Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Host Sensitized Intense InfraredEmissions from Ln^{3+}-doped $GdVO_4$ Nanocrystals: Spanning from 950 nm to 2000 nm

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Table S1: Fractional co ordinates and lattice parameters used in the VESTA program are given below.

Space group I41/amd and Lattice parameter are, a=b=7.19 Å, c= 6.33 Å, α=90º , β=90º and λ=120º

Atom	Symbol	x	y	z	g	B
O	16h	0.000000	0.0646	0.1967	1.000	1
V	4b	0.000000	0.25	0.375	1.000	1
Gd	4a	0.000000	0.75	0.125	1.000	1

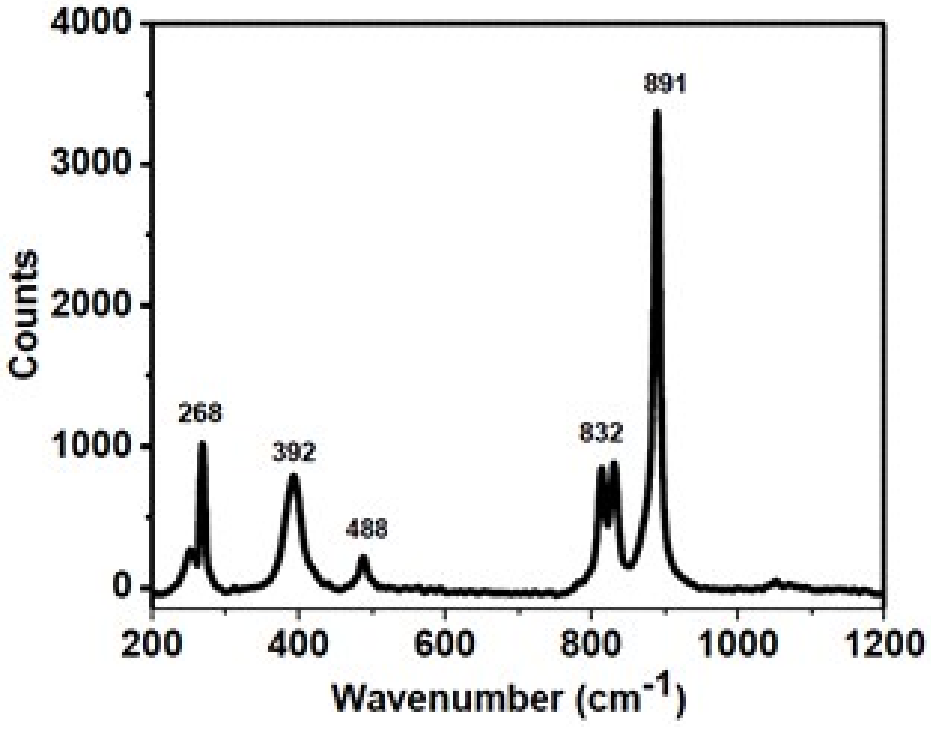

Fig. S1. Raman spectrum of PEI capped $GdVO_4$ nanocrystals.

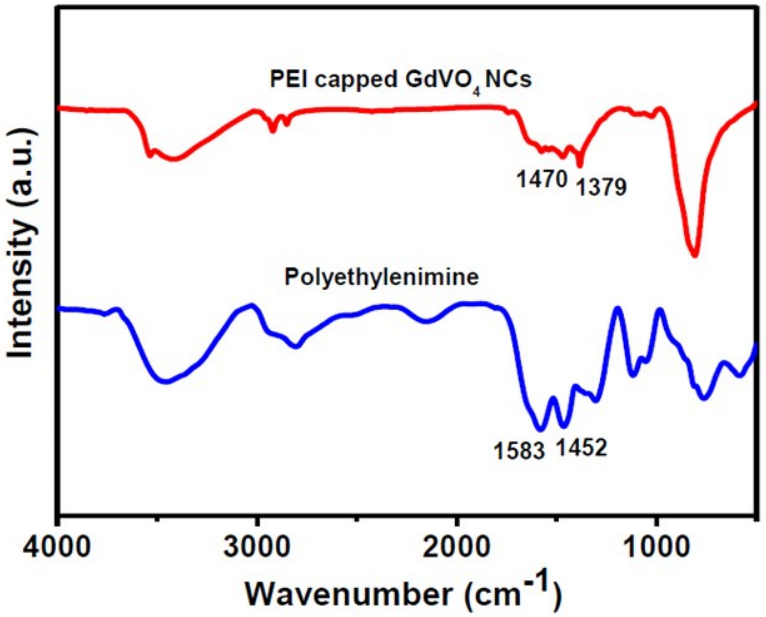

Fig. S2. FTIR spectra of polyethylenimine (PEI) and PEI capped $GdVO_4$ nanocrystals.

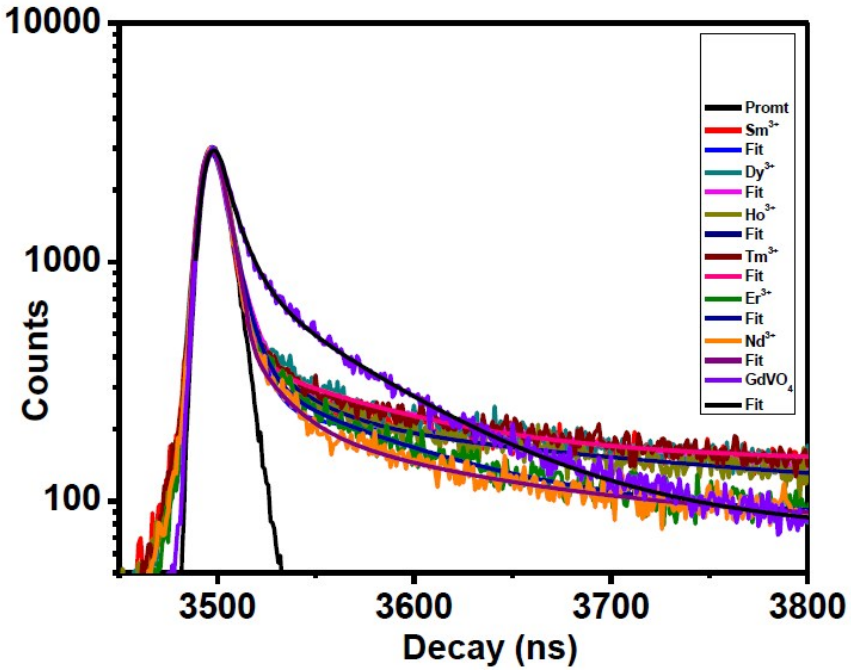

Fig. S3. The lifetime plots of VO_4^{3-} in absence and presence of different Ln^{3+} ions. The λ_{exi} **is** 280 nm and λ_{emi} is 410 nm.

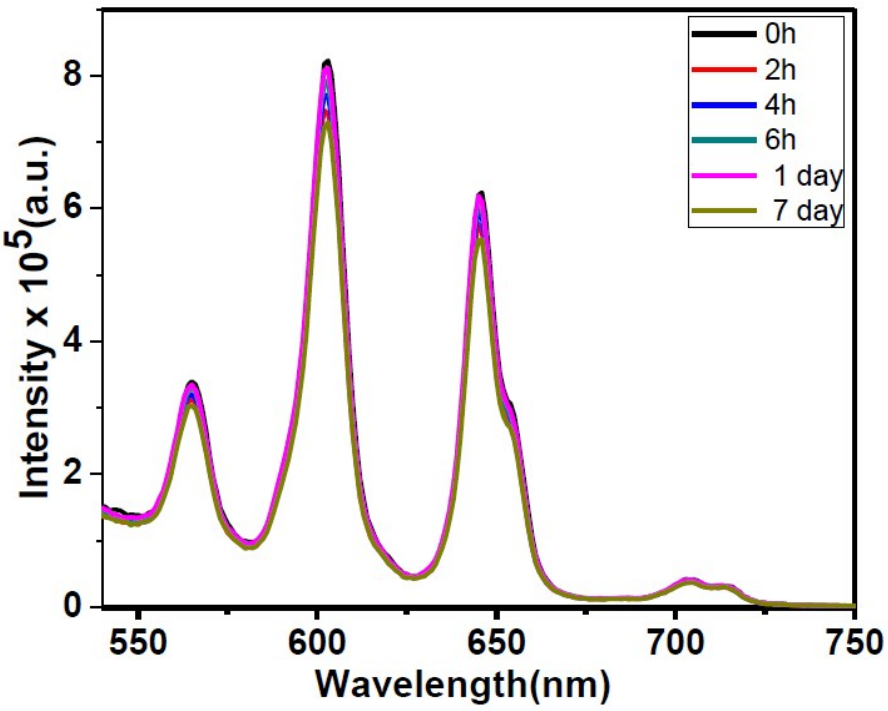

Fig. S4. PL spectra of PEI capped $GdVO_4$ nanocrystals in water indicating the high stability of disperson.

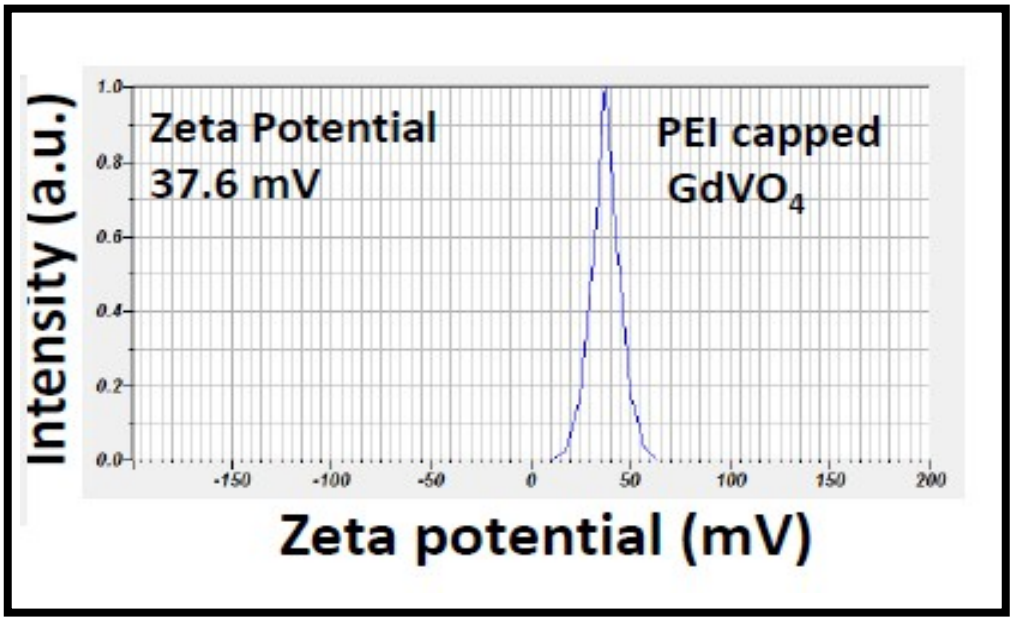

Fig. S5. Zeta potential of PEI capped $GdVO_4$ nanocrystals indicating the high surface charge of the nanocrystals.