

# Environmental Pollution Free System in All Over The World

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**Abstract**—All industries like oil-refineries, petrochemicals, chemical industries and heavy industries (metal) etc are causing tremendous pollution to the nature and its environments i.e. air, water, soil. Presently the residue materials from these industries are either liberated in open air or burnt in open air through openings of high lifted chimney. In both the cases, the residue materials are causing environmental pollution and spreading huge number of diseases in animals and botanic life including human one. In this paper, I propose an inventive environmental pollution control and prevention system for complete destruction the residue materials. The outcoming residue in gaseous form are passed through U or V-shaped zigzag pipes filled either water or oils and thereafter through freezing chamber and are finally burnt in a closed chamber with supply of oxygen. By this, maximum utilization regarding raw materials of these industries is achieved also. Hence, this method facilitates pure ecological balance system as well as highest enrich goals of the industries all over the globe.

**Index Terms**—Chemical industries, Closed Burning Chamber, Environmental Pollution, Freezing Chamber, Heavy industries, Oil-refineries, Petrochemicals, Temperature control equipment, U or V-type zigzag pipes.

## I. INTRODUCTION

Environmental pollution to nature is very high in the surroundings of all industries such as oil-refineries, petrochemicals, chemical industries and heavy industries etc. Most of the times the residue of these industries which is generally composed of different poisonous materials in gaseous form, are either thrown out or burnt in open air after being exhausted through openings of a long heighten chimney. Sometimes, in special cases the suspension particles and ashes in the residue gases are statically charged with some positive or negative voltage and those are picked up by oppositely charged plates which are kept on the path of the residue gases. In this system, the plates are to be cleaned in regular intervals for avoiding saturation condition of the plates by the ashes and the suspended particles which obstruct further attracting particles, but this system can not

ensure the complete destruction of all poisonous materials in the residue gases.

For this, I propose a more effective and least cost consuming environmental pollution Free System, where the pollution is appearing from the residue materials of all industries like oil-refineries, petrochemical, chemical industries and heavy industries etc. By applying this method, we have a complete balance eco-system throughout the world without any sort of environmental pollution causing by the industries.

## II. PRESENT ENVIRONMENTAL POLLUTION CONTROL SYSTEM IN INDUSTRIES

In all type of industries such as oil-refineries, petrochemicals, chemical industries, metal extraction industries (steel, copper, gold etc) and heavy industries etc, the last residue is consisting of some sort of oil, acid, bases, hydrocarbon cycles etc which are highly poisonous and furiously affected in contact of human and biological living bodies. It also destroys the soil and water composition. Generally we throw or burnt these last residue gases in open air. In cases of burning residue gases in open air, some part of the residue gases are not completely (100%) burnt, remain as its original condition. These remaining residue gases i.e. skipping off as unburnt condition and burning ashes of the residue gases mix with natural air in environment. These unburnt residue gases with ashes or simply the residue gases with the ashes of burnt residue gases, because of its highly poisonous character, spread numerous diseases in animals and botanic life including human one, especially in the surroundings of these industries plant (say 3~4 Km radius from the exposure of the residue gases or the burning residue gases). Again while the residue gases are burnt in the open air leaving from high chimney, they consumed lot of oxygen from the surrounding medium for the burning process and as a result scarcity of oxygen may happen in the surrounding medium. At the same time outcome of the burning process like ashes, carbon mono-oxide (CO), carbon di-oxide (CO<sub>2</sub>), hydrogen sulphide (H<sub>2</sub>S), methane (CH<sub>4</sub>) and other poisonous compound of hydrocarbons etc are spreading all over the pick up region (say 3~4 Km radius) from the burning point. This is causing another harmful pollution to the nature. To eliminate the above two types pollution effect causing to environment either being exhausted or burning residual product in open air, I propose a new pollution free system which prevents environmental pollution totally. It is easy to implement in the industries for safe guard the life of animals

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and trees as well as to ensure an environmental balance ecosystem.

In our conventional system for pollution control, lot of different kind trees are planted surrounding the industries for absorbing the poisonous residue materials which are coming out either thrown or burnt in air, but the trees in the surrounding area of the industries can bear the environmental pollution upto certain limit. After certain period, the trees are equally affected by the diseases and reach to the saturation level of absorbing poisonous materials i.e. not being able to absorb further outcome of the residue materials. So, environmental pollution created by these industries, supplemented by the trees, is not a permanent solution for a long time basis. It requires a comprehensive holistic study. My imaginative pollution free system assures an almost permanent solution to minimize a great extent the environmental pollution created by the industries.

### III. PROPOSED ENVIRONMENTAL POLLUTION FREE SYSTEM

The unused residual materials from all sorts of industries like oil-refineries, petrochemicals, chemical industries and heavy industries etc are generally available in gaseous form. If it is not like so, they may be converted to gaseous stage by imparting temperature (heat) under pressure. Then these residual gases are passed through a series of liquids in moderate speed for absorbing most of the materials consisting of the residue gasses. When these residue gases absorbing liquids reach the standard specific gravity or density as specified by the authority concerned, the mixture liquids are replaced by other same kind fresh liquids. For complete destruction of the residue materials, the detailed procedure of the proposed system is described step by step in the following manner.

(A) First of all the residue gases from the industries like oil-refineries, petrochemical, chemical industries and heavy industries etc are brought to suitable temperature which is not much above the boiling point i.e. below which the residue gases are liquefied. It is done for making the movement of residue gas particles through the liquids in moderate speed such that it can get ample time to mix in the absorbing liquids.

(B) Then these moderate temperature residual gases are passed through series of U or V-type zigzag pipes filled with some oil like petrol, spirit, diesel, kerosene, bio-fuel etc for absorbing the oily matters inside the residue gases. The choice of the oil liquids are depending on the experimental result of the residue gases absorbing capacity (tested on laboratory scale first) by the oil on the basis of chemical synthesis absorption examining. When the residue gases mixture with the oil reach to the standard or specified specific gravity (Sp. Gr.), since Sp. Gr. has to be measured time to time, the mixture oil is replaced by suitable fresh oil. This is done with great care and periodically. This work of replacing fluids is carried out automatically by the operation of inlet and outlet valves of the U or V-type pipes with the pressure sensors. At our convenient time i.e. reaching Sp. Gr. at some specified value, the residual fluids are taken away and the fresh oils are supplied to the U or V-shaped zigzag pipes. The residual gas mixing oils are safely used for our different practical purposes or further synthesis

process, which can be easily marketed. Since the density (Sp. Gr.) of the residual gas mixing oil is higher, so it possess high fuel intake.

(C) In the next stage, the residual gas is passed through series of U or V-type zigzag pipes filled with fresh water. By adopting this technique, water soluble things inside the residue gases are absorbed by fresh water and the mixing water with residue gases becomes a chemical solution e.g. acidic, basic or any sort of chemical compound solution. When this chemical mixture with residue gases reaches at specified specific gravity, the mixture chemical solutions are replaced by fresh water again. This replacement business is done automatically by adopting the pressure sensors to operate the inlet and the outlet valve of the U or V-shaped pipes. After proper chemical testing, composition of the residue gases mixture in water can be traced out and it is marketed for use in various purposes.

(D) Lastly the residual gases are cooled to low temperature stage, when maximum amount of the residual gases are solidified in crystalline structure or any other suitable form in solid state. The outcome from this process i.e. residual gases after solidification remain very very less amount like 1-2% from its originating amount. This solidified matter is being analyzed composition and character like stress-strain, temperature, pressure adaptability, life period etc. These solidified materials can be employed for further using either as raw materials in different industries or our day to day consuming materials.

(E) At last the very low content residual gases (almost 1-2% from its initial amount) are fired in a closed chamber with supply of oxygen to prevent any sort of environmental pollution. The closed chamber is to be cleaned periodically. The ashes and other exhaust burning things are merged in the earth in a safest concrete chamber to guard the natural pollution in full swing.

In this environmental pollution free system as shown in Fig. 1, we can safely avoid the natural pollution created by the present system adopted in all type of industries like oil-refineries, petrochemicals, chemical industries and heavy industries etc. At the same time we also reuse the residual substances upto an optimum limit. Therefore, the industries incur maximum utilization of its raw materials and present a complete ecological balance system. This proposed scheme hardly requires one room 12 feet by 10 feet size with different components like U or V-type zigzag pipes, temperature control equipment, pressure sensors, different parameters like Sp. Gr., Gas Flow etc measuring instrument, freezing chamber and closed burning chamber etc. This environmental pollution free instrument may be commercially produced which is easily fitted to the residue gas outlet.

### IV. CONCLUSION

This procedure for controlling natural pollution created by any industry like oil-refineries, petrochemicals, chemical industries and heavy industries etc are highly affected in consideration with financial involvement, initial installation cost of the pollution free (prevention) plant, man power required for maintenance of the site and outcome or fruit of this process. We can create a total safest area inside the factory as well as outside the factory regarding pollution

measure. Both the people who are working in the industry or associated outside the industry surroundings, can enjoy a pure natural environment without any sort of health hazards. Thus, their healths with mind play in a beautiful natural way to offer the best output in their respective jobs. By adopting this system, nobody is affected with the environmental pollution as created now a days by the industries. As a result the company will able to reach its goal with a minimum effort in all respects and to perform its social responsibilities in full order.



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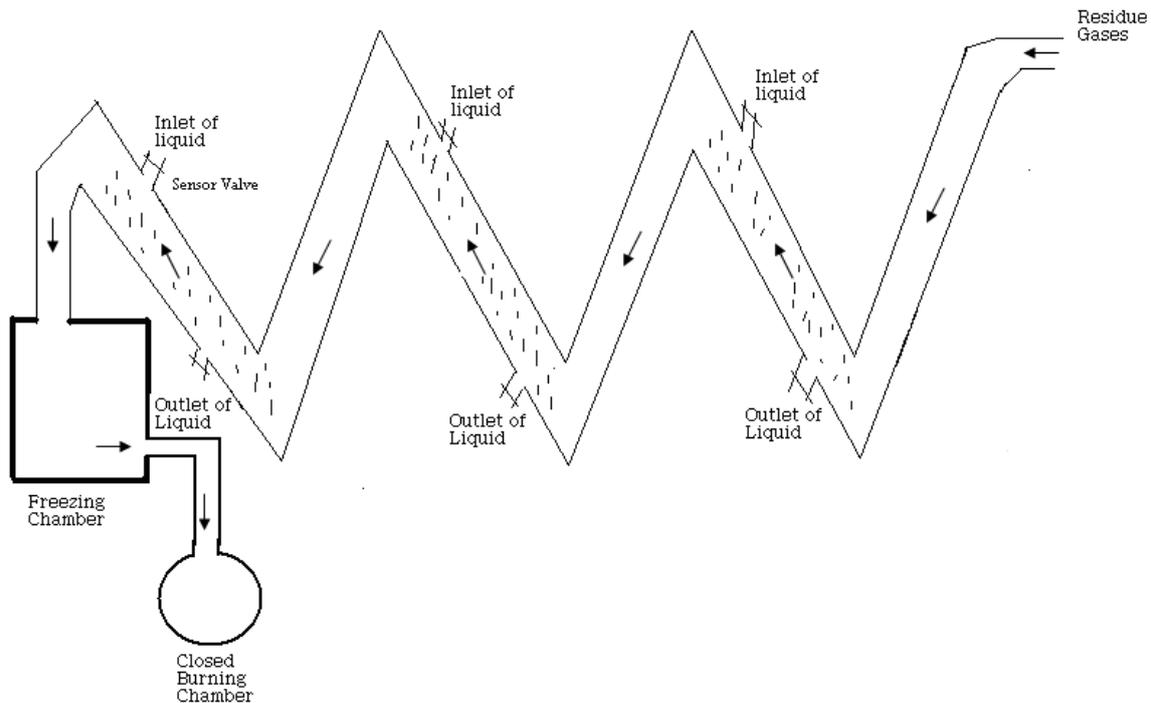


Fig. 1. Environmental Pollution Free System for all type of industries like oil-refineries, petrochemicals and chemical industries and heavy industries etc