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## A disposable paper-based electrochemiluminescence device for ultrasensitive monitoring of

## CEA based on Ru(bpy)<sub>3</sub><sup>2+</sup>@Au nanocages

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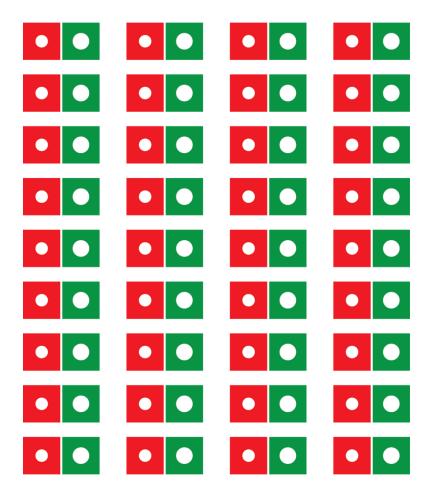


Fig.S1 The origami device designed by Adobe illustrator CS4.

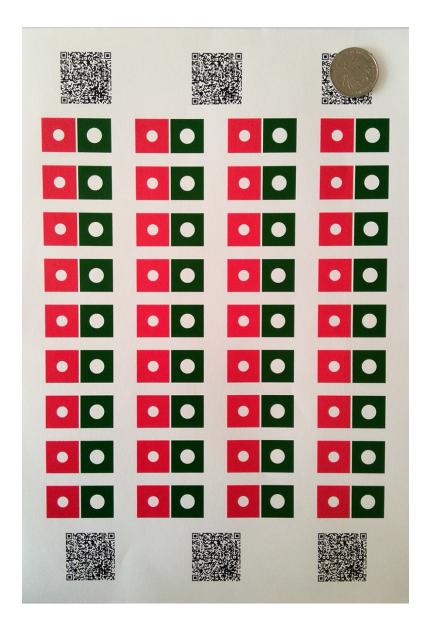


Fig.S2 Wax-printed 3D  $\mu$ -PADs on a paper sheet (A4) before baking.

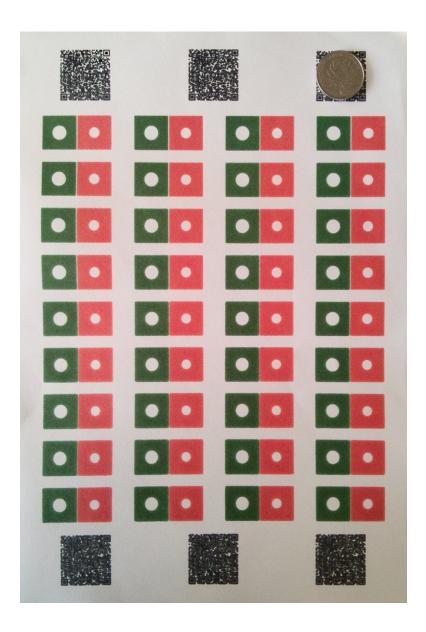


Fig.S3 Wax-printed 3D  $\mu$ -PADs on a paper sheet (A4) after baking.

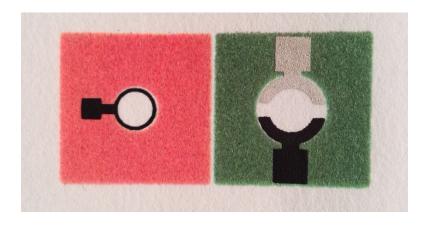


Fig.S4 3D  $\mu$ -PADs on a paper sheet (A4) after screen-printing of Ag/AgCl auxiliary electrode and carbon counter electrode on one surface of paper.