

Bio-Sensing and Monitor System Design by Integrating Replaceable Micro
Array Probes and Amplifier with an Wireless Active RFID Tag

林博威, 林君明

Communication Engineering

Engineering

jmlin@chu.edu.tw

Abstract

This research provides a bio-sensing and monitor system, which integrates replaceable flexible non-fragile bioprobe, Thin-Film-Transistor (TFT) amplifier, as well as an active RFID tag, such that the new wireless device can improve the signal-to-noise (S/N) ratio and impedance matching problems. Besides, the bio-probe device can be disposed to conform to the profile of a bio-body and to improve the electrical contact property. The detailed device fabrication and testing processes are given, the result of probe resistance is 2.7 K Ω , and the monitoring range of the wireless RFID system is 15m, which is very useful for remote monitoring.

Keyword : bio-sensing probe; active RFID tag; Thin-Film-Filmtransistor(TFT); signal-to-noise ratio; Photolithography And Etching Processes (PAEP); Lift-Off-Resist (LOR)