# Electronic Supplementary Information

## Self-template synthesis of defect-rich NiO nanotubes as efficient electrocatalysts for methanol oxidation reaction

Tian-Jiao Wang,[a] Hao Huang,[b] Xin-Ru Wu,[a] Hong-Chang Yao,[c] Fu-Min Li,[*b] Pei Chen,[a] Pu-Jun Jin,[a] Zi-Wei Deng[a] and Yu Chen[*a]

[a] Key Laboratory of Macromolecular Science of Shaanxi Province, Key Laboratory of Applied Surface and Colloid Chemistry (Ministry of Education), Shaanxi Key Laboratory for Advanced Energy Devices, School of Materials Science and Engineering, Shaanxi Normal University, Xi'an 710062, PR China

[b] School of Chemistry and Chemical Engineering, Shaanxi Normal University, Xi'an 710062, PR China

[c] College of Chemistry and Molecular Engineering, Zhengzhou University, Zhengzhou 450001, PR China
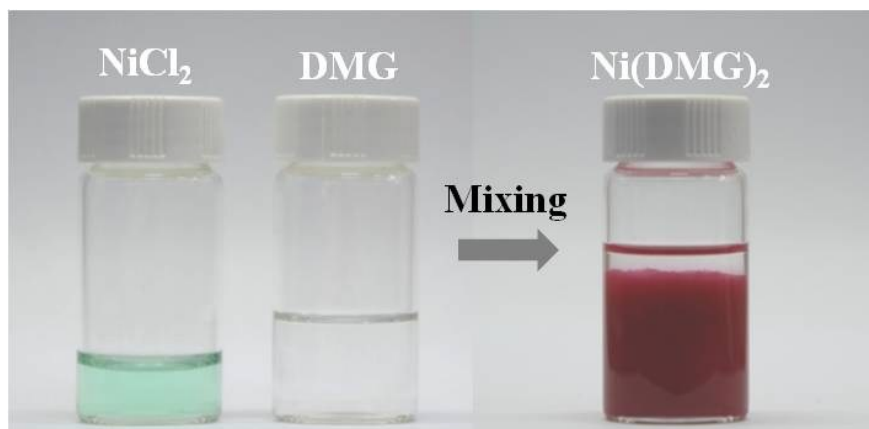
E-mail: lifuminxs@gmail.com and ndchenyu@gmail.com.

**Fig. S1.** The actual digital photographs during Ni(DMG)$_2$ complex synthesis.



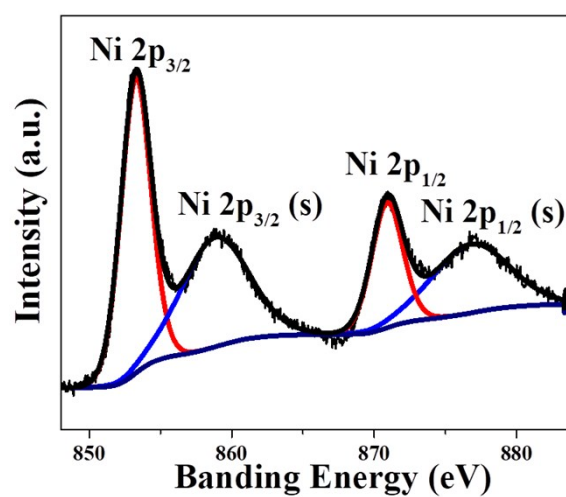**Fig. S2.** The digital photographs of NiO NTs-400.


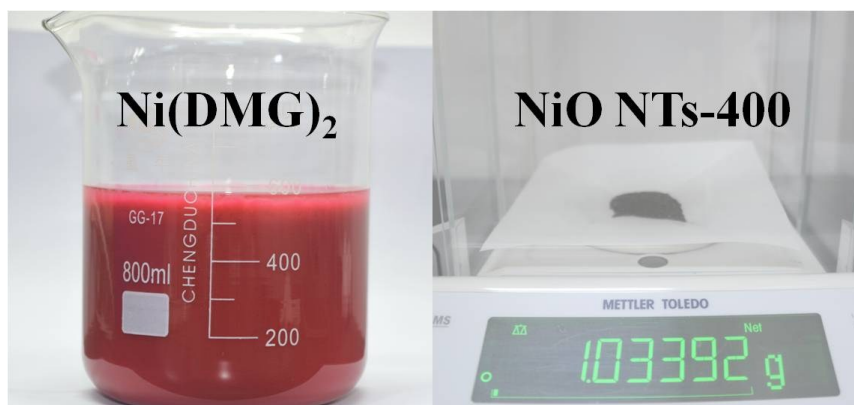
**Fig. S3.** Ni 2p XPS spectrum of NiO-400 NTs.

**Fig. S4.** The actual digital photographs during gram-scale NiO NTs-400 synthesis. After adding 350 mL of 0.1 M DMG ethanol solution into 175 mL of 0.1 M $Ni(NO_3)_2 \cdot 6H_2O$ aqueous solution, 1.03 g NiO NTs-400 can be obtained ultimately.
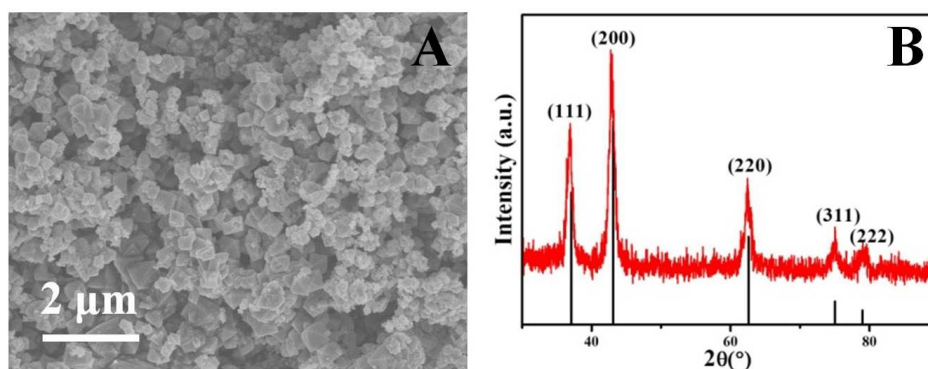


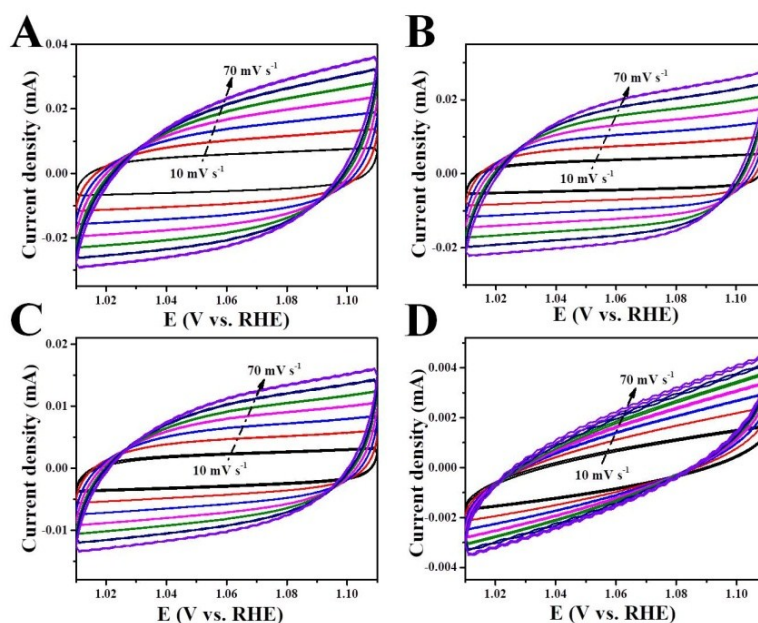**Fig. S5.** (A) SEM image and (B) XRD pattern of NiO NPs-400.



**Fig. S6.** CV curves of (A) NiO NTs-350, (B) NiO NTs-400, (C) NiO NRs-450, and (D) NiO NPs-400 recorded in $N_2$-satured 1 M KOH solution with different scan rates.
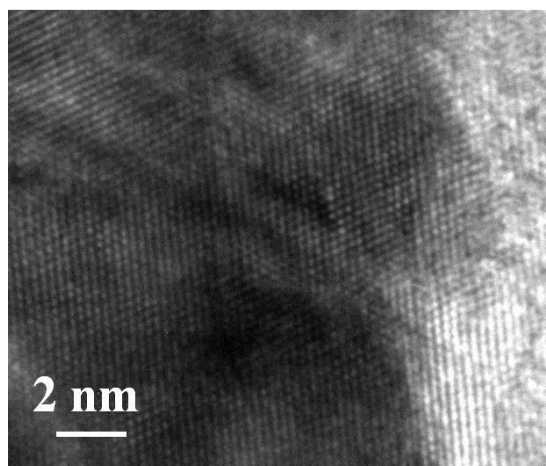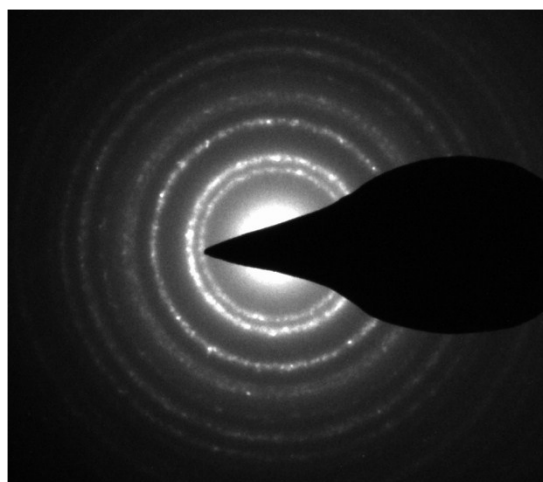
**Fig. S7.** HR-TEM image of NiO NPs-400.



**Fig. S8.** SAED pattern of NiO-400 NTs.