Supporting Information for the Manuscript

Crucial role of titanium dioxide support in soot oxidation catalysis of manganese doped ceria

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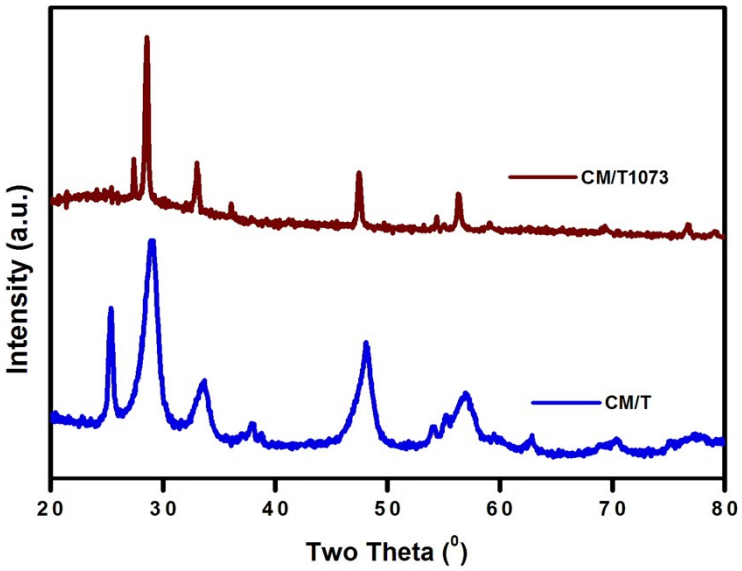
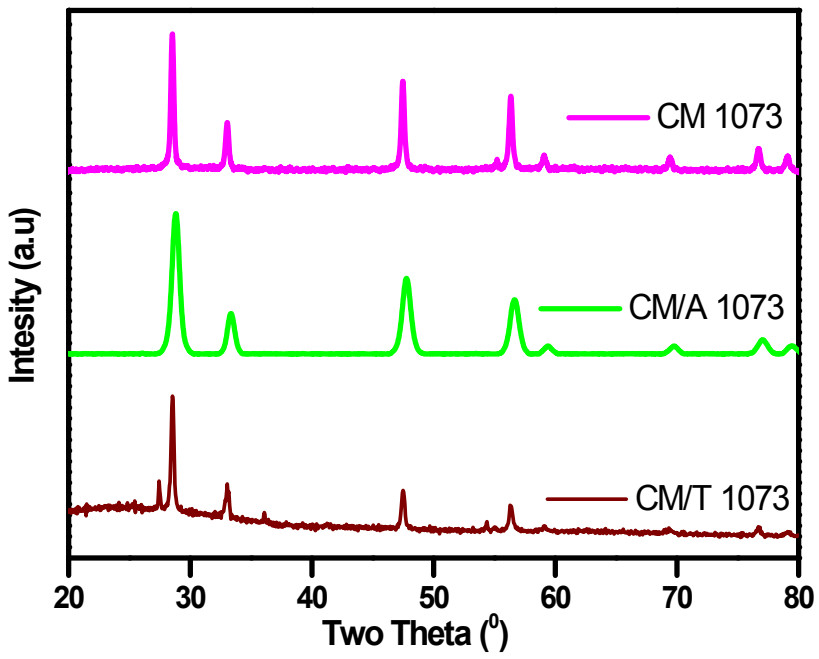


Fig. S1: X-Ray Diffraction pattern of CeO_2-MnO_2/TiO_2 calcined at 773 K (CM/T) and CeO_2-MnO_2/TiO_2 calcined at 1073 K (CM/T1073)



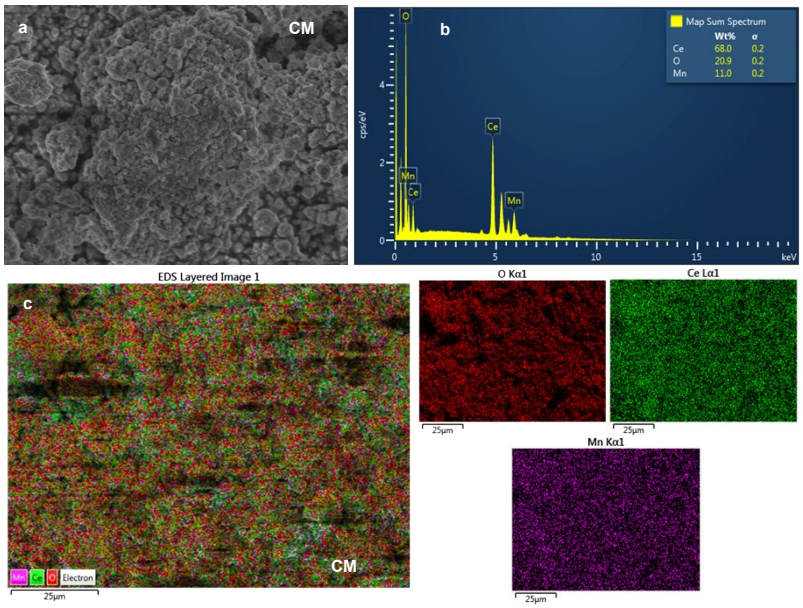


Fig. S3: FESEM (A), EDAX (B), EDS (C) images of CeO_2-MnO_2 (CM) samples calcined at 773 K.

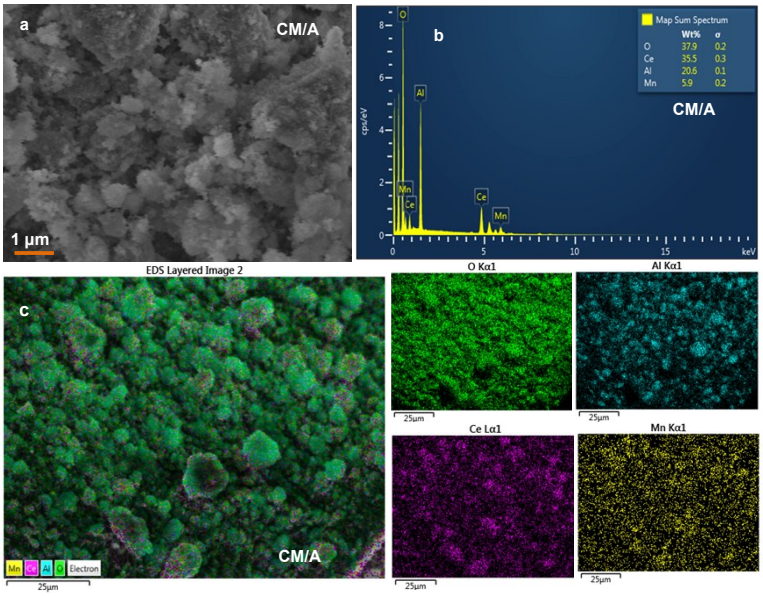


Fig. S4: FESEM (A), EDAX (B), EDS (C) images of CeO_2-MnO_2 /Al_2O_3 (CM/A) samples calcined at 773 K.

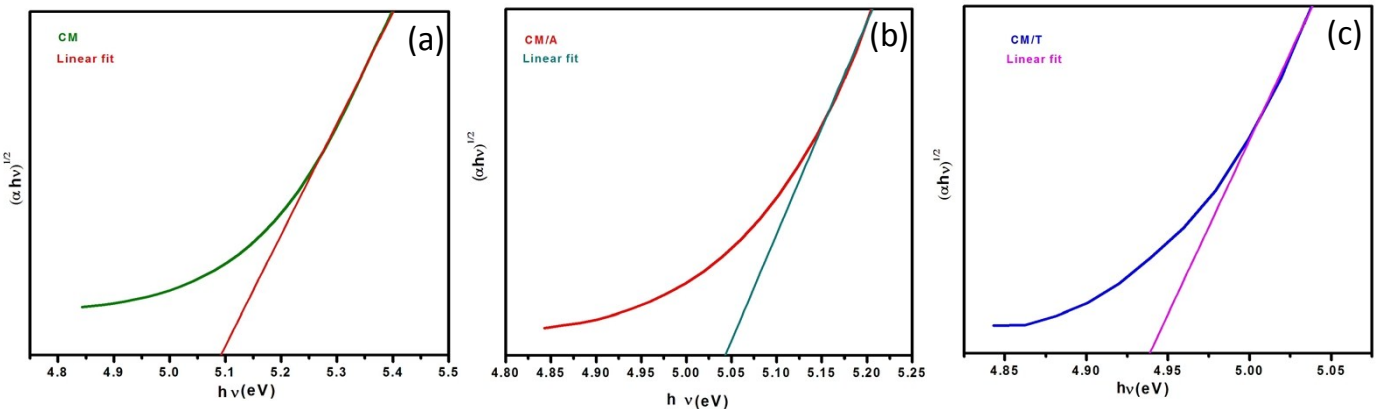


Fig. S5: Plot of Kubelka-Munk function ($(\alpha h\nu)^{1/2}$) against energy (hν eV) for (a) CeO_2-MnO_2 calcined at 773 K (CM), (b) CeO_2-MnO_2/Al_2O_3 calcined at 773 K (CM/A), (c) CeO_2-MnO_2/TiO_2 calcined at 773 K (CM/T).

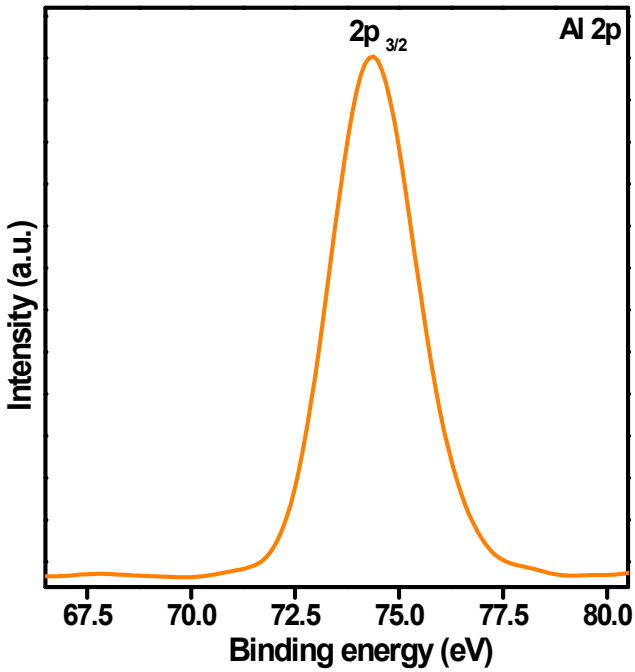


Fig. S6: Al 2p XPS of CeO_2-MnO_2/Al_2O_3 calcined at 773 K (CM/A)

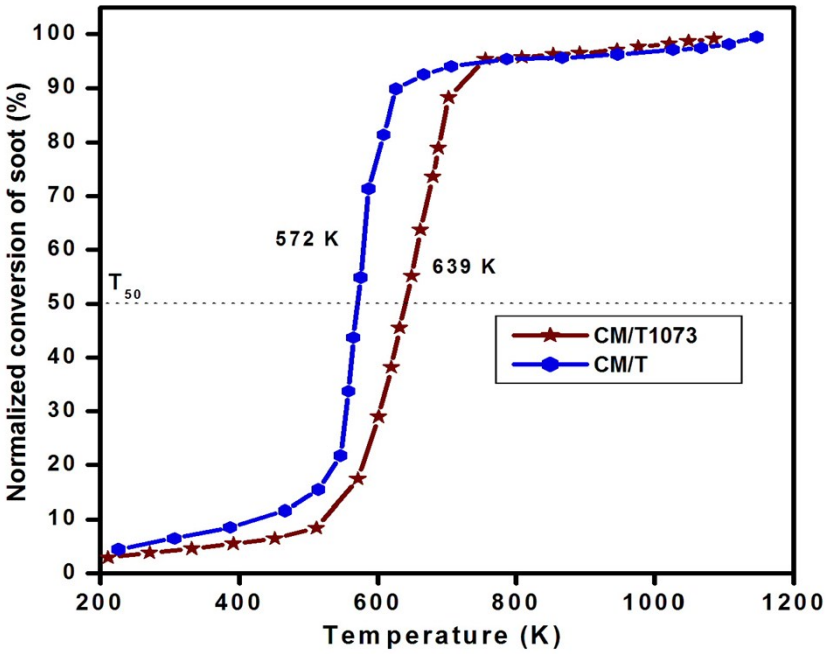


Fig. S7: Normalized soot conversion percentage of CeO_2-MnO_2/TiO_2 calcined at 773 K (CM/T) and CeO_2-MnO_2/TiO_2 calcined at 1073 K (CM/T1073)

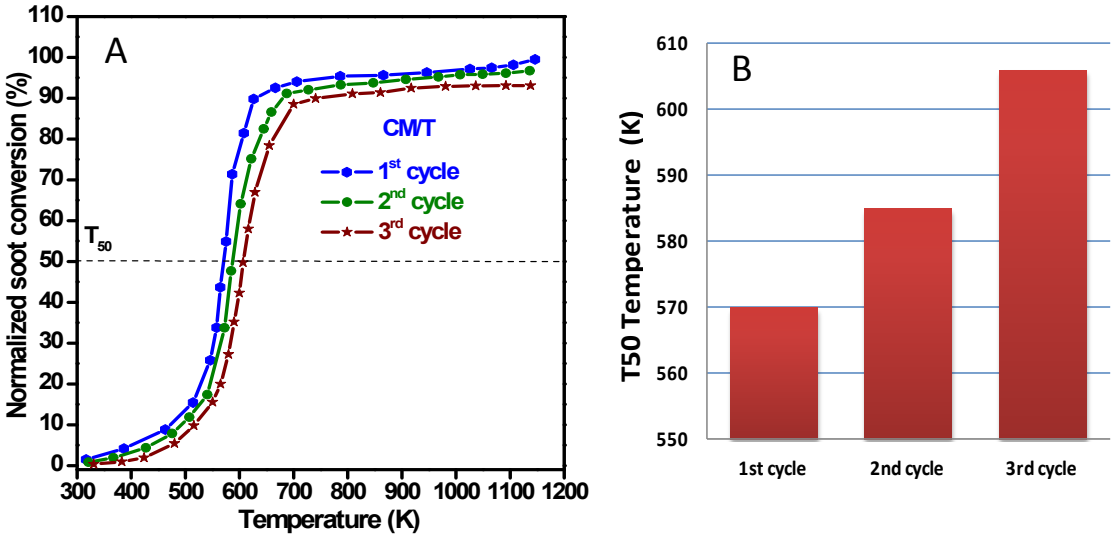


Fig. S8: (A) Normalized soot conversion percentage of CeO_2-MnO_2/TiO_2 calcined at 773 K (CM/T) in cycle performance test. (B) T_{50} temperature in each cycle