

Supporting Information

A General Approach to Functional Metal Oxide Nanobelts: Thermal Decomposition of Precursor and Interface Diffusion Growth Mechanism

Changlong Jiang*, Yubian Han, Shengjun Liu and Zhongping Zhang*

Institute of Intelligent Machines, Chinese Academy of Sciences, Hefei, Anhui 230031,
China. *E-mail: cljiang@iim.ac.cn; zpzhang@iim.ac.cn*

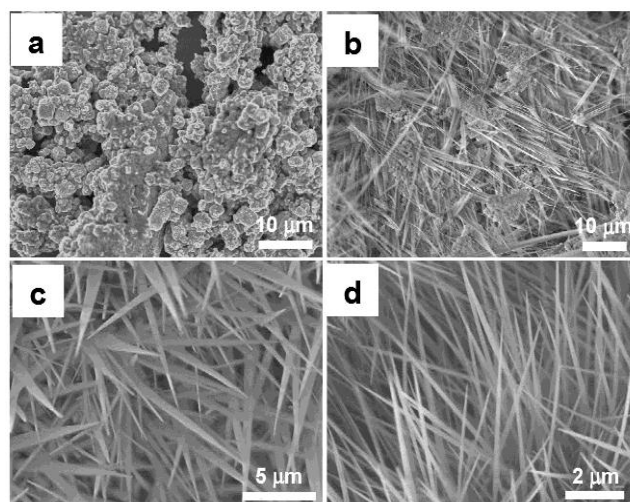


Fig. S1 The SEM images of the as-obtained samples at different heating temperature and heating rate. SEM images of the samples obtained at (a) 200 °C, (b) 400 °C and (c) 600 °C at a rate of 2 °C min⁻¹; (d) 700 °C at a rate of 4 °C min⁻¹.

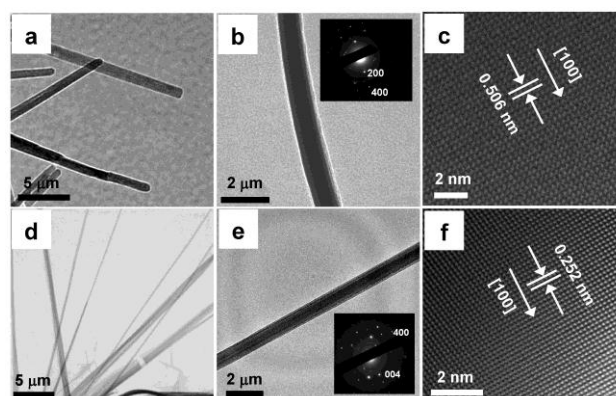


Fig. S2 The TEM images of the as-synthesized In_2O_3 and ITO nanobelts. (a) TEM images of the In_2O_3 nanobelts and (b) a single nanobelt (insert is the corresponding SAED pattern); (c) HRTEM image of the In_2O_3 nanobelts; (d) TEM images of the ITO nanobelts and (e) a single nanobelt (insert is the corresponding SAED pattern); (f) HRTEM image of the ITO nanobelts.

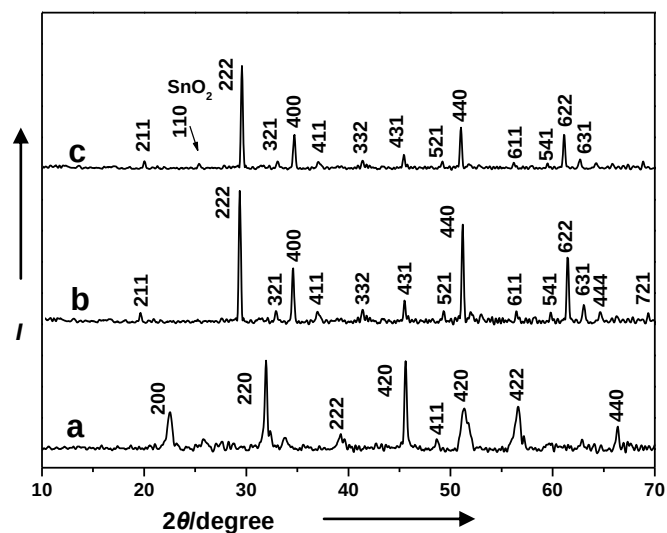


Fig. S3 The XRD patterns of the as-prepared samples: $\text{In}(\text{OH})_3$ (a), In_2O_3 (b) and ITO (c).

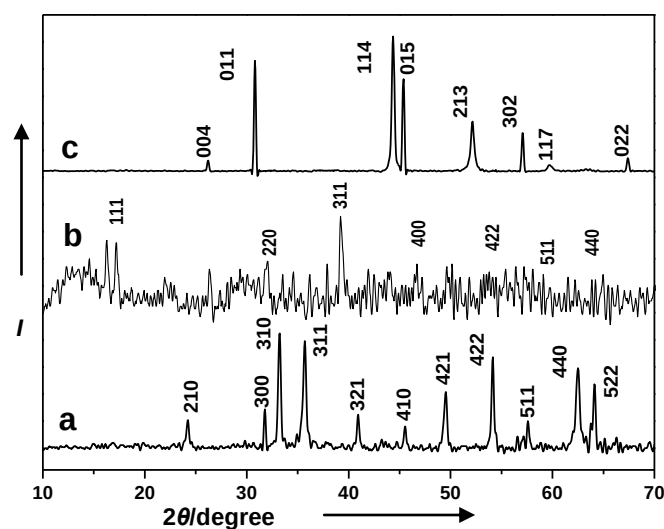


Fig. S4 The XRD patterns of the as-prepared precursors: Iron Oxide Hydroxide (a), Cobalt Oxide Hydroxide (b) and Nickel Oxide Hydroxide (c).

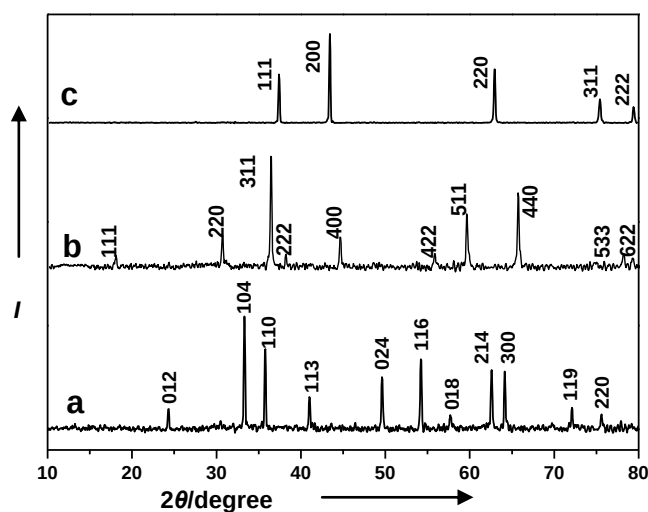


Fig. S5 The XRD patterns of the as-prepared samples: Fe_2O_3 (a), Co_3O_4 (b) and NiO (c).

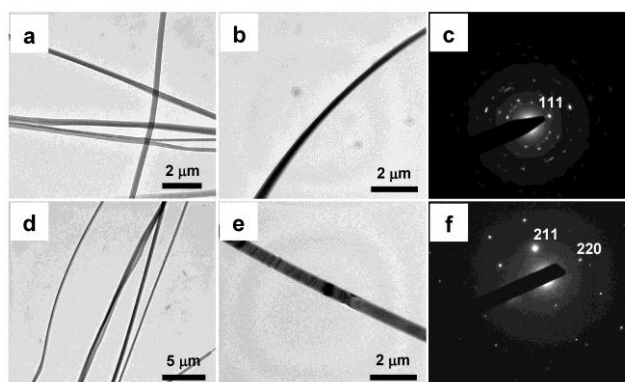


Fig. S6 The TEM images of the as-synthesized Co_3O_4 and NiO nanobelts. (a) TEM images of the Co_3O_4 nanobelts and (b) a single nanobelt; (c) The corresponding SAED pattern of the Co_3O_4 nanobelt; (d) TEM images of the NiO nanobelts and (e) a single nanobelt; (f) The corresponding SAED pattern of the NiO nanobelt.

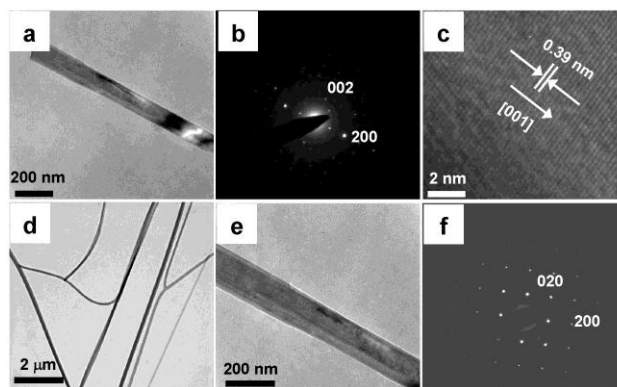


Fig. S7 The TEM images of the as-synthesized MoO_3 and WO_3 nanobelts. (a) TEM images of a single MoO_3 nanobelt and (b) the corresponding SAED pattern of the MoO_3 nanobelt; (c) HRTEM image of the MoO_3 nanobelts; (d) TEM images of the WO_3 nanobelts and (e) a single nanobelt; (f) The corresponding SAED pattern of the WO_3 nanobelt.

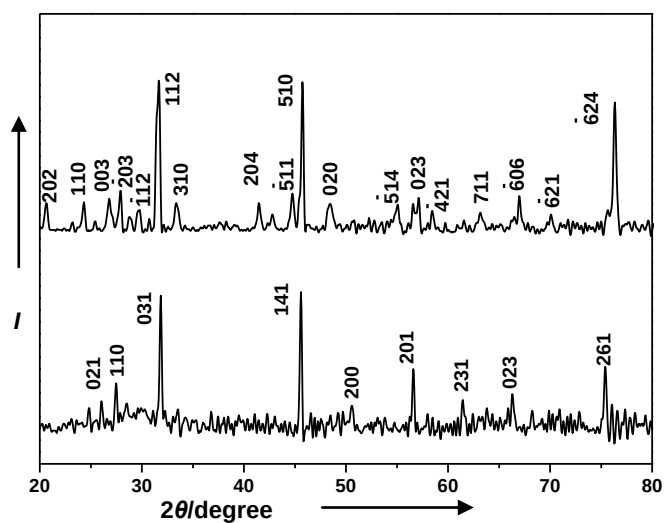


Fig. S8 The XRD patterns of the as-prepared samples: hydrogen Vanadium oxide (upper) and Vanadium oxide (bottom).

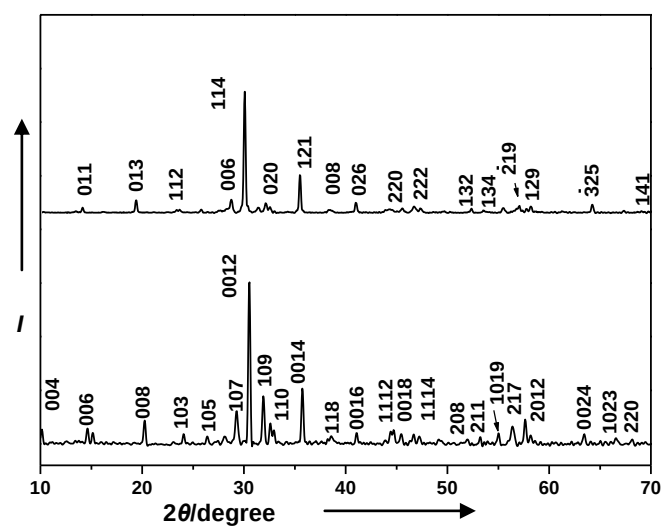


Fig. S9 The XRD patterns of the as-prepared samples: bismuth oxide chloride (upper) and bismuth oxide (bottom).

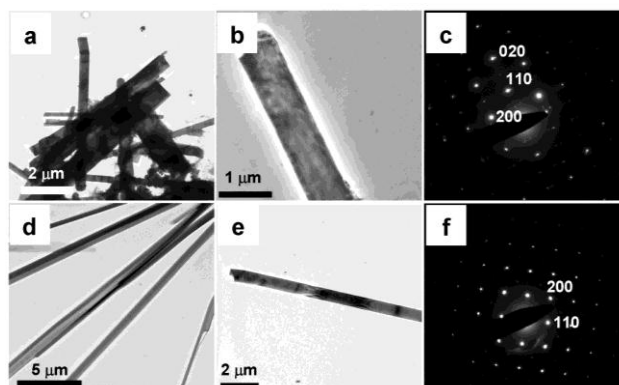


Fig. S10 The TEM images of the as-synthesized V_2O_5 and Bi_2O_3 nanobelts. (a) TEM images of the V_2O_5 nanobelts and (b) a single nanobelt; (c) The corresponding SAED pattern of the V_2O_5 nanobelt; (d) TEM images of the Bi_2O_3 nanobelts and (e) a single nanobelt; (f) The corresponding SAED pattern of the Bi_2O_3 nanobelt.