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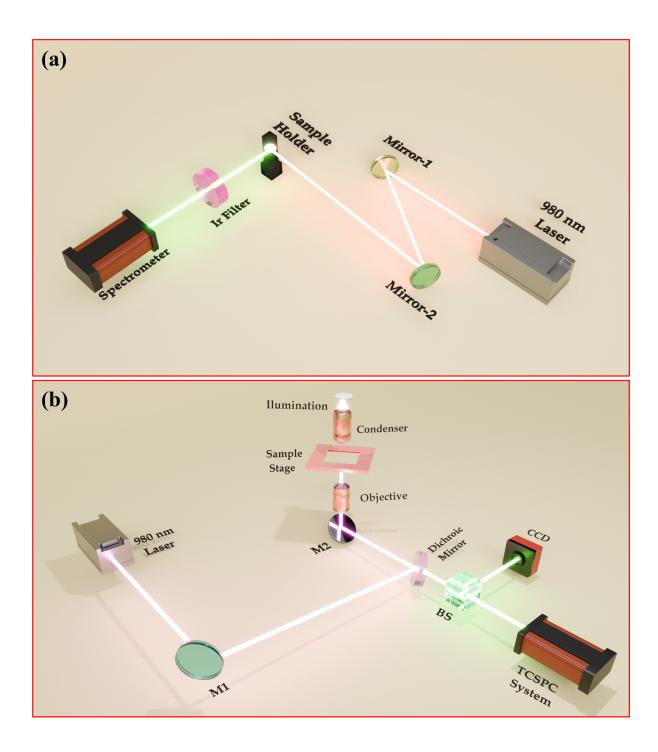


Fig.S1(a) Schematic representation of experimental set up used to obtain the upconversion emission spectrum and (b) optical tweezers setup used to obtain the decay lifetime data.

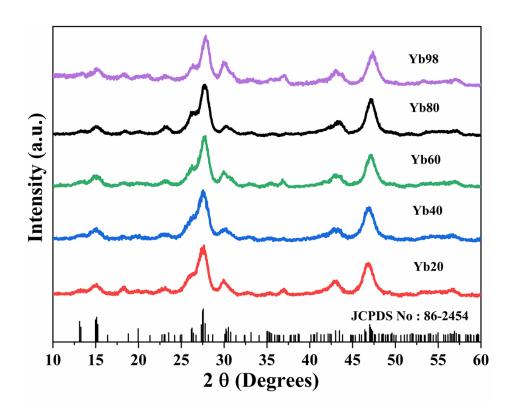


Fig-S2: X-ray diffraction pattern of RbY_2F_7 of varying Yb concentration from 20% to 98%

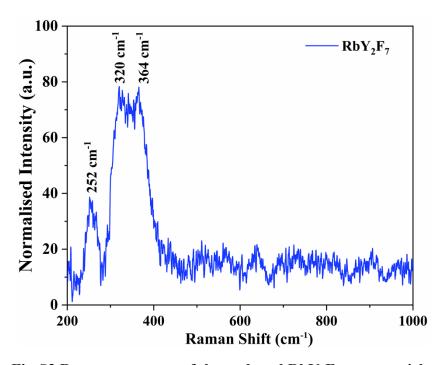


Fig-S3 Raman spectrum of the undoped RbY₂F₇ nanoparticles

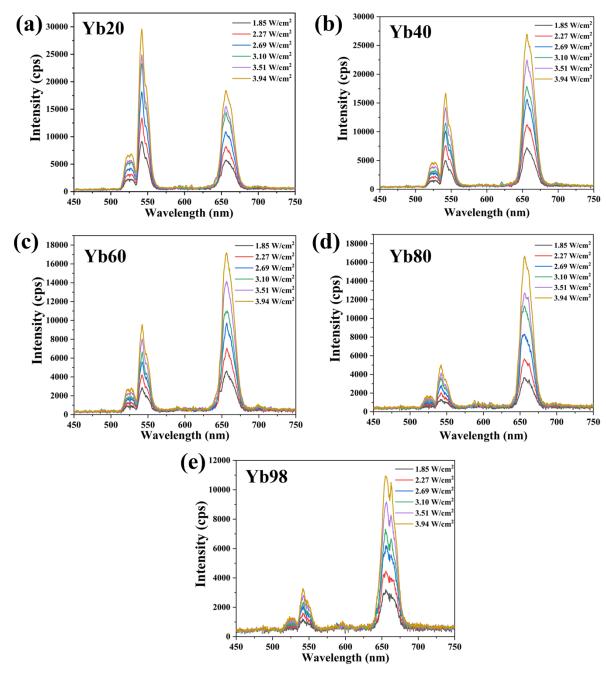


Fig-S4: Power dependent upconversion emission spectrum of RbY₂F₇ of varying Yb concentration from 20% to 98%