

Supporting Information

Cobalt-doped MnO₂ Nanofibers for Enhanced Propane Oxidation

Long Chen,^{a, #} Jiancai Ding,^{b, #} Jingbo Jia,^{b,*} Rui Ran,^b Cheng Zhang,^a Xiping Song^{a,*}

^a State Key Laboratory for Advanced Metals and Materials, University of Science and Technology Beijing, Beijing 100083, China

^b Key Laboratory of Advanced Materials (MOE), School of Materials Science and Engineering, Tsinghua University, Beijing 100084, China

*Corresponding author. E-mail address: jingbo.jia18@gmail.com; xpsong@skl.ustb.edu.cn.

[#] These authors contributed equally to this work.

Table S1 Summary of the Co $2p_{3/2}$ XPS results for MnCo_x samples.

	Peak I (Co ³⁺)			Peak II (Co ²⁺)			Peak III (Co ²⁺)		
	B.E. (eV)	FWHM	area	B.E. (eV)	FWHM	area	B.E. (eV)	FWHM	area
MnCo _{0.05}	780.4	1.4	6091.4	\	\	\	\	\	\
MnCo _{0.2}	780.4	1.1	13960	781.4	1.2	1775.7	782.4	1.2	1714.8
MnCo _{0.5}	780.3	1.2	22424	781.2	1.0	4071.8	782.4	1.2	4267.0

Table S2 Summary of the Mn 3s XPS results for MnCo_x samples.

	Peak I		Peak II		$\Delta\text{Mn 3s (eV)}$
	B.E. (eV)	FWHM	B.E. (eV)	FWHM	
MnO_2	84.38	3.2	89.25	4.1	4.87
$\text{MnCo}_{0.05}$	84.40	3.1	89.25	3.9	4.85
$\text{MnCo}_{0.2}$	84.48	3.0	89.14	3.9	4.66
$\text{MnCo}_{0.5}$	84.42	3.0	89.19	3.9	4.77

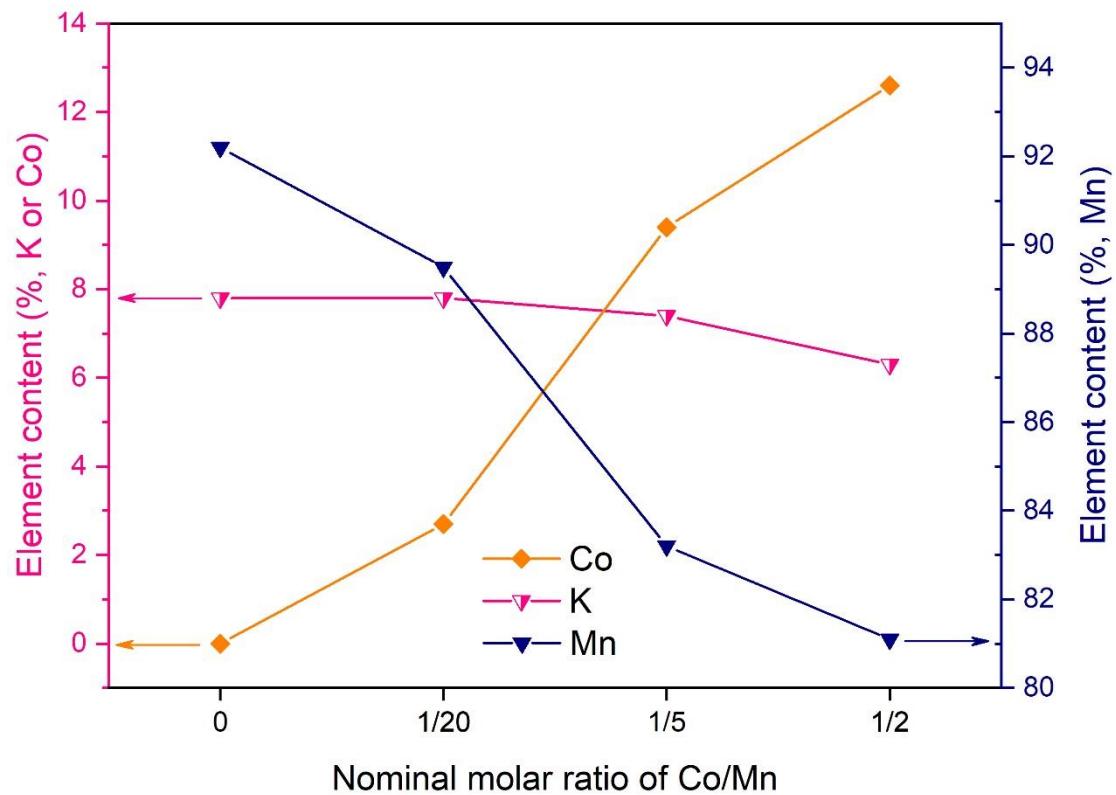


Fig. S1. The element content of MnCo_x samples determined by ICP-OES.

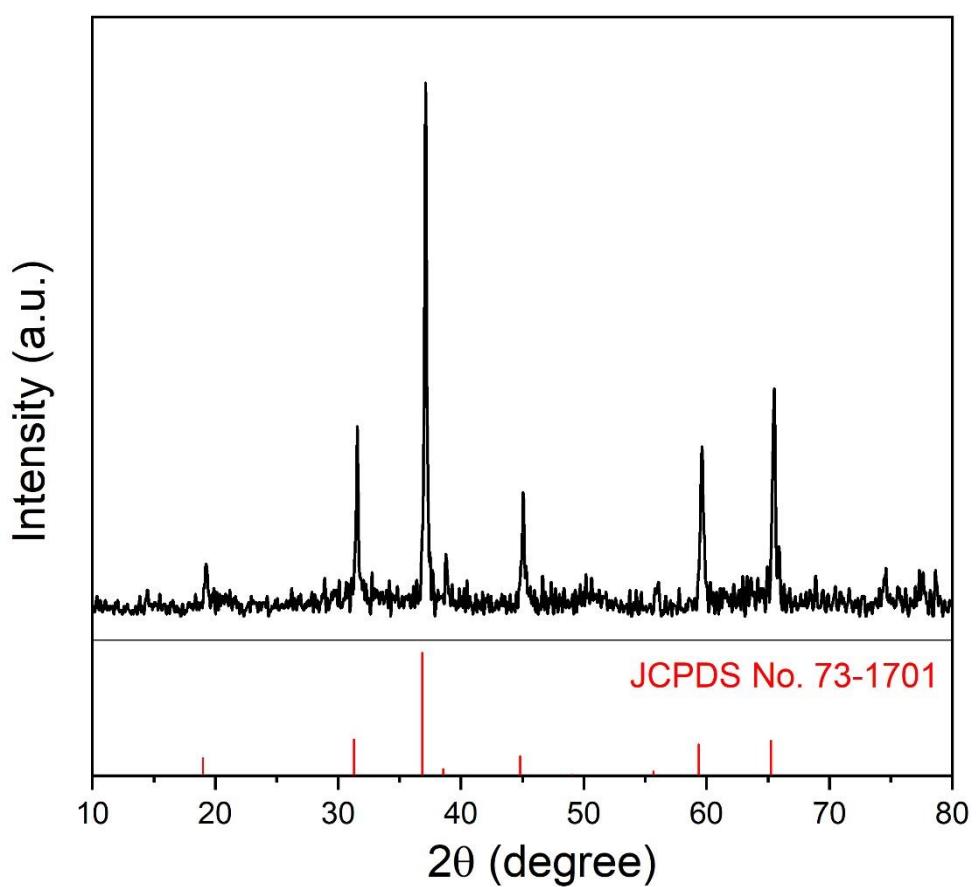


Fig. S2. The XRD patterns of prepared cobalt oxide.

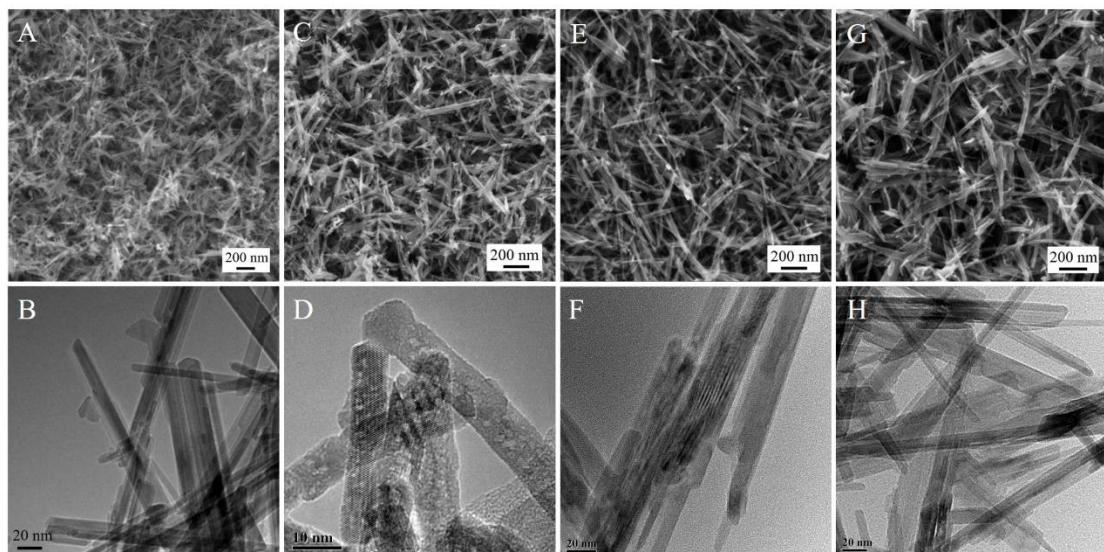


Fig. S3. SEM and TEM images of MnO_2 (A, B), $\text{MnCo}_{0.05}$ (C, D), $\text{MnCo}_{0.2}$ (E, F) and $\text{MnCo}_{0.5}$ (G, H) samples.

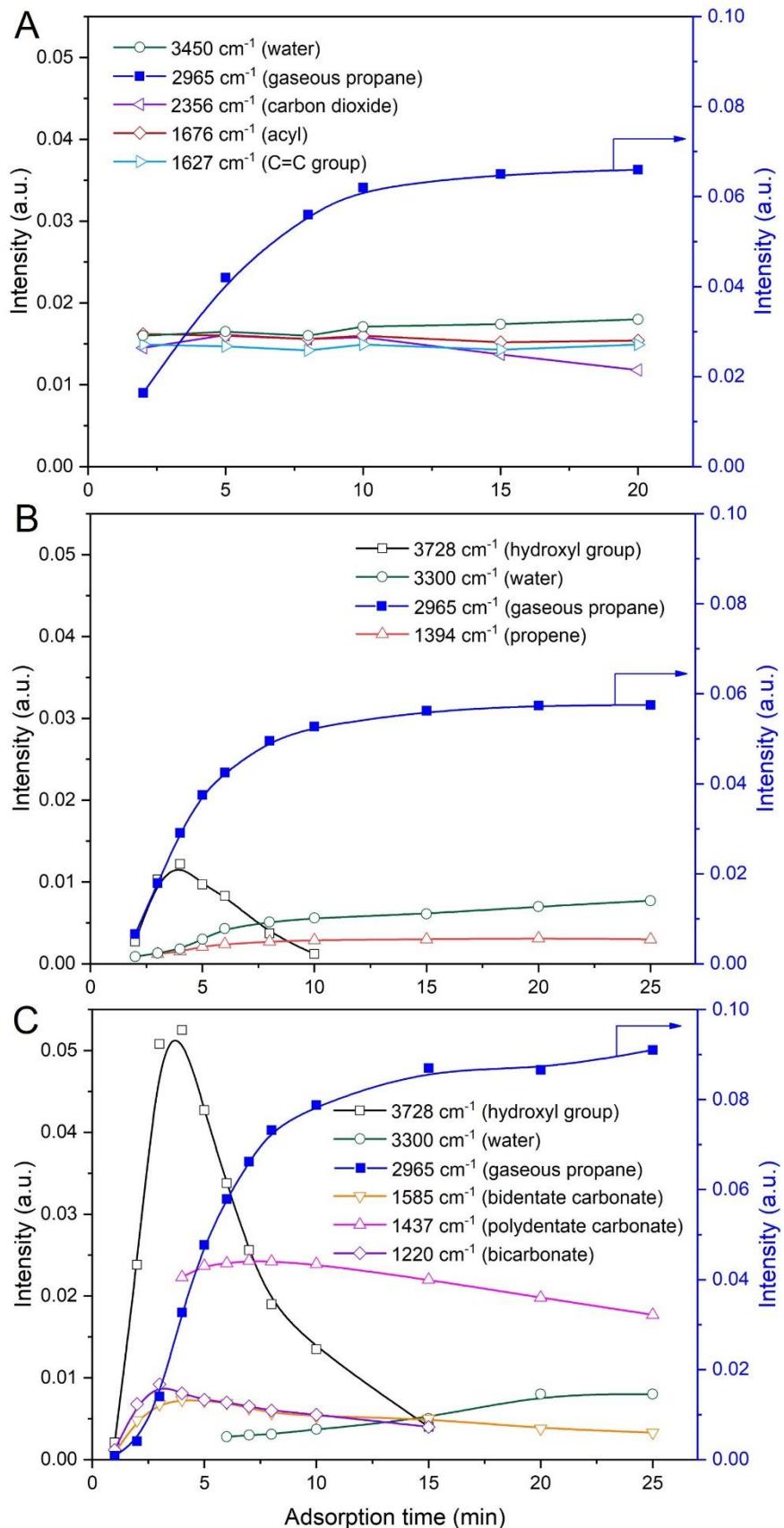


Fig. S4. The intensity evolution of various surface species during C_3H_8 adsorption on the surface of MnO_2 (A), $\text{MnCo}_{0.2}$ (B) and Co_3O_4 (C) samples.