Production of Indium Concentrate from Waste LCD Screens

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Summary: A commercially viable process for the extraction of indium from liquid crystal displays (LCDs).

Description: Indium tin oxide (ITO) is a transparent electrode material with advantageous electronic and optical properties. Worldwide, the demand for indium is growing due to the increased use of touch screen consumer electronic devises. Since the lifetime for these devises is on average in the United States only a few years, the indium that is contained in end-of-life liquid crystal display (LCD) screens should be recovered before disposal. The challenge that current indium recovery methods face is that since the concentration of indium contained within the LCD unit is relatively low, the volume of glass that is needed to obtain meaningful amounts of indium is large. As a result, the shipping costs of the LCD screens cut severely into the potential revenue, and the amount of acid that is used in the leaching operation exorbitant. This method employs a number of abrasion specific comminution processes that take advantage of the surface confined ITO to produce an indium rich concentrate that can be economically leached to recover the indium. The process economics can be further improved by the separation of other saleable material fractions from the screen such as liquid crystal blends.

Main Advantages of this Invention
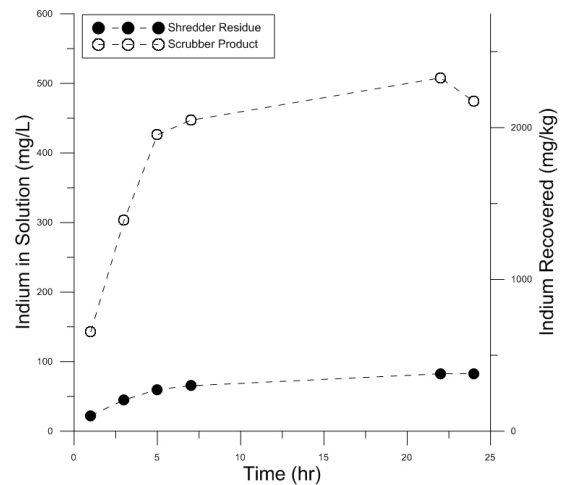- Improves economics for indium recovery
- Straight forward to apply

Potential Areas of Application
- Large consumer electronics companies
- Indium Leaching Circuits

ID number: 16041

Intellectual Property Status: US provisional patent filed.

Opportunity: We are seeking an exclusive or non-exclusive licensee for implementation of this technology.

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