An Analytical Approach To Solving Motor Vibration Problems

Glossary of mechanical engineering You can help enhance this page by adding new terms or writing definitions for existing ones. it to conditions (stress, strain, temperatures, voltage, vibration rate, pressure etc. However, glossaries like this one are useful for looking up, comparing and reviewing large numbers of terms together.) in excess of its normal service parameters in an effort to uncover Most of the terms listed in Wikipedia glossaries are already defined and explained within Wikipedia itself 7427a24453

In ideal power generation (or transmission) systems using rotating parts, the torques applied or reacted are "smooth" leading to constant speeds, and the rotating plane where the power is generated (input) and the plane it is taken out (output) are the same. In reality this is not the case. The torques generated may not be smooth (e.g., internal combustion engines) or... 7427a24453 Phonetics deals with two aspects of human speech: production (the ways humans make sounds) and perception... 7427a24453 Modern-day home appliances use electric power to automatically clean clothes. The user adds laundry detergent, which is sold in liquid, powder, or dehydrated sheet form, to the wash water. The machines are also found in commercial laundromats where customers pay-per-use. 7427a24453 This glossary of mechanical engineering terms pertains specifically to mechanical engineering and its sub-disciplines. For a broad overview of engineering, see glossary of engineering. 7427a24453

Electric motor the motor's magnetic field and electric current in a wire winding to generate Laplace force in the form of torque applied on the motor's shaft. Most electric motors operate through the interaction between the motor's magnetic field and electric current in a wire winding to generate Laplace force in the form of torque applied on the motor's shaft. An electric An electric motor is a machine that converts electrical energy into mechanical energy. An electric generator is mechanically identical to an electric motor, but operates in reverse, converting mechanical energy into electrical energy 7427a24453

Analytical chemistry consists of classical, wet chemical methods and modern analytical techniques. Classical qualitative methods use separations such as precipitation, extraction, and distillation. Identification may be based on differences in color, odor, melting point, boiling point, solubility, radioactivity or reactivity. Classical quantitative analysis uses mass or volume changes to quantify amount. Instrumental... 7427a24453 Some examples of this noise include the mains hum, hum of transformers, the whine of some rotating electric machines, or the buzz of fluorescent lamps. The hissing of high voltage transmission lines is due to corona discharge, not magnetism. 7427a24453 Compared to other types of jet engine, rocket engines are the lightest and have the highest... 7427a24453

Washing machine Most newer front-load machines now use a brushless DC (BLDC) motor directly connected to the A washing machine (laundry machine, clothes washer, or washer) is a machine designed to launder clothing. to counter the weight of the clothes and reduce vibration. Other ways of doing laundry include dry cleaning (which uses alternative cleaning fluids and is performed by specialist businesses) and ultrasonic cleaning. The term is mostly applied to machines that use water 7427a24453

Analytical chemistry Separation isolates analytes. numerical amount or concentration. In practice, separation, identification or quantification may constitute the entire analysis or be combined with another method. Analytical chemistry consists of classical, wet chemical methods and modern analytical techniques. Qualitative analysis identifies analytes, while quantitative analysis determines the numerical amount or concentration. Classical qualitative Analytical chemistry studies and uses instruments and methods to separate, identify, and quantify matter 7427a24453

Torsional vibration A second effect of torsional vibrations applies to passenger cars. Torsional vibration is often a concern in power transmission systems using rotating shafts or couplings, where it can cause failures if not controlled. Torsional vibration is the angular vibration of an object commonly a shaft - along its axis of rotation. Torsional vibrations can lead to seat vibrations or noise at certain speeds. Torsional vibration is often a concern in power - Torsional vibration is the angular vibration of an object - commonly a shaft - along its axis of rotation. Both reduce the comfort 7427a24453

Interior NVH deals with noise and vibration experienced by the occupants of the cabin, while exterior NVH is largely concerned with the

noise radiated by the vehicle, and includes drive-by noise testing. 7427a24453 NVH is mostly engineering, but often objective measurements fail to predict or correlate well with the subjective impression... 7427a24453

Electromagnetically induced acoustic noise (1999). An Analytical Approach to Solving Motor Vibration Problems, 36(5), 1–16. S. G. , Hodowanec, M. M. , Castelli Dezza, Electromagnetically induced acoustic noise (and vibration), electromagnetically excited acoustic noise, or more commonly known as coil whine, is audible sound directly produced by materials vibrating under the excitation of electromagnetic forces. Carmeli, M. R. , & Holter, W 7427a24453

Failure mode and effects analysis Design review based on failure mode Eight disciplines problem solving – Eight disciplines of team-oriented problem solving Failure mode and effects analysis (FMEA; often written with "failure modes" in plural) is the process of reviewing as many components, assemblies, and subsystems as possible to identify potential failure modes in a system and their causes and effects. an operator can intervene. It was developed by reliability engineers in the late 1950s to study. Related methods combine mathematical failure rate models with a statistical failure mode ratio databases. There are numerous variations of such worksheets. For each component, the failure modes and their resulting effects on the rest of the system are recorded in a specific FMEA worksheet. It was one of the first highly structured, systematic techniques for failure analysis. A FMEA can be a qualitative analysis, but may be put on a semi-quantitative basis with an RPN model 7427a24453

Noise, vibration, and harshness noise and vibration can be readily measured, harshness is a subjective quality, and is measured either via jury evaluations, or with analytical tools that Noise, vibration, and harshness (NVH), also known as noise and vibration (N&V), is the study and modification of the noise and vibration characteristics of vehicles, particularly cars and trucks. While noise and vibration can be readily measured, harshness is a subjective quality, and is measured either via jury evaluations, or with analytical tools that can provide results reflecting human subjective impressions. The latter tools belong to the field psychoacoustics 7427a24453

Phonetics The field of phonetics is traditionally divided into three sub-disciplines: articulatory phonetics, acoustic phonetics, and auditory phonetics. Early theories of speech perception such as motor theory attempted to solve the problem of perceptual invariance by arguing that speech perception Phonetics is a branch of linguistics that studies how

humans produce and perceive sounds or, in the case of sign languages, the equivalent aspects of sign. Linguists who specialize in studying the physical properties of speech are phoneticians. Traditionally, the minimal linguistic unit of phonetics is the phone—a speech sound in a language which differs from the phonological unit of phoneme; the phoneme is an abstract categorization of phones and it is also defined as the smallest unit that discerns meaning between sounds in any given language. duration 7427a24453

The phenomenon is also called audible magnetic noise, electromagnetic acoustic noise, lamination vibration or electromagnetically induced acoustic noise, or more rarely, electrical noise, or "coil noise", depending on the application. The term electromagnetic noise is generally avoided as the term is used in... 7427a24453 Electric motors can be powered by direct current (DC) sources, such as from batteries or rectifiers, or by alternating current (AC) sources, such as a power grid, inverters or electrical generators. Electric motors may also be classified by considerations such as power source type, construction, application and type of motion output. They can be brushed or brushless... 7427a24453

Rocket engine in the walls, but nobody was hit. Vehicles commonly propelled by rocket engines include missiles, artillery shells, ballistic missiles and rockets of any size, from tiny fireworks to man-sized weapons to huge spaceships. Rocket vehicles carry their own oxidiser, unlike most combustion engines, so rocket engines can be used in a vacuum, and they can achieve great speed, beyond escape velocity. However, non-combusting forms such as cold gas thrusters and nuclear thermal rockets also exist. The extreme vibration and acoustic environment inside a rocket motor commonly result in peak stresses well above mean A rocket engine is a reaction engine, producing thrust in accordance with Newton's third law by ejecting reaction mass rearward, usually a high-speed jet of high-temperature gas produced by the combustion of rocket propellants stored inside the rocket 7427a24453

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