Supporting Information

Signal Amplification for Electrochemical Biosensing Using *Amplification-by-Polymerization*

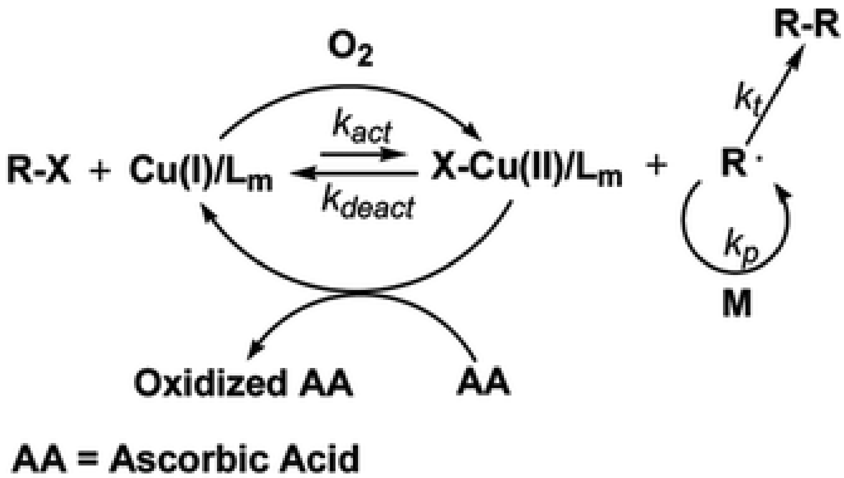
Yafeng Wu[1,2], Songqin Liu[2,*], and Lin He[1,*]

[1]Department of Chemistry, North Carolina State University, Raleigh, NC 27695, USA

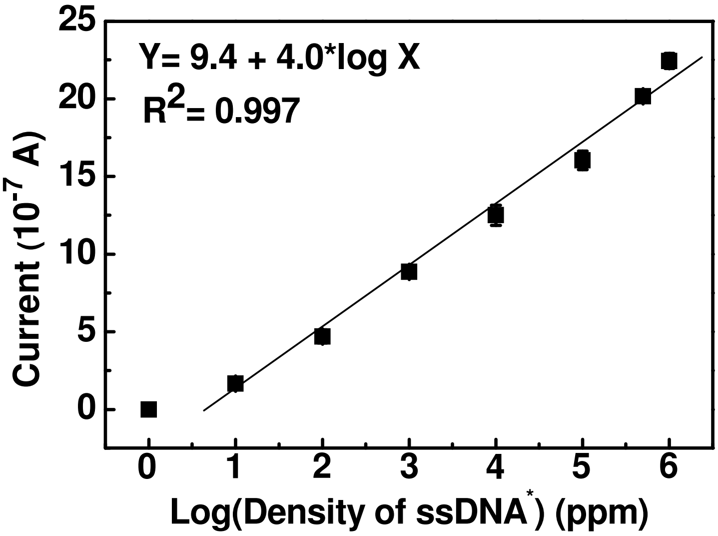
[2]School of Chemistry and Chemical Engineering, Southeast University, Nanjing, 210096, P. R. China

Corresponding Author: Lin_He@NCSU.EDU, 919-515-2993 (Tel), 919-515-8920 (Fax). liusq@seu.edu.cn, 86-25-52090613 (Tel).

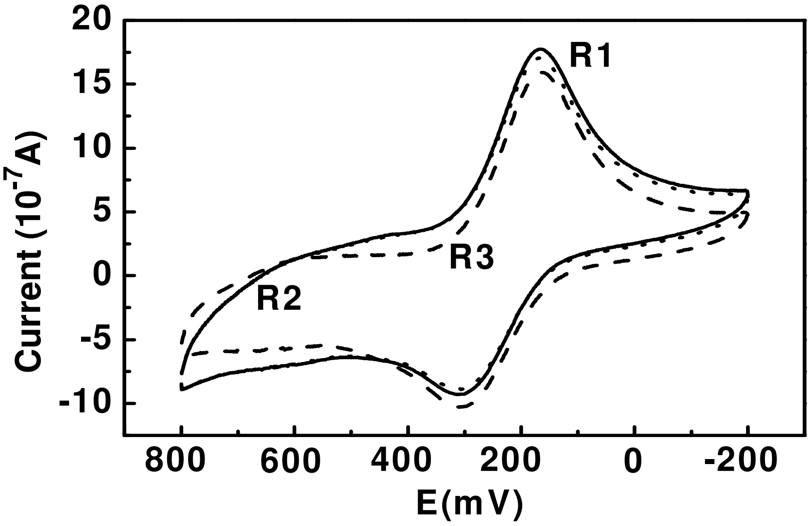
Supporting Information Scheme 1. Polymer grafting in AGET ATRP using ascorbic acid as the reducing agent.[21]



Wu, et al, "Electrochemical Sensing …" Supporting Information Scheme 1.



Supporting Information Figure 1. Quantification of the surface density of ssDNA*. ssDNA* was pre-mixed with the unmodified ssDNA of the same sequence at various ratios from 10 ppm to 100% while the total DNA concentration was maintained at 1 μM. The linear fitting was plotted using all data points except the (0, 0) point.



Supporting Information Figure 2. Reproducibility of polymerization-assisted biosensing in detection of DNA hybridization. The electrodes were prepared on three separated days following the protocol described in the experimental section. Cyclic voltammetric curves were obtained in 0.1 M $HClO_4$ solution at a scan rate of 100 mV s^{-1}.