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## “Restoration of ecosystems” using a trapping method of Carbon Dioxide

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### ABSTRACT

*I have an idea to reduce the carbon dioxide from nature and save the ecosystem. Some basic chemical required for this process. This process is the conversion process of carbon dioxide. In this process probably a new industry will be born. This process can be used in thermal power station and burning the waste paper. Because this is about 85% of the total electric power 558990 GWH generated in 2007-08 by thermal power plants in India. Thus, the total CO<sub>2</sub> emissions can be an estimated as about 523 million tons from all the thermal power plants in India. In this process the source of carbon dioxide is burning of waste papers or thermal power plant. If we burn the paper the paper produces carbon dioxide (but not roasting the paper).*

**Keywords**— Restoration, Ecosystem, Chemistry

### 1. INTRODUCTION

An ecosystem is a large community of living organisms (plants, animals and microbes) in a particular area or land. Examples of them are aquatic ecosystem in marine world. Our ecosystem is in danger. If we do not restore the ecosystem, the plant and animals' life is endangered. Nature cannot restore ecosystem by itself. Restoration of ecosystem can only be done by “Human being”, the most intelligent creation of nature and one who is solely responsible for destruction of ecosystem. Carbon dioxide and plastic are the main reasons for change in the ecosystem. As carbon dioxide (CO<sub>2</sub>) levels in the atmosphere rise, more CO<sub>2</sub> gets absorbed into seawater. As a result, the world's oceans have grown more acidic over time, causing a wide range of well-documented problems for marine animals and ecosystems. The CO<sub>2</sub> is combined with sea water and form Carbonic acid ( $H_2O + CO_2 = H_2CO_3$ ). The main sources of carbon dioxide are fossil fuel and industrial process. The carbon dioxide turns into carbonic acid. And that turns ocean water corrosive, particularly to shellfish and corals. The shellfish and corals (skeleton) are made by limestone. The plastic and **paper** also effect the ecosystem, if we burn the paper its release carbon dioxide and if we roast the paper, it releases green house gases like methane. The plastics are non-biodegradable and it also contain organic compound mainly as carbon and hydrogen etc. if we burn plastic, it release carbon dioxide and very harmful other gases, if we throw out plastic in sea it is very harmful for sea life. Water bodies are getting polluted due to tons of **plastic** garbage being dumped into rivers, oceans, lakes, streams etc., which is making aquatic life miserable. Marine animals like turtles, fish, seabirds, otters and other species swallow this plastic waste that leads to their premature death. Carbon dioxide also increases the sea level. For carbon dioxide firstly glaciers and ice sheets are melting worldwide and adding water to the **ocean**. Secondly, the volume of the **ocean** is expanding as the water warms.

### 2. METHOD

Chemical required: - Sodium hydroxide (NaOH)

Source of carbon dioxide (Na<sub>2</sub>CO<sub>3</sub> + HCl) alternative use of burning paper or thermal power plant.

### 3. PROCEDURE

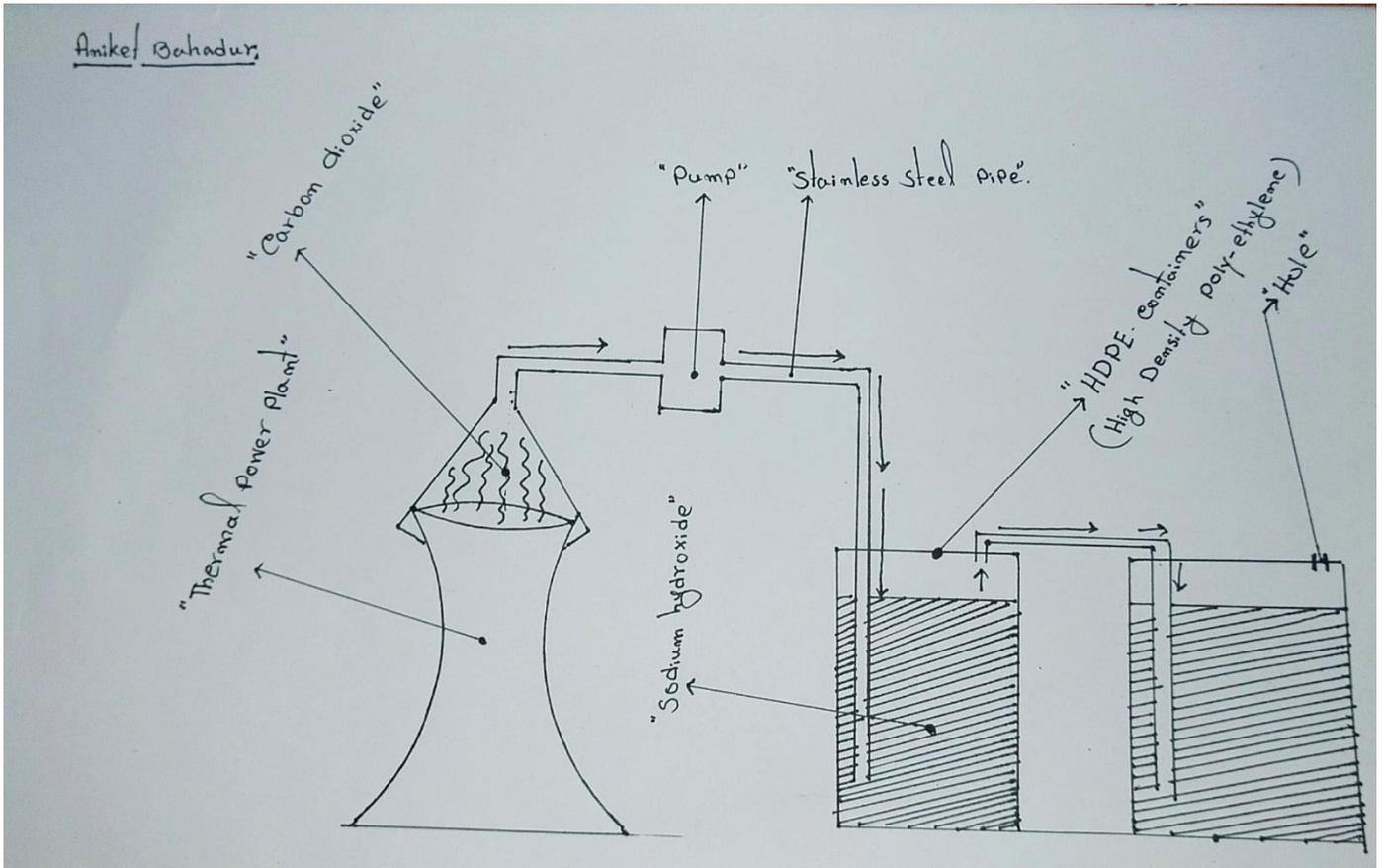
Take a beaker and add some water then sodium hydroxide is added to the water. Make a concentrate solution of sodium hydroxide. For the source of carbon dioxide reaction between HCl and Na<sub>2</sub>CO<sub>3</sub>. Through a pipe the carbon dioxide is passing into sodium hydroxide solution. The only thing that **NaOH** should be **stored** in **containers** made of HDPE (high density poly-ethylene).

### 4. RESULT

The sodium hydroxide is turn into 1<sup>st</sup> Sodium carbonate and after excess of carbon dioxide its form sodium bicarbonate (precipitate) in this process the carbon dioxide gas converted into sodium carbonate and the carbon dioxide is not released into the environment and not effect the ecosystem.

## 5. REACTIONS

1.  $2\text{NaOH} + \text{CO}_2 \rightarrow \text{Na}_2\text{CO}_3 + \text{H}_2\text{O}$  ( Sodium carbonate )
2.  $\text{NaCO}_3 + \text{H}_2\text{O} + \text{CO}_2 \rightarrow 2\text{NaHCO}_3$  (ppt)



## 6. CONCLUSION

In this process and the carbon dioxide is not released into the environment and not effect the ecosystem. The global warming and marine acidic problems are reduced. Because a big amount of carbon dioxide from thermal power plant is trapped by sodium hydroxide. The sodium bicarbonate use as baking powder.

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