

Figure S1 UV-Vis spectrum of Ag-GO nanocomposite, prepared without using NaBH_4 . Note the absence of any plasmon peak around 400nm, typical for Ag NPs.

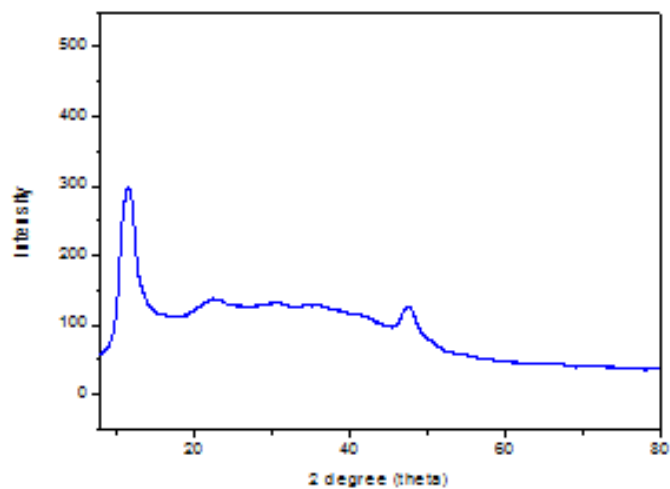


Figure S2 Powder XRD spectrum of Ag-GO nanocomposite, prepared without using NaBH_4 . In the powder XRD spectrum, only typical peaks of graphene and GO are observed.

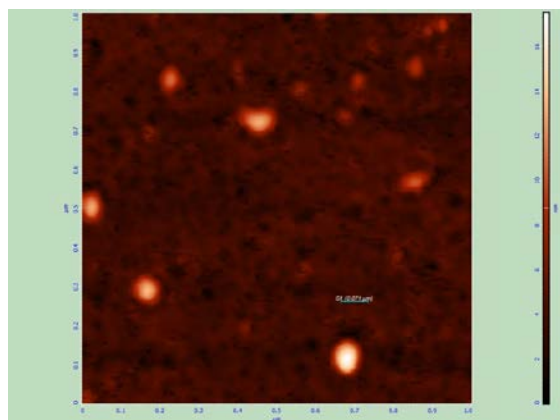


Figure S3 AFM picture of the Ag-GO nanocomposite.

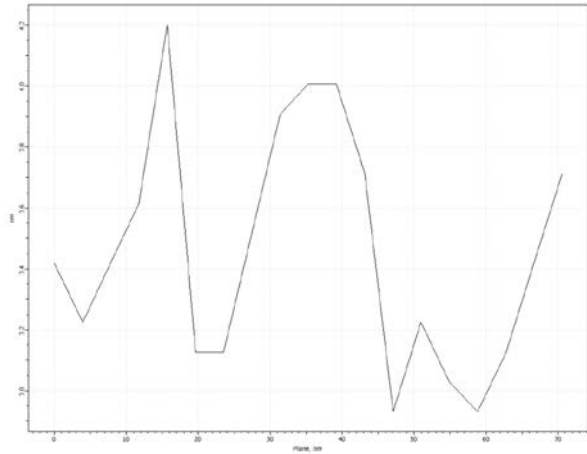


Figure S4 Height variation along a line in the above picture, indicating approximate thickness of Ag-GO nanocomposite particles. Some more (TEM and HRTEM) images of Ag nanoparticles and of Ag-GO nanocomposite are shown below.

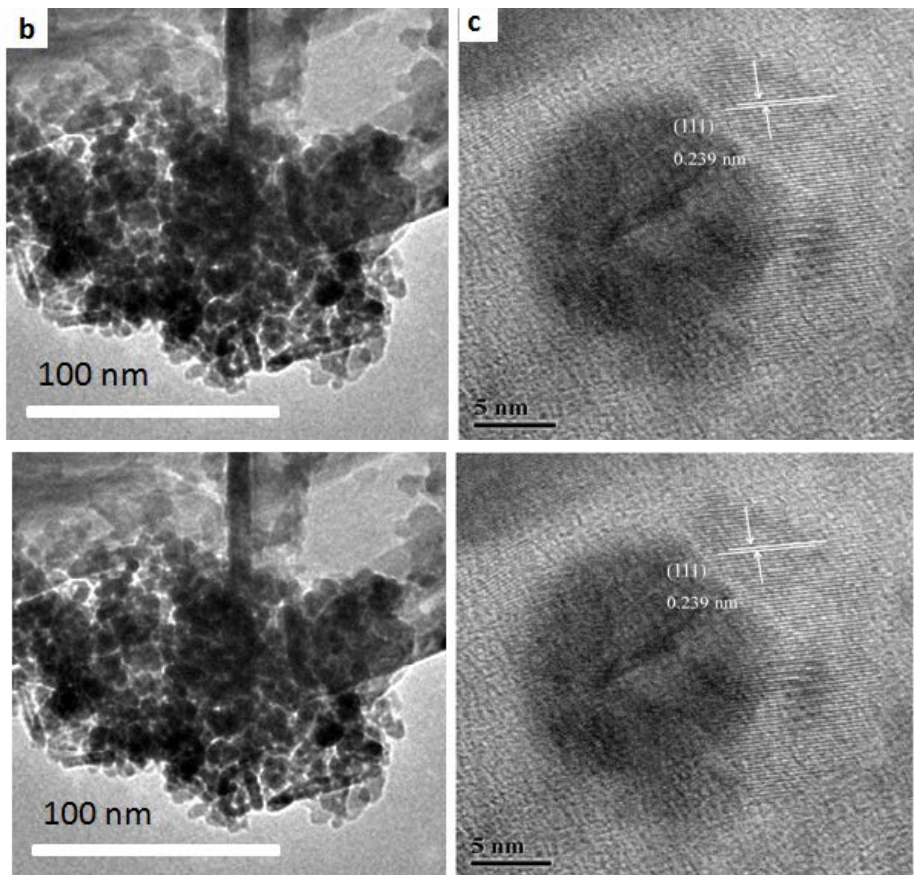


Figure S5 Some TEM images of Ag-GO nanocomposite and HRTEM images of Ag nanoparticles embedded in the nanocomposite.

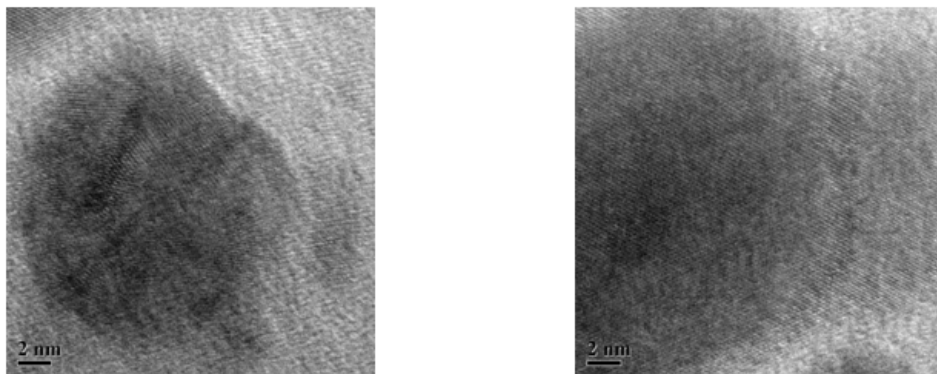


Figure S6 HRTEM images of Ag nanoparticles embedded in Ag-GO nanocomposite.

Size distribution of Ag nanoparticles, as themselves, and as part of the Ag-GO nanocomposite matrix, is shown in Figures S7 and S8 below. The distributions are somewhat different. It is surmised that clustering has occurred for pure Ag nanoparticles, which is effectively prevented when they are part of the Ag-GO nanocomposite. In the latter, only smaller nanoparticles are predominant. The analysis of size distribution was performed by Image-J software, on Figure 7(a) of main text (for pure Ag nanoparticles), and on Figure S 5(a) of supplementary Information (for Ag-GO nanocomposite). Ag nanoparticles in the other TEM images of Ag-GO nanocomposite could not be resolved properly.

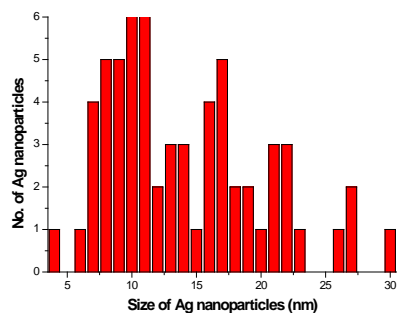


Figure S7 Size distribution of Ag nanoparticles as themselves, analyzed from figure 7(a) of main text.

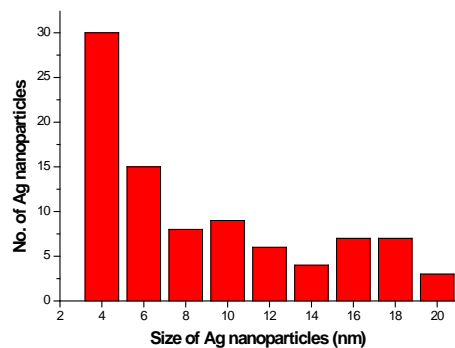


Figure S8 Size distribution of Ag nanoparticles in Ag-GO nanocomposite, as analyzed from figure S5 (a) above.