

## **Conceptual design of automobile engine rubber mounting composite using TRIZ- Morphological chart-analytic network process technique**

### **ABSTRACT**

An engine rubber mounting is one of the important parts of a vehicle. It is a function to isolate or absorb and to reduce vibration to the vehicle body thus to the passenger itself. Due to the engine compartments environment such as heat and massive vibration due to road conditions, the engine rubber mountings lifespan has been reduced. Thus several studies have been conducted to upgrade the material lifespan to make it more reliable and better engine mounting components. This paper presents the conceptual design of kenaf fiber polymer as automotive engine rubber mounting composites using the integration of Theory of Inventive Problem Solving (TRIZ). In this early stage, the solution is generated using 40 inventive principles and TRIZ contradiction method. The solution parameter for the specific design character is the selected using the morphological chart to develop a systematic conceptual design for the component. Four (4) innovative design concepts were produced and Analytic Network Process (ANP) methods were utilized to perform the multi-criteria decision-making process of selecting the best concept design for the polymer composite engine rubber mounting component.

**Keyword:** TRIZ; ANP; Morphological; Automotive composites component; Engine rubber composite mounting