Supporting information for

Highly Efficient Transfer Hydrogenation of Levulinate Esters to γ-Valerolactone over Basic Zirconium Carbonate

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Table S1. The structural information of various basic metal carbonates.

Basic metals carbonate	Structure	Molecular weight (g mol^{-1})
Lead	$2PbCO_3 \cdot Pb(OH)_2$	775.6
Zirconium	$(ZrO)_2CO_3\ (OH)_2 \cdot 2H_2O$	344.5
Nickel	$NiCO_3 \cdot 2Ni(OH)_2 \cdot 4H_2O$	376.2
Zinc	$2ZnCO_3 \cdot 3Zn(OH)_2$	549.1
Mangesium	$4MgCO_3 \cdot Mg(OH)_2 \cdot 5H_2O$	485.8

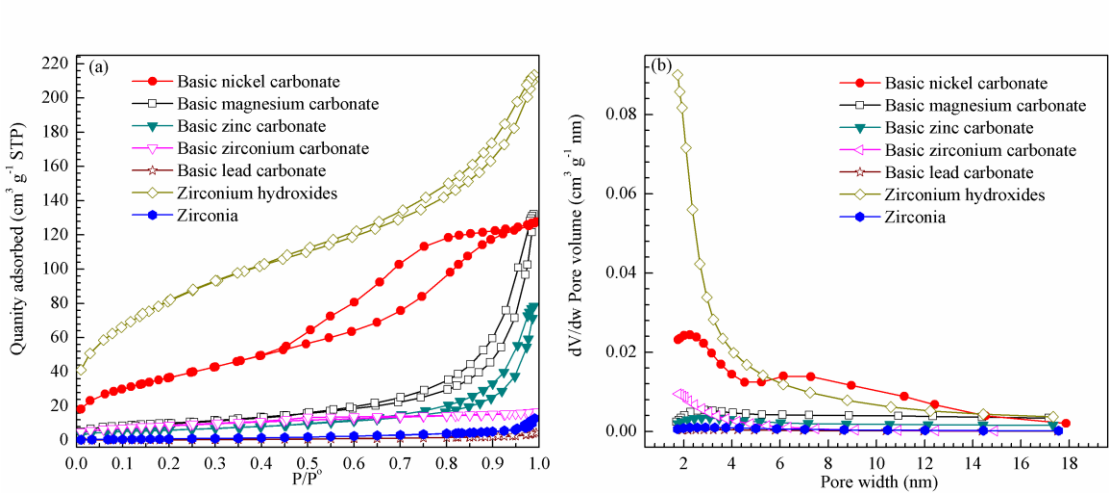

Figure S1. N_2 adsorption-desorption isotherms of various catalysts (a) and pore size distribution (b).

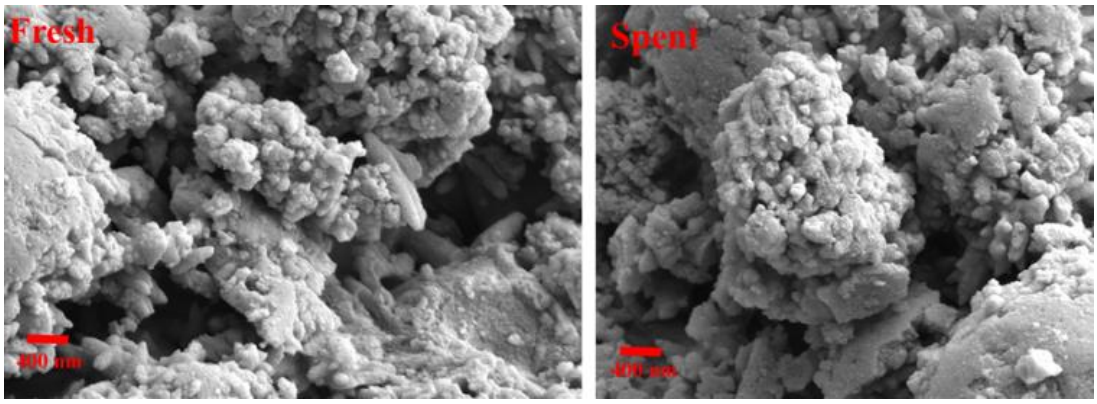

Figure S2. SEM images for the fresh (left) and spent catalysts (right) after six runs.

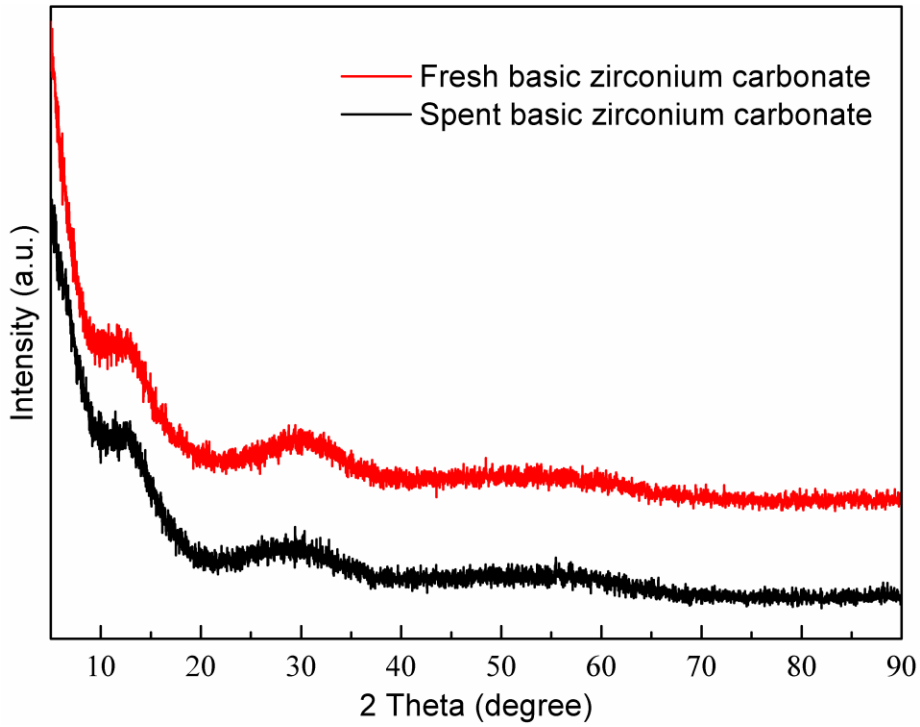

Figure S3. XRD patterns for the fresh and spent catalysts after six runs.

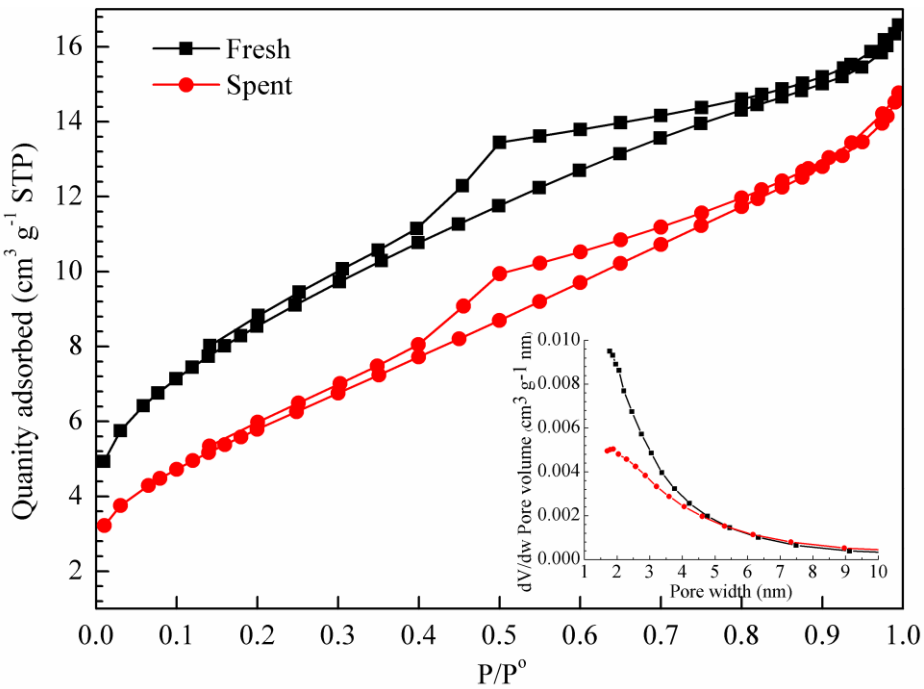

Figure S4. N_2 adsorption-desorption isotherms of fresh and spent basic zirconium carbonate catalysts. The inset shows the resulting pore size distribution.