Electronic Supplementary Information for

Surface Structure-Dependent Electrocatalytic Reduction of CO_2 to C1 Products on SnO_2 Catalysts

Minling Fang,[a] Zhiping Zheng,[a] Jiayu Chen,[a] Qian Chen,[a] Binbin Xu,[a] Deyu Liu,[c] Jianyang Wu,[a] Qin Kuang,[a,*] and Zhaoxiong Xie,[a,b,*]

[a] State Key Laboratory of Physical Chemistry of Solid Surfaces & Department of Chemistry, College of Chemistry and Chemical Engineering, Xiamen University, Xiamen 361005 (P. R. China). E-mail: qkuang@xmu.edu.cn; zxxie@xmu.edu.cn. Fax: (+) 86-592-2183047.

[b] Pen-Tung Sah Institute of Micro-Nano Science and Technology, Xiamen University, Xiamen 361005, China.

[c] *Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences. 1219 Zhongguan West Road, Ningbo 315201, China.*

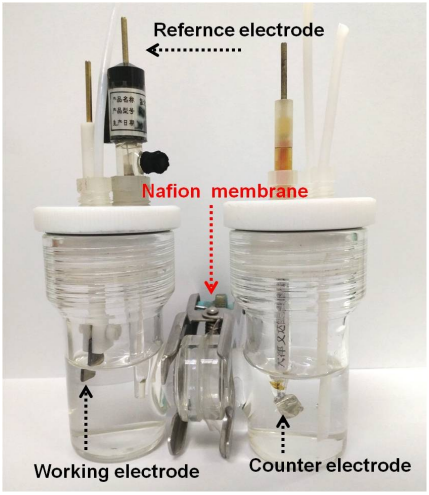

Fig. S1 Schematic illustration of the electrochemical reduction of CO_2 with an H-type 3 electrode cell.

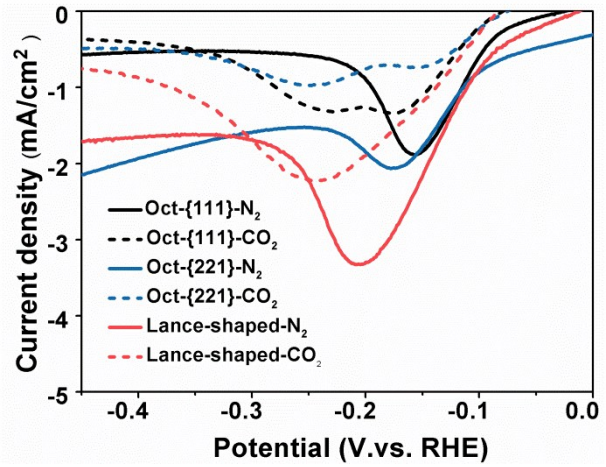

Fig. S2 a) LSVs of SnO_2 in N_2/CO_2 saturated 0.5 M $NaHCO_3$ solution; Chronoamperograms for b) Oct-{111}-SnO_2, c) Oct-{221}-SnO_2 and d) Rod-{110} SnO_2 at different potential in CO_2 saturated 0.5 M $NaHCO_3$.

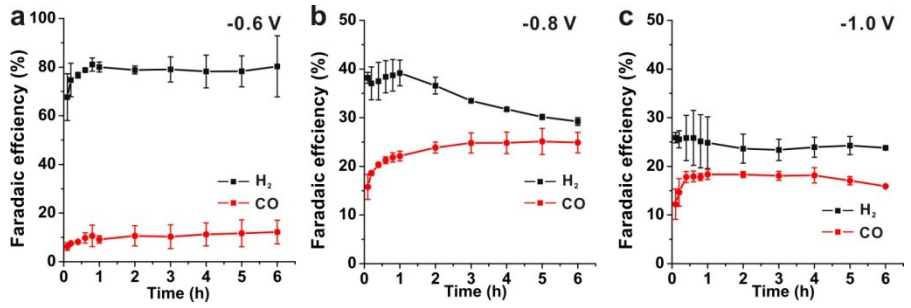

Fig. S3 Faradaic efficiency of H_2 (black line) and CO (red line) for Oct-{221} at diferent potentials in CO_2-saturated 0.5 M $NaHCO_3$ aqueous solution.

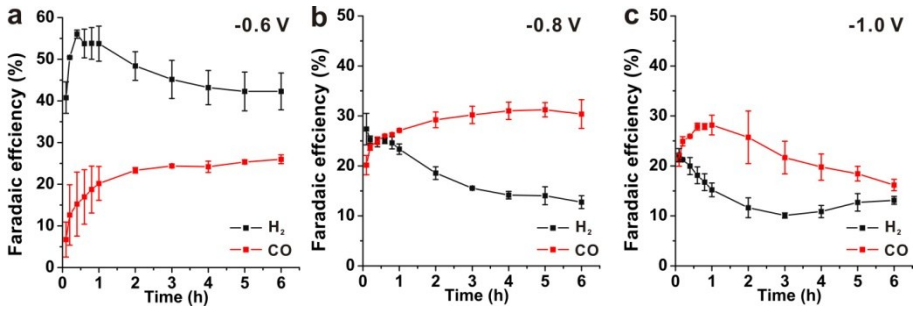

Fig. S4 Faradaic efficiency of H_2 (black line) and CO (red line) for Rod-{110} at diferent potentials in CO_2-saturated 0.5 M $NaHCO_3$ aqueous solution.

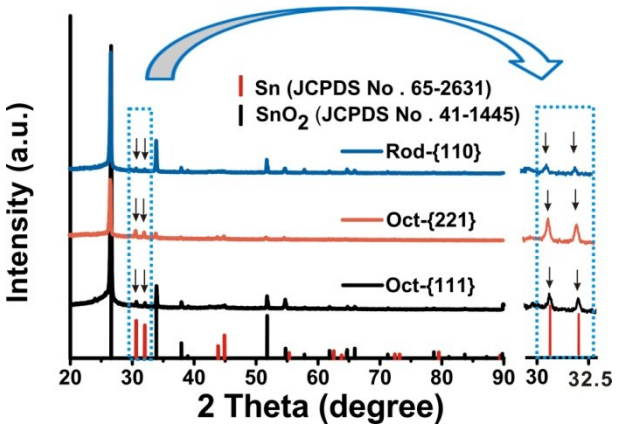

Fig. S5 XRD patterns of different facets SnO_2 after ECR.

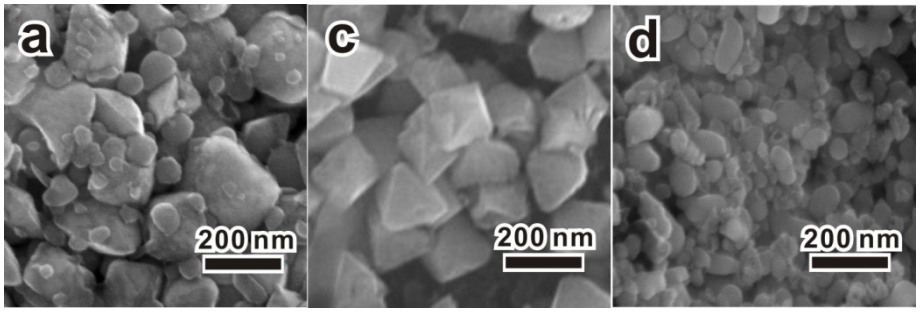

Fig. S6 SEM images of a) Oct-{111}, b) Oct-{221} and c) Rod-{110} after electroreduction catalysis.