

The research and development of an air separation conveyor for obsolete electronic products recycling – John S. Cambell

Electronics are a rapidly evolving industry with continuous development of new and progressive technology. The ceaseless flux of high –technology products into the marketplace is creating a serious environmental dilemma. Most electronic components contain a significant amount of material resources which have the potential to be recovered but instead are stored indefinitely or are dumped in landfills.

In this research, a new separation process was developed and a prototype unit constructed. The objective for this thesis was to develop a separation process, produce a working prototype and deliver a machine for process evaluation. The conceptual idea for the project was to integrate a separation process into a belted conveyor. Target recovery materials were selected appropriate to an obsolete electronics recycling operation. Air separation was selected for the process because of its low cost simple operation and suitability to this application. It was theorized that a perforated belt which was passed over as air stream directed normal to the surface could be used as a separating mechanism utilizing established air separation techniques.



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