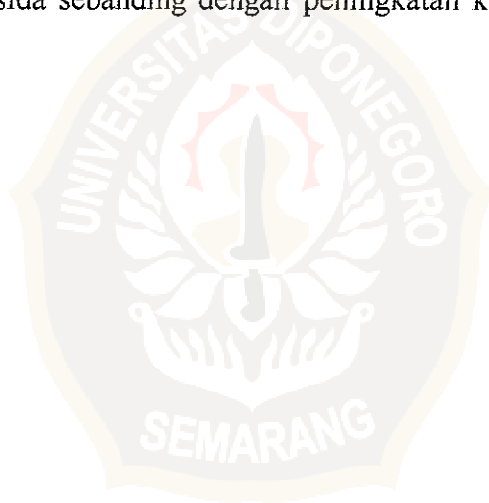


RINGKASAN

Oksidasi etanol menggunakan metode elektrolisis telah dilakukan. Oksidasi elektrolitik tersebut menghasilkan karbondioksida dan molekul air. Oksidasi tersebut dilakukan dengan bantuan reagen redoks kobalt sulfat yang bertindak sebagai pembawa elektron.

Penelitian bertujuan antara lain menentukan pengaruh konsentrasi reagen redoks kobalt sulfat terhadap kuantitas massa karbondioksida hasil elektrooksidasi dengan anoda timbal dan katoda nikrom. Elektrooksidasi 2 mL etanol 99,8 % dengan variasi konsentrasi kobalt sulfat 0,001 M, 0,002 M, 0,003 M, 0,004 M, dan 0,005 M dengan volume 100 mL dilakukan dalam sel elektrolisis bertemperatur 50 - 60 °C, dan potensial eksternal 9 volt. Karbondioksida hasil elektrooksidasi etanol dialirkan ke dalam larutan jenuh kalsium hidroksida yang dibuat dengan melarutkan 3,7 g kristal kalsium hidroksida dalam 500 mL akuades membentuk endapan putih kalsium karbonat.

Hasil penelitian menunjukkan, bahwa konsentrasi kobalt sulfat paling tinggi menghasilkan endapan kalsium karbonat, hasil reaksi karbondioksida dengan larutan jenuh kalsium hidroksida, paling banyak. Sehingga disimpulkan bahwa peningkatan kuantitas karbondioksida sebanding dengan peningkatan konsentrasi reagen redoks kobalt sulfat.



SUMMARY

Oxydation of ethanol by means of electrolysis methode had been performed. The electrolytic oxydation produced carbondioxide and water molecules. It may be carried out using cobaltous sulphate as redox reagent behaved as electron carrier.

The aim of the experiment is to determine the relationship between quantities of cobaltous sulphate concentration as redox reagent and quantities of carbondioxide mass which is a product of ethanol electrooxydation using lead as the anode and nichrome as the cathode. Electrooxydation of 2 mL ethanol 99.8 % with cobaltous sulphate concentration by variation of 0.001 M, 0.002 M, 0.003 M, 0.004 M, and 0.005 M in which the volume of 100 mL was conducted in a 50 - 60 °C electrolysis cell, and external potential of 9 volt. Carbondioxide which is a product of ethanol electrooxydation was flowed to a saturated solution of calcium hydroxide, prepared with 3.7 g of calcium hydroxide crystals added to 500 mL aquadest, to form white precipitate of calcium carbonate.

Experimental results shown that in the highest cobaltous sulphate concentration yield the highest mass of calcium carbonate precipate, reaction of carbondioxide and the saturated solution of calcium hydroxide. By the results, it can be concluded that the quantity of carbondioxide mass increases as the cobaltous sulphate reagent redox concentration increases.

