Radiographies Recycling

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This project arises from the following questions: Is it possible to recycle the radiographies? If so, can it be profitable and environmentally friendly? Our starting point is the hypothesis that radiographies can be recycled with an effective, economical and environmentally friendly method. Radiographies contain silver halide, which by the erosion of water streams end in important watercourses, increasing pollution levels. From the method originally designed, optimization was performed to improve the overall efficiency of the process. For the extraction of silver, 1000g of radiographies underwent different chemical treatments, with inexpensive reagents being all of them recoverable, and to increase the purity of the obtained silver, they underwent a thermochemical treatment, too. The silver nitrate was obtained by nitration and a further solvent evaporation of the obtained silver, thus obtaining 7,9 g of silver crystals. Tests were performed and they confirmed that what had been obtained was silver and silver nitrate, respectively. The purity of the silver nitrate was determined by spectrophotometry (ultraviolet), obtaining a purity of (99± 1) %m/m. The tests were positive, it had been possible to obtain silver and silver nitrate with a practical yield of approximately 99,4 %.

Awards Won: