ABSTRACT

Machine is the most important part in industry,manufacture, or in house. One of machine parts is the engine, in AC or DC. However, the engine sometimes is not working in good condition that make weakness. One of the reason is mechanical losenes, which low-hold in specific part, that make unbalance and misaligment. Vibration is the parameter of experiment.

In final project, to analyze mechanical loseness is used the *accelormeter* to detect vibration of AC engine and Discrete Wavelet Transform (DWT) as signal processing system. DWT decomposite vibration signal and clasify the data of DWT decomposition using Artificial Neural Network in condition, Normal and mechanical looseness (loss bolt). Matlab 2008a is used as signal processing software.

The performance of system can detect the vibration to identify 2 condition , the mechanical looseness (one bolted, two bolted, three bolted and boltless) and normal condtion (Full bolted) in AC engine. The system that implemented in final project can clasify condition of AC engine induction with average accuration 80%.

Keyword : *Vibration, Accelorometer, Discrete Wavelet Transform, Artificial Neural Network, Matlab 2008a*