# **Electronic Supplementary Information (ESI)**

## High field emission performance of

# NiFe<sub>2</sub>O<sub>4</sub>/rGO/CNTs tertiary nanocomposite

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### Figure S1:



Fig. S1. SEM images of (a) GO, (b) CNTs, (c) NC, (d) NG, (e) GC and (f) NGC nanocomposites.

Figure S2:



Fig. S2. Particle size distribution plots for  $NiFe_2O_4$  in (a) NGC, (b) NC and (c) NG nanocomposites.

Figure S3:



**Fig. S3.** (a) Field emission current density (*J*) versus applied electric field (*E*) plots of pristine NiFe<sub>2</sub>O<sub>4</sub>, rGO and CNTs emitters. Inset shows the corresponding F-N plots. (b) Emission current versus time plot of NG nanocomposite emitter. Inset shows the FE image recorded at the onset of stability study.

#### Figure S4:



**Fig. S4.** (a) FESEM image, (b) Raman spectrum, (c) Emission current versus time plot and (d) FE image recorded at the onset of stability study for GC nanocomposite.

#### Figure S5:



Fig. S5. Ultraviolet photoelectron spectra of pristine rGO and CNTs.

### Figure S6:



Fig. S6. Post field emission SEM images of (a, b) NGC and (c, d) NC nanocomposite emitters.