

Realization of a device for detecting the electrical activity of the brain and the acquisition of the EEG electroencephalogram signal

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The brain has always been the master of all human organs, being responsible for all voluntary or involuntary activities. For that, the brain is a subject of a many research such as neurobiology, neurology, psychiatry, psychology, linguistics, anthropology... Among the many methods of exploring the brain, the basic technique is EEG electroencephalography.

The electroencephalogram (EEG) is the recording of the electrical activity of the brain performed on the surface of the head through non-invasive or even invasive electrodes.

From where objective of our thematic is to realize a device that can detect the electrical activity of the brain for diagnostic purposes. Our work rallied two distinct steps, where the first is the electronic design of the EEG device including all its blocks starting with the sensor, a shaping circuit from which the acquisition as well as the recording of the EEG signal are assured by the Arduino card.

The second step consists of processing of the signals recorded on a Matlab programming environment for the purpose of diagnostic assistance.

Keywords: Electroencephalography, brain, EEG signal, arduino card, Matlab

Topics

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Primary author: Dr BADIR BENKRELIFA, Lahouaria (University Center BELHADJ BOUCHAIB, Ain-Temouchent, Algeria;)

Co-authors: Dr BELAID, Boumedyen (Abou-Bekr BELKAID University, Tlemcen, Algeria;); Dr SEKKAL, Mansouria (University Center BELHADJ BOUCHAIB, Ain-Temouchent, Algeria;); Mr TOUNGARA , Cheickna (University Center BELHADJ BOUCHAIB, Ain-Temouchent, Algeria;); Mr DIARRA , Adama dit Konimba (University Center BELHADJ BOUCHAIB, Ain-Temouchent, Algeria;)

Presenters: Dr BADIR BENKRELIFA, Lahouaria (University Center BELHADJ BOUCHAIB, Ain-Temouchent, Algeria;); Dr BELAID, Boumedyen (Abou-Bekr BELKAID University, Tlemcen, Algeria;)

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