European Journal of Pedagogical Initiatives and Educational Practices
ISSN (E): 2938-3625
Volume 1, Issue 3, June, 2023

Fuel, Application of the Composition of Fuel and its Effectiveness to Science

Siddikov Rasuljon Oktamovich
Head of the Department of Engineering
Technologies of T DTU QF

Mirzayev Islombek Umarali
6-20 Student of EEE Group "Technological Machines and Equipment" 2.21

Daughter of Khusanova Sarvinoz Alisher
-20 Student of EEE Group "Technological Machines and Equipment" 2.21

Bakhriddinova, daughter of Dilnora Sharifjan
"Material Science and Technology of New Materials" 3.21

Abstract
In this article, comments were made about fuel, its types and fuel ash.

Keywords: fuel, solid, organic, peat, carbon, hydrogen, nitrogen.

Introduction

All types of solid fuels on the planet owe their origin to solar energy and chlorophyll - a special substance that creates complex organic substances found in leaves and other green parts of plants and then turns into fuel. In its transformations, the fuel goes through the stages of formation of peat, brown coal, coal, and anthracite.

Follows:

C p + H p + O p + N p + S ° p + S p k + A p + W p \u003d 100%, (15)

If we remove the ballast from the fuel, then we get the combustible mass of the fuel

C g + H g + O g + N g + S g ° + S g k \u003d 100%, (16)

The dry weight of fuel corresponds to dehydrated fuel and its composition is as follows:

C s + H s + O s + N c + S o s + S s c + A s \u003d 100%, (17)

Recalculation of fuel composition from one mass to another is carried out using coefficients.

Carbon and hydrogen are the most valuable parts of fuel.

Carbon is in large quantities in all types of fuel: 50-58% in wood and peat, 65-80% in lignite and coal, 90-95% in lean coal and anthracite, 61-73% in shale, fuel available in oil 84-87 % (numbers are given as a percentage of the combustible mass of the fuel). The more carbon in the fuel, the more heat it releases when it burns.

The composition of the working mass of the fuel depends significantly on the volume of ballast, therefore, information is often given on the composition of the combustible mass of the fuel, which is more stable for each type of fuel and mine.

Hydrogen is the second most important part of any fuel. In the fuel, hydrogen is partially associated with oxygen, which forms the internal moisture of the fuel, as a result of which the

thermal value of the fuel decreases. Hydrogen plays an important role in the formation of volatile substances released when fuel is heated without air. Hydrogen is included in volatile substances in its pure form and in the form of hydrocarbons and other organic compounds.

Nitrogen is also a ballast inert component of fuel, which reduces the percentage of combustible elements in it. When fuel is burned, nitrogen in the combustion products is both free and in the form of NO x oxides. The latter refers to the harmful components of combustion products, the amount of which should be limited.

In sulfur fuel, organic compounds are in the form of S ° and pyrites S k and are combined into volatile sulfur S t In addition, sulfur enters the fuel in the form of sulfur salts - sulfates (for example, gypsum CaSO 2).) who are unable to burn. Sulfate sulfur S a is commonly called fuel ash.

The presence of sulfur significantly reduces the quality of fuel, because sulfur dioxide SO 2 and SO 3 (combining with H 2 O to form H 2 SO 4) destroys the metal of the boiler equipment entering the atmosphere and has a harmful effect. living organisms and plants. Therefore, sulfur is a very undesirable element for fuel. Sulfate gases can enter workplaces and cause poisoning of workers.

Fuel ash is a ballast mixture of various mineral substances remaining after the complete combustion of all the combustible part of the fuel. Ash has a negative effect on the combustion quality of fuel.

References:

1. Salimov H., Khatamov A., Mamajonov M. Economic and social geography of Uzbekistan. Study guide. - T.: "New century generation", 2008.
2. Soliyev A.S. and others. Regional economy. study guide/responsible editor Z.Ahmadjonova. - T.: University, 2003
3. Tokhliev N. Basics of the economy of Uzbekistan. / N. Tokhliev, Q. Hakberdiev, Sh. Ermatov, N. Kholmatov. - T.: "National Encyclopedia of Uzbekistan" State Scientific Publishing House, 2006.
4. Noveyshiy entsiklopedichesky spravochnik. Strany mira / Author. - sost. D.O. Khvostova. - M.: OLMA Media Group, 2006.