

## Ringkasan

Dalam proses modifikasi zeolit ada beberapa aspek yang berpengaruh terhadap produknya. Salah satu diantaranya adalah temperatur. Karena itu dalam penelitian ini akan dipelajari pengaruh temperatur pemanasan pada proses pencucian asam dan kalsinasi dalam modifikasi zeolit.

Metode yang dilakukan adalah zeolit dicuci dengan larutan asam dan dipanaskan dengan bervariasi suhu (150; 250; 350; 450; 550)°C kemudian masing-masing direndam dalam larutan amonium nitrat 1M dan dipanaskan hingga kering. Zeolit hasil diuji dengan metode khromatografi penukar ion. Pengaruh temperatur kalsinasi dipelajari dengan metode pencucian asam dengan pemanasan optimum dilanjutkan proses kalsinasi dengan variasi temperatur (150; 250; 400; 550; 700)°C. Zeolit aktif diuji dengan khromatografi penukar ion.

Data hasil penelitian menunjukkan bahwa pengaruh temperatur pencucian asam sangat kecil dan diperoleh suhu optimum adalah 350-450°C dengan prosentase anion ( $\text{Cl}^-$ ) terserap 40%. Sedangkan pengaruh temperatur kalsinasi relatif besar dan diperoleh suhu kalsinasi optimum adalah 550°C dan prosentase anion yang terserap adalah 75% (Clorida), 78% (Nitrit), 81% (Cianid) dan 80% (Nitrat) dan terbukti bahwa zeolit dapat dipergunakan sebagai penyerap anion.

## Summary

In the process of zeolite modification, there are some aspects that influence their products. One which is temperature. Therefore in this research will be studied the influence of heat temperature in the acid washing treatment and calcination in modification process of zeolit.

The method that had been done was washing zeolite by acid solution and heated with temperature variation (150, 250, 350, 450, 550)<sup>o</sup>C. then each of them is soaked with Amonium Nitrat 1M solution for 4 hours, respectively, and left to heated until dry (100-120)<sup>o</sup>C. Activated zeolite was tested with ion exchange Chromatography and by resulted data of exchange is determined of optimum temperatur of heating at the acid washing treatment. The influential of calcination temperature could be learned by acid washing treatment and conducted the method with optimum heating and followed by calcination process with temperature variation (150, 250, 400, 550, 700)<sup>o</sup>C. Activated zeolite was tested by ion exchange chromatography.

The resulted data in this research indicate that the influence of heating temperature on acid washing treatment was a little (insignificant) and optimum temperature on acid washing treatment was at 350-450<sup>o</sup>C and capacity of anion adsorption was 39%. Beside that, the influence of calcination temperature relatively large to the adsorption of anion capacity and obtained the optimum temperature of calcination process at 550<sup>o</sup>C and some anions tests (Cl<sup>-</sup>, NO<sub>2</sub><sup>-</sup>, CN<sup>-</sup> and NO<sub>3</sub><sup>-</sup>) were obtained adsorption of anion capacity are : 75,29%, 77,90%, 80,89% and 79,76%, respectively.