

Supplementary Information

Production of γ -valerolactone over mesoporous CuO catalysts using formic acid as the hydrogen source

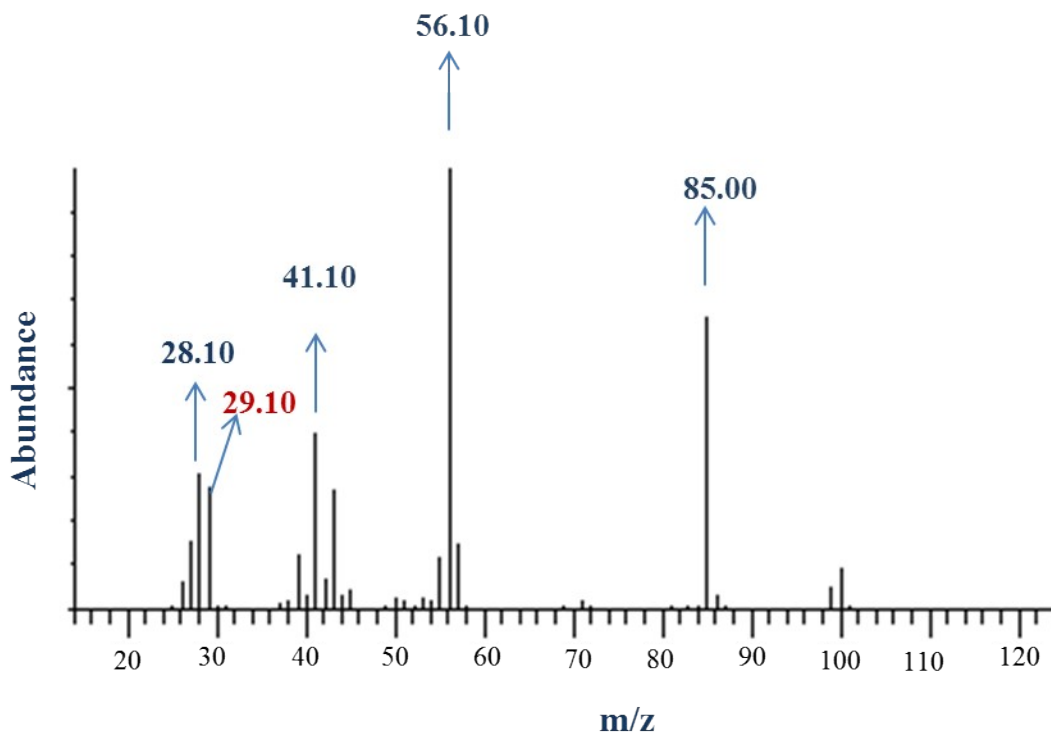
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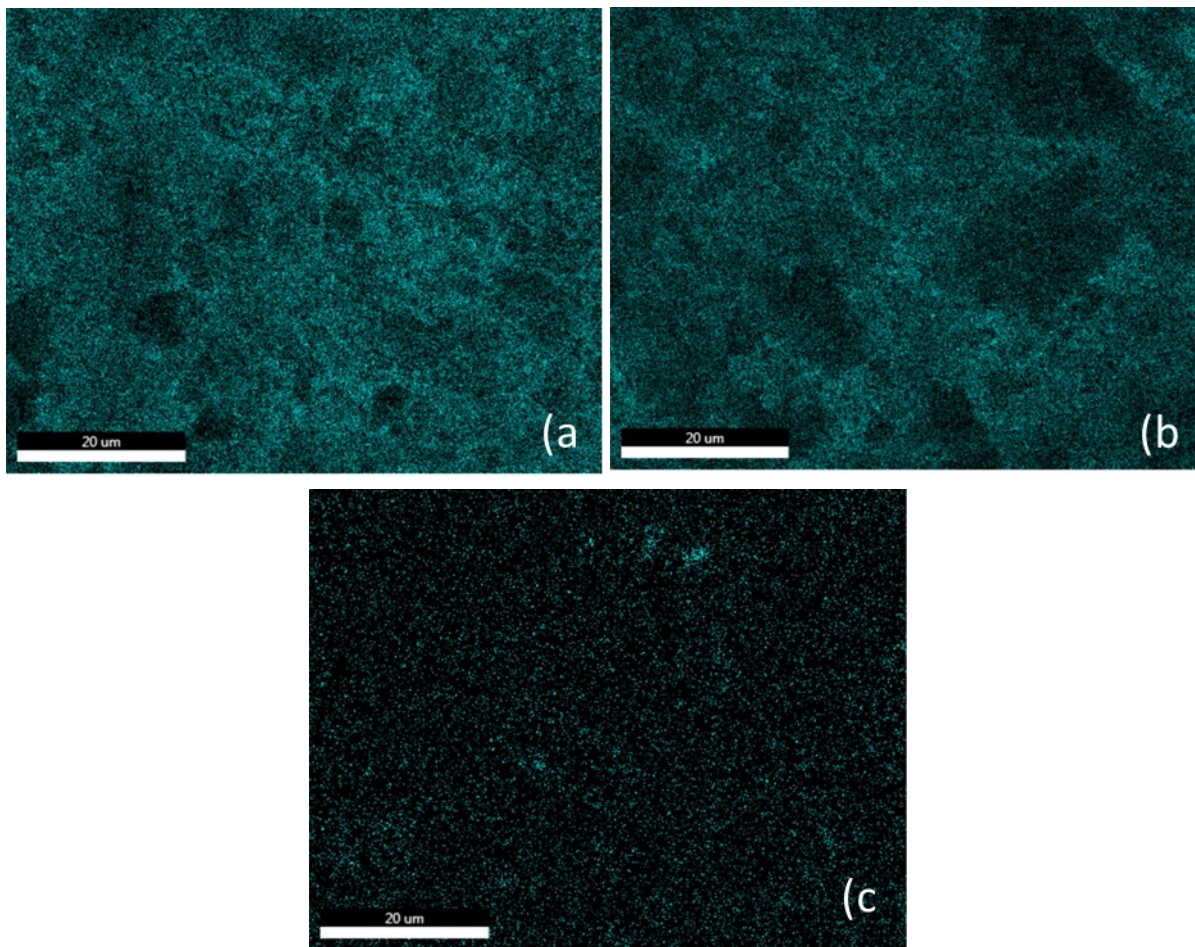
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FIGUER S1. Mass spectrum of GVL was synthesized through conversion of BL using formic acid



FIGUER S2. Elemental mapping (Cu mapping) of a) mCuO, b) mrCuO, d) mCu-KIT-6.

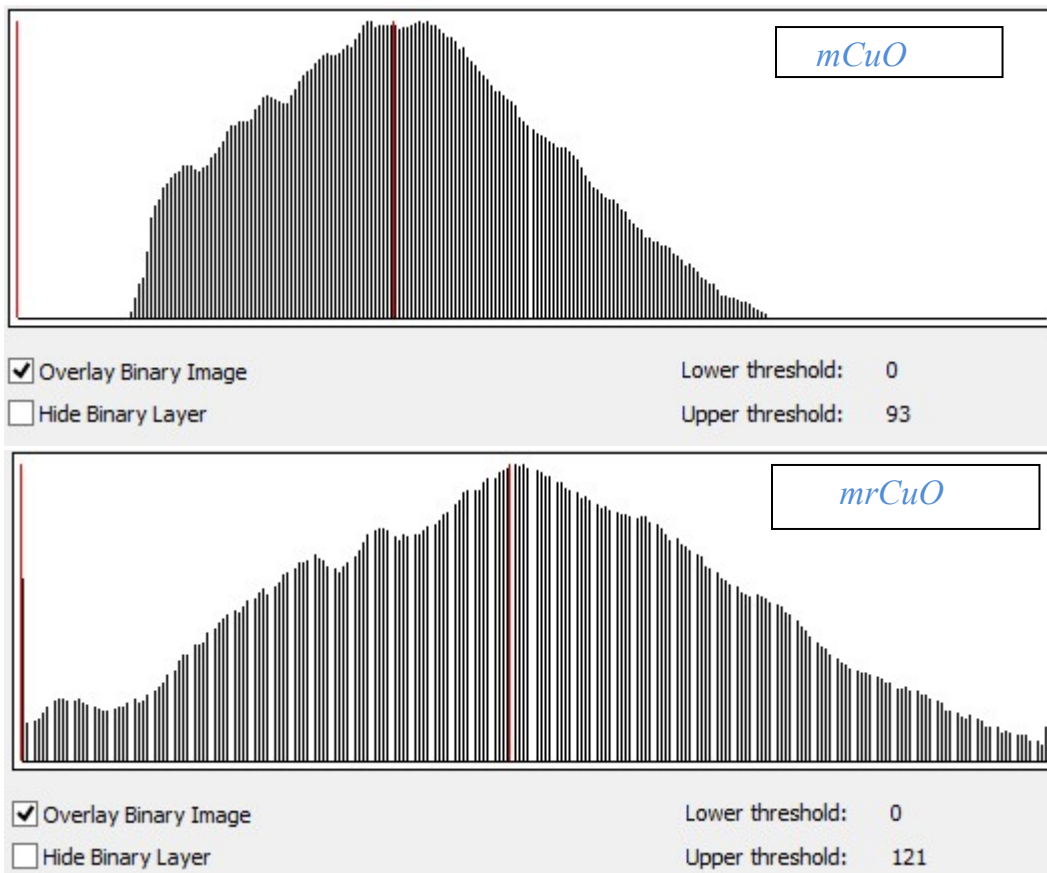
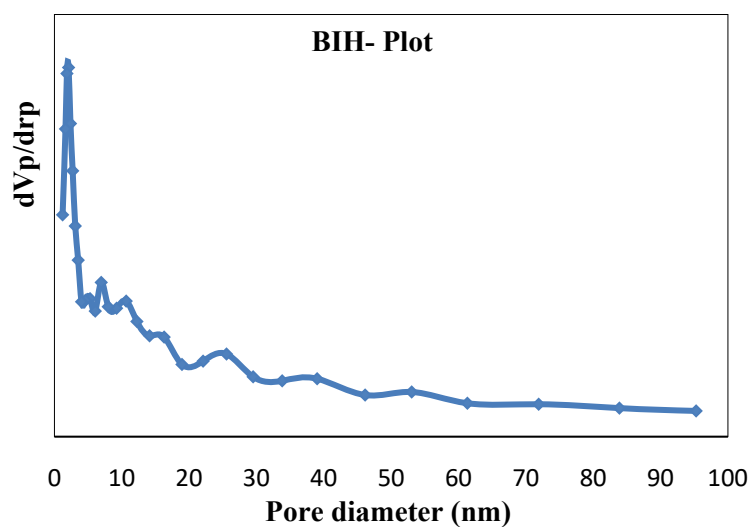
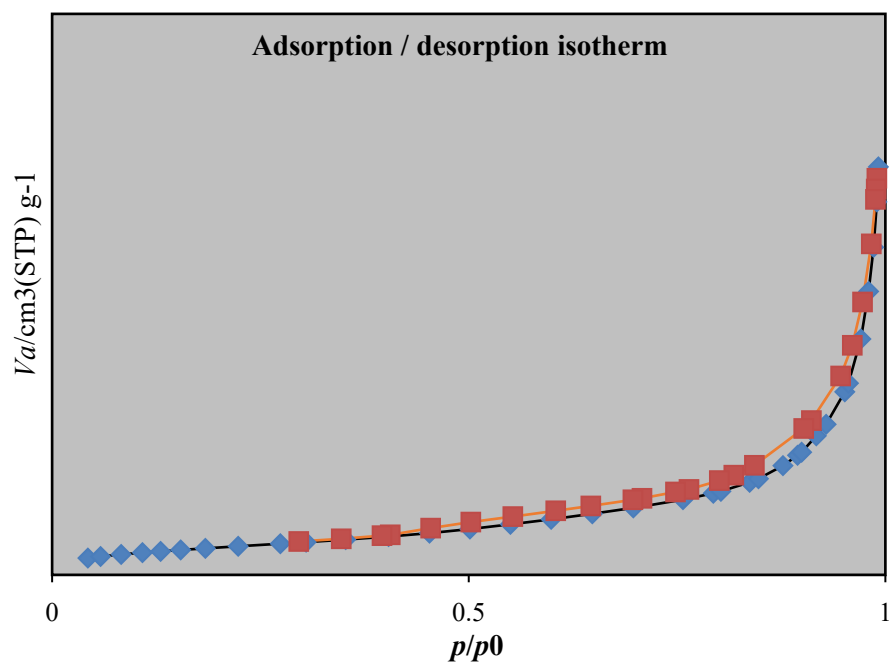


Figure S3 Histogram of the particle size distribution



FIGUER S4. N₂ adsorption / desorption isotherm and BJH plot of recycled mrcuO.

Table S1

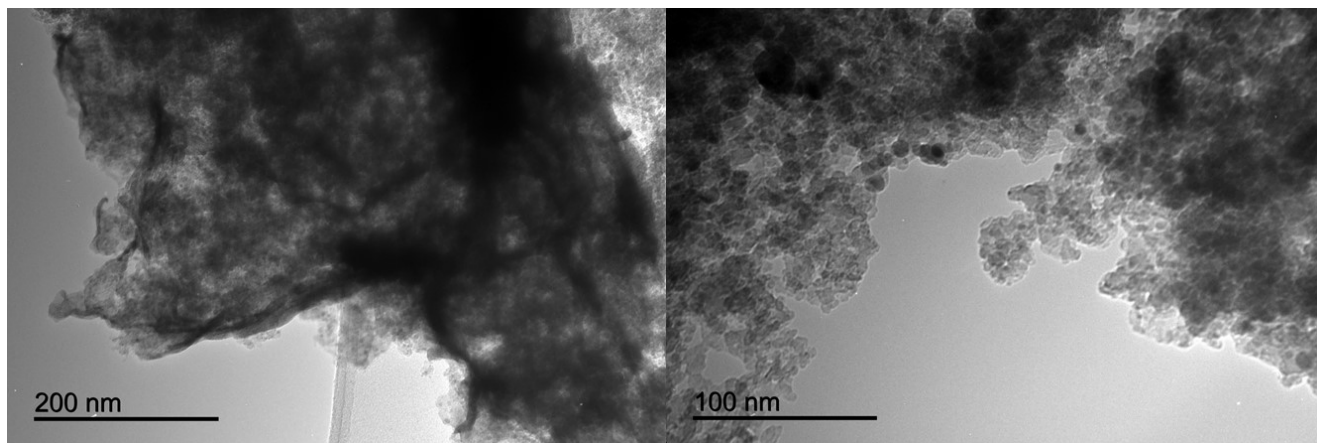
Textural and structural properties of recycled mrcuO catalyst.

Entry	Catalyst	S _{BET} ^a (m ² g ⁻¹)	V _p ^b (cm ³ /g)	r _p ^c (nm)
1	Recycled catalyst	22.36	0.13	2.1

^a Specific surface area.

^b Pore volume.

^c Average pore size distribution by BJH.



FIGUER S5. TEM images of recycled mCuO catalyst