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 (CO₂), hydrogen sulphide (H₂S), methane (CH₄) 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 eco-
system.

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 temporary 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,
frozen 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.

REFERENCE

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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