

CRITICAL METALS FROM WASTE ELECTRONICS: METALLURGY AND BIOLEACHING

*Juris Burlakovs¹
Gintaras Denafas²*

¹ Linnaeus University, Sweden

² Kaunas University of Technology, Lithuania

Abstract

The annual growth rate of waste electric–electronic equipment (WEEE) is about 3–5%. This is the fastest growing waste stream in municipal wastes. Along with their environmental pollution, their high content of major, trace and precious metals in particular are regarded as a potential secondary resource when compared with ores. The main contributing metals in such electronics applications are the rare earths and platinum group metals. At present, the strategic restriction by the supplier countries made the virtual hype in the global market and will negatively impact the EU's economy. Therefore, to ensure the uninterrupted supply of such materials as well as to propose the effective mitigation of electronics waste issue, development of methodology is extremely necessary. This fascinating research area of electronic recycling attracted the separation and environmental chemists around the globe. There is growing technological potential for high metal recoveries by using mechanical, hydrometallurgical and bioleaching processes that are promising options for the treatment of WEEE.

Keywords

Critical metals; Natural resources; WEEE; Hydrometallurgy.