Electronic Supplementary Material (ESI) for Nanoscale.

Supporting Information

Coaxial electrospinning of WO_3 nanotubes functionalized with bio-inspired Pd catalyst and their superior hydrogen sensing performance

Seon-Jin Choi,[a] Saptarshi Chattopadhyay,[b] Jae Jin Kim,[c] Sang-Joon kim,[a] Harry L. Tuller,[c] Gregory C. Rutledge,[b,*] and Il-Doo Kim[a,*]

Contents

Fig. S1

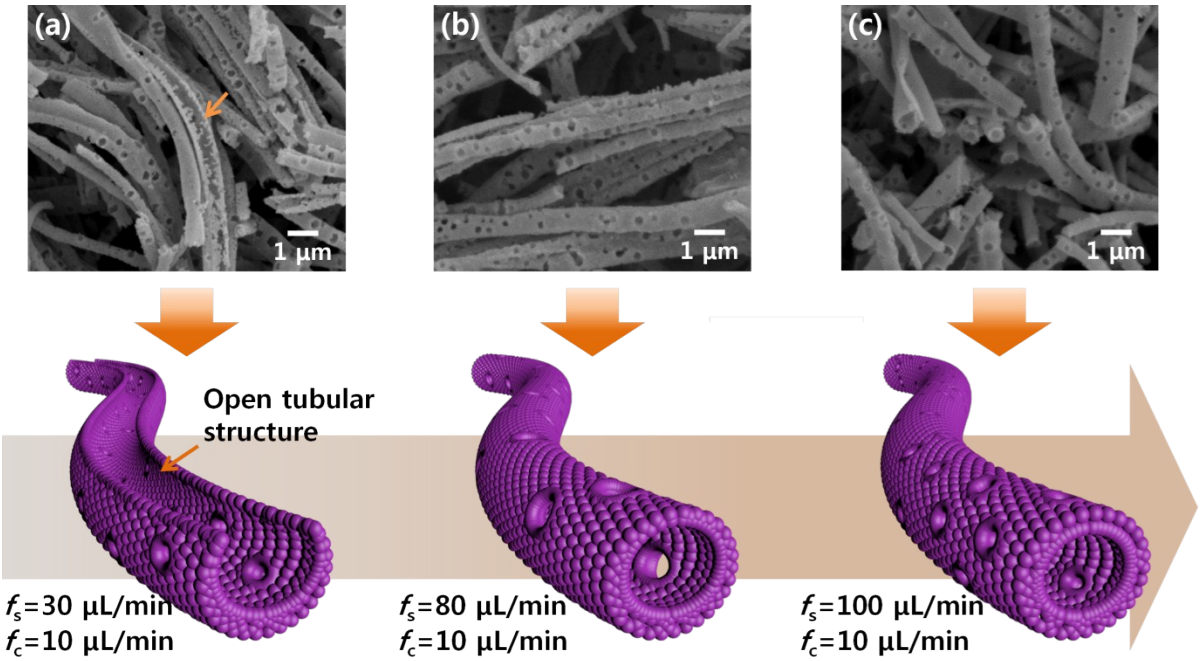

Fig. S1 Macroporous WO_3 nanotubes (NTs) synthesized by polystyrene (PS) colloid templating with different shell composite solution feeding rates (f_s): (a) f_s=30 μL/min, (b) f_s=80 μL/min, and (c) f_s=100 μL/min.

Fig. S2

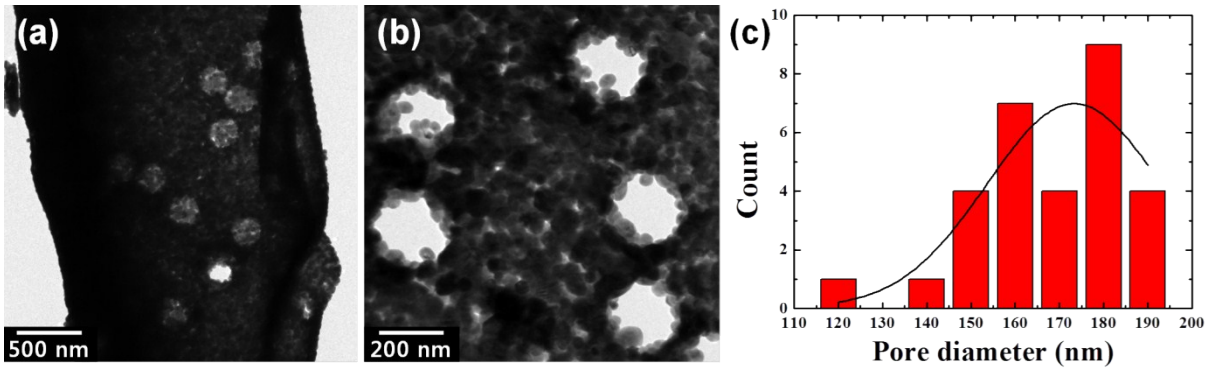

Fig. S2 (a) TEM image of Pd-loaded macroporous WO_3 NTs, (b) magnified TEM image of (a) with spherical pores on the surface, and (c) pore size distribution. The average pore diameter is 173.

Fig. S3

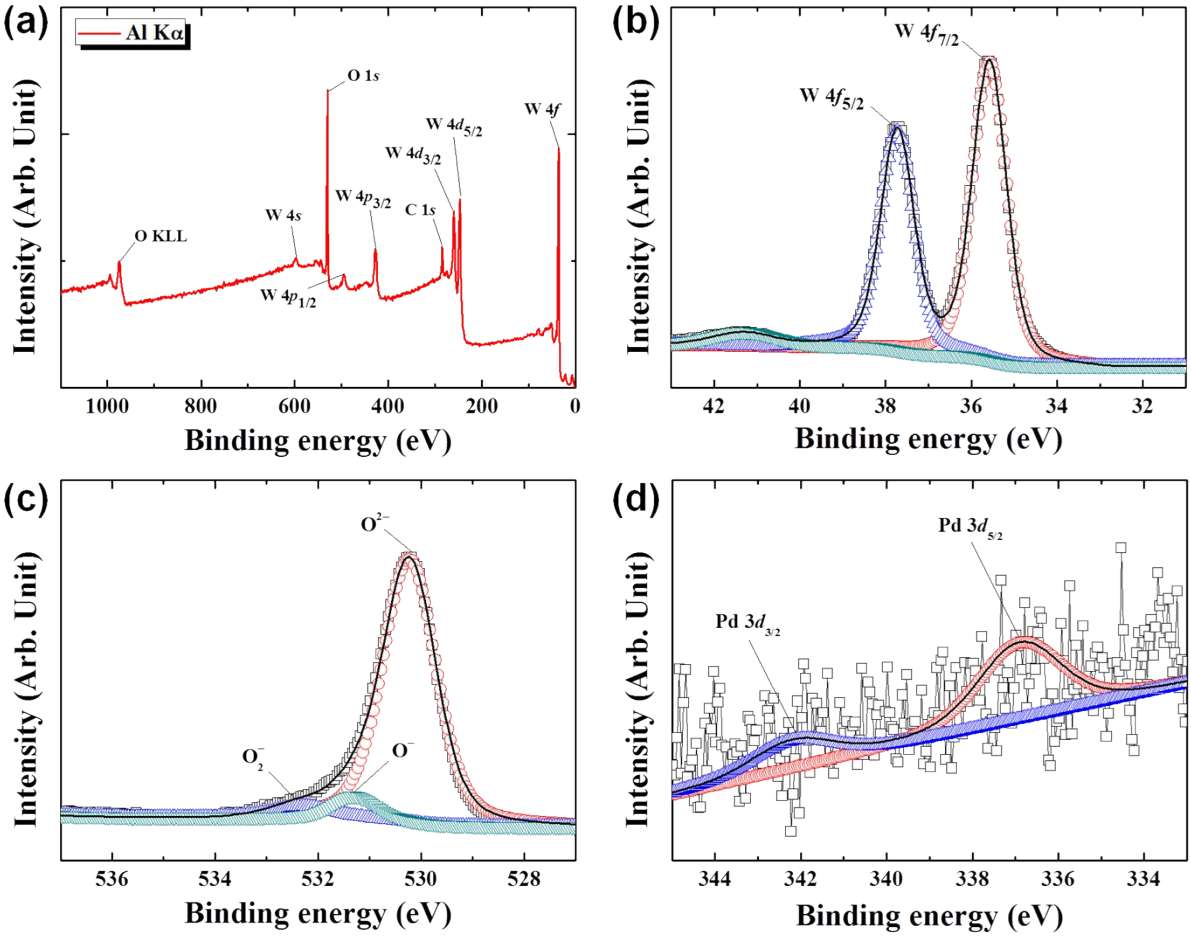

Fig. S3 X-ray photoelectron spectroscopy (XPS) analysis of Pd-Porous WO_3 NTs: (a) Survey scan of Pd-Porous WO_3 NTs. High-resolution spectra in the vicinity of the (b) W 4*f*, (c) O 1*s*, and (d) Pd 3*d*.

Fig. S4

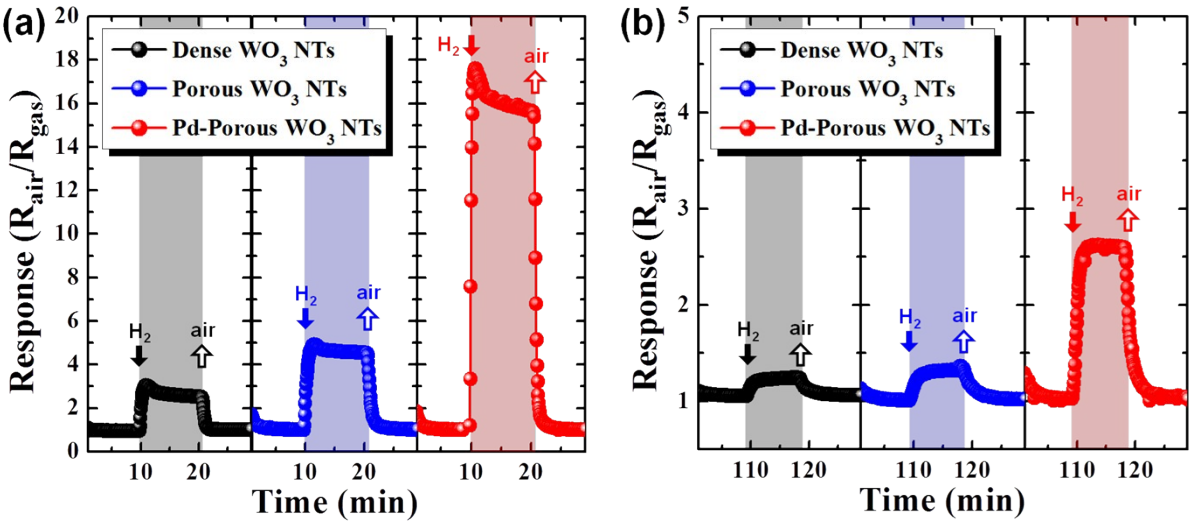

Fig. S4 Dynamic response transition characteristics of dense WO_3 NTs, porous WO_3 NTs, and Pd-Porous WO_3 NTs at (a) 500 ppm and (b) 10 ppm.