

## Supporting information for

### *Pesticide analysis using nanoceria-coated paper-based devices as a detection platform*

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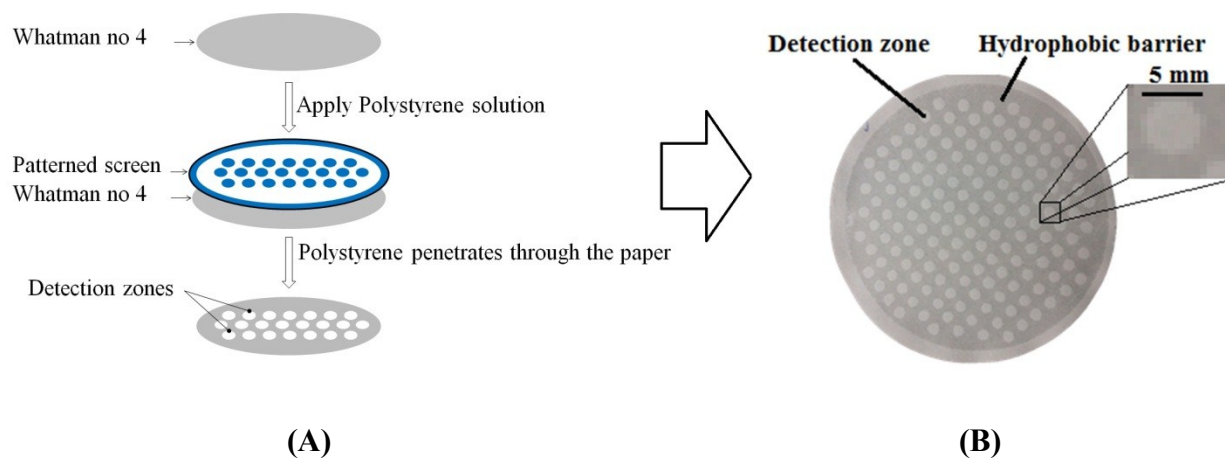
## Cost estimation of the developed device

TableS1 Cost of patterned paper based device

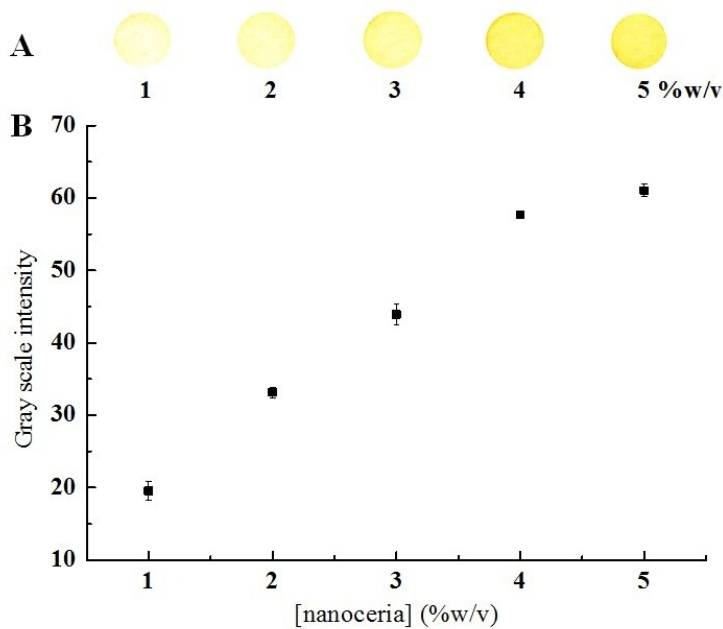
Item	For 15 pieces of circular Whatman # 4 filter paper (11 cm diameter)	
	Unit	Price (\$)
Whatman # 4	15 pieces	1.5
Polystyrene	5 g	0.035
Toluene	20 mL	0.538
Price per 15 pieces of circular Whatman # 4		2.073
Price per one piece of circular Whatman # 4		0.138
Price per one detection zone		0.0011

TableS2 Cost of key chemicals

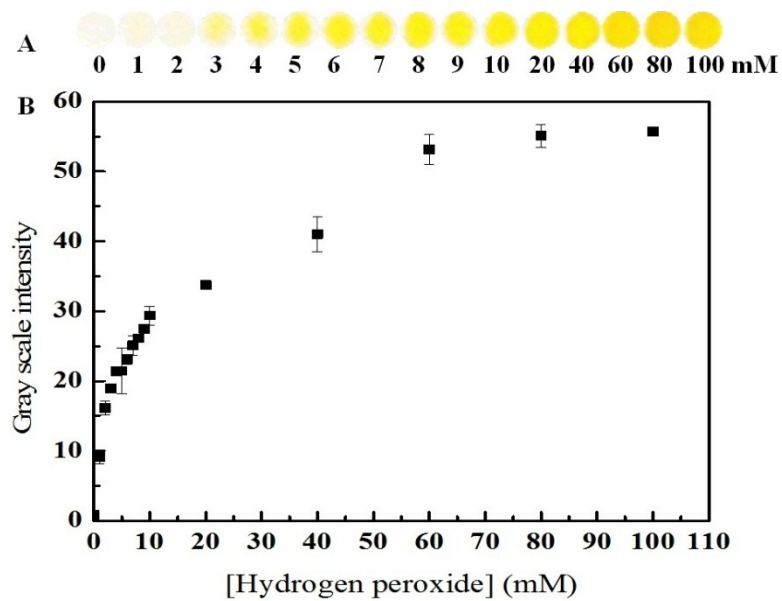
Item	Shipping		Assay	
	Unit	Price (\$)	Unit	Price (\$)
AChE (518 U/mg Solid, 3.9 mg Solid)	2020 U	90.72	$5 \times 10^{-3}$ U	0.0002
Acetylcholine chloride	25 g	68.49	$2.72 \times 10^{-6}$ g	0.0000074
ChOX (13 U/mg Solid, 8 mg Solid)	104 U	136	$25 \times 10^{-3}$ U	0.032
Cerium (IV) oxide (20%w/v, 500 mL)	100 g	297.47	$15 \times 10^{-5}$ g	0.00044
Price per one detection zone				0.033



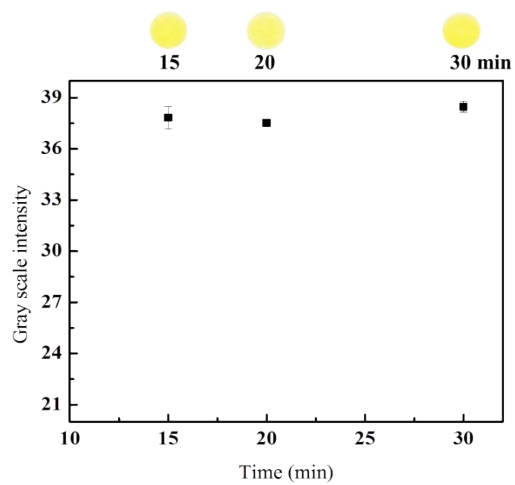
**Figure S1** (A) The steps for fabrication of paper-based device and (B) A paper-based device used in this work.



**Figure S2** (A) Colorimetric response of CeO<sub>2</sub>-coated paper-based device with concentration range of 1 to 5 % (w/v) for the analysis of 100 mM H<sub>2</sub>O<sub>2</sub>. (B) Plot of mean grey intensity as a function of CeO<sub>2</sub> NPs concentrations.



**Figure S3** The colorimetric assay of nanoceria-coated paper-based device for the analysis of H<sub>2</sub>O<sub>2</sub>.



**Figure S4** Reaction time optimization study.