**Electronic Supplementary Information**

**An anionic zeolite-like metal-organic framework (AZMOF) with Moravia network for organic dyes absorption through cation-exchange**

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Fig. S1 FT-IR spectra of H$_3$BTTC

Fig. S2 FT-IR spectra of Sr-BTTC
Fig. S3 FT-IR spectra of desolvated Sr-BTTC samples.

Fig. S4 PXRD pattern of Sr-BTTC
Fig. S5 TG curve of Sr-BTTC: The weight loss before 100 °C is contributed by the guest solvents, when the temperature was raised above 120 °C a substantial mass reduction was observed, which is possibly resulted by removal of coordinated water and terthienobenzene unit as the consequence of BTTC decarboxylation.[1]

Fig. S6 N₂ sorption isotherm for Sr-BTTC recorded at 77K.
**Fig. S7** The absorption intensity (black dots) of MB dye at different concentrations (mol/L) (The red solid line represents the best linear fit.)

\[ Y = 0.3324X - 0.052 \]
\[ R^2 = 0.9977 \]

**Fig. S8** The absorption intensity (black dots) of BR2 dye at different concentrations (mol/L) (The red solid line represents the best linear fit.)

\[ Y = 0.7643X - 0.665 \]
\[ R^2 = 0.995 \]
**Fig. S9** The absorption intensity (black dots) of RB dye at different concentrations (mol/L) (The red solid line represents the best linear fit)

\[ Y = 4.04X - 0.56 \]
\[ R^2 = 0.999 \]

**Fig. S10** The absorption intensity (black dots) of CV dye at different concentrations (mol/L) (The red solid line represents the best linear fit)

\[ Y = 1.00X + 0.078 \]
\[ R^2 = 0.993 \]
Fig. S11 The UV-Vis absorption change of AO7 in the presence of Sr-BTTC

Fig. S12 The UV-Vis absorption change of CR in the presence of Sr-BTTC
Fig. S13 The UV-Vis absorption change of CR in the presence of Sr-BTTC.

Fig. S14 Removal efficiency of MB in the presence of the Sr-BTTC with increasing time.
Fig. S15 Removal efficiency of BR2 in the presence of the Sr-BTTC with increasing time.

Fig. S16 Removal efficiency of RB in the presence of the Sr-BTTC with increasing time.
Fig. S17 Removal efficiency of CV in the presence of the Sr-BTTC with increasing time.

Fig. S18 PXRD patterns of as-synthesized Sr-BTTC, activated Sr-BTTC and dye-absorbed Sr-BTTC.
<table>
<thead>
<tr>
<th>Table S1 Crystal data and structure refinements for Sr-BTTC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Compound</strong></td>
</tr>
<tr>
<td>Formula</td>
</tr>
<tr>
<td>Crystal size(mm)</td>
</tr>
<tr>
<td>$T$/K</td>
</tr>
<tr>
<td>Crystal system</td>
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<tr>
<td>Space group</td>
</tr>
<tr>
<td>$a$ (Å)</td>
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<tr>
<td>$b$ (Å)</td>
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<tr>
<td>$c$ (Å)</td>
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<tr>
<td>$\alpha$ (º)</td>
</tr>
<tr>
<td>$\beta$ (º)</td>
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<tr>
<td>$\gamma$ (º)</td>
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<tr>
<td>$V$ (Å$^3$)</td>
</tr>
<tr>
<td>$Z$</td>
</tr>
<tr>
<td>$D_c$ (g.cm$^{-3}$)</td>
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<tr>
<td>$F$(000)</td>
</tr>
<tr>
<td>Theta range/º</td>
</tr>
<tr>
<td>Reflections collected</td>
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<tr>
<td>Unique reflections</td>
</tr>
<tr>
<td>Goof</td>
</tr>
<tr>
<td>$R_1$ [I &gt; 2σ(I)]</td>
</tr>
<tr>
<td>$wR_2$ [I &gt; 2σ(I)]</td>
</tr>
</tbody>
</table>

$^a$ $R_1 = \Sigma ||F_o| - |F_c||/\Sigma |F_o|$.  $^b$ $wR_2 = \Sigma w(|F_o|^2 - |F_c|^2)^2/\Sigma w(F_o^2)^2)^{1/2}$, 
where $w = 1/[\sigma^2(F_o^2) + (aP)^2 + bP]$. $P = (F_o^2 + 2F_c^2)/3$. 

Table S2 The adsorption capacity for BR on various adsorbents.

<table>
<thead>
<tr>
<th>Adsorbents</th>
<th>Adsorption capacity (mg/g)</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sr-BTTC</td>
<td>675</td>
<td>This work</td>
</tr>
<tr>
<td>PET depolymerization products</td>
<td>29</td>
<td>Clean-Soil Air Water., 2012, 40, 325-333</td>
</tr>
<tr>
<td>Calcite</td>
<td>37.2</td>
<td>Separ. Sci. Technol., 2010, 45, 1471-1481</td>
</tr>
<tr>
<td>HT-SDBS</td>
<td>40.5</td>
<td>J. Hazard. Mater., 2008, 153, 911-918</td>
</tr>
<tr>
<td>HT-SDS</td>
<td>83.3</td>
<td>J. Hazard. Mater., 2008, 153, 911-918</td>
</tr>
<tr>
<td>G-SO3H/Fe3O4</td>
<td>199.3</td>
<td>Clean-Soil Air Water., 2013, 41, 992-1001</td>
</tr>
</tbody>
</table>
Olive stone 526.3  
*J. Hazard. Mater.*, 2009, **163**, 441-447

N-Vinyl 2-pyrrolidone/itaconic acid/organo clay nanocomposite hydrogel 550.0  
*Water Air Soil Pollut.*, 2013, **224**, 1760-1775

Treated spent bleaching earth 555.6  
*J. Colloid Interface Sci.*, 2007, **307**, 9-16

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<thead>
<tr>
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<td>Sr-BTTC</td>
<td>545</td>
<td>This work</td>
</tr>
<tr>
<td>TA-G</td>
<td>201</td>
<td><em>Colloids Surf. A</em>, 2015, <strong>477</strong>, 35–41</td>
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<td>Kaolinite</td>
<td>46.08</td>
<td><em>Appl. Clay Sci.</em>, 2012, <strong>69</strong>, 58-66</td>
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<tr>
<td>Coconut (Cocos nucifera)</td>
<td>71</td>
<td><em>J. Hazard. Mater.</em>, 2008, <strong>158</strong>, 65-72</td>
</tr>
<tr>
<td>Rice husk ash</td>
<td>13.76</td>
<td><em>J. Environ. Manage.</em>, 2007, 84, 390-400</td>
</tr>
</tbody>
</table>

**Table S3** The adsorption capacity for RB on various adsorbents.

Reference: