

The effects of dopamine concentration on optical fiber sensor

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Recently Parkinson's disease, one of the brain disease types, is generally known for an incurable disease that is related to amount of Dopamine. Normally, a parkinson's patient is prescribed dopamine at everyday 1~100 mg/day (1~10mM). In this experiment chitosan-gold nano shell on optical fiber has been used for analysis of dopamine. When chitoan and gold were compounded by ionic interaction, the chitosan-gold nanoshell was obtained uniformly. For dopamine coating onto the chitosan-gold nanoshell that nanoparticles was attached on optical fiber, surface of optical fiber was reformed with APTMS and Glutaradehyde for a reaction with the optimal temperature and pH control. The optical fiber surface property was analyzed by contant angle apparatus. The sensing characteristics of optical fiber were checked with dopamine concentration change. Transmission Electron Microscope(TEM), Scanning Electron Microscope(SEM), Atomic Force microscope (AFM) were used to analyze for the experiment.