

ABSTRACT

The feet are an important part of the human body, whose function is to carry out movement, movement, activity and support body weight. The ability of the feet to support body weight and body stability when moving, one of them is a therapist by the morphology of the soles of the feet. This morphology is classified into three types of feet, namely normal feet, flat feet, and high arches. The shape has a linear appearance with the type of human foot posture, namely normal leg posture, suspension, and pronation. In the field of medical rehabilitation medicine, the analysis and diagnosis of the soles of the feet is one of the things needed to provide footwear comfort solutions for owners of abnormal feet. This is done because flat feet or high arches tend to cause a condition that is easily tired when on the move. In addition, the balance becomes unstable when doing high activities such as running. This research system is made as comfortable and simple as possible to use by humans who see changes in the pressure of their feet at the point that is observed while doing certain activities. The system uses a piezoelectric sensor as the main component. Furthermore, the value of the pressure distribution obtained from each point is processed and displayed on a two-dimensional foot image. The measurement results obtained show that the shape of the foot and the value of the comparison when stepping is obtained on the soles of the feet from all test scenarios carried out for the shape of the normal foot of the foot between 0 to 0,000298468 Pa while making the shape of the foot flat foot between 0 to 0.000294872 Pa.

Keywords: Pressure distribution, feet sole, piezoelectric sensor, *in-sole system*