

一种低噪声的生物微传感器CMOS读出电路研究

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摘要：

为提高生物微传感器的探测灵敏度，设计了一种低噪声的生物微传感器CMOS读出电路，提出了一种新型的相关双采样（CDS）电路，对读出电路的噪声进行抑制。在 $0.6\mu\text{m}$ CMOS工艺下，用Spectre仿真器对该电路进行了模拟，仿真结果表明，采用相关双采样的CMOS读出电路使传感器的输入输出转换具有良好的线性关系。

关键词：生物传感器；恒电位仪；相关双采样；读出电路

Study of a low noise CMOS readout circuit for micro biosensor

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Abstract:

A CMOS readout circuit for biosensor that used a new Correlated Double Sampling (CDS) circuit was designed. The CDS circuit makes biosensor possible to obtain high sensitivity and low noise features. Simulation was carried out on a $0.6\mu\text{m}$ CMOS process by Spectre simulator. The simulation results showed that a good linear relation between input and output of the biosensor has been obtained by using CMOS readout circuit based on CDS.

Keywords: biosensor; potentiostat; CDS; readout circuit

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