

Cytochrome c/silver nanoparticle hetero-layer film to enhance electrochemical signal for information storage device

윤진호¹, 최혜규², 민준홍³, 최정우^{1,2,†}

¹Department of Chemical and Biomolecular Engineering, Sogang University;

²Interdisciplinary Program of Integrated Biotechnology, Sogang University; ³School of Integrative Engineering, Chung-Ang University

(jwchoi@sogang.ac.kr[†])

In this research, silver nanoparticle is introduced to cytochrome c layer to enhance electrochemical signal. Electrochemical signal enhancement of biomolecules is essential to acquire the enhanced memory property. The hetero-layer film composed of cytochrome c and silver nanoparticle was fabricated on Au substrate via chemical linker. The electrochemical property investigation of hetero-layer film was verified by cyclic voltammetry (CV) and surface topology of film was investigated by atomic force microscopy (AFM). Finally, to verify enhanced memory function of fabricated film, chronoamperometry (CA) was used. From experimental data, the fabricated hetero-layer film showed the enhanced electrochemical-signal and memory function compared to cytochrome c homolayer without silver nanoparticle. Acknowledgements: This work was supported by Samsung Research Funding Center of Samsung Electronics under Project Number SRFC-MA1401-04