

## **ABSTRACT**

The use of drugs for a long time can cause changes in the structure of the brain's performance. Changes in brain activity can be represented in the form of an EEG signal. This study aims at locating the features of the P300 signal and the more effective stimulus to generate the P300 signal. The EEG input data uses secondary data consisting of 40 male participants with an age range of 25 – 40 years. The data collection process contains a stimulus to generate a P300 signal and recording for 50 seconds using 19 channels and a 10-20 system. Data processing is carried out using a bandpass filter (3-30 Hz), noise removal using the ICA (Independent Component Analysis) method, and data processing in Matlab. The results of the study show that the P300 signal features can affect the formation of amplitude and latency. The more effective stimulus in generating the P300 signal for drug users is a similar stimulus shabu with an amplitude value of 18,3  $\mu\text{V}$  and a fast response latency of 252,9 ms.

**Key words:** EEG-P300, different shabu stimuli, similar shabu stimuli