

Economic and Environmental Benefits of the Indium Recycling from the Waste Liquid Crystal Displays in China

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Abstract : Indium is one the scarce resources which can be only used less than 30 years, and more than 70% of the indium is used for the production of the LCD. The benefit of recycling Indium from waste LCD is large. Take the LCD-TV for example, the yield of which was close to 90 million units in 2010. If it was available to recycle the indium effectively, the yield of the secondary-indium could reach up to 110 metric ton, which accounted for one third of the primary indium production in China. And compared with the dispersion and long process extraction of the primary indium resources, secondary indium concentrates in the waste LCD, the exploitation has great economic and environmental benefits. However, the potential benefits were indefinite, resulting in China's government did not pay enough attention to the indium recycling industry. In our study, an estimation model was constructed to analyze the potential of the indium in the waste LCD. The different types of LCD were detected to find out the content of indium. Then, the potential of the indium in the waste LCD was estimated in China. Furthermore, the pollution emissions of the product process of the primary and secondary indium was analyzed respectively to calculate the economic and environmental benefits of the indium recycling from the waste LCD in China.

Keywords : indium recycling, waste liquid crystal displays, benefits, China

Conference Title : ICWM 2015 : International Conference on Waste Management

Conference Location : Copenhagen, Denmark

Conference Dates : June 11-12, 2015