

Supplementary information

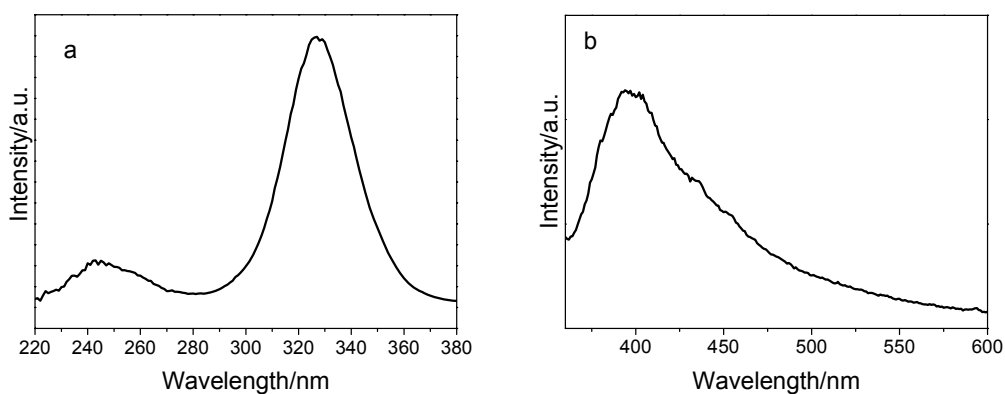


Fig.S1 Excitation (a) and emission (b) spectra of **IL-2**

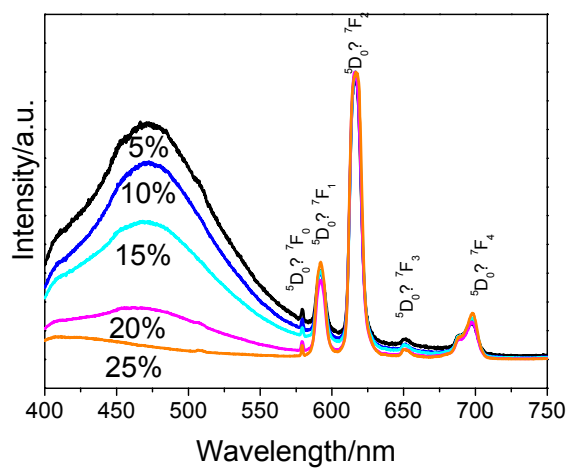


Fig. S2 Emission spectra of Eu/IL-2 , the spectra were recorded at room temperature by excitation at 350nm.

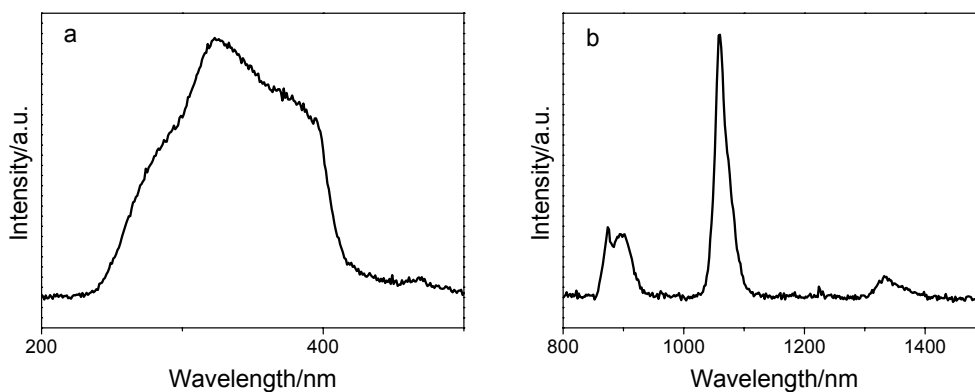


Fig. S3 Excitation (a) and emission spectra (b) of **Nd-TTA/IL-2**. The excitation spectrum was obtained by monitoring at 1064nm and the emission spectrum was obtained by excitation at 324nm.

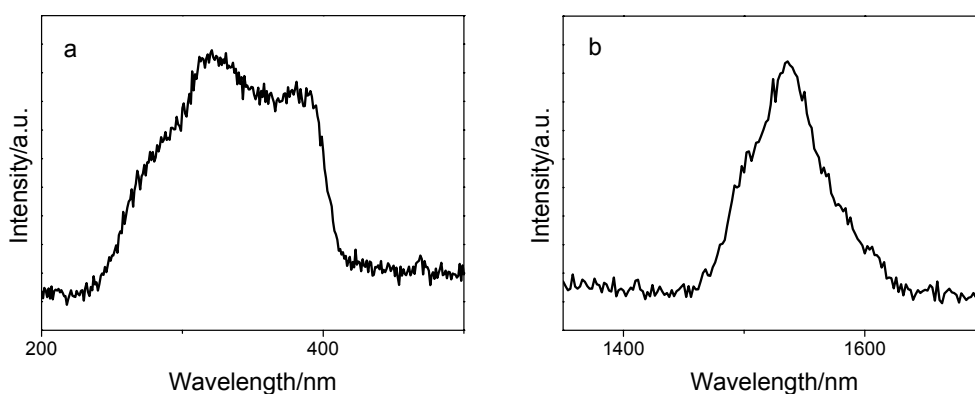


Fig. S4 Excitation (a) and emission spectra (b) of **Er-TTA/IL-2**. The excitation spectrum was obtained by monitoring at 1542nm and the emission spectrum was obtained by excitation at 324nm.