Abstract

Induction motor fault conditioning is desirable to increase machine's performance and efficiency by avoiding consequential damages in near future of testing. Vibration signals’
randomness prevents usage of any conventional methods for its analysis. Any non-conventional methods require extraction of different types of features and selection of features. This increases processing time of the whole conditioning system. In this paper, a different preprocessing technique, an extension to traditional approach, which uses basic statistical and frequency domain features, is used, hence reducing processing time. The preprocessing technique involves vibration signal denoising using wavelets and obtaining best trained data. Support vector machine classifier has been used for electrical and mechanical fault characterization. The effectiveness of the proposed method is proved through experimental results, and thus shown that a robust induction machine condition monitoring system has been produced.

Reference

3. Wavelet aided SVM Classifier for Stator Inter-Turn Fault Monitoring in Induction Motors by S. Das, Member, IEEE, C. Koley, Member, IEEE, P. Purkait, Member, IEEE, and S. Chakravorti, : Power and Energy Society General Meeting, 2010 IEEE, 25-29 July 2010
5. Application of MCSA and SVM to Induction Machine Rotor Fault Diagnosis by Ruiming Fang, Hongzhong Ma, Intelligent Control and Automation, 2006. WCICA 2006. The Sixth World Congress on,

Index Terms

Computer Science Communications
Key words

wavelet denoising  SVM

piezoelectric accelerometer