Abstract

Fault diagnosis of the modern complex devices is one of the most important tasks in many application areas. Recently, it is found that, neural networks and fuzzy logic control have widely used for the diagnostic devices. Fuzzy logic systems provide high processing speed but lower computing power. While, the neural networks can achieve high computing power but slower convergence rate. Therefore, the proposed system introduces the fuzzy neural network fault diagnostic system for diagnosis the complex devices. The integration between the fuzzy logic and the neural network enables the diagnostic system to have the advantages of both of these techniques and overcome the limitations of each of them. The suggested system has been applied for diagnosis a production line of radiated surgery tools as a non-linear complex faulty system. The obtained results show that the proposed diagnostic system can diagnose the complex devices with more accurate and speedy results rather than the traditional diagnostic system. Therefore, it can be applied for the practical applications effectively.

References


**Index Terms**

Computer Science  
Artificial Intelligence

**Keywords**

Fault diagnosis  
Fuzzy Logic  
Neural Network