

Pengaruh jenis dan konsentrasi larutan leaching terhadap recovery logam emas dan tembaga dari hasil daur ulang printed circuit board = Effect of type and concentration of leaching solution towards the recovery of gold and copper metals from recycled printed circuit board

Arrazy Akmal, author

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Abstrak

Dengan kemajuan teknologi, maka pemakaian produk elektronik akan terus meningkat. Sehingga peluang untuk mengolah limbah elektronik sangatlah besar untuk era yang sekarang sedang berjalan. Salah satu limbah elektronik yang menjadi target proses pengolahan limbah adalah, Printed Circuit Board. Limbah PCB direduksi ukurannya menjadi sekitar 1,0 cm x 1,0 cm, dan kemudian limbah PCB yang telah dilakukan reduksi ukuran kemudian di leaching dengan menggunakan larutan asam klorida, asam klorida ditambahkan hydrogen peroxide, serta larutan aqua regia, masing ndash; masing dengan konsentrasi 4M dan 6M.

Hasil dari proses leaching tersebut kemudian dilakukan pengujian secara visual dan dengan Optical Microscope untuk mengetahui transformasi fisik setelah proses leaching dan juga pengujian dengan Atomic Absorption Spectrophotometry untuk mendapatkan nilai recovery logam emas dan tembaga. Hasil dari proses leaching menunjukkan recovery logam emas dan tembaga dapat mencapai sebesar 64.50 dan 90.24.

With the advancement of technology, the usage of electronic products will continue to increase. And because of this, it is an immense opportunity to recycle electronic wastes. One of the known types of electronic waste to be targeted for the recycling process of electronic wastes is, the Printed Circuit Board. In which, PCB waste is reduced in size about 1.0 cm x 1.0 cm, and after it is reduced in size, it is then leached by using hydrochloric acid solution, hydrochloric acid mixed with hydrogen peroxide, and aqua regia solution, each with concentration of 4M and 6M.

The result of the leaching process is then tested visually and by using Optical Microscope to understand the physical transformation after the leaching process. And then it is tested by using the Atomic Absorption Spectrophotometry in order to get the recovery value of gold and copper metals. The results of the leaching process shows that recovery of gold and copper metals could reach up to 64.50 and 90.24.