Study on one-step oxidative esterification of glycerol with MOF supported polyoxometalates as catalyst

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Figure S1 XRD patterns of MOF and POM raw materials

![Figure S1 XRD patterns of MOF and POM raw materials](image-url)
Figure S2 Products distribution of glycerol transformation over (a) MOF-HPMo; (b) MOF-HPMoV1; (c) MOF-HPMoV2; (d) MOF-HPMoV3. Reaction conditions: glycerol 5 mmol, deionized H₂O 2 mL, H₂O₂ (1 mL a.q., 30% w.t.), catalyst 20 mg, 40°C, 24 h.
Figure S3 GC-MS results, reaction conditions: lycerol 5 mmol, MOF-HPW 20 mg, deionized H$_2$O 2 mL, H$_2$O$_2$ (1 mL a.q., 30% w.t.), 40°C, 24 h.

Figure S4 XRD patterns of MOF-HPW and MOF-HPW after being used for 5 times.
Table S1  Concentration of H$_2$O$_2$ after reaction $^a$

<table>
<thead>
<tr>
<th>pH value</th>
<th>4</th>
<th>6</th>
<th>8</th>
<th>8 $^b$</th>
</tr>
</thead>
<tbody>
<tr>
<td>H$_2$O$_2$ concentration (mol/L)</td>
<td>0.039</td>
<td>0.036</td>
<td>0.016</td>
<td>0.043</td>
</tr>
</tbody>
</table>

$^a$ Reaction conditions: glycerol 5 mmol, deionized H$_2$O 2 mL, H$_2$O$_2$ (1 mL a.q., 30% w.t.), catalyst 20 mg, 40°C, 24 h.

$^b$ Another 1 mL H$_2$O$_2$ was added.