

Studi penambahan serat ijuk perlakuan kimia terhadap sifat kristalinitas dan kekuatan mekanik polipropilena dengan variabel waktu dan temperatur pencampuran kering = Study addition of palm fiber chemical treatment of the crystallinity and mechanical properties of polypropylene with variable time and temperature of dry mixing

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Abstrak

[Pada penelitian ini, serat ijuk dihancurkan dan diayak ukuran 40 # setelah itu serat ijuk diberi perlakuan kimia dengan NaOH 2 % selama 1 jam, KMnO₄ 0,1 N selama 15 menit, dan NaClO 5 % selama 5 jam dengan tujuan mendapatkan selulosa kristalin. Setelah itu dilakukan proses pencampuran kering (hotmelt mixing) antara polipropilen dengan serat ijuk hasil perlakuan kimia dengan 7,5 % volum serat ijuk terhadap polipropilen dengan variabel temperatur 160°C, 165°C, dan 170°C dan variabel waktu pencampuran 15 menit dan 20 menit. Setelah itu dilakukan pengujian uji FTIR buat serat, sedangkan buat komposit adalah uji tarik, uji STA, uji XRD, dan uji FE-SEM hal ini dilakukan untuk mendapatkan sifat kristalinitas dan mekanik dari komposit polipropilen ini. Hasil penelitian menunjukkan bahwa serat ijuk hasil perlakuan lebih kristalin dari pada serat ijuk tanpa perlakuan, polipropilen dengan serat ijuk hasil perlakuan kimia cukup kompatibel terhadap polipropilen, dari penelitian didapatkan sifat kristalinitas terbaik pada variabel 165°C selama 20 menit. Dan yang memiliki sifat kekuatan tarik paling baik adalah variabel 170°C selama 20 menit, sedangkan yang memiliki % elongasi paling baik adalah dengan variabel 160°C 20 menit.

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