

Electronic Supplementary Information

(ESI)

Self-healing for nanolayered manganese oxides in the presence of cerium(IV) ammonium nitrate: New findings

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Synthesis of Mn-K oxide

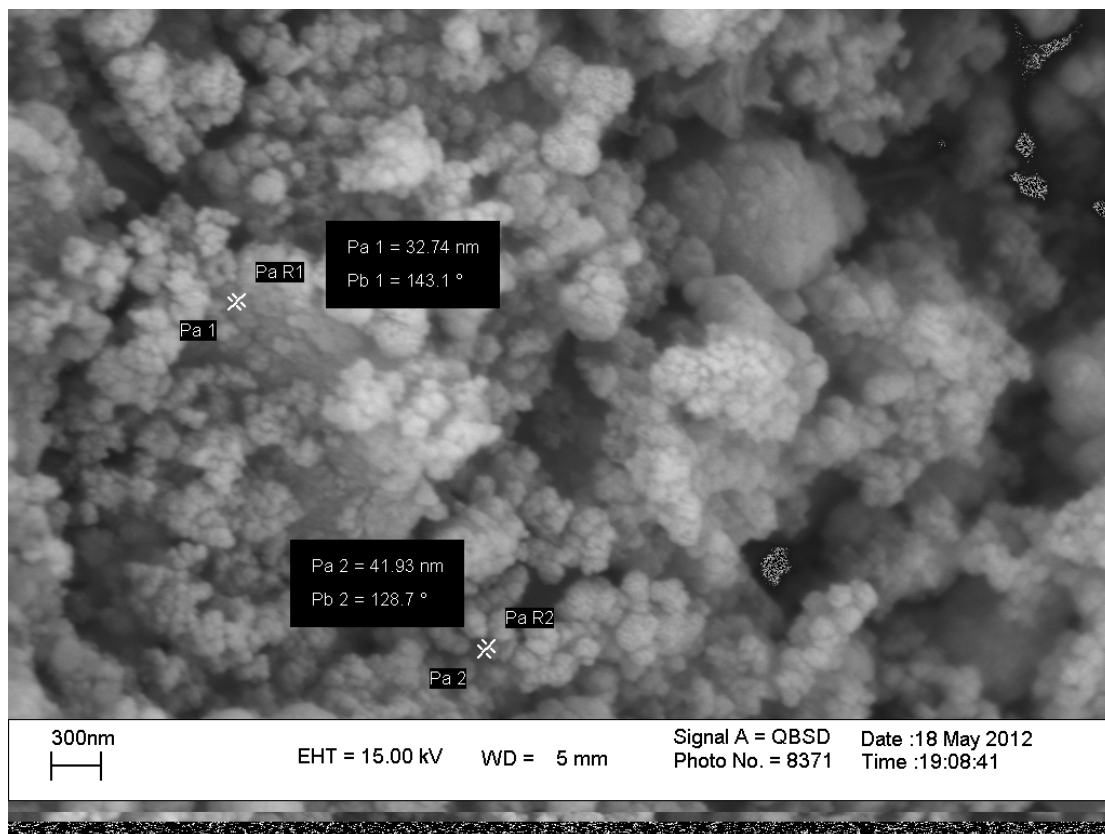
Solution 1: $\text{Mn}(\text{CH}_3\text{COO})_2 \cdot 2\text{H}_2\text{O}$ (2.77 mmol, 692.0 mg) was dissolved in the smallest possible amount of water.

Solution 2: to a solution of KMnO_4 (2.00 mmol, 316.0 mg) in 35 mL water contains KOH.

Addition of solution 1 to solution 2 under vigorous stirring resulted in a dark brown precipitate. The obtained suspension was filtered and washed using distilled water (1.0 L) before being allowed to dry for 12 h at 60 °C in an oven. The compound was heated to higher temperature (100-750 °C) for 10 h in air to obtain a brown powder.



a



b

Fig. 1 TEM (a) and SEM (b) images from nanolayered Mn oxide. Reprinted with permission from ref. 1. Copyright (2013) by Royal Society of Chemistry.

Table S1 Experimental conditions of ten data matrices.

Data matrix	[Ce ⁴⁺]
D1	0.05
D2	0.1
D3	0.12
D4	0.15
D5	0.2
D6	0.5
D7	0.75
D8	1
D9	1.5
D10	2.0

Reference

1.M. M. Najafpour, M. Kompany-Zareh, A. Zahraei, D. Jafarian Sedigh, H. Jaccard, M. Khoshkam, R. D. Britt and W. Casey, *Dalton Trans.*, 2013, **42**, 14603.