High Performance of Mn-Doped MgAlOx Mixed Oxides for Low Temperature NOx Storage and Release

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Table S1. Summary of catalysts NO\textsubscript{x} storage capacity and reaction conditions.

<table>
<thead>
<tr>
<th>Catalysts</th>
<th>Calcination Temperature (°C)</th>
<th>$S_{\text{BET}}$ (m\textsuperscript{2}·g\textsuperscript{-1})</th>
<th>NSC (mg·g\textsuperscript{-1})</th>
<th>Refs</th>
</tr>
</thead>
<tbody>
<tr>
<td>MnMgAlO\textsubscript{x}</td>
<td>400</td>
<td>243.3</td>
<td>9.3</td>
<td>13.5</td>
</tr>
<tr>
<td>CoMg\textsubscript{2}Al\textsubscript{1}O\textsubscript{x}</td>
<td>800</td>
<td>23.8</td>
<td>2.4 (100°C)</td>
<td>-</td>
</tr>
<tr>
<td>Ag/MgAlO</td>
<td>500</td>
<td>180</td>
<td>7.3</td>
<td>6.6</td>
</tr>
<tr>
<td>Ca:Co:AlO</td>
<td>800</td>
<td>72</td>
<td>4.5 (100°C)</td>
<td>-</td>
</tr>
<tr>
<td>RuMgAlO</td>
<td>600</td>
<td>280</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Mn\textsubscript{0.4}Sn\textsubscript{0.3}Ce\textsubscript{0.3}O</td>
<td>500</td>
<td>120.9</td>
<td>8.7(100°C)</td>
<td>-</td>
</tr>
<tr>
<td>MnO\textsubscript{x}–SnO\textsubscript{2}</td>
<td>500</td>
<td>83.1</td>
<td>8.7(100°C)</td>
<td>-</td>
</tr>
<tr>
<td>La\textsubscript{0.7}Sr\textsubscript{0.3}MnO\textsubscript{3}</td>
<td>700</td>
<td>-</td>
<td>-</td>
<td>4.9</td>
</tr>
<tr>
<td>Pt/BaO/CeO\textsubscript{2}/Al\textsubscript{2}O\textsubscript{3}</td>
<td>500</td>
<td>93</td>
<td>-</td>
<td>7.4</td>
</tr>
<tr>
<td>1%Pt/BaO/Al\textsubscript{2}O\textsubscript{3}</td>
<td>500</td>
<td>160</td>
<td>3.2</td>
<td>-</td>
</tr>
</tbody>
</table>
Figure S1. NO$_x$ adsorption and desorption profiles of the samples: (a) Mn0, (b) Mn5, (c) Mn10, (d) Mn15, (e) Mn20 catalysts at 300 °C. (Reaction conditions: 1000 ppm NO, 5 vol.% O$_2$, balanced with He, 100 mL/min; STP = 0 °C, 1 atm).
Figure S2. NO\textsubscript{x} adsorption and desorption profiles of Mn15 catalyst at different temperatures: (a) 150 °C, (b) 200 °C, (c) 250 °C, (d) 300 °C, (e) 350 °C. (Reaction conditions: 1000 ppm NO, 5 vol.% O\textsubscript{2}, balanced with He, 100 mL/min; STP = 0 °C, 1 atm).
Figure S3. lean-rich cycling performance of Mn15 sample at different temperatures: (a) 150°C, (b) 200 °C, (c) 250 °C, (d) 300 °C, (e) 350 °C. (lean condition: 500 ppm NO, 7.5 vol.% O₂, balanced with He, 50 mL/min; rich condition: 5 vol.% H₂, balanced with N₂, 50 mL/min; STP = 0 °C, 1 atm).
References

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