## Recycling based comprehensive characterization of waste printed circuit boards of various brown and white goods

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Pollution control is associated with the process of making all products. Recommended waste management practices include reduction in the amount of waste produced, the expansion of recycling technology, and the increase in complementing recycling technology government measures related to waste management. In recent decades, electricity and Electronic Electronics (EE) of jobs that are rapidly growing the manufacturing industry globally. Many factors, such as new scientific and technological innovations, lifestyle changes, and shortening of life expectancy of EEE product in the massive collection of waste from electrical and electronic equipment (WEEE) in the middle of the garbage dump (5% of total waste is filled with a different type of waste compared to traditional municipal waste. Worldwide Many factors, such as new scientific and technological innovations, lifestyle changes, and shortening of life expectancy of EEE productsin large quantities of waste from electrical and electronic equipment (WEEE) within wastestream (5% of total solid waste. Most of the online garbage disposal is also used in developing countries, where improper and risky set-up and sale Strict environmental regulations and rising costs of waste disposal and therefore can be exported to small retailers in developing countries is more profitable than re-used in their own countries. - Use donations and donations from rich industrialized to developing countries. EEEs (EEEs) is a critical factor in determining the content of the recycling e-waste system. this in the composition associated with their physical and chemical properties including metal that incorporates the various types of waste EEEs are scarce in existing literature. Therefore, the main objective of this study was to fully identify two types of PCBs from one of the 16-e-life EEEs classified as black and white goods with common and valuable metals associated with moisture content, flexible material and pH for recycling purpose. The results showed that a large proportion of PCBs brown material stocks occupied common items such as Cu (high: 23 wt.% On laptop), Al (highest: 6 wt.% On computer), Pb ( highest: 15 wt.% on DVD player) and Ba (highest: 7 wt.% on TV), which makes them use the second app. Precious metals, Au and Ag were found packed in brown goods PCBs with very high

Au content in mobile phone (316 g / ton) and Ag in laptop (636 g / ton). It can be deduced from the study that PCBs of black goods will serve as a tool for more powerful energy sources than white goods for the purpose of replacing metals due to their high content of common and precious metals. Complete measurement of PCB impurities of black and white goods helps to improve the similarity between the metal content and the precision of recycling materials to ensure efficient resource distribution.to have a high line of uncertainty due to the lack of consistent evaluation criteria and interpreting problems.