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researchers and students: theory and practice collection of materials of the
international scientific and practical conference on the topic

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In the collection of materials of the conference, the role and role of Science, Education and production in the era of globalization, the pressing problems of the issues of interaction of these processes, feedback on their solutions were presented by mature specialists of the field.

In addition, research on the scientific and practical topic, carried out in the economics, Exact Sciences, Natural Sciences and socio-humanities during the globalization period, information is presented in the scientific and practical fields, which includes the latest innovative technologies in the fields of production.

It can be argued that this collection is one of the specific intersections of current thoughts and innovative ideas of the world of science. This scientific and practical conference was actively attended by professors and scientific researchers engaged in scientific research in Uzbekistan and foreign countries. In increasing the position of the scientific and practical conference, the professors and teachers of domestic and foreign higher educational institutions made a significant contribution.

Professors and teachers of foreign higher educational institutions who actively participated in the work of the conference made a worthy contribution to the high level of interaction with scientists of our country. The processes of international cooperation with foreign countries and exchange with them in the field of Science in the era of globalization have a positive effect on the development of Higher Education, the fields of Science and production. The materials of this conference are special in that they include a wide range of research, from theoretical developments to practical solutions, demonstrating the diversity of approaches and directions in this area.

In conclusion, it should be noted that this scientific and practical conference will be a very useful collection for everyone who is interested in modern research in the fields of further development of Higher Education, Science, Education and production in the era of globalization. The authors are responsible for the content and quality of the articles and abstracts included in the collection.

THE ROLE OF GREEN TECHNOLOGIES IN SOLVING ENVIRONMENTAL PROBLEMS

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Annotation. This article examines the role of green technologies in solving modern environmental problems. In the context of global climate change, environmental degradation, and resource depletion, green technologies have become essential tools for achieving sustainable development. The study analyzes key areas of green technology application, including renewable energy, waste management, water conservation, and sustainable agriculture. It also highlights the environmental, economic, and social benefits of these technologies, as well as the challenges associated with their implementation. Furthermore, the paper discusses global trends and emphasizes the importance of integrating green innovations into national development strategies. The findings suggest that green technologies play a crucial role in reducing environmental impact and ensuring a sustainable future.

Key words: green technologies, environmental protection, sustainability, renewable energy, climate change, eco-innovation, waste management.

One of the most pressing challenges of the twenty-first century is the growing scale of environmental problems, including climate change, air and water pollution, deforestation, and the depletion of natural resources. These issues pose serious threats to human health, biodiversity, and the overall stability of ecosystems. In response to these challenges, the concept of sustainable development has gained global importance, emphasizing the need to balance economic growth with environmental protection. In this context, green technologies have emerged as effective solutions for reducing negative environmental impacts and promoting a more sustainable future. Green technologies refer to environmentally friendly innovations and practices that aim to conserve natural resources, reduce pollution, and minimize ecological damage. These technologies are designed to improve efficiency in the use of energy and materials while reducing harmful emissions and waste. One of the most significant areas of green technology application is renewable energy. Traditional energy sources such as coal, oil, and natural gas contribute significantly to greenhouse gas emissions, which are the primary cause of global warming. In contrast, renewable energy sources such as solar, wind, hydro, and geothermal energy provide cleaner alternatives that have a much lower environmental impact. The use of solar energy, for example, has increased rapidly

in recent years due to technological advancements and decreasing costs. Solar panels convert sunlight into electricity without producing harmful emissions, making them an environmentally sustainable energy source. Similarly, wind energy is another important renewable resource that generates electricity through wind turbines. These technologies not only reduce dependence on fossil fuels but also contribute to energy security and economic development.

Another important aspect of green technologies is waste management. The rapid growth of urban populations and industrial activities has led to an increase in waste generation, which poses serious environmental and health risks. Green technologies offer innovative solutions for waste reduction, recycling, and reuse. For instance, modern recycling systems allow materials such as plastic, glass, and metal to be processed and reused, reducing the need for raw materials and minimizing landfill waste. Additionally, waste-to-energy technologies convert waste into usable energy, providing a sustainable way to manage waste while generating power.

Water conservation is also a critical area where green technologies play a vital role. Freshwater resources are becoming increasingly scarce due to population growth, climate change, and inefficient water use. Technologies such as water purification systems, desalination, and smart irrigation help improve water efficiency and ensure the availability of clean water. In agriculture, drip irrigation systems allow water to be delivered directly to plant roots, reducing water waste and increasing crop productivity. Such innovations are essential for ensuring food security and sustainable agricultural practices. Sustainable agriculture itself is another key domain of green technology. Traditional farming methods often rely heavily on chemical fertilizers and pesticides, which can harm the environment and human health. Green technologies promote eco-friendly farming practices, such as organic agriculture, precision farming, and the use of biofertilizers. These approaches help maintain soil fertility, reduce environmental pollution, and improve the quality of agricultural products. Furthermore, the use of modern technologies such as sensors and data analysis enables farmers to optimize resource use and increase efficiency. In addition to environmental benefits, green technologies also offer significant economic and social advantages. The development and implementation of eco-friendly technologies create new job opportunities and stimulate economic growth. Green industries, such as renewable energy and environmental engineering, are rapidly expanding and contributing to the global economy. Moreover, the adoption of green technologies can reduce healthcare costs by improving air and water quality, thereby enhancing public health and well-being.

However, despite their numerous advantages, the widespread adoption of green technologies faces several challenges. One of the main obstacles is the high initial cost of implementation. Many green technologies require significant investment in infrastructure and equipment, which may be difficult for developing countries to afford. Additionally, there may be a lack of awareness and technical expertise needed to implement these technologies effectively. Policy and regulatory barriers can also slow down the adoption process. To overcome these challenges, it is essential for governments, private sectors, and international organizations to work

together in promoting green technologies. Financial incentives, subsidies, and supportive policies can encourage investment in sustainable solutions. Education and awareness programs are also important for informing the public about the benefits of green technologies and promoting environmentally responsible behavior. Furthermore, international cooperation plays a key role in sharing knowledge, technology, and resources. Looking toward the future, green technologies are expected to play an increasingly important role in addressing environmental challenges and achieving sustainable development goals. Continuous innovation and technological advancement will further enhance the efficiency and affordability of green solutions. As global awareness of environmental issues continues to grow, the demand for sustainable technologies is likely to increase. This will accelerate the transition toward a greener and more sustainable world.

In conclusion, green technologies are essential tools for solving modern environmental problems and ensuring a sustainable future. By reducing pollution, conserving resources, and promoting eco-friendly practices, these technologies contribute to the protection of the environment and the well-being of society. Despite existing challenges, the potential benefits of green technologies are significant and far-reaching. Therefore, their development and implementation should be considered a priority in both national and global strategies for sustainable development.

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