Electronic Supplementary Material (ESI) for Green Chemistry.

In-Situ Encapsulation of Co_2P nanoparticles in N, P co-doped CNTs towards Non-enzymatic Glucose Sensing and Electrocatalytic Water Oxidation

Debanjan Das[a], Abhinaba Das[a] , Meera Reghunath[a] and Karuna Kar Nanda[a*]

[a]*Materials Research Centre, Indian Institute of Science, Bangalore-560012, India*

Supporting Information

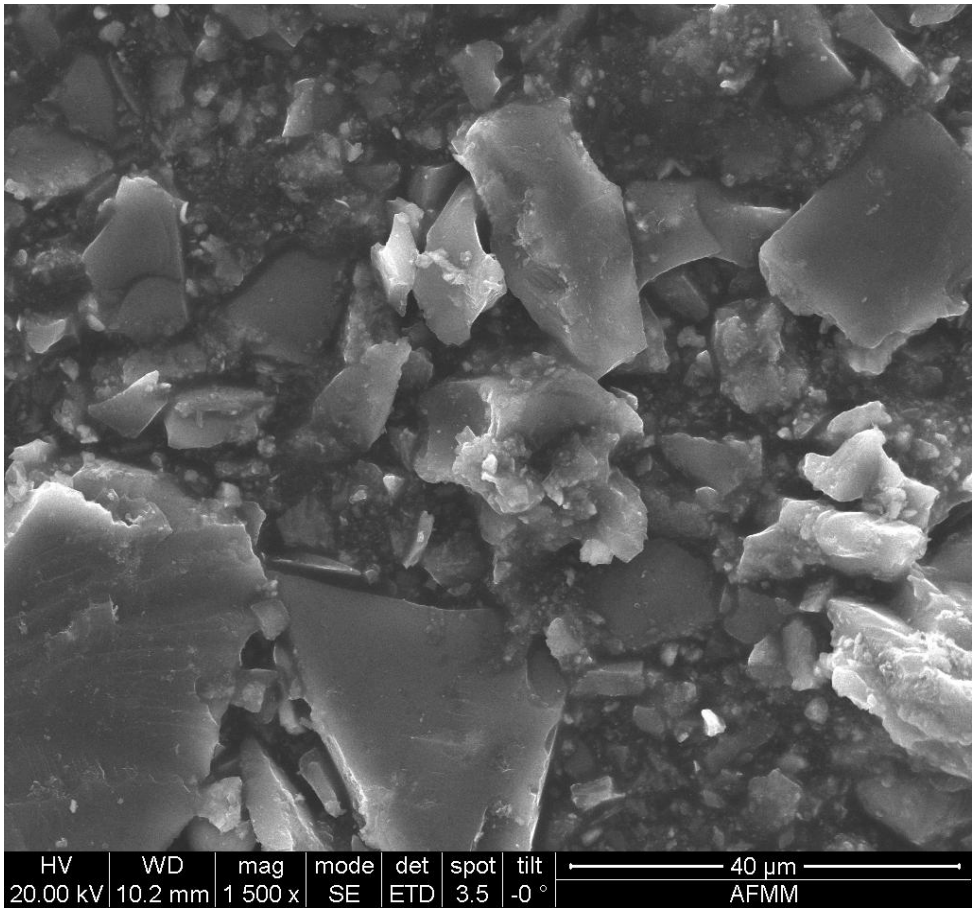
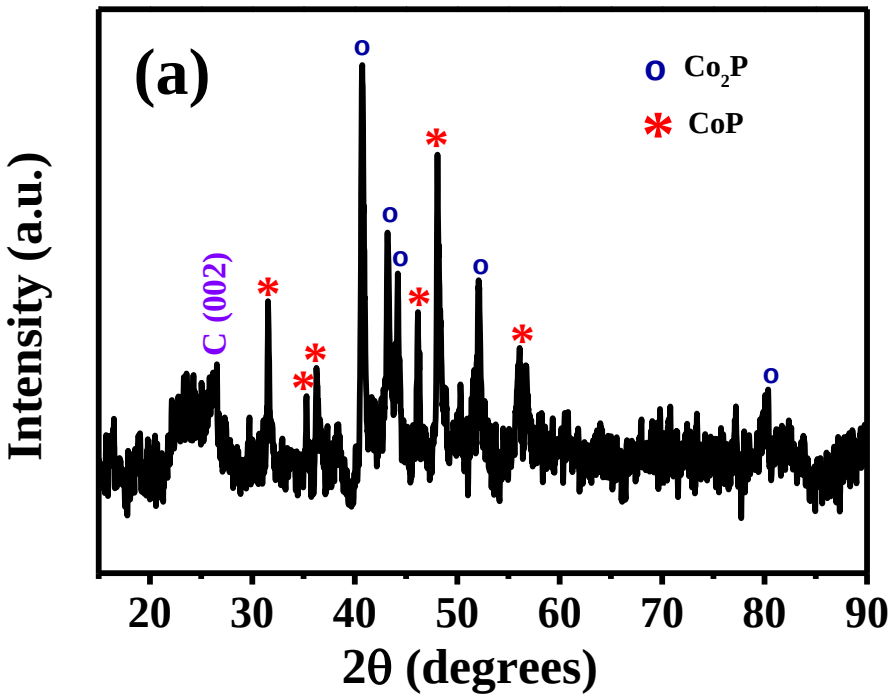


Figure S1: FESEM image of the g-C_3N_4 intermediate obtained at 550 ^{0}C.



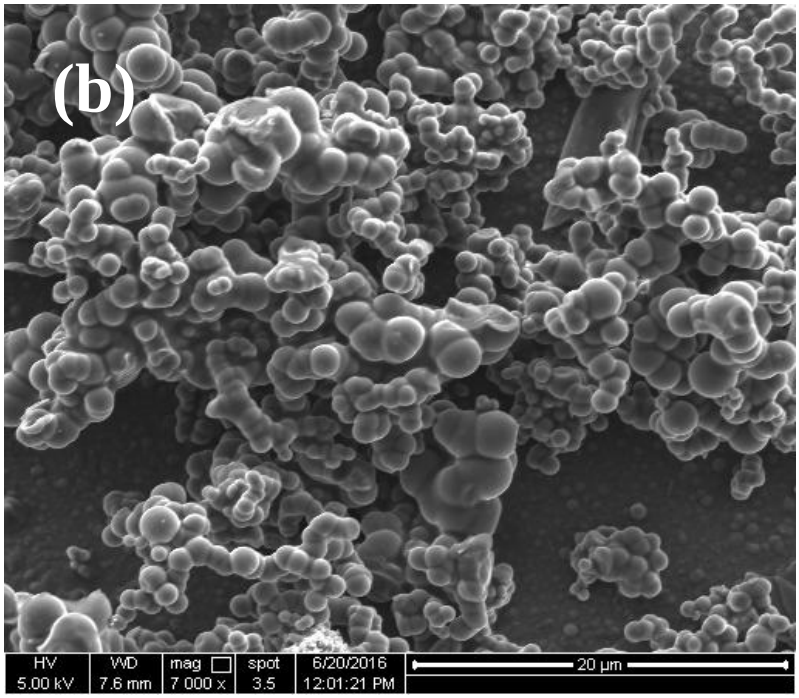


Figure S2: **a**) XRD pattern and (**b**) FESEM images of Co_2P-CoP/C synthesized at 850 ^{0}C employing D-Glucose as the carbon source.

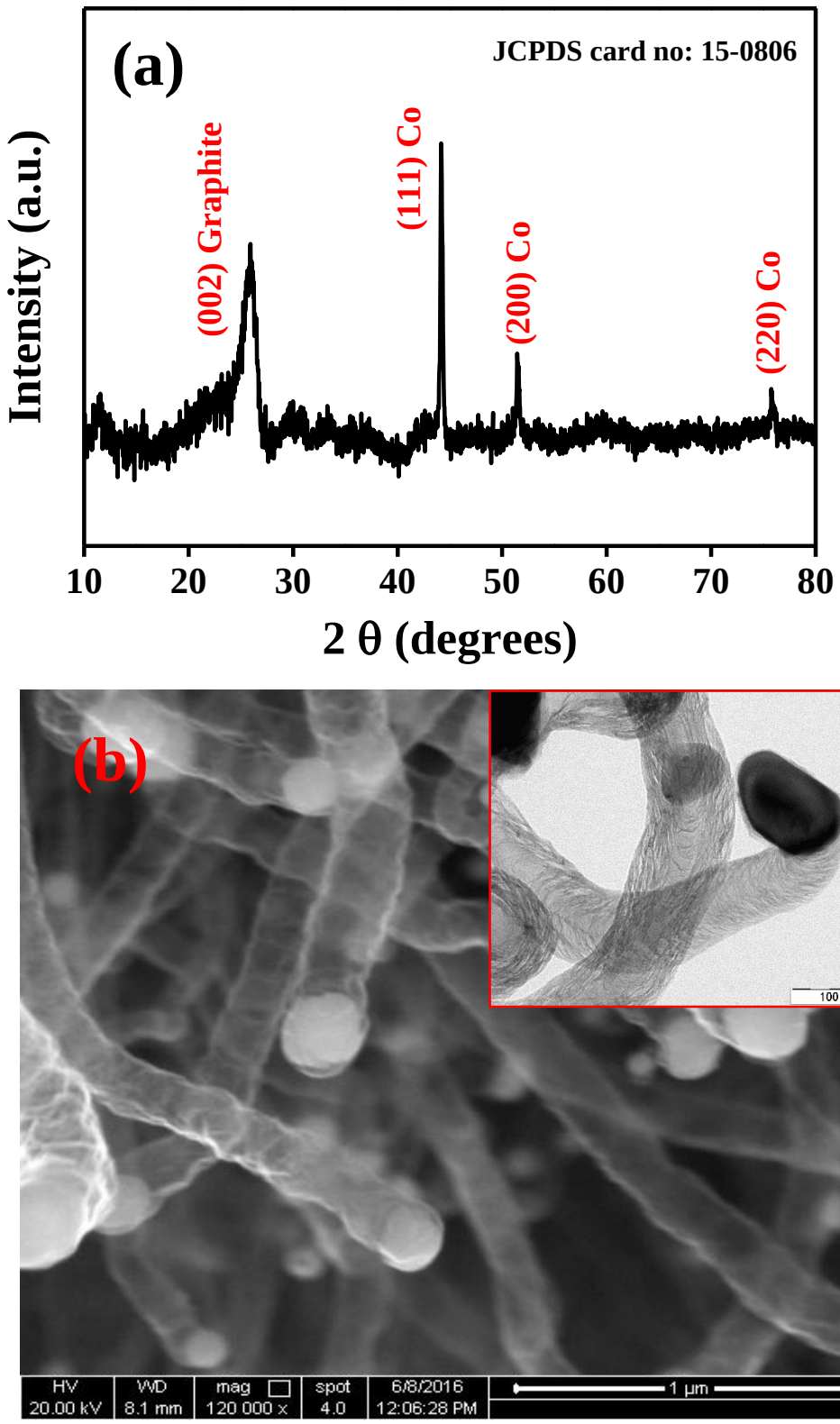


Figure S3: (a) XRD pattern and **(b)** FESEM and TEM (inset) of Co-NCNT synthesized at 850 ^{0}C

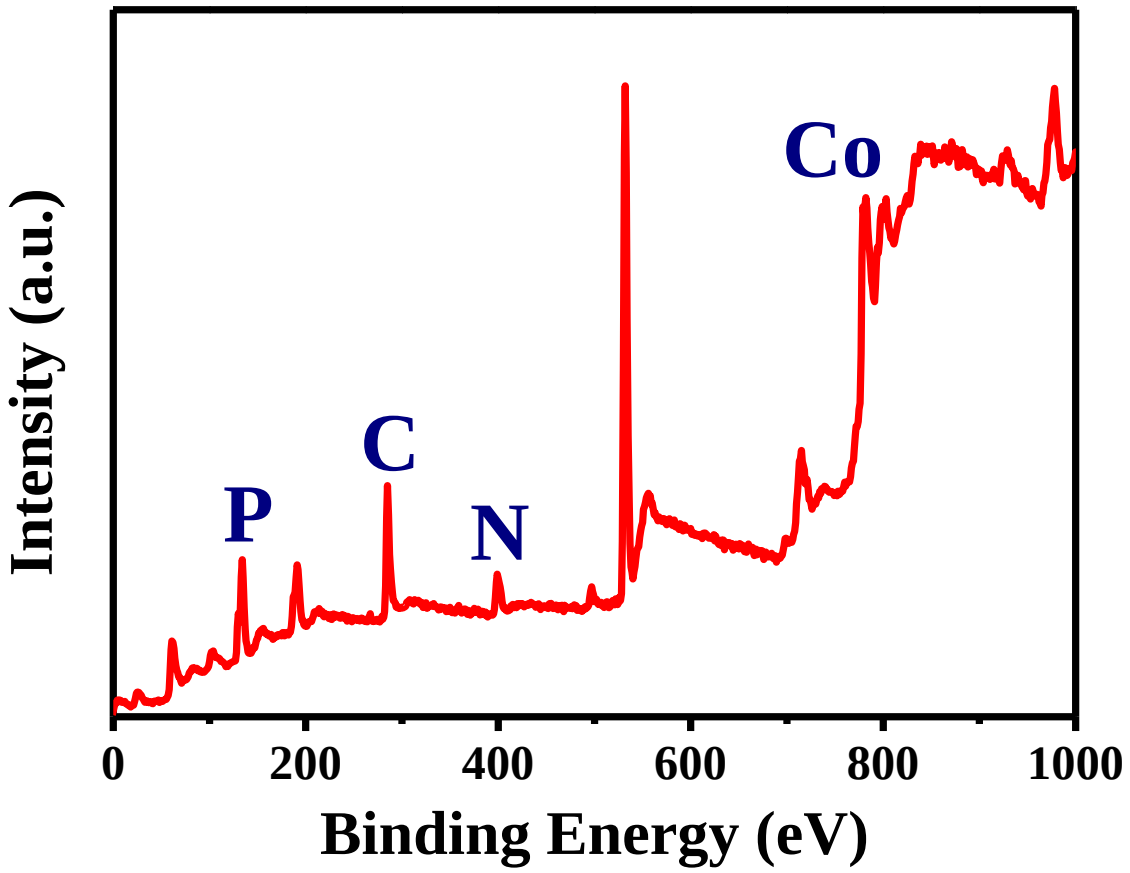


Figure S4: XPS survey spectrum of Co_2P/NPCNT revealing the presence of Phosphorus (P), Carbon (C), Nitrogen (N) and Cobalt (Co).

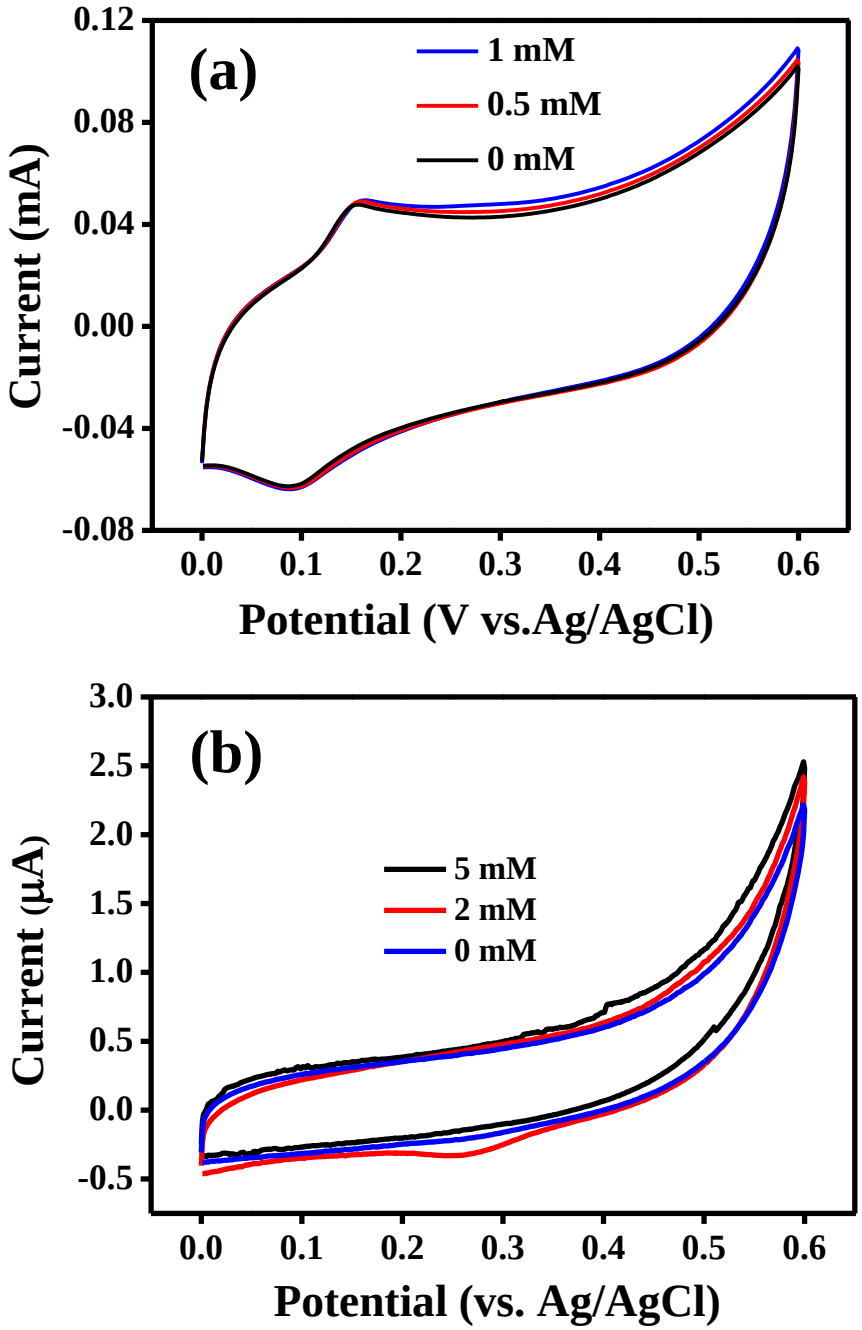


Figure S5: CV curves of **(a)** Co/NCNT-modified GCE and **(b)** bare GCE at different glucose concentrations.

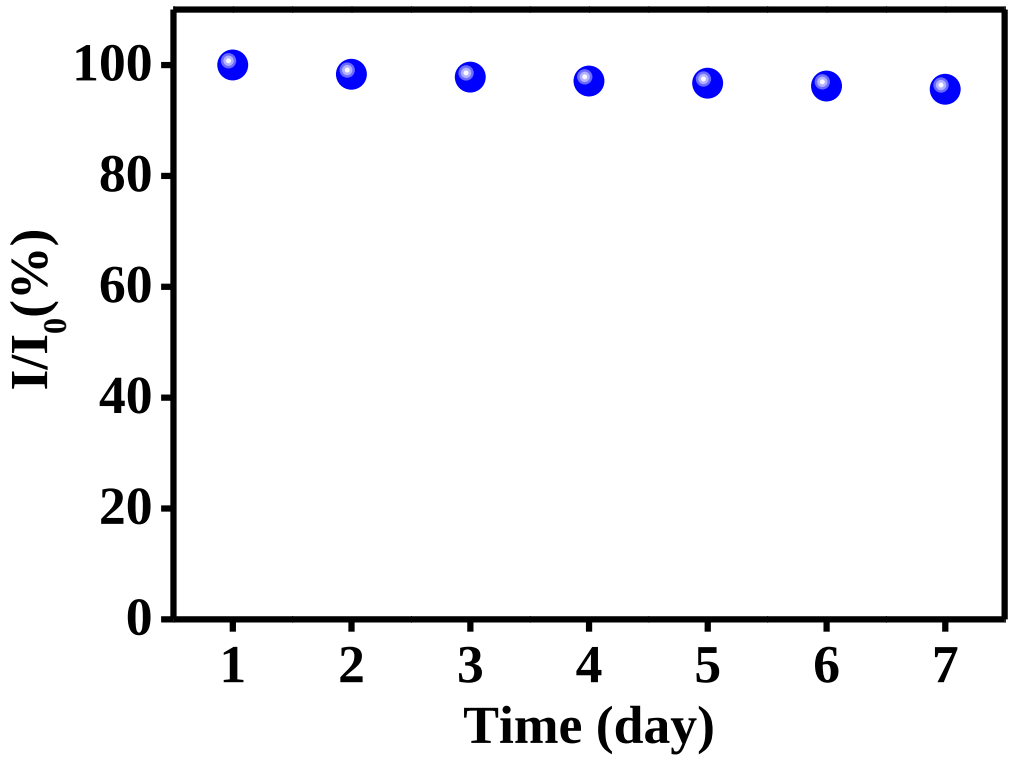


Figure S6: Long term stability performance of the Co_2P/NPCNT-modified GCE towards 1 mM glucose in 0.1 M KOH at +0.55 V vs. Ag/AgCl.

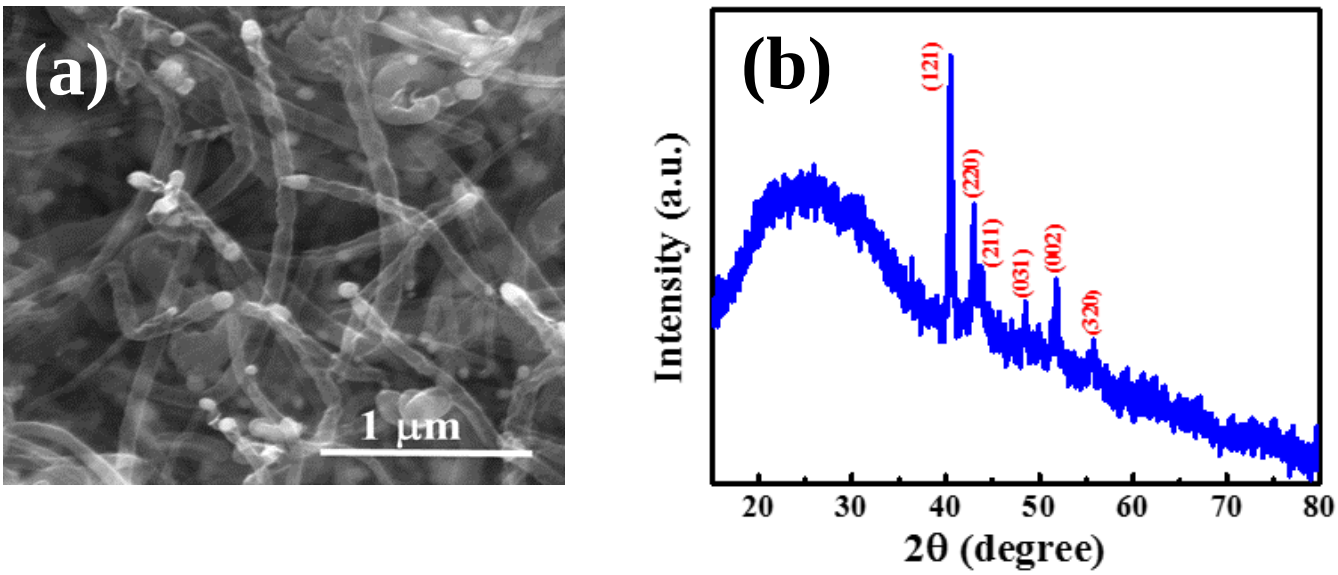
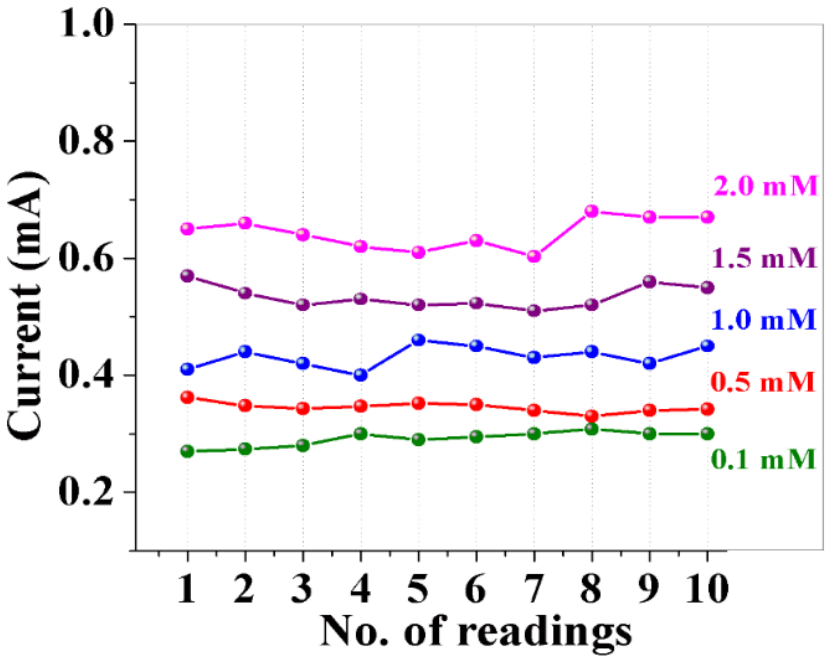


Figure S7: **(a)** FESEM image and **(b)** XRD pattern of the Co_2P/NPCNT sample after the long term stability test

\



Sl. No.	Glucose conc. (mM)	RSD (%)
1	0.1	4.17
2	0.5	2.35
3	1.0	4.24
4	1.5	3.53
5	2.0	3.98

Figure S8: Relative standard deviation of the response current for 10 Co_2P/NPCNT modified GCE towards at various glucose concentration

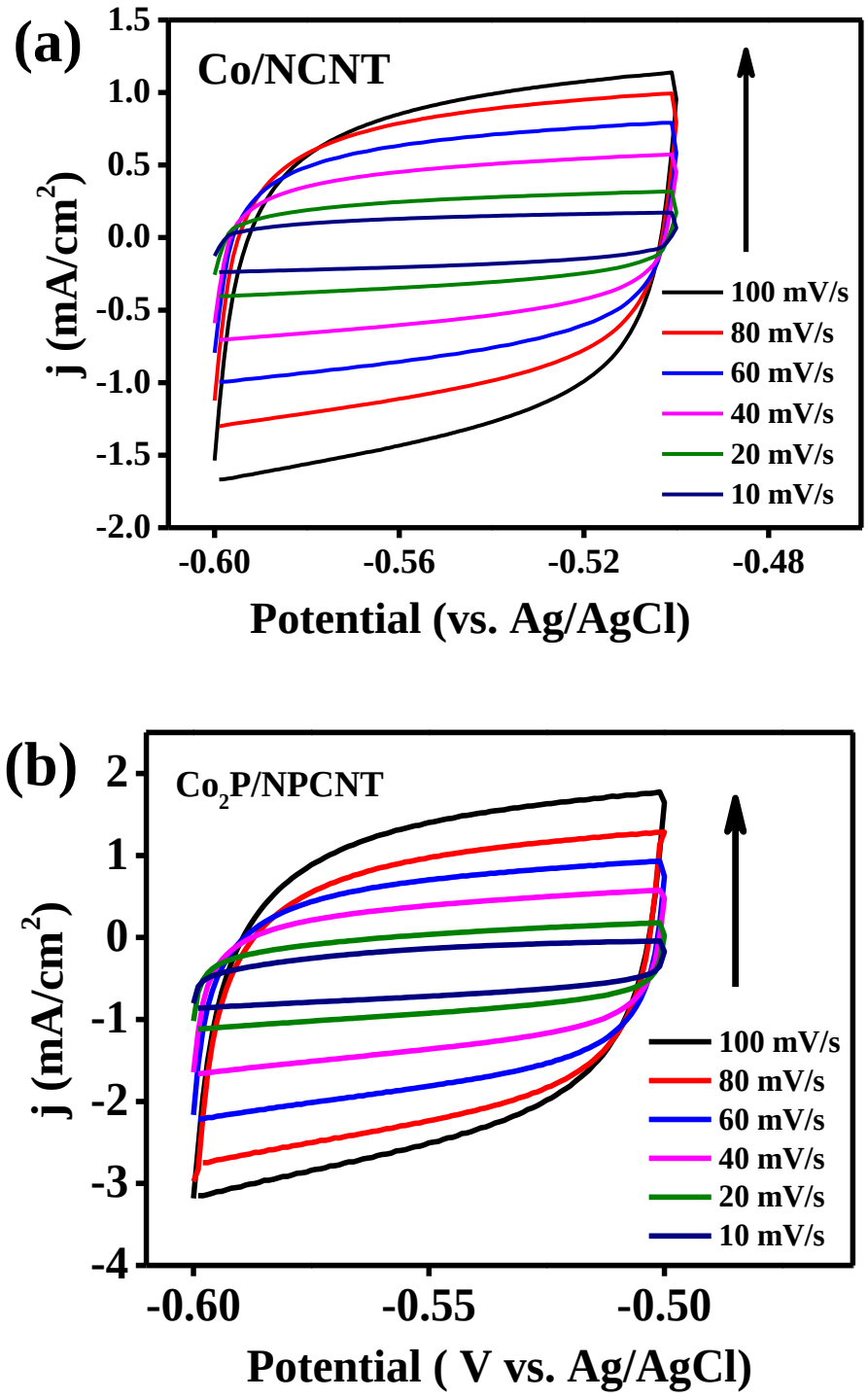


Figure S9: CV curves of **(a):** Co/NCNT and **(b)** Co_2P/NPCNT acquired at scan rates of 10 to 100 mV/s in non-faradaic region.