

The processing solid municipal waste in alternative fuels is considered important and perspective in world practice, since the combustion of this fuel has negative impact on the environment as compared to traditional fuels. The use of RDF also reduces the consumption of natural resources and the area of landfills sites for waste disposal. In addition, the price of alternative fuel is much lower than the price of fossil fuels.

BIBLIOGRAPHY

1. Концепция создания мощностей по производству альтернативного топлива из твёрдых коммунальных отходов и его использования (утверждена Советом Министров Республики Беларусь № 664 от 22.08.2016).

2. Таланова, Ю. П. Использование RDF-топлива в промышленности строительных материалов / Ю. П. Таланова, Е. К. Сергиенко, А. Б. Бахмат // Актуальные проблемы экономики строительства: Материалы 73-й студ. науч.-техн. конф. – Минск, 2017. – С. 54–57.

3. Waste-to-Energy Options in Municipal Solid Waste Management, GIZ, A Guide for Decision Makers in Developing and Emerging Countries. – 2017. – P. 26–30.

4. Mutz, D. Co-processing Waste Materials in Cement Production. The GTZ-Holcim Public Private Partnership / D. Mutz, V. Nandan // International J. of Environmental Technology and Management. – 2006. – Vol. 17 (2–4). – P. 300–309.

NEWTON'S GENIUS

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This article about Newton's genius, and about his contribution to science.

Keywords: Cambridge, genius, skill, acceleration is force divided by mass ($F = ma$), any action causes an equal resistance, the law of gravity.

The genius of Isaac Newton is in the word itself. In the years when Isaac studied at Cambridge, he was the main quality that developed his genius-the desire to get to the truth, to the heart of the matter.

In its 23 years he already possessed the skills of integral and differential calculus, he also became a Professor of mathematics at Cambridge University. His work was limited to not only classroom lessons, he also met at various meetings, which were necessary for the proper management of College in 17 century?

And one day in the fall, before the meeting, Newton walked through the Park and saw the Apple tree from which an Apple fell. Without any reasoning in his brain flashed the thought that the fall of an Apple and the movement of the planets in their orbits must obey the same universal law. To come to him, Newton was necessary to sweep away the detritus of the old Aristotelian philosophy, adopt the philosophy of "mechanical" and then something to reject and it make correct inferences from the comparison of terrestrial and Celestial movements, develop a theory and repeatedly reaffirm its coincidence calculated and real celestial phenomena.

In 1671 he was able to create a new model of the telescope-big sizes and better quality.

Awesome and truly a great man for the entire history of mankind was Isaac Newton. Without his discoveries, our world will certainly was quite different. First and foremost, it is the first time Newton demonstrated that white light contains all other colors. And this discovery has impacted not only on physics, but in astronomy and many other sciences.

However, the most important discoveries of Newton's three laws of mechanics are considered:

- 1) acceleration is force divided by mass ($F = ma$);
- 2) any action causes an equal resistance;
- 3) the law of gravity.

At first glance, these laws are simple and obvious. However, the absence of these simple to Newton laws an insurmountable wall stood in the way of development of mankind. And, of course, because all sciences interrelated, this barrier has affected not only the physics, but also in mathematics, astronomy, even in philosophy and economics.

But opening these was given to the Newton does not just. Only thought, the search and painstaking labor allowed Newton to come to their great and important discoveries.

Since the discoveries of Newton, many scientists consider him almost the most important and great man both for the world of science and for the whole of humanity as a whole. And Newton's achievements were rec-

ognized as scientists of those days when Isaac Newton only made his great discoveries, and scientists of today, when humanity has made so many discoveries that it is simply impossible to remember all of them.

So without a doubt, Isaac Newton is one of the greatest people and the greatness of his and his discoveries on the merits is appreciated by all human descendants.

THE STEEL AS PART OF HISTORY

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The history of steel production dates back to the times when humanity appeared on earth. For all this time, made a great many wonderful discoveries and inventions. But the methods of steel mining can rightly be called the main among all inventions, among all discoveries.

Keywords: Puddling method, open-hearth method, industrialization, cast iron, steel.

The first thing that people got according to the official story is the "shatter iron". His process was simple. They took low-grade iron or swamp ore.

The process of ore melting took place directly in the coal itself. Therefore, the molten lump contained impurities of various metals, slag, stones and clay. Also in different fragments there was a different content of carbon. After that, by forging, the extra components were separated and by repeating the process of smelting-forging, steel was obtained. But this method had its drawbacks – it turned out products of small volume.

In the era of industrialization of society and the development of new military and industrial technologies, there was an urgent need for a large amount of steel.

And in the second half of the 18th century in England the "Puddling method" of steelmaking was invented. There was no contact between the cast iron and the fuel in the puddling furnace. Coal burned in the hearth, the heat from which was sent to the workspace, turning the loaded cast iron into a pasty mass. In this case, the furnace walls were covered with a layer of clay mixed with iron oxides, which helped the carbon in the molten iron to oxidize. At an enormous temperature and due to a special coating, carbon and impurities burned out, and crystals of sufficiently pure iron appeared in the melt. After collecting them into a bundle, the workers pulled him out of the furnace and sent him to a forging.

At the beginning of the second half of the XIX century, Henry Bessemer developed a new, more productive method for producing steel. The process of redistribution of liquid iron into cast steel by blowing through it compressed air, normal atmospheric or enriched with oxygen. The purge operation is performed in a Bessemer converter. The transformation of iron into steel is due to the oxidation of impurities contained in the iron – silicon, manganese, and carbon (in part also iron) with oxygen from the air of the blast. Despite the increase (with the oxidation of impurities) of the melting point of the metal, it remains in a liquid state due to the release of heat during oxidation reactions.

But after a decade: engineer Pierre Martin patented the process, which was called "open-hearth method", which allowed to melt cast iron, load it with scrap metal or ore – and produce steel of the desired quality and composition.

The most progressive today is considered the oxygen-converter method of steel production. At the same time, such promising ways of producing steels are being developed, such as direct reduction of steel from ore, electrolysis, electroslag remelting (ESR), etc.

SUSTAINABLE DEVELOPMENT IN INTERNATIONAL WATER LAW

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The article analyses the status of sustainable development in international law governing the utilization of transboundary freshwater resources. The research is centered around international treaties and instruments codify-