

## ABSTRACT

Personal authentication has grown rapidly in the past 3 decades after biometric system discovery. Biometric system is considered more effective for the purposes of personal authentication as its attached to the body, non-transferable and tend to be difficult to replicate. One region that newly developed in biometric system is finger knuckle.

Band-Limited Phase-Only Correlation (BLPOC) is the development of the POC method that can find the degree of similarity between the two images that are tested. POC method itself are Fourier Transform that converts the image pixel value from time domain to frequency domain. After that, the two images are combined producing cross-phase spectrum, then cross-phase spectrum normalized revealing final result known as degree of similarity between two images, shown as a peak. While high frequencies in BLPOC methods are not included in the calculation.

This study uses 400 greyscale FKP (Finger Knuckle Print) images, divided into 40 users where each user has 10 FKP images data. After testing and analyzing methods BLPOC apparently has enough potential to be used in biometric system, reaching 91.67% accuracy for genuine image cases and 96.84% for imposter image cases.

**Keywords:** *biometric system, Finger Knuckle Print, Band-Limited Phase-Only Correlation, Fourier Transform, peak.*