Supporting Information

Importance of porous structure and synergistic effect on the catalytic oxidation activities over hierarchical Mn-Ni composite oxides

Wenxiang Tang [a,b], Yuzhou Deng [a], Wenhui Li [a], Jiaqi Li [a], Gang Liu [a], Shuangde Li [a], Xiaofeng Wu [a*], Yunfa Chen [a*]

Table S1. The comparative experimental results of catalytic performance towards benzene oxidation between the as-prepared MNCO catalyst and other catalysts in reported literatures.

Catalysts	Surface area ($m^2\ g^{-1}$)	VOC type	VOC conc. (ppm)	SV ($mL\ g_{cat}^{-1}\ h^{-1}$)	$T_{90\%}$ (ºC)	Ref. no.
Co/CeO_2/SBA-15	529	Benzene	1000	39,600	265	24
$Ce_{1-x}Zr_xO_2$	133.7	Benzene	2000	155,000	350	25
$LaMnO_3$, $LaCoO_3$, $LaFeO_3$	4.8~17.2	Benzene	1000	60,000	350	26
Cu-Mn-Ce-O	109	Benzene	1000	60,000	250	27
Mn-Cu-O	266	Benzene	1000	60,000	234	20
Pd/AlCe-PILC	343.6~377.4	Benzene	160	25,000	240	9
Pd/La-ZSM-5	261	Benzene	1000	20,000	260	28
Mn-Ni-O	201	Benzene	1000	120,000	232	This work

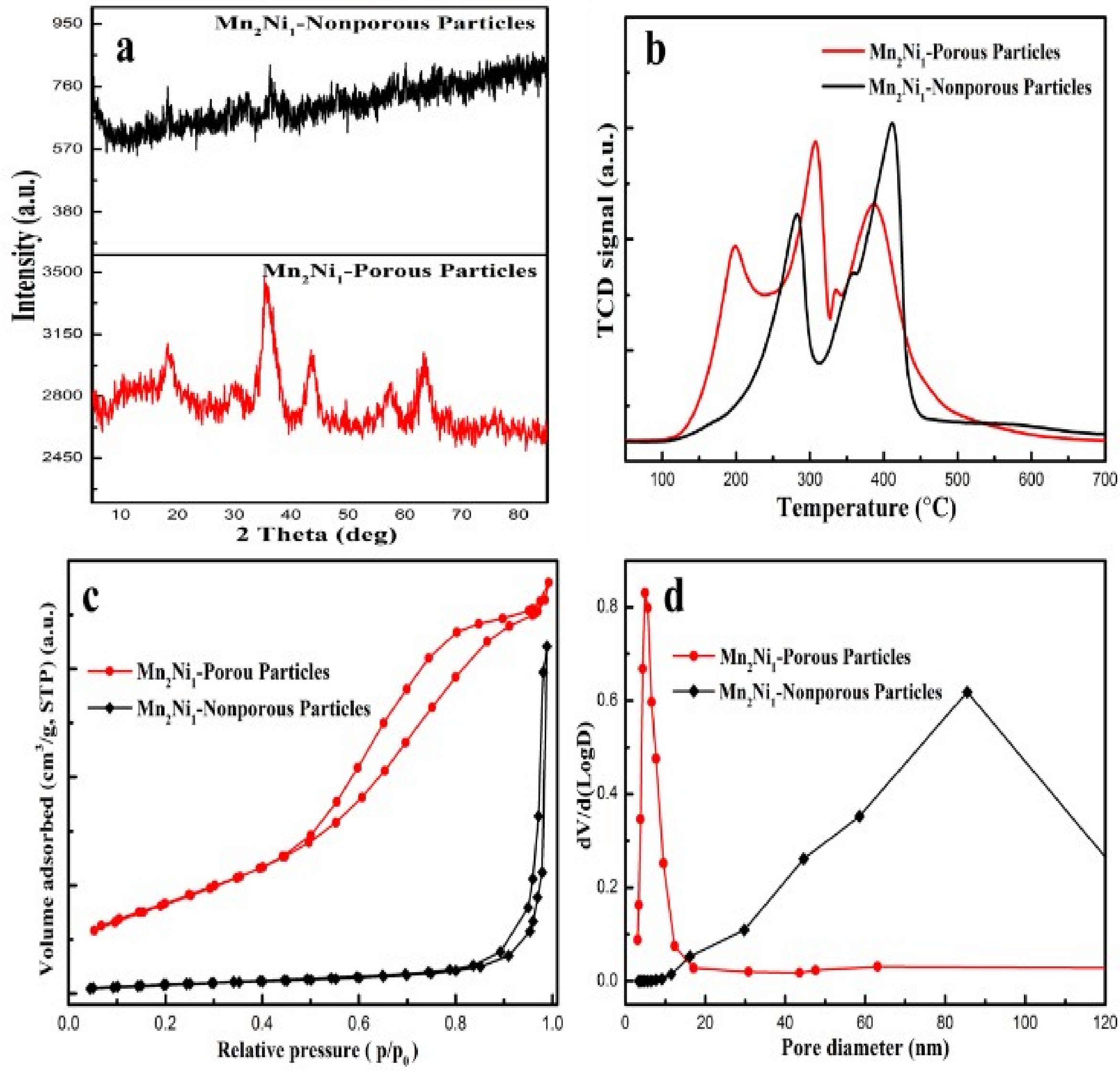

Fig. S1. Comparison between general nonporous and oxalate-derived porous MNCO particles. (a) XRD patterns, (b) H_2-TPR profiles, (c) N_2 adsorption-desorption isotherms, (d) BJH pore-size distribution.

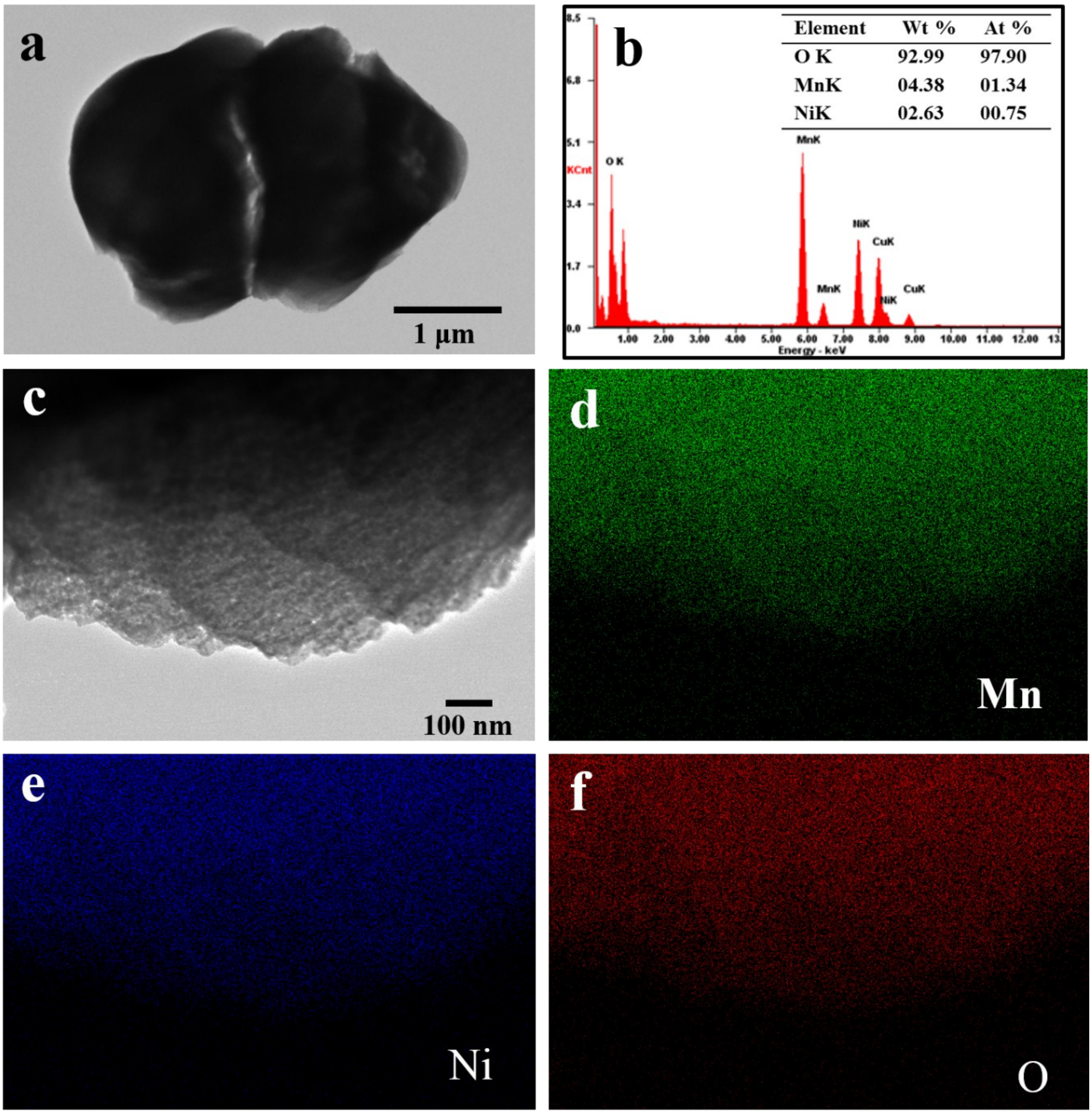

Fig. S2. TEM images (a, c), EDX-data (b) and elemental mapping images (d, e, f) of the oxalate-derived porous MNCO (Mn2Ni1) particles.