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(57) Abstract :

Effective diagnosis of machine is predicted by real time modular monitoring system whose main focus is to forecast life span of the component /tool with high flexible capability of prediction. The proposed invention presents a two stage model based on back propagation neural network model of artificial intelligence, for real time prediction which monitors and validates life span of the tool. Parameters such as temperature, current, vibration, acceleration and cutting forces are utilized for forecasting tool wear from the analytic model. Process efficiency increases with effective assessment of tool wear rate such that tool replacement avoids any catastrophic event. Tool wear is predicted during turning of hardened steel by checking multilayer perceptron using artificial neural networks. Monitoring and prediction system of tool lifespan enhances the productivity of manufacturing unit based on the analysis of artificial neural networks

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