Electronic Supplementary Material (ESI) for Analyst.

Chronocoulometric Signalling of BNP using a Novel Quantum Dot Aptasensor

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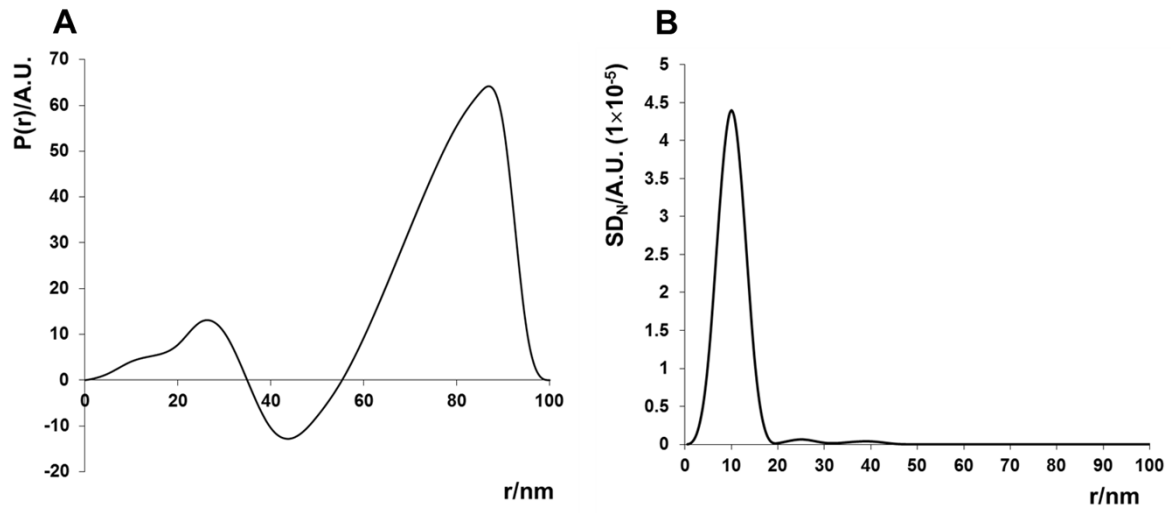

Fig. S1 PDDF (A) and SD_N (DB) models for MSA-$NiSe_2$ QDs in aqueous solution (QDs produced using a reaction time of 15 min).

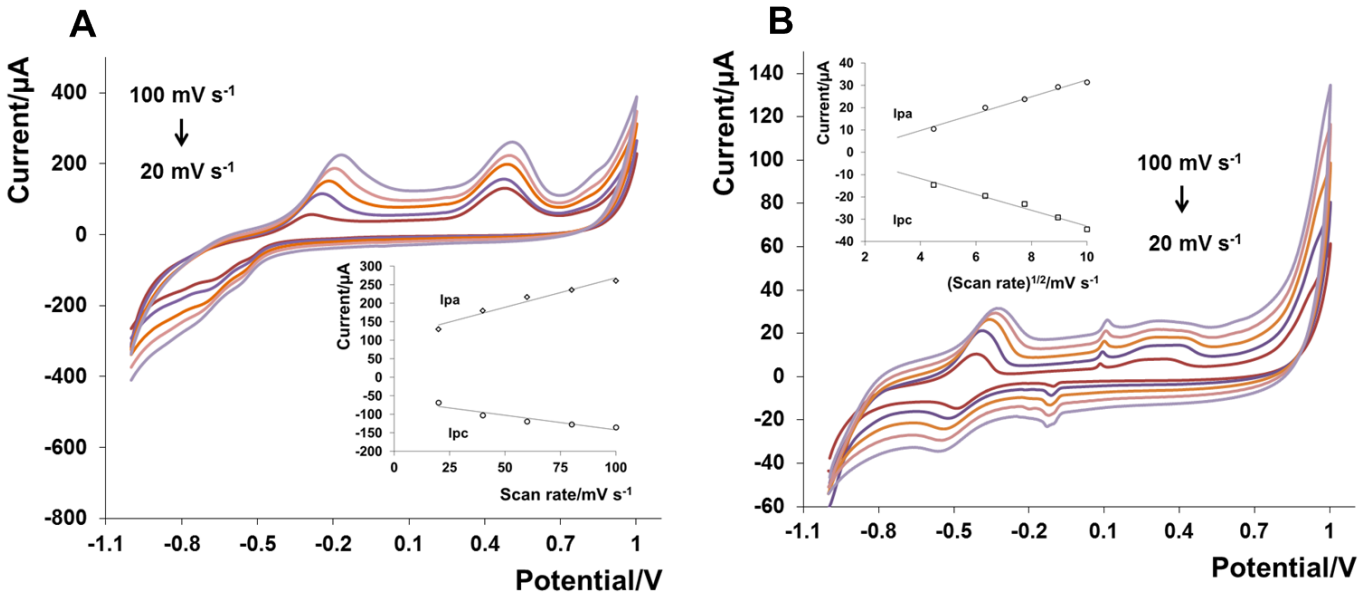

Fig. S2: Cyclic Voltammograms of pre-adsorbed MSA-$NiSe_2$ QDs on SPCE (A) and solution MSA-$NiSe_2$ QDs at SPCE (B), in 10 mM PBS, pH 7.4, at multiple scan rates ranging from 20 to 100 mV s^{-1}.

Table S1: Comparison of nano-based electrochemical biosensors for BNP detection.

Method	Interface	Linear range	LOD	Reference
EIS	Nanostructured ZnO/Au microelectrode	0.001-1000 ng mL^{-1}	8 pg mL^{-1}	[1]
DPV	Anti-BNP-Streptavadin modified SPCE	$1.0x10^{-2}$-$1.0x10^{2}$ ng mL^{-1}	3.3 ng mL^{-1}	[2]
Linear sweep voltammetry (LSV)	AChE-labeled anti-BNP antibodies	200 -1000 ng mL^{-1}	10 ng mL^{-1}	[3]
Lateral flow immunoassay (LFIAs)	AuNPs modified LFIAs	-	0.1 ng mL^{-1}	[4]
Amperometric	Anti NT-proBNP-HRP-SPCE	0.57-193 ng mL^{-1}	0.43 ng mL^{-1}	[5]
Chronocoulometry	aptamer/MSA-$NiSe_2$ QDs/SPCE	10 -180 pgmL^{-1}	5.45 pgmL^{-1}	**This work**

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