Supplemental Information

Distance-based paper device combined with headspace extraction for determination of cyanide

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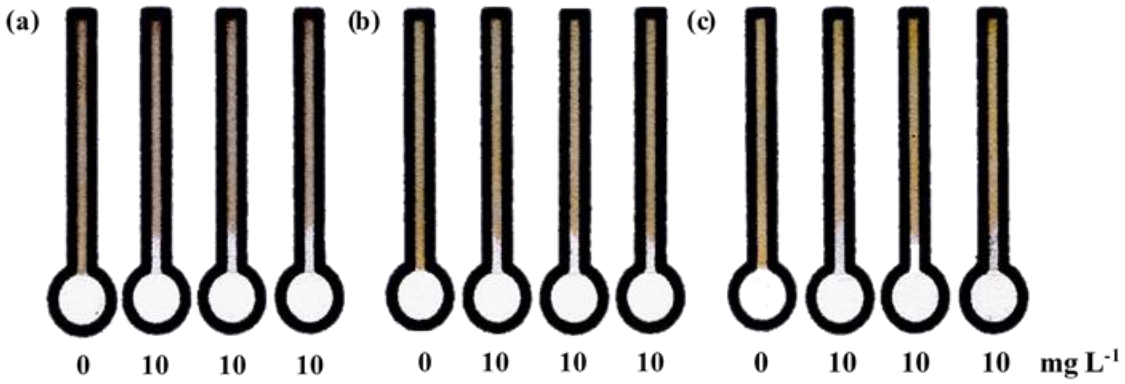


Fig. S1 The effect of AuNPs for the Au@Ag NPs synthesis with the different concentration of AuNPs at (a) 0.500, (b) 0.250 and (c) 0.125 with the response signal of CN^- 10 mg L^{-1}

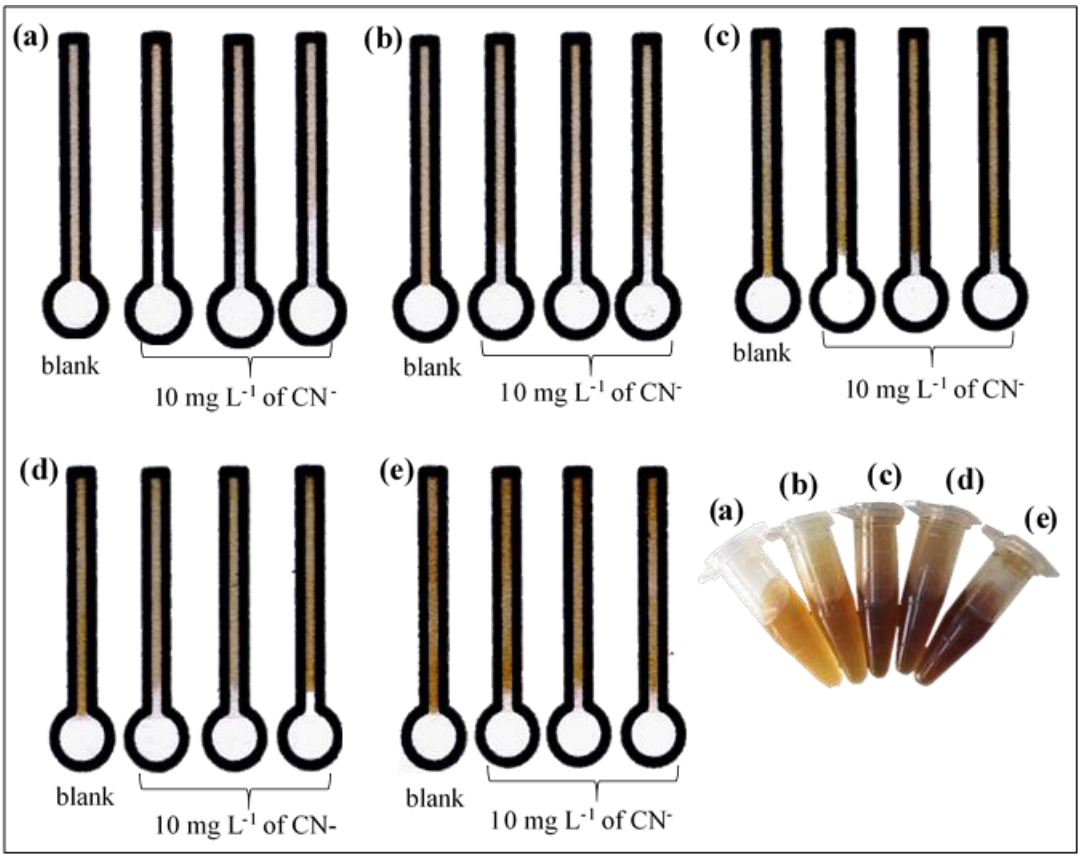


Fig. S2 The effect of $AgNO_3$ for the Au@Ag NPs synthesis with the different concentration of $AgNO_3$ at (a) 500, (b) 800, (c) 1,000, (d) 1,500 and (e) 2,000 mg L^{-1} on the distance-based paper device with the response signal of CN^- 10 mg L^{-1}

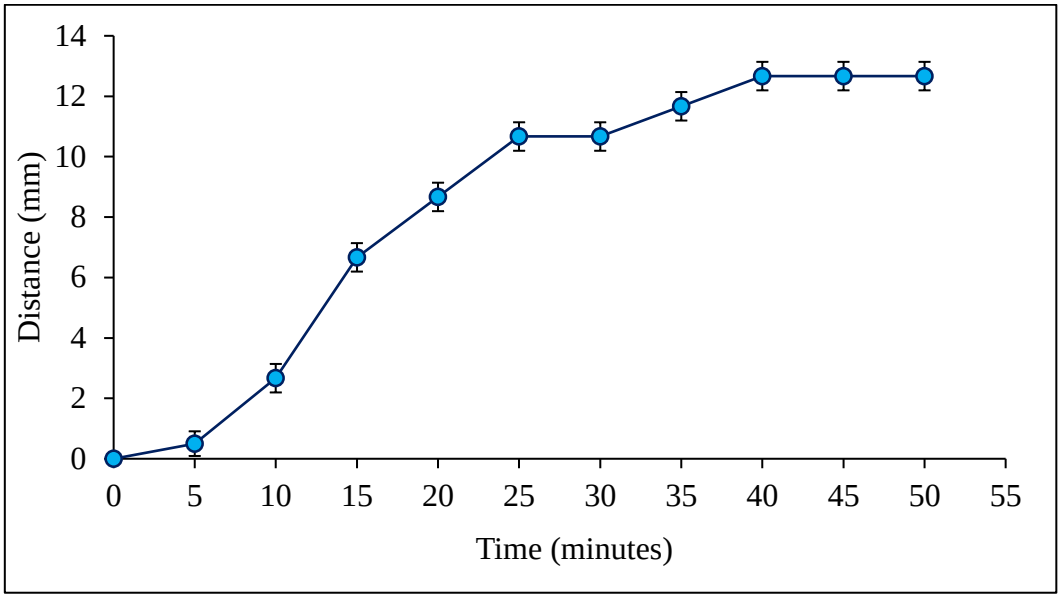


Fig. S3 Detection time for CN^- on distance-based device in the range of 0 – 50 minutes with CN^- 10 mg L^{-1}

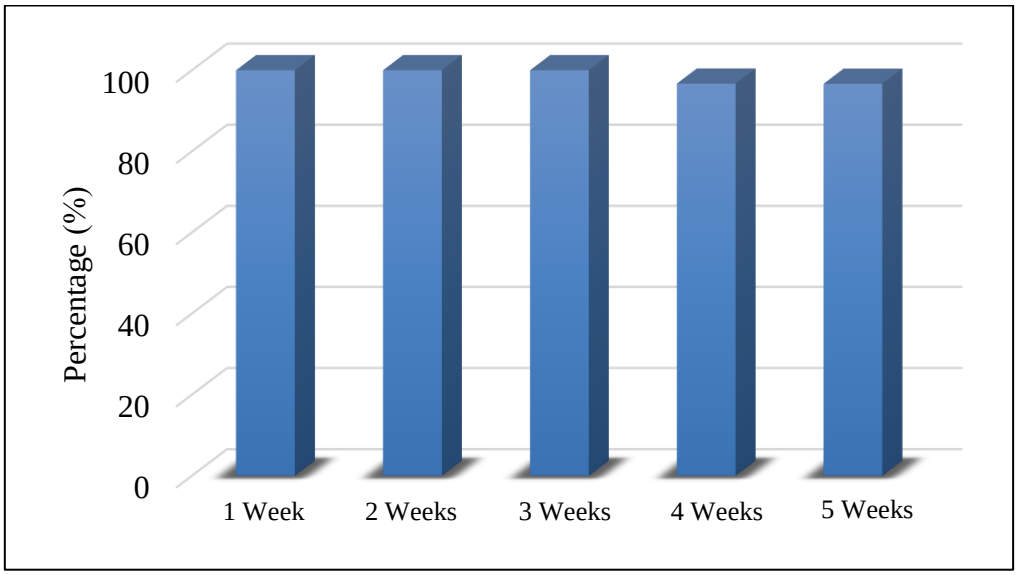
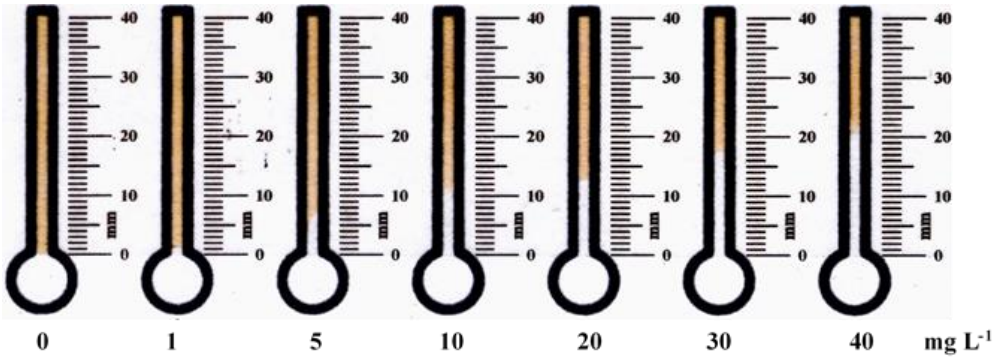


Fig. S4 Lifetime of CN^- on distance-based device

(a)



(b)

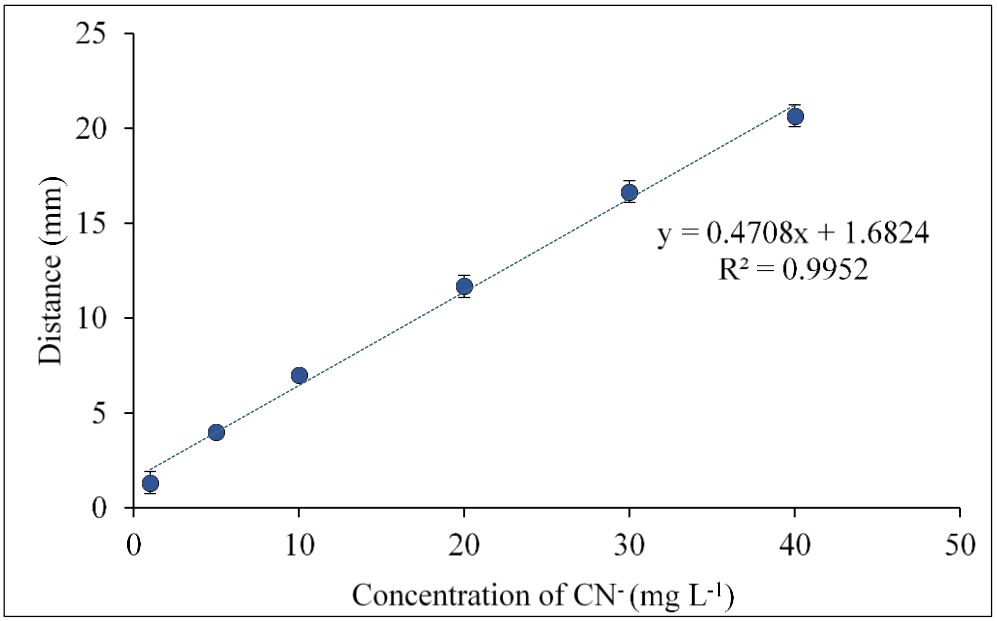


Fig. S5 Calibration curve for CN^- determination in the range of 1 – 40 mg L^{-1}

Table S1 Determination of CN^- in water samples

Samples	Spiked level ($\mu g\ L^{-1}$)	CN^- found ($\mu g\ L^{-1}$)	Recovery (%)
Seawater	0	N.D.	
	70	70 ± 4.0	100
	500	536 ± 40.3	107
Drinking water	0	N.D.	
	70	70 ± 4.0	100
	500	540 ± 11.8	108
Tap water 1	0	N.D.	
	70	68 ± 4.0	97
	500	466 ± 40.2	93
Tap water 2	0	N.D.	
	70	70 ± 4.0	100
	500	470 ± 40.5	94
Tap water 3	0	N.D.	
	70	68 ± 4.0	97
	500	536 ± 40.1	107

N.D. = not detected