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## **ACCEPTED MANUSCRIPT**

### A series of near-infrared rare earth metal-organic frameworks based

#### on a ketone functionalized aromatic tricarboxylate ligand

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#### Abstract

Three porous lanthanide metal-organic frameworks (Ln-MOFs)  $[Ln(BCB)(DMF)] \cdot (DMF)_m(H_2O)_n$ (Ln= Yb<sup>3+</sup> (1), Er<sup>3+</sup> (2), Dy<sup>3+</sup> (3), DMF = N, N'-dimethylformamide) have been successfully prepared using 4,4',4"-benzenetricarbonyltribenzoic acid (H<sub>3</sub>BCB) as organic linkers. X-ray diffraction analysis reveals that these ketone group decorated complexes are isostructural, and each form a three-dimensional structure possessing two types of one-dimensional channels along the *c* axis. Moreover, the near-infrared luminescence properties of the three complexes were also investigated. *Keywords*: Metal-organic framework; 4,4',4"-benzenetricarbonyltribenzoic acid (H<sub>3</sub>BCB); Crystal structure; One-dimensional channel; Near-infrared luminescence Download English Version:

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