

Supporting information for:

Self-aggregation of fluorophore-triphenylamine nanostructures with tunable luminescent properties: effect of acidity and rare earth ions

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Contents:

1. Selected bond lengths [\AA] and angles [$^\circ$] for **L**;
2. The packing structure of the crystal **L**;
3. SEM images of **L** nanostructures prepared in pH = 4;
4. SEM images of nanostructures of **L** with the excess concentration of Tm^{3+} ;
5. SEM images of hexagonal prisms nanostructures when the Yb^{3+} was added to acidic aqueous solution of pH = 3.
6. XRD patterns of **L** nanorods and **L**-RE nanohybrids, respectively.

Table S1 Selected bond lengths (\AA) and angles ($^\circ$) for of **L**

N(1)-C(13)	1.356(12)	C(21)-O(1)	1.301(11)
N(1)-C(6)	1.410(8)	C(21)-O(2)	1.178(12)
N(1)-C(13)	1.356(12)	C(13)-C(14)	1.351(12)
C(18)-C(19)	1.399(12)	C(13)-C(15)	1.393(13)
C(19)-C(20)	1.286(12)	C(7)-C(8)	1.356(12)
C(20)-C(21)	1.433(14)	C(1)-C(6)	1.371(11)
C(7)-N(1)-C(13)	122.6(6)	C(6)-N(1)-C(7)	117.4(7)
C(6)-N(1)-C(13)	119.2(7)	C(18)-C(19)-C(20)	129.3(9)
C(19)-C(20)-C(21)	121.0(9)	O(2)-C(21)-O(1)	120.9(9)

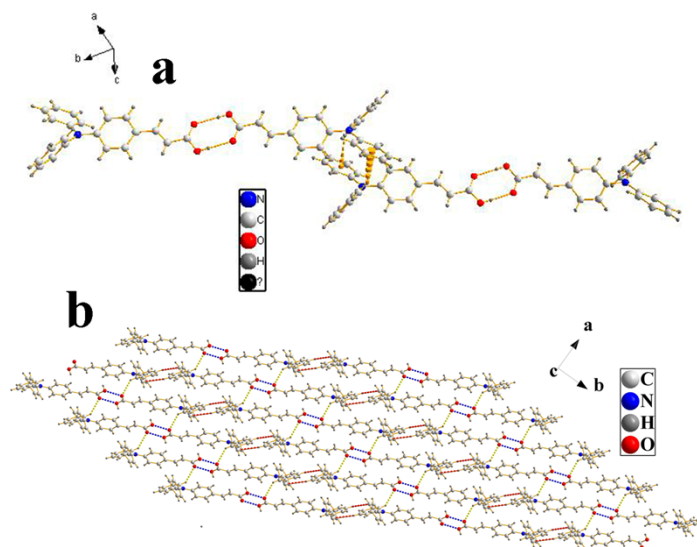


Fig. S1. (a) the packing structure of L through C-H...C weak interactions, (b) the supramolecular self-assembly packing diagram.

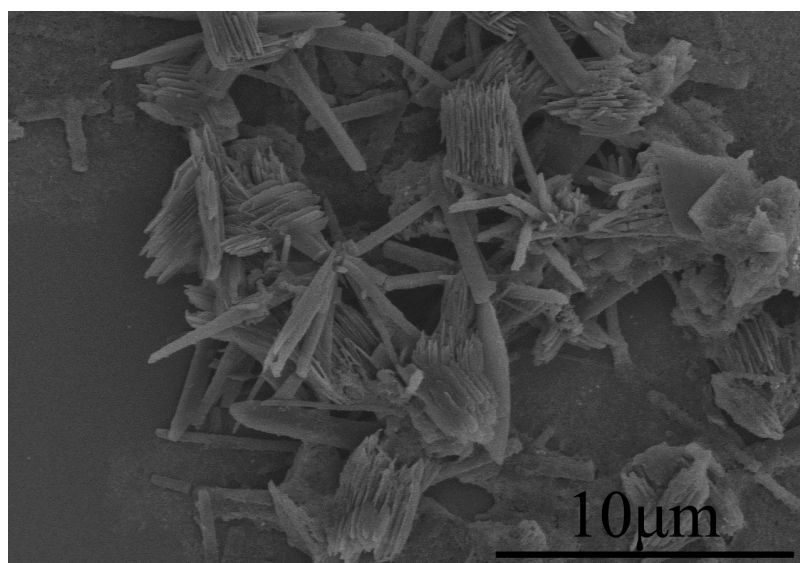


Fig. S2 SEM images of L nanostructures prepared in pH = 4

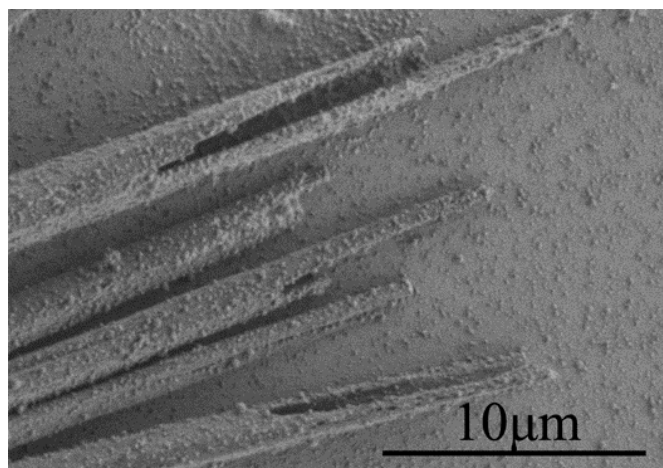


Fig.S3 SEM images of nanostructures of **L** with the excess concentration of Tm^{3+} .

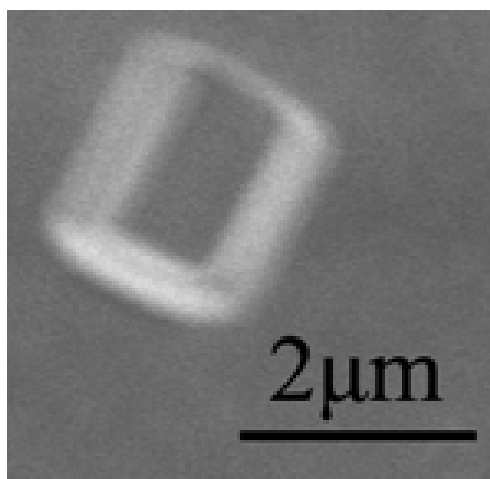


Fig.S4 SEM image of hexagonal prisms nanostructures when the Yb^{3+} was added to acidic aqueous solution of $\text{pH} = 3$.

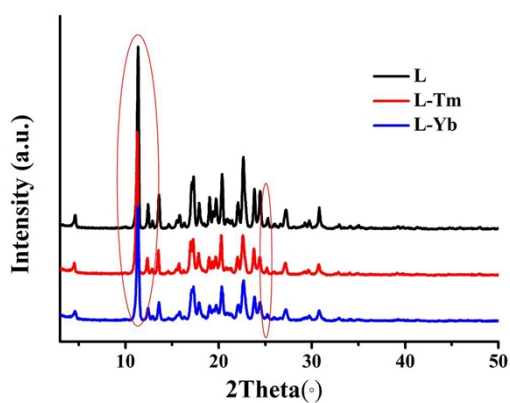


Fig.S5 XRD patterns of **L** and **L-RE** hybrids.