band edge excitations, four sites were divided into three groups: a)sites A and B could only be excited by 4f excitation; b)site D could only be excited by band edge excitation; c) site C could be excited by both 4f and band edge exictations.

We measured emission spectra of sites A, B and C at five temperature points in the range of 10K to 77K. Some new lines appear as the temperature increases. For site A there are five lines, peaked at 20355, 20348, 20313, 20271 and 20260 cm^{-1}; for site B two lines, 20407, and 20389 cm^{-1}; for site C four lines, 20381, 20376, 20362 and 20351 cm^{-1}. As expected from Boltzmann distribution at different temperatures, the new lines were assigned to transitions from the higher Stark levels of $^5F_3$.

Time resolved spectra of $^5F_3$ fluorescence were measured at 10K. From the obtained spectra, it is estimated that the transition probabilities of sites D, B, C are about 3×10^4, 1×10^4 and $4 \times 10^3 s^{-1}$ respectively. This shows that sites D, B and C are with different ligand environments.

We prepared a group of samples doped with 10^{-4} mol/mol Ho and codoped with 3.5×10^{-3} - 1×10^{-4} mol/mol Li. It is found that the ratios of emission intensities from sites C and B to that from site A obviously increase with Li concentration. As an example, the ratios in the sample with 3.5×10^{-3} Li increase by 60% as compared with that in the sample with 3.5×10^{-4} Li. It indicates that sites B and C might be associates formed by Ho ion and Li ions, while site A might be a center that is hardly concerned with Li ions.

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