# *ABSTRACT*

*Palm vein recognition is one of the biometric systems are recently developed. Palm vein is located inside the human body, so it is robust, difficult to be duplicated, and are not affected by dryness and roughness of skin. Therefore palm vein has high security and needs to be studied more.*

*Process of individual recognition using palm vein consists of several processes, they are ROI detection, preprocessing, feature extraction, and feature matching. These processes are related between them, one of the most important process is to determine the exact features that can be used universally throughout the data as a differentiator between individuals. Minutiae feature is a feature that is widely used in the case of fingerprint recognition systems and obtains a high accuracy values. In this study the crossing number algorithm is used to determine the minutiae feature consisting of bifurcation and termination which are applied to the palm vein recognition.*

*In the testing process, the palm vein data which taken from CASIA are scanned using a CCD camera and infrared light that has 940 nm in wavelength. The amount of data is derived 354 images taken from 59 individuals, consisting of 250 images are used as template and 50 images are used as test images taken from 50 individuals of them, while 54 images from the others is used as the image Impostor.*

*The results show that the best accuracy was 81.32% with a system using the method of maximum curvature on preprocessing, combine bifurcation and termination as features, and use the modified Hausdorff distance method when matching features. However, this technique is needed consistency ROI, therefore the detection of ROI still use visual verification.*

***Key*** : *Palm vein Recognition, Minutiae feature, Bifurcation, Termination*