

Exquisitely Constructing a Robust MOF with Dual Pore Sizes for Efficient CO₂ Capture

Yanxi Li ^{1,*}, Yuhua Bai ^{1,2}, Zhuozheng Wang ¹, Qihan Gong ^{1,*}, Mengchen Li ¹, Yawen Bo ¹, Hua Xu ¹, Guiyuan Jiang ² and Kebin Chi ^{1,*}

¹ CNPC Petrochemical Research Institute Company Limited, Beijing 102206, China;
limengchen@petrochina.com.cn (M.L.)

² College of Chemical Engineering and Environment, China University of Petroleum-Beijing,
Beijing 102249, China

* Correspondence: liyanxi@petrochina.com.cn (Y.L.); gongqihan@petrochina.com.cn (Q.G.);
ckb459@petrochina.com.cn (K.C.)

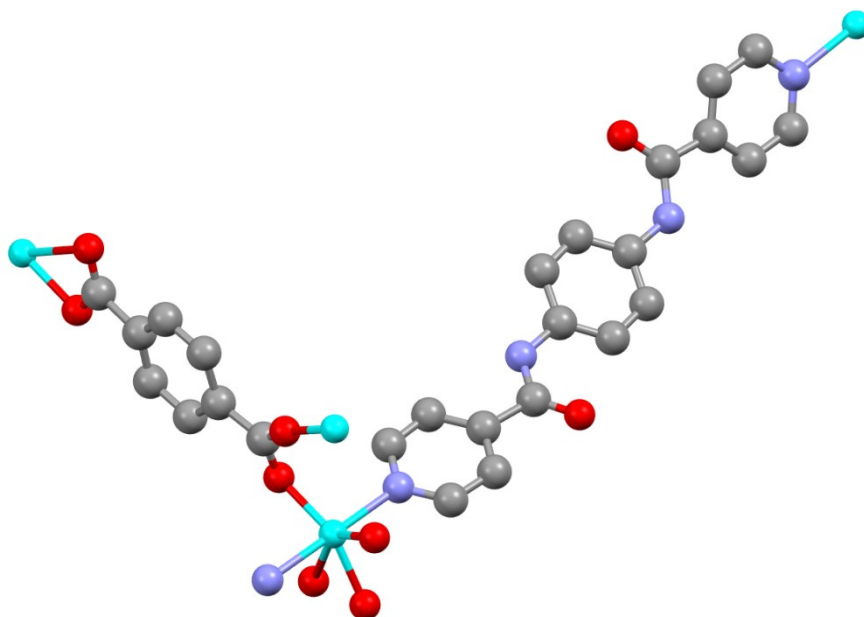


Figure S1. The asymmetric unit of PRI-1. Cu, C, N, O atoms are in cyan, grey, blue, and red, respectively.

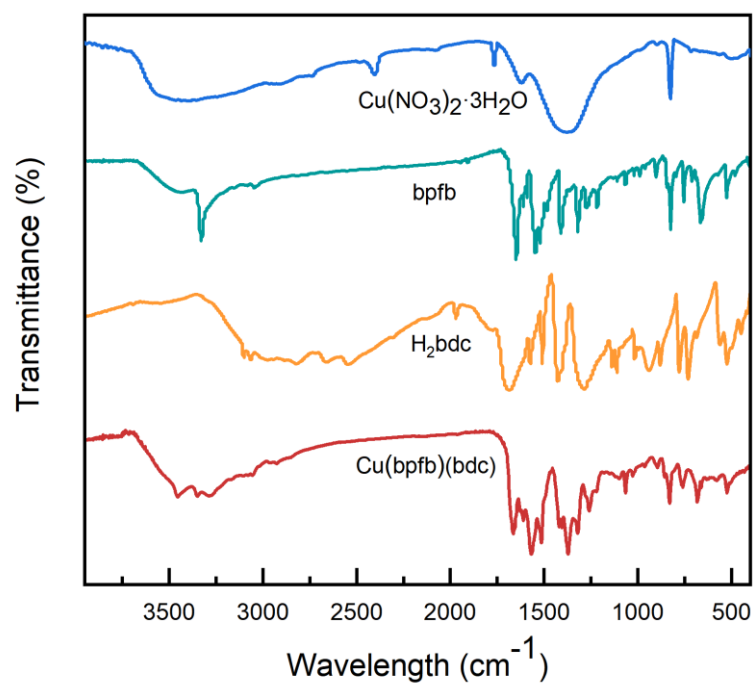


Figure S2. The FT-IR spectra of PRI-1 and raw materials.

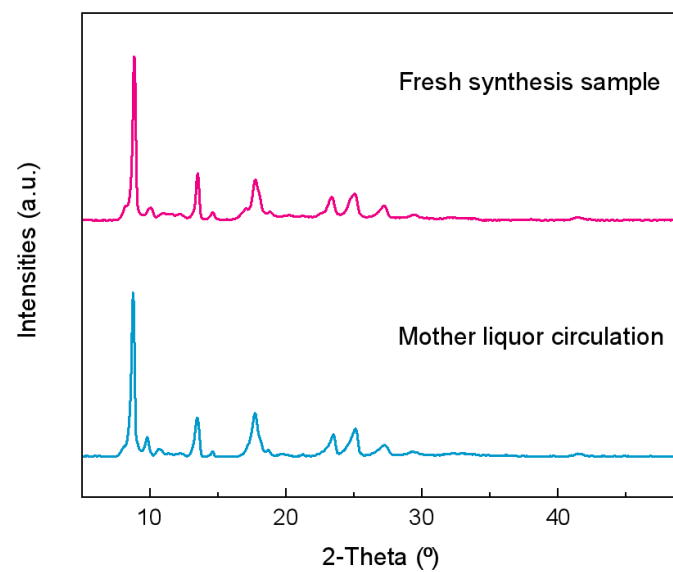


Figure S3. PXRD patterns of PRI-1 samples from the fresh synthesis and Mother liquor circulation synthesized method.

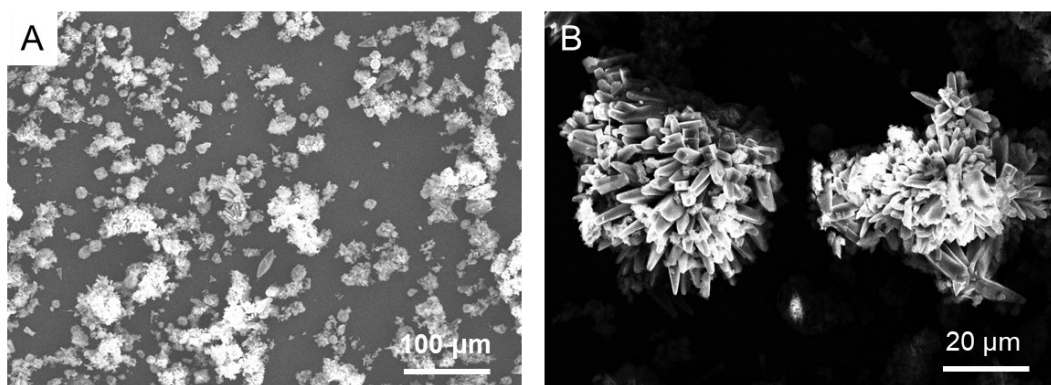


Figure S4. SEM pictures of PRI.

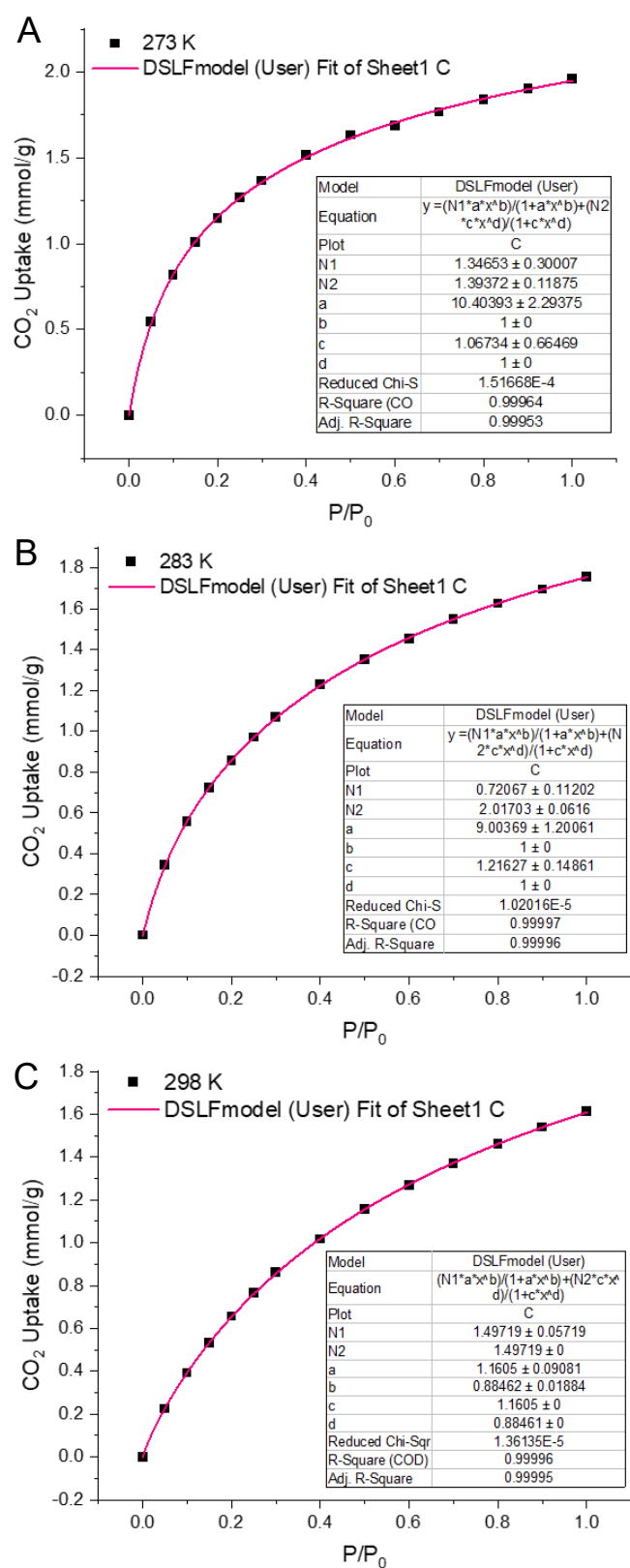


Figure S5. Gas adsorption isotherm of CO₂ with the DSLF fit for PRI-1 at 273, 283 and 298 K.

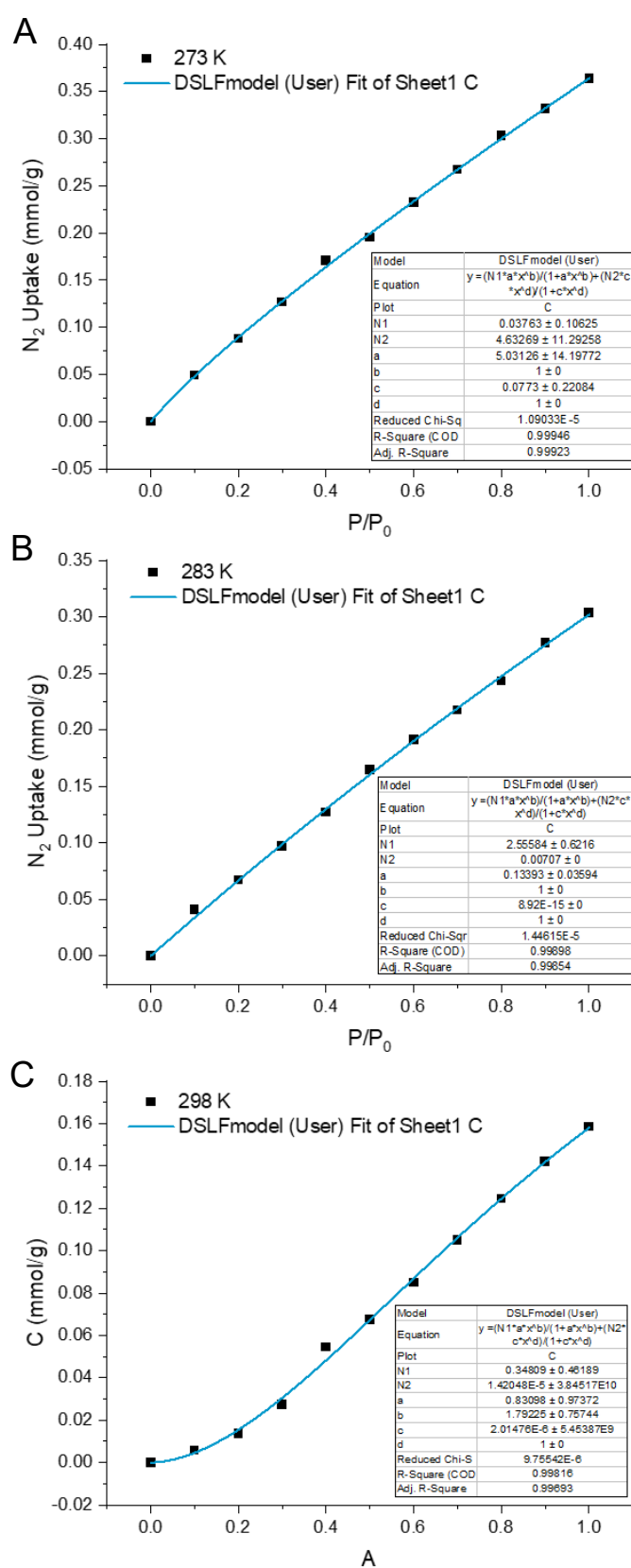


Figure S6. Gas adsorption isotherm of N_2 with the DSLF fit for PRI-1 at 273, 283 and 298 K.

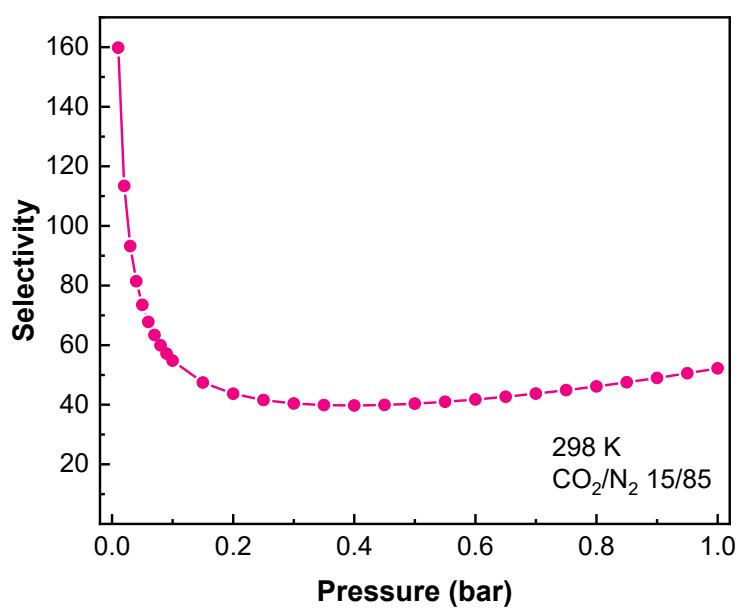


Figure S7. IAST selectivity of PRI-1 for CO₂/N₂ (15:85) at 298 K.

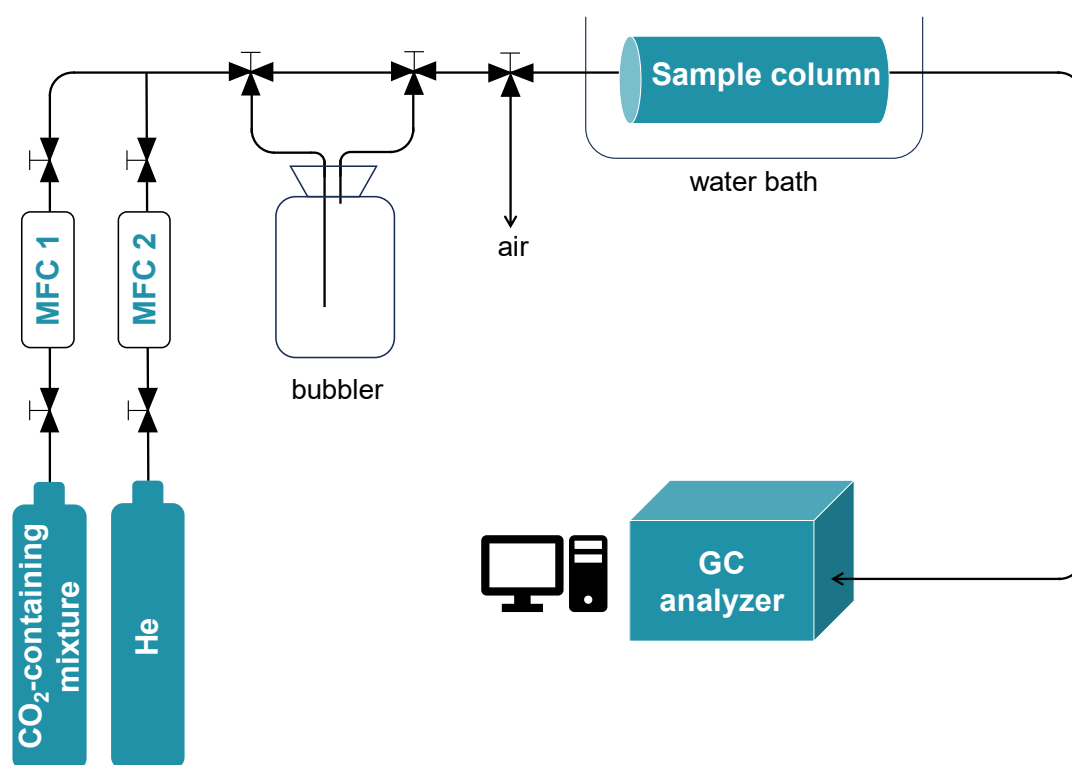


Figure S8. Diagram of the home-made dynamic breakthrough experimental apparatus.