

Supplementary Materials

Ag Catalysts Supported on CeO₂, MnO₂ and CeMnO_x Mixed Oxides for Selective Catalytic Reduction of NO by C₃H₆

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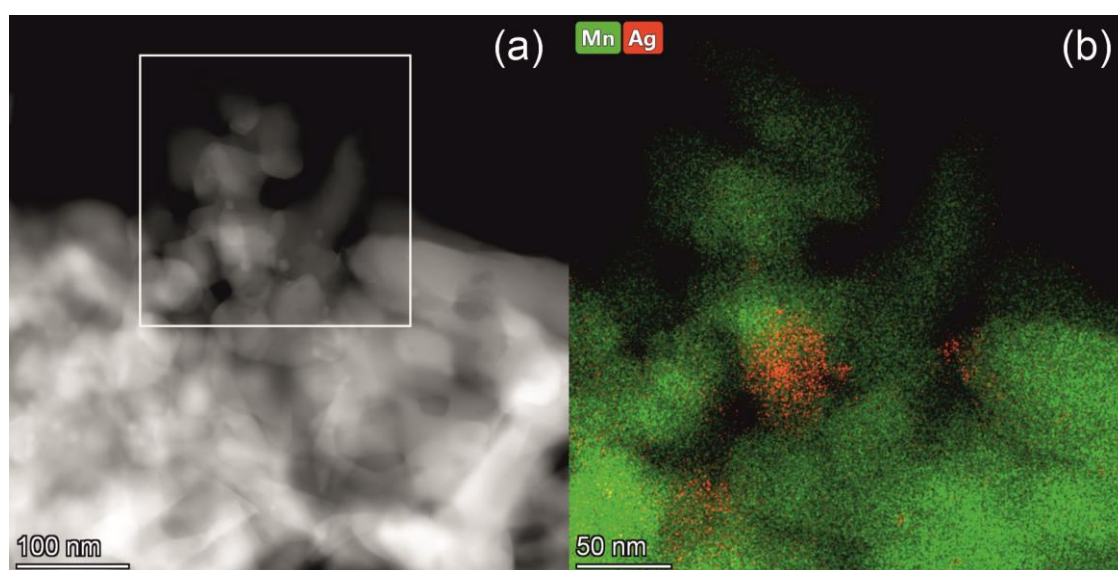


Figure S1. HAADF STEM (a) and high resolution EDX mapping of indicated region (b) for the Ag/MnO_x sample.

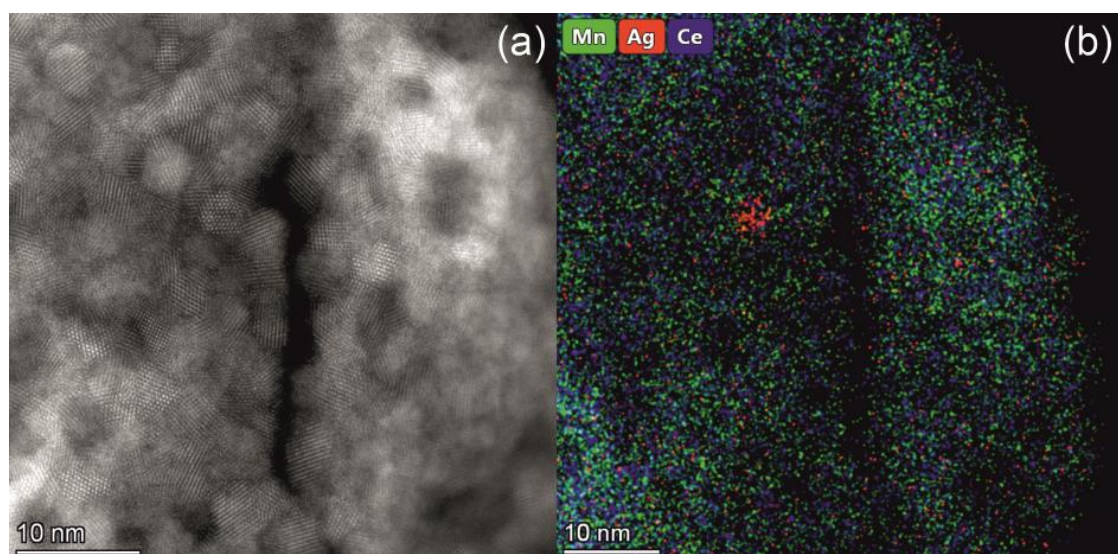


Figure S2. HRTEM image (a) and high resolution EDX mapping (b) for the Ag/CeMnO_x sample.

Results of Studies of Aged Samples

The results of the study of aged samples by the low-temperature adsorption method are presented in Table S1. The presented data indicate that under aging conditions, there is a strong change in the textural characteristics of the catalysts as a result of sintering. For Ag/CeO₂ and Ag/CeMnO_x samples, a decrease in the SSA by a factor of 2 is observed, while the SSA decrease by a factor of 2 is observed for the Ag/MnO_x sample.

Table S1. Specific surface area (SSA) and total pore volume (V) of supports and catalysts determined by low-temperature nitrogen adsorption/desorption data.

Sample	SSA, m ² /g	V, cm ³ /g
Ag/CeO ₂	34	0.13
Ag/CeO ₂ (aged)	14	0.12
Ag/MnO _x	12	0.12
Ag/MnO _x (aged)	3	0.01
Ag/CeMnO _x	47	0.22
Ag/CeMnO _x (aged)	21	0.16

Table S2 shows the phase composition of the samples and the characteristics of their crystalline phases according to XRD data. According to the XRD data, in the aged Ag/CeO₂ sample, only a phase with a fluorite structure is present with a crystal lattice parameter, $a = 5.41 \text{ \AA}$. At the same time, a noticeable increase in the size of crystallites of the fluorite phase up to 43 nm is observed for the aged Ag/CeO₂ sample in comparison with the initial catalysts.

For the aged Ag/MnO_x sample, the formation of one cubic phase of manganese oxide Mn₂O₃ with a crystal cell parameter of 9.40 \AA and a crystallite size of ~97 nm is observed.

In the aged Ag/CeMnO_x sample, according to the XRD data, there are two crystalline phases: a relatively finely dispersed CeO₂ phase with a fluorite structure and a rough phase of manganese oxide Mn₂O₃.

Table S2. Phase composition of aged samples and characteristics of their crystalline phases according to XRD data.

Sample	Phase composition		Structural parameters		D _{XRD} , nm
	Phase	Content, wt. %	S.G.	a , \AA	
Ag/CeO ₂ (aged)	fluorite	100	Fm-3m	5.41	43
Ag/MnO _x (aged)	Mn ₂ O ₃	100	Ia-3	9.40	97
Ag/CeMnO _x (aged)	fluorite	72	Fm-3m	5.40	13
	Mn ₂ O ₃	28	Ia-3	9.40	n.a.*

*The correct determination of a full width at half maximum is impossible.