

## Supplementary Information

# Fully Inkjet-Printed Biosensors Fabricated with a Highly Stable Ink based on Carbon Nanotubes and Enzyme-Functionalized Nanoparticles

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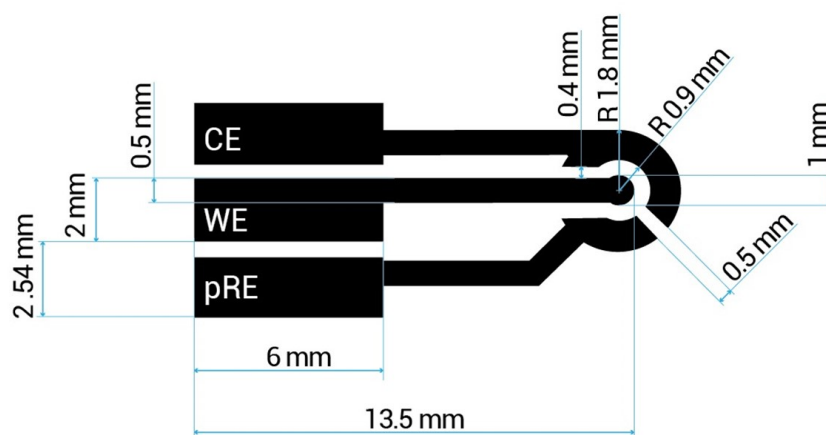
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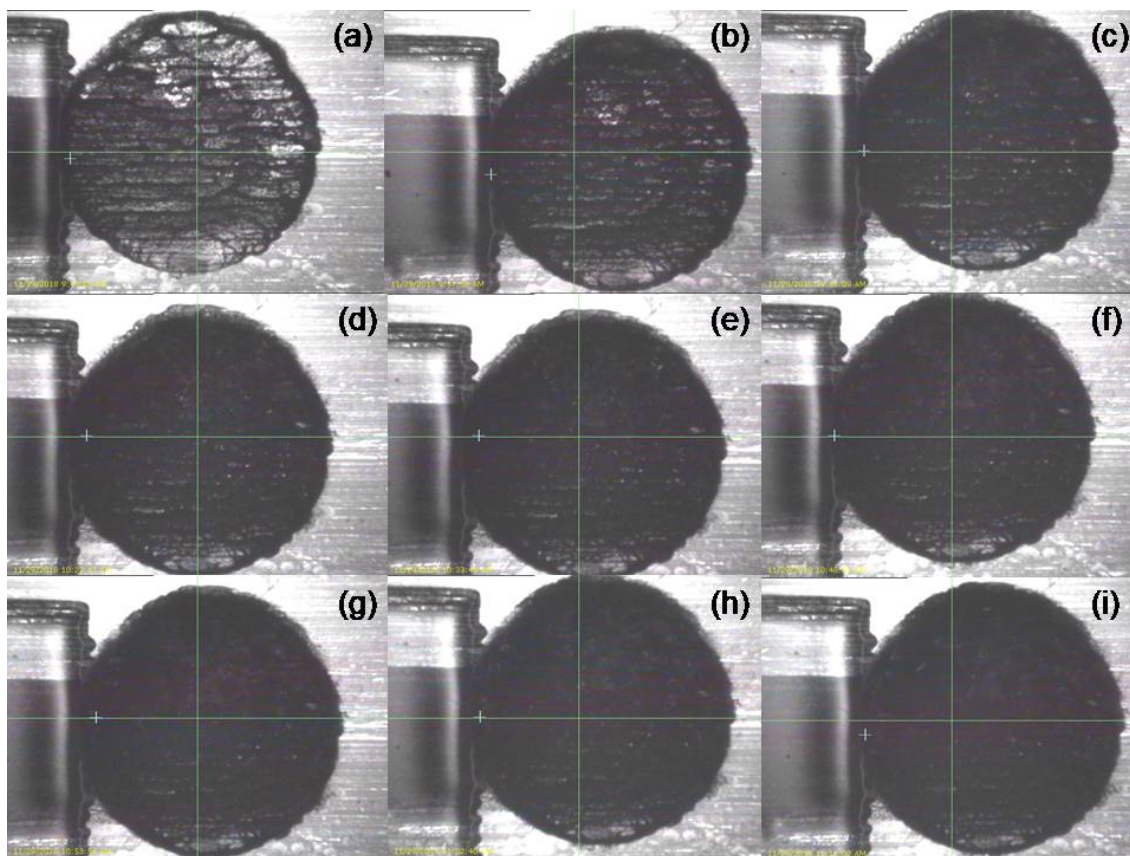
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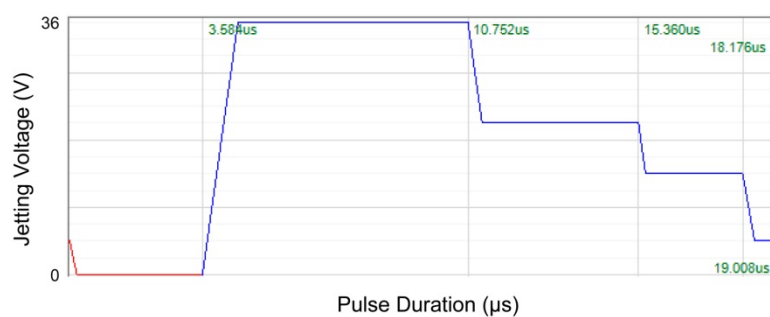


**Figure S1.** Design of printed working electrode (WE), counter electrode (CE), pseudo-reference electrode (pRE).



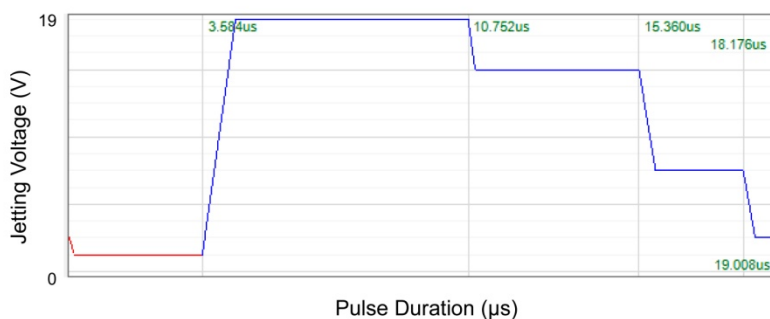
**Figure S2.** Images of a WE printed with different layers of the SWCNT-5 ink obtained with the camera of the DMP-2831: (a) 1-layer; (b) 3-layer; (c) 6-layer; (d) 7-layer; (e) 9-layer; (f) 12-layer; (g) 13-layer; (h) 15-layer and (i) 18-layer.

(a)



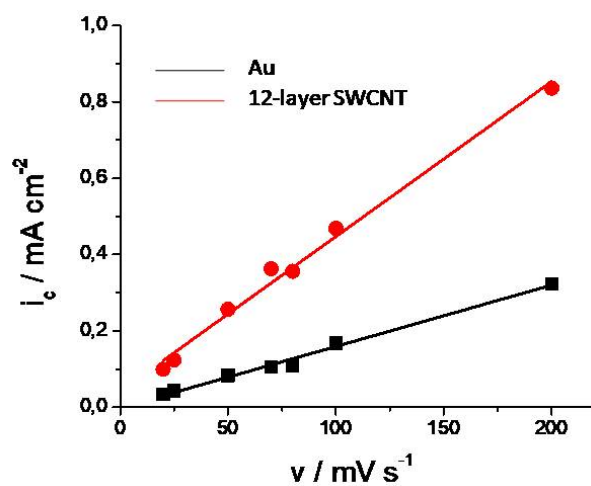
Print resolution / Drop spacing	1693 dpi / 15 $\mu\text{m}$
Maximum jetting frequency	5 KHz
Maximum jetting voltage	36 V
Maximum number of nozzles	2

(b)

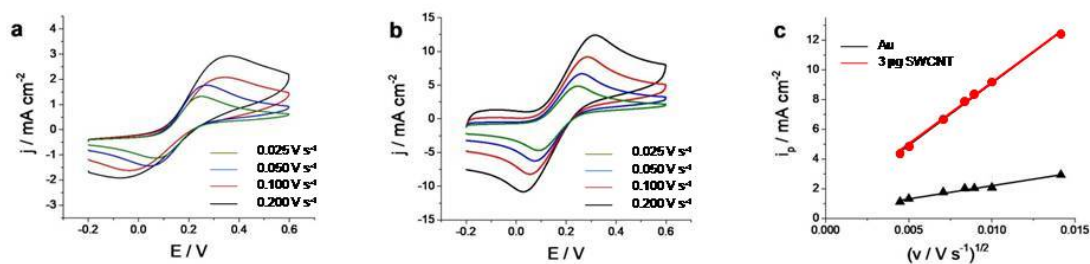


Print resolution / Drop spacing	1693 dpi / 15 $\mu\text{m}$
Maximum jetting frequency	5 KHz
Maximum jetting voltage	19 V
Maximum number of nozzles	7

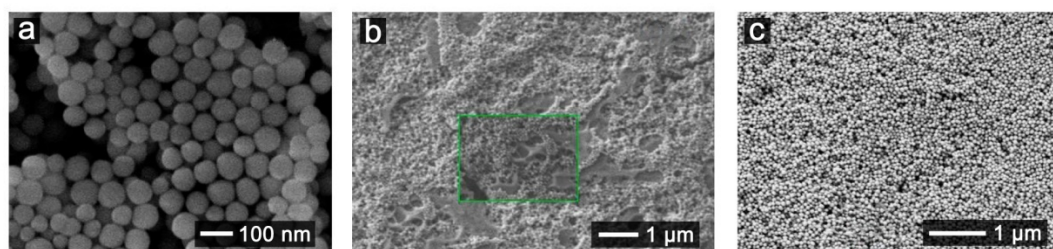
**Figure S3.** Waveform and parameters developed to fine-tune the drop ejection of the inkjet printhead for (a) SWCNT-7.5 and (b) SWCNT-5.



**Figure S4.** Plot of capacitive current vs. scan rate obtained for a Au printed electrode (black) and a 12-layer of 7.5 mg/ml concentration of SWCNT printed electrode (red).



**Figure S5.** Cyclic voltammograms obtained for a printed electrode in solution of 10 mM hexacyanoferrate (III/II) in a 0.1 M KNO<sub>3</sub> at different scan rates of 0.025, 0.050, 0.100 and 0.200 V s<sup>-1</sup>: (a) Au; (b) with 3 µg of SWCNTs; (c) Randles-Sevcik plots.



**Figure S6.** SEM images (a) of spherical SiO<sub>2</sub> nanoparticles with an average diameter of 90 nm prepared by a sol-gel process; (b) top view of surface WE printed with SWCNT-SNP-HRP ink with concentration of SNP-HRP lower to 1 mg/ml and (c) top view image of surface of 12-layer SWCNT-SNP-HRP (5 mg/ml of SWCNTs and 5 mg/ml of SNP-HRP) printed electrode.