## Electronic supplementary information (ESI)

## Thiadiazole-functionalized Pb(II)-MOF for "Turn-on" Fluorescence Selective Sensing of Al<sup>3+</sup>

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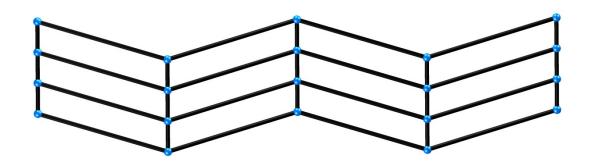


Fig. S1 Schematic representation of the (4,2)-connected net of Pb-BTDB

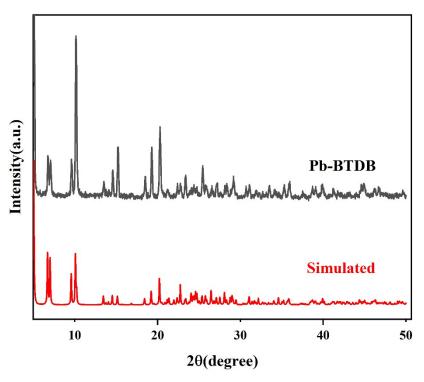


Fig. S2 PXRD pattern of Pb-BTDB

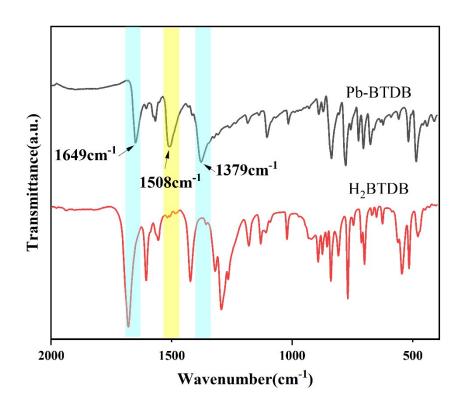


Fig. S3 FT-IR spectra of Pb-BTDB and H<sub>2</sub>BTDB ligand

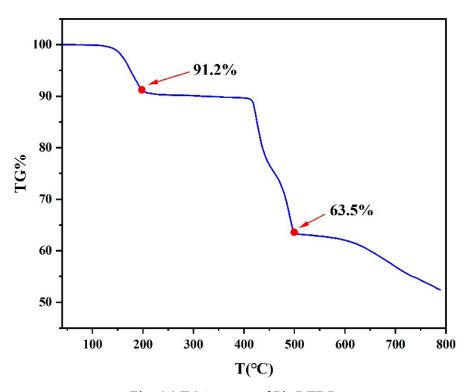


Fig. S4 TGA curve of Pb-BTDB

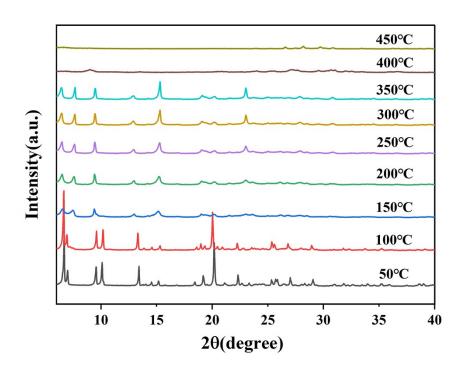


Fig. S5 Variable-temperature PXRD patterns of Pb-BTDB

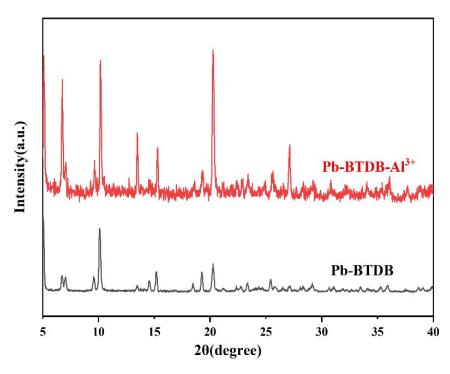


Fig. S6 PXRD patterns of Pb-BTDB before and after treatment with Al<sup>3+</sup>

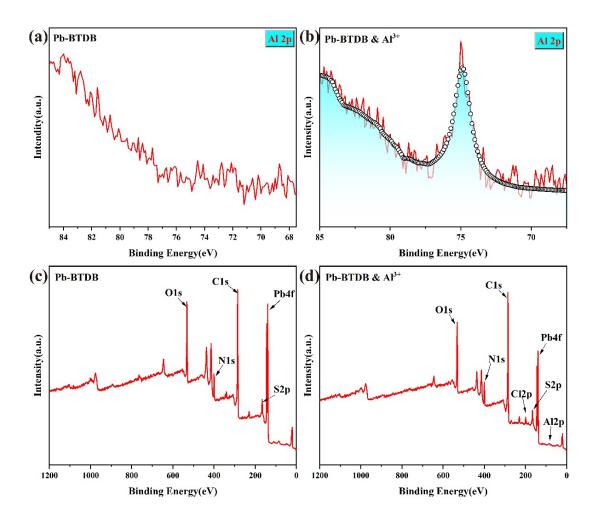


Fig. S7 XPS spectra of Al 2p (a)(b) and survey (c)(d) for Pb-BTDB before and after treatment with  $Al^{3+}$