

# A summary of Vibration analysis techniques for fault detection and diagnosis in bearing

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**Abstract :** Bearing is one of the most critical components of rotating machinery. They are employed to support and rotate the shafts in rotating machinery. Therefore; any fault in the bearings can lead to losses on the level of production and equipments as well as the creation of an unsafe working environment for humans. For that reason, the bearing fault diagnosis has received considerable attention from the research and engineering communities in recent years. The purpose of this study is to review the Vibration analysis techniques and explore their capabilities, advantages and disadvantages in monitoring rolling element bearings.

**Keywords :** Vibration analysis, bearing Fault diagnosis, Fast Fourier Transform (FFT), Envelope Analysis (EA), Short Time Fourier Transform (STFT), Empirical Mode Decomposition (EMD)