

Supporting Information

Oxygen Vacancies Dependent Au Nanoparticle Deposition and CO

Oxidation

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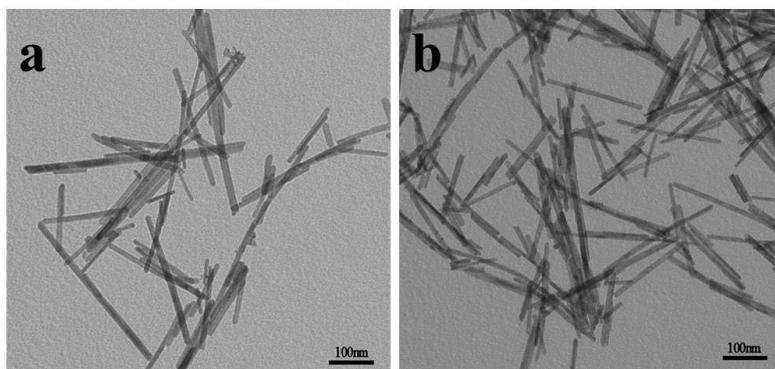


Figure S1. TEM images of (a) CeO₂ NRs (b) VC-CeO₂

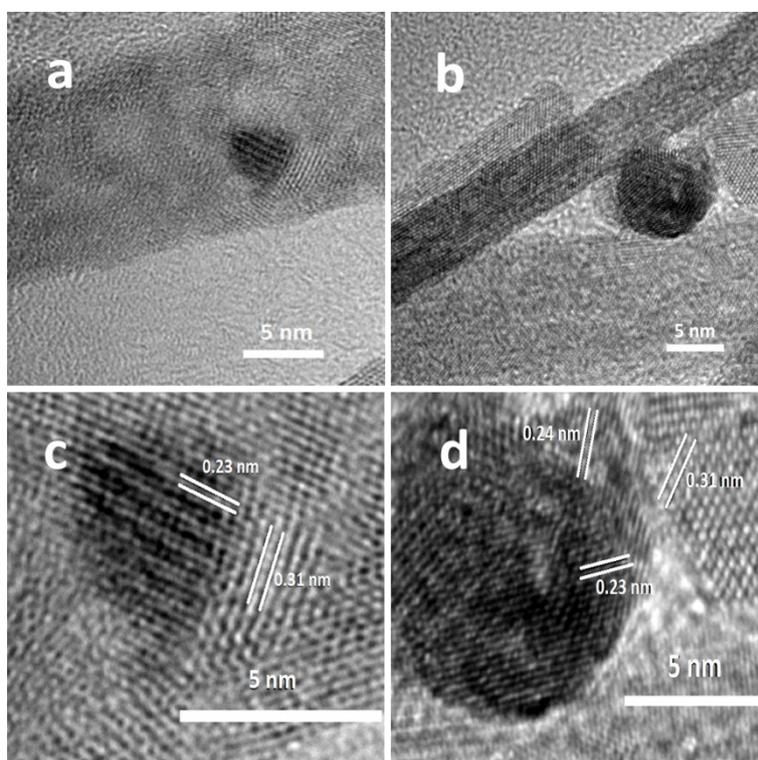


Figure S2. TEM images of (a) Au/CeO₂, (b) Au/VC-CeO₂ and HRTEM identification of (c) Au/CeO₂, (d) Au/VC-CeO₂ after the catalyzed CO oxidation.

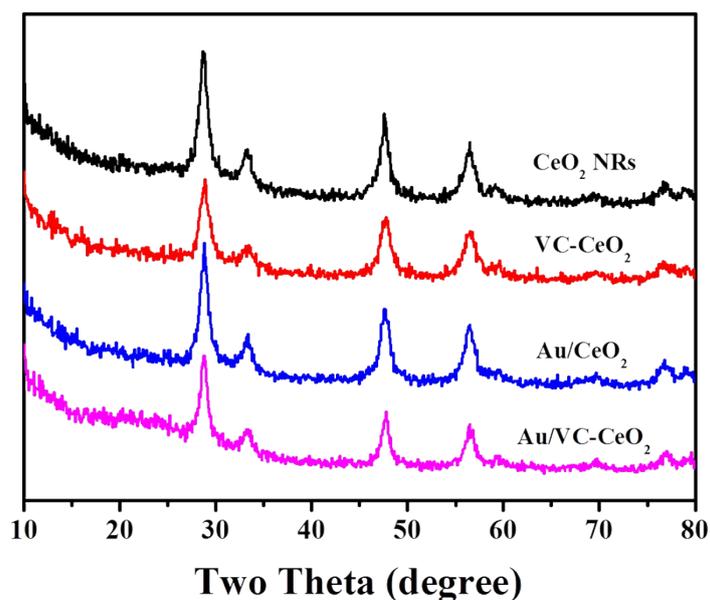


Figure S3. XRD patterns of CeO_2 NRs, VC- CeO_2 , Au/ CeO_2 , and Au/VC- CeO_2 .

Table S1. Content of Au and O species calculated from XPS.

Catalysts	Au^0	Au^+	Au^{3+}	$\text{O}_\beta/\text{O}_\alpha$
CeO_2 NRs	--	--	--	0.42
VC- CeO_2	--	--	--	0.98
Au/ CeO_2	31.4%	18.6%	50.0%	0.55
Au/VC- CeO_2	34.6%	41.0%	24.4%	0.53

Table S2. Content of Au and Ce species calculated from XPS after CO oxidation.

Catalysts	Au^0	Au^+	Au^{3+}	Ce^{3+}
Au/ CeO_2	73.1%	16.2%	10.69%	27.56%
Au/VC- CeO_2	84.68%	15.32%	0%	26.18%

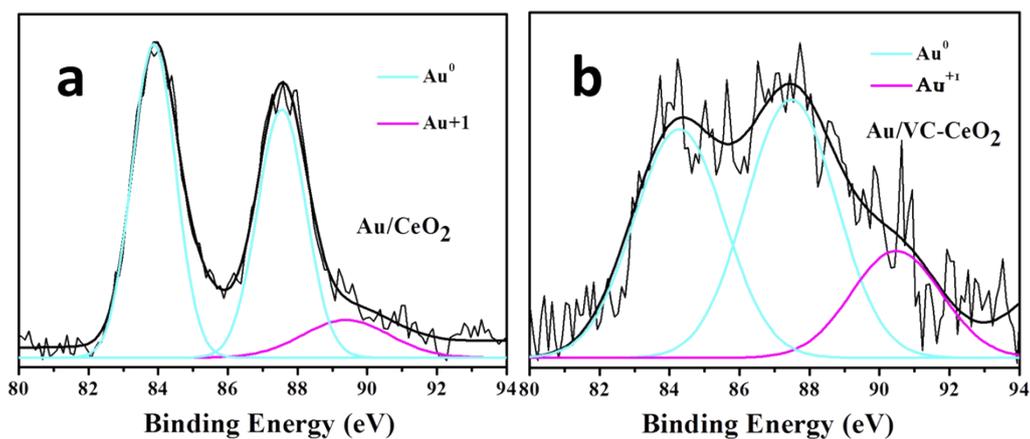


Figure S4. XPS spectra of (a) Au/CeO₂, and (b) Au/VC-CeO₂ after CO oxidation.

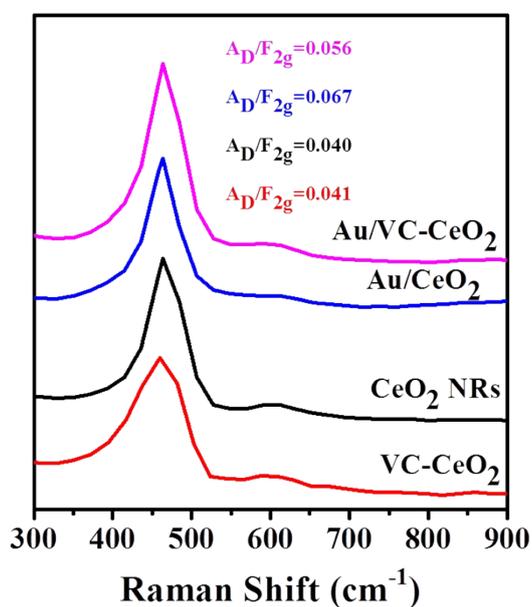


Figure S5. Raman spectra of CeO₂ NRs, VC-CeO₂, Au/CeO₂, and Au/VC-CeO₂ after CO oxidation.

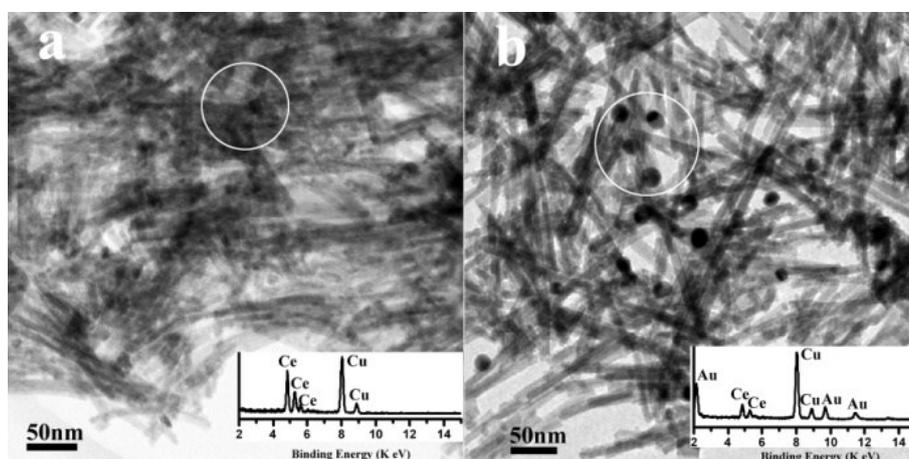


Figure S6. TEM observation of (a) pristine CeO₂ NRs and (b) VC-treated CeO₂ NRs

reacted with HAuCl_4 , respectively.