

Defence Seminar

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Seminar Title	: Multiple Fault Parameters Estimation of an Active Magnetic Bearing Integrated Coupled–Rotor–Bearing System
Speaker	: Kuppa Sampath Kumar ( Rollno : 515id1003)
Supervisor	: Prof. Mohit Lal
Venue	: MS Team (Code: rcdqezu)
Date and Time	: 22 Jul 2021 (11:00 AM)
Abstract	: Abstract: Condition monitoring techniques have an important role in continuously running high-speed machines including jet engines, ship propellers, compressors, steam turbines and generators. Early detection and diagnosis of faults such as inherent unbalance, shaft bow/bent, misalignment, bearing, gear, rotor cracks and motor faults associated with these machines are the primary concern of researchers in the field. The excessive vibration generated at higher operating speeds due to these faults can be suppressed and controlled with the help of Active Magnetic Bearings (AMBs). AMB is a mechatronic product used in industries due to its excellent features such as no wear and tear, lubrication-free and frictionless operation due to the absence of mechanical loading. The present work mainly concentrates on the development of an identification algorithm to estimate fault parameters (inherent unbalance and misalignment) along with AMB parameters in an AMB integrated rotor-bearing-coupling system. The work carried out in this thesis mainly focuses on the modelling, analysis and estimation of fault parameters of an AMB integrated coupled rotor-bearing system. AMB is used as an agent to suppress the excessive vibration generated due to various faults present in the system. The faults considered in this analysis are coupling misalignment and inherent unbalance. The identification methodology developed has scope in the online condition monitoring of rotating machines.