

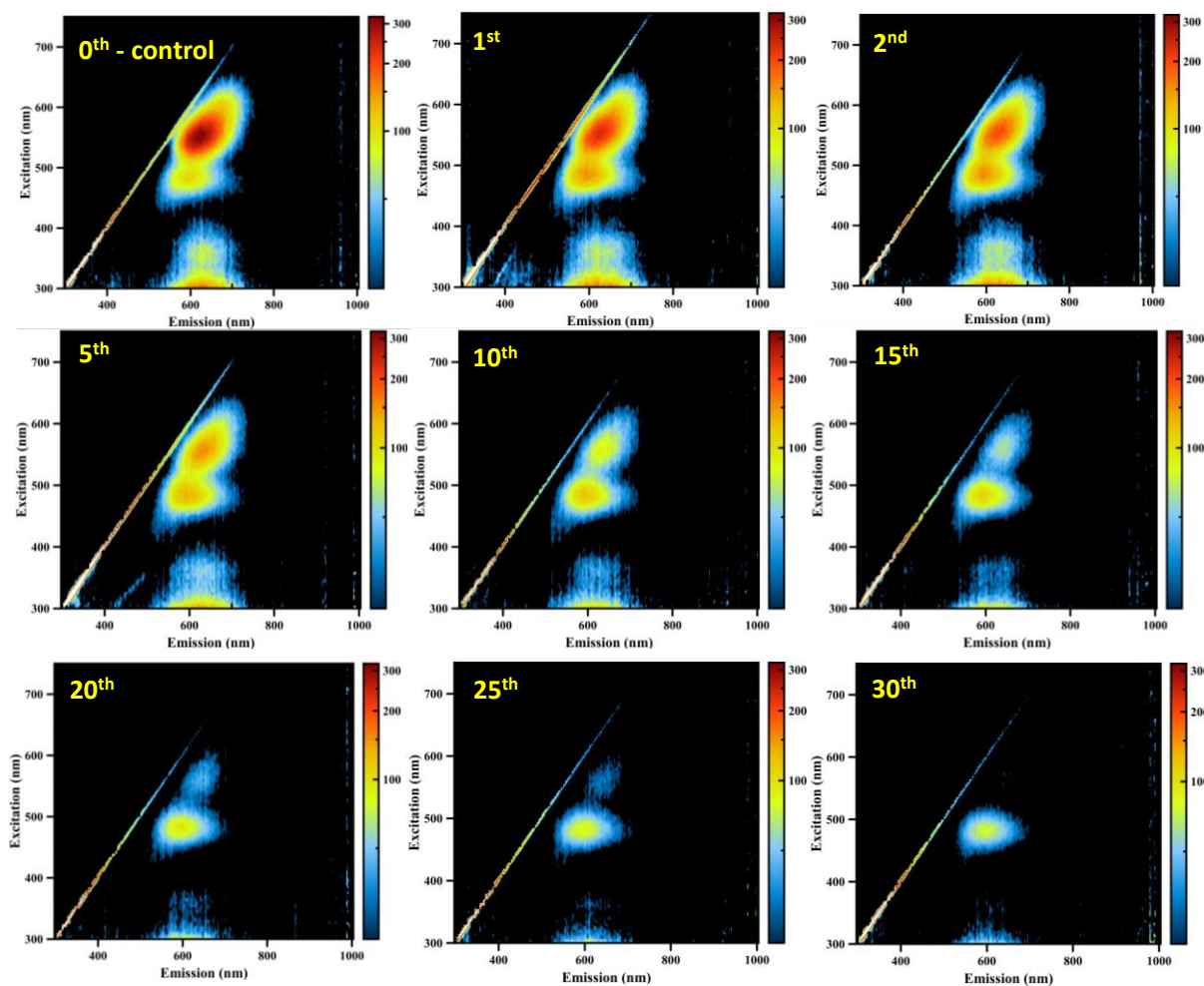
## ***Supplementary Materials***

### ***DNA-Templated Silver Nanoclusters as Dual-Mode Sensitive Probes for Self-Powered Biosensor Fueled by Glucose.***

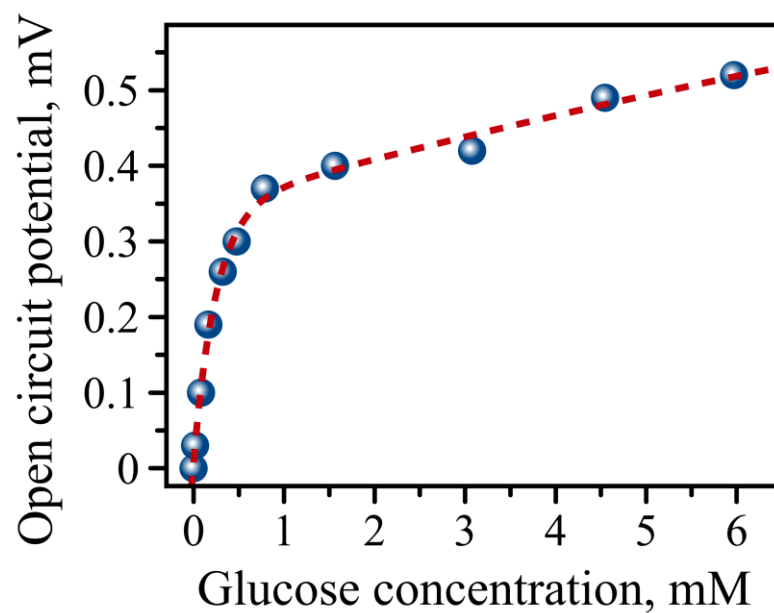
Akhilesh Kumar Gupta<sup>1</sup>, and Alexey V. Krasnoslobodtsev<sup>1\*</sup>

<sup>1</sup> Department of Physics, University of Nebraska Omaha, Omaha, NE 68182, USA.

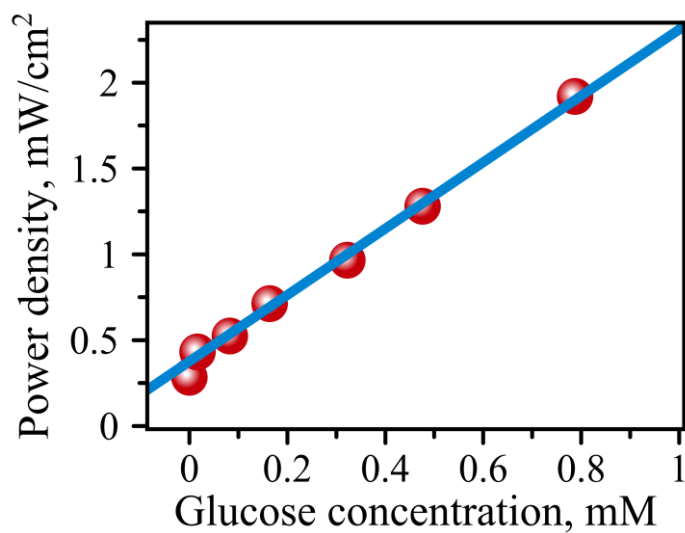
\* Correspondence: [akrasnos@unomaha.edu](mailto:akrasnos@unomaha.edu); Tel.: +1-402-554-3723.



**Figure S1.** Representative EEMS patterns for probing performance of the optical readout for the mixture of 100  $\mu\text{L}$  of 10  $\mu\text{M}$  AgNCs@DNA, 5  $\mu\text{L}$  of 1 mM GOx with the successive addition of 5  $\mu\text{L}$  (500 $\mu\text{M}$  glucose) solution. Numbers indicate the  $n^{\text{th}}$  addition of the 5  $\mu\text{L}$  glucose solution. The EEM patterns show gradual decline of the “red” emissive peak with increased glucose concentration which was then used for evaluation of the sensor’s optical readout strategy.



**Figure S2.** Open circuit potential (OCP) dependence on glucose concentration. The dependence indicates that the BFC performance is still controlled by the kinetics of the enzymatic reaction, GOx + glucose, but the potential increases even at high glucose concentrations providing the possibility for power output and the design's operation as BFC.



**Figure S3.** Enlarged section of the power density vs  $C_{\text{glucose}}$  plot in the range of concentrations between 0 and 1 mM (highlighted in blue in **Figure 3C**). Solid blue line is the linear approximation,  $a \cdot x + b$  to the data points ( $a = 1.98 \cdot 10^{-6}$ ,  $b = 3.5 \cdot 10^{-4}$ ) which was used to estimate LOD level yielding 29.2  $\mu\text{M}$  of glucose concentration.