

## **ABSTRACT**

*The textile industry in Indonesia is one of the most influential industries in the national economy, which occupies the third rank with export value of 12.26 billion US \$. PT Buana Intan Gemilang is one of the textile industry that exports. To be able to compete then the quality of product need to be considered, hence required process of inspection. The inspection process at PT Buana Intan Gemilang is still done manually relying on human vision, which causes an imbalance between demand and inspection capacity. In addition, another major problem is because the inspection process is still done manually so the accuracy and consistency of the inspection process is still not good. This research has a purpose to be able to apply image processing in the inspection process and to know the factors that influence the inspection process with image processing. The method used is the Taguchi Approach Method to test the combination of factors affecting the inspection process using orthogonal arrays to determine the number of experiments performed with the combination of each factor. The result of the Taguchi method is the error rate and will be processed using the S / N and ANOVA Ratios, which with the S / N ratio will know which combination has the best resistance to the uncontrolled factors and with the ANOVA will know which factors have the most influence Great to the inspection process. The results showed that the factors that significantly influence the inspection process are light intensity 1300lx, camera distance 16 cm, camera resolution 1280x960 pixels, grayscale value 10, threshold value 0.3 and operator edge detection Sobel. ANOVA results show that the grayscale value is the most influential factor on the process of fabric defect inspection with image processing.*

**Keywords:** *Inspection Process, Image Processing, Taguchi Approach, Orthogonal Array, S / N Ratio, ANOVA*