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Abstract
In this study, Nickel hexacyanoferrate (NiⅡHCF) and Cuprous hexacyanoferrate (CuIHCF) which behave as electron-transfer mediators were employed to modify the carbon paste electrodes (CPEs), there by we can manipulate at lower operating potentials for detection of H2O2 and glucose. Their performance and characteristics were tested at reduction potential of －0.20 V (vs.Ag/AgCl) and compared.

The NiHCF-modified CPE, with 0.5 cm2 geometric surface area, reveals that the detection limit is 0.01 mM H2O2, a linear relation exists in the range of 0.01?3.185 mM H2O2, with a correlation coefficient (R2) 0.998 and its sensitivity is 0.204 mA/cm2-mM H2O2. As for the detection of glucose, the detection limit is 0.02 mM, linear range is 0.02?1.9 mM, R2 is 0.9996 and sensitivity is 24μA/cm2-mM Glucose. When the CuIHCF-modified CPE, with 0.25 cm2 geometric surface area, was employed, the experimental results reveal that the detection limit of 0.01 mM H2O2 (S/N=3), linear range of 0.01?3.51 mM H2O2, R2 is 0.998 and sensitivity is 0.4182 mA/cm2-mM H2O2. For the detection of glucose, the detection limit is 0.02 mM, linear range of 0.02?2.54 mM, R2 is 0.9997 and sensitivity is 46.02μA/cm2-mM Glucose.

From these comparison, we see that the CuIHCF-modified CPE behaves a better capabilit as a amperometric biosensor for detecting the biological substrates, so it is worthwhile to further improve its performance for the future practical applications.
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