

Room-Temperature H₂ Gas Sensing Characterization of Graphene-doped Porous Silicon *via* a Facile Solution Dropping Method

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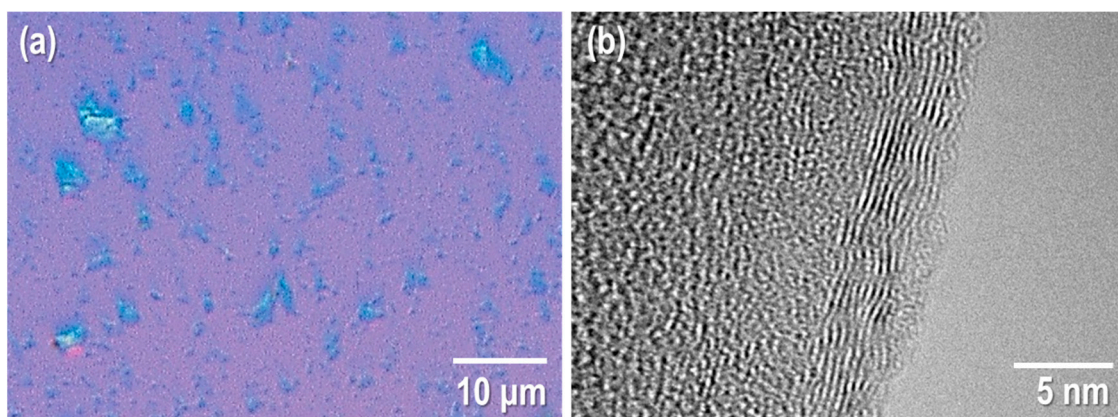


Figure S1. (a) Optical microscope (OM) and (b) TEM images of the as-received graphene.

The majority of graphene (except some aggregated domains on the top-right) deposited on the surface of a Si wafer were less than 5 μm in length, specifically 2-3 μm on average (Fig. S1(a)), and their thickness was less than 5 nm (Fig. S1(b)).

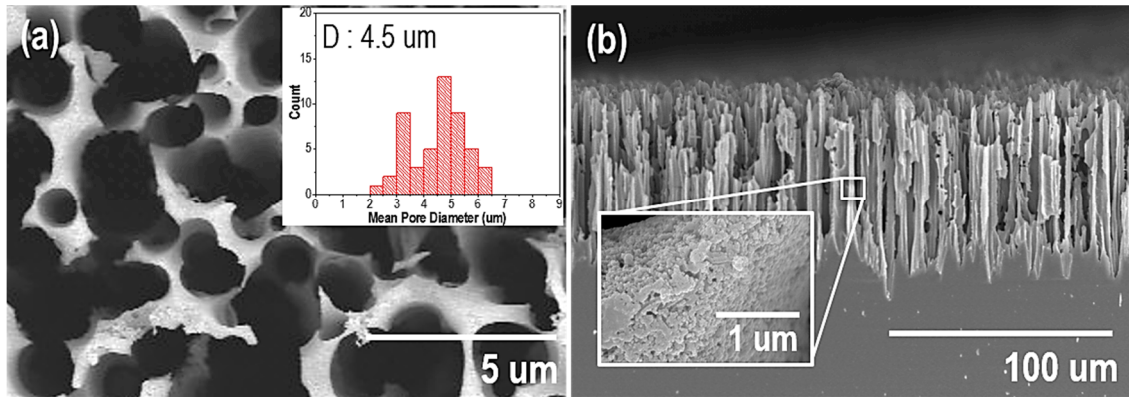


Figure S2. (a) Surface and (b) cross-sectional morphology of porosity generated on the pristine Si substrate with an average thickness of 90 μm .

The surface image confirms the external pore diameter of Si was 4.5 μm (Fig. S2(a)) and the cross-sectional image illustrates that the average thickness of the generated vertical pore depth was 90 μm , where the pore tapered towards the inner pores (Fig. S2(b)).