ABSTRACT

Peak flow meters commonly still use mechanical system, so error rate of reading is high. Therefore, development of digital peak flow meter is done by using sensors, because there's no proper sensor for the peak flow meter module. Purpose of this study is to develop simplest, non-invasive to objectively monitor airway function using peak flowmeters. Contribution of this research is to find out if MPX5100GP pressure sensor can be used to measure airflow in peak flow metertools. This achieved by creating peak flow meter by using pressure sensor to measure airflow. Module designed using the MPX5100GP sensor. Sensor has pressure range of 0-100 Kpa to detect patient breath. This module equipped with a display facility using TFT Nextion to display results of examination. In addition to display, there's also data storage by using SD Card to store results of the examination as well as printer to print test results for further diagnostic purposes. In this study module has been tested and has highest error rate 4.21 % and lowest 0.50 % against comparison tool. From this study, it can be concluded that MPX5100GP pressure sensor can be used to determine peak expiration value of lungs. Furthermore, this development can be used for checking PEFR values that test results can be displayed in real time on the nextion TFT, stored in a micro SD Card in txt form can be processed on PC to produce graphics and can be printed immediately because system has been equipped with a printer.