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Role of alkali charge compensator in the luminescence: A case study with $CaWO_4:Nd^{3+}$ and $SrWO_4:Nd^{3+}$ scheelite

Debarati Das[1], Santosh .K. Gupta[1*], C.S. Datrik[2], P. Nandi[3], K. Sudarshan[1,4*]

[1]*Radiochemistry Division, Bhabha Atomic Research Centre, Mumbai-400085, India*

[2]*Product Development Section, Bhabha Atomic Research Centre, Mumbai-400085, India*

[3]*Glass and Advanced Ceramics Division, Bhabha Atomic Research Centre, Mumbai-400085, India*

[4]*Homi Bhabha National Institute, Anushaktinagar, Mumbai – 400094, India*

*To whom correspondence should be addressed. santoshg@barc.gov.in Tel.: +91-22-25590636 (SKG) and kathis@barc.gov.in Tel.: +91-22-25590737 (KS)

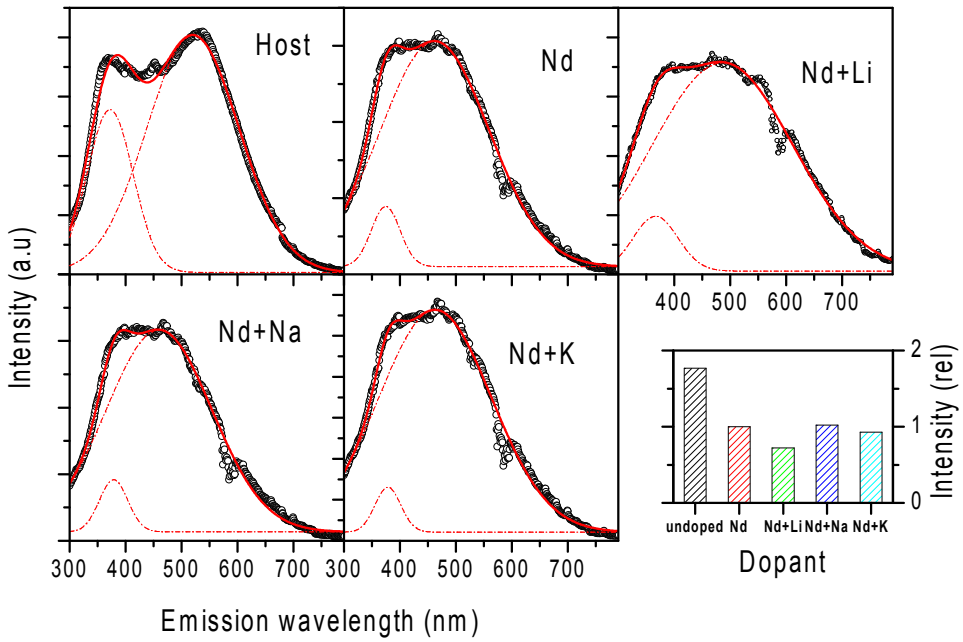

Figure S1. Deconvoluted emission spectra (λ_{ex}=250 nm) of undoped and doped $CaWO_4$ along with histogram showing variation in relative emission intensity.

Table S1. Summary of the visible emission data fitted to two peaks in undoped and doped $CaWO_4$ samples with λ_{ex} = 250nm

	Peak 1			Peak 2		
Dopant in $CaWO_4$	Centroid (nm)	FWHM(nm)	Intensity (%)	Centroid (nm)	FWHM(nm)	Intensity (%)
Undoped	372 ±0.4	96±1	25.4±0.5	520 ±0.6	193±2	74.6±0.7
Nd^{3+}	374±0.5	60±2	6.6±0.3	462±0.7	227±2	93.4±0.8
Nd^{3+}+ Li^{+}	367±1	93±6	8±1	486±3	293±6	92±3
Nd^{3+}+ Na^{+}	379±1	60±2	6.5±0.4	460±1	220±2	93.4±0.9
Nd^{3+}+ K^{+}	379±1	54±3	4.4±0.3	463±1	235±2	95.5±0.8

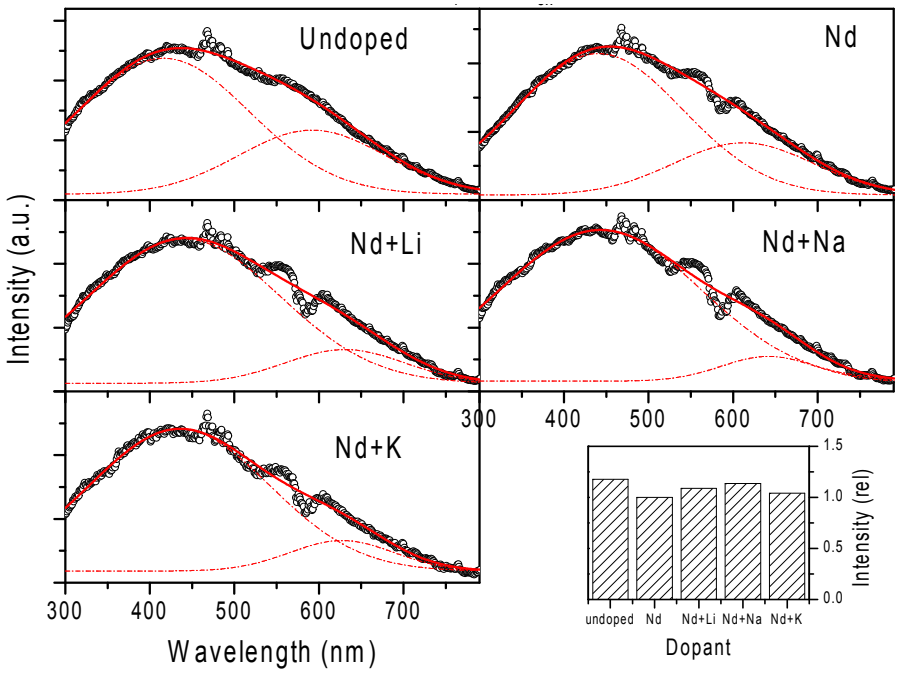

Figure S2. Deconvoluted emission spectra (λ_{ex}=250 nm) of undoped and doped $SrWO_4$ along with histogram showing variation in relative emission intensity.

Table S2. Summary of the visible emission data fitted to two peaks in undoped and doped $SrWO_4$ samples with λ_{ex} = 250nm

	Peak 1			Peak 2		
Dopant in $SrWO_4$	Centroid (nm)	FWHM(nm)	Intensity (%)	Centroid (nm)	FWHM(nm)	Intensity (%)
Undoped	416±6	237±7	71±4	592 ±8	203±9	29±5
Nd^{3+}	440±5	233±5	77±3	612±8	193±2	23±4
Nd^{3+}+ Li^{+}	441±3	264±6	87±2	631±5	165±12	13±2
Nd^{3+}+ Na^{+}	443±1	278±5	93±2	642±3	130±10	7±1
Nd^{3+}+ K^{+}	435±2	248±4	89±2	627±4	145±9	11±1

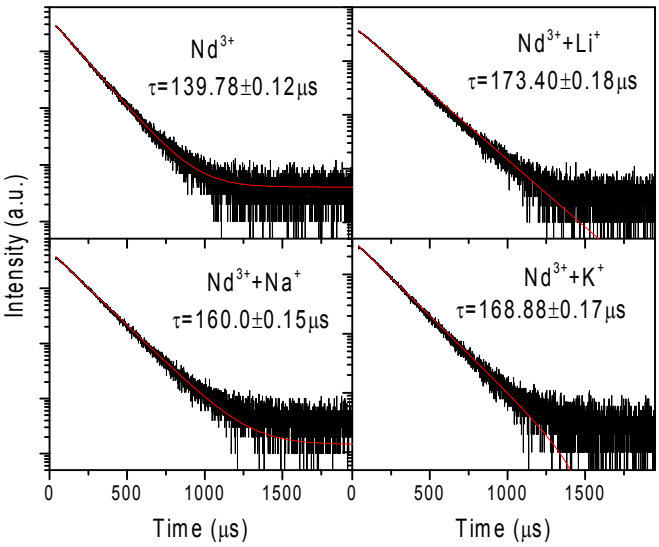

Figure S3. PL lifetime spectra in alkali doped $CaWO_4:Nd^{3+}$ for emission of 1056nm with excitation at 583 nm.

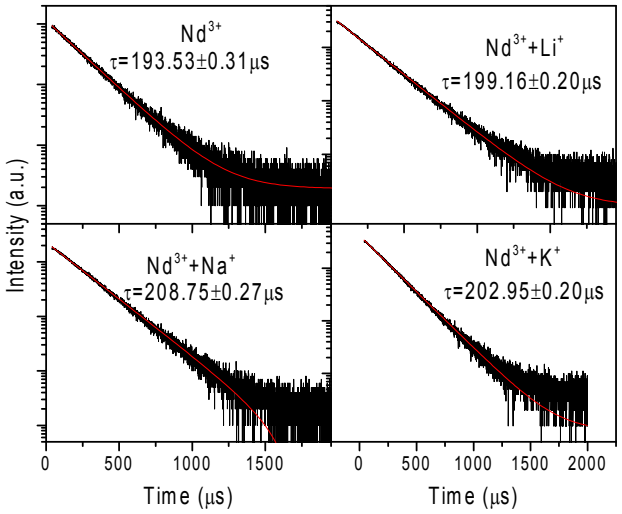

Figure S4. PL lifetime spectra in alkali doped $SrWO_4:Nd^{3+}$ for emission of 1056 nm with excitation at 583 nm.