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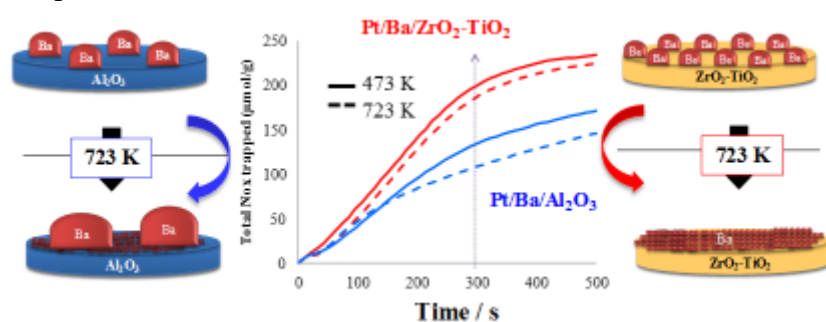
# Effect of support material $\text{Al}_2\text{O}_3$ vs $\text{ZrO}_2\text{-TiO}_2$ on the Ba availability for NSR catalyst: an *in situ* and *operando* IR study.

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## Graphical abstract



## HIGHLIGHTS

- $\text{ZrO}_2\text{-TiO}_2$  presents a high superficial density of BaO anchoring sites compared to  $\text{Al}_2\text{O}_3$ .
- Medium sized isolated BaO clusters form over  $\text{Al}_2\text{O}_3$ .
- $\text{ZrO}_2\text{-TiO}_2$  stabilizes high density of small BaO particles.
- IR *operando* shows high Ba availability over  $\text{ZrO}_2\text{-TiO}_2$  resulting in fast nitration.

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