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Supporting Information

Self-assembly synthesis of Co_3O_4/ multi walled carbon nanotubes composites: An efficient enzyme-free glucose sensor

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Fig. S1

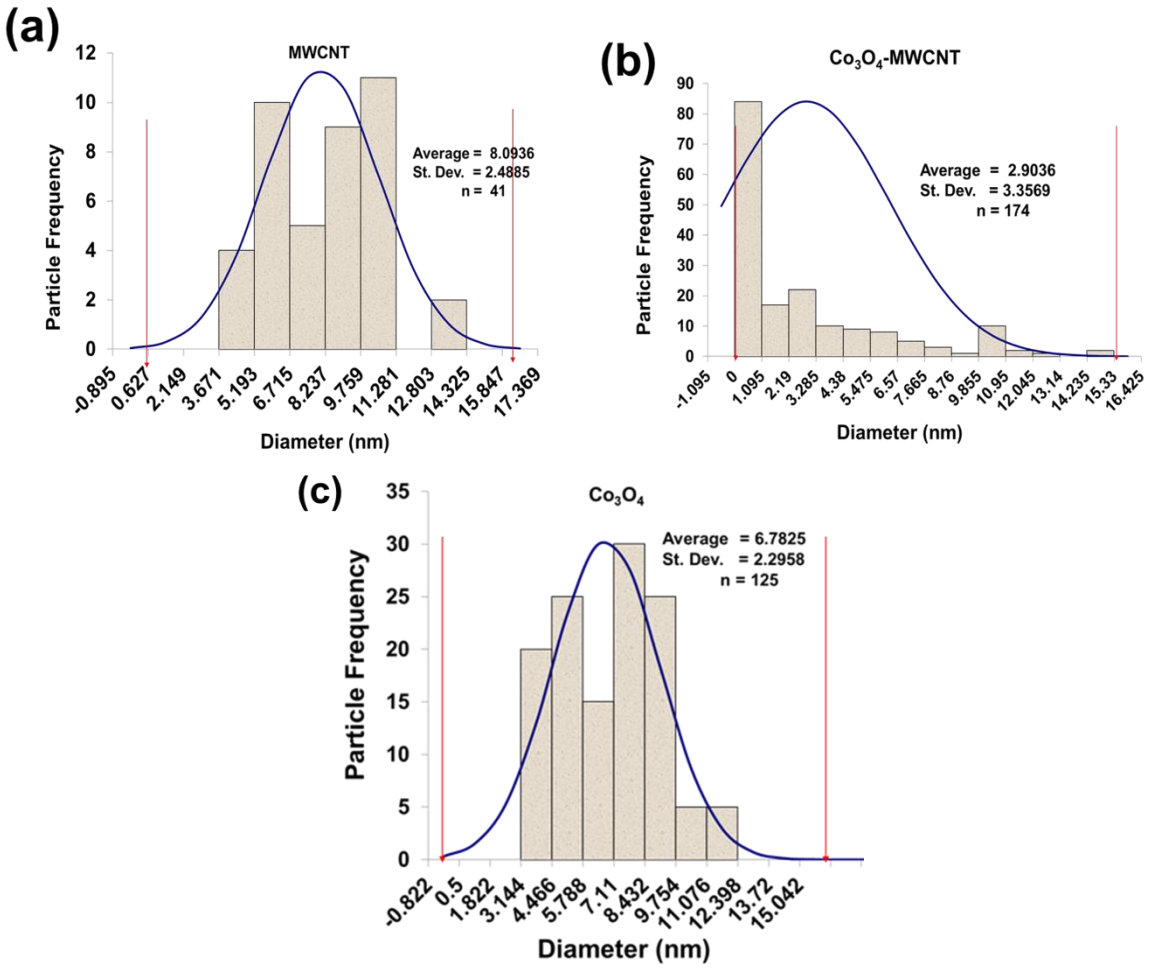

Fig. S1 The size distribution histograms and corresponding Gaussian fits. (a) MWCNT (b) Co_3O_4-MWCNT composite and (c) Co_3O_4.

Fig. S2

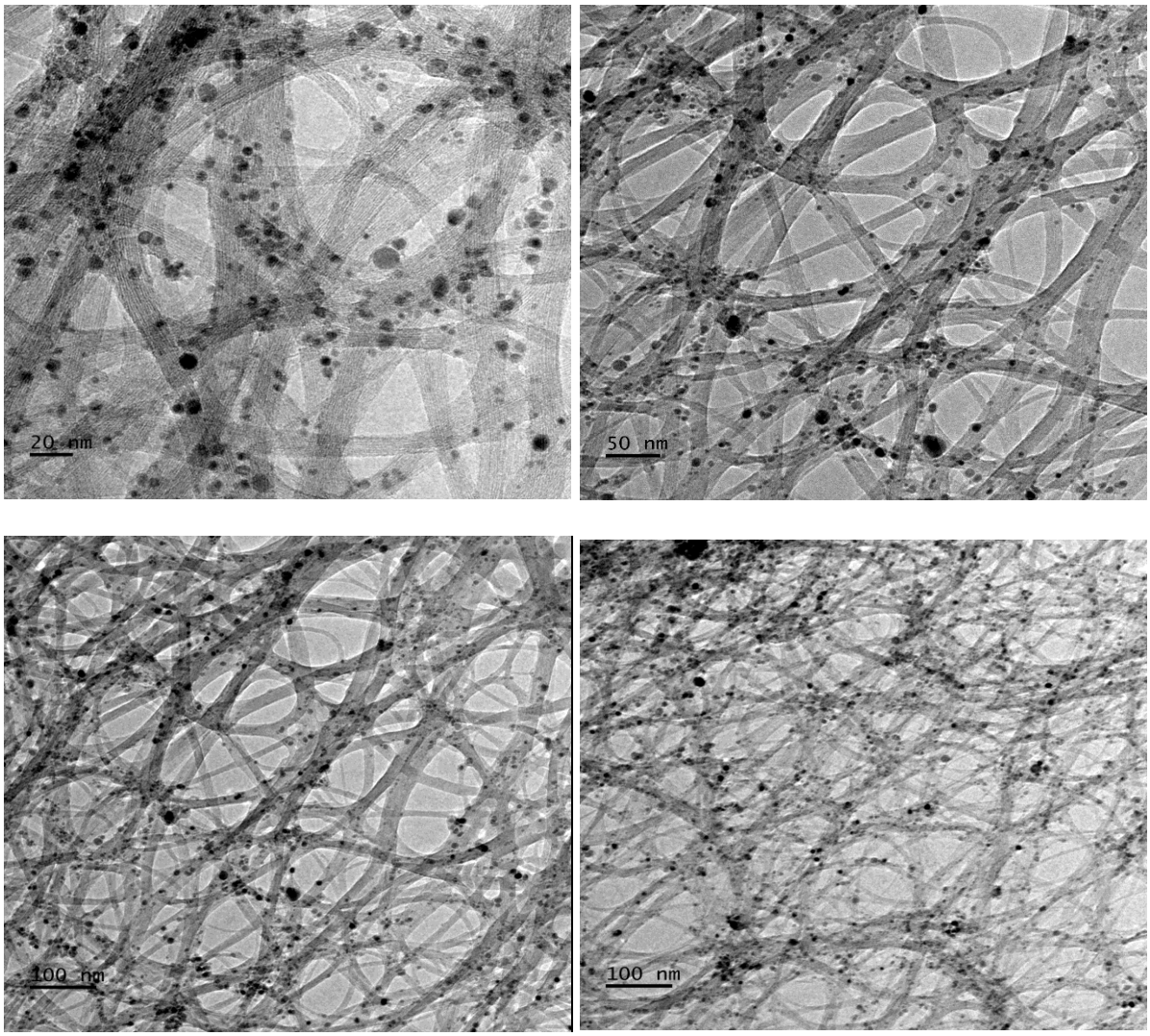

Fig. S2 The TEM images of Co_3O_4-MWCNT composite at different magnification (20 nm, 50 nm and 100 nm).

Fig. S3

Glucose concentration studies

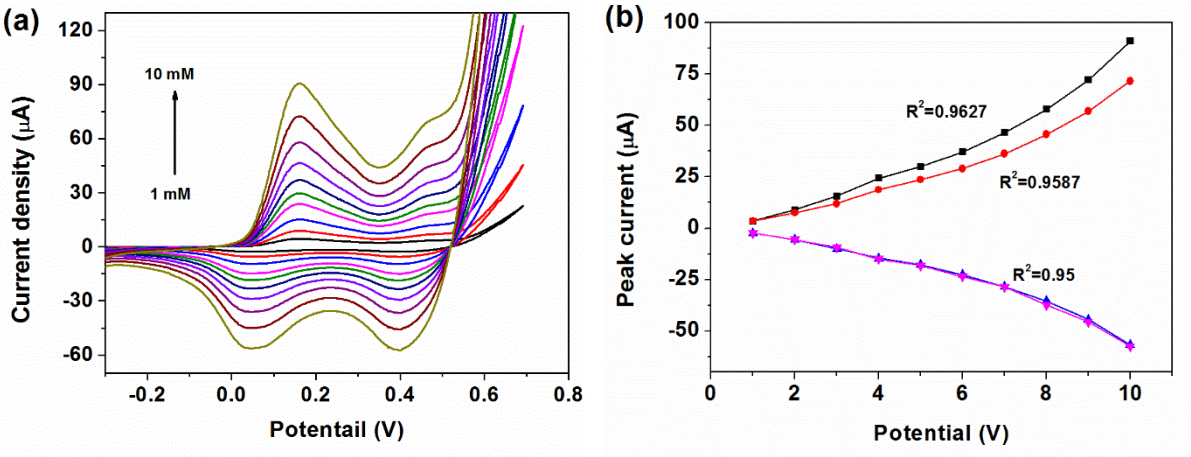

Fig. S3 (a) CV spectra of Co_3O_4-MWCNT/GCE for different glucose concentration (1 mM to 10 mM) in 0.2 M NaOH solution at 50 mV s^{-1} and (b) plot of peak current vs. potential with the linear regression values calculated.

Fig. S3 shows the CV spectra of Co3O4-MWCNT/GCE for various glucose concentrations. It is observed that the magnitude of the electrochemical response current of the Co3O4-MWCNT/GCE increases with increasing concentration of glucose (Fig. S3 (a)). It can attributed to catalytic action of Co3O4 bound on the MWCNT surface that acts as a high surface area matrix and facilitates higher electron transfer rate. From the linear relartionship measurements the regression coefficient value of anodic and cathodic peaks are found to be R^2 = 0.96, 0.9587, 0.95 and 0.95 respectively Fig. S3 (b). These results suggest the synergistic effect of Co3O4 and MWCNT will effectively enhances the direct electrocatalytic oxidation of glucose.