

Electronic Supplementary Information

Table SII. Summary of the catalysts evaluated in this study.

Sample	Method	Parent zeolite or support	Si/Al ratio	Metal precursor	Fe / wt. %	Ref. ^b
Fe-ZSM-5-st	Steam activation	Home-made	31	Fe(NO ₃) ₃ ·9H ₂ O	0.7	1
FeGa-ZSM-5-st	Steam activation	Home made	32 ^a	Fe(NO ₃) ₃ ·9H ₂ O	0.6	1
Fe-silicalite-st	Steam activation	Home made	∞	Fe(NO ₃) ₃ ·9H ₂ O	0.7	1
ZSM-5-st	Steam activation	CBV 8020, Zeolyst	37	No iron added	0.017	1
Fe-ZSM-5-cvd	Chemical vapour deposition	CBV 3024E, Zeolyst	15	FeCl ₃	4.5	2
Fe-ZSM-5-lie,n	Liquid-ion exchange	CBV 3024E, Zeolyst	15	Fe(NO ₃) ₃ ·9H ₂ O	0.8	1
Fe-ZSM-5-iw	Incipient wetness	CBV 3024E, Zeolyst	15	FeSO ₄ ·7H ₂ O	2.0	1
Fe-ZSM-5-lie	Liquid-ion exchange	CBV 8014, Zeolyst	40	FeSO ₄ ·7H ₂ O	1.7	3
Fe-beta-lie	Liquid-ion exchange	CP 814C, Zeolyst	19	FeSO ₄ ·7H ₂ O	1.8	3
Fe-mordenite-lie	Liquid-ion exchange	CBV 21A, Zeolyst	10	FeSO ₄ ·7H ₂ O	1.6	3
Fe-ferrierite-lie	Liquid-ion exchange	CP 914C, Zeolyst	10	FeSO ₄ ·7H ₂ O	1.7	3
Rh-ZSM-5-iw	Incipient wetness	CBV 3024E, Zeolyst	15	RhCl ₃	0.4	4
Fe/Al ₂ O ₃	Incipient wetness	γ-Al ₂ O ₃ , 507-C, Aldrich	-	FeSO ₄ ·7H ₂ O	2.0	1

^a Si/Ga ratio.

^b Recipes for the preparation of the catalysts have been adapted from the literature:

1. J. Pérez-Ramírez, F. Kapteijn, G. Mul, J.A. Moulijn, *J. Catal.* 2002, **208**, 211.
2. H.-Y. Chen, W.M.H. Sachtler, *Catal. Today* 1998, **42**, 73.
3. J.C. Groen, Ll. Maldonado, E. Berrier, A. Brückner, J.A. Moulijn, J. Pérez-Ramírez, *J. Phys. Chem. B* 2006, **110**, 20369.
4. J. Pérez-Ramírez, F. Kapteijn, G. Mul, X. Xu, J.A. Moulijn, *Catal. Today* 2002, **76**, 55.

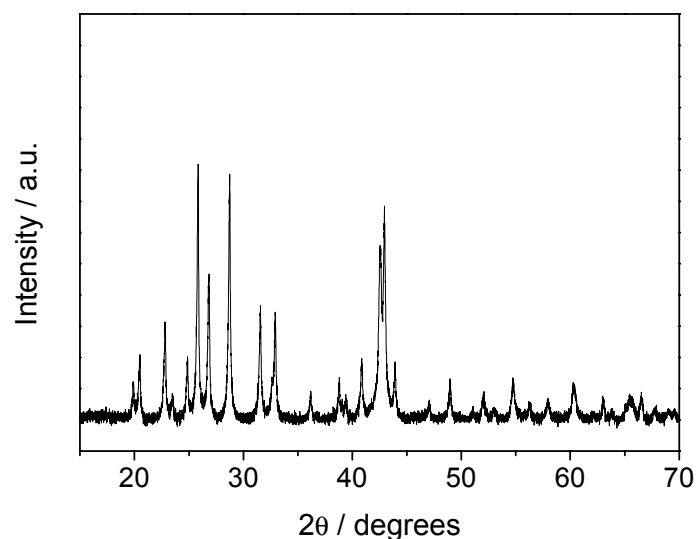


Fig. S11. X-ray diffraction pattern of the solid formed by precipitating the outlet gas of the $\text{N}_2\text{O}+\text{SO}_2$ reaction over Fe-ZSM-5-st with a 0.2 M BaNO_3 aqueous solution. The reflections correspond to BaSO_4 (JCPDS 24-1035), supporting the formation of SO_3 in the reaction. The pattern was measured in a Bruker AXS D8 Advance diffractometer equipped with a Cu tube, a Ge(111) incident beam monochromator, and a Vantec-1 PSD. Data were recorded with an angular step size of 0.016° and a counting time of 6 s per step.