Electronic Supplementary Information (ESI) for Nanoscale.
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Electronic supplementary information

Structural and Electronic Engineering of 3DOM WO_3 by Alkali Metal Doping for Improved NO_2 Sensing Performance

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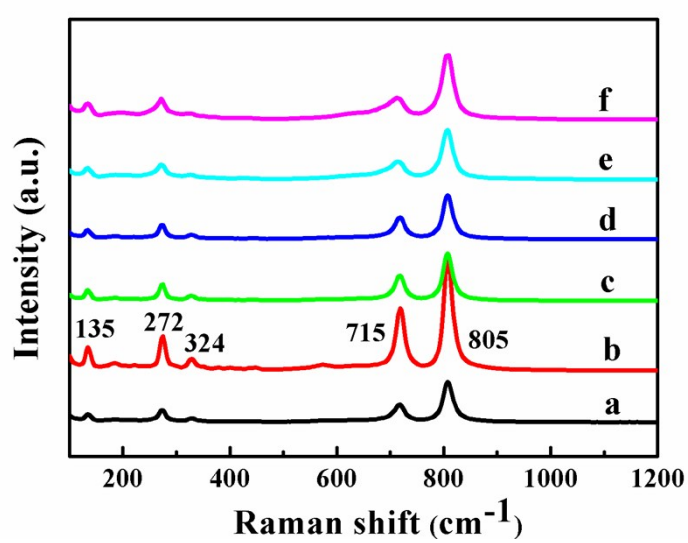

Fig. S1 Raman spectrum of the 3DOM samples, from a to f are WO_3 and Li^+-, Na^+-, K^+-, Rb^+-, Cs^+-doped WO_3, respectively.

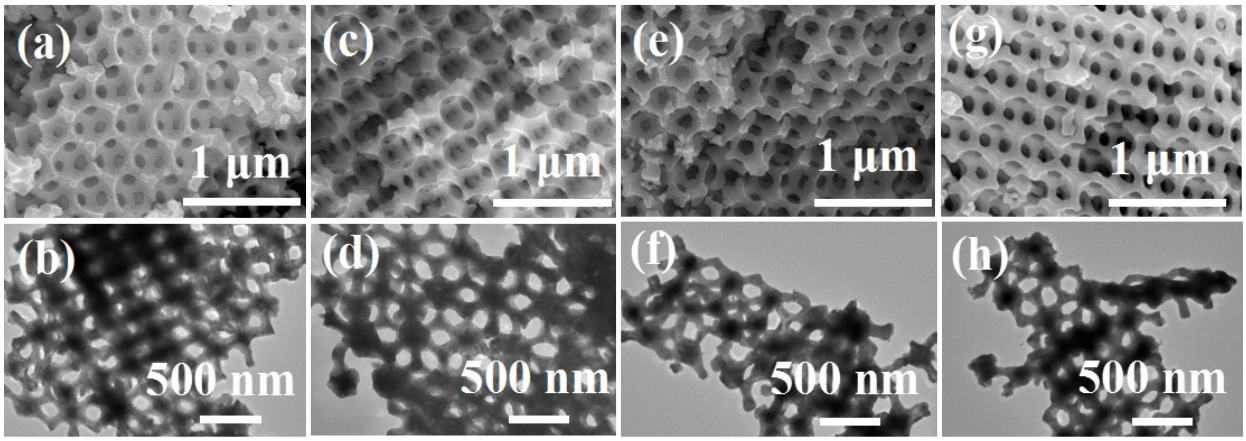

Fig. S2 SEM and TEM images of the 3DOM samples: (a), (b) 3DOM WO_3/Na; (c), (d) 3DOM WO_3/K; (e), (f) 3DOM WO_3/Rb; (g), (h) 3DOM WO_3/ Cs.

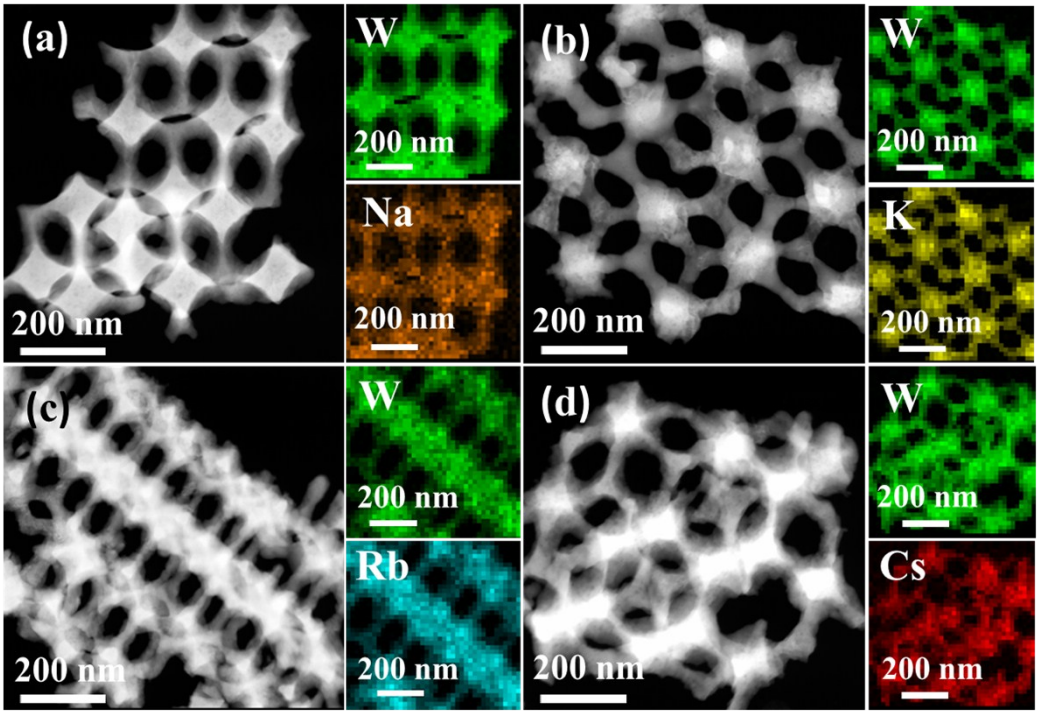

Fig. S3 STEM images and elemental mappings of the 3DOM samples: (a) Na^+-, (b) K^+-, (c) Rb^+- and (d) Cs^+- doped 3DOM WO_3.

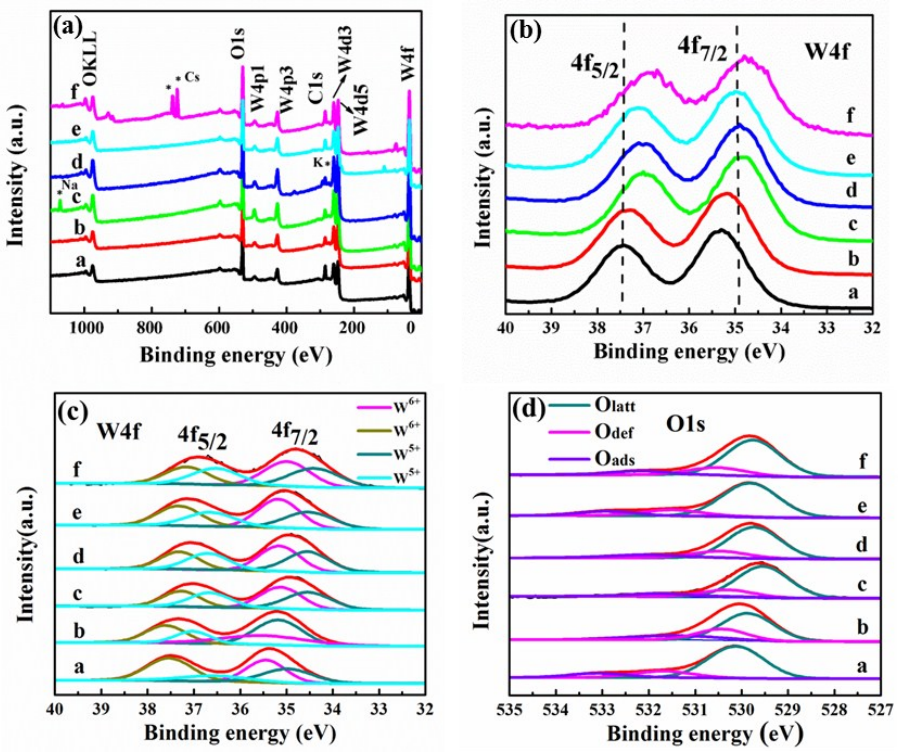

Fig. S4 XPS spectra of the 3DOM samples: (a) full-range survey spectrum; (b) high magnification of the W4f spectrum; (c) W4f spectrum; (d) O1s spectrum, from a to f are WO_3 and Li^+-, Na^+-, K^+-, Rb^+-, Cs^+- doped WO_3, respectively.

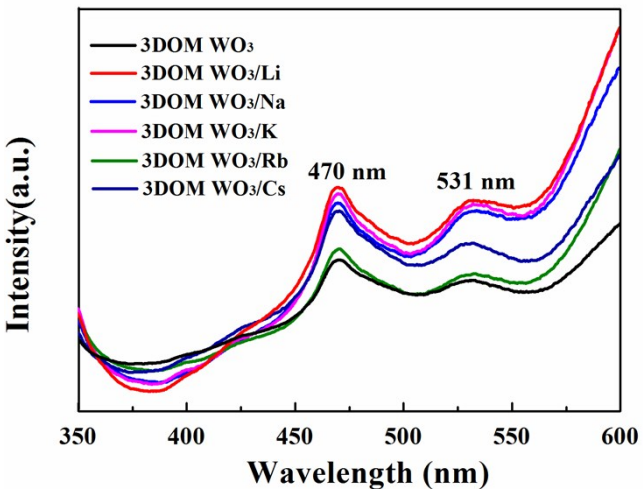

Fig. S5 PL spectrum of the 3DOM samples.

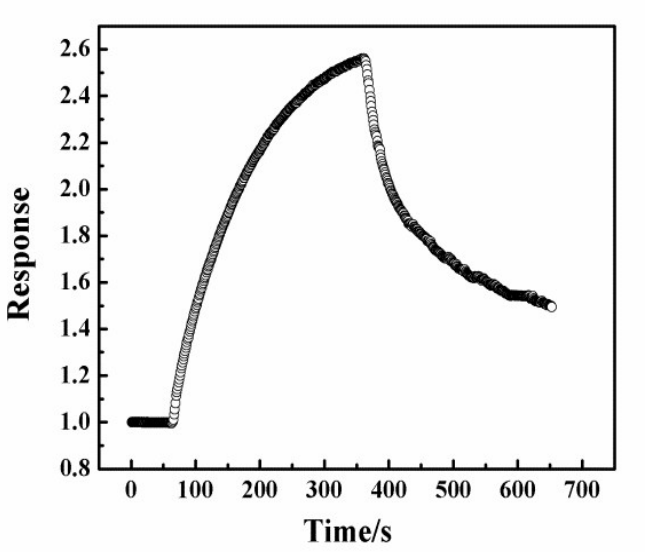

Fig. S6 Transient plot of nonporous WO_3 to 500 ppb NO_2 at the optimum working temperature (150 ^oC).

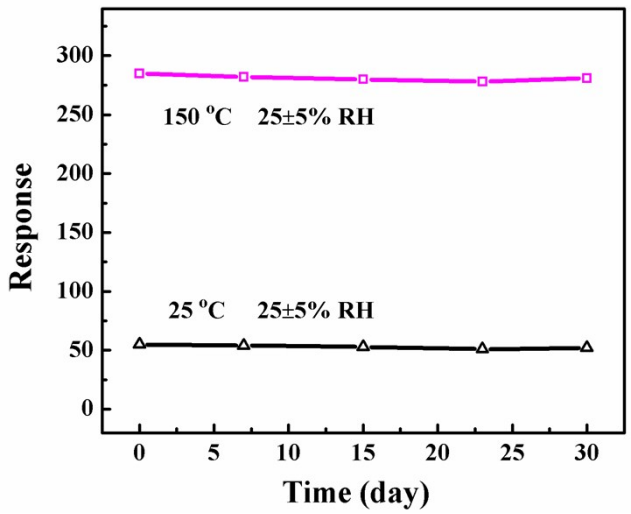

Fig. S7 Sensing stability of 3DOM WO_3/Li for nearly one month.

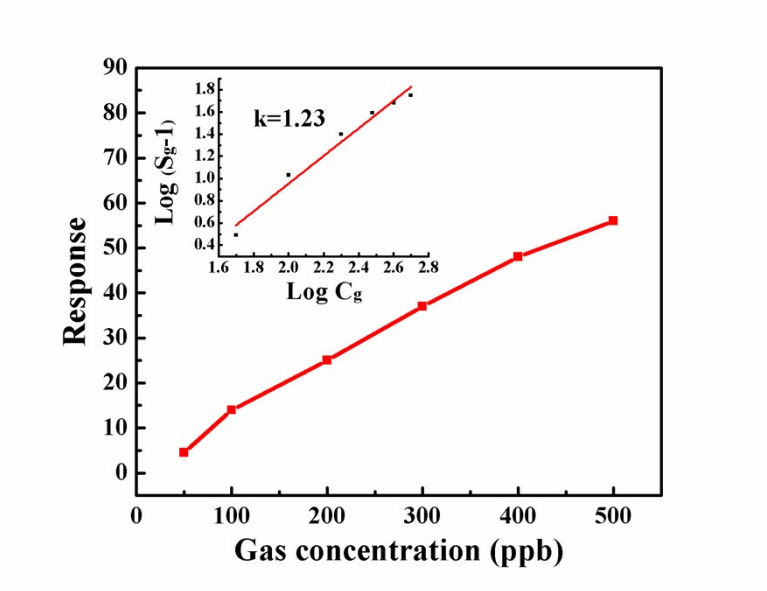

Fig. S8 Response of 3DOM WO_3/Li to NO_2 concentration at room temperature (25 °C), inset: the corresponding log S_g-1 versus log C_g curves.