

Effect of Chemical Treatment on Impact properties of Kenaf Reinforced Epoxy Composite

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ABSTRACT

Kenaf have been extensively exploited over last few years. By 2020, our government aims to cultivate 10,000 hectares of kenaf which is capable to bring revenue of almost RM50 million to our country. To investigate the chemical reaction of kenaf fibre and to determine its mechanical properties are the objectives of this project. Natural fibre is more biodegradable, low density and have a good mechanical strength compare with synthetic fibre. Although synthetic fibre can be recycle through combustion but some effects will caused to our earth such as air pollutions, water pollutions, and risk of inhalation for human because need consume over 1300 to 3000 degree. From the results, it shows that kenaf fibre have high potential to fabricate because of its good mechanical properties. Kenaf had been treated with 1%, 3% and 5% of sodium hydroxide since of treated kenaf will perform higher strength compare with untreated kenaf. Results shows that the higher percentage of sodium hydroxide obtain the higher tensile strength. Results of tensile stress for 1%, 3% and 5% of NaOH are 0.47MPa, 0.49MPa and 0.52MPa respectively and Young's modulus values are 111GPa, 21GPa and 20GPa respectively. Sodium hydroxide was employed because it help to softer and smoother the fibre, and it would be easily reinforced with the epoxy resin. The good interfacial bonding between matrixes has influence on the strength of natural composite.