

## **Supplementary information**

### **Bi-Functionalization of a Patterned Prussian Blue Array for Amperometric Measurement of Glucose via Two Integrated Detection Schemes**

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Four pages total.

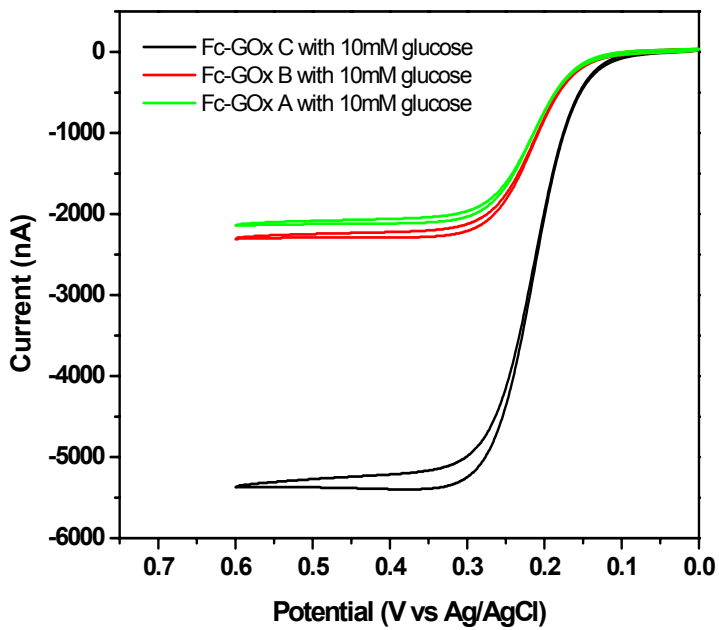
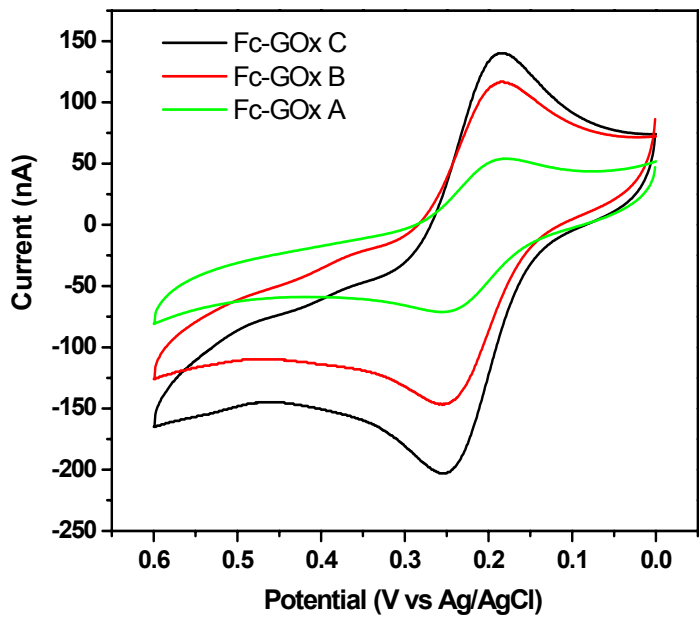
Figure S1. Electrochemical characterization of Fc-GOx conjugates: (a) CV of Fc-GOx with different Fc/GOx ratios in the absence of 10mM glucose. The scan rate was 2 mV/s (b) CV of Fc-GOx in the presence of 10mM glucose (scan rate: 2mV/s). Detailed values about the ratios are given in Table 1.

Table S1. The results of the protein content determination for different Fc/GOx ratios by Bradford protein assay and iron content assay by AES for the modified Fc-GOx conjugates.

Table S2. Results for the optimization of the sensor composition and fabrication parameters.

## Figure S1

Colors are difficult to see in B&W, dashed lines are a better option



**Table S1** Results of the protein content determination by Bradford protein assay and iron content assay by AES for the modified Fc-GOx conjugates.

|   | GOx Con. (mg/mL) | Fe Con. (ppm) | Fc/GOx |
|---|------------------|---------------|--------|
| A | 5.001            | 7.73          | 5      |
| B | 6.211            | 17.15         | 8      |
| C | 4.569            | 18.72         | 12     |

**Table S2** Results for the optimization of the sensor composition and fabrication parameters.

| Exp. # | PB <sup>a</sup> | Fc/GOx <sup>b</sup> | GOx-Nafion              | Nafion <sup>d</sup> | Anodic detection |                  | Cathodic detection |                 |
|--------|-----------------|---------------------|-------------------------|---------------------|------------------|------------------|--------------------|-----------------|
|        | (s)             |                     | ( $\mu$ L) <sup>c</sup> | (%)                 | Current(nA)      | Time (s)         | Current (nA)       | Time (s)        |
| 1      | 3               | 5                   | 10                      | 0.1                 | -28.2 $\pm$ 0.3  | 67.6 $\pm$ 7.6   | 88.0 $\pm$ 0.2     | 76.98 $\pm$ 8.1 |
| 2      | 3               | 8                   | 20                      | 0.3                 | -36.5 $\pm$ 2.9  | 100.6 $\pm$ 8.6  | 187.0 $\pm$ 17.9   | 97.9 $\pm$ 2.2  |
| 3      | 3               | 12                  | 30                      | 0.5                 | -47.8 $\pm$ 5.9  | 101.2 $\pm$ 2.8  | 117.1 $\pm$ 25.7   | 98.1 $\pm$ 11.9 |
| 4      | 5               | 5                   | 20                      | 0.5                 | -65.6 $\pm$ 9.5  | 96.3 $\pm$ 4.3   | 477.2 $\pm$ 28.9   | 119.3 $\pm$ 4.5 |
| 5      | 5               | 8                   | 30                      | 0.1                 | -21.2 $\pm$ 5.6  | 106.6 $\pm$ 13.7 | 358.4 $\pm$ 17.9   | 153.3 $\pm$ 4.2 |
| 6      | 5               | 12                  | 10                      | 0.3                 | -43.5 $\pm$ 13.3 | 83.3 $\pm$ 5.2   | 403.6 $\pm$ 14.4   | 77.0 $\pm$ 2.4  |
| 7      | 8               | 5                   | 30                      | 0.3                 | -92.3 $\pm$ 6.4  | 122.5 $\pm$ 5.9  | 1240.1 $\pm$ 55.3  | 88.4 $\pm$ 3.2  |
| 8      | 8               | 8                   | 10                      | 0.5                 | -94.4 $\pm$ 3.6  | 109.6 $\pm$ 5.1  | 1320.7 $\pm$ 24.5  | 89.9 $\pm$ 2.6  |
| 9      | 8               | 12                  | 20                      | 0.1                 | -93.1 $\pm$ 1.5  | 174.4 $\pm$ 12.2 | 882.3 $\pm$ 37.8   | 149.8 $\pm$ 4.8 |

<sup>a</sup> electrodeposition time of PB

<sup>b</sup> ratio of bound ferrocene probes/glucose oxidase

<sup>c</sup> volume of GOx-Nafion solution applied for membrane casting

<sup>d</sup> Nafion percentage in the GOx-Nafion solution