

RESEARCH OF ENVIRONMENTAL TECHNOLOGIES OF THE ENERGY INDUSTRY

Vinnitsia National Technical University

Анотація

Енергетична промисловість відіграє важливу роль у сучасному світі, забезпечуючи електроенергією мільйони людей і приводячи в рух нашу економіку. Проте разом з цим прискіст виробництва енергії також створює значний вплив на навколишнє середовище. Забруднення повітря, викиди парникових газів та використання нестійких джерел енергії є серйозними проблемами, які потребують негайного вирішення. Відповідно, дослідження технологій екологізації в енергетичній промисловості є ключовим напрямком для створення сталого та екологічно чистого майбутнього.

Ключові слова: промисловість, забруднення, технології.

Abstract

The energy industry plays an important role in today's world, providing electricity to millions of people and driving our economy. However, at the same time, the increase in energy production also creates a significant impact on the environment. Air pollution, greenhouse gas emissions and the use of unsustainable energy sources are serious problems that need immediate solutions. Accordingly, the research of greening technologies in the energy industry is a key direction for creating a sustainable and ecologically clean future.

Key words: industry, pollution, technologies.

Introduction

In today's world, environmental problems are becoming an urgent task for all industries, in particular for utilities and energy. The activities of this industry have a significant impact on environmental pollution, so the research of greening technologies becomes a key task. Atmospheric air pollution is one of the most painful problems of our time. Even a century ago, the composition of the atmosphere, in fact, did not change during the last 300-400 years. However, the rapid growth of industry, the explosive explosion of automobile transport, aviation, the industrial production of petrochemical products, household chemicals, the processing of agricultural land from airplanes, and landfills have led to a progressive increase in atmospheric air pollution. Utility energy is an industry that provides the production, transmission, distribution and consumption of energy to meet the needs of urban populations and infrastructure.

The main characteristics of communal energy include the following aspects: sources of energy are various sources such as coal, natural gas, oil, renewable energy (solar, wind, hydro) and others. Technical systems include systems of production, transmission and distribution of electricity, heat and hot water for communal needs. Infrastructure means power transmission networks, heat networks, energy facilities, thermal energy enterprises and other objects. Energy efficiency and environmental friendliness deal with modern requirements provide for the improvement of systems to ensure efficient use of energy and minimize the negative impact on the environment. Economic aspect takes into account the cost of energy production and consumption, tariff policies, investments in the development and modernization of energy infrastructure.

Research Results

Technologies of industrial greening play an important role in today's world, providing electricity to millions of people and driving our economy. However, at the same time, the increase in energy production also creates a significant impact on the environment. Air pollution, greenhouse gas emissions and the use of unsustainable energy sources are serious problems that need immediate solutions. Accordingly, the

research of greening technologies in the energy industry is a key direction for creating a sustainable and ecologically clean future.

One of the first important technologies to be actively explored is the transition to renewable energy sources. Solar, wind and hydropower are becoming more affordable and efficient. Research is aimed at increasing the efficiency of the use of these energy sources, as well as at developing new technologies for their integration into the energy infrastructure.

Another key technology is energy storage. The development of efficient storage systems will increase the reliability of the use of renewable energy sources and reduce dependence on traditional sources such as coal or oil. Increasing energy efficiency is also an important area of research. The introduction of the latest technologies and approaches to the optimization of production processes will allow to reduce energy consumption and emissions, while maintaining high productivity. The development of emission reduction technologies is also an important aspect of research. The introduction of emission cleaning systems, catalysts and other innovative solutions will significantly reduce the negative impact of the energy industry on the environment.

Conclusions

The study of greening technologies of the energy industry moves us towards the formation of a sustainable and ecologically clean future. The advantages can be called conservation of natural resources, reduction of emissions into the environment, economic advantages and minimization of risks. By combining innovative technologies with a responsible approach to energy production, we can ensure the planet's viability for generations to come.

REFERENCES

1. Закон України «Про енергозбереження» № 74/94 від 01.07.1994. URL : <https://zakon.rada.gov.ua/laws/show/74/94-%D0%B2%D1%80#Text> (дата звернення 20.04.2024)
2. Івашура А. А. Екологія: теорія і практикум / А. А. Івашура, В. М. Орехов. – Харків: ВД «Інжек», 2004. – 256 с.
3. Промислова екологія: Навчальний посібник / С.О. Апостолюк, В.С. Джигирей, А.С. Апостолюк та ін. – К.: Знання, 2005. 474 с.

Цибаль Павло Сергійович – студент групи ТЗД-226, факультет будівництва, цивільної та екологічної інженерії, Вінницький національний технічний університет, м. Вінниця, e-mail: pashathibal@gmail.com

Науковий керівник: Слободянюк Алла Анатоліївна – старший викладач кафедри іноземних мов, Вінницький національний технічний університет, м.Вінниця, e-mail: a.allavin@gmail.com

Tsybal Pavlo S. – student of Faculty of Construction, Civil and Environmental Engineering, Vinnytsia National Technical University, Vinnytsia, e-mail: pashathibal@gmail.com

Scientific Supervisor: Slobodianiuk Alla A. – Senior Lecturer of the Foreign Languages Department, Vinnytsia National Technical University, Vinnytsia, e-mail: a.allavin@gmail.com