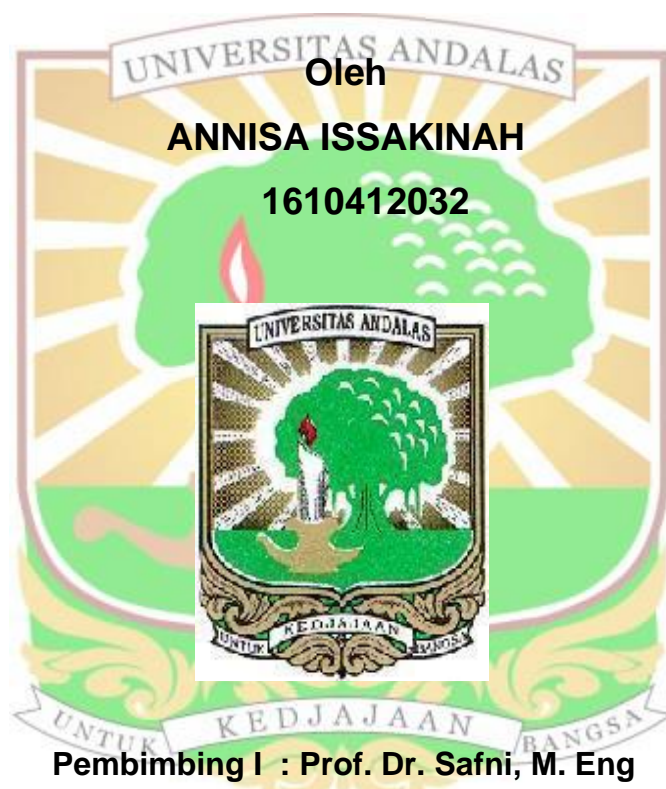


**DEGRADASI LINIER ALKILBENZENA-SULFONAT (LAS) PADA
LIMBAH DETERJEN SECARA SONOLISIS DAN FOTOLISIS
DENGAN PENAMBAHAN KATALIS TiO_2**

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**PROGRAM STUDI SARJANA
JURUSAN KIMIA
FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM
UNIVERSITAS ANDALAS
PADANG
2020**

ABSTRACT

DEGRADATION OF LINEAR ALKYLBEZENE-SULFONATE IN DETERGENT WASTE BY SONOLYSIS AND PHOTOLYSIS BY ADDITION OF THE TiO_2 CATALYST

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Linear Alkylbenzene-Sulfonic (LAS) is an anionic surfactant which is currently widely used as an active ingredient in synthetic detergent formulations. The use of detergents has produced domestic liquid waste containing LAS so as to pollute the river ecosystem. In this study LAS degradation of detergent waste by sonolysis and photolysis with UV A lamps ($\lambda = 365 \text{ nm}$) with and without the addition of TiO_2 catalyst. Detergent waste used is liquid detergent waste so klin, rinso, attack and kemist. The results of the study were measured with a UV-Vis spectrophotometer at λ 200-700 nm. The optimum catalyst mass of TiO_2 obtained was 15 mg. From the two methods of sonolysis and photolysis LAS degradation for 90 minutes obtained percent degradation respectively 53.98% and 56.28%. Furthermore, with the addition of TiO_2 catalyst the degradation of LAS increased to 68.20% and 93.94%, so that the photolysis method was faster in degrading LAS in detergent waste compared to the sonolysis method. The photolysis method used for the application of LAS degradation in liquid detergent wastes (so clinics, rhinos, attacks and chemists) obtained percent degradation of LAS respectively 82.81%, 91.59%, 93.79%, and 96.02%. From the research results, kemist liquid detergent waste has a higher percent degradation compared to three other detergent wastes, so that kemist liquid detergent is more environmentally friendly.

Keywords: LAS, degradation, photolysis, sonolysis, TiO_2 .

