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Highly Dispersed Ni-decorated Porous Hollow Carbon Nanofibers: Fabrication, Characterization, and NO_x Gas Sensors at Room Temperature

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Supporting information

1. *SEM images*

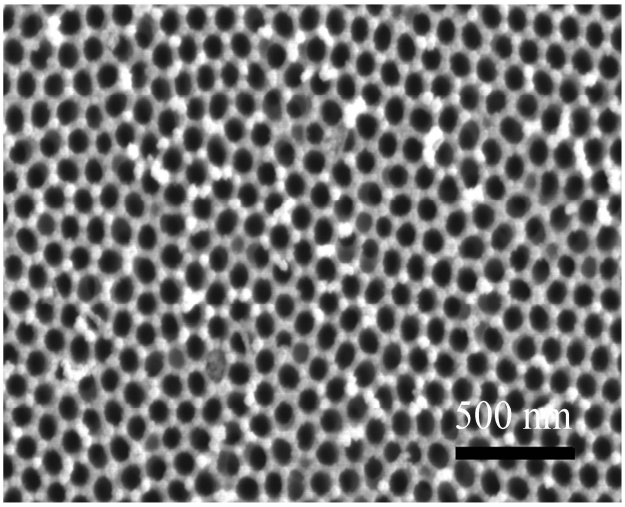


Fig. S1 SEM images of the prepared AAO membrane with ~60 nm pore diameters (top view).

2. *XRD patterns*

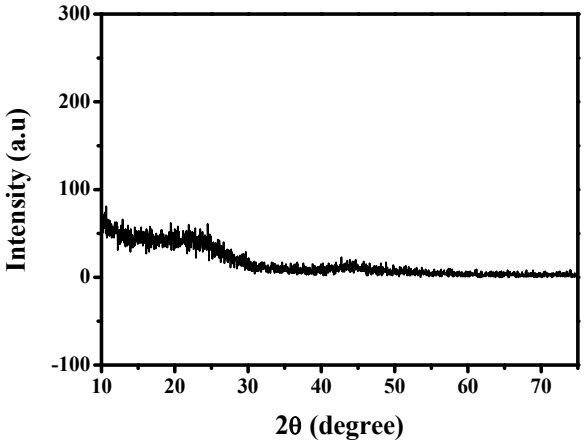
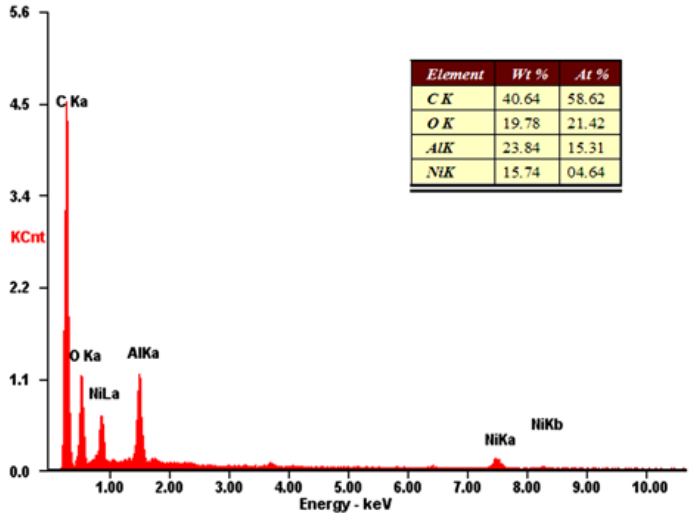


Fig. S2 Wide-angle XRD patterns of the samples (without Ni precursors) calcined at temperatures 800 ^{o}C.

3. *EDX spectrum*



Element	Wt %	At %
C K	40.64	58.62
O K	19.78	21.42
AlK	23.84	15.31
NiK	15.74	04.64

Fig. S3 Typical EDX spectrum of HCFs-Ni-NPs (S-2-600).

4. *Response-recovery curves*

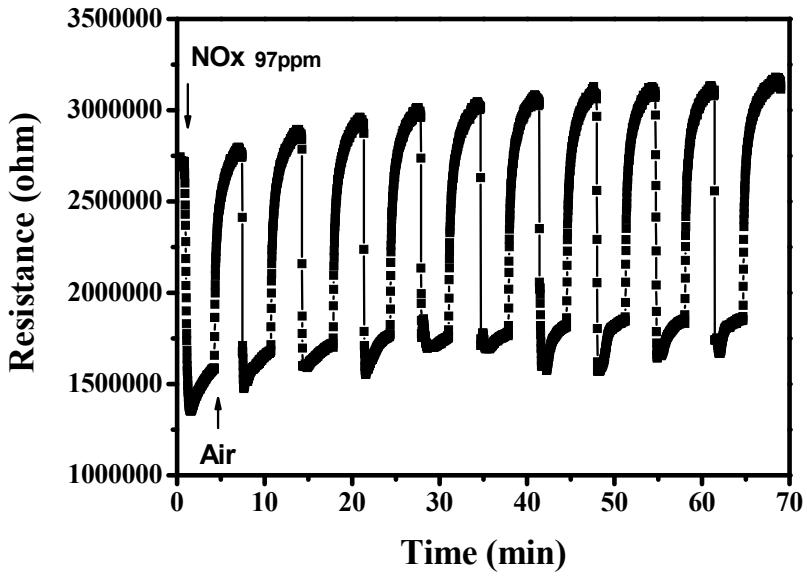


Fig. S4 Response-recovery curves of fabricated HCFs-Ni-NPs gas sensor (S-2-600) to NO_x gas at 97 ppm (10 cycles) at room temperature.

5. Response-recovery curves

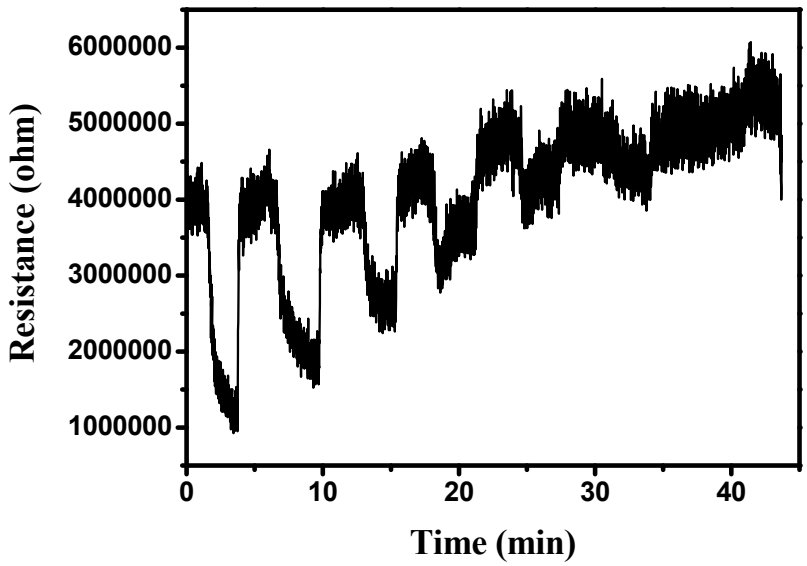


Fig. S5 Response-recovery curves of HCFs gas sensor to NO_x gas at 97-0.97 ppm at the room temperature. (S-2, removing Ni-NPs after annealing at 600 °C).

6. Table of the amount of Ni

Table S1 The amount of Ni in the products

The sample	The content of Ni in the products (wt%)
S-1-600	3.83
S-2-600	9.37
S-3-600	19.57
S-4-600	33.04

7. HR-TEM images

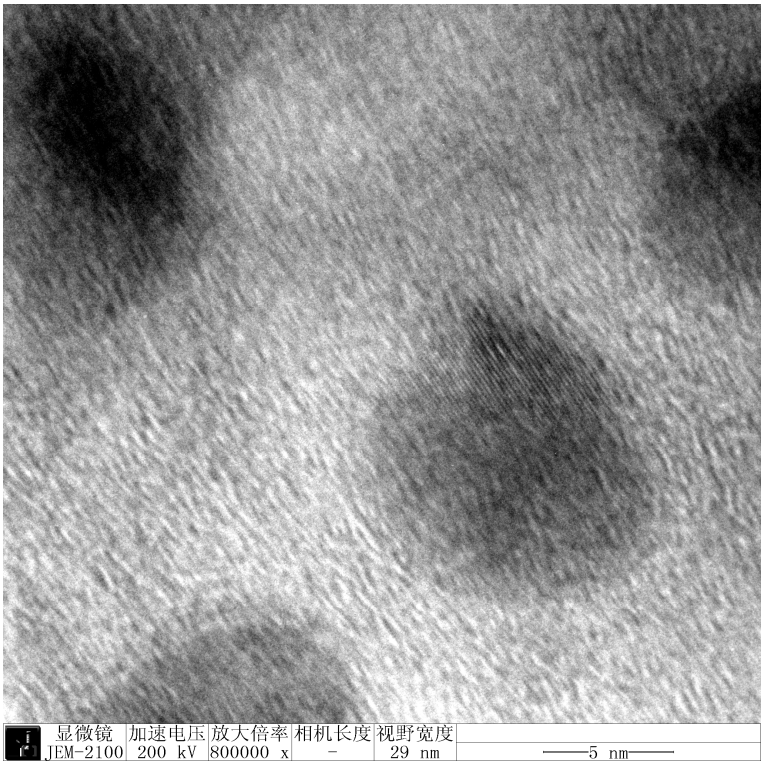


Fig. S6 HR-TEM images of the HCF-Ni-NPs (the original image of Figure 3c).