

Supporting Information

Scalable 3D Photobioelectrodes made of Reduced Graphene Oxide combined with Photosystem I

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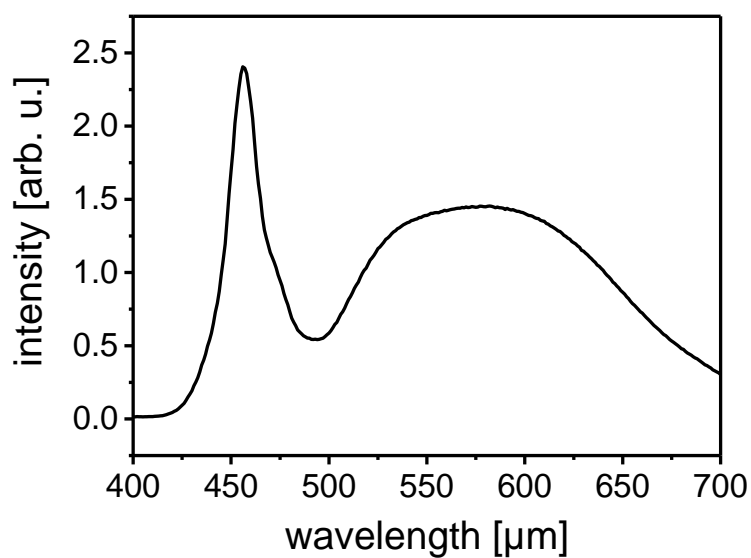


Figure S1: Light emission intensity of the light source used for photo measurements.

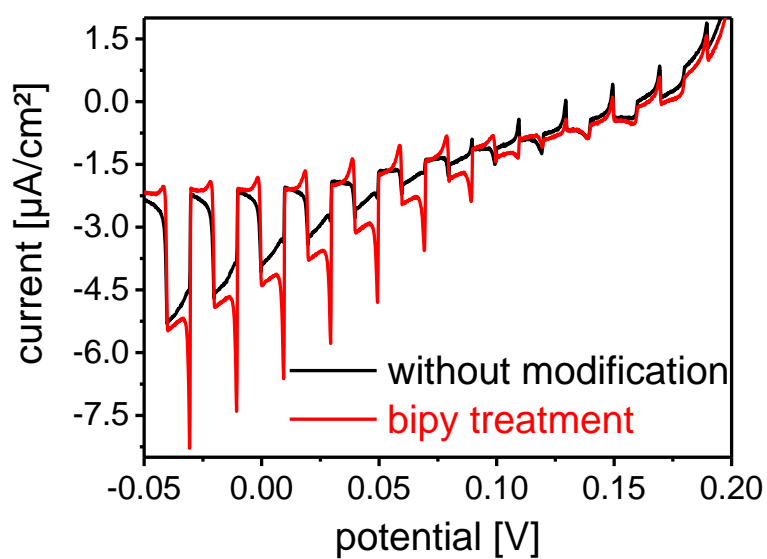


Figure S2: Chopped-light-voltammetry experiments for 3D rGO (6 spin-coating steps) electrodes with and without surface modification by bipyridine before protein immobilization (measured in 5 mM PPB pH 7, scan rate 2 mV/s). Incubation of both electrodes with 30 μ M PSI (100 mM PPB pH 7) and 1 mM cyt *c* (5 mM PPB pH 7) for 3 min each.

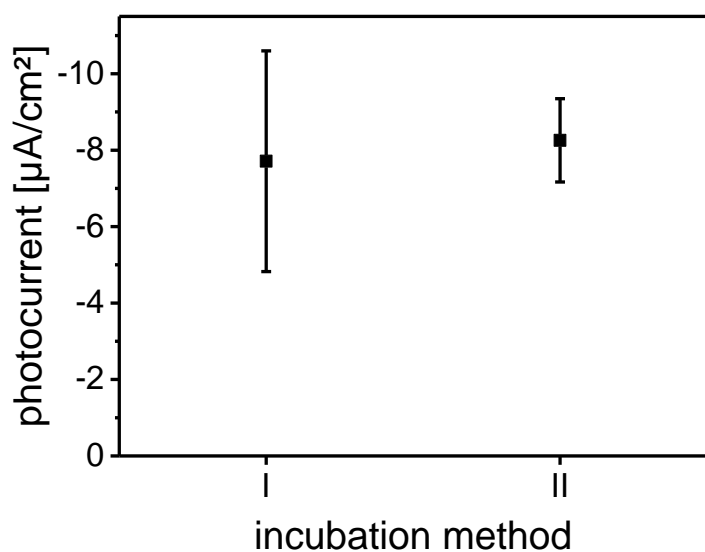


Figure S3: Comparison of mean value (black squares) and standard deviation (error bars) of the photocurrent of photobioelectrodes prepared with two different protein immobilization processes measured with 3 and 4 electrodes, respectively. (I) sequential incubation of the 3D rGO electrode with first 30 μM PSI (100 mM PPB pH 7), then 1 mM cyt *c* (5 mM PPB pH 7) for 3 min each; (II) incubation with a mixture containing 15 μM PSI and 0.5 mM cyt *c* (50 mM PPB pH 7) for 3 min. The photocurrent was measured at -0.15 V vs. Ag/AgCl in 5 mM PBB pH 7.

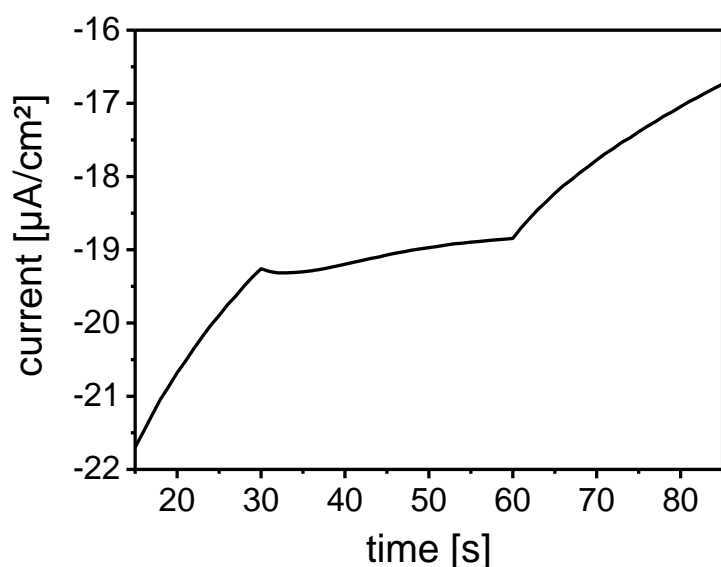


Figure S4: Photocurrent measurement of a 3D rGO electrode prepared by 12 spin-coating steps. The electrode was prepared without immobilizing PSI but with 0.5 μM cyt *c* for 3 min. Light was switched on at 30 s and switched off at 60 s, applied potential -0.15 V vs. Ag/AgCl, 5 mM PBB pH 7.