

Figure 1: XRD patterns of the studied catalysts. A) supports; B) gold based catalysts.

Figure 2: Raman spectra of the supports.

Figure 3: Oxygen storage capacity (OSC) of the materials. Left) supports; right) gold based catalysts.

Figure 4: WGS catalytic test. A) Supports activity; B) gold based catalysts activity.

Figure 5: Long term stability test under realistic conditions (50% H₂; 12% CO₂; 30% H₂O; 11% CO)

Table 1. Chemical composition, specific surface area, ceria crystallite size and ceria lattice parameter of the prepared materials.

Sample	%Al₂O₃ (wt%)	%CeO₂ (wt%)	%MO_x (wt%)	%Au (wt%)	CeO₂ crystallite size (nm)¹	CeO₂ lattice parameter (Å)	S_{BET} (m²/g)
Ce/Al	85.38	14.62	-	-	5.2	5.407	186
CeFe/Al	81.70	16.20	2.10	-	5.1	5.394	175
CeCu/Al	82.41	15.65	1.94	-	8.2	5.406	183
CeZn/Al	84.40	14.40	1.20	-	4.9	5.410	185
Au/Ce/Al	83.62	14.70	-	1.68	5.5	5.405	197
Au/CeFe/Al	81.23	14.90	1.72	2.17	5.6	5.396	184
Au/CeCu/Al	80.62	15.78	1.85	1.75	7.3	5.416	175
Au/CeZn/Al	83.59	13.37	1.05	1.99	5.1	5.409	181

¹: estimated by Scherrer equation on CeO₂ (111).

Figure 1

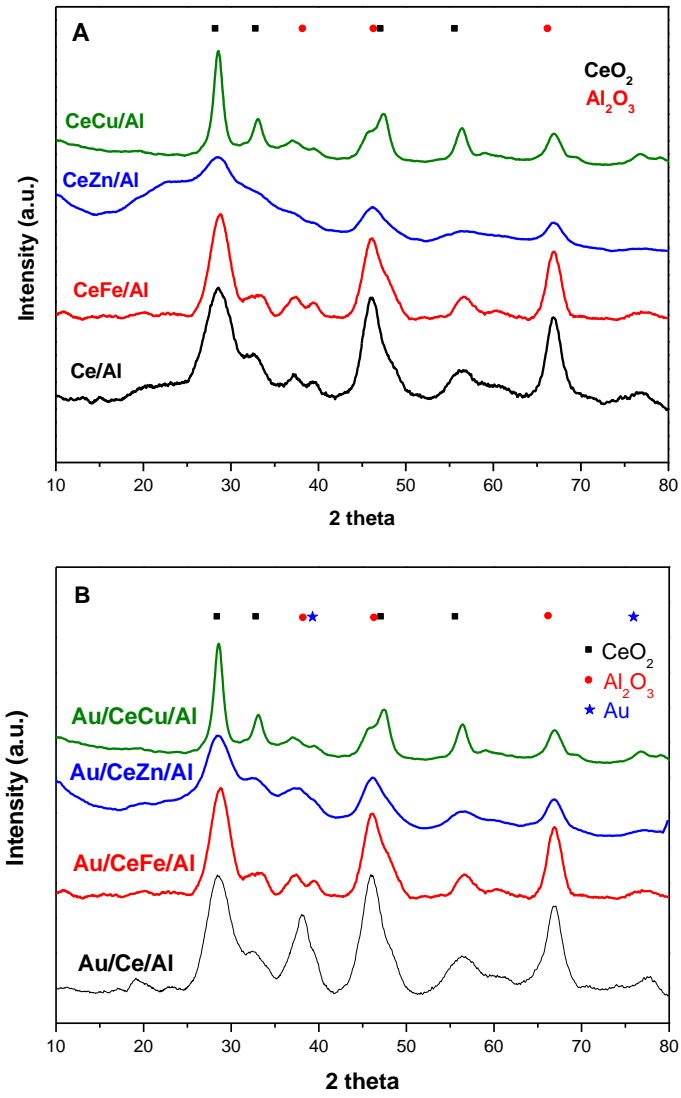


Figure 2

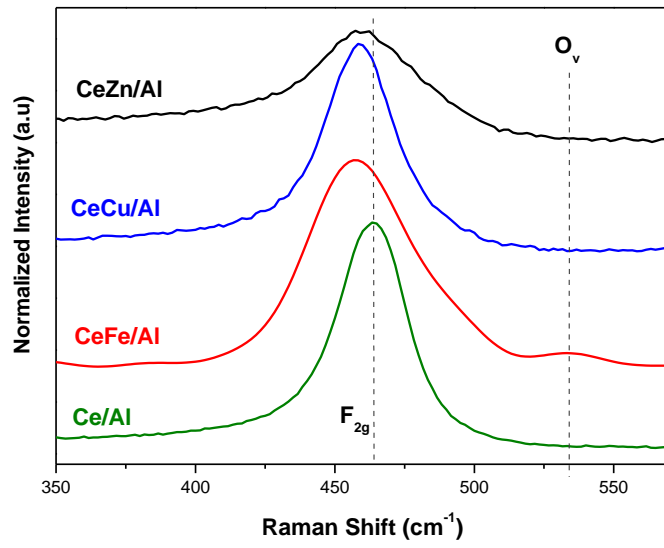


Figure 3

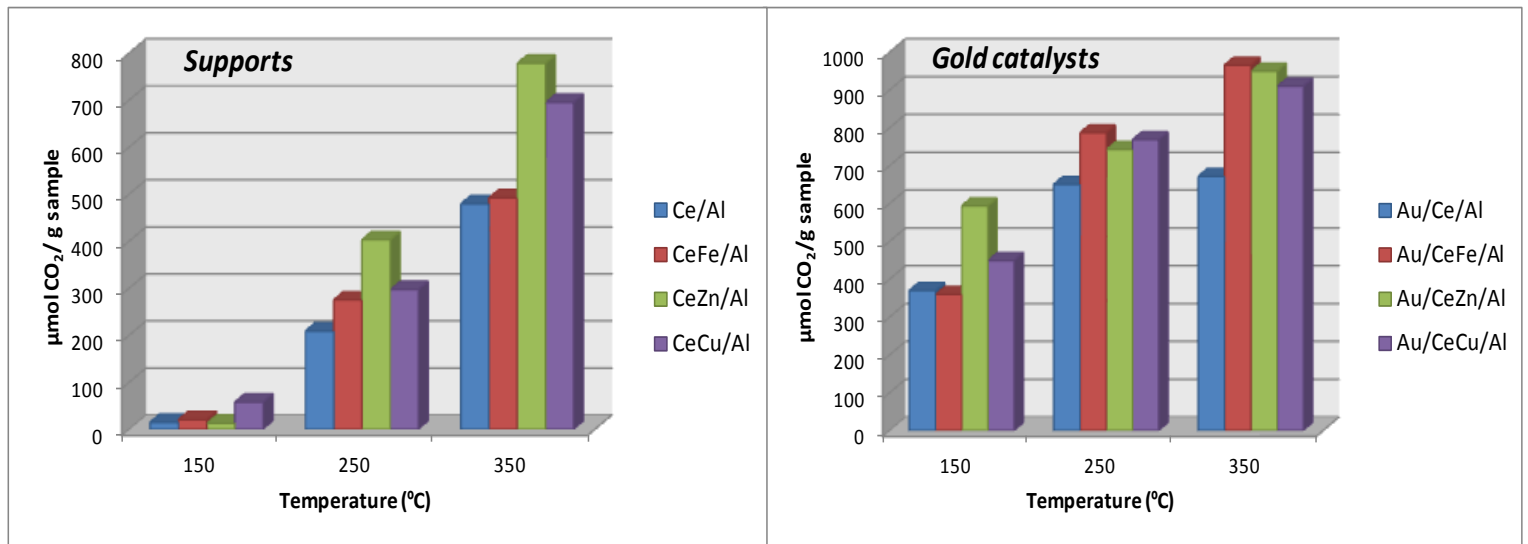


Figure 4

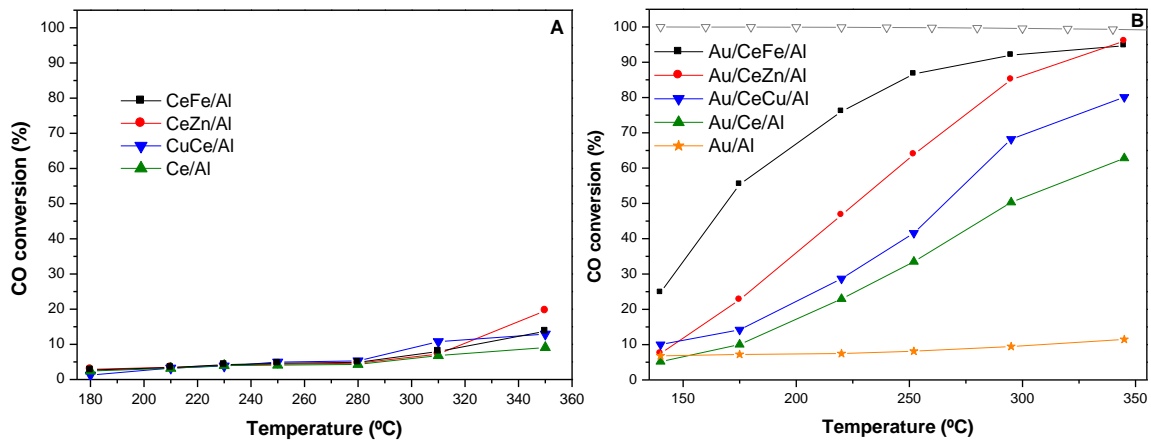


Figure 5

