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Research on Restoration and Intelligent Management of the Global Village

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ABSTRACT

A sharp rebound in global energy emissions in 2018 is disappointing as the carbon-dioxide data monitored by mon ppm, hawaii reached 415.09 on may 3, the highest level in at least 800,000 years. We are well known to emit 0.272 kg of carbon dust, 0.997 kg of carbon dioxide (CO₂), 0.03 kg of sulfur dioxide (SO₂), 0.015 kg of nitrogen oxides (NOX) and huge amounts of heat to the earth for each electricity we use a 1 degree thermal power plant. Therefore, the full use of renewable energy instead of fossil energy, not only to achieve reduction. The effective measures to open the era of boiler and automobile cold emission are also the trend of the development of national environmental protection and energy strategy.

1. Introduction

The energy problem, from China and even the whole world, is gradually becoming an urgent problem. With the development of the times, this problem will become more and more urgent.

For a long time, garbage disposal technology is a key industry in all countries in the world. The country has issued many guiding policies to encourage the development of garbage disposal industry. In line with the support and call of the state for renewable resources, the development of new green and efficient waste disposal methods not only advocates the national environmental protection policy, but also is a major industrial innovation. As a new type of high-tech industry innovation, waste pyrolysis tech-

nology has been gradually approved by many scientific research departments. It can be seen that the energy saving and environmental protection characteristics, no heat pollution, huge economic benefits and effective solutions to the national waste industry problems of waste pyrolysis treatment cold discharge technology. The state, to the nation, to the enterprise, is a win-win or even multi-win profit model.

2. Key Technical Points and Major Innovation Points

“Distributed waste pyrolysis cold emission energy station” integrates key technologies, constant catalytic suspension combustion at 1100 °C to solve the formation conditions of dioxins, and the cold emission technology

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below 35 °C solves the end synthesis problem of dioxins. The investment per ton of construction is 50% of the waste power generation, and the income is more than 10 times that of waste power generation, saving 80% of the cost of treatment for the government, and the thermal efficiency of waste power generation in the world. The heat efficiency of the technology is up to 99%, without thermal pollution, saving about 20% of the energy emitted by the chimney compared with the traditional method, solving the problem of haze and the generation of the earth's heat island effect. It has a broad application prospect and good ecological and social benefits to realize the on-site harmless treatment and intelligent treatment and disposal of high-efficiency calorific value resources of organic solid wastes, such as domestic waste, and reduce secondary pollution.

The main scientific and technological innovation of "distributed waste pyrolysis cold emission energy station" includes four aspects: systematic thermodynamic research, which provides theoretical basis for the design of crushing equipment and pyrolysis furnace of "energy station". The science and technology innovation belongs to: urban domestic waste treatment and comprehensive utilization. According to TG and DTG curves, the pyrolysis process and characteristics of MSW are analyzed: the first stage is the precipitation of interstitial water and bound water, and the concentration of steam in the furnace increases; in the second stage, when the material temperature continues to rise, organic compounds in waste such as garbage will undergo a pyrolysis reaction, C-C, C=O and C-H bonds will break continuously to generate free radicals, and various complex polymerization cyclization will occur among them. At the same time, steam reforming reaction takes place in the furnace; the third stage is that the primary pyrolysis product further takes place, and the larger molecule of organic matter is broken to form small molecule non condensable gas. In addition, cyclization and aromatization reactions will occur, which will change the composition of tar in the primary pyrolysis and generate more PAHs. Some complex metal oxides produced in the process of pyrolysis can form autocatalytic effect on the primary and secondary pyrolysis of MSW.

The equipment intelligent integration of "distributed waste pyrolysis cold emission energy station" has developed a cogeneration and cogeneration industrial operation system with waste pyrolysis and multi energy efficient utilization.

The science and technology innovation belongs to: heating engineering. Through the further integration and innovation of various key technologies, intelligent control and efficient utilization of multi-level heat exchange, the

project equipment constitutes the modular assembly of complete equipment and the serialization of products; the equipment and equipment organically integrate the thermal and chemical equipment. In the equipment production process, to ensure the standardization and interchangeability of the interfaces of different functional modules of products, so as to realize the modularization of equipment components, it is convenient to form different series of products through flexible combination of different modules to meet the multi-level target requirements based on the requirements of customer scale and thermal energy utilization. The "energy station" pyrolysis incinerator and other major equipment are installed in underground buildings. The ground buildings can be artistically designed into unique shapes, which not only solves the problem of "difficult site selection" for waste treatment, but also saves land resources and reduces the cost of municipal engineering^[2].

Through the integration of new HVAC technology, further innovation and automatic control, the system effectively reduces energy consumption, recycles the heat generated by pyrolysis and combustion, optimizes the energy utilization efficiency of waste treatment, and realizes multi energy and efficient utilization. Innovation of cold exhaust emission technology, not only make full use of energy, but also avoid high temperature emission synthesis of harmful gases. Using plastic PVC pipe as chimney can reduce the cost and solve the problem of condensate corrosion caused by hot discharge of steel chimney. At the same time, there is no aerosol formed by cold and hot air exchange in tail gas, The aerosol wrapped PM2.5 was pushed into the air to form haze and exhaust pollution to the atmosphere. The exhaust gas is cold discharged below 35 °C, and the utilization rate of heat energy is increased by more than 20%. The system adopts high-temperature flue gas high-speed internal circulation flushing device to realize external heating for heat exchange utilization and improve energy utilization efficiency. Therefore, the total energy utilization rate of "energy station" reaches more than 99%^[1].

To sum up, the project will adopt the continuous moving fluidized bed to integrate the key technologies such as tar free pyrolysis, catalytic suspension combustion, and environmental protection cold emission of tail gas, to build a "distributed waste pyrolysis cold emission energy station", intelligent control system, realize the joint production and supply of waste pyrolysis and multi-energy and efficient utilization, innovate the new concept of waste treatment and disposal, and develop a new concept of waste treatment and disposal Clean energy. The implementation of the project can truly realize the on-site harm-

less treatment and resource utilization of urban garbage, no heat pollution discharge, and adjust measures to local conditions to improve the ecological environment.

3. Start the Era of Automobile Cold Exhaust

In 2018, the global consumption of oil is 3.5 billion tons (625 million tons in China) * 40% = 1.4 billion tons (42% of the kinetic energy is generated by the oil burned by the automobile, and about 40% of the energy is discharged after the work consumption is removed) (the three-way catalytic chamber is about 500 degrees, and the tail gas is discharged).

The temperature is about 80-100 °C, and the exchange with cold air produces fog. After the combustion of fossil raw materials, PM2.5 particles are pushed out by heat energy and wrapped up by fog to form haze. 40% of energy is converted into heat, which gives the reason for rapid warming of the earth. There was the theory of oil depletion very early, which means that sooner or later, the earth will be mined out of oil. There are two reasons, one is the limited resources, the other is the uncontrolled exploitation of human beings. As we all know, oil, natural gas and coal are non renewable resources, mainly because their formation process is very slow.

Compared with knowledge management, the higher level of intelligent management lies in its ability to use intelligent resources. Smart management is not only resource management, but also capability management. The ability to use smart resources is reflected in two aspects: construction ability and operation ability. Construction ability refers to the ability to ensure that the enterprise organization has the inner mind, including the psychological contract force, emotional connection force to maintain the basic structure of the enterprise organization, and the value judgment to guide the development and evolution of the enterprise organization. Operational capability refers to the ability of enterprises to apply smart resources to decision support, including factor allocation, platform synergy and value transformation. Since intelligent management is called management, it can not stay at the static level of resources or capabilities, but must have executive and operational functions to realize the concretization of abstract activities. In the traditional enterprise management, enterprise management is usually divided into planning, organization, leadership, control and other functions.

As an important part of smart city construction, smart energy management system can provide strong technical support for smart city construction by relying on self-developed biomass particles, energy-saving equipment, distributed energy station and big data analysis platform, and provide a package of system solutions for the con-

struction of smart parks, smart communities and smart campuses. The service mode of "convenience, benefit, benefit and people-oriented" and the industrial chain form of "cross-border cooperation and multi win-win" light up a promising future for the healthy development of smart park industry.

4. The Basic Situation of Waste Pyrolysis Cold Emission

The solution to dioxin can only be controlled in the international minimum standard by the two waste power generation technologies, i.e. garbage pyrolysis cold emission energy stage grate furnace, waste incineration power generation and circulating fluidized bed incineration boiler. However, the heat energy generation is increased by adding coal for combustion supporting, high temperature quartz boiling and coal blending combustion.

The distributed waste pyrolysis cold emission energy station does not violate the natural purification law of nature. Waste pyrolysis gasification gas carbon catalytic combustion has changed the fluctuating data of the ground burning temperature of materials for waste incineration power generation fluctuates greatly around 800 °C. The new technology splits the garbage pyrolysis into gas carbon and then breaks the wall for catalytic combustion, forming the air catalytic rolling of the carbon under high pressure. The furnace temperature can be maintained at about 1050 °C and dioxin emission is 3.9 times lower than the international standard, which changes the problem of dioxin synthesis at the end of the chimney due to the high emission temperature (international standard chimney emission temperature 180 °C -260 °C). The emission temperature of this technology is 28 °C -35 °C, which can not meet the requirements of dioxin synthesis. No heat emission, energy conservation, changing the world's combustion utilization rate to more than 99%, energy saving about 20% (generally around 20% energy into heat emissions). Without heat emission, there will be no fog formed by cold and hot air exchange. Without heat emission, PM2.5 will not be carried by heat energy to form haze. It has changed the haze of the world caused by the heat emitted by combustion. No heat emission (about 20% (furnace combustion) occurs when underground energy is mined and burned - 40% (automobile) is converted into heat emission.

In order to make good use of waste heat in power generation, it needs to rely on the cooperation of steam turbine generator set and waste heat boiler. The waste heat boiler can convert the heat from incineration waste into superheated steam, and apply steam kinetic energy

to steam turbine generator to provide technical guarantee for power generation. There are many methods to treat or purify flue gas, including activated carbon, dust removal and deacidification. There are many kinds of garbage in the city and the structure is complex. Even after effective treatment, there are still a lot of harmful substances in the flue gas, such as heavy metals, carbon dioxide, acid gas and so on. These toxic gases will cause serious air pollution^[3]. At this time, it is necessary to carry out treatment and purification measures. According to the different types of reaction materials, the treatment methods can be divided into dry method, semi dry method and wet method. The wet process has the best effect, but it also needs higher cost as support.

5. How to Replace Traditional Waste Incineration with Distributed Waste Pyrolysis Energy Station

Through the waste incineration power generation technology, the urban garbage can be effectively treated, the environmental pollution caused by garbage can be reduced, and the secondary utilization of resources can be realized. At this stage, there are still many factors restricting the

development of waste incineration power generation technology. Only by finding the source of the problem and proposing effective solutions can we improve the application level of waste incineration power generation technology and make the urban development more healthy.

The traditional method is centralized incineration with many links, high cost, high treatment cost and pollution on the way. Several links break the natural purification law of nature, spend thousands of yuan to treat a ton of garbage, generate power generation income of about 200 yuan, and lose more than 80% of the total. The power on the Internet can be spread thousands of miles to reduce the pressure for users, and mainly for cooling and heating

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