Title: Effect of support material Al_2O_3 vs ZrO_2-TiO_2 on the Ba availability for NSR catalyst: an *in situ* and *operando* IR study

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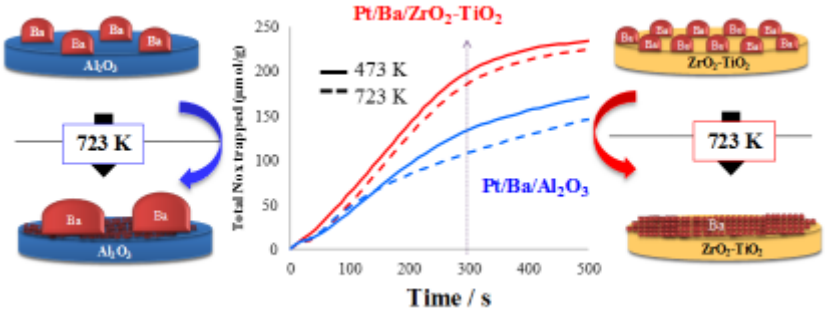
Graphical abstract



HIGHLIGHTS

- ZrO_2-TiO_2 presents a high superficial density of BaO anchoring sites compared to Al_2O_3.
- Medium sized isolated BaO clusters form over Al_2O_3.
- ZrO_2-TiO_2 stabilizes high density of small BaO particles.
- IR *operando* shows high Ba availability over ZrO_2-TiO_2 resulting in fast nitration.