Supplemental information



**Fig. S1** Outlet concentration of bypass gas stream.

(Inlet gas composition: NO=1000 ppm, O2=5%)

Blank control experiment was designed to check the response of the analyzer to the inlet gas concentration. It means that there is no catalysts in the reactor. The obtained outlet concentrations were plotted in Fig. S1.

In the experiment, the valve was switched at 7s to allow NO to enter the reactor. However, the concentration of NO begins to rise at 10s. The reason includes both the response of the gas analyzer and the dispersion in pipelines, reactor, and gas analyzer’s pump. Dead volume is existed. Therefore, the profile of NOx was moved forward by 3 s. The profile of adjusted NOx with hollowed symbols is in good agreement with that in reality, implying a synchronous response.





**Fig. S2** Isotherm Linear Plot, (a) Fe/ZSM-5(SI), (b) Fe/ZSM-5(HI),

(c) Fe/ZSM-5(AI), (d) H/ZSM-5