MECHANICAL AND TRIBOLOGICAL ANALYSIS OF BASALT AND BANANA FIBRE REINFORCEMENT EPOXY COMPOSITE

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An alternative to tackle these drawbacks can be found in natural fibers. Also a significant increase in the automotive and construction industries emphasized on the alternative to the conventional materials With the increase in demand for sustainable materials, natural fibres have played an important role in fulfilling this demand. New materials are always being looked at with better mechanical properties to have safer designs and a wider range of applications. This article focuses to highlight the recent advancements conducted to explore the dynamics characteristics of fibre-reinforced composite via. Analytical and numerical approaches for different volume ratios analyzed for various boundary conditions. A mathematical model is been developed to solve the different dynamic responses in which it consists of the equations to solve. Composite beams and beam like elements are principal constituents of many structures and used widely in high speed machinery, aircraft and light weight structures. Among these materials, Natural Fibres Reinforced Composites (NFRC) is finding much interest as a substitute for glass or carbon reinforced polymer composites. One of the most widely utilized natural fibres for reinforcement in polymer composites is hemp fibre. The vibration effect on the structures is more destructive and the loss of stiffness and causes the structure to exhaust. It is very important to understand the natural frequency, resonance, damping effect, and frequency response function. Based on the available literature survey this article focuses on the decline of the vibrations in the structure and increase the lifespan of the structure. It is necessary to understand dynamic characteristics viz., natural frequencies (ωn), damping characteristics (C), and frequency response function (FRF) of the beam. The analytical approach is been carried out in the phase 1 of the project. The next phase will be the numerical analysis is been carried and validation of the both the analytical and numerical is done at the end of the project.

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