

## **ABSTRACT**

*Currently, mental health has become a particular concern in the health field. Because, by having a healthy mental, people will have a positive energy to undergo their daily activity. Mental health is strongly influenced by the state of the brain, therefore, to have a good mental health, the health of the brain should be maintained. Binaural Beat is a "sound effect" that can build up certain emotions on someone through binaural frequency that are made. With Binaural Beat, we can train people's brain to have a good mental health so that the positive energies can be formed. In this thesis, writer will do a research on the design of engineering systems of the brain wave frequencies through binaural frequency which aims to increase the positive energy for the audience. Binaural frequency will be tested directly to someone to observe their brain wave activity through EEG test (Electroencephalography), and a questionnaire will be distributed to the respondents to define the effect from before and after of the binaural frequency from one week of use. This system successfully stimulates the respondents with the probability of being stimulated is 92.30% and took the average time of 6 minutes 28 seconds after the stimulation began for the respondents to be stimulated. This system managed to increase the positive energy of the respondent's daily emotional after 1 week of usage from 34.33% to 82.17%.*

*Keyword : Brain, binaural beat, binaural frequency, brainwave, EEG,*

*Positive energy*