ABSTRACT

The enamel rods every individual has different characteristics to each other. These characteristic underlying the identification or recognition of each individual. Enamel is coating the crown of teeth and it thickness is different in each region. Also enamel is the hardest tissue of the human body. So, the pattern of tooth enamel is very suiTabel to be identified in case of fire. Because the tooth enamel is heat-resistant up to 1000^{o}C. Different with DNA and fingerprint, there are fatty tissue, so that it can disintegrate when exposed to heat.

In this research, discusses about identification by comparing enamel rods in individual using Discrete Wavelet Transform (DWT) method and the classification is Self Organizing Maps (SOM). As well as the number of samples used were 10 incisivus teeth that were photographed with a special technique and the enamel rods that exist only in one-thrid from roots of the visible. When teeth was taken, it shouldn't have any fillings and caries, because it can be difficult to see the pattern of enamel rods. In this research using incisivus teeth because it has a large area than the other teeth and more easily found for the sample.

The result from process of research is an application based on Matlab that can be used to identify and compare the methods which is more efficient to use. Hopefully this research can help the dental forensic to identify the characteristic patterns of the enamel rods which belonged to each individual. The system of individual identification based on enamel rods have an accuracy 88.5*%.*

Keywords: *Enamel, Incisivus, Discrete Wavelet Transform (DWT), Self Organizing Map (SOM)*