Supporting Information

Two zinc-viologen interpenetrating frameworks with straight and offset stacking modes respectively showing different photo/thermal responsive characters

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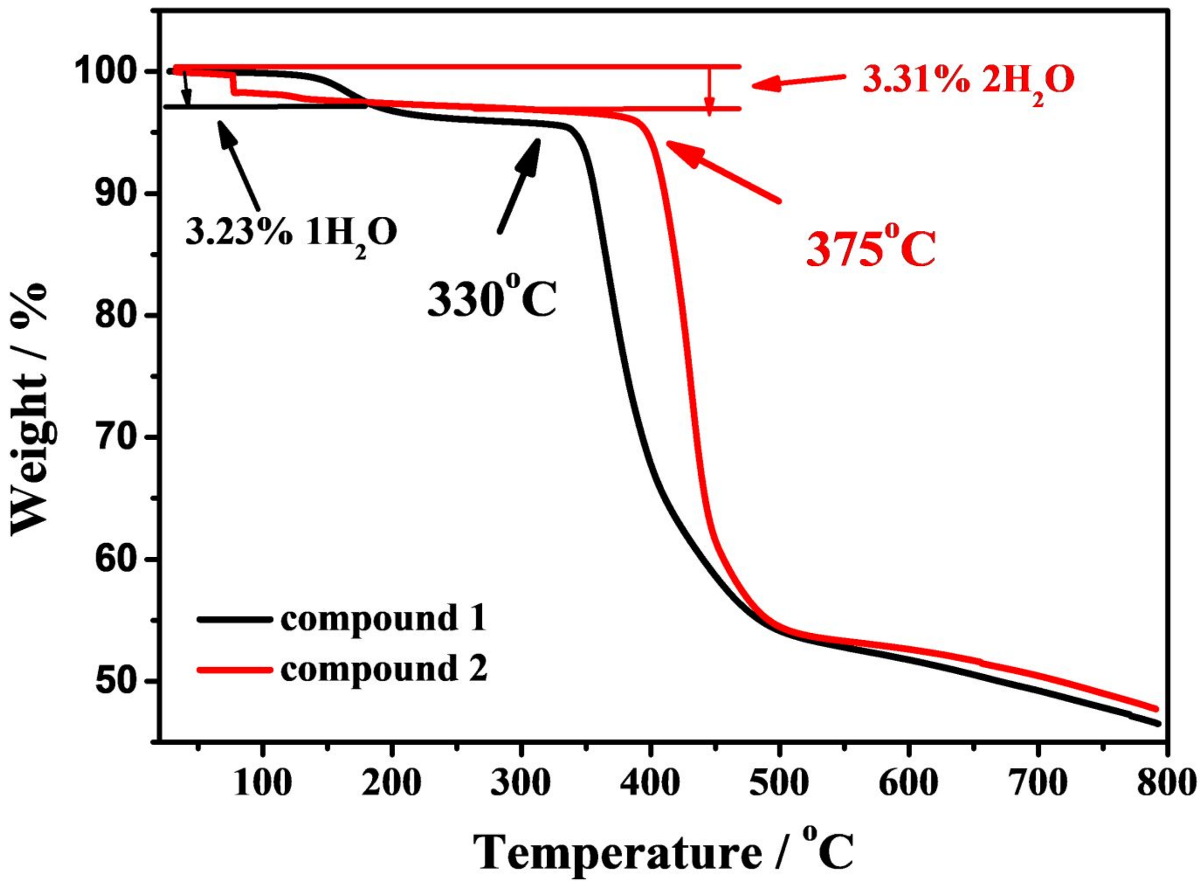

Figure S1. Thermogravimetric (TG) curves of compounds **1** and **2**.

TG analyses indicate that two major weight losses are observed for compound **1** and **2** (Figure S1). The first weight loss of 3.23% (3.17% for calculated) and 3.31% (3.39% for calculated) started at ca. 150 °C and 100 °C, corresponding to the loss of the guest water molecules for **1** and **2** respectively. Their curves remain no changes in weight up to 330 °C and 375 °C. The decomposition of the frameworks occurs at higher temperature and they give the final thermal decomposition product ZnO and carbon species after the gas leaving of CO, H_2O, CH_4 and NO during the heating process. [S1]

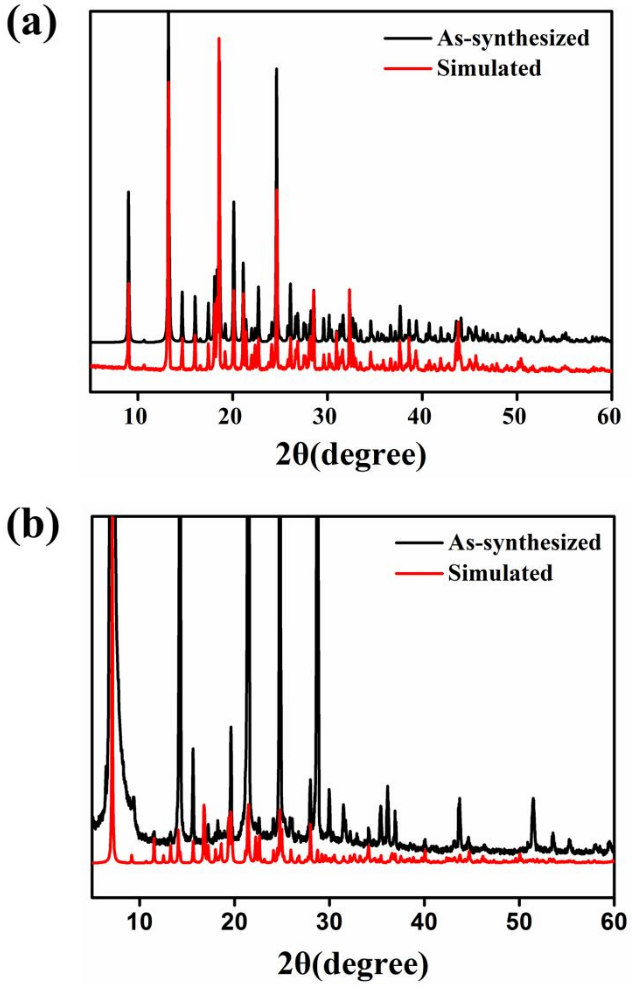

Figure S2. Simulated and as-synthesized powder X-ray diffraction patterns of (a) compound **1** and (b) compound **2**.

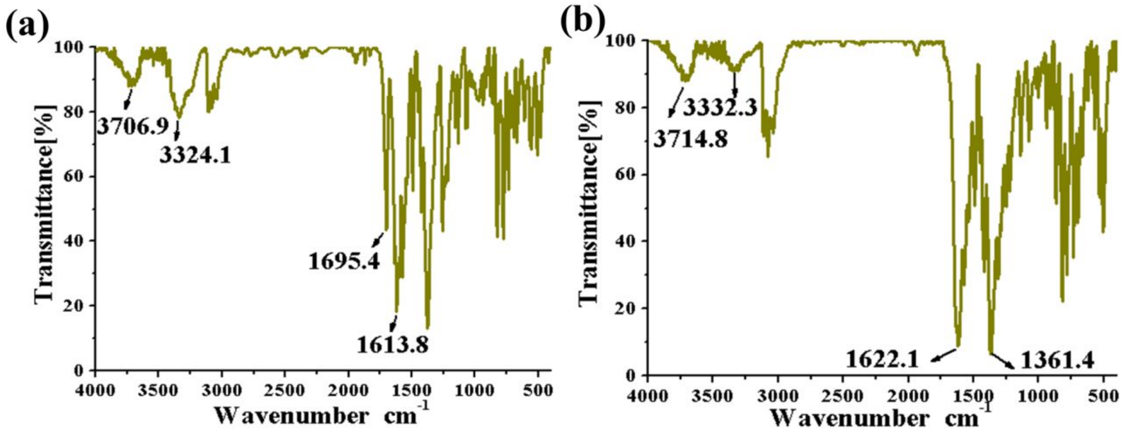

Figure S3. IR spectra of (a) compound **1** and (b) compound **2**.

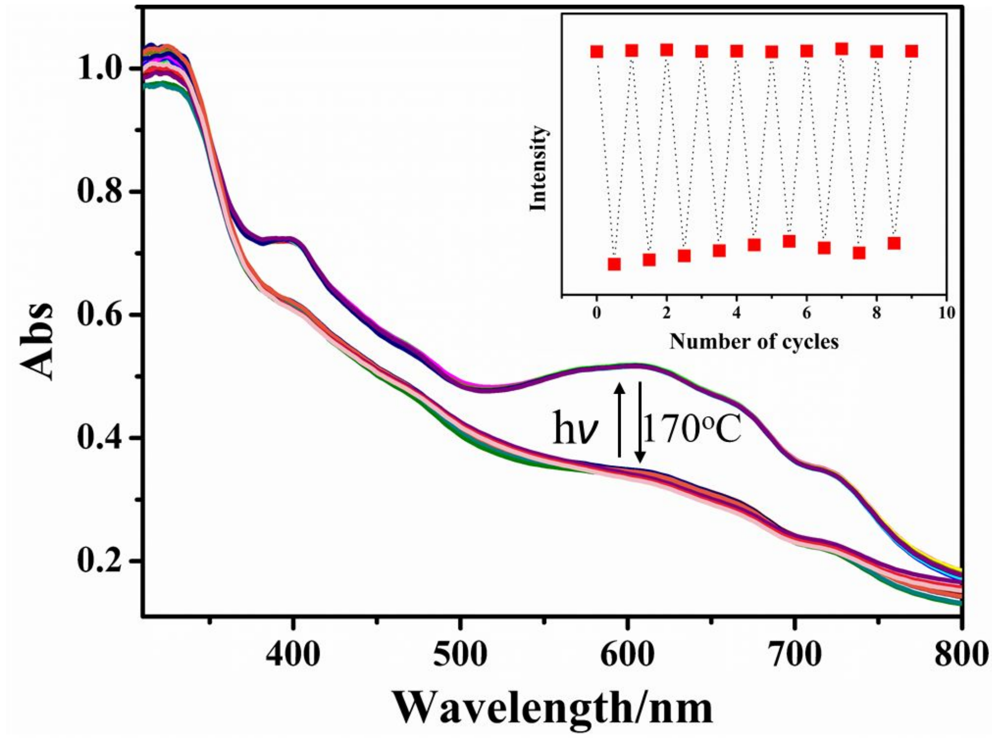

Figure S4. The UV-Vis absorbance spectral changes at 606 nm for the sample of **1** on alternate excitation by photoirradiation and heating at 170°C over nine cycles in air.

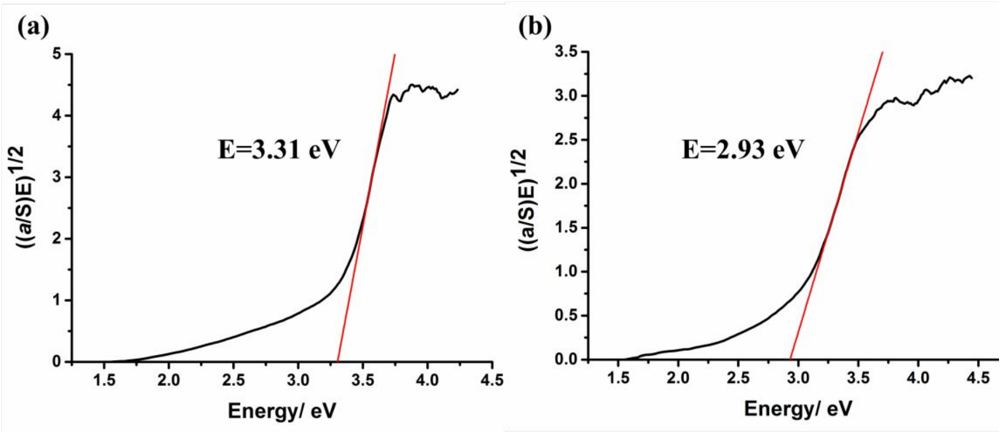

Figure S5. The optical band gap energy for (a) compound **1** and (b) compound **2**.

REFERENCES:

(S1) Liu, B.; Shioyama, H.; Akita, T.; Xu, Q. Metal-organic framework as a template for porous carbon synthesis. *J. Am. Chem. Soc*. **2008**, *130*, 5390-5391.