

Sintesis dan karakterisasi biopolimer selulosa asetat selulosa asetat butirat dengan bentonit terinterkasi surfaktan heksadesiltrimetilamonium bromida (HDTMABr) sebagai nanofiller =
Synthesis and characterization biopolimer cellulose acetate cellulose acetate butyrate with bentonite intercalated surfactant hexadecyltrimethylammonium bromide (HDTMABr) as nanofiller

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Abstrak

Pembentukan nanokomposit OCT-C16/selulosa asetat- selulosa asetat butirat melalui dua tahapan sintesis, yaitu sintesis organoclay dan sintesis nanokomposit. Sebagai perbandingan, dalam penelitian ini juga disintesis nanokomposit selulosa asetat. Sintesis organoclay meliputi tiga tahapan yaitu purifikasi karbonat, sintesis Na-Bentonit Purifikasi dan sintesis organoclay- HDTMABr. Hasil karakterisasi dengan XRD pada sampel organoclay menunjukkan interkalasi pada surfaktan HDTMABr dapat meningkatkan basal spacing organoclay menjadi 19,7595 Å.

Dalam sintesis nanokomposit selulosa asetat termodifikasi selulosa asetat butirat dilakukan penambahan variasi persen berat organoclay-HDTMABr sebagai nanofiller sebanyak 0%, 1%, 3%, 5%, dan 7%. Pada sintesis selulosa asetat juga ditambahkan variasi persen berat organoclay- HDTMABr yang sama dengan nanokomposit selulosa asetat termodifikasi selulosa asetat butirat. Hasil sintesis dikarakterisasi dengan FTIR. Variasi dengan 7% organoclay- HDTMABr merupakan nanokomposit dengan produk paling keruh.

The formation of nanocomposite OCT-C16/cellulose acetate- cellulose acetate butyrate was carried out through two stages of synthesis, namely organoclay synthesis and cellulose acetate-cellulose acetate butyrate synthesis. As a comparison, in this study cellulose acetate nanocomposite was synthesized. Organoclay synthesis involves three steps, namely carbonate purification, synthesis of Na - Bentonite and intercalation HDTMABr surfactant. The XRD characterization on the samples showed that intercalation by HDTMABr surfactant can increase the basal spacing of organoclay up to 19.7595 Å.

In the synthesis of cellulose acetate-cellulose acetate butyrate nanocomposite variation of weight percent of organoclay as nanofiller as much as 0 %, 1 %, 3 %, 5 %, and 7 % was conducted. The similar variation was applied in the synthesis of cellulose acetate- cellulose acetate butyrate The results of the synthesis were characterized by FTIR. Variation with 7 % organoclay nanocomposite - HDTMABr is the most turbid product.