

SINTESIS MORDENIT DARI KAOLIN DALAM AKTIVITAS DEGRADASI ZAT WARNA RHODAMIN B

INTISARI

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Telah dilakukan penelitian tentang sintesis zeolit mordenit dari kaolin dalam aktivitas degradasi zat warna rhodamin B. Zeolit mordenit dibuat dari kaolin dengan proses metakaolinasi, dealuminasi, *aging*, hidrotermal dan *ion exchange*. Aktivitas degradasi rhodamin B oleh mordenit dilakukan dengan metode fotodegradasi melalui sinar *ultraviolet*. Karakterisasi hasil sintesis dilakukan menggunakan *Fourier-Transform Infrared Spectroscopy*, *X-Ray Diffraction*, *Surface Area Analyzer*. Pengaruh waktu degradasi zat warna rhodamin B dapat diketahui dengan menggunakan UV-Vis. Hasil karakterisasi XRD (*X-Ray Diffraction*) menunjukkan zeolit mordenit berhasil terbentuk dengan kristanilitas yang tinggi pada $2\theta = 21,2^\circ$ dan $26,9^\circ$. Ukuran pori yang dihasilkan sebesar 3,2896 nm. Hasil degradasi zat warna rhodamin B diperoleh nilai % degradasi yang lebih efektif pada metode fotodegradasi dengan nilai sebesar 99,38%.

Kata kunci: Mordenit, Rhodamin B, Zeolit.

MORDENITE SYNTHESIS OF KAOLIN IN DEGRADATION ACTIVITY OF RHODAMIN B

ABSTRACT

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In this research, the mordenite has been converted from kaolin and the degradation activity of rhodamin B has been performed. The mordenite is converted from kaolin by metakaolination, dealumination, aging, hydrothermal and ion exchange processes. The degradation activity of rhodamine B by mordenite was done by photodegradation method through ultraviolet rays. Physicochemical characterization of mordenite was engaged by Fourier-Transform Infrared Spectroscopy (FTIR), X-Ray Diffraction (XRD), and Surface Area Analyzer (SAA). The effect about degradation time of rhodamine B can be determined by using UV-Vis. The characterization using XRD (X-ray Diffraction) show that mordenite is successfully formed with high crystallinity at $2\theta = 21,2^\circ$ dan $26,9^\circ$. The pore size is 3.2896 nm. The photodegradation method was found more effective with the value of % degradation until 99.38%.

Keywords: Mordenite, Rhodamin B.