Supplementary Information

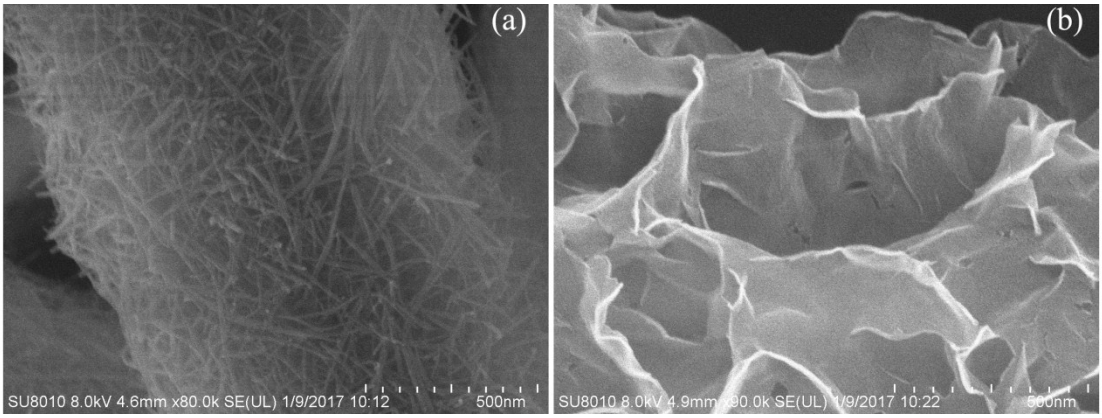

Fig. S1. SEM images of the precursors of α-MnO_2@**$_2$@**$NiCo_2O_4$: (a)nanowire; (b)nanosheet

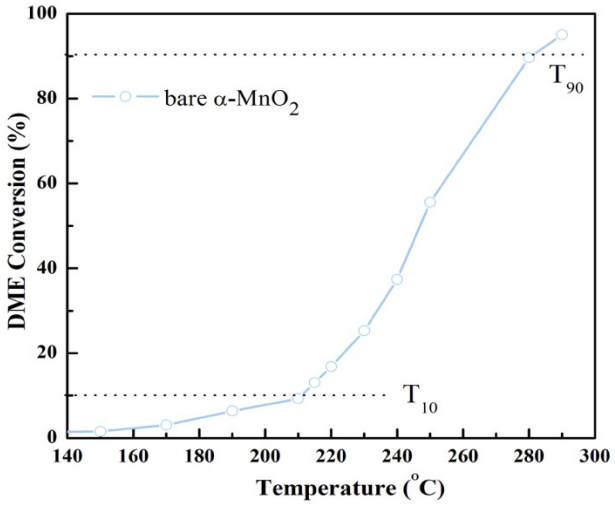

Fig.S2 the catalytic combustion activity of bare α-MnO_2.

Table S1
Some of the reported catalysts for DME combustion

Catalyst	**T_{10}/°C**	**T_{90}/°C**	**Reference**
α-MnO_2@$NiCo_2O_4$ nanowire	175	198	Our work
α-MnO_2@$NiCo_2O_4$ nanosheet	152	169	Our work
$CoFe_2O_4$	*ca.*300	*ca.*410	1
2PtAl	106	*ca.310*	2
$LaMnO_3$	210	295	3
$Zn_{0.8}Mn_{0.2}Fe_{2.4}O_4$	257	276	4
BaNi0.8Mn0.2Al11O19-δ	130	*ca.*340	5
Pt/Al_2O_3	*ca.*140	*ca.*220	6
Pt/ZrO_2	*ca.*180	*ca.*360	7
α-MnO_2 nanorod	*170*	*238*	8
Mn_3O_4-OMS-2	*163*	*230*	9

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