

STICK HANDLE FOR GALVANIC SKIN RESPONSE (GSR) AND TEMPERATURE MONITORING

Description:

Demographic change in developed societies has increased the number of older people who need a cane to walk. On the other hand, the galvanic response of the skin and temperature are two variables linked to the emotional response and other states such as stress or fatigue. The implementation of conductivity or galvanic skin response (GSR) and temperature sensors integrated in the handle of a cane is proposed. Although the acquisition and processing electronics are shared, measurements are taken by multiple sets of transducers distributed on the handle, to obtain reliable results. The integration of GSR and temperature sensors in the handle of the same allows to follow the state of these people and helps to protect them against situations of supervening fatigue or diseases of a different nature. Compared to other options, the integration in the handle of a cane monitors the critical moment in which the user moves, and at the same time increases adherence to use, as it is a device that is needed, in any case, and it is not perceived as a foreign object or difficult to handle.

Keywords:

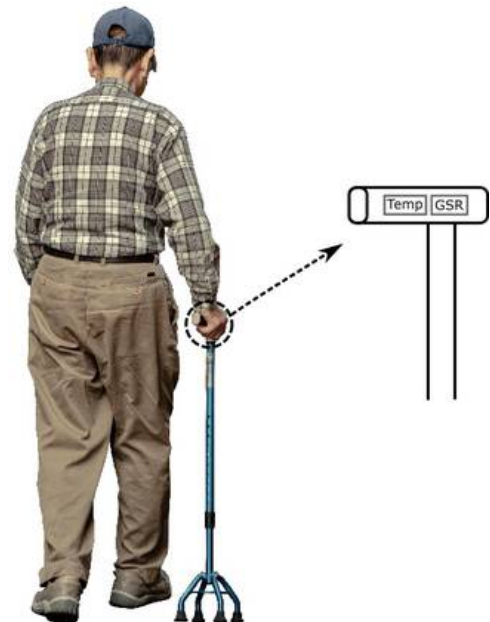
[Sensors](#), [Monitoring](#), [Walking Stick](#), [Wearable](#), [Telemedicine](#)

Sectors:

[ICT](#), [Electronics](#), [Health](#), [Engineering](#)

Areas:

[Hardware / Devices / Components](#), [Electronics](#), [Health Sciences](#),
[Instrumentation](#), [Quality of life](#), [Technological Improvements](#)



Advantages:

There are “wearable” devices such as bracelet or watch that incorporate GSR and skin temperature sensors. Compared to these devices, the present proposal has the following advantages: The use of a cane has the advantage of allowing the measurement of variables related to walking (“gait”), which has been shown to be related to the state of health. It also increases adherence, since people who need the cane will be monitored without the need for additional devices, and they will also be monitored in the most critical moments in which movements occur and there is a risk, for example, of falls. People with dementia often remove their bracelets and watches, which they cannot do with a cane. The aging of the population in advanced societies makes it advisable to develop remote health monitoring devices that are easy to use.

Uses and Applications:

Telemedicine sector applied to the elderly, and in general, people with mobility problems, users of a cane or crutch. The device can be for home use or for use in residences or hospitals.

Patent Number: ES1289780Y

Applicants: Universidad De Málaga

Inventors: Andrés Trujillo León, Fernando Vidal Verdu, Julián Castellanos Ramos

Filing Date: 16/12/2020

Protection Level: National (Spain)

Processing Status: Spanish utility model