

عنوان مقاله:

Application of Data Mining in Condition Based Maintenance System, A Case Study using Oil Analysis and Case-Based Reasoning

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خلاصه مقاله:

Productivity is a key weapon for manufacturing companies to stay competitive in a continuous growing global market. Increased productivity can be achieved through increased availability. This has directed focus on different maintenance types and maintenance strategies. Increased availability through efficient maintenance can be achieved through less corrective maintenance actions and more accurate preventive maintenance intervals. Condition Based Maintenance (CBM) is a technology that strives to identify incipient faults before they become critical which enables more accurate planning of the preventive maintenance. CBM can be achieved by utilizing complex technical systems or by humans manually monitoring the condition by using their experience, normally a mixture of both is used. Although CBM holds a lot of benefits compared to other maintenance types it is not yet commonly utilized in industry. One reason for this might be that the maturity level in complex technical CBM system is too low. This paper will acknowledge this possible reason, although not trying to resolve it, but focusing on system technology with component strategy and an open approach to condition parameters as the objective is fulfilled. , this paper uses data mining techniques including association rules and neural network and classification, to survey technical components of a complete CBM system approach and by a case study illustrate how a CBM system for truck BENZ2628 fault diagnosis and prognosis can be designed using the Artificial Intelligence method Case-Based Reasoning and oil .analysis

کلمات کلیدی:

Maintenance, Condition Based Maintenance (CBM), Oil Analysis, Data Mining, Diagnosis, Prognosis, Artificial Neural Network, Decision Tree, Classification, Case- Based Reasoning (CBR), Decision Support System

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