



## ABSTRACT

*Heart sound recordings have the advantage compared to just listening to the heart with a stethoscope for a re-recording can be heard and analyzed the spectral and frequency. The main problem in the heart of the sound recording is the presence of noise. To analyze heart sounds requires special knowledge. Not all doctors can do very well. Therefore, it needs a good classification system so that the results truly objective and to avoid misinterpretation. Because the difference is very small heart sound classification is done by ANFIS.*

*Decision making is done by eliminating existing noise used db3 wavelet transformation level 2 with global thresholding methods, feature extraction using wavelet packet decomposition db1 level 8 to get details and approximation, classification is done by ANFIS with 2 inputs and one output with 5 membership functions. Thus, for 25 heart sounds made 25 ANFIS. Training data 25 cases of normal heart murmurs from <http://www.bioscience.org/atlas/heart/sound/sound.htm>.*

*Results of this system is able to classify the normal heart sounds and murmurs to noise levels between -48.586 dB for mitral regurgitation third heart sound to 26.699 dB for mitral stenosis murmur presystolic while for the case of coarctation of the aorta systolic murmur never be recognized. So that the ANFIS can be used to classify heart murmurs as a tool for the diagnosis of heart problems.*

*Keywords: ANFIS, heart murmur, noise, feature extraction, classification, wavelet transformation.*