sensors

MDPI

Supporting information

A Sensor Array Realized by a Single Flexible TiO_2/POMs Film to Contactless Detection of Triacetone Triperoxide

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Table S1. The available techniques for detection of TATP.

Detection techniques	Sensing materials	Limits of detection	Response time	Ref
Semiconductor based vapor sensor	organic-semiconductor sensors	<100 ppb	30 s	[1]
	SnO_2 and WO_3	12 ppb	-	[2]
	metal oxide catalyst	8 ppm	2 min	[3]
	In_2O_3 nanoparticles	2.9 ppb	120 s	[4]
Ion mobility spectrometry	-	1.2 ng	-	[5]
Colorimetric method	colorimetric sensor	< 2 ppb	-	[6]
	silver nanoparticles	20 nM	-	[7]
	N,N-dimethyl-p-phenylene diamine	0.1 $mg \cdot L^{-1}$	-	[8]
Electrochemical method	Molecularly-imprinted polymer	26.9 $\mu g \cdot L^{-1}$	-	[9]
	$Fe^{II/III}$ ethylenediaminetetraacetate	0.89	-	[10]

Table S2. The atomic percentage results of TiO_2/PW_{11} from XPS.

Name	Peak BE	FWHM eV	Area(P) CPS.eV	Atomic %
W4f	35.39	1.19	61905.31	3.94
Ti2p	458.56	1.15	123995.77	17.6
O1s	530.04	1.47	154800.67	52.12
P2p	133.1	0.38	2507.5	1.38

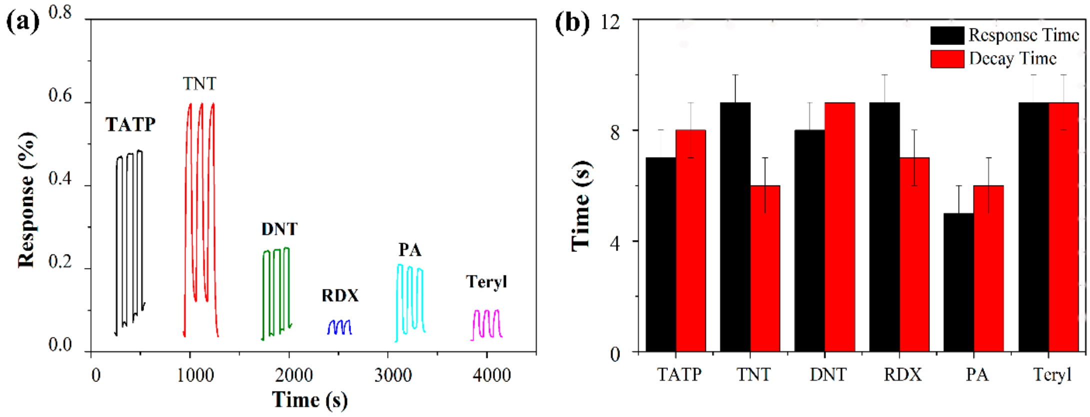

Figure S1. Response and response time and decay time of TiO_2 under 365 nm illumination.

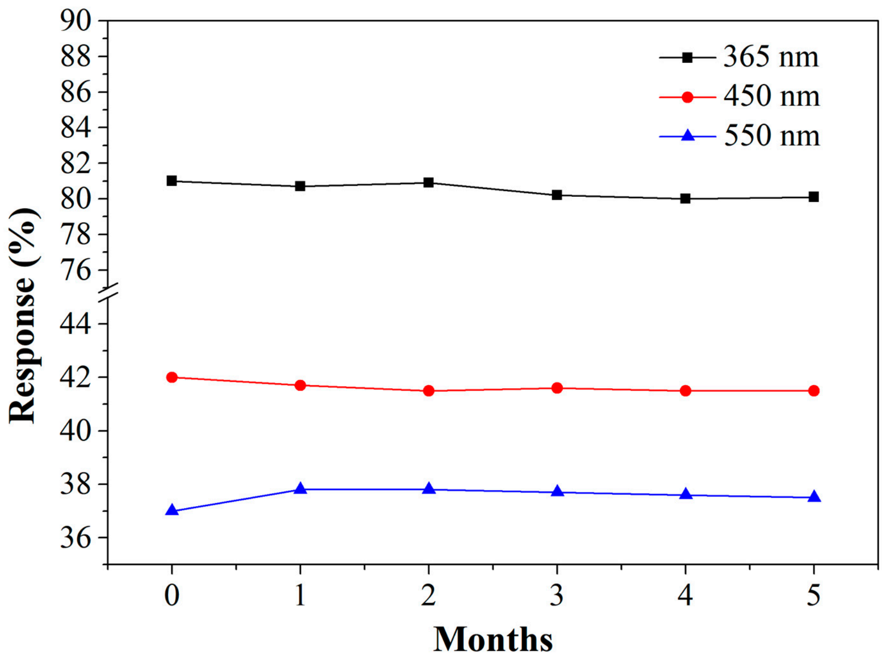

Figure S2. The long-term stability of sensor film under the illumination of 365 nm, 450nm and 550nm.

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