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A Novel Silver Recovery Method from Waste Photographic Films with NaOH Stripping

Nuri NAKİBOĞLU

Balıkesir University, Faculty of Science and Arts,

Chemistry Department, Balıkesir-TURKEY

e-mail: nnuri@balikesir.edu.tr

Duygu TOSCALI

Ege University, Faculty of Science, Chemistry Department, Bornova,

İzmir-TURKEY

Gürel NİŞLİ

Ege University, Faculty of Science, Chemistry Department, Bornova,

İzmir-TURKEY

Abstract: A novel, simple, fast, cheap and pollution-free method was developed for recovering the silver from waste X-ray photographic films with NaOH stripping. The method has a number of advantages because it obviates the need for burning, oxidizing, electrolysis or purifying steps. Moreover, all experiments were carried out in the same flask, unlike other techniques. Silver recovery conditions were optimized and silver a purity level of 99% was recovered. The metal impurities (Al, Cd, Co, Cr, Cu, Fe, Mg, Mn, Ni, Pb and Sn) in the recovered silver were determined using the ICP-MS method. The results were compared with results in the literature for high-purity silver using the same method.

Key Words: Silver recovery, waste photographic films, sodium hydroxide

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