

Pengaruh reduksi mineral pengotor dan modifikasi pertukaran kation dalam bentonit sebagai bahan pengisi terhadap karakteristik nanokomposit bermatriks karet alam = The effect of mineral impurities reduction and modification of cation exchange in the bentonite as fillers on characteristics of nanocomposite with natural rubber as matrix

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Abstrak

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Tesis ini meneliti mengenai pengaruh pengurangan mineral pengotor pada bentonit menggunakan alat hidrosiklon dan modifikasi pertukaran kation dengan penambahan dosis surfaktan terhadap basal spasi organobentonit yang dihasilkan serta terhadap sifat-sifat dari nanokomposit karet alam/organobentonit. Nanokomposit karet alam/organobentonit dibuat dengan teknik pelelehan kompon. Hasil penelitian menunjukkan proses reduksi mineral pengotor pada bentonit telah mampu mengurangi kandungan senyawa pengotor, seperti Fe₂O₃, CaO, dan K₂O. Sementara itu, peningkatan dosis surfaktan pada bentonit dapat meningkatkan basal spasi pada organobentonit. Organobentonit rendah mineral pengotor ini mampu menghasilkan nanokomposit dengan sifat mekanik yang lebih baik dari nanokomposit berbahan pengisi bentonit alam.;

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ABSTRACT

This thesis are to studies the effect of the reduction of mineral impurities in the bentonite using hydrocyclone and the effect of cation exchange modification with the addition of surfactant dosage on the basal spacing of organobentonit and the properties of natural rubber/organobentonite nanocomposites Natural rubber/organobentonite nanocomposites made by melting compound technique.

The results showed the reduction process of mineral impurities in the bentonite has been able to reduce the content of impurities, such as Fe₂O₃, CaO, and K₂O.

Meanwhile, an increase in the dose of surfactant on bentonite may increase the basal spacing of organobentonite. Low mineral impurities organobentonite is capable of producing nanocomposite with better mechanical properties than nanocomposite filled pristine bentonite.;This thesis are to studies the effect of the reduction of mineral impurities in the bentonite using hydrocyclone and the effect of cation exchange modification with the addition of surfactant dosage on the basal spacing of organobentonit and the properties of natural rubber/organobentonite nanocomposites Natural rubber/organobentonite nanocomposites made by melting compound technique.

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