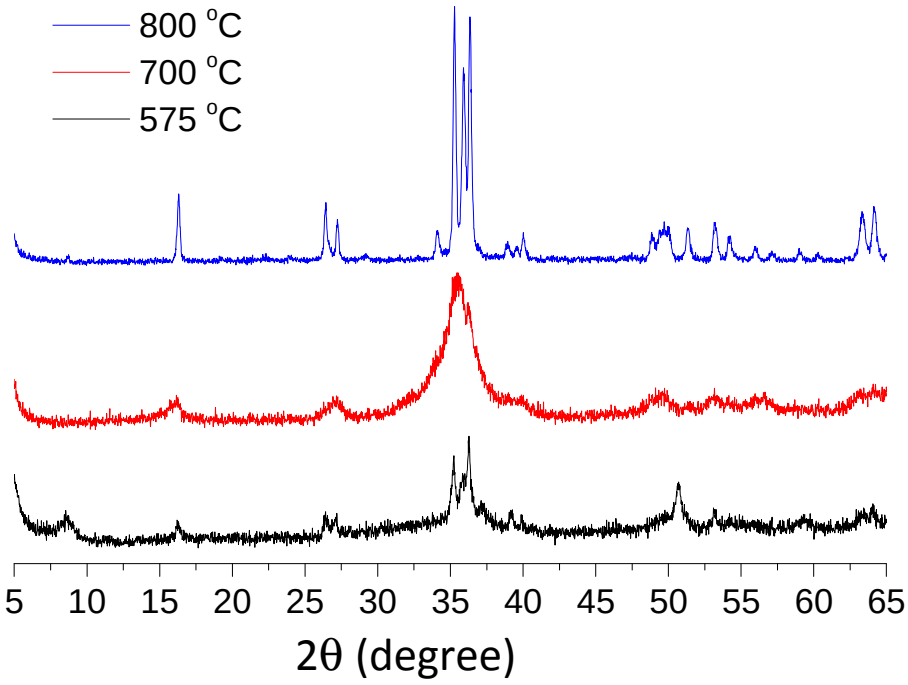

Figure S3. XRD patterns of Ho-containing species obtained upon calcination of nanodroplets at different temperatures. The evolution indicates the formation of solid $Ho_2O_2SO_4$ nanoparticles.

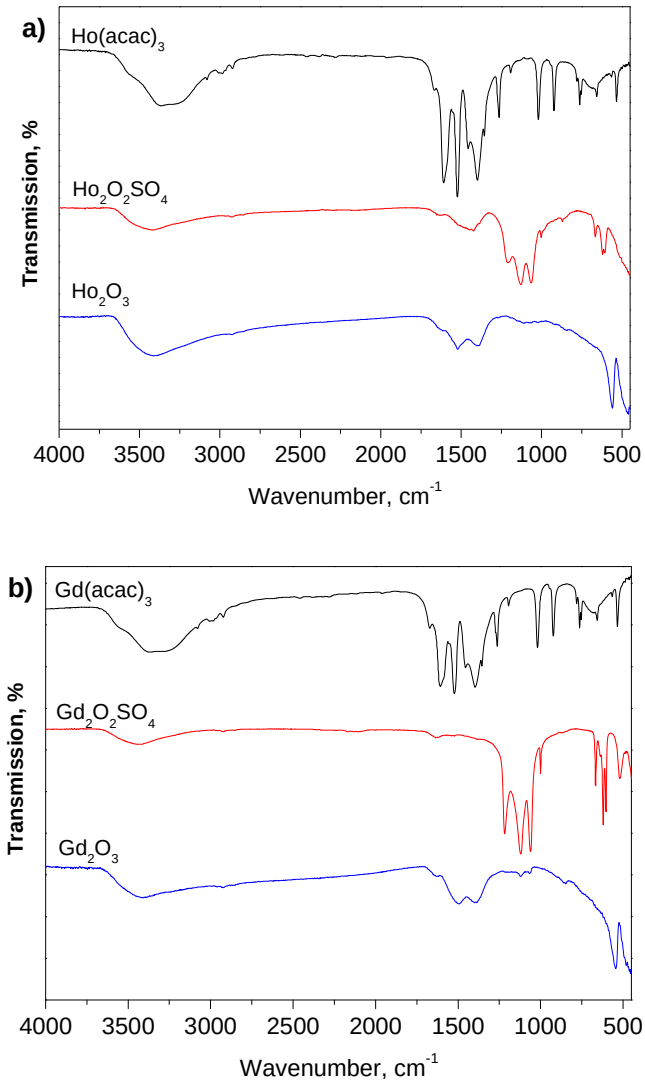

Figure S4. FTIR spectra of the starting material $Ln(acac)_3$ and obtained products $Ln_2O_2SO_4$ and Ln_2O_3 NPs. . Ln = Ho (a) or Gd (b).

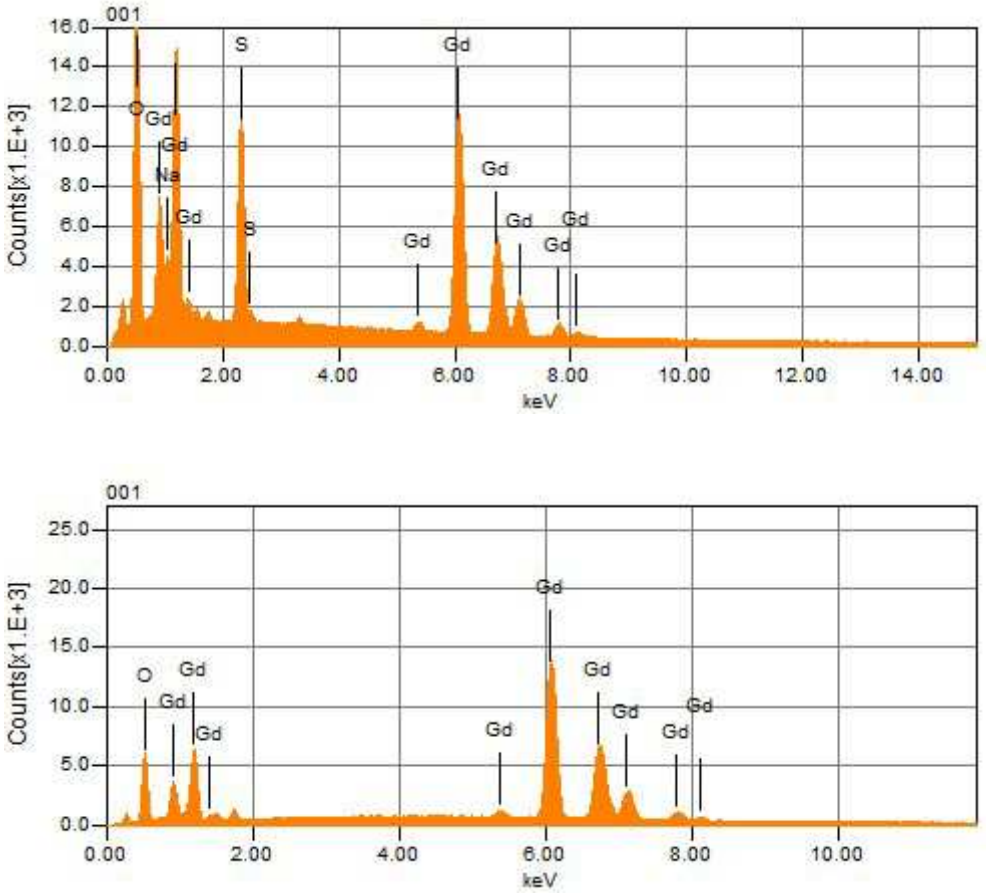

Figure S5. EDS of $Gd_2O_2SO_4$ (upper) and Gd_2O_3 (lower) NPs obtained after calcination.

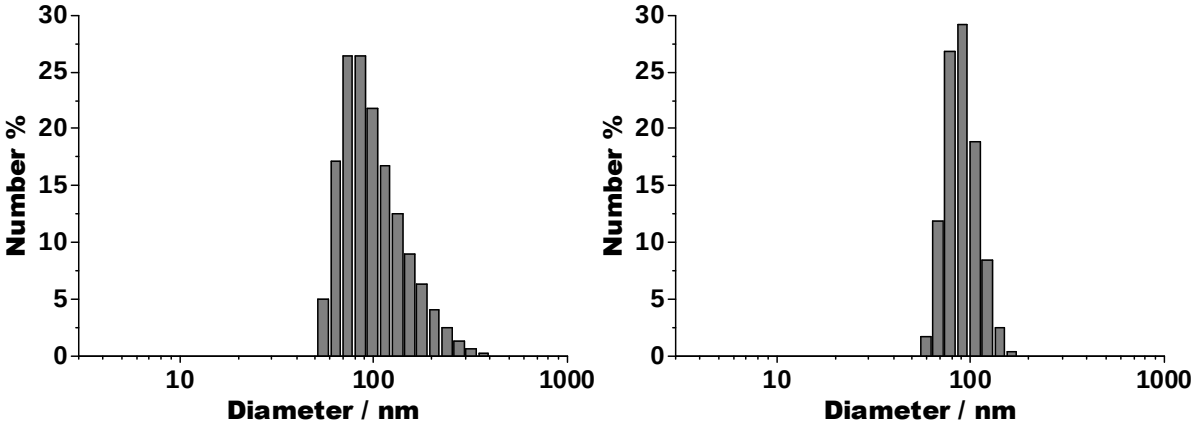

Figure S6. DLS measurements of the hydrodynamic radius of Ho-containing (*left*) and Gd-containing (*right*) nanodroplets prepared by using Brij® 35 as surfactant (Table 1, entries 8 and 10 respectively).