nanomaterials

MDPI

*Article*

# Fabrication of Three-Dimensional Multilayer Structures of Single-Walled Carbon Nanotubes Based on the Plasmonic Carbonization

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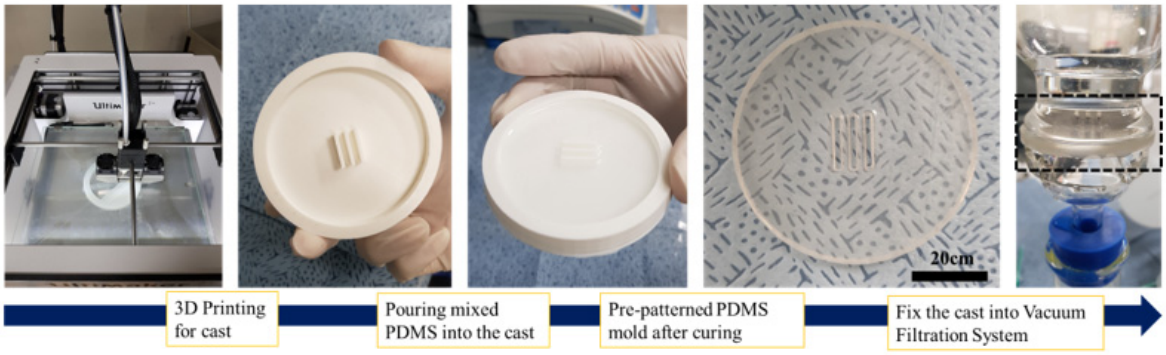



**Figure S1.** PDMS Mold for 3D Pattern.

## Properties of SWCNTs

*1. Physical Properties of CNTs*

TUBALL, diameter: 1.6 ± 0.4 μm, length > 5 μm, SWCNTs ≥ 80 wt%, metal impurities ≤ 15 wt%, moisture < 5.

*2. density of the Film*

15 mg of CNTs was added to a mixture of 0.5 g and 50 mL of DI water, and then 20 μL of CNTs solution was added to DI water for vacuum filtration. One filtered solution contains about 0.00594 mg of CNT and the volume of a complete 3D pattern sample contains about 0.01188 mg of CNTs. The average thickness of a single layer in the 3D pattern is about 0.9 μm, and the length of a single CNTs film is 13 mm and the width is 1 mm. Therefore, the volume of a complete 3D pattern is calculated to be about 0.0117 $mm^2$ and the density of the film is about 1.0154 $mg/mm^3$.

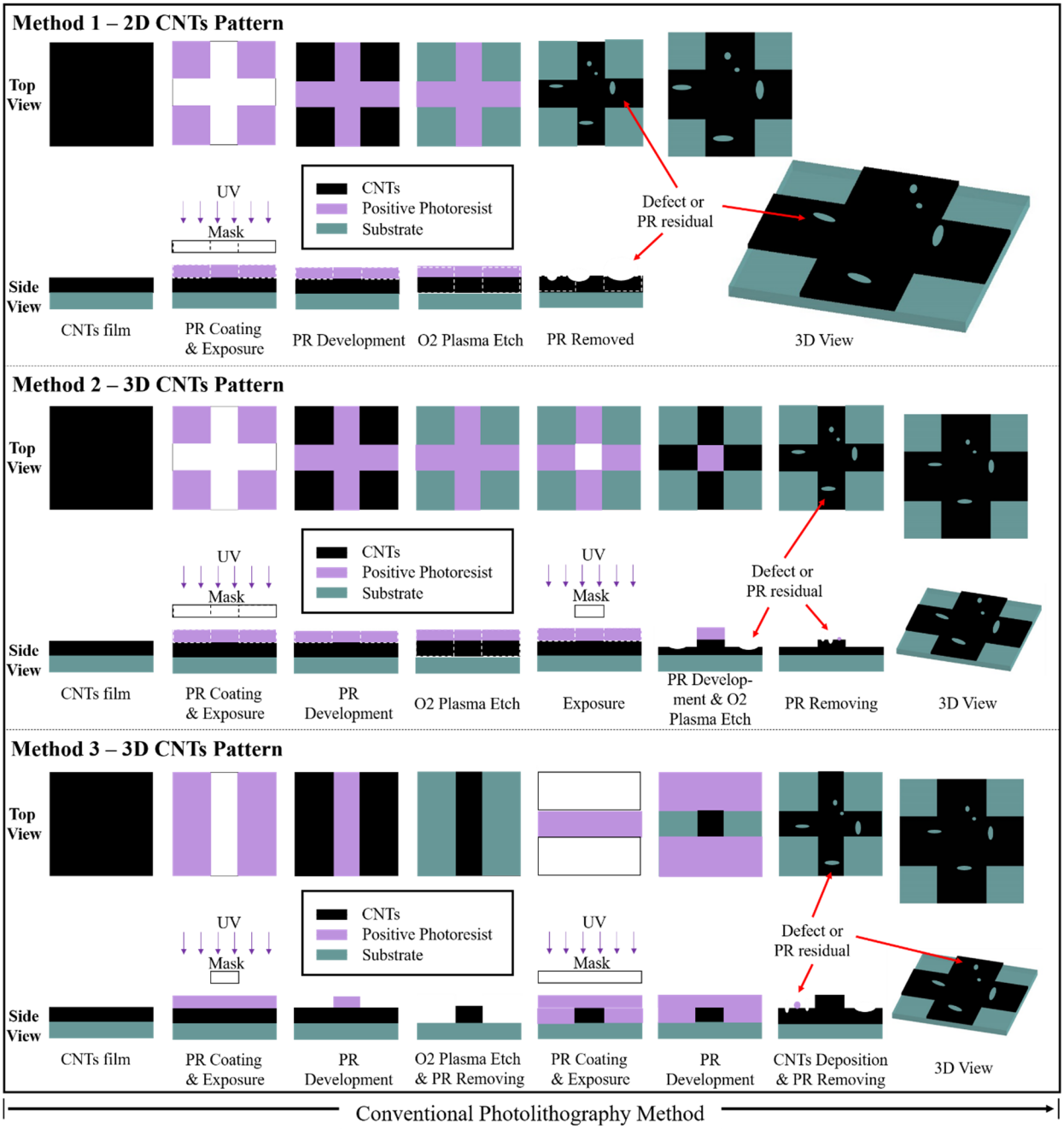



**Figure S2.** Process comparison of conventional photolithography method.