THE USE OF FLOCCULANT HYDROLYZED STARCH-graft-POLYACRYLAMIDE (St-g-PAM) FOR DYE REMOVAL OF WASTE WATER

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ABSTRACT

The purpose of this research for studied the effect of hydrolyzed process of Starch-graft-Polyacrylamide (St-g-PAM), for dye removal color from waste water. This material is copolymer flocculant from synthetic and natural polymer which is hoped having properties those are more eminent than it is homopolymer. The combination of these starch and polyacrylamide is done by grafting to method and solution polymerization method. This St-g-PAM synthesis’s result thus is hydrolyzed with NaOH solution. This Hydrolyzed St-g-PAM result is expected could have a capability of removing dye on waste water. This experiment is aimed to learn the influence of changing of NaOH volume. During St-g-PAM flocculant hydrolyzed process toward dye removal process. The material is tested its characteristics with Neutralization Equivalent, pH test, Spectrometry test, and FTIR.

The result from Neutralization Equivalent is known that by increasing of NaOH volume during hydrolyzed process the value of N.E. decreases along with increasing independent degree of polymer. The biggest value of N.E is 49,3827 attained on NaOH volume 17,5 ml. and the smallest is 15,8730 on NaOH volume about 80 ml. from dye removal test is attained the best dye removal percentage about 53,333% for direct orange and 46,164
% for reactive red in pH 10 by using 6 Hydrolyzed St-g-PAM on 0,3 ppm concentration.

Key words: starch, polyacrylamide, polyaluminium chloride, dye removal