Supporting Information

SI 1 FTIR spectrum of (a) M-CTAB-BT, (b) M-SDS-BT, (c) M-P123-BT, and (d) M-TX100-BT.
A XPS wide scan of (a) Raw-BT and (b) M-TX100-BT.
Effect of pH on benzene adsorption capacity of M-TX100-BT. Experimental conditions: initial benzene concentration ($C_0$), 2.5 mmol/L; contact time, 24 hours; temperature, 303 K; and adsorbent dosage (S/L), 1.0 mg/mL.
Isotherm modelling of benzene adsorption onto M-TX100-BT: (a) Langmuir and (b) Temkin isotherm models.
Intraparticle/Weber-Morris plot for benzene adsorption by M-TX100-BT at different reaction temperatures.

- Benzene adsorption capacity, $q_t$ (x10^3 mmol/g) vs. $t^{0.5}$ (min)
- Experimental data, 303K
- Experimental data, 313 K
- Experimental data, 323 K

Graph showing three different lines labeled as (k1), (k2), and (k3) corresponding to different temperatures.
Kinetic modelling of benzene adsorption onto M-TX100-BT.

Experimental data, 303 K
PSO, 303 K
Experimental data, 313 K
PSO, 313 K
Experimental data, 323 K
PSO, 323 K

Benzene adsorption capacity, $q_t (\times 10^3 \text{ mmol/g})$

Contact time, $t$ (min)