Synthesis, characterization and photoluminescent properties of Zn-based mono-and hetero-MOFs containing the R-isophthalate (R = methyl or tertbutyl) ligands

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Electronic Supplementary Information (ESI)
ESI. 1 Diverse coordination modes of the mip and tbip ligands. For each carboxylate group: (a) $\mu_1$-$\eta^1$-$\eta^0$-monodentate and $\mu_2$-$\eta^1$-$\eta^1$-bis-monodentate mode; (b-e) $\mu_2$-$\eta^1$-$\eta^1$-bis-monodentate mode.

ESI. 2 Four Zn-based cluster SBUs. (a) 10-connected cluster SBU Zn$_4$(COO)$_{10}$ for Zn-mip; (b) 10-connected cluster SBU Zn$_2$Mg$_2$(COO)$_{10}$ for ZnMg-mip; (c) 11-connected cluster SBU Zn$_6$O$_5$(COO)$_{11}$ for Zn-tbip; (d) 7-connected cluster SBU Zn$_2$Ba(COO)$_7$ for ZnBa-tbip.
ESI. 3 TG-DTA for MOF Zn-mip.

ESI. 4 TG-DTA for MOF ZnMg-mip.
ESI. 5 TG-DTA for MOF Zn-tbip.

ESI. 6 TG-DTA for MOF ZnBa-tbip.
**ESI. 7** The XRPD patterns of the simulated and as-synthesized MOFs for Zn-mip.

**ESI. 8** The XRPD patterns of the simulated and as-synthesized MOFs for ZnMg-mip.
ESI. 9 The XRPD patterns of the simulated and as-synthesized MOFs for Zn-tbip.

ESI. 10 The XRPD patterns of the simulated and as-synthesized MOFs for ZnBa-tbip.
**ESI. 11** The excitation spectrum for **Zn-mip**

**ESI. 12** The excitation spectrum for **ZnMg-mip**
ESI. 13 The excitation spectrum for Zn-tbip

ESI. 14 The excitation spectrum for ZnBa-tbip
**ESI. 15** The emission spectra excited at 315 nm for the free ligands H₂mip and H₂tbip.

**ESI. 16** FT-IR spectrum for MOF Zn-mip.
ESI. 17 FT-IR spectrum for MOF ZnMg-mip.

ESI. 18 FT-IR spectrum for MOF Zn-tbip.
ESI. 19 FT-IR spectrum for MOF ZnBa-tbip.