

## Enhancement of the CO oxidation reaction: Impact of the precursor addition sequence on the synthesis of Au-Co<sub>3</sub>O<sub>4</sub>/Al<sub>2</sub>O<sub>3</sub> catalysts

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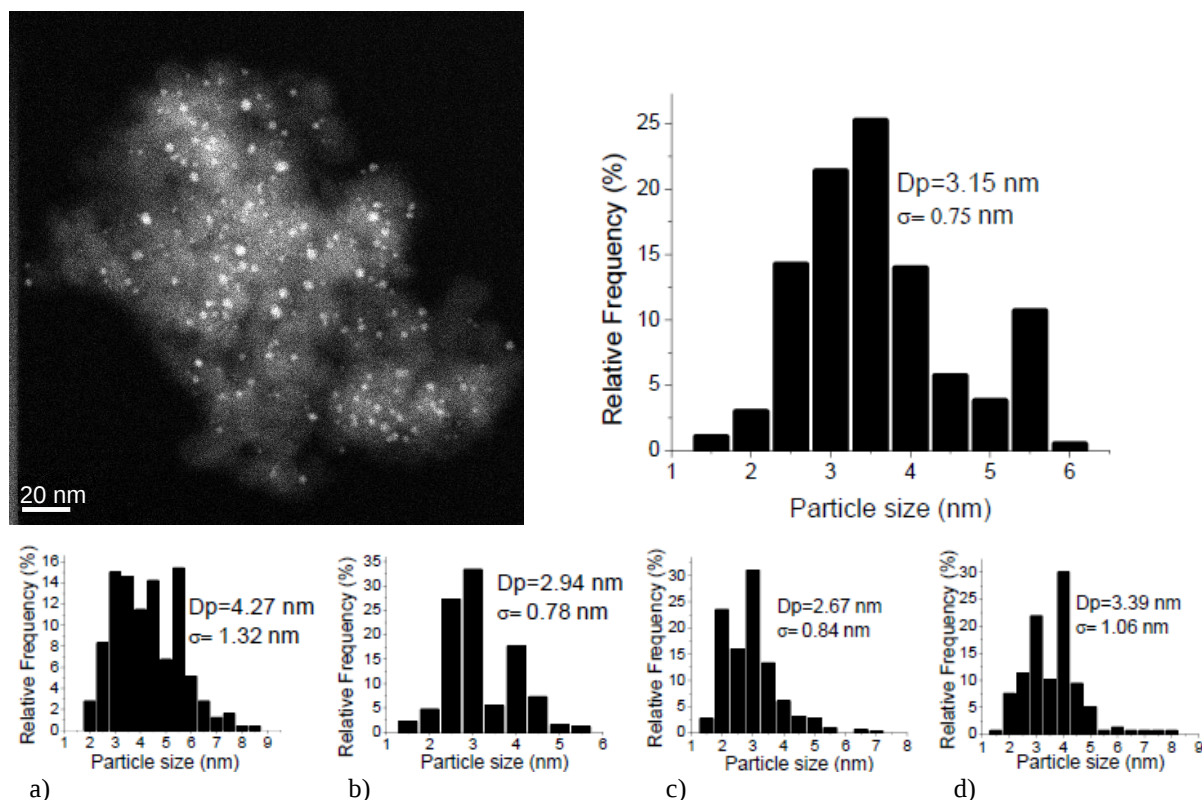
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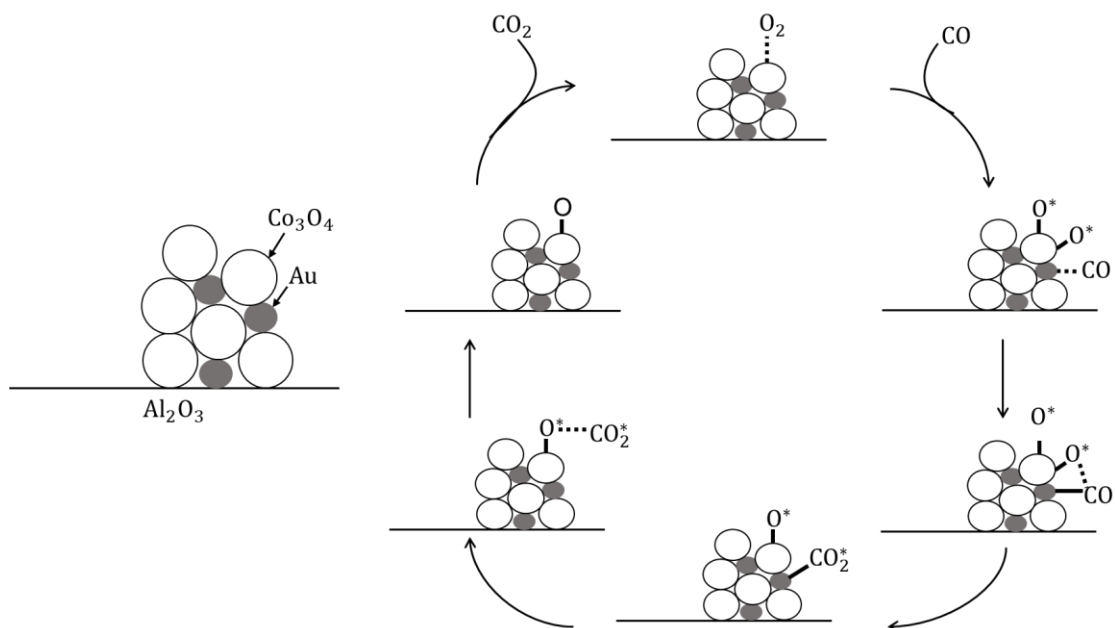
### SUPPLEMENTARY MATERIAL

**Table 1.** EDS analysis result for the fresh catalysts in wt. %.

| Catalyst                                             | O     | Al    | Au   | Co   |
|------------------------------------------------------|-------|-------|------|------|
| Au/Al <sub>2</sub> O <sub>3</sub>                    | 57.67 | 39.62 | 2.71 | ---- |
| Co/Al <sub>2</sub> O <sub>3</sub>                    | 47.47 | 51.90 | ---- | 0.63 |
| AuCo <sub>1.18</sub> /Al <sub>2</sub> O <sub>3</sub> | 51.41 | 45.15 | 2.76 | 0.68 |
| AuCo <sub>2.98</sub> /Al <sub>2</sub> O <sub>3</sub> | 49.96 | 44.19 | 3.03 | 2.82 |
| Co <sub>1.25</sub> Au/Al <sub>2</sub> O <sub>3</sub> | 49.94 | 46.77 | 2.67 | 0.62 |
| Co <sub>3.10</sub> Au/Al <sub>2</sub> O <sub>3</sub> | 52.74 | 41.82 | 2.73 | 2.71 |



**Fig. 1** (Top) HAADF TEM image and their respective histogram of Au/Al<sub>2</sub>O<sub>3</sub> catalyst that shown a particle size of 3.15 nm. (Bottom) histograms for a) AuCo<sub>1.18</sub>/Al<sub>2</sub>O<sub>3</sub>, b) Co<sub>1.25</sub>Au/Al<sub>2</sub>O<sub>3</sub>, c) AuCo<sub>2.98</sub>/Al<sub>2</sub>O<sub>3</sub> and d) Co<sub>3.10</sub>Au/Al<sub>2</sub>O<sub>3</sub> thermally treated at 400 °C in air.



**Fig. 2** Schematic representation of the possible pathway for the CO catalytic oxidation over the catalyst Au-Co<sub>3</sub>O<sub>4</sub>/Al<sub>2</sub>O<sub>3</sub>, according to the references: P. Thormählen, M. Skoglundh, E. Fridell, and B. Andersson, *J. Catal.* 188, 300-310 (1999) and Jonas Jansson, *J. Catal.* 194, 55-60 (2000).