Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics

Supporting Information for:

Clear microstructure-performance relationships in Mn-containing perovskite and hexaaluminate compounds prepared by Activated Reactive Synthesis

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Table content

Physical and textural characterizations

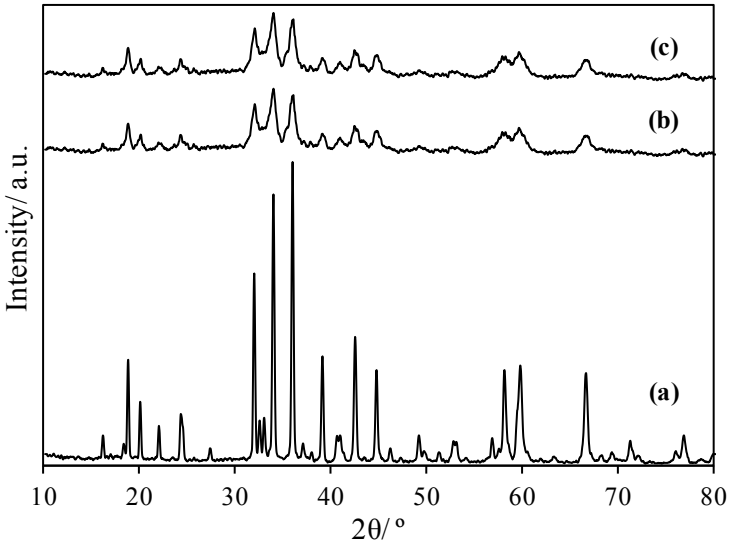

Fig. S1 Diffractograms recorded at each step of the synthesis for $LaMnAl_{11}O_{19}$. (a) SRR-LaMnAl, (b) HEBM-LaMn, and (c) HE-LE(RT)-LaMnAl.

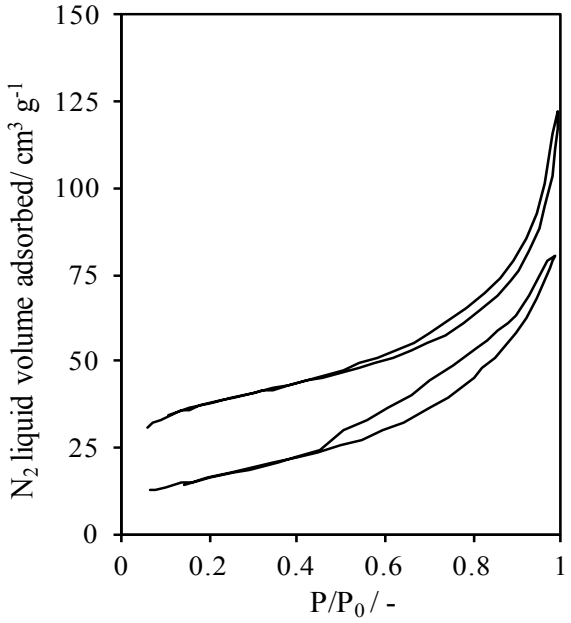

Fig. S2 Nitrogen adsorption/desorption isotherms recorded for selected mixed oxides (▲) HE-LE(CR)-LaMn, (●)HE-LE(RT)-LaMnAl.

Manganese reducibility

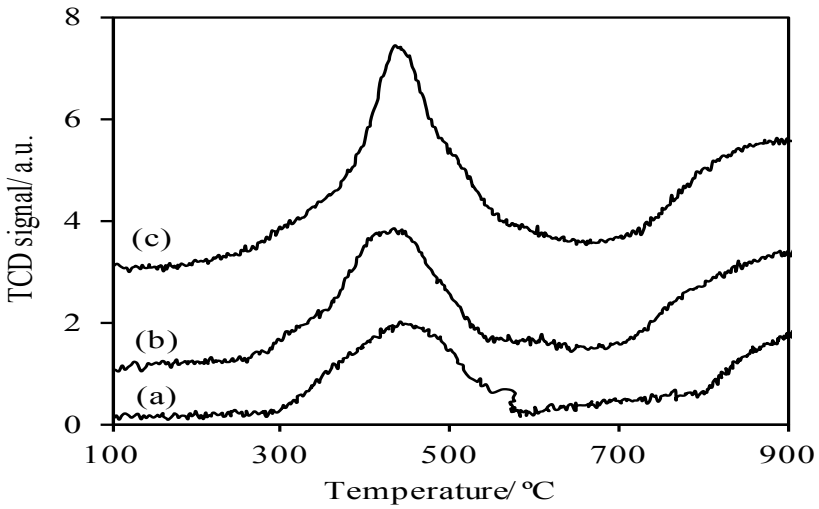

Fig S3 Temperature programmed reduction profiles recorded over $LaMnO_{3+\delta}$: (a) SSR-LaMn; (b) HEBM-LaMn; (c) HE-LE(CR)-LaMn.

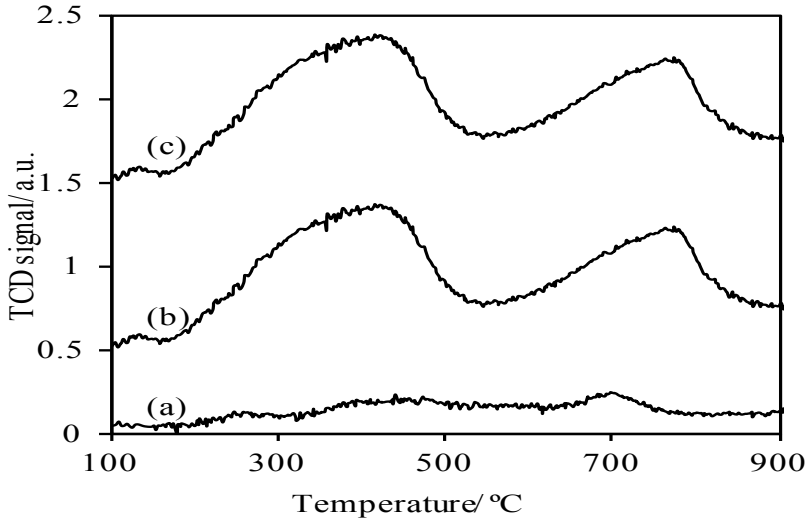

Fig S4 Temperature programmed reduction profiles recorded over $LaMnAl_{11}O_{19-\delta}$: (a) SSR-LaMnAl; (b) HEBM-LaMnAl; (c) HE-LE(RT)-LaMnAl.

Temperature-programmed isotopic exchange

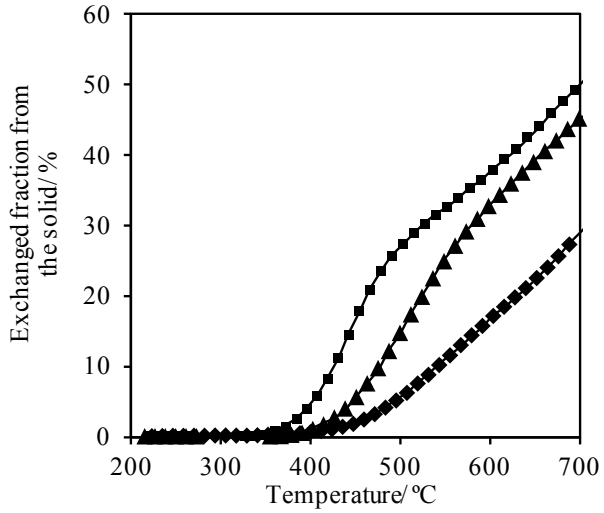

Fig S5 Evolution of the fraction of oxygen exchanged from the solid with the reaction temperature. (◆) SSR-LaMn; (▲) HEBM-LaMn; (■) HE-LE (CR)-LaMn.

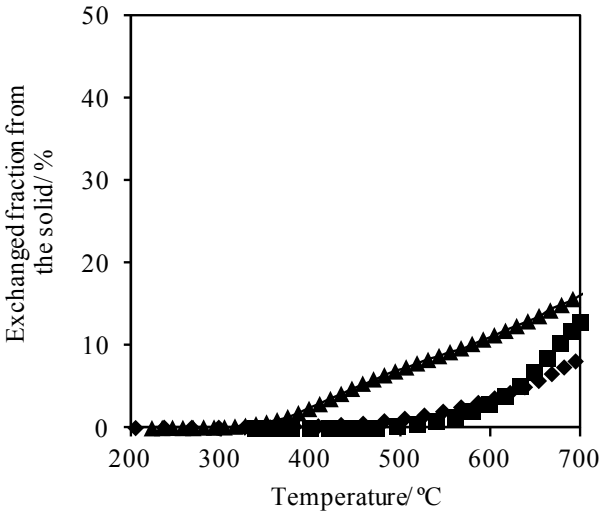

Fig S6 Evolution of the fraction of oxygen exchanged from the solid with the reaction temperature. (◆) SSR-LaMnAl, (■) HEBM-LaMnAl, (▲) HE-LE(RT)-LaMnAl.