Supporting Information

Correlation Between the Covalency and the Thermometric Properties of 

Yb$^{3+}$/Er$^{3+}$ Co-doped Nanocrystalline Orthophosphates

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Figure S1. The representative TEM images of REPO$_4$:Yb$^{3+}$, Er$^{3+}$ (RE; Y, Lu, La and Gd) nanocrystals: YPO$_4$:Yb$^{3+}$, Er$^{3+}$ (a, b); LuPO$_4$:Yb$^{3+}$, Er$^{3+}$ (c, d); LaPO$_4$:Yb$^{3+}$, Er$^{3+}$ (e, f); Gd PO$_4$:Yb$^{3+}$, Er$^{3+}$ (g, h)
Figure S2. The histograms of the nanoparticles’ size distributions of YPO$_4$:Yb$^{3+}$, Er$^{3+}$ (a); LuPO$_4$:Yb$^{3+}$, Er$^{3+}$ (b); LaPO$_4$:Yb$^{3+}$, Er$^{3+}$ (c); Gd PO$_4$:Yb$^{3+}$, Er$^{3+}$ (d)
Figure S3 The comparison of the FTIR spectra of the REPO₄:Yb⁺³, Er⁺³ (RE; Y, Lu, La and Gd) nanocrystals: YPO₄:Yb⁺³, Er⁺³ (a, b); LuPO₄:Yb⁺³, Er⁺³ (c, d); LaPO₄:Yb⁺³, Er⁺³ (e, f); Gd PO₄:Yb⁺³, Er⁺³ (g, h).
Figure S4. The ln(LIR) vs 1/T for YPO₄:Yb³⁺, Er³⁺; LuPO₄:Yb³⁺, Er³⁺; LaPO₄:Yb³⁺, Er³⁺; GdPO₄:Yb³⁺, Er³⁺