

PENINGKATAN KADAR KALIUM PADA FELDSPAR

DENGAN METODE PERTUKARAN ION SISTEM BATCH

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RINGKASAN

Pada umumnya, feldspar di Indonesia mempunyai kualitas yang rendah. Sebagai bahan baku keramik diperlukan feldspar dengan kadar kalsium (Ca) rendah dan kalium (K) yang relatif tinggi, oleh karena itu feldspar tersebut perlu adanya perlakuan untuk meningkatkan kadar kalium (K). Peningkatan kadar kalium (K) dalam feldspar dapat dilakukan dengan metode pertukaran ion sistem *batch*.

Proses pertukaran ion dilakukan secara bertahap yaitu pertukaran ion dengan menggunakan HCl, selanjutnya pertukaran ion dilakukan dengan menggunakan KCl terhadap H-feldspar. Pertukaran ion dilakukan dengan variasi konsentrasi KCl, pH dan waktu kontak. Karakterisasi sampel dilakukan dengan metode difraksi sinar-X, peningkatan kadar kalium ditentukan secara tidak langsung dengan metode Spektrofotometri Serapan Atom.

Disimpulkan bahwa feldspar Desa Clering Kecamatan Keling Jepara merupakan feldspar golongan albit. Kondisi optimum pertukaran ion dicapai pada konsentrasi KCl 20000 ppm, pH=9 dan waktu kontak 3 jam dengan peningkatan kalium sebesar 0,618 miliekuivalen.

SUMMARY

Commonly, Indonesian feldspar has low quality. Feldspar which has low calcium (Ca) and high potassium (K) contents was needed as raw material in ceramics therefore the quality of Indonesian feldspar must be optimized by increasing its potassium (K). Increasing of potassium (K) in feldspar could done by ion exchange batch system.

The ion exchange process was done indirect method, first using HCl and then KCl solutions. The ion exchange process was conducted by various concentration, pH and contact time. The sample was characterized by X-ray diffractometer and potassium (K) content was determined by indirect method using Atomic Absorption Spectrophotometer.

It was concluded that the sample was albit feldspar. Optimum condition of ion exchange was reached at KCl concentration of 20000 ppm, pH=9 and contact time for three hours as well as the increasing of potassium (K) content was 0,618 miliekuivalen.

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