

## **ABSTRACT**

*This Final Project about detection of tuberculosis (TBC) and pleura effusion using co-insurance matrix gray level (GLCM) method and artificial neural network-backpropagation (ANN-BP). The disease has characteristics that can be identified from photos of lung X-rays.*

*The system developed consists of several parts, pre-processing system, feature extraction system and classification system. The pre-processing phase aims to improve the level of photos quality will be detected, furthermore the system uses resize and grayscale. Feature extraction phase aims to get feature of images uses GLCM and then will be classify uses ANN-BP.*

*The system has been developed, in the learning process uses 60 images, then the image will be classified in three conditions of pleura effusion, normal and tuberculosis, the image will be used as a network or net on ANN-BP. Before testing with a new image or test image, the will be train with 60 training data 60 and produced 100% for all conditions. Furthermore the system will be test with 60 new images or test data. The accuracy of testing phase will be compute with the true data defied the total data.*

*The accuracy obtained of the system about 100% for 60 training images, with each class 20 training images. The accuracy of the test image is 70% for 60% of the test image, with each class 20 test image, the effusion condition 85%, normal 75%, TBC 55%.*

*Keywords: Tuberculosis (TBC), pleura effusion, gray level coocurance matrix (GLCM), artificial neural network - backpropagation (ANN-BP).*