

Structural modelling on automotive engine mounting from kenaf fiber reinforced natural rubber/thermoplastic polyurethane green composites

ABSTRACT

This paper presents an investigation of deformation analysis using ANSYS of automotive engine rubber mount made from kenaf fiber reinforced natural rubber (NR)/thermoplastic polyurethane (TPU) composites. The modelling of mounting was conducted using CATIA software. To determine the of the Poisson's ratio of this new material composites is important, which was required data to be filled into the ANSYS software. The Poisson's ratio was calculated based on the previous data experiment from the stress-strain results. The analysis was focussing on the deformation and stress analysis effected from the pressure that was applied in the modelling and in the ANSYS simulation software which is 250 psi. The deformation and stress simulation results were then identified and discussed and the results were compared to the Natural Rubber material of the same design simulation.

Keyword: Structural analysis; Kenaf fiber TPU composites; Engine rubber mounting; ANSYS