

**Effect of copper loading on synergism in CuO/CeO<sub>2</sub> nanorod catalyst  
for toluene combustion**

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Table S1 ICP-MS results for the catalysts

Catalyst	Copper oxide concentration (ppb)	Copper oxide loading ratio (wt. %)
CuCe-1	430.1	0.83
CuCe-2	511.3	1.33
CuCe-3	665.2	2.74
CuCe-4	790.7	3.82
CuCe-5	880.3	4.29

Table S2 Consumption of temperature programmed experiments

Catalyst	H <sub>2</sub> consumption (μmol/g)			O <sub>2</sub> desorption (μmol/g)	
	Peak $\alpha$	Peak $\beta$	Peak $\gamma$	Peak $\alpha$	Peak $\beta$
CuCe-1	1.04	17.36	8.77	1.78	0.92
CuCe-2	5.50	28.09	4.85	1.95	0.78
CuCe-3	3.47	8.97	3.32	5.98	2.59
CuCe-4	1.07	10.76	3.93	0.90	10.85
CuCe-5	5.70	7.27	8.13	1.48	3.02

Table S3 Comparison of catalytic activities in different reference

Catalyst	Toluene reaction gas mixture	GHSV ( $\text{mL}\cdot\text{g}_{\text{cat}}^{-1}\cdot\text{h}^{-1}$ )	T <sub>100</sub> (°C)	Reference
CuCe-4	1000ppm	18000	260	This work
CuO	1000ppm	30000	280	[1]
Cu <sub>0.5</sub> Ce <sub>0.5</sub> -C	500ppm	50000	298	[2]
Cu <sub>0.5</sub> Ce <sub>0.5</sub> -DR	500ppm	50000	260	[2]
CuCe-SG	1500ppm	35000	280	[3]

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