Single Layer Carbon Loaded Polyethylene Film for Foot Pressure Monitoring

Ramya P. [1], Padmapriya B. [2], Poornachandra S. [3], Arumugaraja M. [4]

[1]Department of Biomedical Engineering, PSG College of Technology, Coimbatore,641004, India
[2]Department of Biomedical Engineering, PSG College of Technology, Coimbatore, India
[3]Department of Electronics & Communication Engineering, Excel Engineering College, Komarapalayam, India
[4]Department of Biomedical Engineering, PSG College of Technology, Coimbatore, India
E-mail: ramya.ece.snsce@gmail.com

Abstract

Arthritis is an intense or unremitting irritation ailment that influences the joints, connective tissues, muscle, ligaments, and stringy tissue. It is a main cause of inability among individuals more than 50 years old in developed country, also it tends to strike amid the most beneficial long periods of adulthood regularly causing torment and deformation. It offers ascend to tremendous healthcare expenditures and loss of work. With the existing system, there are different size of FSR sensors used for foot pressure analysis. A sole with major pressure points (2 - 9) was designed to analyse the foot pressure but unfortunately, the foot size differs from one person to another person. So, the single sole design setup cannot be used for all the persons. In the proposed method, a sensor array designed with single layer carbon loaded polyethylene film was designed and each sensor with sides 21 mm x 21 mm to form the 7x3 array pattern of foot pressure pad. By using the array foot pressure pad, we can analyse the pressure points throughout the pad. Each of the sensors in the array is having the gap of 5mm. The output analog signal acquired and this electrical signal may result in pre-emptive of the knee problem.

Keywords: Piezo resistive, Foot pressure monitoring, velostat, pressure pad