

# Supporting information

## Synergistic Effect in Ag/Fe-MnO<sub>2</sub> Catalysts for Ethanol Oxidation

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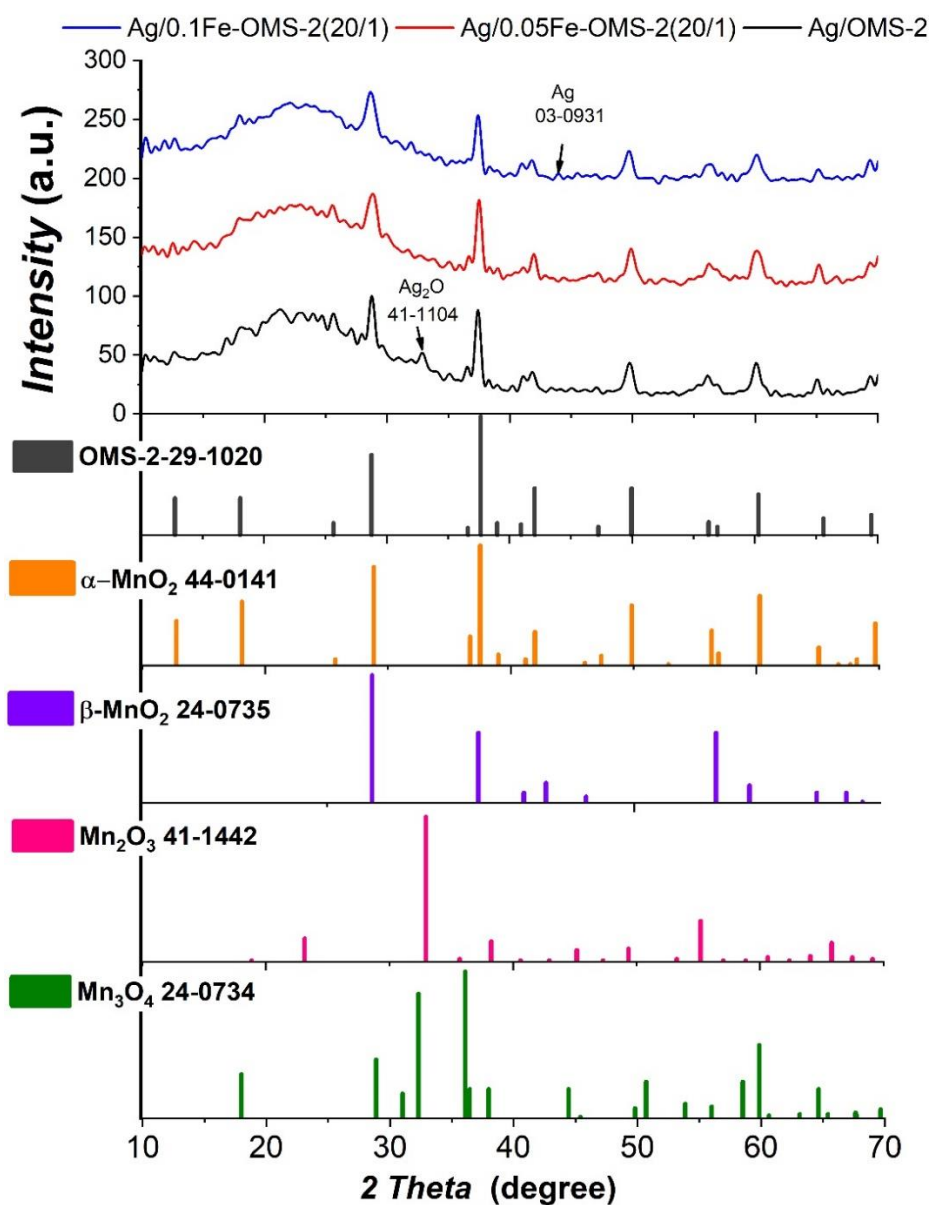
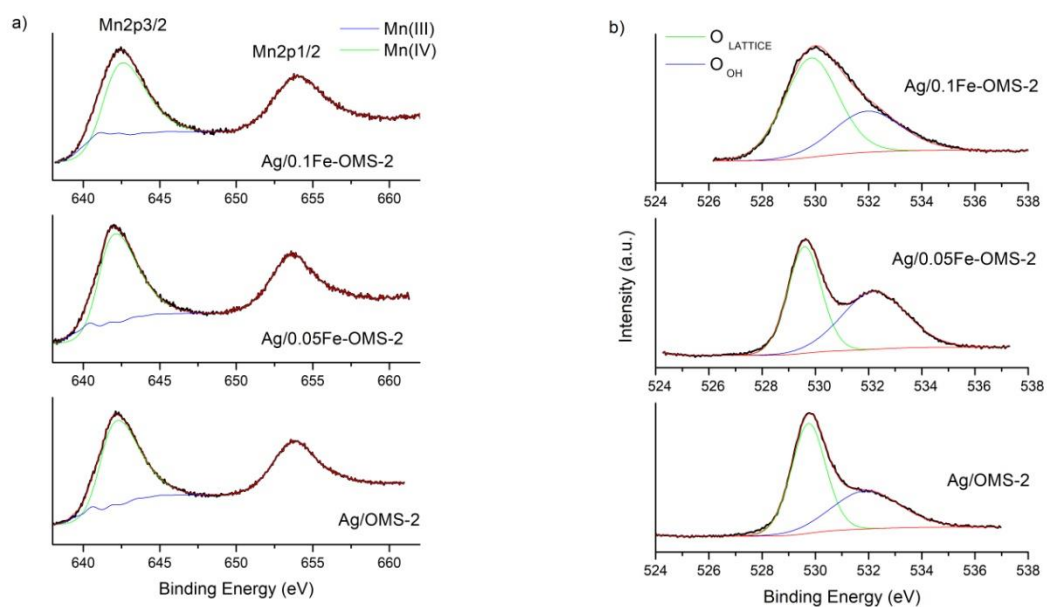
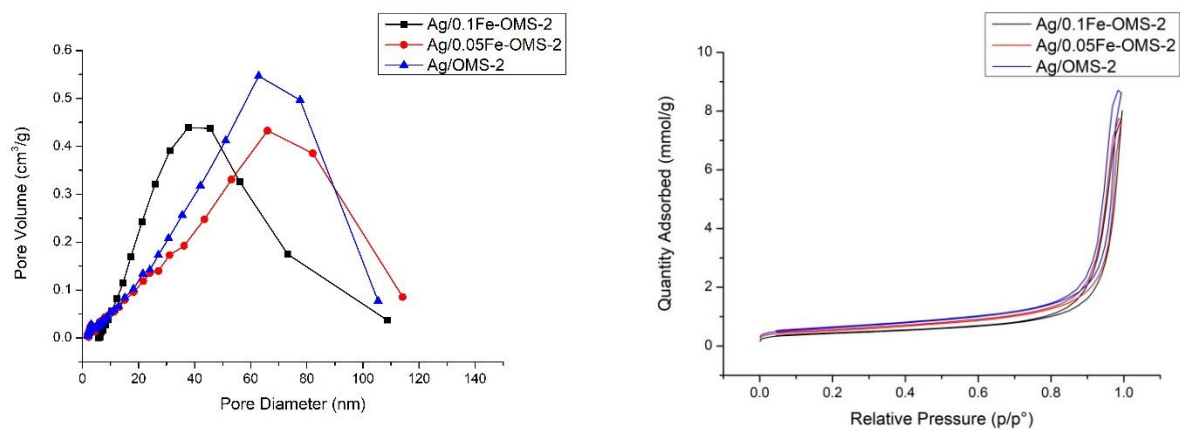


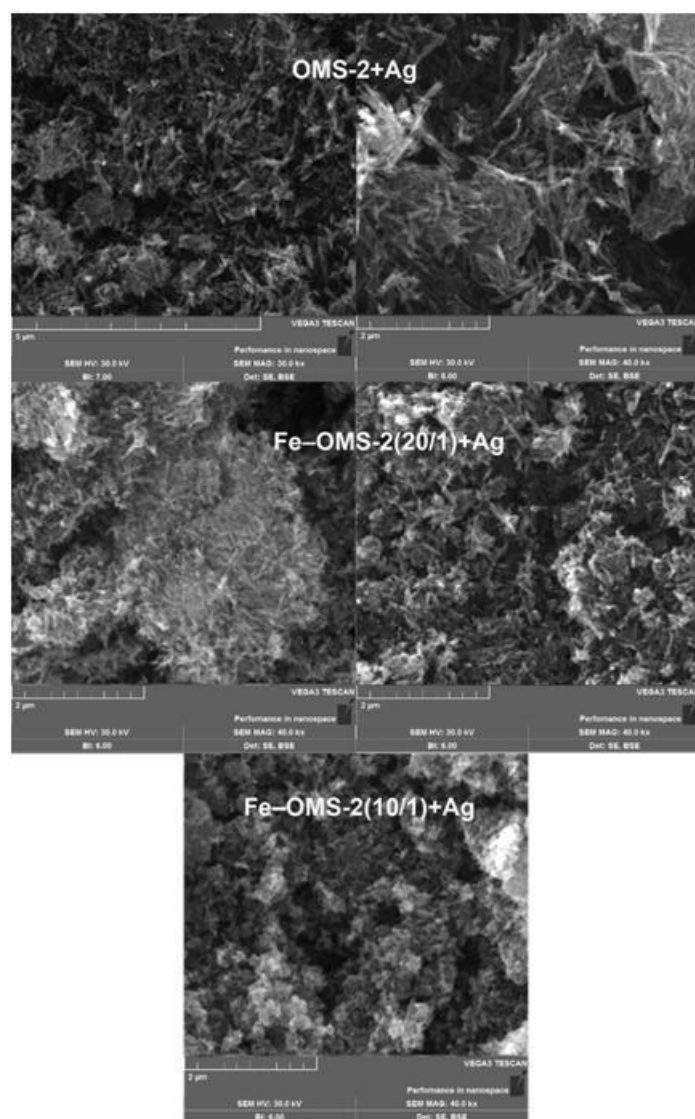
Figure S1. XRD patterns for prepared catalysts.



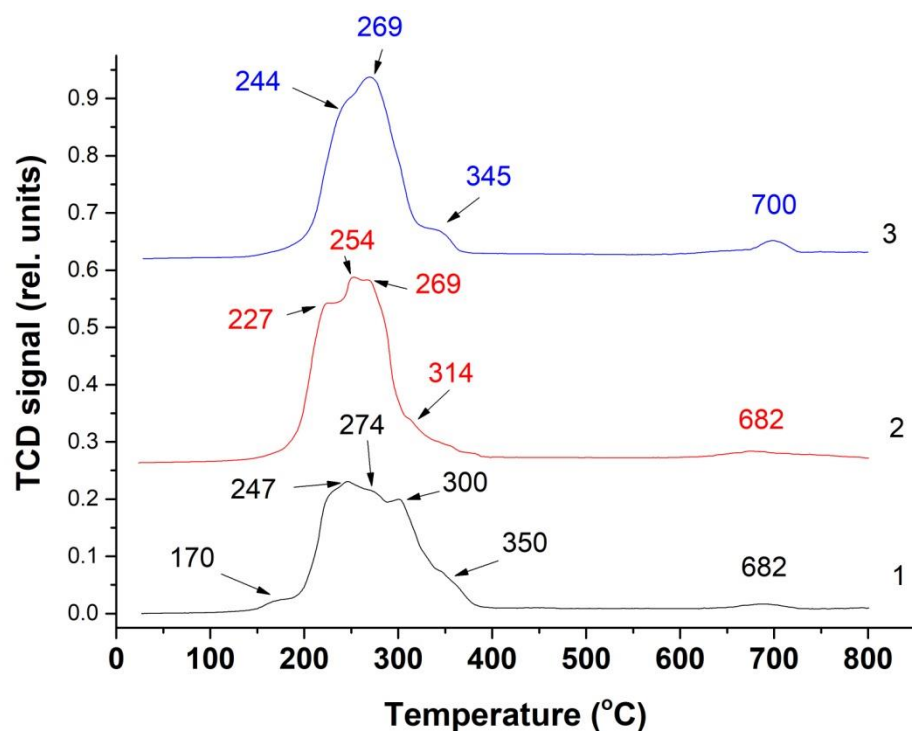
**Figure S2.** XPS regions a) Mn2p and b) O1s.



**Figure S3.** Texture characteristics for prepared samples.



**Figure S4.** SEM images for investigated samples.



**Figure S5.** H<sub>2</sub>-TPR profiles for prepared samples:

1 — Ag/OMS-2, 2 — Ag/0.05Fe-OMS-2, 3 — Ag/0.1Fe-OMS-2

**Table S1.** H<sub>2</sub> consumption during H<sub>2</sub>-TPR experiments performed on the investigated catalysts before and after Ag introduction.

Sample	mmol-H <sub>2</sub> /g
Ag/OMS-2	0.042
Ag/0.05Fe-OMS-2	0.060
Ag/0.1Fe-OMS-2	0.038

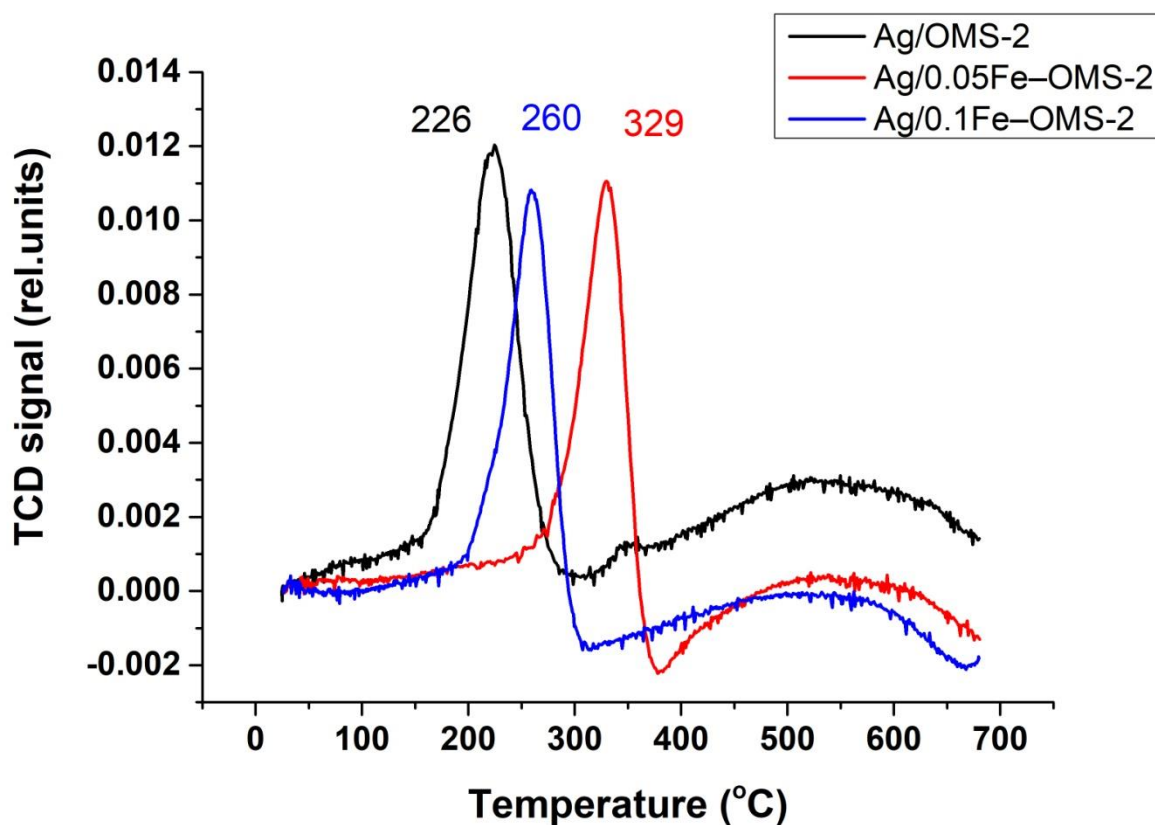


Figure S6. TPO profiles for prepared samples.

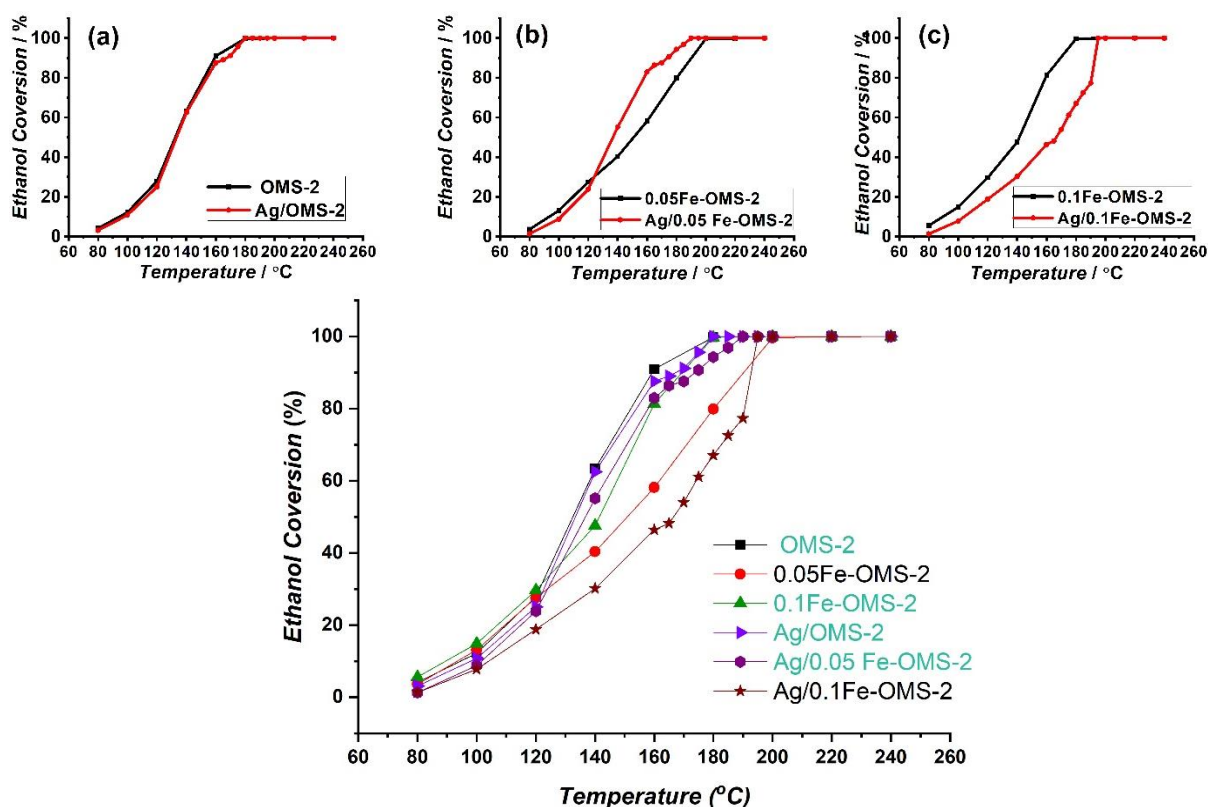
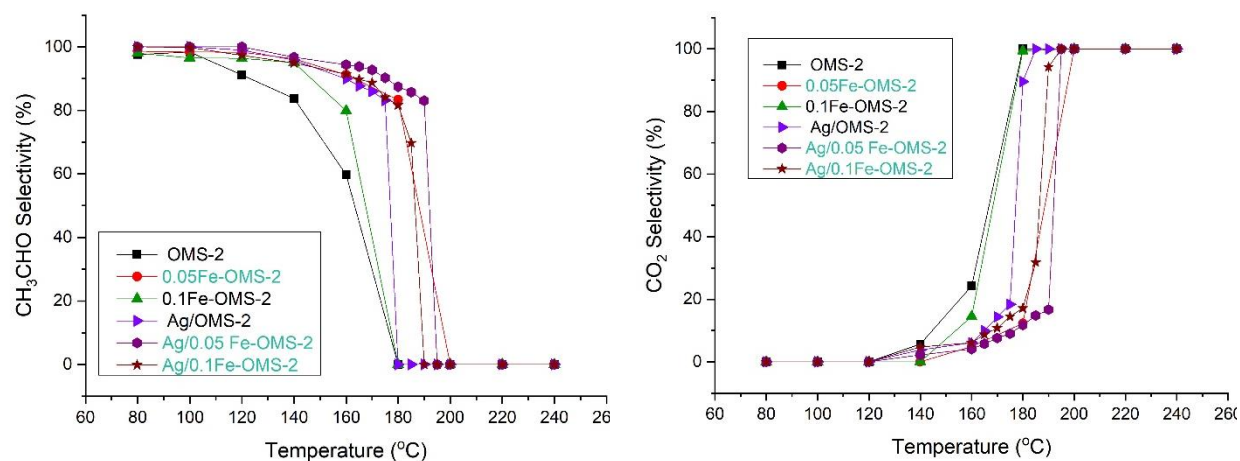


Figure S7. Light-off curves for catalysts with and without Ag [67]. Reaction conditions: GHSV = 7200 mL g<sup>-1</sup> h<sup>-1</sup>, Et/O<sub>2</sub> = 2/18.



**Figure S8.** Temperature dependences of acetaldehyde and  $\text{CO}_2$  selectivities for catalysts with and without Ag [67]. Reaction conditions: GHSV =  $7200 \text{ mL g}^{-1} \text{ h}^{-1}$ , Et/ $\text{O}_2$  = 2/18.