Electronic Supplementary Information

High-performance UV/Visible photodetector of Cu₂O/ZnO hybrid thin films on a SWNTs-based flexible conducting substrate

Xianbin Liu,*a Hejun Du,*a Penghua Wang,b Teik-Thye Lim,b,c and Xiao Wei Sund

Received (in XXX, XXX) Xth XXXXXXXX 20XX, Accepted Xth XXXXXXXX 20XX DOI: 10.1039/b000000x

^a School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore. Fax: +65 6795 4630; Tel: +65 6795 4783; E-mail: <u>liuxianbin@ntu.edu.sg</u>, and <u>mhdu@ntu.edu.sg</u>

^b Nanyang Environment and Water Research Institute (NEWRI), Nanyang Technological University, Singapore

^c School of Civil and Environmental Engineering, Nanyang Technological University, Singapore

^d School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore

The light intensity of the homemade LED light panels were characterized by Pyranometer CMP6 (Kipp & Zonen) at a special distance between the light and the device as shown in Table S1.

Table S1. The light intensity of various homemade LED light panels at different distances

	Light Intensity (mW/cm ²)			
	3 cm	5 cm	10 cm	20 cm
White LED	28.7	19.9	8.9	3.1
UV (360-370 nm)	0.3	0.2	0.1	
Infrared (850 nm)	5.5	3.6	1.4	0.5
Blue (475 nm)	3.2	2.7	1.2	0.4
Red (625 nm)	2.3	1.8	0.8	0.3
Green (525 nm)	6.9	4.6	1.9	0.7



Fig. S1. Photocurrent versus light intensity curves of the three photodectors with $ITO/Cu_2O/ZnO/SWNTs$ structure (black), $ITO/ZnO/Cu_2O/SWNTs$ structure (red), and $ITO/Cu_2O/SWNTs$ structure (blue) upon different intensities of white LED lights without applied bias.