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Silver Recovery from Waste Photographic Films by Using Enzymatic Method

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**Abstract:** A different enzymatic method was developed for stripping the silver from waste X-ray photographic films. The silver having purity of > 99% was recovered by smelting the obtained slurry in the presence of borax. Enzyme extract, obtained from *Bacillus subtilis* ATCC 6633 by modifying Horikoshi medium, was used for stripping the silver layer. 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 those in with literature for high purity silver using the same method.

**Key Words:** Silver recovery, waste photographic films, *Bacillus subtilis*

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