Electronic Supplementary Information

Multichannel Pathways-Enriched Mesoporous NiO Nanocuboids for Highly Sensitive and Selective Detection of 3-Hydroxy-2-Butanone Biomarkers

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Outline

Figure S7 The color change of M-NiO NCs sensors after exposing to different concentrations of 3H-2B gas at 120 ^{o}C. The photos were taken when the sensors' signals reached saturation, after exposure time of 278, 242, 135, 110 and 99 s in 5, 10, 25, 50 and 100 ppm 3H-2B, respectively.

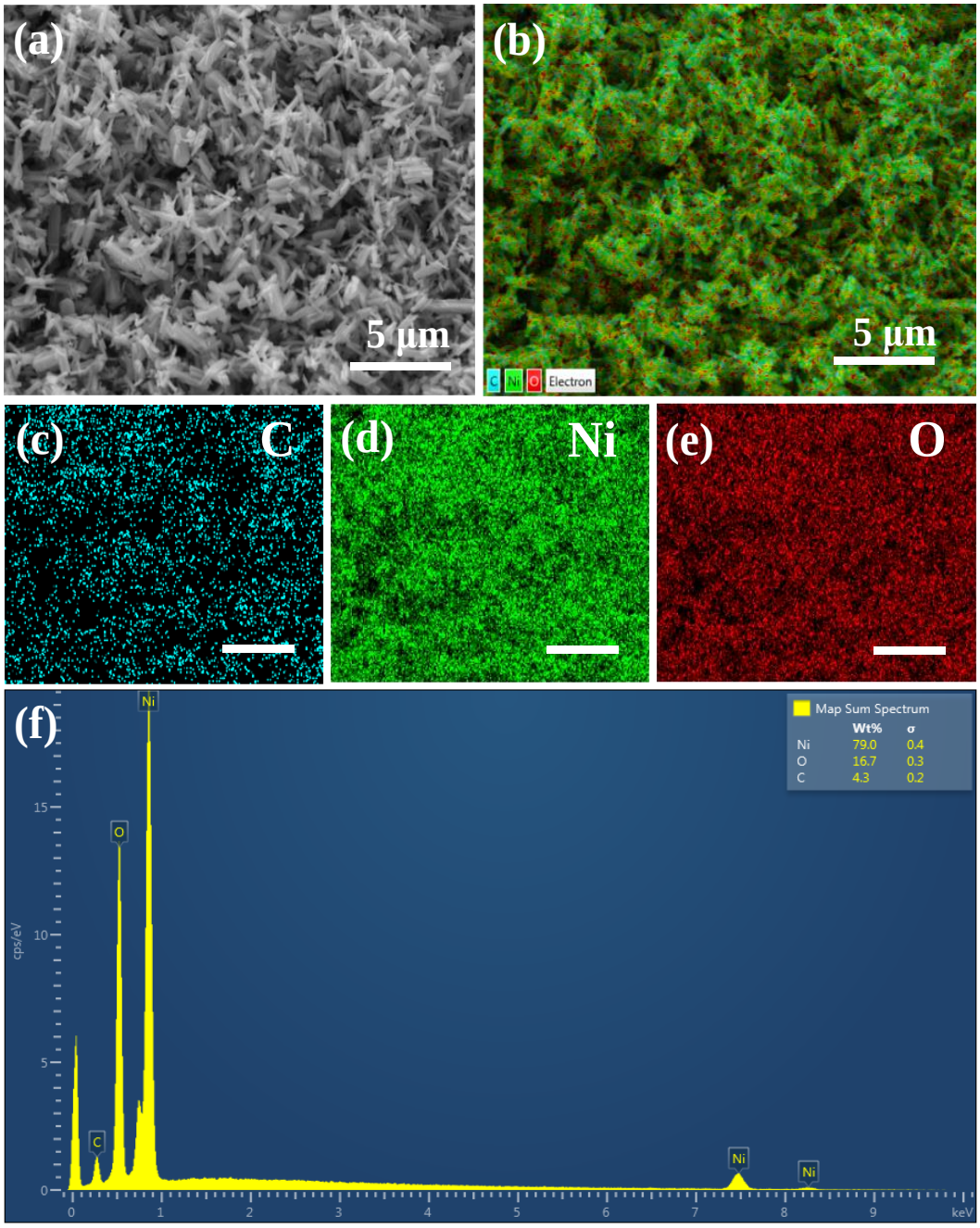

Figure S1 Large-scale synthesis of M-NiO NCs (a) and the corresponding element mapping of C (c), Ni (d) O (e), and EDS spectra (f), respectively.

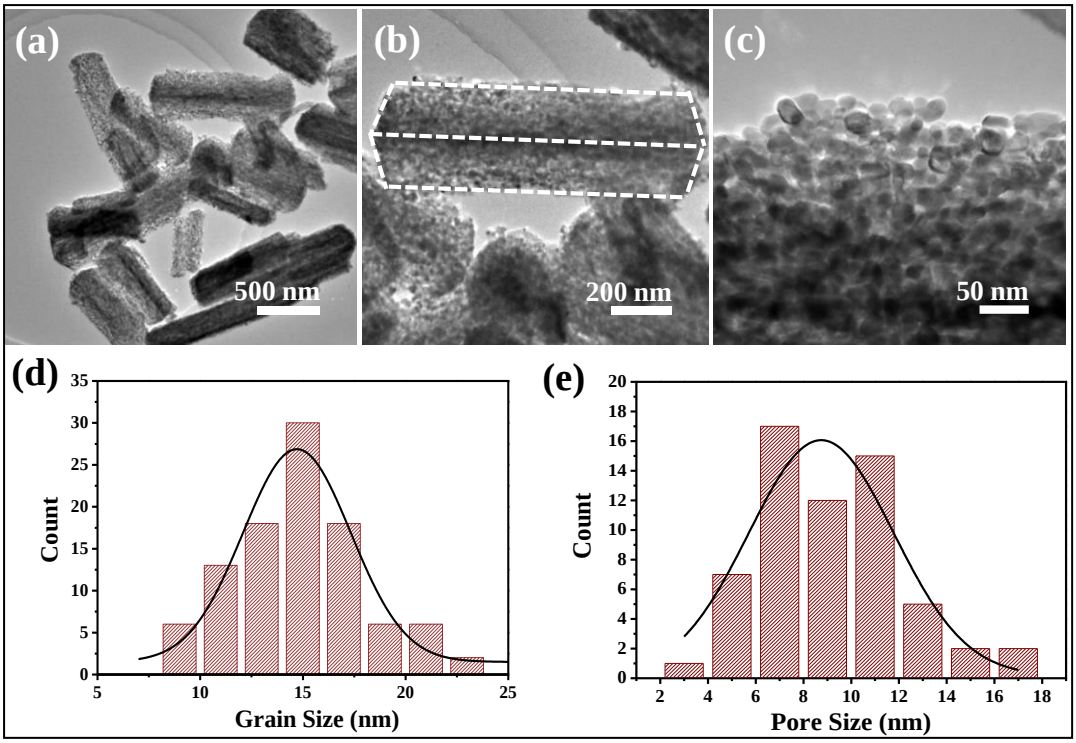

Figure S2 TEM images, grain size distribution and pore size distribution of M-NiO NCs after long-term stability test.

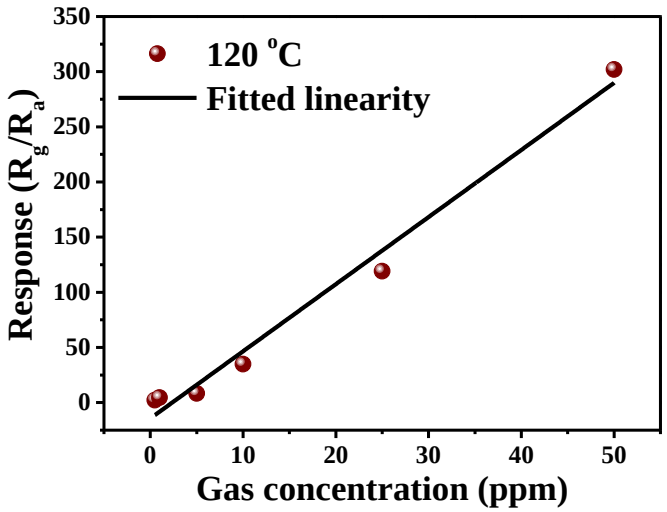

Figure S3 Linear fitting curve of the sensitivity with 3H-2B concentration (ppm) at 120 ºC;

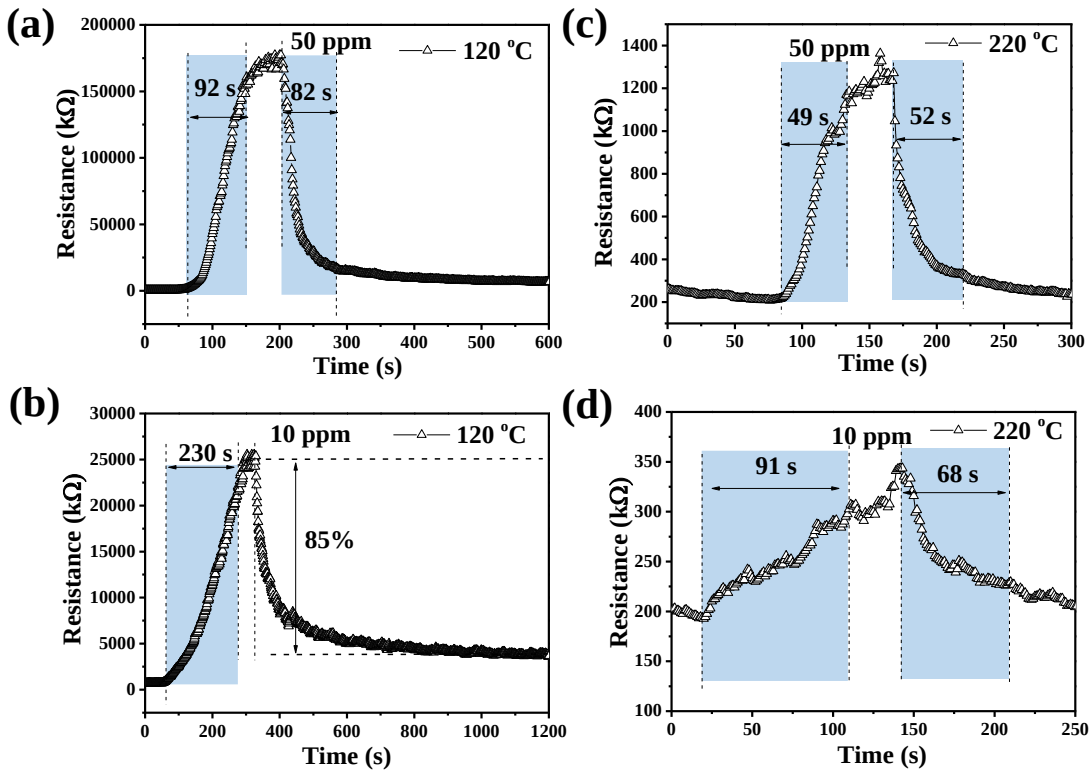

Figure S4 Response and recovery times of M-NiO NCs sensor to 50 (a and c) and 10 ppm (b and d) of 3H-2B at 120 (a and b) and 220 ºC (c and d), respectively.

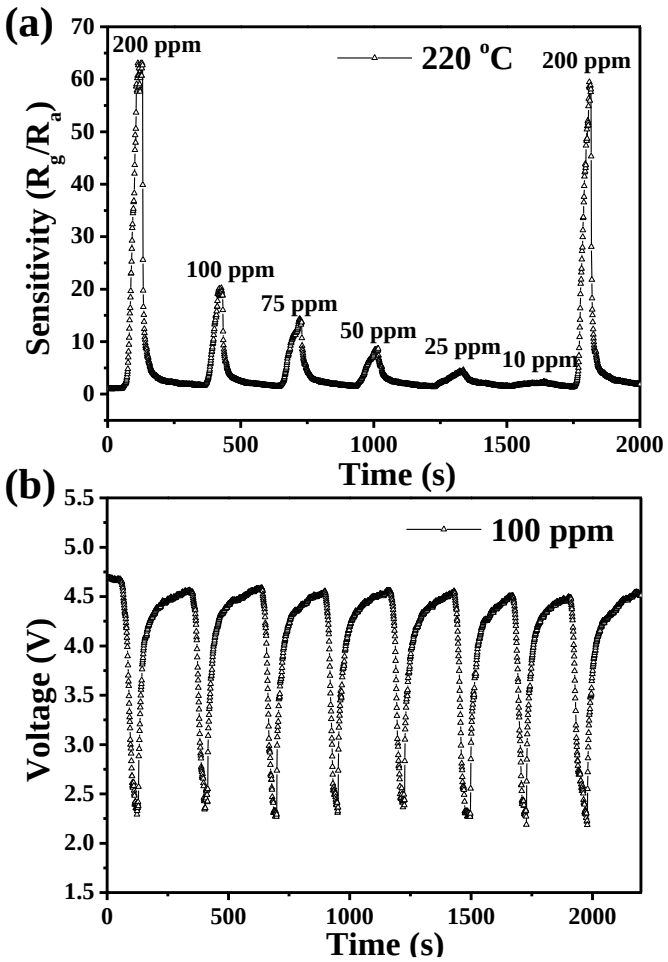

Figure S5 (a) Sensing response of M-NiO NCs to various concentrations of 3H-2B and (b) Reproducibility to 100 ppm successive target gas at 220 ºC.

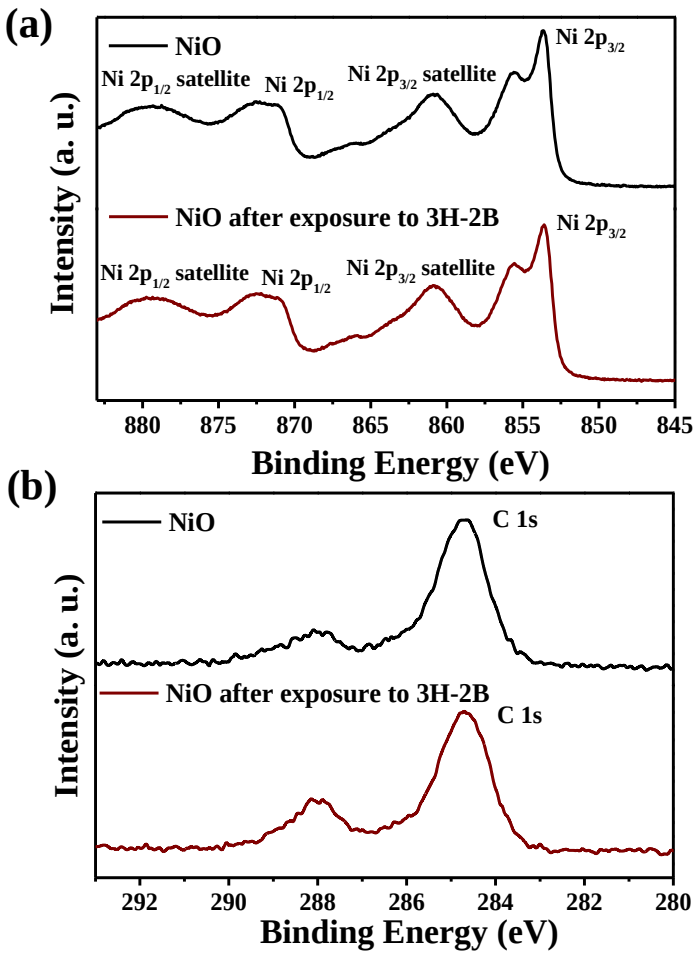

Figure S6 XPS spectra of the M-NiO NCs samples after exposure to air and 3H-2B at 120 ^{o}C for 30 min. (a) Ni 2p spectra and (b) C 1s spectra.

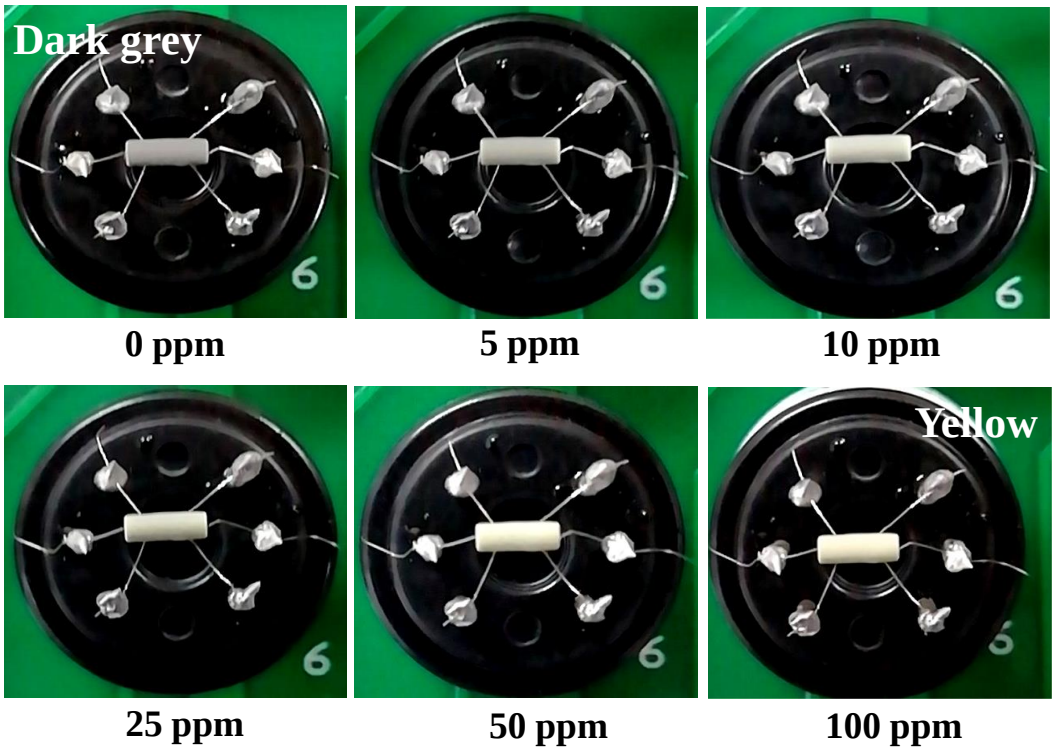

Figure S7 The color change of M-NiO NCs sensors after exposing to different concentrations of 3H-2B gas at 120 ^{o}C. The photos were taken when the sensors' signals reached saturation, after exposure time of 278, 242, 135, 110 and 99 s in 5, 10, 25, 50 and 100 ppm 3H-2B, respectively.