

## Enhancement of Glucose Sensing Behavior of Cobalt Tetraphenylporphyrin Thin Film Using Single-Wall Carbon Nanotubes

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We have developed a glucose biosensor based on single-wall carbon nanotubes (SWCNTs) and cobalt tetraphenylporphyrin (CoTPP) thin film using glucose oxidase (GOx). In this work, a plasma-polymerized thin film of CoTPP was prepared on indium tin oxide (ITO) electrodes and we examined the electrochemical biosensing ability of GOx-immobilized CoTPP/SWCNT/CoTPP/ITO electrodes towards glucose. Cyclic voltammetric (CV) methods were used to investigate the electrochemical behavior of these electrodes. The effect of radio frequency (rf) power of plasma for the deposition of the CoTPP polymer on glucose sensing was also studied, and it was found that the sensitivity of these devices increases with decreasing plasma power. Our glucose biosensor based on CNTs shows high sensitivity towards glucose, which promises the application of these devices as glucose biosensors.

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