

## ABSTRAK

*Pemeriksaan kadar gula darah pada diri seseorang biasanya dilakukan tes urine dan juga memakai alat Glukometer dengan cara menusuk ujung jari tangan seorang pasien memakai jarum. semakin berkembangnya sistem sensor gas terutama sensor gas TGS 822 dan MQ 138 dapat digunakan untuk mendeteksi senyawa Aseton dan Alkohol dari gas buang pernafasan. Pada penelitian ini menggunakan sensor gas MQ 138 dan TGS 822, hasil deteksi kedua sensor diproses menggunakan jaringan syaraf tiruan (JST) metode Backpropagation. Berdasarkan hasil penelitian bahwa sensor gas TGS 822 dan MQ 138 mampu mendeteksi kadar gula darah melalui gas buang pernafasan dengan metode Backpropagation dengan memperhitungkan suhu dan kelembaban mempunyai akurasi rata-rata pendeteksian 96,53 % atau mempunyai deviasai rata-rata 3,47 % dibanding pengukuran dengan menggunakan Glukometer.*

*Kata Kunci : Sensor gas, gas pernafasan, kadar gula darah, Backpropagation.*

## ABSTRACT

*Checking of persons' blood glucose level is usually done by urine test and also using a glucometer by piercing the patient's fingertip using needle. The development of the gas sensor system especially TGS 822 and MQ 138 can be used to detect acetone and alcohol from expiration gas. TGS 822 and MQ 138 gas sensor were used in this study. The result of both detection sensor were processed using artificial neural network (ANN) Backpropagation method. Based on the research, it can be seen that the gas sensor of TGS 822 and MQ 138 were able to detect blood glucose levels through the expiration gas with Backpropagation method considering the temperature and humidity having a detection average accuracy of 96.53% or mean deviation of 3.47% compared to the measurements using glucometer.*

*Keywords: gas sensors, gas breathing, blood glucose levels, Backpropagation*