ABSTRACT

The use of biometric systems as one system of identification has been growing rapidly, one of which is used is the palm of the hand. Palmprint is still relatively new biometrics, which has unique characteristics such as palmprint lines and stable. The uniqueness and stability of the tattoo is a powerful feature of each palm.

The design of palmprint identification system is using Phase-Only Correlation (POC). Usefulness of phase components in 2D DFT from the image allows us to get the excellent palmprint image matching. System simulation was conducted with the aid of software Matlab 2009b. The samples tested were then processed by acquisition based on image processing and the results will be identified with the help of POC. The output from this system is the palmprint pattern recognition and decision making appropriate to each of the palm of the hand that becomes an input.

Tests on this system are using band-limited POC. Band-limited POC produces a peak value of the correlation function associated with the similarity between two images. From the variant band-limited POC (BLPOC) that have been tested, including BLPOC without preprocessing (BLPOC), BLPOC with translation alignment (BLPOC + NP), BLPOC with rotation alignment (BLPOC + NR), and BLPOC with translation and rotation alignment (BLPOC + NP + NR), indicating that BLPOC + NR has the best accuracy because it has a value of 9,461% EER which is equivalent to 90,539% accuracy . Results were obtained from tests conducted on 30 eight times with the palm of the hand-making for each palm with a different time of collection.

Keyword: Biometric, Phase-Only Correlation, palmprint, 2D DFT