

ABSTRACT

Psychological conditions are influenced by emotional and cognitive stress experienced by humans. This situation attacks the human cognitive level which can cause mental and psychological damage which can indirectly affect brain performance. To meet these objectives, the method applied must minimize inconvenience to everyone, be efficient, and accurate. EDA is the solution to this problem, because the detection process is non-invasive or without damaging human skin.

This tool will detect calm and distress conditions in humans based on electrical conductance on the skin which will produce a signal containing SCL and SCR components which are sampled with a frequency of 10 Hz and a resolution of 10 bits, then processed on a PC using Matlab including deconvolution, FFT, and extraction. feature. Furthermore, these signals are identified to determine changes in calm and distress conditions that occur in the subject during the 5 minute monitoring time.

From measurements using the GSR sensor, a higher electrical conductivity value was observed in the distress condition compared to the calm condition because the higher the conductivity of the skin, the higher the level of distress experienced by using feature extraction including MSC, MASC, INSC, ILSC, and F2SC. Of the 5 feature extractions, MSC feature extraction will be used because it has the most significant result in this study, which is 0.79. The range of electrical conductance values of the skin using feature extraction for men in calm, distress, and calm conditions after Quizizz work is 0.0840 ± 0.2562 ; 0.14 ± 0.2832 ; 0.2357 ± 0.2586 and in women it is -0.0460 ± 0.2419 ; 0.0408 ± 0.3033 ; 0.01034 ± 0.2834 .

Keywords: *Psychological, Wearable Device, Electrodermal Activity (EDA), Galvanic Skin Response (GSR), Healthcare, Exosomatic.*