

## Supplementary Material

**Single-use fluidic electrochemical paper-based analytical devices fabricated by pen plotting and screen-printing for on-site rapid voltammetric monitoring of Pb(II) and Cd(II)**

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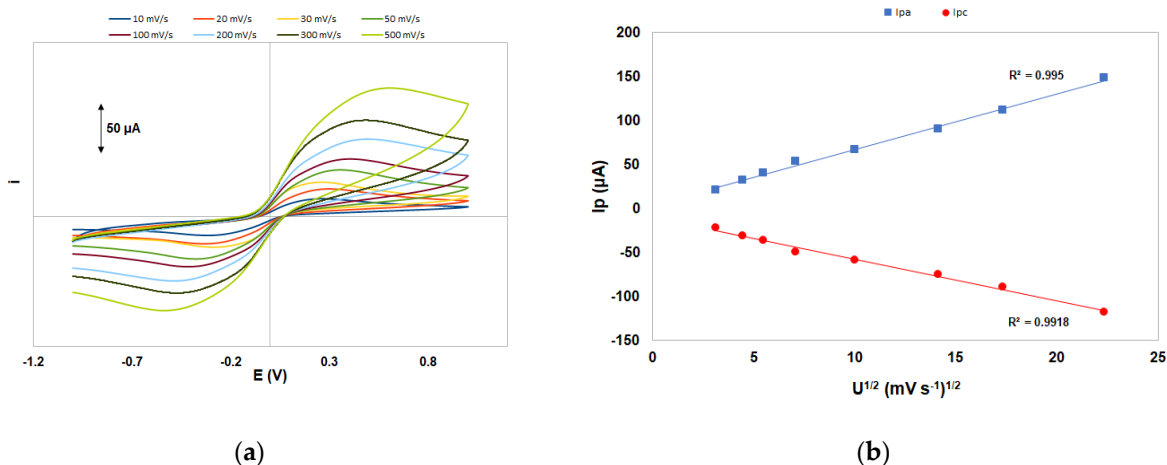


Figure S1. (a) CVs at the ePADs in 0.002 mol L<sup>-1</sup> potassium ferrocyanide/ 0.002 mol L<sup>-1</sup> potassium ferricyanide solution in 0.01 mol L<sup>-1</sup> KCl, (b) Plot of the anodic peak current ( $I_{pa}$ ) and the cathodic peak current ( $I_{pc}$ ) vs the scan rate ( $U$ ).

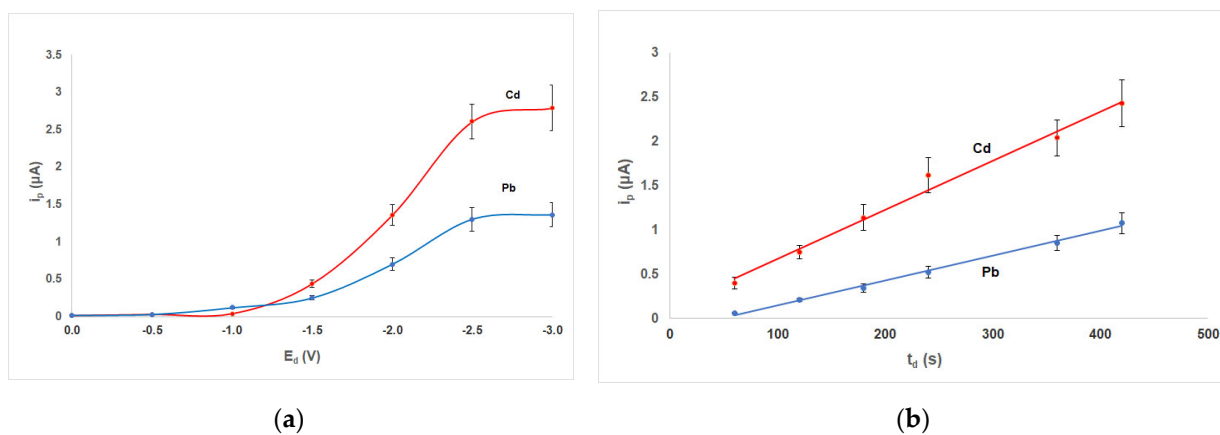


Figure S2. Effect of the (a) deposition potential, (b) deposition time on the stripping peak heights of Pb and Cd. Conditions: 200  $\mu$ g L<sup>-1</sup> Pb(II) and Cd(II); supporting electrolyte 0.5 mol L<sup>-1</sup> acetate buffer (pH 4.5) containing 10 mg L<sup>-1</sup> Bi(III); deposition time, 420 s; deposition potential -2.5 V.

Table S1. Comparison of existing electrochemical paper-based devices for the determination of Pb(II) and Cd(II) by stripping analysis (in grayscale are the applications dealing with simultaneous determination of the two target metals).

Type of Device	LOD ( $\mu\text{g L}^{-1}$ )		Linear range ( $\mu\text{g L}^{-1}$ )		Ref.
	Pb(II)	Cd(II)	Pb(II)	Cd(II)	
Non-integrated	700 <sup>1</sup>	1000 <sup>1</sup>	1000-10000 <sup>1</sup>	2500-10000 <sup>1</sup>	41
	100 <sup>2</sup>	400 <sup>2</sup>	500-10000 <sup>2</sup>	500-10000 <sup>2</sup>	
Non-integrated	1	5	NR	NR	36
Non-integrated	2	-	NR	NR	37
Non-integrated	1	2.4	NR	NR	42
Non-integrated	0.5	0.5	0.5-400	0.5-400	43
Integrated	0.5	-	10-250	-	44
Integrated	4.2	2.4	10-1000	5-800	This work

<sup>1</sup> Bismuth-film

<sup>2</sup> Mercury-film

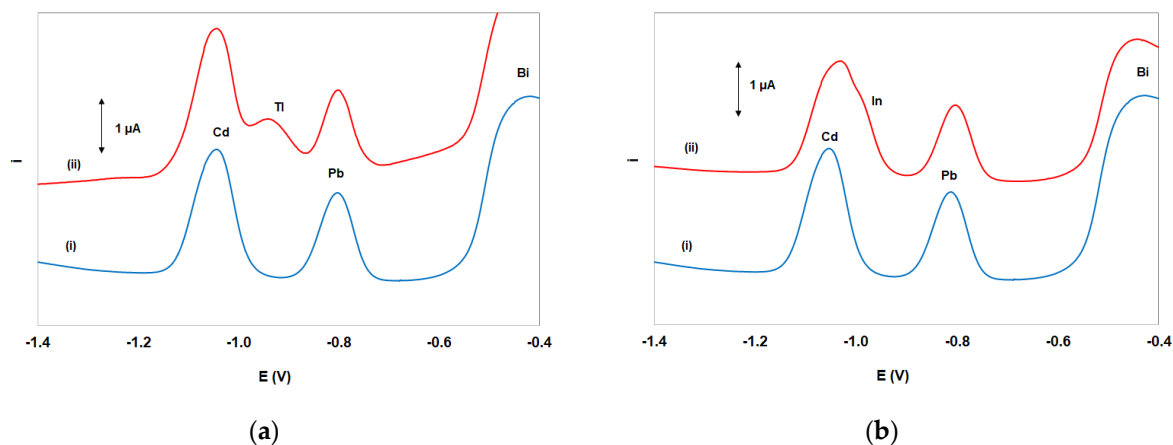


Figure S3. Interference by (a) Tl(I), (b) In(III) on the SW stripping peaks of Pb and Cd. (i) Response without interferences, (ii) Response in the presence of interferences. Conditions: 200  $\mu\text{g L}^{-1}$  Pb(II), Cd(II), In(III) and Tl(I); supporting electrolyte 0.5 mol  $\text{L}^{-1}$  acetate buffer (pH 4.5) containing 10 mg  $\text{L}^{-1}$  Bi(III); deposition time, 420 s; deposition potential -2.5 V.