Supporting Information

Facile Design of Highly Effective $CuCe_xCo_{1-x}O_y$ Catalysts with Diverse Surface/Interface Structures towards NO Reduction by CO at Low Temperatures

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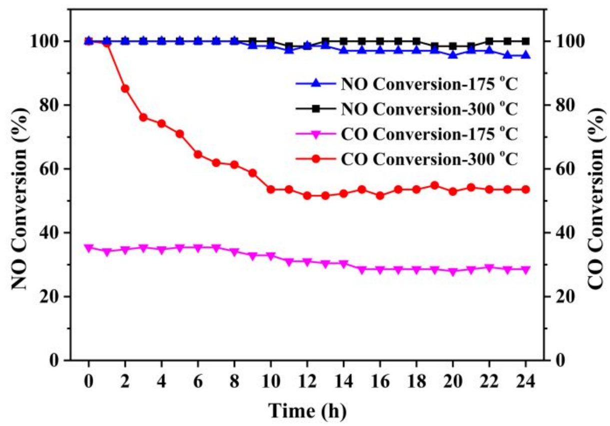

Figure S1. The stability test of $CuCe_{0.2}Co_{0.8}O_y$ catalyst at 175 °C and 300 °C for 24 h. Reaction condition: 1000ppm NO, 2000ppm CO, He balance, GHSV = 50,000 h^{-1}.

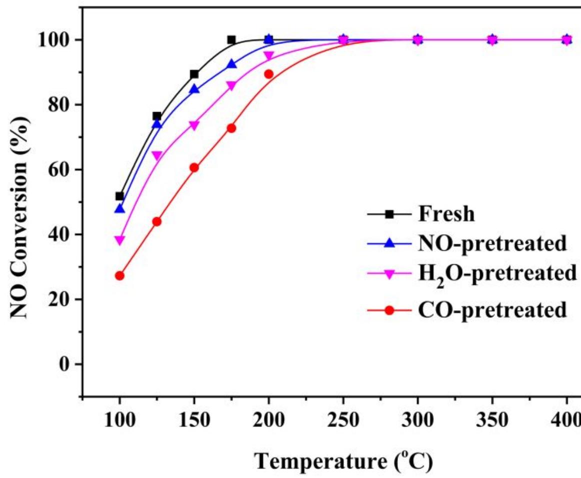

Figure S2. NO conversion of $CuCe_{0.2}Co_{0.8}O_y$ catalyst pretreated under 5000 ppm CO, 5000 ppm NO and 10 % H_2O/He steam at 200 °C. Reaction condition: 1000ppm NO, 2000ppm CO, He balance, GHSV = 50,000 h^{-1}.

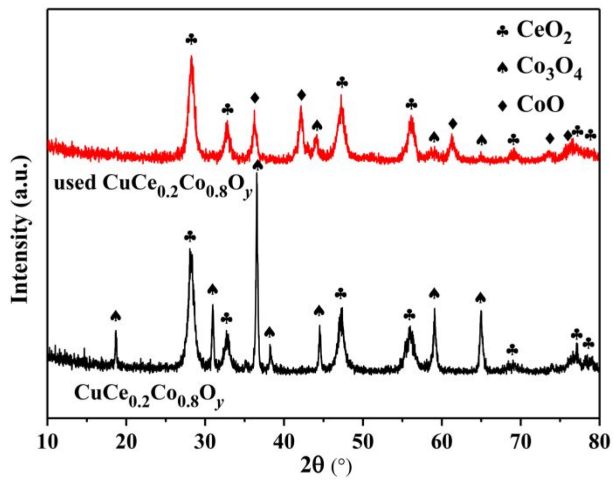

Figure S3. XRD patterns of fresh and used $CuCe_{0.2}Co_{0.8}O_y$ catalysts.

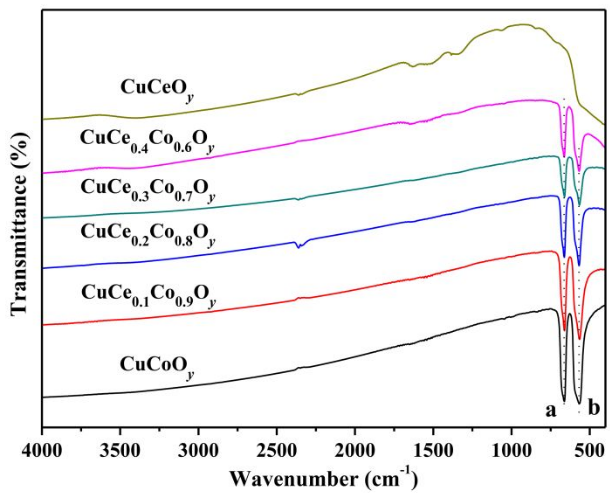

Figure S4. FT-IR spectra of $CuCe_xCo_{1-x}O_y$ catalysts.

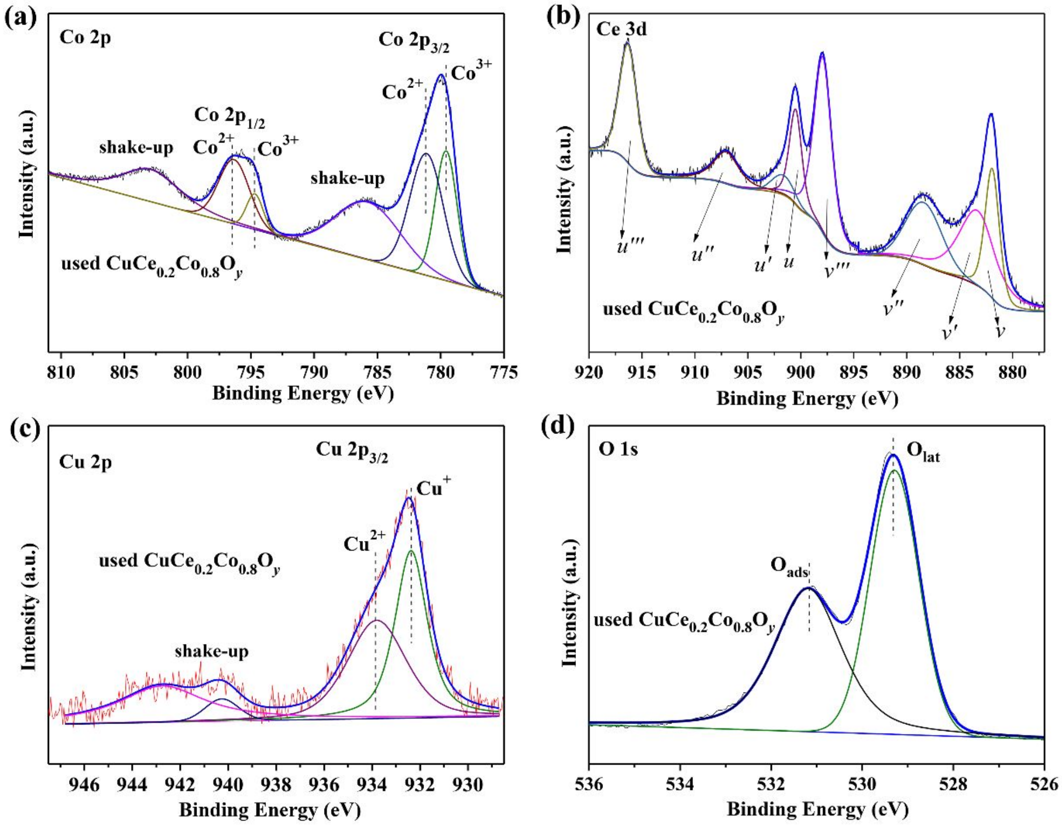

Figure S5. XPS profiles of (a) Co 2p, (b) Ce 3d, (c) Ce 3d and (d) O 1s of used $CuCe_xCo_{1-x}O_y$ catalysts.

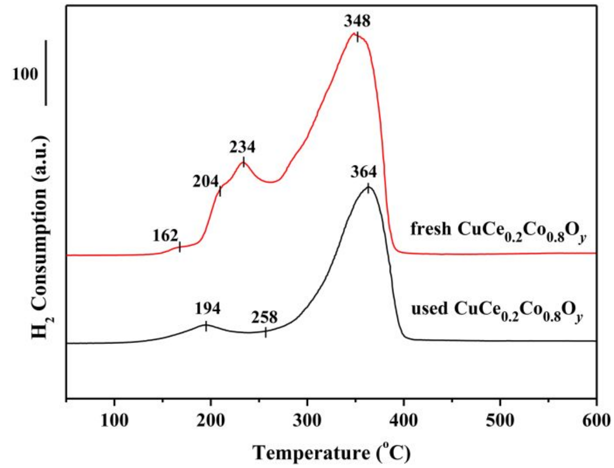

Figure S6. H_2-TPR profiles of fresh and used $CuCe_{0.2}Co_{0.8}O_y$ catalyst.

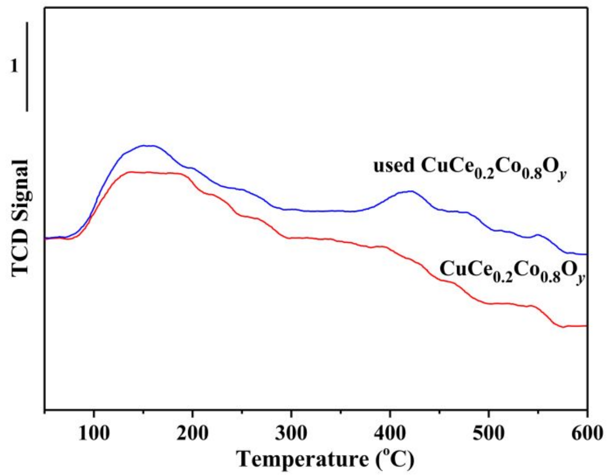

Figure S7. CO-TPD profile of fresh and used $CuCe_{0.2}Co_{0.8}O_y$ catalyst.

Table S1. Comparison of NO conversion for NO reduction by CO over different catalysts.

Catalysts	Reaction condition	NO conversion	Reference
$CuCe_{0.2}Co_{0.8}O_y$	1000 ppm NO, 2000 ppm CO, He balance, GHSV = 50,000 h^{-1}	175 ^oC, 100 %	This work
Fe-Co/ASC	1000 ppm NO, 2000 ppm CO, N_2 balance, GHSV = 6000 h^{-1}	175 ^oC, 70 %	[1]
Cu/MCM-41	250 ppm NO, 750 ppmCO, Flow rate = 80 mL/min	350 ^oC, 23 %	[2]
4% Cu/Fe-Ce	800 ppm NO, 1600 ppm CO, N_2 balance, GHSV = 30,000 h^{-1}	175 ^oC, 100 %	[3]
Cu-Ce/CNTs	250 ppm NO, 5000 ppm CO, He balance, GHSV = 12,600 h^{-1}	175 ^oC, 70 %	[4]
Al(Cu+Co+Ce)	1200 ppm NO, 1200 ppm CO, GHSV = 26,000 h^{-1}	175 ^oC, 65 %	[5]
$CuO/Ce_{0.2}Ti_{0.8}O_2$	6.0% NO, 6.0% CO, He balance, GHSV = 5000 h^{-1}	175 ^oC, 45 %	[6]
Cu/CeO_2	5% NO, 10% CO, He balance, GHSV = 36,000 h^{-1}	175 ^oC, 83 %	[7]
$CuO\text{-}CoO_x/\gamma\text{-}Al_2O_3$	2.5% NO, 5% CO, He balance, GHSV = 12,000 $mL\cdot g^{-1}\cdot h^{-1}$	175 ^oC, 30 %	[8]
Cu-Fe/CNTs	5% NO, 10 % CO, He balance, GHSV = 60,000 h^{-1}	175 ^oC, 55 %	[9]
$CuO\text{-}MnO_x/TiO_2$	5% NO, 10% CO, He balance, GHSV = 12,000 h^{-1}	200 ^oC, 13 %	[10]

References

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