



Transferring Electromyogram Signal between Limbs

Ehab A. Hamed, Mohamed Atef, Mohamed Abbas, R. R. Gharieb

Abstract:

This paper introduces a sensing and stimulation system to transfer the electromyogram (EMG) signal from one limb to another, aiming to enable self-electro-physical therapy. The presented technique depends on sensing EMG signal from one limb muscle and, simultaneously, stimulating the corresponding muscle in the other limb by this signal. The technique has been implemented on a standalone cheap microcontroller. The sensing and stimulating circuits have been implemented using off-shelf components. The delivery of the stimulating signal has been done noninvasively through surface electrodes.

Keywords:

Electromyogram, EMG, Electrical Stimulation, Rehabilitation, Peripheral nerve injury, Electro-physical therapy

Published In:

Fourth International Japan-Egypt Conference on Electronics, Communications and Computers (JEC-ECC) , NULL , 141-144