

## Abstract

About 10% couples of reproductive in the United States have difficult to conceive, about 30% of case are caused by women's problem, 30% men's problem, and both partners. The first step to detect the *Polycystic Ovary Syndrome* (PCOS) in women using ovary's image ultrasonography. Then, from this image can be found the woman's fertility rate, into the category PCO or Non-PCO, The proposed method using Gabor Wavelet and K-Nearest Neighbor (KNN). Gabor Wavelet used to feature extraction and K-Nearest Neighbor (KNN) used to classification. In this study, Data contains of 96 sample image, divide 58 training and 38 testing. From the results of testing the performance reached the highest accuracy 84.21% when using Gabor Wavelet 16 features and K-Nearest Neighbor (KNN) using distance type *cosine* and value of  $k = 1$  and  $k = 3$ . The fastest computing time reached 164.002 seconds when using Gabor Wavelet 16 features with *k-nearest neighbor* using *euclidean* with the value  $k = 3$ .

**Keywords:** *ultrasonography, gabor wavelet, k-nearest neighbor, polycystic ovary syndrome*