A multiple objective decision making models for materials management of end-of-life electronic products – Kai Jin

Due to customers' demand for new technology and their increasing consumption of electronics, the environmental hazards in the disposal and precious metal recovery more attention has been paid to the take-back and recycling of end-of-life (EOL) electronic equipment and computers, in particular.

This research focuses on exploring a systematic approach to environmental impact analysis and decision making in the end-of-life electronics take-back and recycling process. The objective of this research is to develop a theoretical scheme of multi-objective decision –making (MODM) for material management of end-of-life electronic products. This research results in a structured decision support system to help analysts and decision-makers think systematically about the selection of recycling scenario.

The MODM method in this research is based on an interactive reference point method and fuzzy logic theory. The decision making model consists of four phases: quantifying, re-scaling, aggregation, and interactive decision-making process. The prototype of the environmental decision support model is developed using Microsoft Visual Basic and Access.

