Abstract

The goal of this study was to detect glucose levels in the blood using a non-invasive method through human mouth breath. In patients with type 1 mellitus generally have low salivary levels which can cause bad breath or called Halitosis. The method used in this study is using breath sensor in the form of MQ-4 and Figaro TGS-2602 on human mouth breath to get results in the form of hydrogen sulfide (H2S) and methane (CH4) from a person's breath. The results will be obtained in mg / dl after the data is obtained by a sensor with a filter the last lowpass was processed using a machine-learning algorithm in the form of K-Nearest Neighbor with the Regression classification method. The results of the 5-diabetes mellitus sample test data and 40 diabetes mellitus training data can detect glucose in the blood with an accuracy of 80% and will be compared with previous research. Sample 40 training data was taken from several patients who had p diabetes mellitus and non-diabetes mellitus disease using glucometer with 95% accuracy rate. This system is expected to provide a solution for people with type 1 diabetes mellitus for someone who suffers from the disease

Keyword: **K-Nearest Neighbor, MQ-4, Figaro-TGS2602, Regression, Lowpass**