

## Preparation of gold nanoparticles deposited electrode using electrochemical deposition for an enzyme electrode

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The use of nanoparticles of different metals has been suggested as a promising criterion for the fabrication of highly active electrodes for many electrochemical applications. There are several methods for preparation of nanoparticles, among them, the electrochemical deposition method is more attractive in electrode modification by facilitating the electron transfer and improving the analytical sensitivity. Gold, a less expensive and environmentally benign noble metal in comparison with other metals, has been receiving increased attention as a novel catalyst material. Especially, the use of gold nanoparticle (AuNP) is playing an increasing role for the preparation of biosensors due to large surface area and conductivity. In this study, AuNP deposited electrodes are prepared by the electrochemical deposition, especially double-pulse technique. In order to optimize the preparation method of AuNPs, which is applied to enzyme electrode, the effects of potential, time, and concentration of gold colloid solution were investigated. From the results, it was known that the particle size and density could be controlled by electrodeposition method.