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## **Adsorpsi Limbah Cair Industri Sarung Tenun Menggunakan Zeolit Teraktivasi Asam**

### ABSTRAK

Telah dilakukan aktivasi zeolit dengan asam klorida, zeolit yang telah diaktivasi digunakan untuk adsorpsi limbah cair sarung tenun. Aktivasi dilakukan dengan cara menambahkan asam kedalam zeolit kemudian di *shaker* selama 3 jam, disaring selanjutnya dicuci hingga netral. Adsorpsi dilakukan dengan menambahkan zeolit teraktivasi kedalam limbah, di *shaker*, disaring dan filtrate yang diperoleh diukur dengan spektrofotometer UV-Vis. Karakterisasi zeolit sebelum dan sesudah adsorpsi dilakukan dengan menggunakan XRD dan FTIR.

Disimpulkan bahwa adanya aktivasi asam terhadap zeolit tidak merubah mineral komponen penyusun zeolit sedangkan kondisi optimum adsorpsi limbah cair sarung tenun oleh zeolit teraktivasi asam dicapai pada ukuran partikel 106 $\mu$ m, waktu kontak 60 menit, pH limbah 13 dan rasio adsorben/adsorbat 1,5%. Kemampuan adsorpsi zeolit terkativasi asam terhadap limbah cair sarung tenun meningkat 23,86% pada rasio adsorben/adsorbat 0,375 g/ 25 mL sampel.

Kata kunci: Zeolit, Adsorpsi, Limbah cair industri sarung tenun

## **Adsorption Weave Case Liquid Waste Using Zeolite Acid Activated**

### ABSTRACT

Activation zeolite was done by chloride acid, zeolit activated use for adsorption weave case liquid waste. Activation was done by adding chloride acid into zeolite and then shaken for 3 hours, filtered and it washed till neutral. Adsorption was done by adding zeolite activated to liquid waste, shaken, filtered and filtrate was obtained measure by using UV-Vis spectrophotometer. Characteritition zeolite before and after adsorption was done by using XRD and FTIR.

It was concluded that acid activation to zeolite did not change the mineral constituent of zeolit, optimum condition of adsorsption was reached at particle size of 106  $\mu$ m, time contact of 60 minute, waste pH of 13 and ratio adsorben/adsorbat of 1,5%. The adsorptivity of activated zeolit to weave case liquid waste increase equal to 23,86% for adsorbent/adsorbat ratio 0,375 g/ 25 mL of sample.

Keywords: Zeolite, Adsorption, Waeves Case Liquid waste

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