**Characteristics of Ultrasonication Assisted Assembly of Gold Nanoparticles in Hydrazine Reduced Graphene Oxide**

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**SFig.1:** Raman spectra of (A) graphite, (B) GO, (C) hrGO and (D) hrGO-AuNP at different percentage of 633 nm laser powers (a) 5%, (b) 10%, (c) 50% and (d) 100%.

**SFig.2:** UV-Spectra of hrGO-AuNP (a) without sonication, (b) 10 min of sonication, (c) 20 min of sonication and (d) 30 min of sonication.
SFig.1: Raman spectra of (A) graphite, (B) GO, (C) hrGO and (D) hrGO-AuNP at different percentage of 633 nm laser powers (a) 5 %, (b) 10%, (c) 50% and (d) 100 %.
**Fig. 2:** UV-Spectra of hrGO-AuNP (a) without sonication, (b) 10 min of sonication, (c) 20 min of sonication and (d) 30 min of sonication.