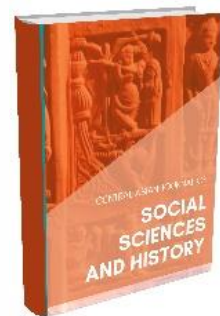




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Getting fuel by pyrolysis device and using it

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ABSTRACT

High temperature in the reaction zone of the raw material in a short time and sufficient mixing of the raw material with water vapor to increase the rate of gas formation. Along with the formation of gas, additional liquid product pyrolysis - resin is also formed. Pyrolysis is one of the most important methods of obtaining raw materials in industry for the chemical synthesis of petroleum. This process occurs at relatively low temperatures (500–800 ° C) compared to gasification (800–1300 ° C) and combustion (900–2000 ° C). When wood is heated in an airless place from 450 to 800 0C, gaseous and liquid products, as well as solid residue - charcoal are formed. This method was widely used in ancient times 80-90 years ago in charcoal, coal from blacksmithing, shashlik cooking, jewelry.

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Introduction

Pyrolysis (from the Greek word for per-fire, scorching heat and lexis-dispersion, decomposition, decomposition) is the transformation of organic compounds, ie biomass, under the influence of high temperatures. Typically, this process of processing thermally recycled oil and gas raw materials at high temperatures is called pyrolysis. This, of course, leads to the destruction of the molecule of the extracted substance and other changes.

The main common pyrolysis equipment in the manufacturing industry is the tubular type. The raw material (M: gasoline) passes through a steam heater and mixes with the heated water vapor before entering the reactor, and the raw material continues to heat up in the reactor. This is the pyrolytic

process. This means that the reactor temperature (at the outlet of the reactor) is 750–8500C. In a short time, the high temperature in the reaction zone of the raw material and the mixing of the raw material with water vapor increases the rate of gas formation sufficiently. Along with the formation of gas, additional liquid product pyrolysis - resin is also formed. Pyrolysis resin is characterized by a high concentration of aromatic hydrocarbons. This includes benzene, toluene, naphthalene, and others. The synthesis of many organic products consists of hydrocarbons. In addition, resin has been widely used in shipbuilding in the past.

The high energy density of pyrolysis in liquid products is of great interest due to their great potential in use as liquid fuels.

Pyrolysis is one of the most important methods of obtaining raw materials in industry for the chemical synthesis of petroleum.

In addition to pyrolysis gasification and direct combustion, industrial and domestic wastes, it is expedient to use energy from biomass with less advanced technology at the same time. It is one of the effective methods of thermal processing of biomass. Pyrolysis is understood as the process of thermal processing of organic compounds without oxygen mixing. This process occurs at relatively low temperatures (500–8000S) compared to gasification (800–13000S) and combustion (900–20000S).

The first pyrolysis plants were built in the Russian cities of Kiev and Kazan in the 70s of the XIX century. The possibility of separation of aromatic hydrocarbon resins during pyrolysis has been proven. Pyrolysis was in high demand in World War I (1914–18) for the production of TNT (trinitrotoluene), the raw material for toluene.

Raw materials for pyrolysis are diverse. Gases range from hydrocarbons (ethane, propane) to heavy distillates and crude oil. However, the main mass of pyrolysis processed is gaseous hydrocarbons and gasoline raw materials. These types of raw materials are the most needed type of product in the least coke cycle.

The development period of thermal pyrolysis of hydrocarbons introduced a number of important improvements in the design and technological scheme of production of pyrolysis furnaces. In this regard, if in the early 1960s the capacity of the pyrolysis unit on ethylene was 100-140 thousand tons / year, today it is more than 1.0-1.4 million / year.

When wood is heated to 450 - 8000 C in an airless place, a gaseous and liquid product, as well as a solid residue - charcoal is formed. This method was widely used in ancient times 80-90 years ago in charcoal, coal from blacksmithing, shashlik cooking, jewelry. The raw material obtained by dry shredding of firewood is one of the earliest processes of chemical technology.

Currently, wood from traditional birch and pine trees is used to carry out this process. For pyrolysis of firewood, for example, the moisture content of white birch should be 10-15%.

The unprocessed pyro fuel is a dry black resinous liquid, and the output from the pyrolysis reactor can yield up to 80% of the raw material mass. The piezo fuel can be used as a replacement for boiler fuel. The fuel can also be used in gas turbines and diesel engines.

In the future, part of the pyrolysis device fuels will be used to supply pyro fuel to utilities in the city.

All commercially operated pyrolysis devices are equipped with computer control and operate continuously throughout the day.

In developed countries, the output of pyrolysis in the processing of solid wood raw materials with an moisture content of 10% on an industrial scale is close to 74%, the resulting pyrolysis fuel is a mixture of solid resin and it is a by-product of traditional pyrolysis or industrial gasification.

In short, each country has 3 reserves of mineral resources - gas, oil and coal, and 4 - pyrolysis fuels, which are obtained as a fuel, in addition to the enrichment of underground reserves.

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