Supporting information

Highly porous metal-organic framework sustained with 12-connected nanoscopic octahedra

Weigang Lu[a], Daqiang Yuan*[b], Tegan A. Makal[a], Zhangwen Wei[a], Jian-Rong Li[a], and Hong-Cai Zhou*[a]

Department of Chemistry, Texas A&M University, College Station, TX 77843, USA
Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences, Fuzhou, 350002, P.R.China.

e-mail: zhou@mail.chem.tamu.edu
ydq@fjirsm.ac.cn

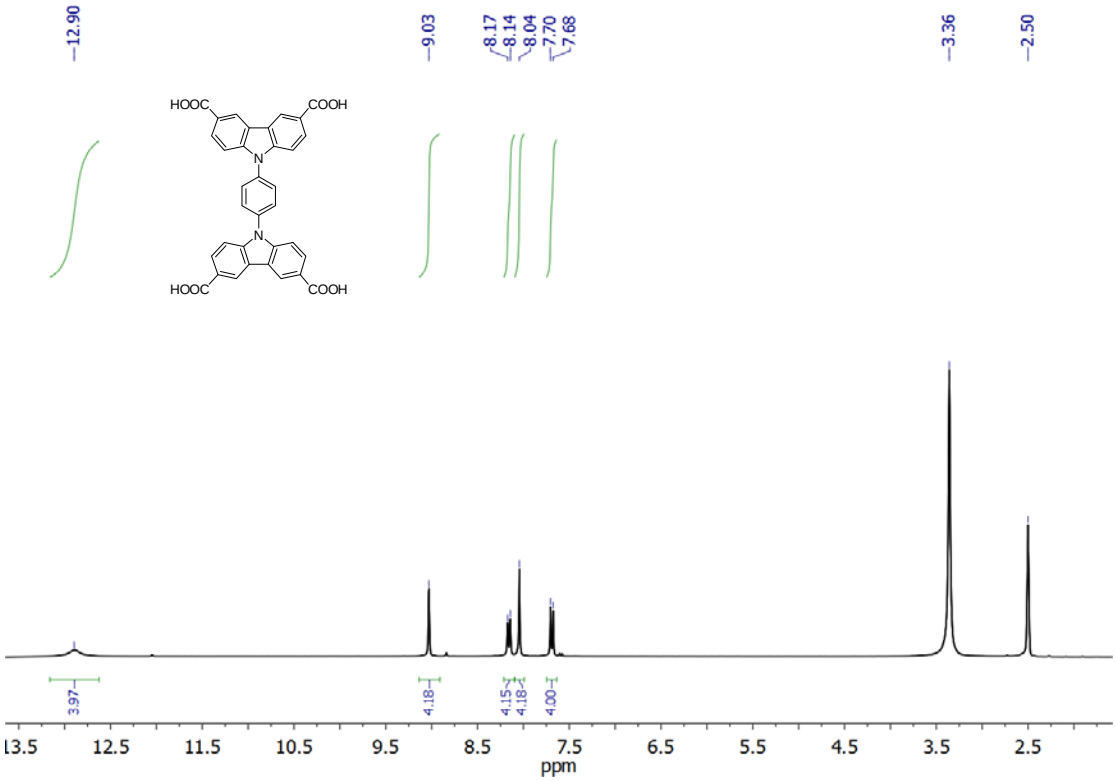

Fig. S1 ^{1}H-NMR of H_4pbcd

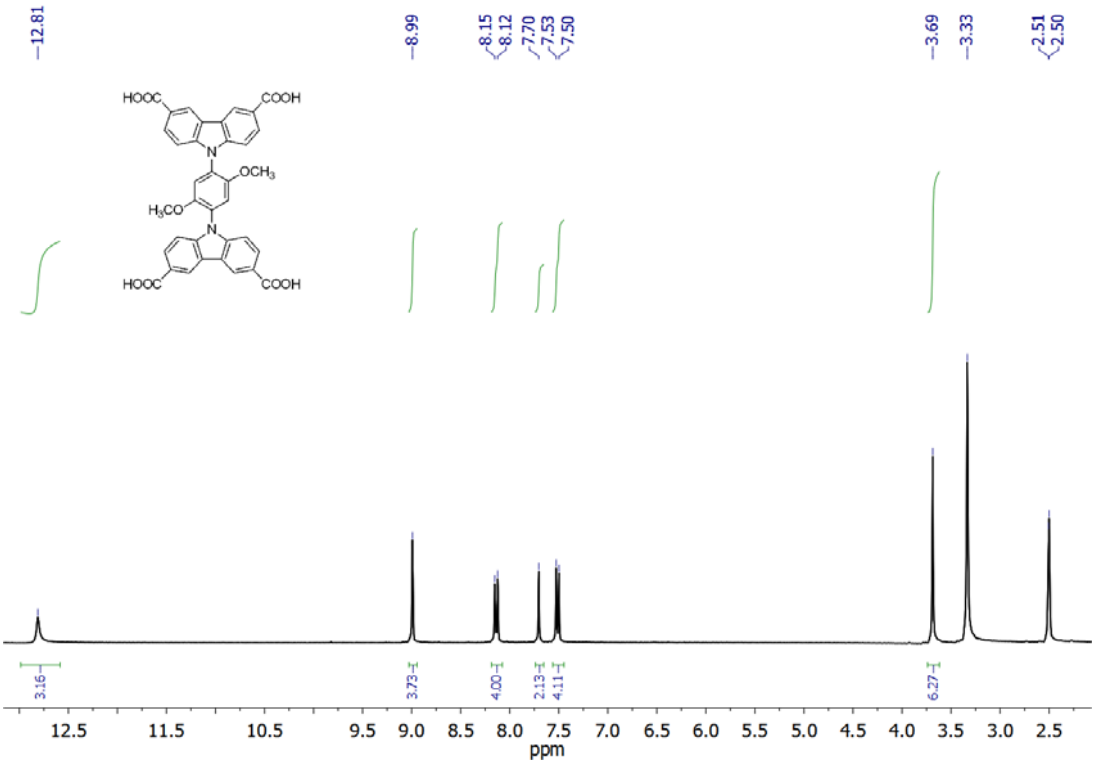

Fig. S2 ^{1}H-NMR of H_4dpbcd

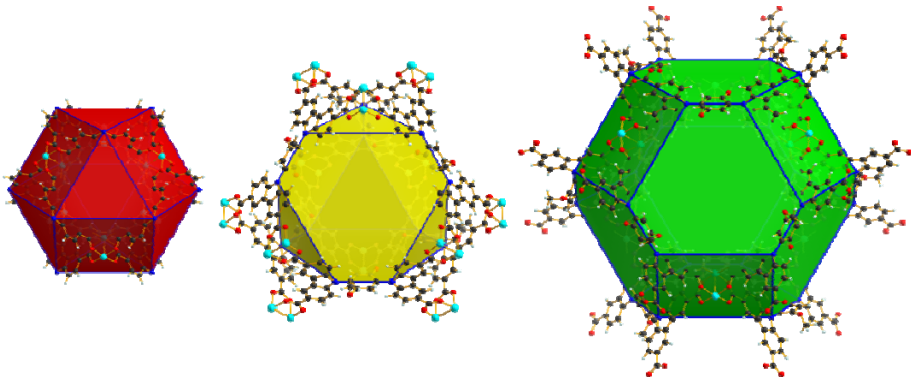

Fig. S3 Three type of cages in PCN-82

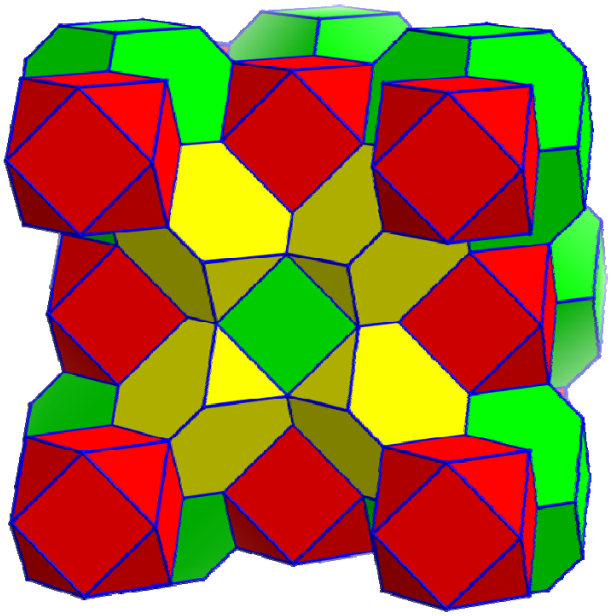

Fig. S4 Polyhedron packing in PCN-82

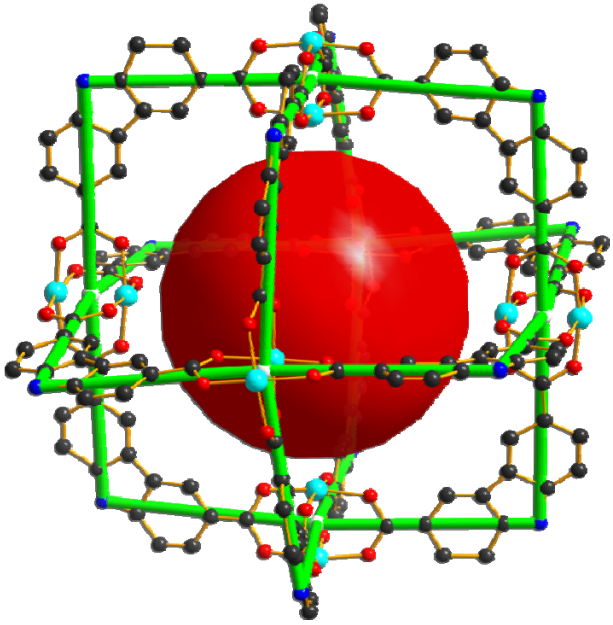

Fig. S5 Cage A in PCN-81

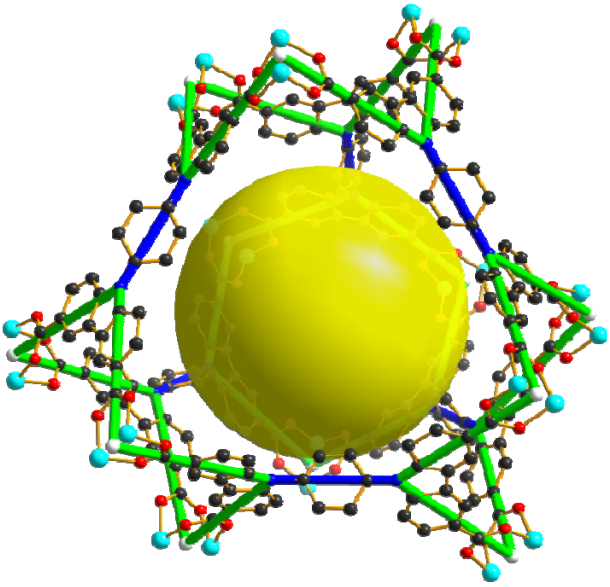

Fig. S6 Cage B in PCN-81

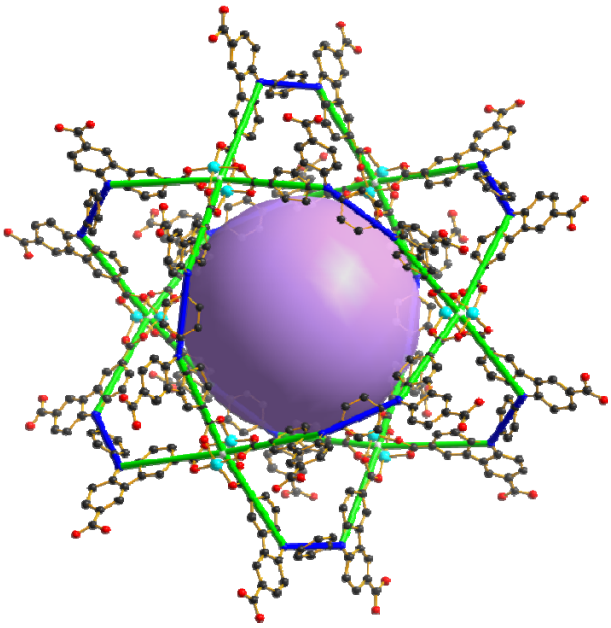

Fig. S7 Cage C in PCN-81

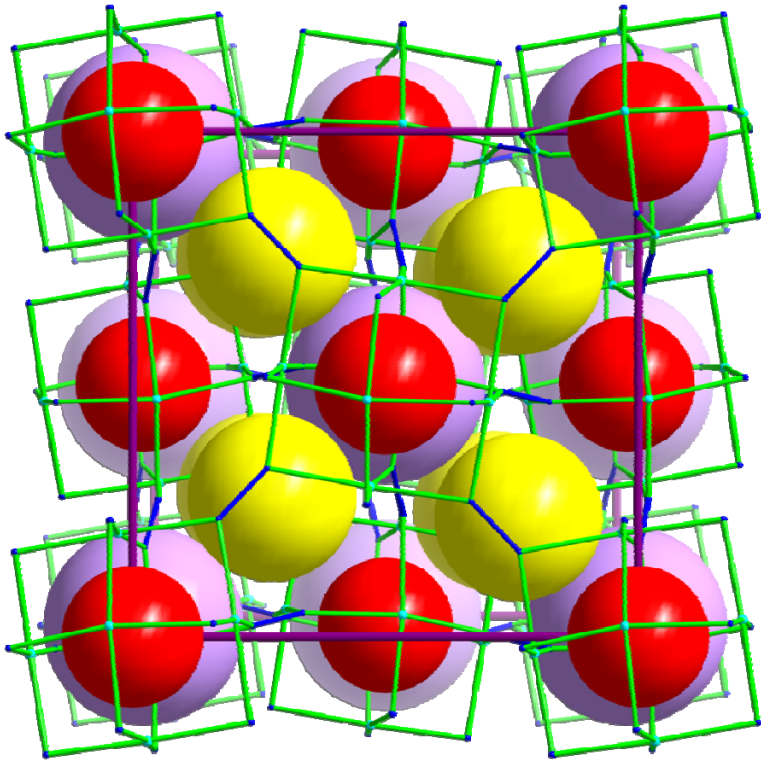

Fig. S8 Cage packing in PCN-81

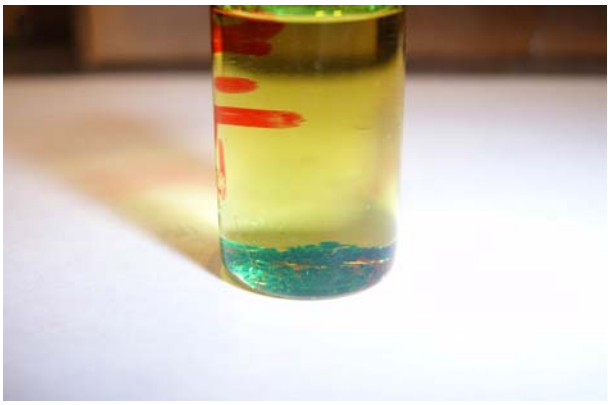

Fig. S9 Fresh sample of PCN-82

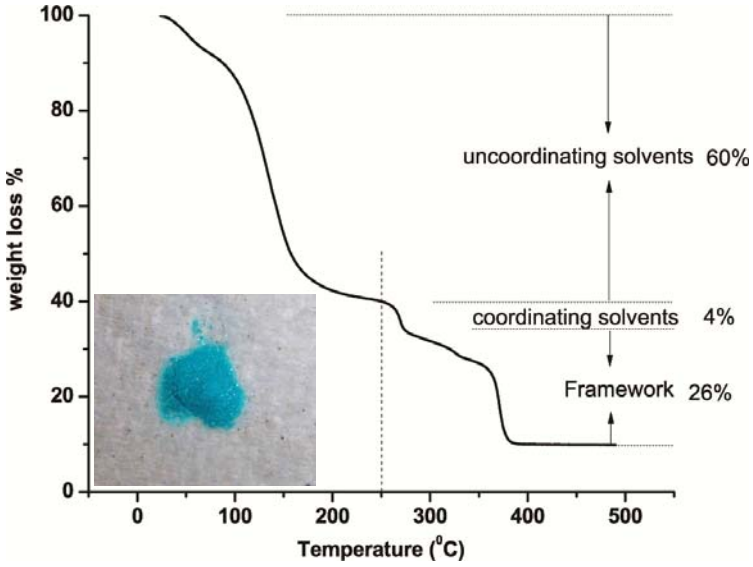

Fig. S10 TGA of PCN-82, inset picture shows sample dried on paper towel for a while before loaded for TG analysis

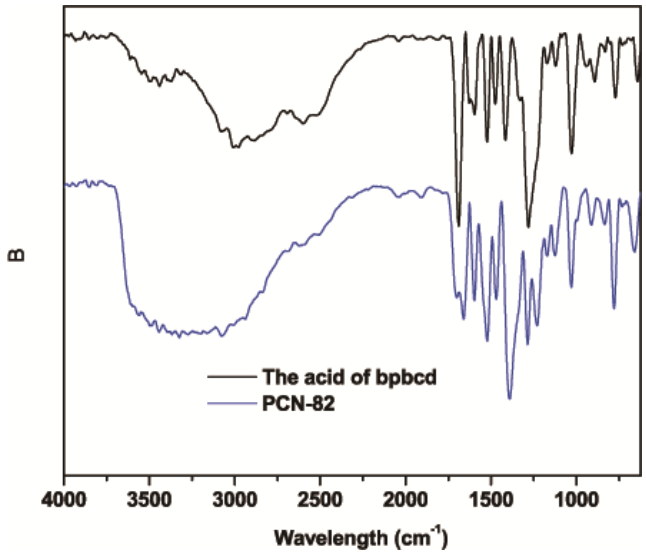

Fig. S11 Infrared spectroscopy of H_4bpbdc and PCN-82

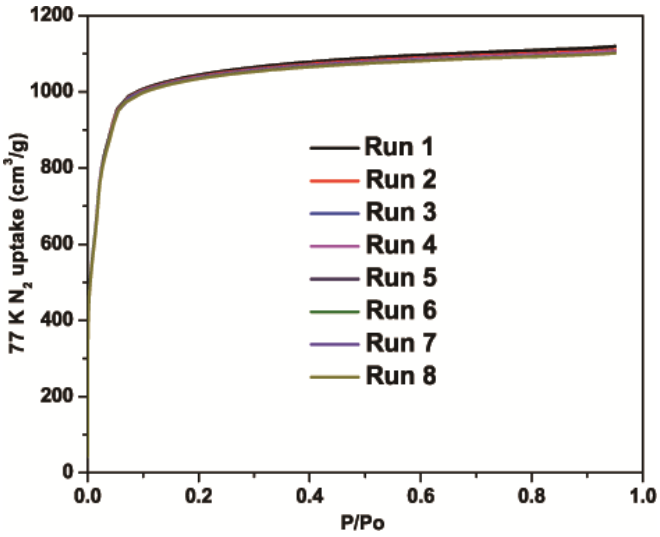

Fig. S12 N_2 adsorption isotherms of freeze-dried PCN-82 in 8 consecutive cycles

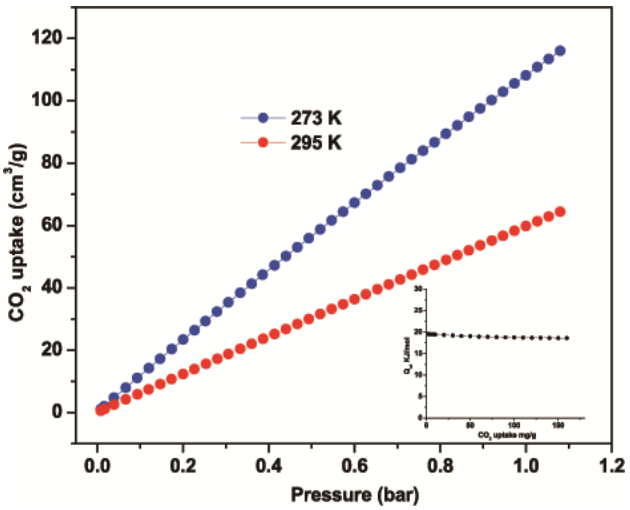

Fig. S13 CO_2 adsorption isotherms of freeze-dried PCN-82 at 273 K and 295 K, inset is calculated heat of adsorption

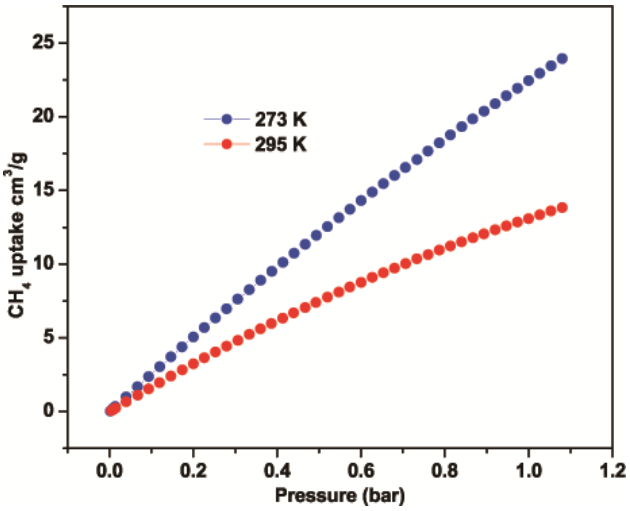

Fig. S14 CH_4 adsorption isotherms of freeze-dried PCN-82 at 273 K and 295 K

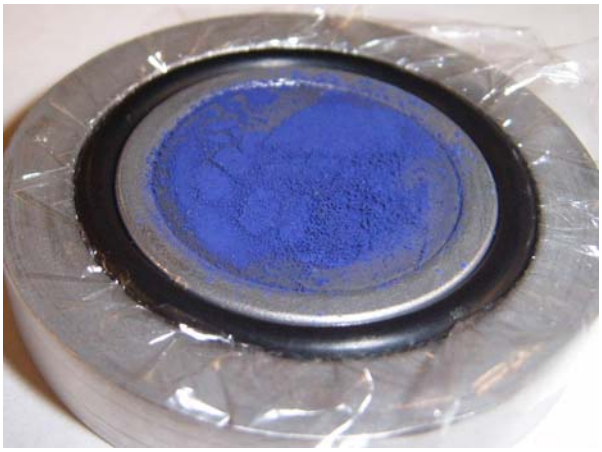

Fig. S15 PXRD measurement setup for the activated PCN-82