

Supporting Information

Site Selective Lanthanide Doping in a Nonanuclear Yttrium(III) Cluster Revealed by Crystal Structures and Luminescence Spectra.

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Table S1: Amount of lanthanide ion per doped cluster from XRD single crystal structure determinations and EDX analysis. The percentages given are for Ln / (Y + Ln) ratios.

Clusters	Simplified formula ^b	Ln (%) ^a		
		XRD ^b	EDX on single-crystals ^c	on powder
(1)	[Y _{7.34} Yb _{1.66}]	18.4	17.6	15.9
(2)	[Y _{7.02} Dy _{1.98}]	22.0	18.9	20.0
(3)	[Y _{7.05} Tb _{1.95}]	21.7	21.0	19.7
(4)	[Y _{8.77} Pr _{0.23}]	2.6	(*)	(*)
(5)	[Y _{8.60} Eu _{0.40}]	4.4	(*)	(*)
(6)	[Y _{8.02} Eu _{0.98}]	10.9	8.9	11.2
(7)	[Y _{6.08} Eu _{2.92}]	32.4	29.9	31.5
(8)	[Y _{4.65} Eu _{4.35}]	48.3	49.1	50.9

(a) Ln + Y=100%

(b) From XRD single crystal structure refinement of the site occupation.

(c) Average data collected on 10 single-crystals.

(*) due to the very low percentage of dopant Ln(III) element, EDS results were not significant and have not been included in the Table.

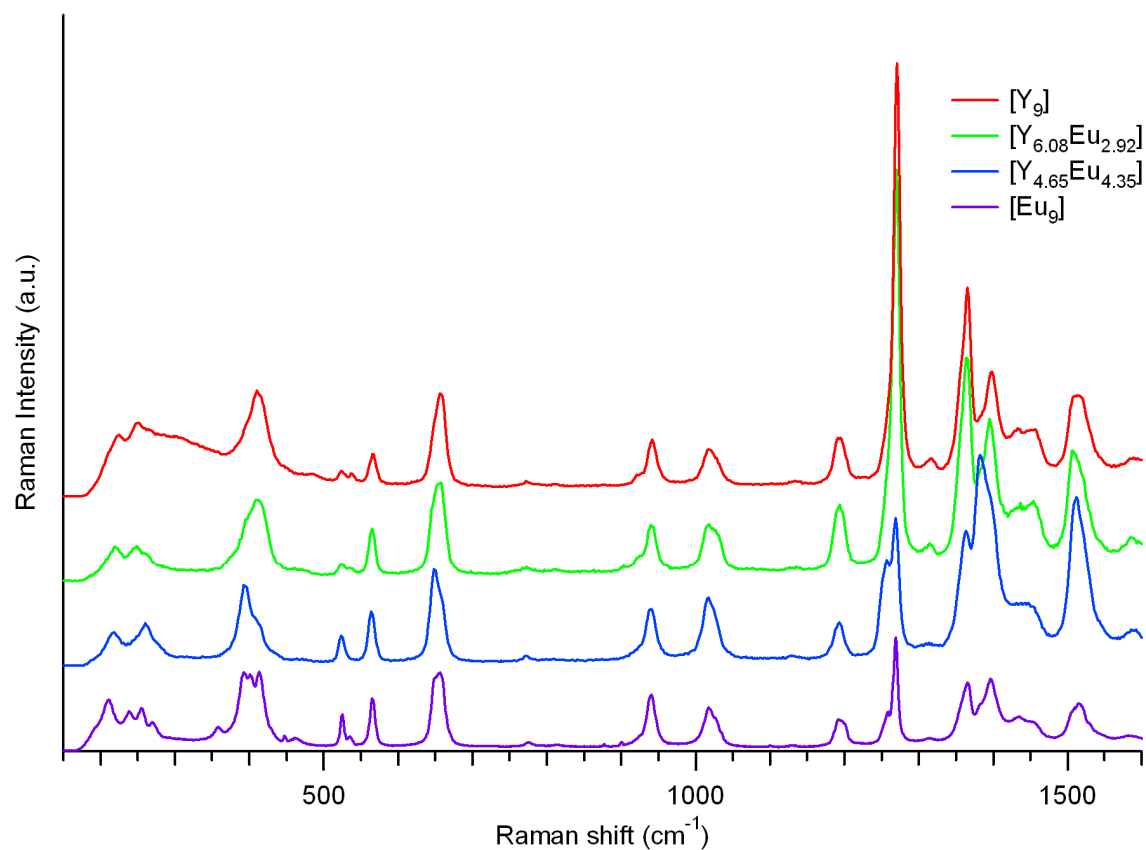


Figure S1: Raman spectra of [Y₉], [Y_{6.08}Eu_{2.92}], [Y_{4.65}Eu_{4.35}] and [Eu₉]. Raman spectra of the top three sample were acquired using a 488 nm excitation laser while a 785nm excitation source was used to obtain the [Eu₉] spectrum.