Supporting Information

Efficient Electrocatalytic Conversion of N₂ to NH₃ on NiWO₄ Under Ambient Conditions

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and after 1 h electrolysis at −0.3 V vs. RHE in Ar atmosphere. (d) UV-Vis absorption
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Table S1. Comparison of the NH$_3$ electrosynthesis activity for NiWO$_4$ under ambient conditions with other catalysts.

<table>
<thead>
<tr>
<th>Catalyst</th>
<th>Electrolyte</th>
<th>NH$_3$ Yield Rate</th>
<th>FE (%)</th>
<th>NH$_4^+$-N Testing Method</th>
<th>Ref</th>
</tr>
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<tbody>
<tr>
<td>NiWO$_4$</td>
<td>0.1M HCl</td>
<td>48.86 µg h$^{-1}$ mg$^{-1}$</td>
<td>19.32</td>
<td>Indophenol method</td>
<td></td>
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<tr>
<td></td>
<td>0.1M Na$_2$SO$_4$</td>
<td>28.4 µg h$^{-1}$ mg$^{-1}$</td>
<td>10.18</td>
<td>This Work</td>
<td></td>
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<tr>
<td>Sn/SnS$_2$</td>
<td>0.1M PBS</td>
<td>23.8 µg h$^{-1}$ mg$^{-1}$</td>
<td>6.5</td>
<td>Indophenol method</td>
<td></td>
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<tr>
<td>W$_2$N$_3$</td>
<td>0.1M HCl</td>
<td>11.66 µg h$^{-1}$ mg$^{-1}$</td>
<td>11.67</td>
<td>Indophenol method</td>
<td></td>
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<tr>
<td>Ru$_{55}$/N-C</td>
<td>0.05M H$_2$SO$_4$</td>
<td>120.9 µg h$^{-1}$ mg$^{-1}$</td>
<td>29.6</td>
<td>Indophenol method</td>
<td></td>
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<tr>
<td>pAu/NF</td>
<td>0.1M Na$_2$SO$_4$</td>
<td>9.42 µg h$^{-1}$ cm$^{-2}$</td>
<td>13.36</td>
<td>Indophenol method</td>
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<tr>
<td>BiNCs</td>
<td>0.5M K$_2$SO$_4$</td>
<td>200 mmol g$^{-1}$ h$^{-1}$</td>
<td>66</td>
<td>Nessler’s reagent</td>
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<td>Bi NS</td>
<td>0.1M Na$_2$SO$_4$</td>
<td>13.23 µg h$^{-1}$ mg$^{-1}$</td>
<td>10.46</td>
<td>Indophenol method</td>
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<tr>
<td>FeS@MoS$_2$/CFC</td>
<td>0.1M Na$_2$SO$_4$</td>
<td>8.45 µg h$^{-1}$ cm$^{-2}$</td>
<td>2.96</td>
<td>Indophenol method</td>
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<tr>
<td>N@MoS$_2$</td>
<td>0.1M Na$_2$SO$_4$</td>
<td>69.82 µg h$^{-1}$ mg$^{-1}$</td>
<td>9.14</td>
<td>Indophenol method</td>
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<tr>
<td>Fe@Fe$_3$O$_4$</td>
<td>0.2M NaHCO$_3$</td>
<td>7.956 µg h$^{-1}$ cm$^{-2}$</td>
<td>6.25</td>
<td>Nessler’s reagent</td>
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<tr>
<td>Mn$_3$O$_4$</td>
<td>0.1M Na$_2$SO$_4$</td>
<td>11.6 µg h$^{-1}$ mg$^{-1}$</td>
<td>3</td>
<td>Indophenol method</td>
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<tr>
<td>AuNPs</td>
<td>0.1M Li$_2$SO$_4$</td>
<td>9.22 µg h$^{-1}$ cm$^{-2}$</td>
<td>73.32</td>
<td>Indophenol method</td>
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<tr>
<td>Fe$_{54}$-N-C</td>
<td>0.1M KOH</td>
<td>7.48 µg h$^{-1}$ mg$^{-1}$</td>
<td>56.55</td>
<td>Indophenol method</td>
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<td>O-MoC@NC</td>
<td>0.5M Li$_2$SO$_4$</td>
<td>22.5 µg h$^{-1}$ mg$^{-1}$</td>
<td>25.1</td>
<td>Indophenol method</td>
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<tr>
<td>p-Fe$_2$O$_3$/CC</td>
<td>0.1M Na$_2$SO$_4$</td>
<td>13.56 µg h$^{-1}$ mg$^{-1}$</td>
<td>7.69</td>
<td>Indophenol method</td>
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<tr>
<td>Ag$_3$Cu BPNs</td>
<td>0.1M Na$_2$SO$_4$</td>
<td>24.59 µg h$^{-1}$ mg$^{-1}$</td>
<td>13.28</td>
<td>Indophenol method</td>
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<td>PC/Sb/SbPO$_4$</td>
<td>0.1M HCl</td>
<td>25 µg h$^{-1}$ mg$^{-1}$</td>
<td>31</td>
<td>Indophenol method</td>
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<tr>
<td>Mo$_2$C/C</td>
<td>0.5 m Li$_2$SO$_4$</td>
<td>11.3 µg h$^{-1}$ mg$^{-1}$</td>
<td>7.8</td>
<td>Nessler’s reagent</td>
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<td>Fe-TiO$_2$</td>
<td>0.5M LiClO$_4$</td>
<td>25.47 µg h$^{-1}$ mg$^{-1}$</td>
<td>25.6</td>
<td>Indophenol method</td>
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<tr>
<td>Eex-COF/NC</td>
<td>0.1M KOH</td>
<td>12.53 µg h⁻¹ mg⁻¹</td>
<td>45.43</td>
<td>Indophenol method</td>
<td>[19]</td>
</tr>
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<tr>
<td>BCC PdCu</td>
<td>0.5M LiCl</td>
<td>35.7 µg h⁻¹ mg⁻¹</td>
<td>11.5</td>
<td>Indophenol method</td>
<td>[20]</td>
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</table>

References