

ABSTRAK

Serat alam Eceng Gondok banyak digunakan untuk berbagai macam penelitian ilmiah. Dalam penelitian ini, dilakukan pengujian impact material komposit matriks epoksi diperkuat serat eceng gondok menggunakan fraksi volume 10%, dengan variasi panjang serat 25mm, 50mm, dan 70mm dengan model serat kontinu searah. Metode yang digunakan adalah metode eksperimen. Hasil pengujian impact dari spesimen, angka kekuatan impact tertinggi pada komposit dengan panjang serat 70mm sebesar 6,87 kJ/m², disusul dengan komposit dengan panjang serat 50mm sebesar 6,84 kJ/m². Kekuatan impact terendah pada komposit dengan panjang serat 25mm sebesar 5,80 kJ/m². Data kekuatan dianalisis menggunakan metode regresi sehingga diperoleh persamaan regresi dari kekuatan impact material komposit resin di perkuat serat eceng gondok.

Kata Kunci : **Komposit, Eceng gondok, Dimensi serat, Kandungan serat, Uji Impact, Metode Regresi**



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ABSTRACT

Water hyacinth natural fiber is widely used for various kinds of scientific research. In this study, the impact test of an epoxy matrix composite material reinforced with water hyacinth was carried out using a volume fraction of 10%, with variations in fiber length of 25mm, 50mm, and 70mm with a unidirectional continuous fiber model. The method used is the experimental method. The results of the impact test of the specimen showed that the highest impact strength was in the composite with a fiber length of 70mm of 6.87 kJ/m², followed by a composite with a fiber length of 50mm of 6.84 kJ/m². The lowest impact strength in the composite with a fiber length of 25mm is 5.80 kJ/m². The strength data were analyzed using the regression method so that a regression equation was obtained from the impact strength of the resin composite material reinforced with water hyacinth fibers.

Keywords: *Composite, Water hyacinth, Fiber dimensions, Fiber content, Impact Test, Regression Method*



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