

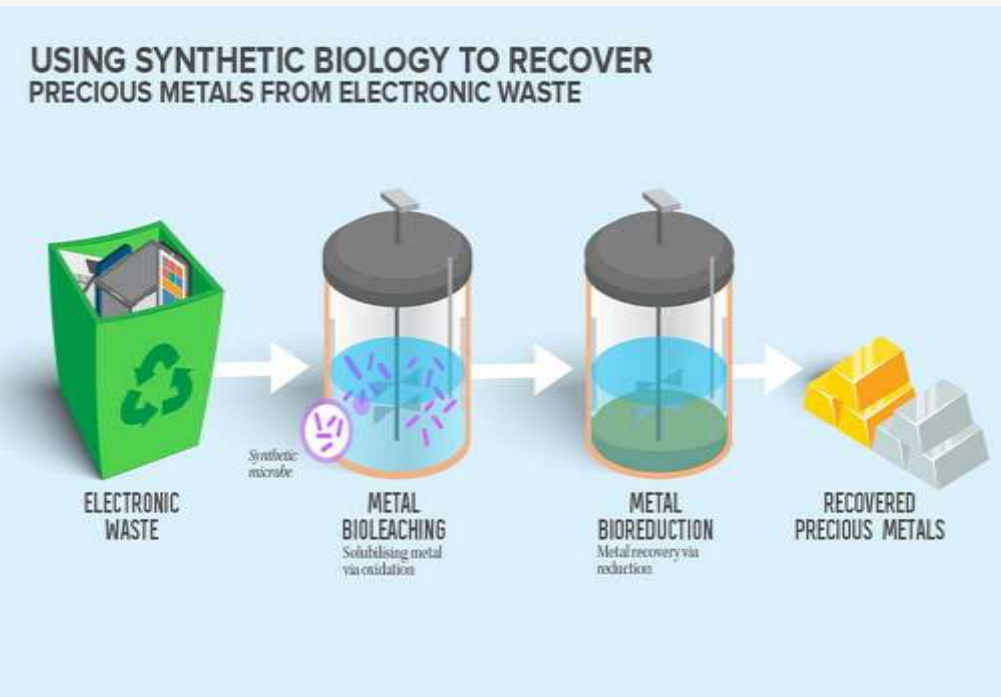


Metallurgy from E-Waste

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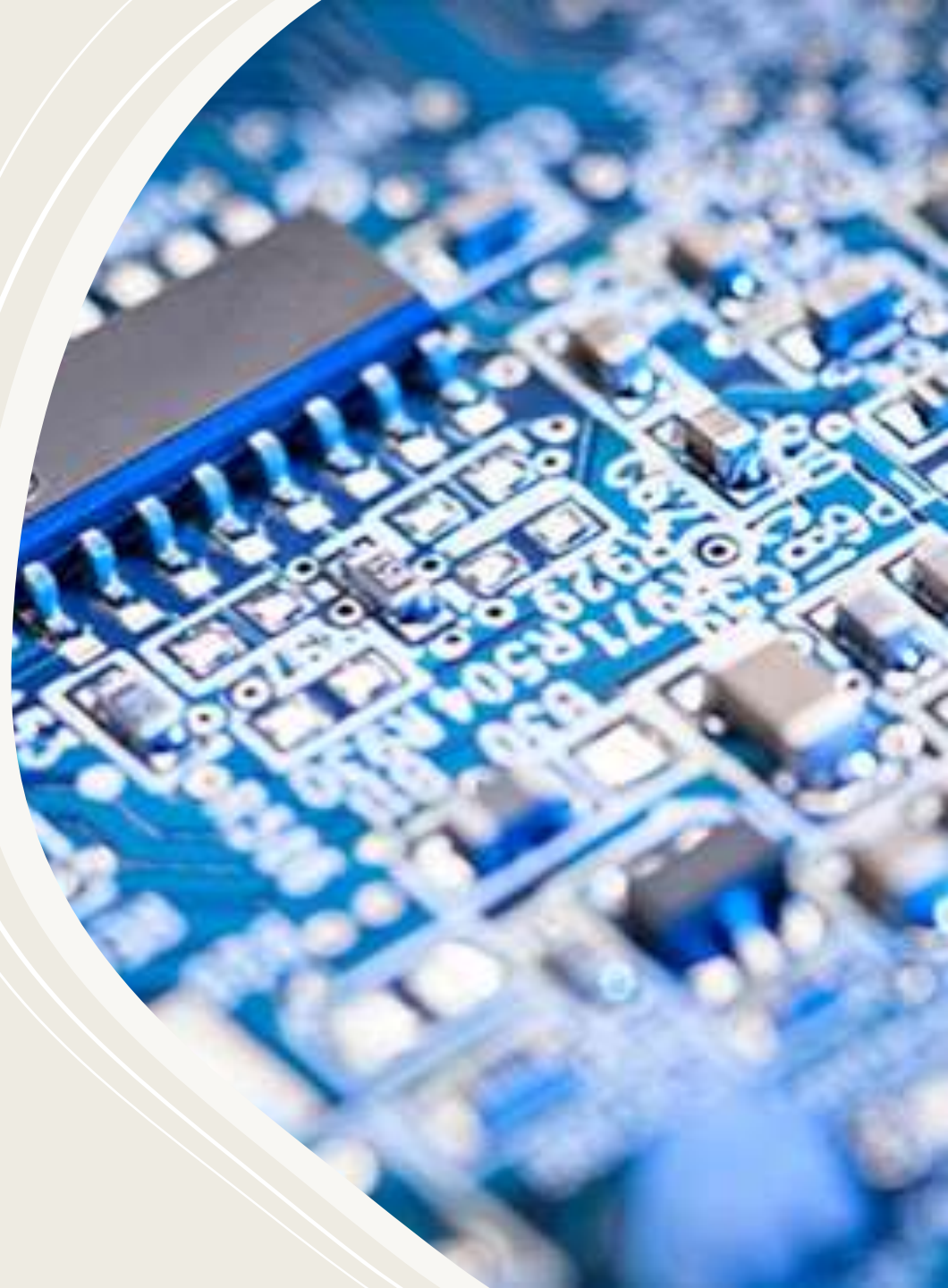
Extraction of Gold from E-Waste



Microbiological processes have been proposed over the last decade as possible alternatives to extracting precious metals such as copper, gold, palladium and silver from e-waste. Bacteria such as *Thiobacillus ferrooxidans* and *T. thiooxidans*, as well as fungi including *Aspergillus niger* and *Penicillium simplicissimum* have been documented to successfully extract copper, aluminum, lead and zinc from e-waste. *Aspergillus niger* and *Chromobacterium violaceum* are two microorganisms that have been found as suitable and sustainable methods of extracting gold from gold plated electronic devices.

Electronics Goods which Contain Silver

- CDs, DVDs and rewriteable optical disks
- High-voltage contacts (Silver cadmium oxide resists arcing)
- Button batteries (silver oxide) and laptop batteries (silver zinc oxide)



Bronze

Bronze is a copper-based alloy that typically consists of approximately 88% copper and 12% tin. Trace amounts of other metals, such as aluminum, manganese, phosphorus, and silicon, may also be present in the alloy.

Bronze is harder than copper as a result of alloying that metal with tin or other metals. Bronze is also more fusible (i.e., more readily melted) and is hence easier to cast. It is also harder than pure iron and far more resistant to corrosion.



Recycling of Waste Management

Waste management is the activities involved in the disposal of wastes and its recycling. In our day to day lives, we create waste like paper, glass, electronics, tin, and more. Waste management has great importance in our lives. For instance, it protects the environment. Proper waste management prevents environmental pollution thus, increasing the safety of humans, plants and animals. Recycling wastes enables the saving of resources and prevents the accumulation of wastes. It also saves energy and protects the environment as there is no need to collect more raw materials. IT creates jobs in the recycling industry and prevents landfills. Many challenges are facing the waste management and recycling industry but there is also excellent work going on to ensure that this is an industry to be proud of and one that will continue to secure effective, sustainable and ecologically sound waste management and recycling for many years to come.





Thank You