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Title: Promotion effect of rare-earth elements on the catalytic decomposition of ammonia over Ni/Al<sub>2</sub>O<sub>3</sub> catalyst

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## ACCEPTED MANUSCRIPT

# Promotion effect of rare-earth elements on the catalytic decomposition of ammonia over Ni/Al<sub>2</sub>O<sub>3</sub> catalyst

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#### Graphical abstract

#### Highlights

- The Ni/Al<sub>2</sub>O<sub>3</sub> catalysts modified by rare-earth elements were investigated.
- The addition of rare-earth elements promoted ammonia decomposition reaction.
- La-modified Ni/Al<sub>2</sub>O<sub>3</sub> was most active in this study.
- The hydrogen inhibition phenomenon was alleviated by the modification.

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