Supporting Information

Enhanced luminescence of Near-Infrared-Sensitized Upconversion Nanoparticles via Ca^{2+} doping for Nitric Oxide release platform

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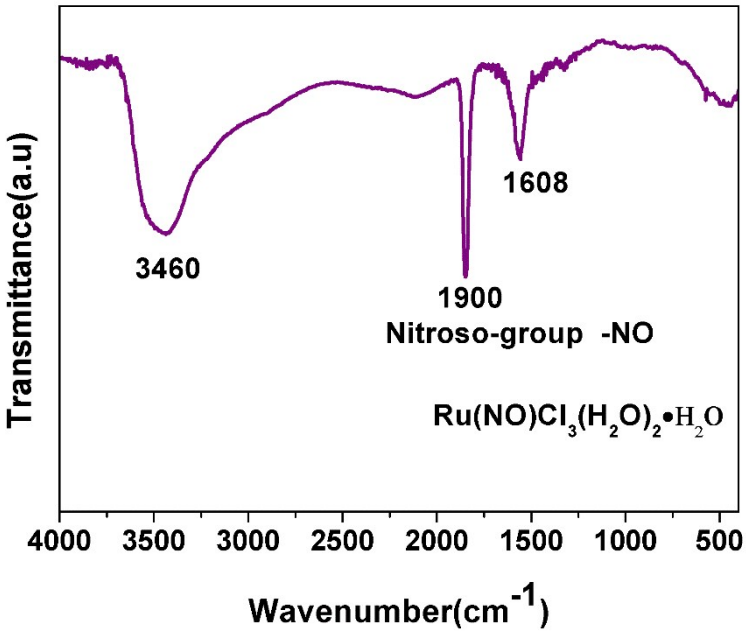

Figure. S 1. Infrared spectra of hydrated nitrosotrichlorosilane.

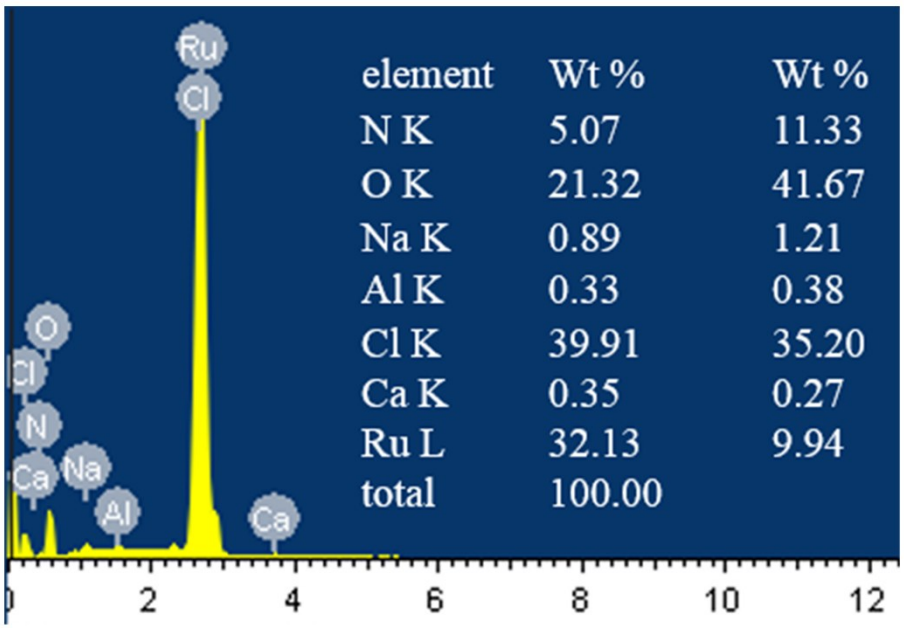

Figure. S 2 EDS energy spectrum and EDS element percentage of hydrated nitrosotrichlorosilane

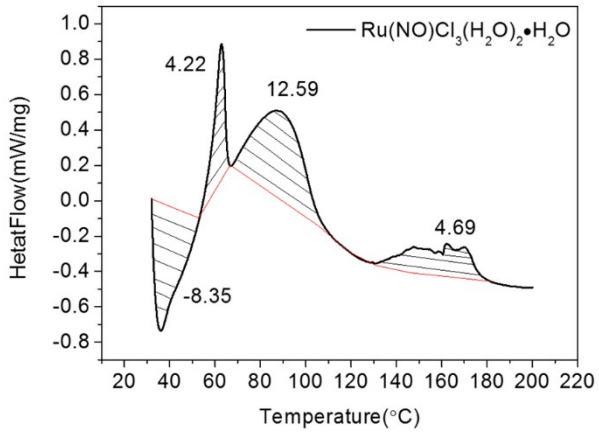

Figure. S 3 Differential thermal analysis of hydrated nitrosotrichlorosilane

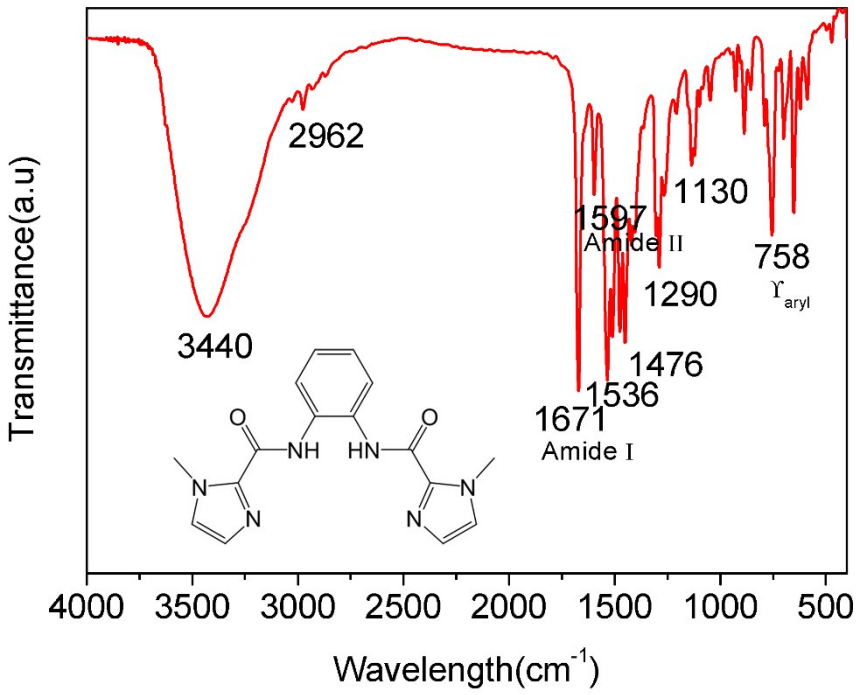

Figure. S 4 FTIR of N,N'-(1,2-Phenylene)bis(1-methyl-1H-imidazole-2-carboxamide) ligand

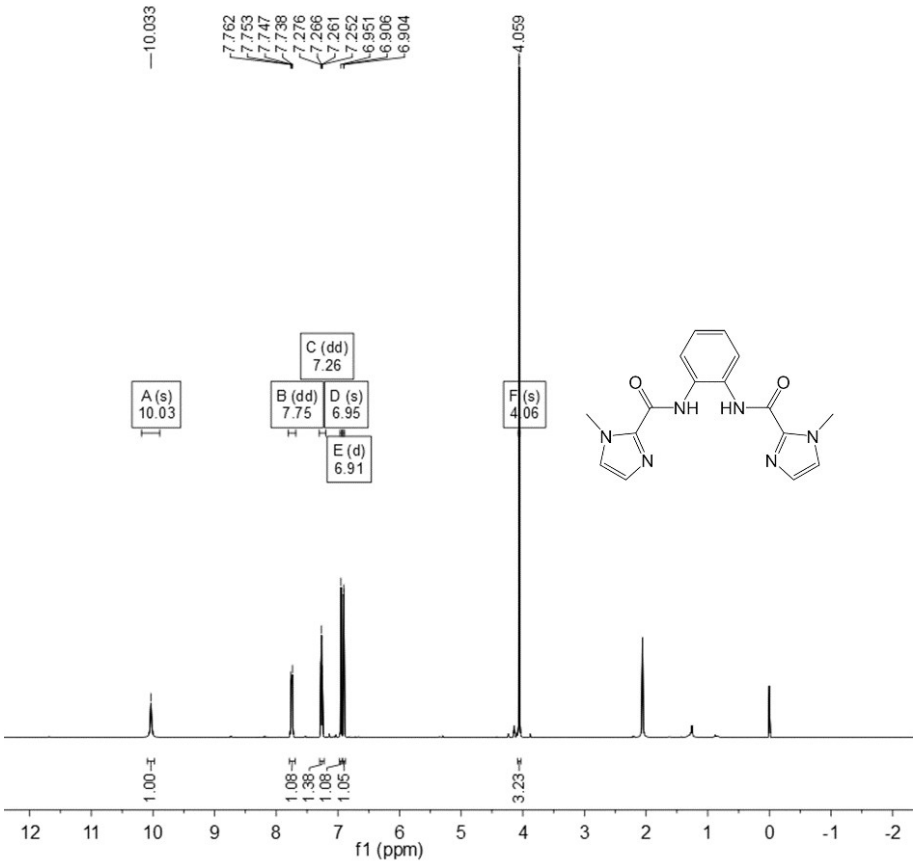

Figure. S 5 ^{1}H NMR spectra of N,N'-(1,2-Phenylene)bis(1-methyl-1H-imidazole-2-carboxamide) ligand

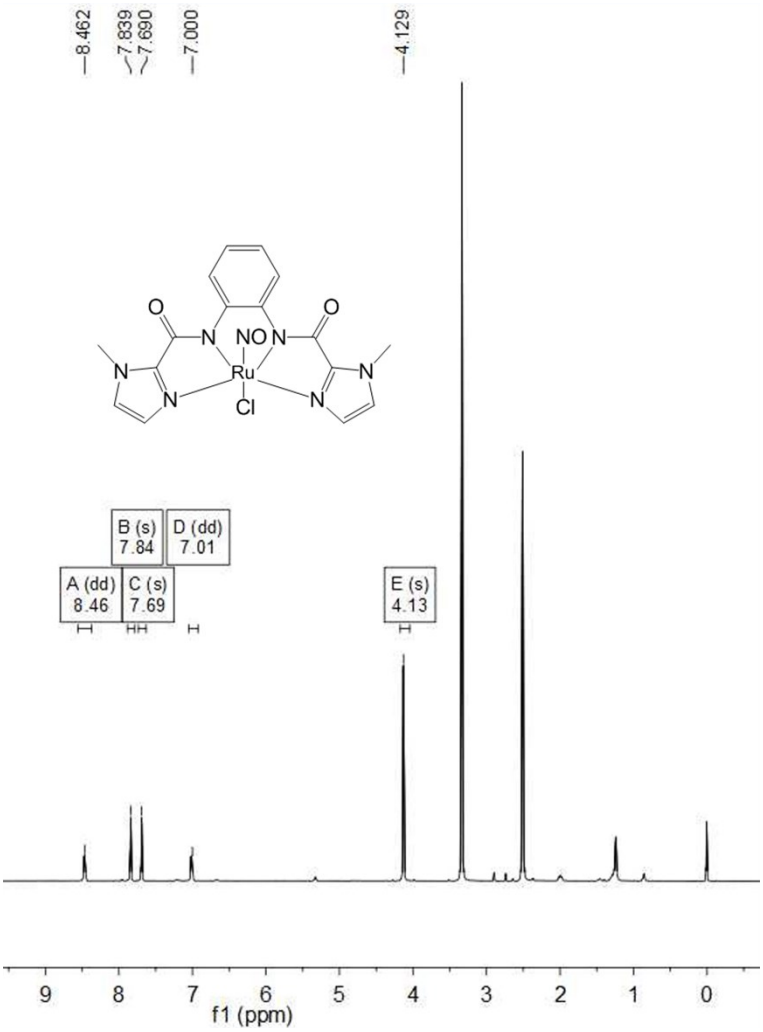

Figure. S 6 ^{1}H NMR spectra of nitrosyl complex [(3)Ru(NO)(Cl)]

Table S 1 The table shows the main fluorescence bands corresponding to the fluorescence spectrum. (The enhancement multiples of fluorescence is integrated in this article.)

wavelength / UCNPs	345 nm	365 nm	451 nm	475 nm
$NaYF_4$: Yb/Tm	0.05087	0.05087	0.10173	1.32255
$NaYF_4$:Ca/Yb/Tm	1.93296	9.10524	13.02203	302.15167
$NaYF_4$:Ca/Yb/Tm@NaGdF 4	9.25785	53.86846	82.96455	722.21375

Table S 2 Changes in pure $NaYF_4$, 30% Ca doped-$NaYF_4$, 30% Ca doped-$NaYF_4$ @ $NaGdF_4$ up-conversion luminous intensity ($^1G_4 \rightarrow {}^3H_6$) after integration.

wavelength / UCNPs	475 nm($^1G_4 \rightarrow {}^3H_6$)
$NaYF_4$: Yb/Tm	37.185
$NaYF_4$:Ca/Yb/Tm	4501.98795
$NaYF_4$:Ca/Yb/Tm@$NaGdF_4$	11265.19575