DNA-based Information Storage Device Consisting of ssDNA/Cu Bilayers

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We proposed and developed the DNA-based information storage device that comprises of ssDNA/Cu heterolayers on Au Electrodes. A thiol-modified single strand DNA was immobilized on Au electrode by covalent bonding. And then, copper ion was chemically adsorbed on external structure of ssDNA. The fabricated DNA layer was confirmed by SPR and Raman spectroscopy. We measured the redox properties of each ssDNA/Cu molecules by CV experiment and established a 2-stage information storage system by CA. In the near future, DNA-based information storage device will provide the bioelectronic device.

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