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Multimode high-sensitive optical $YVO_4:Ln^{3+}$ nanothermometers (Ln^{3+} = Eu^{3+}, Dy^{3+}, Sm^{3+}) using charge transfer band features

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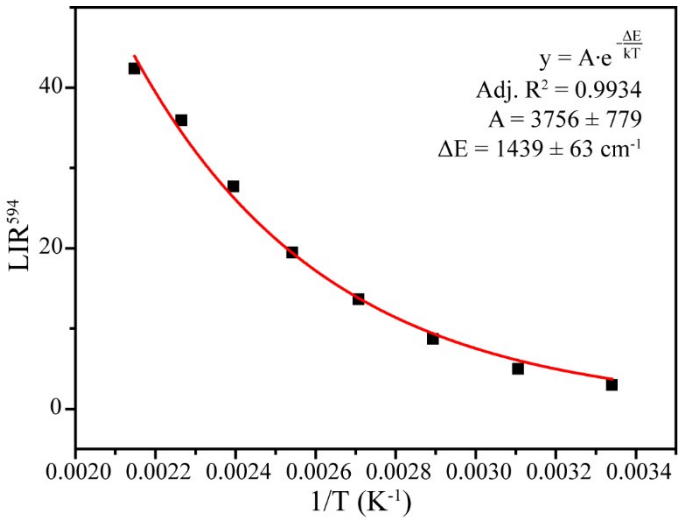

Figure S1. Evolution of LIR^{594} as a function of temperature for $YVO_4:Eu^{3+}$ 1 at.% nanoparticles.

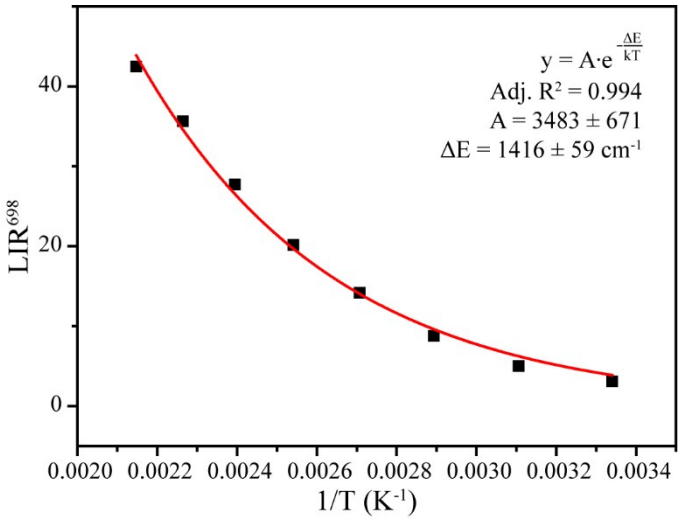

Figure S2. Evolution of LIR^{698} as a function of temperature for $YVO_4:Eu^{3+}$ 1 at.% nanoparticles.

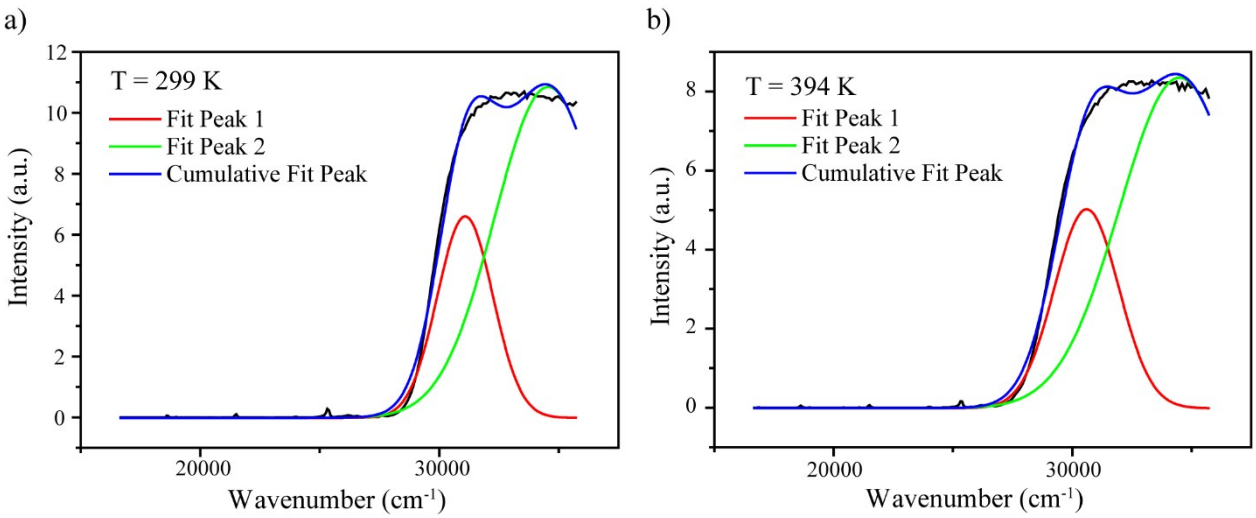

Figure S3. Deconvolution procedure of CTB of $YVO_4:Eu^{3+}$ 1 at.% nanoparticles a) T = 299 K and b) T = 394 K.

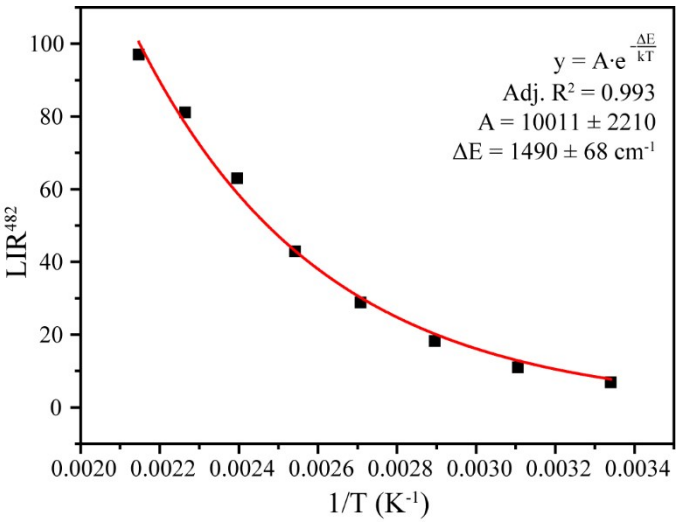

Figure S4. Evolution of LIR^{482} as a function of temperature for $YVO_4:Dy^{3+}$ 1 at.% nanoparticles.

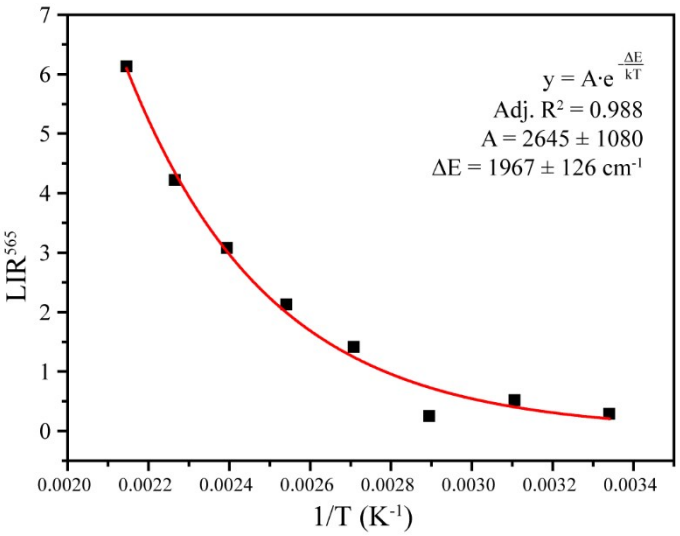

Figure S5. Evolution of LIR^{565} as a function of temperature for $YVO_4:Sm^{3+}$ 1 at.% nanoparticles.

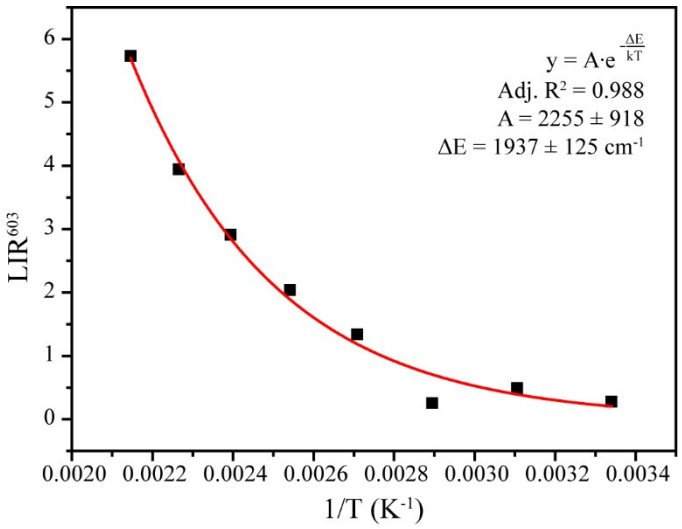

Figure S6. Evolution of LIR^{603} as a function of temperature for $YVO_4:Sm^{3+}$ 1 at.% nanoparticles.

Table S1. Comparison of LIR-based sensitivities calculated from different transitions for $YVO_4:Ln^{3+}$ (Ln^{3+} = Eu^{3+}, Dy^{3+}, Sm^{3+}) nanoparticles.

Material	**Transition**	**S_r (%K^{-1})@299K**
$YVO_4:Eu^{3+}$ 1 at.%	$^5D_0$–$^7F_1$ (594 nm)	2.31
	$^5D_0$–$^7F_2$ (619 nm)	2.23
	$^5D_0$–$^7F_4$ (698 nm)	2.27
$YVO_4:Dy^{3+}$ 1 at.%	$^4F_{9/2}$–$^6H_{15/2}$ (482 nm)	2.39
	$^4F_{9/2}$–$^6H_{13/2}$ (572 nm)	2.37
$YVO_4:Sm^{3+}$ 1 at.%	$^4G_{5/2}$–$^6H_{5/2}$ (565 nm)	3.16
	$^4G_{5/2}$–$^6H_{7/2}$ (603 nm)	3.11
	$^4G_{5/2}$–$^6H_{9/2}$ (646 nm)	3.09