PUNGUT ULANG PERAK DARI LIMBAH FILM FOTOGRAFI MELALUI PROSES *LEACHING* DENGAN LARUTAN ASAM

SKRIPSI

diajukan untuk memenuhi salah satu syarat memperoleh
gelar Sarjana Sains pada Program Studi Kimia

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UNIVERSITAS PENDIDIKAN INDONESIA

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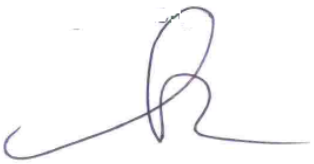

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ABSTRAK

Penelitian berbasis *review* jurnal ini membahas tentang penggunaan larutan asam pada pungut ulang perak dari limbah film fotografi. Tujuan penelitian ini adalah mengetahui larutan asam terbaik untuk pungut ulang perak dari limbah film fotografi melalui proses *leaching*. Data-data yang didapatkan kemudian dikumpulkan dan diolah menjadi data sekunder. Hasil *review* jurnal menyatakan bahwa variasi konsentrasi, suhu, dan waktu *leaching* pada semua larutan asam mampu meningkatkan pungut ulang perak. Asam oksalat mampu menghasilkan pungut ulang perak yang tinggi yaitu 91,82% dengan konsentrasi 10% (b/v), waktu leaching 20 menit dan suhu leaching 100°C tanpa menghasilkan produks samping yang berbahaya. Pada kajian evaluasi ekonomi, grafik CNPV/Investasi terhadap waktu (tahun) menunjukkan bahwa pada pungut ulang perak dari limbah film fotografi melalui proses *leaching* dengan asam oksalat yang dilakukan dalam skala industri mampu mencapai titik periode pengembalian modal (PBP) dalam jangka waktu 3 tahun.

Kata kunci: Pungut Ulang, Perak, Limbah Film Fotografi, *Leaching*

ABSTRACT

This journal review-based research discusses the use of acid solutions in silver recovery from photographic film waste. The purpose of this study was to determine the best acid solution for recovering silver from waste photographic film through a leaching process. The data obtained are then collected and processed into secondary data. The results of the journal review stated that variation the concentration, temperature, and leaching time of all acidic solutions was able to increase silver recovery. Oxalic acid was able to produce high silver recoveries of 91.82% with a concentration of 10% (w / v), a leaching time of 20 minutes and a leaching temperature of 100 ° C without producing harmful side products. In an economic evaluation study, the CNPV / Investment against time (years) graph shows that the recovery of silver from photographic film waste through a leaching process with oxalic acid carried out on an industrial scale is able to reach a payback period (PBP) point within a period of 3 years.

Keywords: Recovery, Silver, Photographic Film Waste, Leaching

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