Self-Assembled Multilayer Graphene Oxide Membrane and Carbon Nanotubes Synthesized Using a Rare Form of Natural Graphite

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SUPPORTING INFORMATION

1. Raman spectroscopy of multilayer GO membrane.

Figure S1 shows Raman spectra for multilayer GO membranes. The multilayer GO membranes were fabricated using graphite oxide synthesized from natural vein graphite and commercially available flake graphite purchased from Asbury carbon, NJ, USA, following the Hummers method. Raman measurements were carried out using Rainshaw machine with 50 W Power, 633 nm HeNe Laser, wavenumber range 4000 cm\(^{-1}\) to 200 cm\(^{-1}\) at Nanyang Technological University, NTU, Singapore. Both spectra show peaks around 1600 cm\(^{-1}\) and 1350 cm\(^{-1}\) which are well known for G and D peaks for GO. It seems that the intensity of D peak of vein graphite based GO is somewhat less than that of based on regular graphite, in line with the quality of the parental material. However this requires detailed investigation as varying degree of oxidation could take place in a membrane.
Fig. S1 showing Raman spectra obtained from multilayer GO membrane produced using vein and flake graphite following the same graphite oxidation route described in the manuscript. The spectra are presented as recorded without the background subtraction.