Electronic Supplementary Material (ESI) for Analyst

Electronic Supplemental Information

Tailoring zinc porphyrin to the Ag nanostructure substrate: an effective approach for photoelectrochemical studies in the presence of mononucleotides

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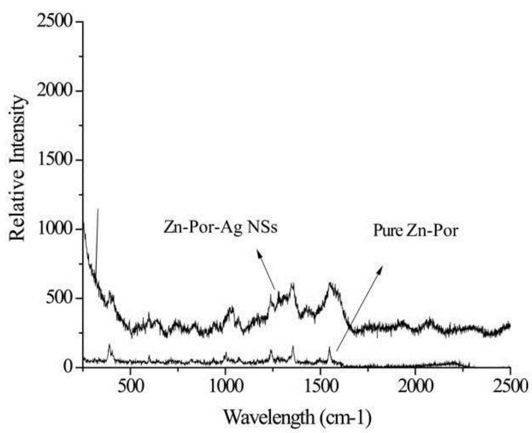

Fig.S1. Raman spectrum of pure 2-Cyano-3-(2′-(5′,10′,15′,20-tetraphenylporphyrinato Zinc- (II))yl)acrylic acid and SERS spectrum of the Ag foil surface cycled 5 times in 8 M KOH. Spectra were recorded after washing the surface with solvent (tetra hydro furan). No baseline correction was performed on the Raman spectra. The SERS shows that the porphyrin has been modified on the surface.

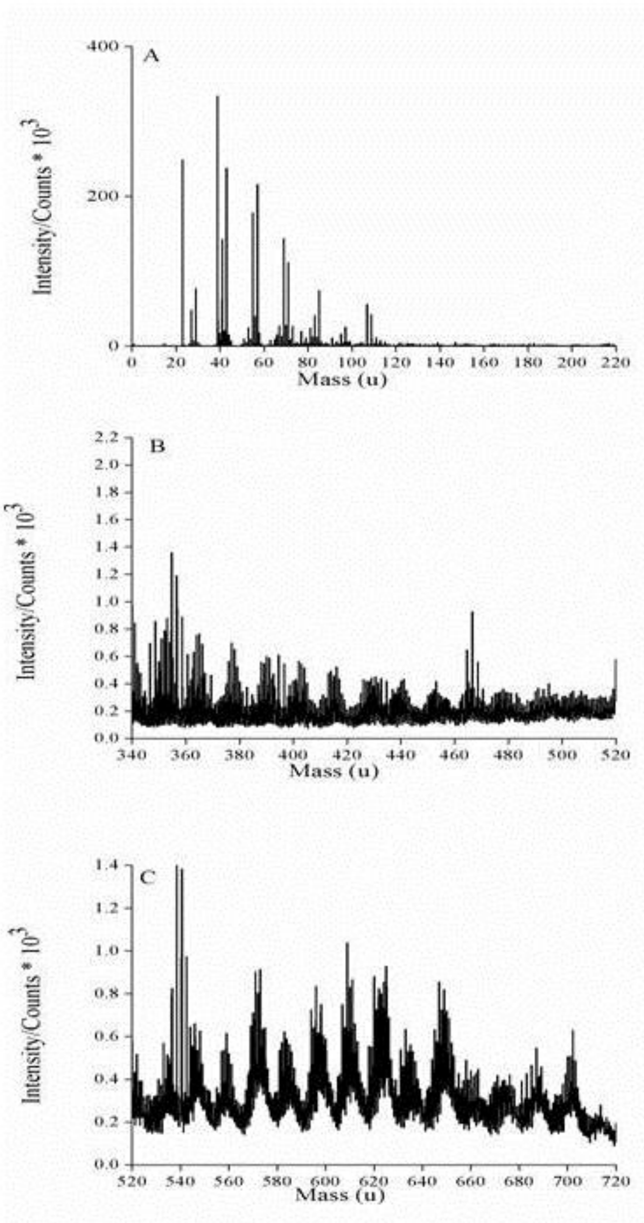

Fig. S2. Positive secondary ion mass spectrum of the porphyrin film on Ag NSs surface.A, B and C do not contain any specific peaks indicating porphyrin immobilization on Ag NSs.

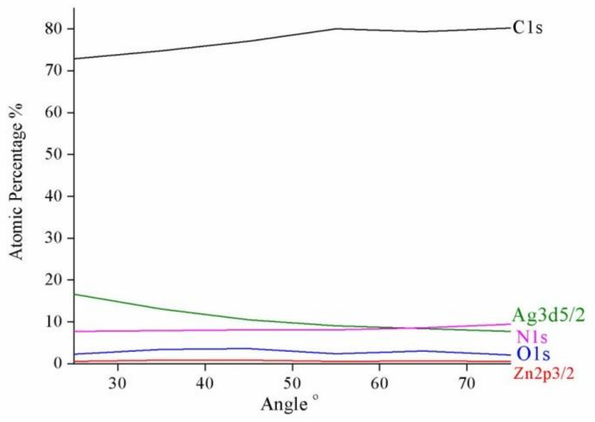

Fig. S3. Angle resolved x-ray photoelectron spectroscopy **(**ARXPS) of modified Ag NSs with porphyrin. The figure shows the atomic percentage of substrate and immobilized porphyrin in different angles.

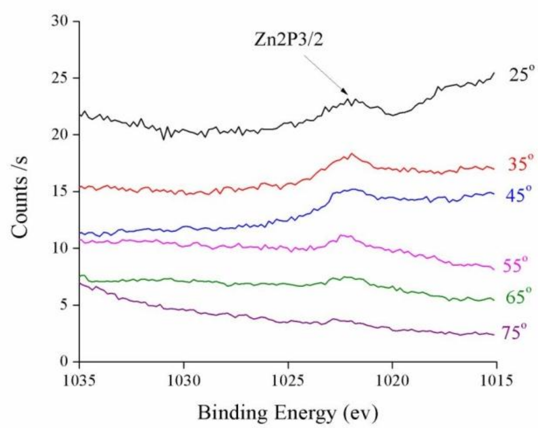

Fig. S4. A series of Zn 2p spectra in different angles. It shows binding energy at 1021.0 eV.

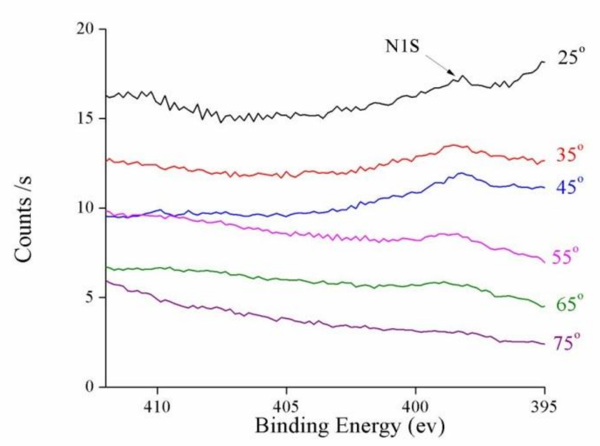

Fig. S5. A series of N1s spectra in different angles. It shows a binding energy at 398.0 eV.

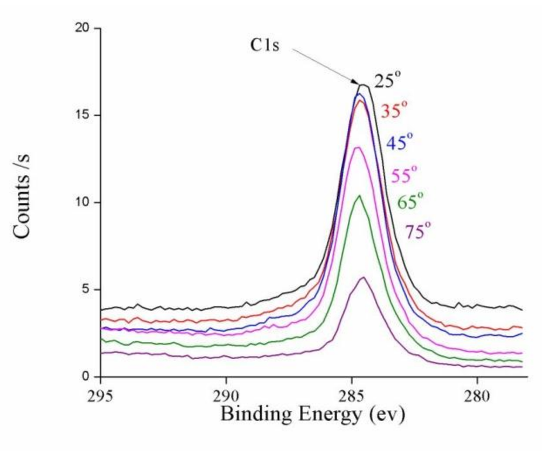

Fig. S6. A series of C1s spectra in different angles. It show binding energy at 288.3 eV for C1s.

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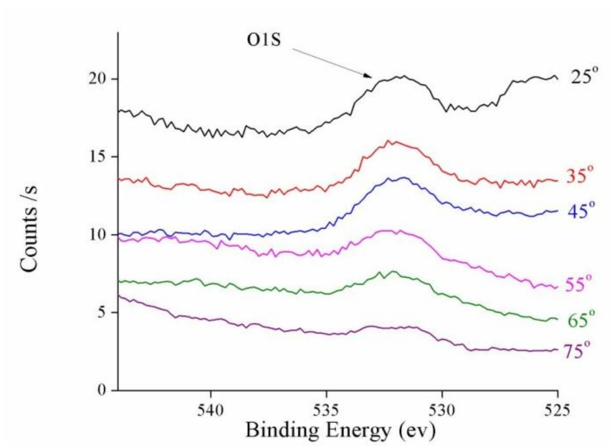

Fig. S7. A series of O1s spectra in different angles. It shows a peak around 532.5 eV for O 1s.

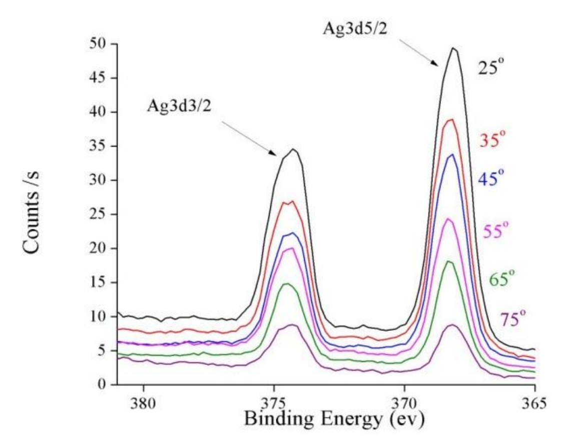

Fig. S8. A series of Ag 3d 3/2 and Ag 3d 5/2 spectra in different angles. It shows two peaks around 368 and 374 eV which are indicative of metallic silver.

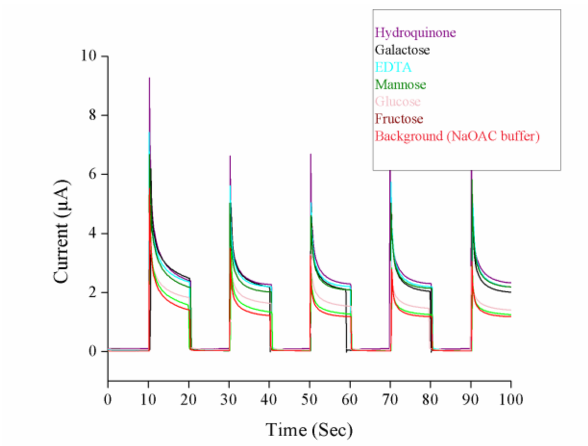

Fig. S9. The effect of various electron donors on the photocurrent response of the modified Por-Ag NSs. As can be seen in the graph photocurrent response has the highest amount in the present of hydroquinone, EDTA, galactose and manose. It has moderate response after addition of fructose and glucose.