

ABSTRACT

When listening to certain music or sounds sometimes humans feel different emotion and response, this response arises from the stimulus from the music or sound. By listening music while sleeping will affect a person's sleep. To classify the brain activity it required process of measurement of brain wave activity. In this final project conducted analysis of brain activity by using EEG based on people who sleep while listening music by using EEG as an instrument to capture brain signals. EEG is a device that can capture electrical activity in the brain and inform conditions such as emotional, fatigue, health and concentration levels.

In this final project has been designed a system to classify the sound condition of sleep wwith given music stimulus based on delta and theta signal through EEG. Where there are 3 conditons. Where each condition there are 30 data in each channel. Before classify, it required preprocessing, Discrete Wavelet Transform as feature extraction and K-Nearest Neighbor (KNN) for classification.

The test result show that the best channel is on AF8 channel on the delta signal with 96% accuracy, 29 data from 30 data can recognize the system well and theta signal with 93% accuracy, 28 data from 30 data can recognize the system well.

Keyword : *Electrocephalography, Discrete Wavelet Transform, KNN, Music Stimulus*