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Paper electrodes

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In general, glucose sensor is fabricated on polymer substrate such as polycarbonate and polyvinyl chloride. These substrates are expensive and hard to decompose in the nature. In this study, we develop a carbon interdigitated electrode on paper substrate which is used for the measurement of glucose in human blood. By the method of Cyclic Voltammetry, qualitative and quantitative analysis could be easily obtained by our sensor. With high concentration, the measuring current signal will be enhanced. By observing the change of measuring current, the electrode can distinguish the different concentration of glucose in human blood. The electrodes are fabricated by screen printing technology and measured by LCR meter and electrochemical impedance analyzer (IM6-ex) to analyze the character of capacitance and impedance. These disposable electrodes are design in interdigitated form and easily fabricated with lower price and provide better sensitivity in measuring than traditional electrode. Besides, the electrodes on paper can provide the economical superiority and also be decomposed in the nature quickly without any pollution. By this cheap and paper-made sensor, medical researcher can sense the glucose with low cost and without produce extra waste.

Biography

P.J. Chen is a MS student of Electrical Engineering in National Central University, Jung-Li City, Taiwan. He received the BS degree in electrical engineering from Chang Gung University, Jung-Li City, Taiwan. His current research interests include biosensor, biomedical signal processing, micro-processor and C programming.

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