

Electronic Supplementary Material

Synthesis of non-peripheral amine substituted nickel(II) phthalocyanine capped gold nanoparticles and their immobilization on electrode for the electrocatalytic oxidation of hydrazine

A. John Jeevagan and S. Abraham John*

Centre for Nanoscience and Nanotechnology
Department of Chemistry, Gandhigram Rural Institute
Gandhigram – 624 302, Dindigul, India

*Corresponding author: Tel: +91 451 245 2371 ; Fax : + 91 451 245 3031

E-mail : abrajohn@yahoo.co.in

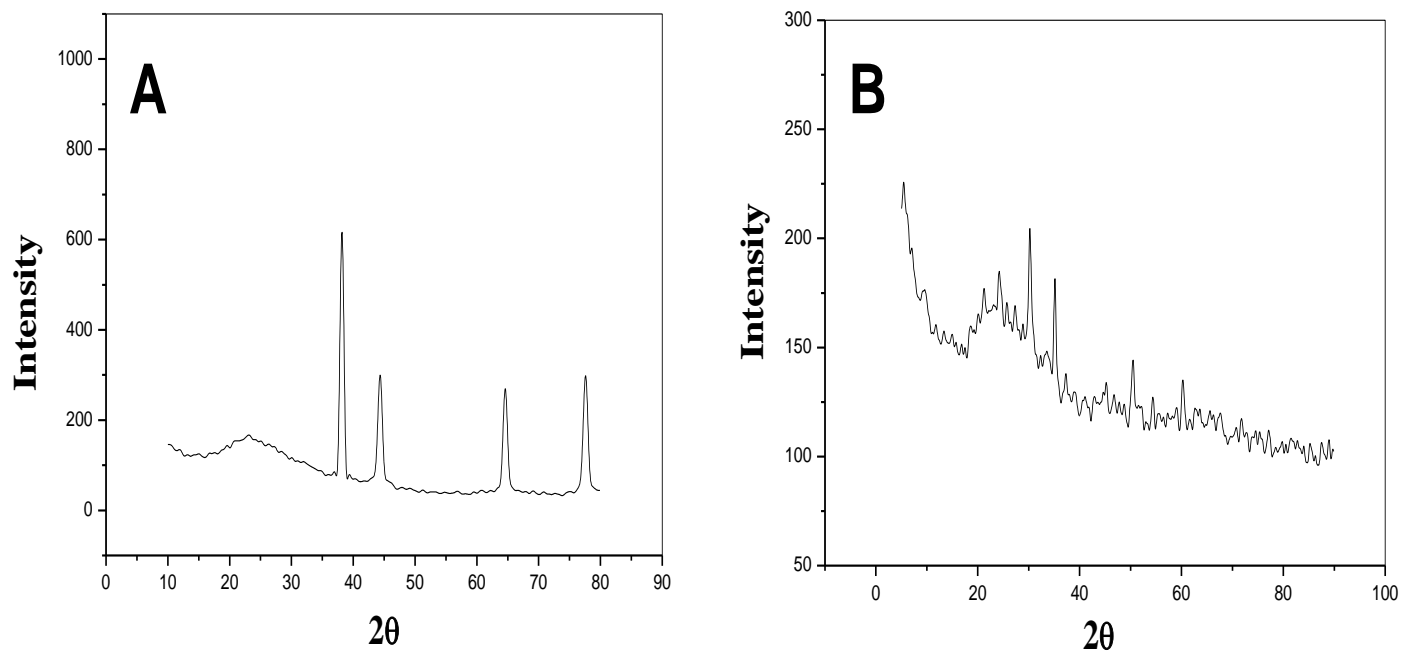


Fig. S1. X-ray diffraction pattern obtained for (A) 4α -Ni^{II}TAPc-AuNPs and (B) ITO/MPTS/ 4α -Ni^{II}TAPc-AuNPs.

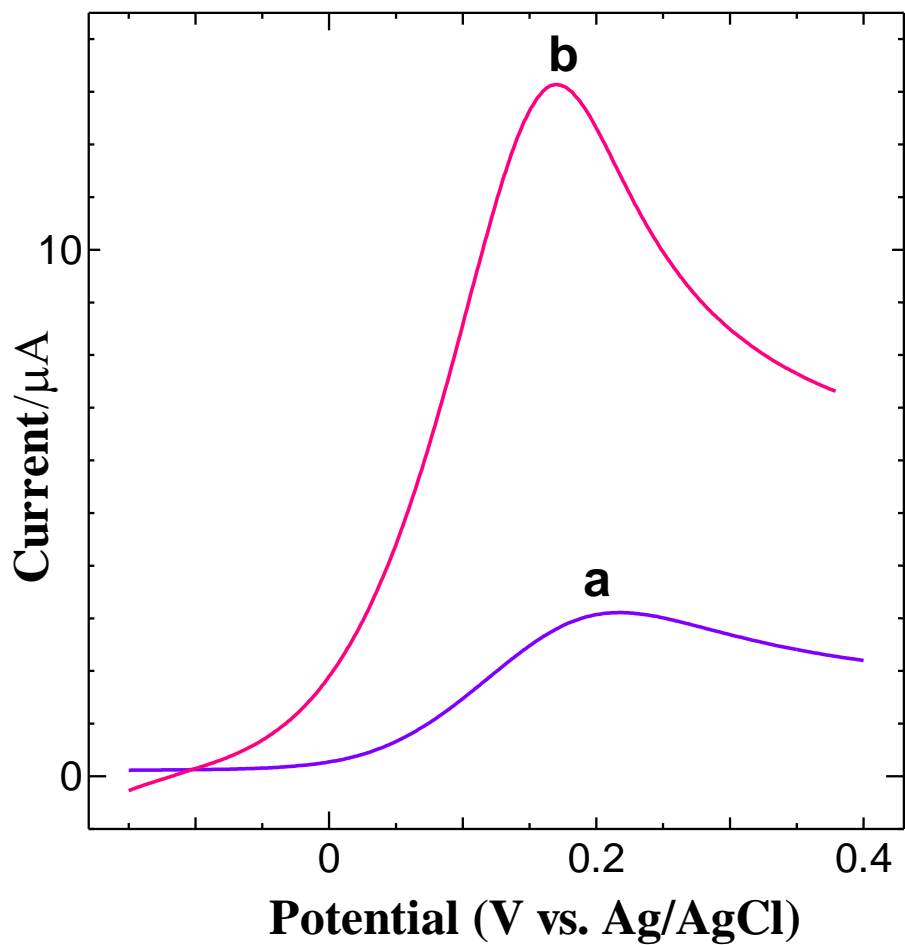


Fig. S2. LSVs obtained for 0.5 mM hydrazine at (a) Au/HDT/C-AuNPs and (b) Au/HDT/ Ni^{II} TAPc-AuNPs modified electrodes in 0.2 M PB solution (pH 7.2) at a scan rate of 0.05 V s^{-1} .

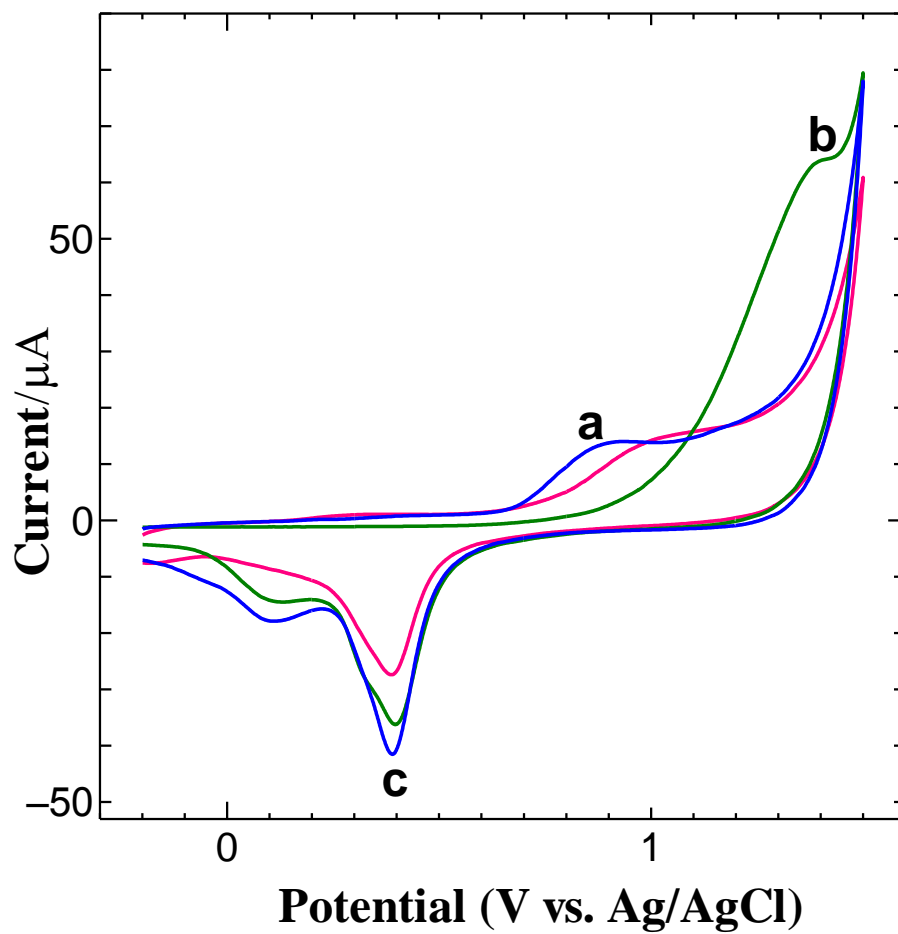


Fig. S3. CVs obtained for (a) bare Au, (b) Au/HDT/C-AuNPs and (c) Au/HDT/4 α -Ni^{II}TAPc-AuNPs modified electrodes in 0.2 M PB solution (pH 7.2) at a scan rate of 0.05 V s⁻¹.

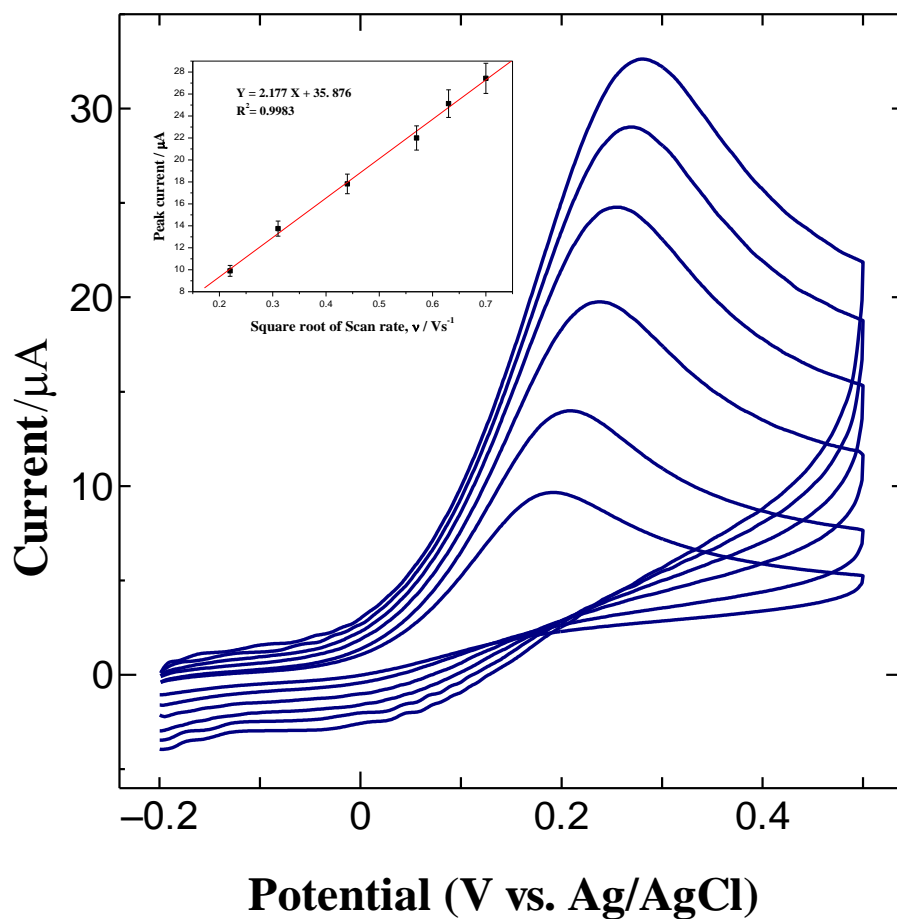


Fig. S4. CVs obtained for 0.5 mM hydrazine at Au/HDT/4 α -Ni^{II}TAPc-AuNPs modified Au electrode in 0.2 M PB solution (pH 7.2) at scan rates of 0.05, 0.1, 0.2, 0.3, 0.4 and 0.5 V s⁻¹.

Table S1

Table for impedance data

Parameter	Bare Au	Au/HDT	Au/HDT /4 α - Ni ^{II} TAPc- AuNPs
R _s (k Ω)	0.211	0.120	0.110
CPE (F)	4.288 $\times 10^{-6}$	7.092 $\times 10^{-7}$	5.868 $\times 10^{-7}$
R _{CT} (k Ω)	12.93	103.67	17.55
k _{et} (cm s ⁻¹)	6.628 $\times 10^{-4}$	8.278 $\times 10^{-5}$	4.889 $\times 10^{-4}$