

Supporting information

Laser Induced Graphene on the Surface of Carbon-Coated 3D-Printed Microneedle Array for Minimally Invasive Electrochemical Detection of Olanzapine

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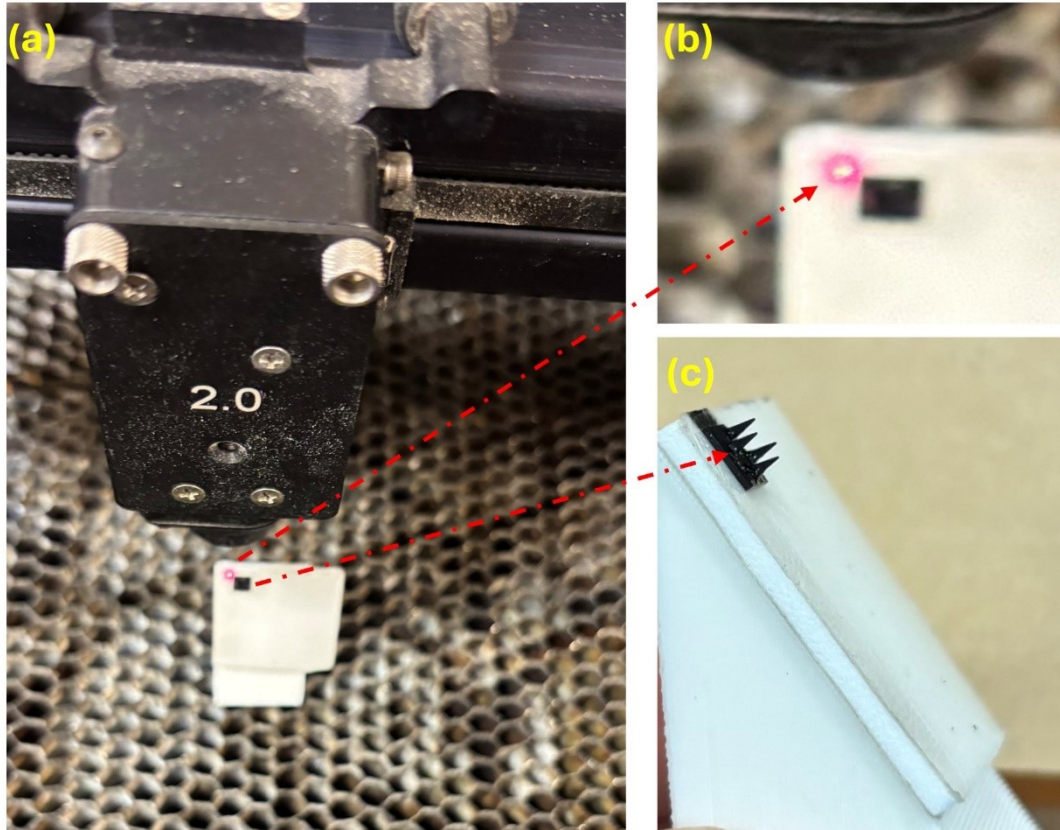


Fig S1: Illustration of laser induced graphitization of carbon-coated 3D-printed microneedle array. (a) Photo of custom 3D-printed block angled at 60° holding the carbon-coated 3D-printed microneedle array positioned under the CO₂ laser beam (b) magnified photo of the laser beam focused on the 3D-printed block before laser irradiation and (c) carbon-coated 3D-printed microneedle array (2 x 2) affixed onto a custom 3D-printed block angled at 60°, using double-sided adhesive tape to ensure stable positioning and exposure.

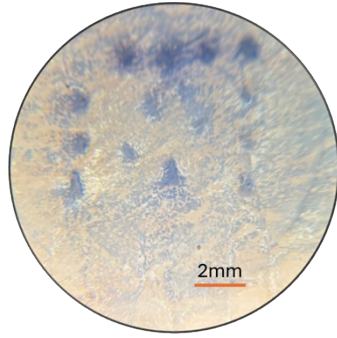


Fig S2: Microscopic image of skin patch after microneedle insertion and Trypan Blue treatment.

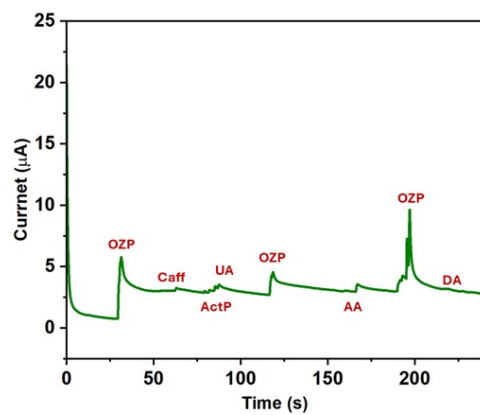


Fig S3: Chronoamperometry response of microneedles sensor towards OPZ in the presence of potential interference compounds.



Video1.mp4

Supplementary Video 1: Short video clip of the laser induced graphitization of carbon-coated 3D-printed microneedle array using CO₂ laser machine.