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Hydrogenation of levulinic acid into gamma-valerolactone over in situ reduced CuAg bimetallic catalyst: Strategy and mechanism of preventing Cu leaching

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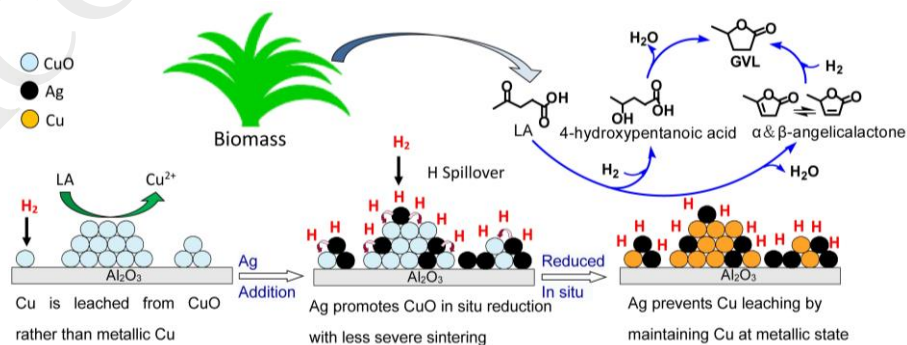
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Graphical abstract

The addition of Ag to the Cu/Al₂O₃ catalyst extensively suppressed Cu leaching; the CuAg/Al₂O₃ catalyst without reduction pretreatment achieved approximately 100% yield to gamma-valerolactone (GVL) and exhibited good repeatability in nine consecutive cycles under mild reaction conditions of 180 °C and 1.4 MPa H₂.



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