**Supporting Information**

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Photoluminescent and Cytotoxic Properties of Multinuclear Complexes and Multinuclear-based Polymers with Group 12 Metals and Tripodal Ligand

Jin’an Zhao,*a Kun Peng,b Yan Guo,b Jin Zhang,b Shufang Chen,a and Jiyong Hu*a

**Fig. S1** The structure of I presented as thermal ellipsoid model.

**Fig. S2** View of 3D supramolecular structure of I stabilized by hydrogen-bonding and π–π interactions (Symmetry codes: A:3-y, 2/3+x-y, -1/3+z; 1-x,1-y,1-z).
**Fig. S3** The coordination environment of 2 presented as thermal ellipsoid model.

**Fig. S4** View of 3D supramolecular structure of 2 stabilized by hydrogen-bonding and π···π interactions (Symmetry codes: A 4/3-y, 2/3+x-y, -1/3+z; B 5/3-x, 4/3-y, 4/3-z; C 2-y, 1+x-y, z; D 5/3-x,4/3-y,4/3-z).

**Fig. S5** The structure of 3 presented as thermal ellipsoid model.
**Fig. S6** The tetranuclear framework of complex 4 (all hydrogen atoms are omitted for clarity).

**Fig. S7** The structure of 4 presented as thermal ellipsoid model.

**Fig. S8** View of 3D supramolecular structure of 3 stabilized by hydrogen-bonding and π···π interactions (Symmetry codes: ^2/3-y, 1/3+x-y, 1/3+z; 1-x, 1-y, 1-z).
Fig. S9 (a) The TG and DSC curves of complex 1 with solvent molecular; (b) The TG and DSC curves of complex 1 without solvent molecular.

Fig. S10 (a) The TG and DSC curves of complex 2 with solvent molecular; (b) The TG and DSC curves of complex 2 without solvent molecular.

Fig. S11 The photoluminescence emission spectra of ligand tpbb (λex = 349 nm) in the solid state at 298 K and cryogenic temperatures.
Fig. S12 ESI-MS spectrum of complex 1.