Supporting Information

Activity Augmentation of Functionalized 2D Conjugated Polymer Matrix with Iron Vanadate Nano-Bulbs for real-time Detection of Levofloxacin.

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Table ST 1.

FVO	D (nm)	∂ (nm^{-2})	Macrostrain percentage (%)
CN	13.35	0.0066	0.2451
FVO	19.49	0.0026	0.2422
FVO/CN	10.38	0.0093	0.2391

Dislocation density (∂)

$\partial = 1/D^2$

Macrostrain Percentage (ε)

$\varepsilon = \beta/4tan\theta$

Table ST 2.

	E_{pa} (V)	E_{pc} (V)	I_{pa}(µA)	I_{pc}(µA)	ΔE_p(V)	R_{ct}(Ω)
Bare GCE	0.441	0.076	58.71	-60.15	0.365	2581
FVO/GCE	0.374	0.143	68.81	-76.33	0.231	1665
CN/GCE	0.402	0.142	65.6	-74.51	0.260	1479
CN/FVO/GCE	0.347	0.164	81.96	-80.29	0.183	535

Table ST 3

S.NO	Electrode	Method	Electrolyte	Linear range (µM)	LOD (µM)	Real sample	Ref
1	SnO_2/MWCNT/GCE	DPV	0.1M PBS (pH 6.0)	1.0-9.9	0.2	River water	**[1]**
2	BDD electrode	SWV	0.5 M Na_2SO_4 (pH = 5.5)	10-80.9	2.88	Urine, Blood serum	**[2]**
3	Co@$CaPO_4$ -modified GCE	DPV	0.1M PBS	0.3- 460	0.151	Different water samples	**[3]**
4	($FeCl_3$ or Fe (III)) modified GCE	SWV	Acetate buffer (PH 4.5)	1.5-2.3	1.5	Urine, Blood serum and saliva	**[4]**
5	poly (l-cys)/AuNPs/rGO/GCE	DPV	PBS (pH = 6.5)	0.001–0.1	0.3	Water samples	**[5]**
6	poly(p-ABSA)-rGO/GCE	LSV	Sodium Acetate Buffer (0.1 M, pH 4.5)	2.0 – 30.0	0.12	Urine	**[6]**
7	Polypyrrole-graphene-gold nanoparticles	DPV	0.2 mol L^{-1} H_2SO_4	1.0 – 100.0	0.53	River water	**[7]**
8	Au/PDDA/rGO/GCE	LSV	PDDA	10.0 – 200.0	3.9	RNA and Pharmaceutical Samples	**[8]**
9	Electrochemically	DPV	0.2 M	2.812	0.84	Medicinal	**[9]**

	Polymerized (EP) Glycine (GN) Layered Carbon Paste Electrode (EPGNLCPE)		PBS 30 to 90 µM (pH 7.0)			samples	
10	FVO/CN/GCE This work	DPV	0.1M PBS (pH = 7.4)	0.25 – 320	0.06	Human blood serum	-

Figure SF 1

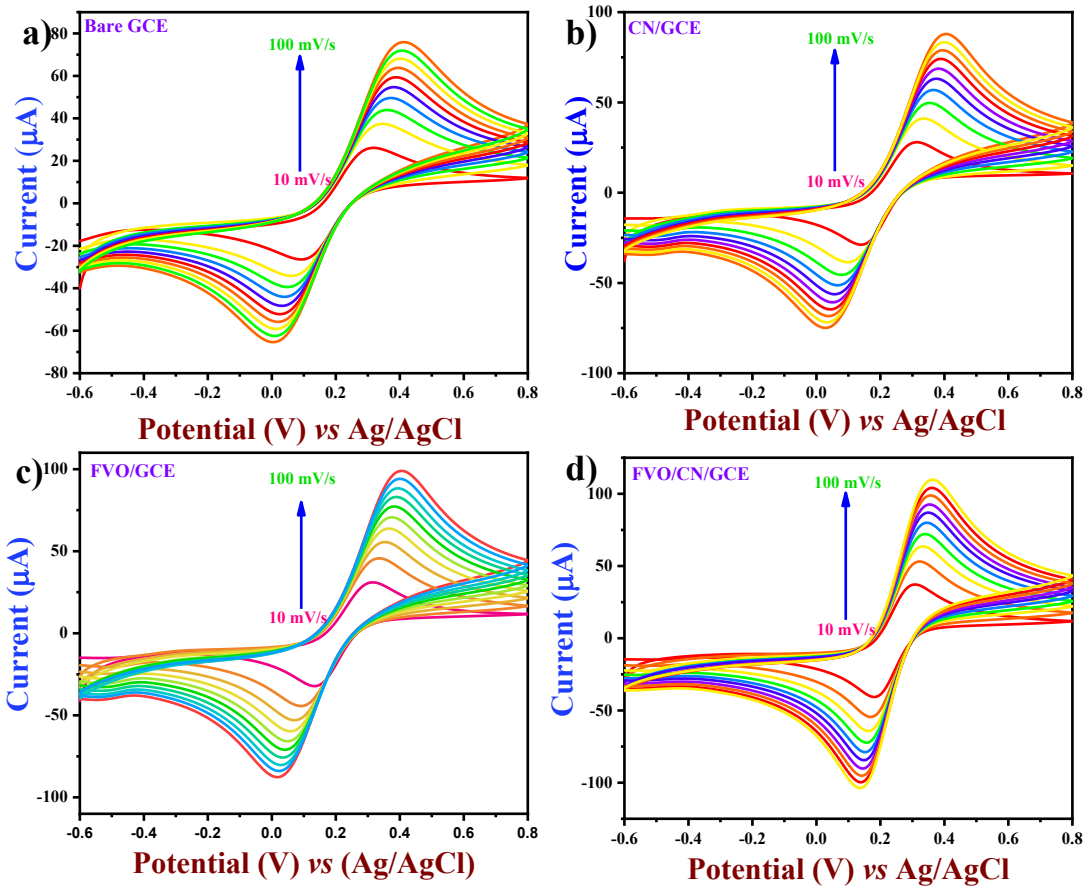

Figure SF1 - CV's Scan Rate study of Bare GCE, CN/GCE, FVO/GCE and FVO/CN/GCE in 0.1 M KCl with 5 mM $[Fe(CN)_6]^{3-/4-}$ at a scan rate from 10 to 100 mV/s.

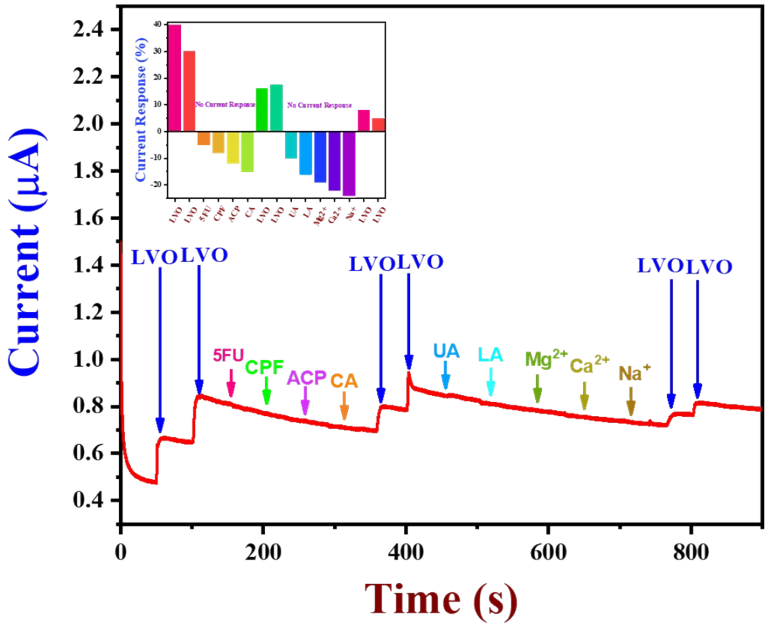

Figure SF 2

Figure SF2 – Selectivity of the FVO/CN/GCE in 0.1 M PBS with the addition of 10-fold concentration of interference molecules by amperometry technique (Rotation rate = 1000 RPM).

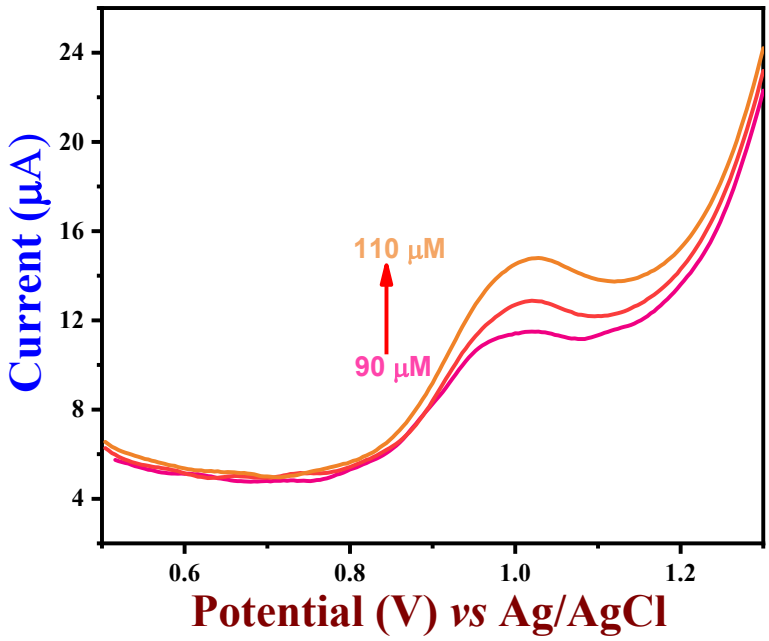

Figure SF 3

Figure SF3 – Real sample analysis of LVO with FVO/CN/GCE in human blood serum diluted with 0.1 M PBS (pH 7.4).

Figure SF4

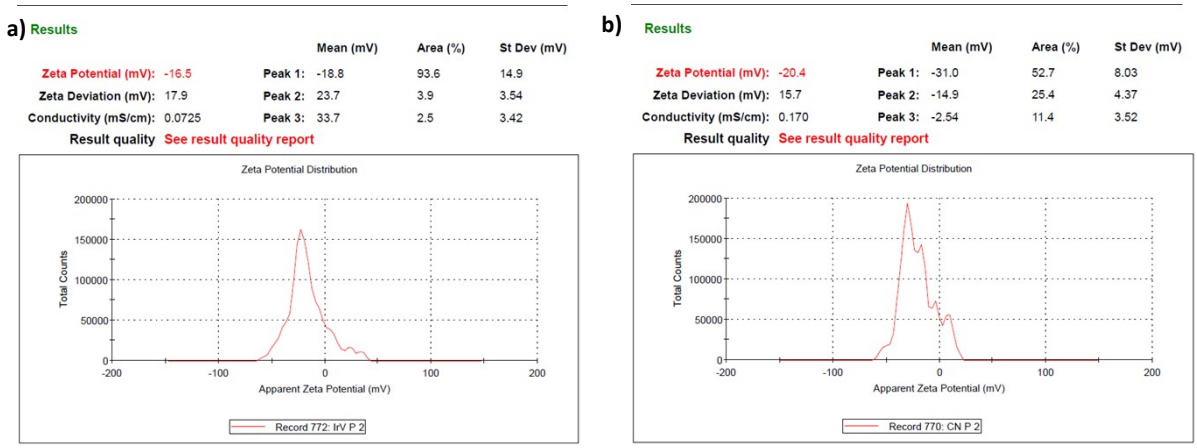

Figure SF4 – Zeta Potentials of a) FVO and b) CN.

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