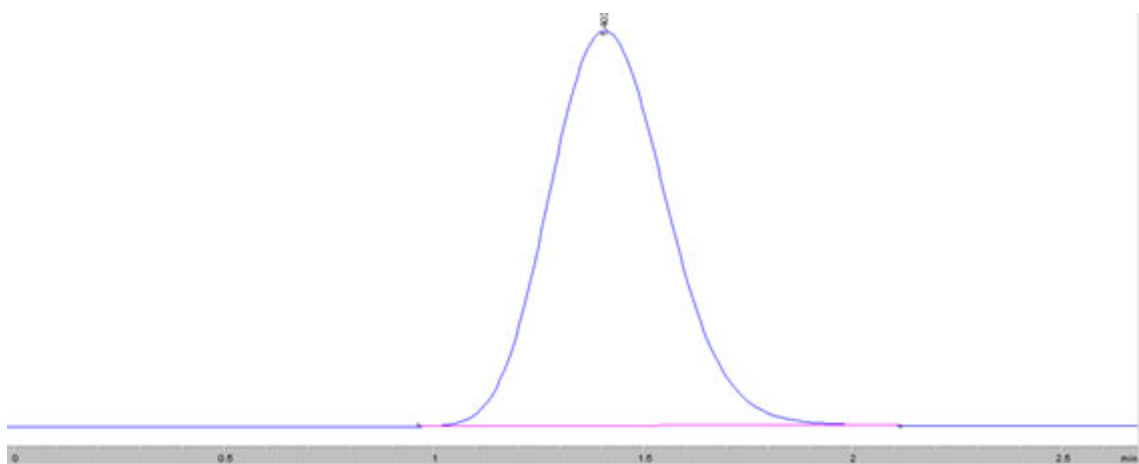


Supplementary Information

# Understanding the Working Mechanism of the Novel HKUST-1@BPS Composite Materials as Stationary Phases for Liquid Chromatography

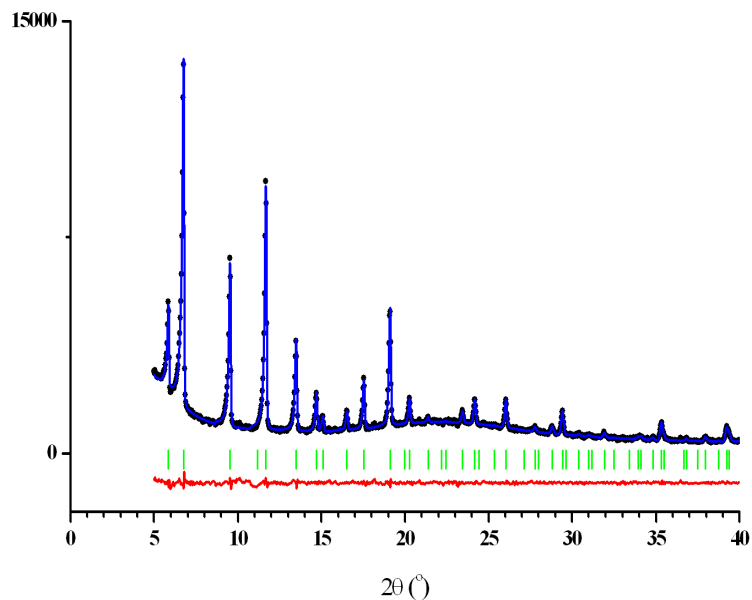
Bulat R. Saifutdinov <sup>1,2,\*</sup>, Vera I. Isaeva <sup>3,\*</sup>, Vladimir V. Chernyshev <sup>1,2</sup>, Vadim V. Vergun <sup>3</sup>, Gennady I. Kapustin <sup>3</sup>, Yulia P. Ivanova <sup>1</sup>, Mikhail M. Ilyin <sup>4</sup>, Olga P. Tkachenko <sup>3</sup>, Aleksey K. Buryak <sup>1</sup> and Leonid M. Kustov <sup>2,3,5</sup>

1. HPLC examinations of the HKUST-1@BPS Composite Materials
2. XRD examinations of the HKUST-1@BPS Composite Materials
3. DRIFTS examinations of the HKUST-1@BPS Composite Materials
1. HPLC examinations of the HKUST-1@BPS Composite Materials

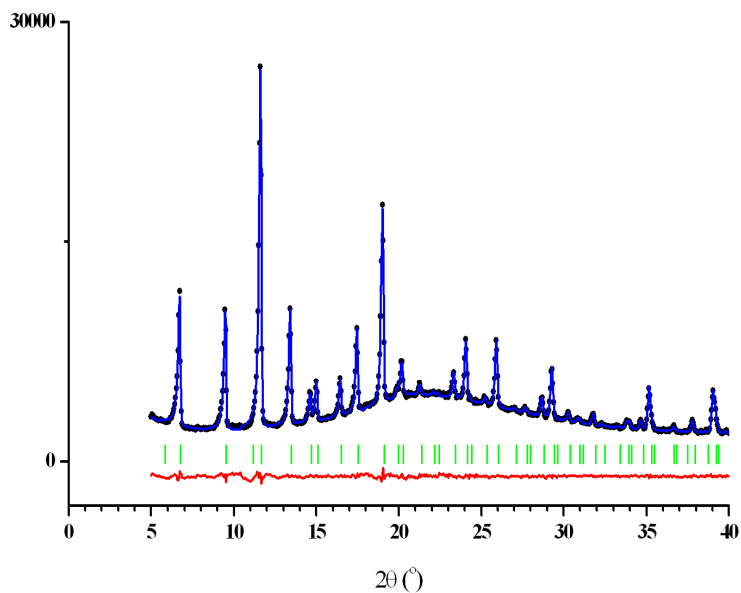


**Figure S1.** Output curve (chromatogram) recorded during the elution of benzene at 65°C through the porous layer of the HKUST-1@BPS composite material (sample 1).

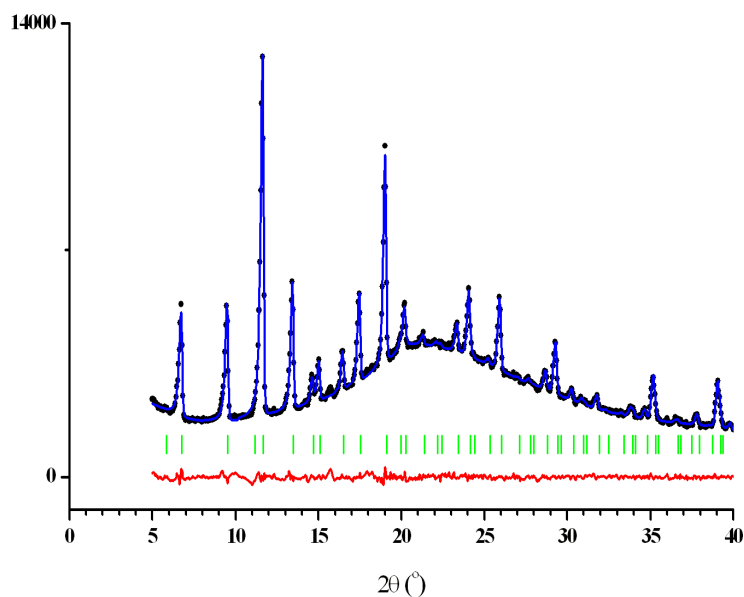
## 2. XRD examinations of the HKUST-1@BPS Composite Materials



**Figure S2.** The result of the Pawley fitting for **1** ( $c^2 = 1.8$ , cubic unit cell parameter  $a = 26.270(2)$  Å, sp. gr.  $Fm-3m$ ), showing the experimental pattern (black dots), calculated (blue) and difference (red) curves. Vertical green bars denote calculated peak positions.

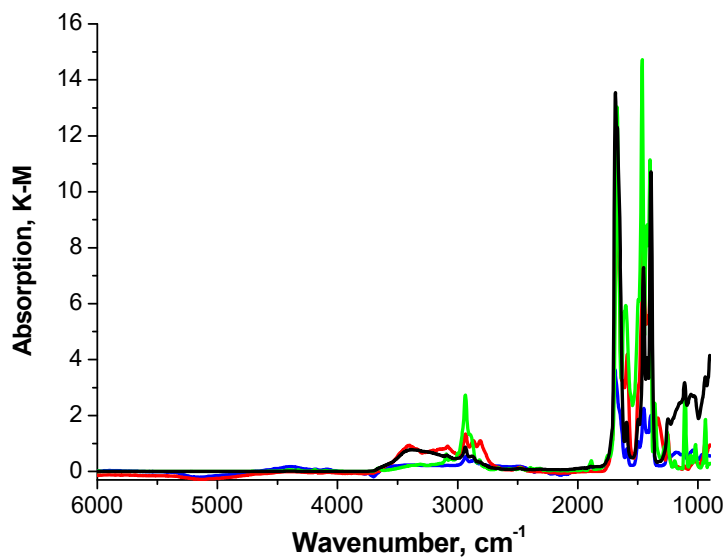


**Figure S3.** The result of the Pawley fitting for **2** ( $c^2 = 2.4$ , cubic unit cell parameter  $a = 26.392(2)$  Å, sp. gr.  $Fm-3m$ ), showing the experimental pattern (black dots), calculated (blue) and difference (red) curves. Vertical green bars denote calculated peak positions.

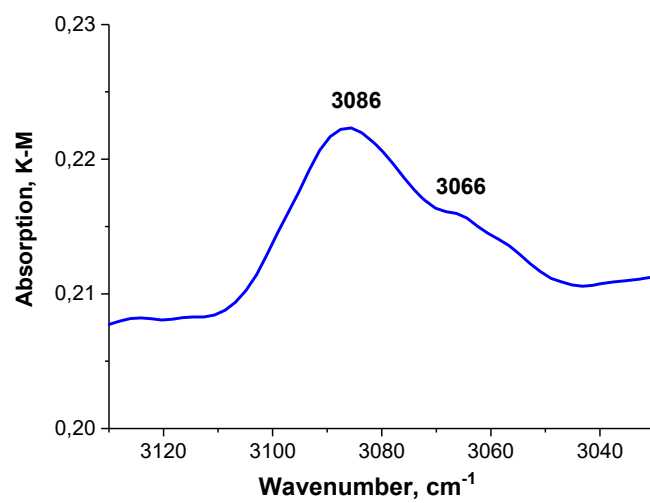


**Figure S4.** The result of the Pawley fitting for **3** ( $c^2 = 1.7$ , cubic unit cell parameter  $a = 26.397(2)$  Å, sp. gr.  $Fm-3m$ ), showing the experimental pattern (black dots), calculated (blue) and difference (red) curves. Vertical green bars denote calculated peak positions.

### 3. DRIFTS examinations of the HKUST-1@BPS Composite Materials



**Figure S5.** Survey DRIFT spectra of the **1** (black), **2** (red), **3** (green) and HKUST-1mw (blue) materials.



**Figure S6.** DRIFT spectrum of the composite **3** in the frequency range of 3130–3030 cm<sup>-1</sup>.