

# Vibration for detection and diagnosis bearing faults using adaptive neurofuzzy inference system

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**Abstract:** The fault diagnosis of electrical machines is a primordial and necessary task in industry. The failure is unbearable because it causes, incontestably, decrease in production and increases cost repair. Induction motors are the most important equipment in industry, where reliability and safe operation is desirable, for maintenance, such as detection, and diagnosis of mechanical and electrical defects of electric drives. The several techniques are adopted and frequency analysis is the most widely used. Artificial intelligence techniques were gained popularity last decade's in numerous applications. The presented results show the detected and diagnosed, of the bearing faults of the induction motor, based on Adaptive Neuro-Fuzzy Inference System. The vibration analysis of the induction machine using the Artificial Intelligence Techniques, combining neural networks and fuzzy logic has been applied successfully. The designed ANFIS network shows about 99% accurate results as validated by Mat lab / Simulink simulation

**Keywords :** diagnosis, fault, vibration, bearing