A FPGA-based Real-time Diagnosis for the Compartment Syndrome

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ABSTRACT

The purpose of this research is to apply Field Programmable Gate Array to detect compartment syndrome. The study ’ s results show that applying FPGA enhances the accuracy of the measurement and owes many advantages, such as low cost, portable small-sized shape, and so on. In this study, we use the method of invasion. First of all, the injection in the body helps to release the liquid in the tissue out of the compartment. Then we used a pressure sensor, A/D converter, VHDL, and displayer to complete the detection and measure the pressure from the compartment. According to the results of this experiment, this instant detection system can assist doctors diagnosing compartment syndrome effectively and accurately.

Keywords : Compartment Syndrome ; Sensor ; Pascal ’ s law ; FPGA

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