PENGARUH PERBEDAAN SUHU DEHIDRASI NATRIUM SILIKAT DARI ABU SEKAM PADI TERHADAP KARAKTERISTIK SILIKA GEL

Isa Istiqomah

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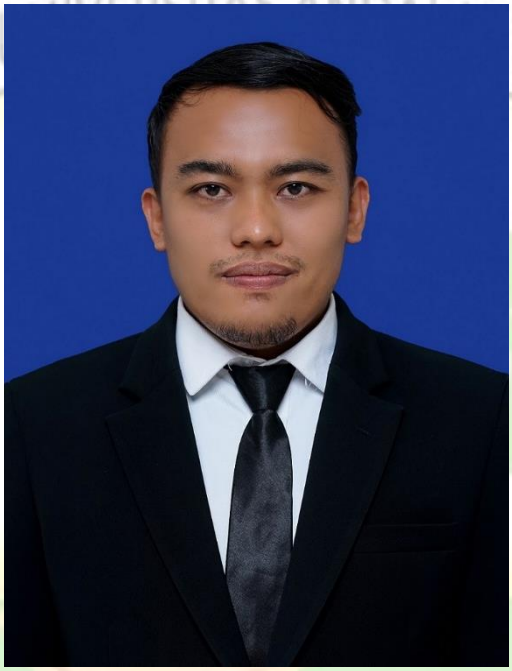

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Isa Istiqomah, Anwar Kasim, Novelina

ABSTRAK

Penelitian ini bertujuan untuk mengetahui Pengaruh Perbedaan Suhu Dehidrasi Natrium Silikat dari Abu Sekam Padi Terhadap Karakteristik Silika Gel. Penelitian ini menggunakan Rancangan Acak Lengkap (RAL) dengan 5 perlakuan yaitu proses dehidrasi natrium silikat dengan variasi suhu 60^0C, 65^0C, 70^0C, 75^0C, 80^0C. Data penelitian dianalisis menggunakan ANOVA dan jika berbeda nyata dilanjutkan dengan Duncan's New Multiple Range Test (DNMRT) pada taraf 5%. Hasil penelitian menunjukkan bahwa perlakuan memberikan pengaruh nyata terhadap daya serap air silika gel yang dihasilkan. Perlakuan terbaik berdasarkan analisa daya serap air yaitu perlakuan A (suhu dehidrasi 60^0C) dengan nilai rata-rata daya serap air pada 1 jam 1,33%; daya serap air pada 12 jam 6,48%; daya serap air pada 24 jam 10,90%. Silika gel tersebut memiliki gugus silanol (Si-OH) dan gugus siloksan (Si-O-Si). Karakteristik pori berupa luas permukaan 17,080 m^2/g; volume pori total 0,01608 cc/g; rata-rata ukuran pori 18,8290 Å.

Kata kunci: **Abu sekam, Dehidrasi, Natrium silikat, Silika gel**

The Effect Of Sodium Silicate Dehydration Temperature Difference from Risk Husk Ash on Silica Gel Characteristics

Isa Istiqomah, Anwar Kasim, Novelina

ABSTRACT

This study aims to determine the effect of differences in temperature of sodium silicate dehydration from rice husk ash on the characteristics of silica gel. This study used a completely randomized design (CRD) with 5 treatments, the dehydration process of sodium silicate with temperature variations of 60^0C, 65^0C, 70^0C, 75^0C, 80^0C. The research data were analyzed using ANOVA and if it had a real effect, then continued with Duncan's New Multiple Range Test (DNMRT) at the 5% level. The results showed that the treatment had a significant effect on the water absorption of the silica gel produced. The best treatment based on the analysis of absorption capacity was dehydration temperature of 60^0C with an average velue of 1 hour water absorption 1.33%; water absorption 12 hours 6.48%; water absorption 24 hours 10.90%. Silica gel has a silanol group (Si-OH) and a siloxane group (Si-O-Si). The pore characteristics include a surface area of 17,080 m^2 / g; total pore volume 0,01608 cc / g; the mean pore size was 18,8290 Å.

Key words: husk ash, dehydration, sodium silicate, silica gel