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## **Supplementary Information (SI)**

## Promotional mechanism of enhanced denitration activity with Cu modification in Ce/TiO<sub>2</sub>-ZrO<sub>2</sub> catalyst for low temperature NH<sub>3</sub>-SCR system

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Fig. S1 Optimized structures of the intermediates and the transition states for  $NH_3$  dehydrogenation reaction on the Cu atoms. The bond lengths are given in Å.

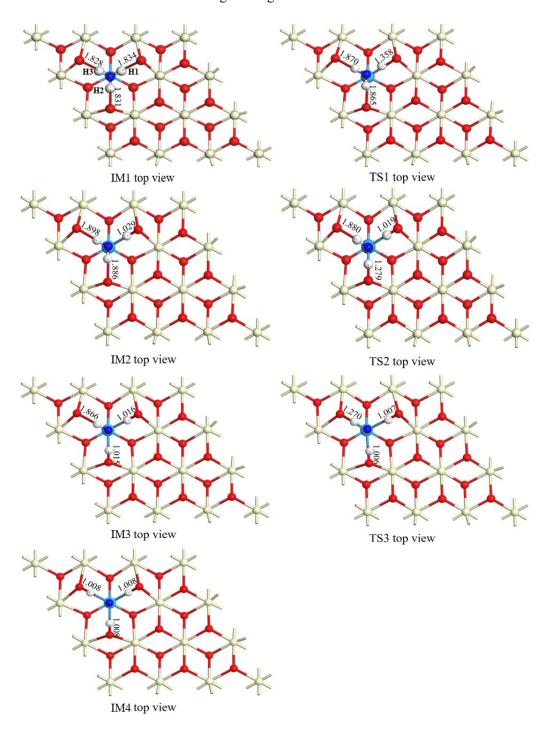


Fig. S2 Optimized structures (top view) of NO adsorptions on (a) Cu-NH<sub>2</sub>, (b) Cu-NH, (c) Cu-N, (d) NH<sub>2</sub>-Cu-OH, (e) NH<sub>2</sub>-Cu-O. The bond lengths are given in Å.

