

A RESEARCH ABOUT CREATING SPECTROMETER USING MICROCONTROLLER AND LED

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Abstract: Nowadays, spectrometer is used widely in different fields. Particularly in medical field, spectrometer is used in testing machines which have highly accurate, convenient and quick result.

In my graduation paper, I'd like to mention the method in creating a basic spectrometer. It is designed in the graduation paper using microcontroller PIC18F2550, light source is a system including three LED lights with red, green, blue color and light sensor used is photodiode BS120. An outstanding advantage of spectrometer designed in graduation paper is support USB communication. Thus, it is easy and convenient to connect with a computer and to send the data with high speed. Spectrometer designed is applied in measuring glucose concentration in urine and able to develop the apply for other analyzing systems such as lap on chip system.

Keywords: *Spectrometer, PIC18F2550, USB communication*