

Supporting information

Hybrid of silver nanowire and pristine-graphene by liquid-phase exfoliation for synergetic effects on electrical conductive composites

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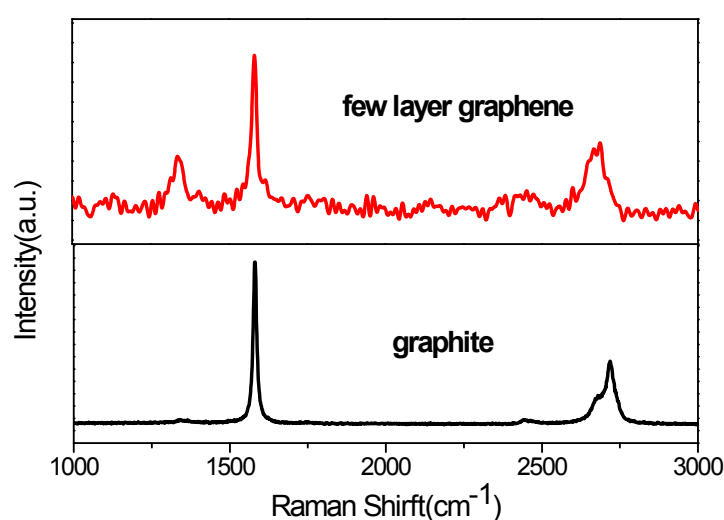


Fig. S1 The Raman spectra of the prepared graphene and natural graphite

The 2D peak of bulk graphite (spectrum (d)) consists of two components 2D1 and 2D2, roughly 1/4 and 1/2 the height of the G peak, respectively. The few layer graphene sheets display different 2D peak. Moreover, the 2D peak has a shift to lower frequency as the layer number decreases. The result is consistent with the literatures.

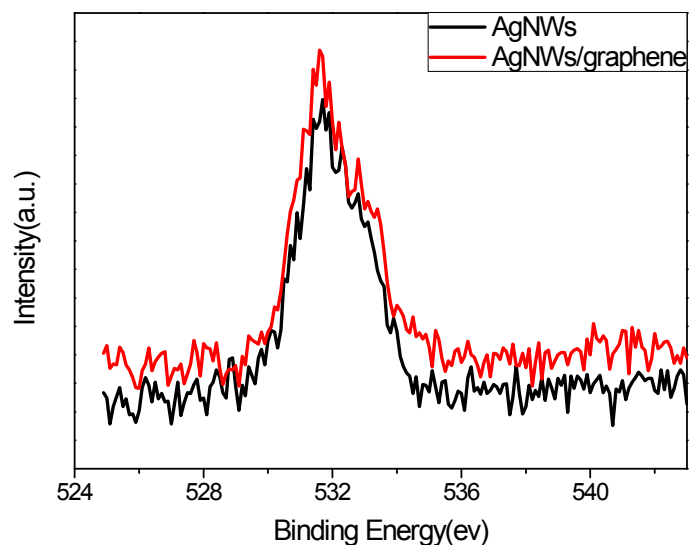


Fig. S2 O1s XPS spectra of AgNWs and AgNW/graphene

Both of the AgNWs and AgNW/graphene hybrid have the nearly same O1s spectra, indicating that the O and N in the hybrid results from the residual Glycerol and PVP attached with pure AgNWs. Moreover, these features of C-N and C-O have been fit to the spectrum in the intensity ratio 2: 1, respectively, as would be expected for PVP.

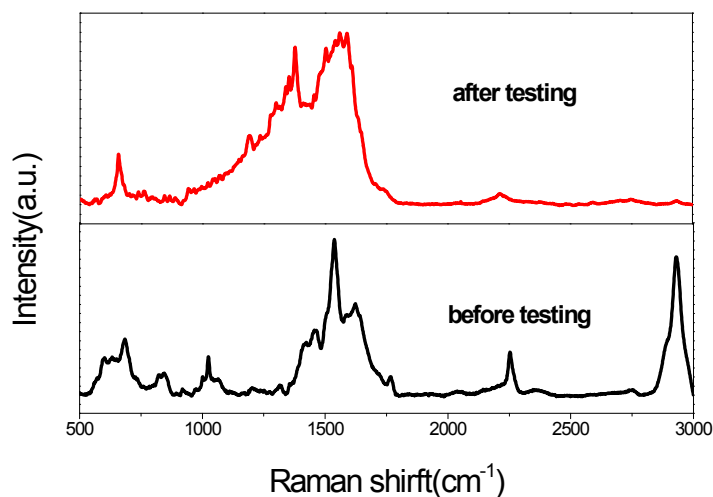


Fig. S3 Raman spectra of the samples before and after testing for mechanical property

Before the testing, the composite filled with graphene display a obvious G band in

the Raman spectra. When it is conducted for the testing of mechanical property, the composites are teared. Thus the graphene sheets embedded in the composites display structure defects, which lead to the presence of D band. The presence of the D band when the sample is teared indicates that the graphene sheets are slightly embedded in the polymer matrix with sufficient interactions.