Supplementary information for

NO_2 gas sensors based on CVD tungsten diselenide monolayer

Yichuan Wu[1,2,3], Nirav Joshi[2,4], Shilong Zhao[3,5], Hu Long[5], Liujiang Zhou[6], Ge Ma[7], Bei Peng[1], Osvaldo N Oliveira Jr[4], Alex Zettl[5], and Liwei Lin[2,3]*

[1]School of Mechanical and Electrical Engineering, University of Electronic Science and Technology of China, Chengdu 611731, China.

[2]Berkeley Sensor and Actuator Center, University of California at Berkeley, CA 94720, USA.

[3]Tsinghua-Berkeley Shenzhen Institute, Tsinghua University, Shenzhen 518055, China.

[4]São Carlos Institute of Physics, University of São Paulo, São Carlos 13560-970, Brazil.

[5]Department of Physics, University of California at Berkeley, and Materials Sciences Division, Lawrence Berkeley National Laboratory, and Kavli Energy NanoScience Institute at the University of California Berkeley and the Lawrence Berkeley National Laboratory, Berkeley, CA 94720, USA.

[6]Institute of Fundamental and Frontier Sciences, University of Electronic Science and

Technology of China, Chengdu 610054, China.

[7]Department of Intelligent Industrial Research, China Academy of Industrial Internet, Beijing 100084, China.

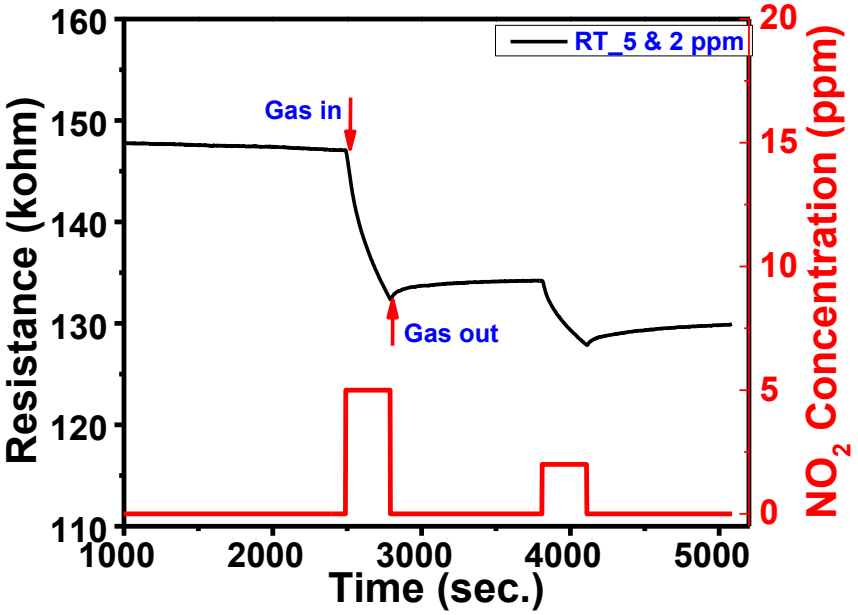

Figure S1: Gas sensing responses for WSe_2 upon exposure to NO_2 (5 & 2 ppm) at room temperature.

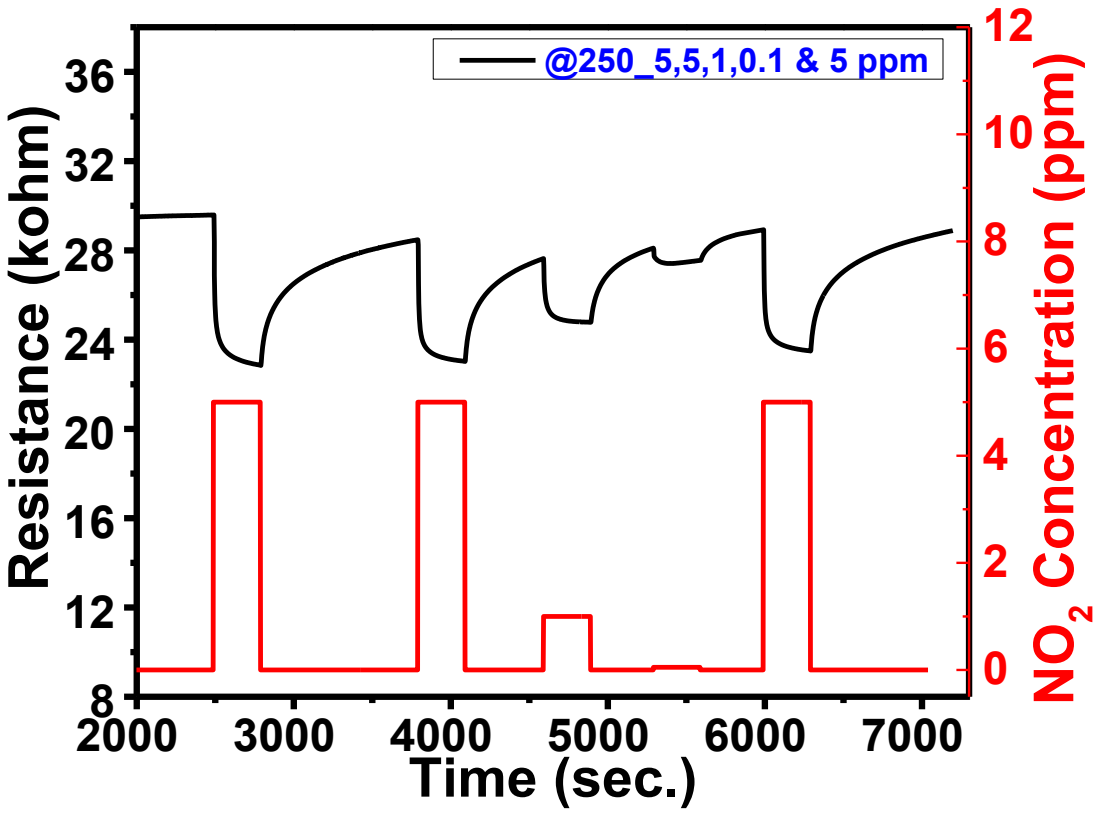

Figure S2: Sensor response of WSe_2 with five reproducible cycles for exposures to NO_2 at 250 °C

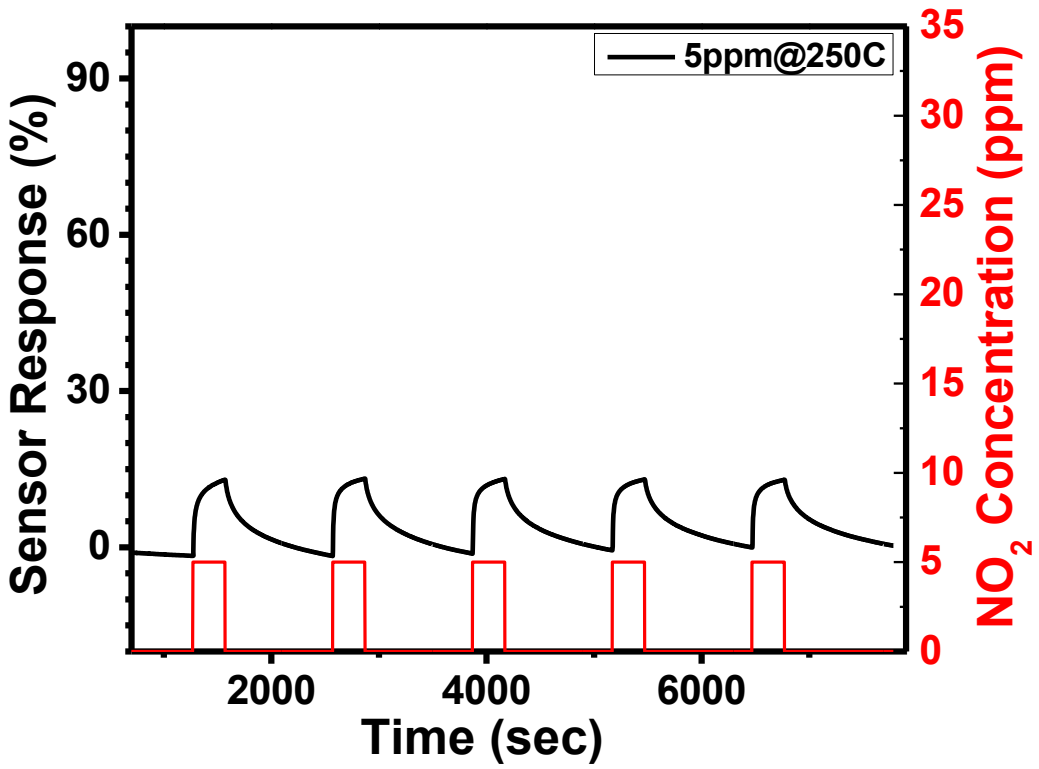

Figure S3: Dynamic electrical response of WSe_2 sensor with 5 ppm NO_2 exposure at an operating temperature of 250 °C.

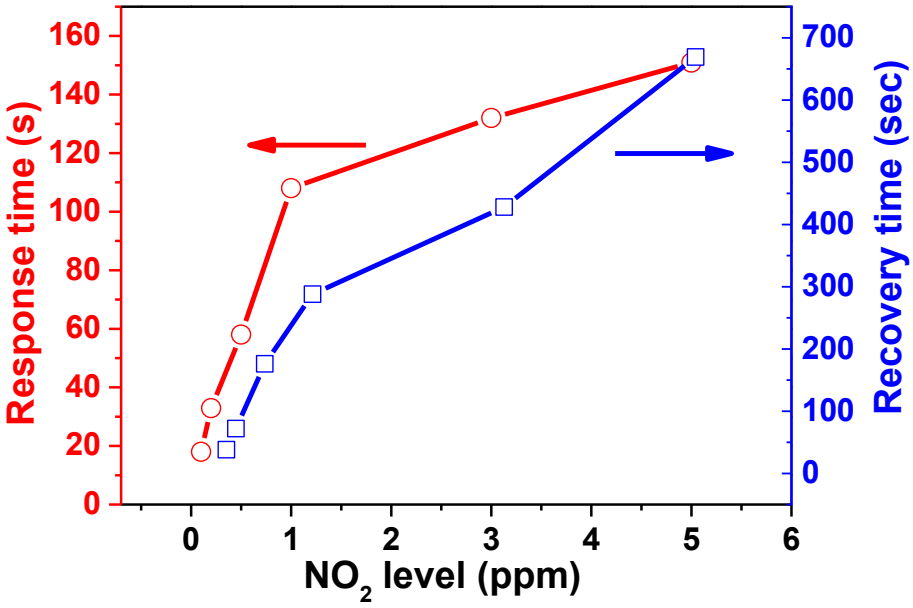

Figure S4: Gas sensing response and recovery time as a function of NO_2 gas concentration in the range of 0.1 to 5 ppm at 250 ^{0}C.