

# Micro-recycling as a method to protect the environment

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**Abstract**— The environment on earth surface is deteriorating very fast. Mostly human activities are responsible for it. To save the environment we should lead an environment friendly life. The things we use in our daily life are mostly derived from plants or minerals. Plants can be grown again, but minerals cannot be recreated. So, mineral items should be efficiently recycled. More efficient is the recycling, less is the need for mining. Less is the mining, better is the environmental protection. Recycling of bigger things is there in one form or the other in all countries. But small and very small metal things are often thrown away. We, in this article, are describing a method of recycling these small metal things. We have termed it as micro-recycling.

**Index Terms**— Big metal things, Environment, Micro-recycling, Minerals, Plants, Recycling, Small metal things.

## 1 INTRODUCTION

THE environment on earth surface is deteriorating very fast. This is responsible for loss of habitat of many creatures and they are facing extinction. It is also directly or indirectly influencing the living conditions of the human beings. So, as many methods as possible should be adopted to save the environment. As such if we try to understand the nature we can observe that nature does not waste anything. It recycles all the elements and compounds again and again to sustain different creatures. This occurs in the form of different cycles like nitrogen cycle or carbon cycle<sup>1</sup>. Similarly we should learn from nature to recycle every thing we use in our daily life. The things we use are either derived from plants or minerals. All the metals are obtained from various minerals. Minerals are obtained from mining and mining is one of the major cause of environmental degradation. If we sincerely try we can grow a forest again by plantation, but we cannot build a mine again. Even the nature cannot produce a mine again. Hence we must be very careful in using the things made of metals. After use we should try to recycle all metallic goods. Longer we use the metallic goods and more efficiently we recycle them, less will be demand on the mining. Less is the mining better is the environmental protection<sup>2</sup>.

Recycling of bigger metallic things is being practiced in almost all countries in different forms<sup>3</sup>. But a lot of small and very small metallic objects are often thrown away. These are not possible to trace out once they are thrown out. So they are lost forever. For example- pins, stapler pins, pieces of electrical wires containing copper/aluminum wires, empty medicine strips made of aluminum foils, aluminum foils used as wrappers. There are many other such things. The total amount of such things thrown away all over the world will be a massive amount. If these things can be recycled it will certainly reduce the demand on metals needed to make these things again and again. In this article we are going to describe a method which can be used to recycle these small and very small metallic things.

## 1 AIM

Preventing wastage of small and very small metallic objects and thereby saving the environment.

## 2 MATERIALS AND METHODS

**Materials-** The following substances are required to run a micro-recycling unit. These are containers (separate for separate metals and alloys), weighing scale of very small magnitude, computer, and ledgers.

**Method-**It should be informed to public that instead of throwing away small metallic things, they should bring it to these micro-recycling centers (Picture-1). This can be done by giving advertisement in News papers or in televisions or by public announcement by mikes or by distributing pamphlets. be entered in to the computer also. Once the total deposit exceed certain amount (let us say 100grams), suitable price should be paid to the depositor.

The depositor after receiving the amount will put his signature on the ledger to avoid confusion about payment. At the time of deposit also the depositor should sign as a proof of his deposition. Once a substantial amount of metallic things have accumulated they should be transported to a nearest industry where such things can be reutilized.

People need not come just to hand over a small pin. They can either keep all small things in a packet and bring once to the centers or deposit in the center if they are passing by that road for some other purpose. People need not come to the center solely to deposit a few pins. This will not be cost effective. In the center the person in charge will first segregate different metallic things or alloys. He will separately weigh them and enter into the ledger. In the ledger he will mention the name of the depositor in one page. The names should be mentioned in alphabetical order so that it will be easy to find out his name on subsequent occasions easily. The same thing can be kept recoded in a computer.

## 3 DISCUSSION

Though various methods of recycling have been described<sup>3</sup>, but we did not find any article on our concept of micro-recycling. It is well described that various methods of recycling can be adopted depending on cost

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effectiveness of recycling process<sup>3</sup>. However, we say that while protecting the environment the cost should not be considered. The indirect gain we will have will be far more than the cost of recycling. All tables and figures will be processed as images. You need to embed the images in the paper itself. Please don't send the images as separate files.

Picture-1



A model of micro-recycling unit

#### 4 CONCLUSION

If micro- recycling is adopted as a universal method of recycling small/ very small metallic things; it will help greatly to save the environment. These centers of micro-recycling can be established by government or by voluntary organizations or by private people.

#### 5 REFERENCES

1. Nutrient Cycle (Carbon cycle in biosphere) Biology for XII. National Council of Educational Research and Training,2006. P-253.
2. Friendsoftheearth.uk/sustainable-living/7benefits of recycling.29<sup>th</sup> March, 2018.
3. Recycling- saving the earth- Encyclopedia Britanica. Editor-Michele Metych.