

## Supporting Information

### **The kinetics of light irradiation enhanced room temperature NO<sub>2</sub> gas sensor using hybrid ZnO/ZnTe nanorod structures**

Nguyen Minh Hieu<sup>1\*</sup>, Cao Van Phuoc<sup>2</sup>, Cao Viet Anh<sup>3</sup>, Nguyen Manh Hung<sup>5</sup>, Anh D. Phan<sup>1</sup>,  
Nguyen Duc Chinh<sup>2</sup>, Sutripto Majumder<sup>6</sup>, Truong Hong Cuong<sup>2</sup>, Hoang Gia Chuc<sup>1</sup>, Do Van  
Minh<sup>2</sup>, Do Quang Trung<sup>4</sup>, Tu Nguyen<sup>4</sup>, Nguyen Van Du<sup>4</sup>, Tran Manh Trung<sup>1</sup>, Pham Thanh  
Huy<sup>1</sup>, Jong- Ryul Jeong<sup>2</sup>, Chunjoong Kim<sup>2</sup>, Dojin Kim<sup>2</sup>

<sup>1</sup>Faculty of Materials Science and Engineering, Phenikaa University, Yen Nghia, Ha Dong,  
Hanoi 12116, Vietnam

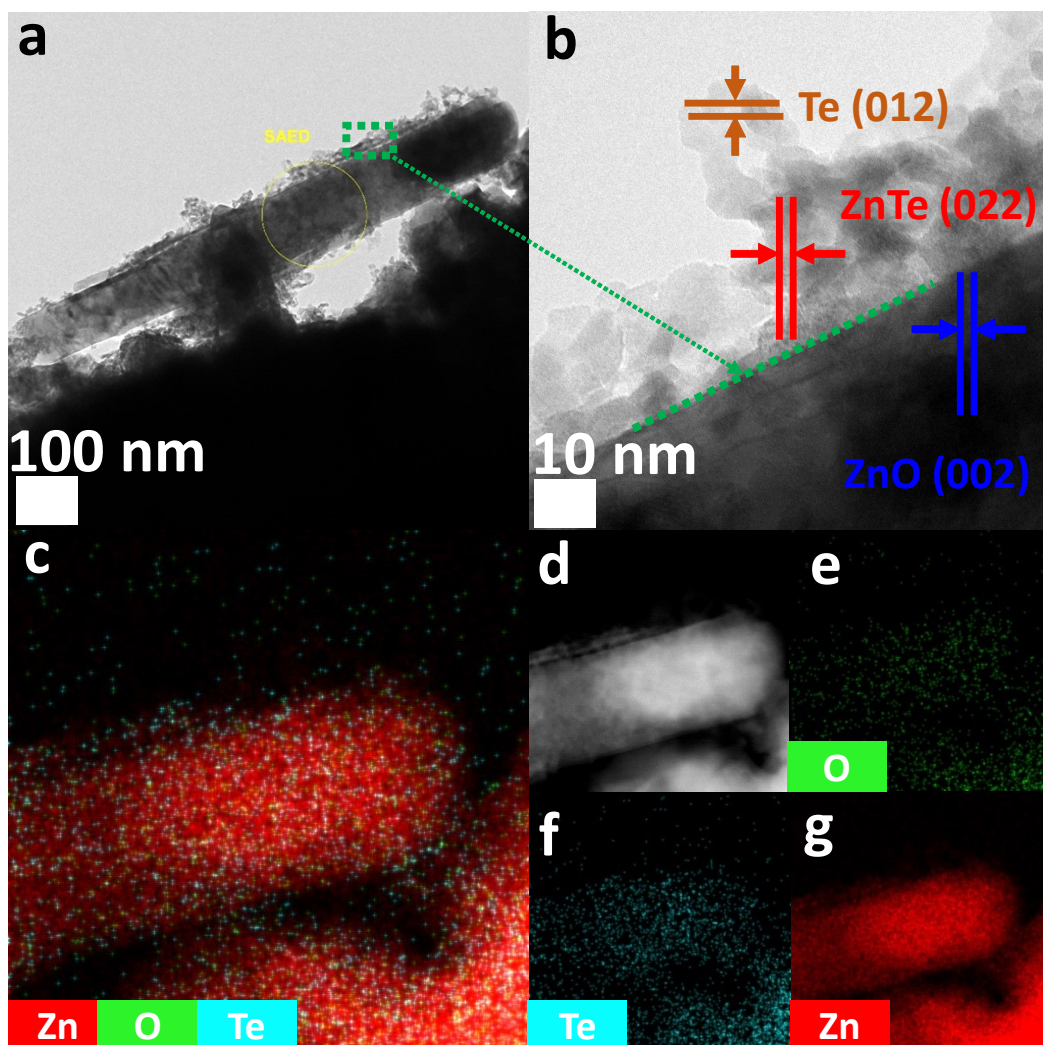
<sup>2</sup>Department of Materials Science and Engineering, Chungnam National University, Daejeon,  
34134, Republic of Korea

<sup>3</sup>Department of Electrical Engineering, Chungnam National University, Daejeon, 34134,  
Republic of Korea

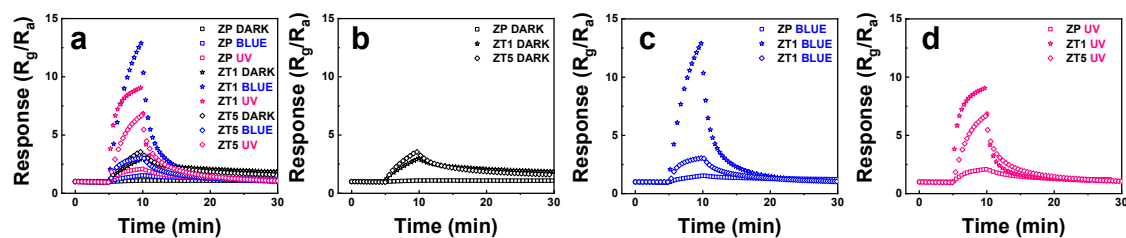
<sup>4</sup>Faculty of Fundamental Sciences, Phenikaa University, Yen Nghia, Ha Dong, Hanoi 12116,  
Vietnam

<sup>5</sup>Department of Materials Science and Engineering, Le Quy Don Technical University, Hanoi  
100000, Vietnam

<sup>6</sup>Department of Physics, School of Natural Science, Yeungnam University, Gyeongsan, 38541,  
Republic of Korea



**Fig. S1.** The TEM illustration of (a) (b) ZT5, and elemental mapping of (c-d) whole ZT5 and separated (e) O, (f) Te, and (g) Zn, respectively.



**Fig. S2.** The response of (a) all sensors under all conditions, (b) ZP, ZT1, ZT5 at dark, (c) ZP, ZT1, ZT5 under blue, and (d) ZP, ZT1, ZT5 under UV.

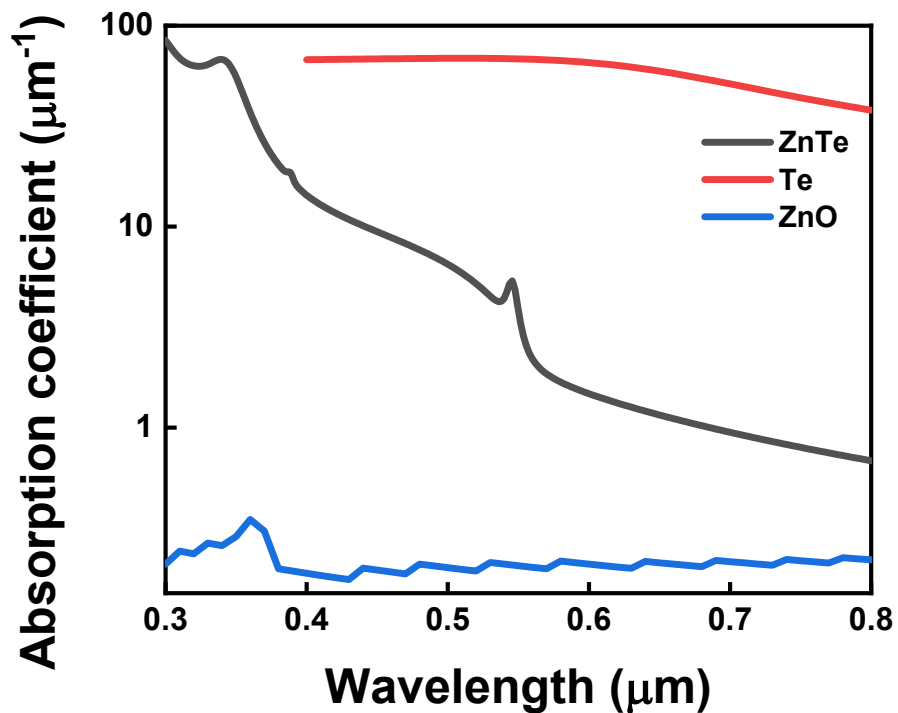


Fig. S3. Absorption coefficient of ZnO, ZnTe, and Te at different wavelengths.

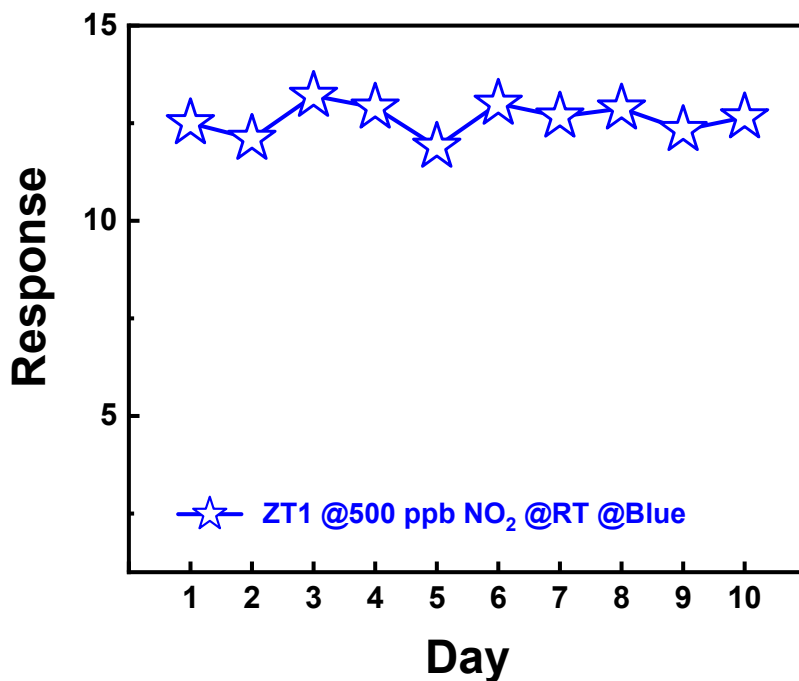


Fig. S4. Response of ZT1 toward 500 ppb NO<sub>2</sub> at RT under blue light effect through 10 consecutive days of repeated measurements.

