

## **Supplementary Material**

### **Design and analysis of a single system of impedimetric biosensor for the detection of mosquito-borne viral diseases**

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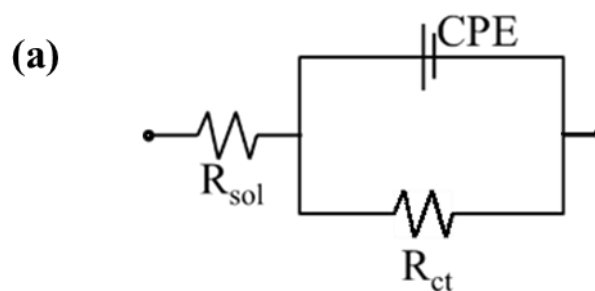
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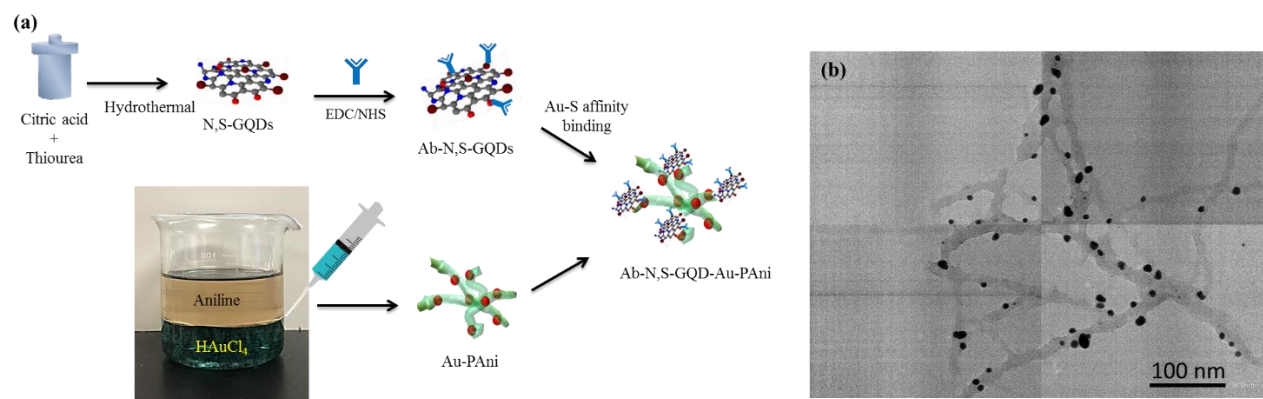
**Table S1.** (a) Circuit diagram for the electrochemical fitting, (b) The electrochemical parameters of the sensor electrode obtained from impedimetric circuit diagram.



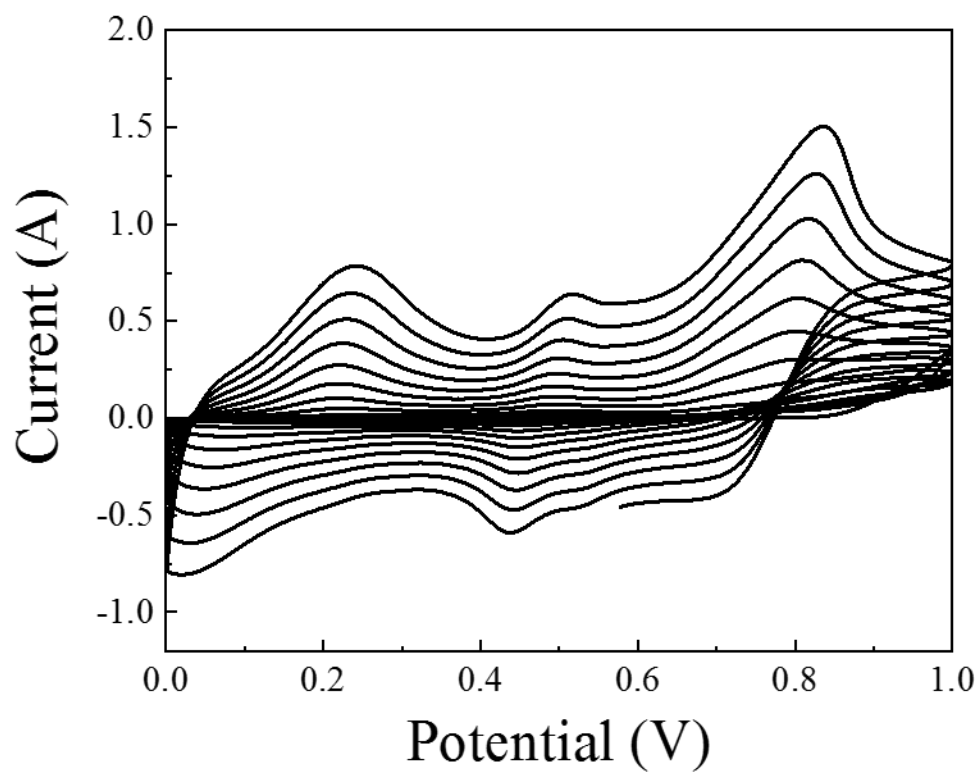
(b)

		$R_{sol} (\Omega)$	$CPE (10^{-7} F)$	$n$	$R_{ct} (\Omega)$
<b>Au-PAni/N,S-GQDs</b>	0	20.4	5.40	0.345	5837
	10 fg mL <sup>-1</sup>	21.2	6.35	0.348	6873
<b>CHIKV</b>	100 fg mL <sup>-1</sup>	23.4	6.22	0.342	7925
	1 pg mL <sup>-1</sup>	27.5	5.12	0.370	9284
	10 pg mL <sup>-1</sup>	27.7	4.97	0.492	15052
	100 pg mL <sup>-1</sup>	28.1	6.87	0.542	22944
	1 ng mL <sup>-1</sup>	31.6	5.68	0.563	35632

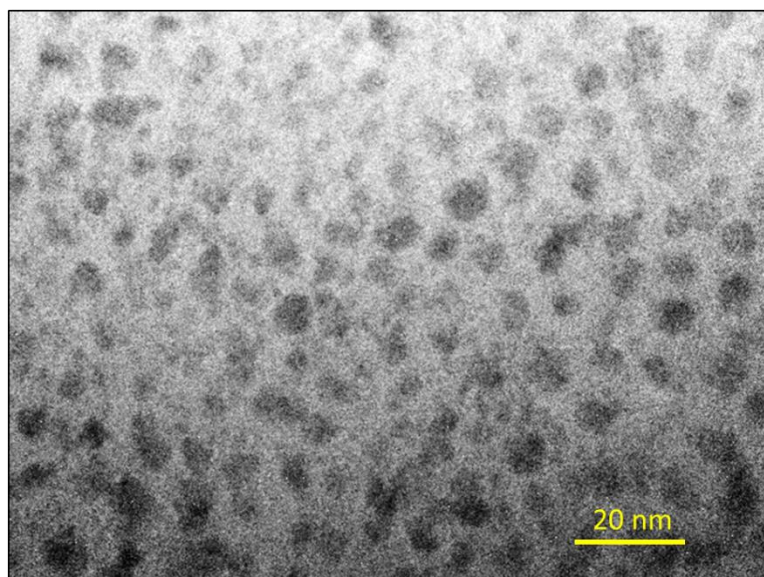
## The synthesis and TEM images of AuNP-PAni and N,S-GQDs:



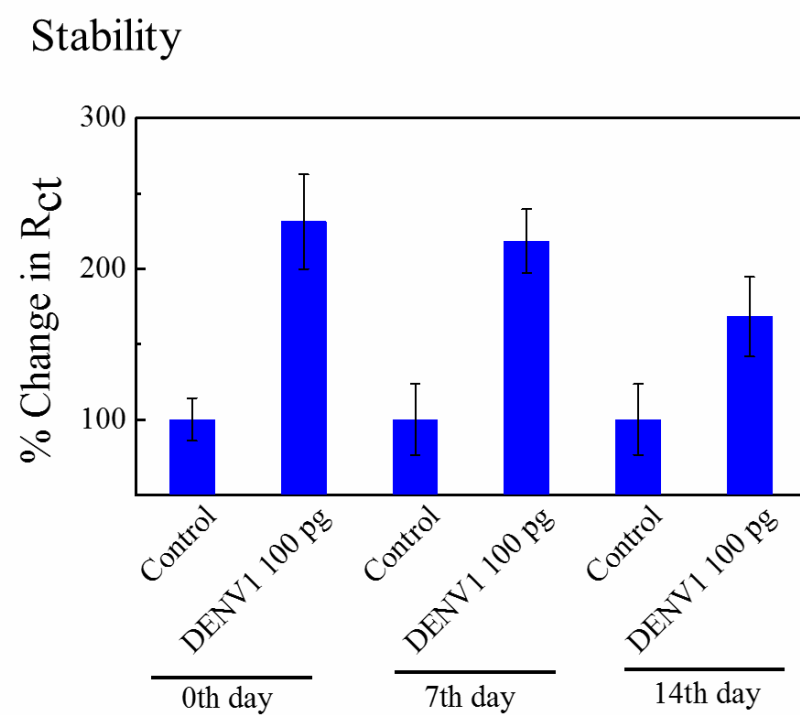
**Figure S1.** (a) Schematic illustration of Au-PAni-N,S-GQD-Ab sensor electrode, (b) TEM image of Au-PAni nanocomposite.



**Figure S2.** Electropolymerization of polyaniline on the bare Au electrode.



**Figure S3.** TEM image of N,S-GQDs. The small black particles with a size of 8–12 nm represent the GQD structures.



**Figure S4.** Stability test of the sensor electrodes.