ЛУЧШИЕ ИНТЕЛЛЕКТУАЛЬНЫЕ ИССЛЕДОВАНИЯ

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TECHNICAL RULES FOR INSTALLING SOLAR PANELS

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Annotation: A solar panel is a device that converts sunlight into electricity by using photovoltaic (PV) cells. PV cells are made of materials that produce excited electrons when exposed to light. The electrons flow through a circuit and produce direct current (DC) electricity, which can be used to power various devices or be stored in batteries. Solar panels are also known as solar cell panels, solar electric panels, or PV modules.

Key words: Solar panel, Panels, Power, However, Electricity, Energy, Solar energy.

One of the many benefits of solar energy is that it is environmentally friendly. Solar panels use less energy than other forms of energy, such as coal or oil, so they're better for the planet. The panels have few to no emissions, so they don't contribute as much to climate change than other energy sources do. They're also reliable. Even if there's a power outage to your area's electrical grid, your solar panels have energy stored in their batteries that can run your home's electricity. And solar panels do have affordable options; you can install them on a wide range of properties without having to spend a lot of money if you choose an option like a solar lease.

There is no one-size-fits-all answer when it comes to choosing the right solar system for your property. However, there are a few key things to consider when making your selection

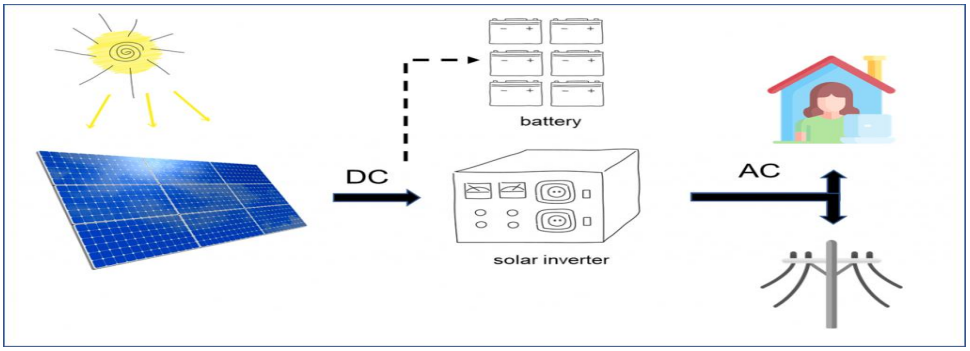

Figure 1. Installation of solar panels

First and foremost, think about your needs. What energy options do you want and need? Do you want to use solar energy to power your home or just generate some extra to offset the costs of certain expenses you have? Do you want a heating or cooling system that relies solely on solar energy? What other factors will affect your decision, like your property's size, orientation, and weather conditions?

To get an idea of how much solar power your property can generate, you first need to estimate how much light and heat your home uses. Next, compare that number with the estimated solar power generation your property can generate based on its location and installed system. You should also consider consulting with a solar installer to get an accurate estimate of your property's potential.

Once you know what kind of solar system will work best for your property, it's time to choose one! There are a few different types of systems available, so it's important to choose the right one for your needs. Consider your budget and climate before making a decision. Some popular systems include rooftop solar panels, ground-mounted panels, and hybrid systems that combine both types of installation.

Once you've chosen a system, it's time to install it! Consult with a qualified contractor to complete this process. And remember: always be sure to inspect and maintain your new solar system to keep it running at its best!

If you want your solar panels to last as long as possible, it is important to make regular inspections of them. This will help you identify any issues early on and ensure that your panels are working properly.

There are a few things to inspect when checking your solar panels. Look at the orientation of the panels and the condition of the wiring. All of these factors can impact how much energy your panels are able to generate. By monitoring these things regularly, you can ensure that your solar power is reaching its full potential.

Solar energy is an increasingly popular option for powering your home, and this comprehensive guide can help you get the most out of your installation. Whether you're looking for solar power for your home, business, or other property, use the tips in this article to get a better understanding of the selection and installation process.

The installation of solar panels requires the following conditions:

Sufficient sunlight: Sufficient direct sunlight is required for the effective operation of solar panels. Therefore, it is recommended to install them in places with a large number of sunny hours per year and at the maximum possible height above the level of the surrounding landscape.

Tilt angle: You need to install solar panels at an angle that corresponds to the geographical latitude of your location and the time of year. For example, at mid-latitudes, the angle of inclination in summer should be equal to the latitude of the area, and in winter - the latitude of minus 5 degrees. This will help to maximize the use of solar radiation.

Orientation: Solar panels should be oriented to the south for maximum absorption of solar radiation. A deviation from the direction to the south is acceptable, but not more than 15-20 degrees.

Surface quality: The surface on which the solar panels are installed should be flat and horizontal. This will ensure an even distribution of the load and improve the efficiency of the panels.

Weather protection: Solar panels should be installed in such a way that they are protected from moisture, snow, ice and dust. This will help extend the service life of the panels and maintain their efficiency.

Many are familiar with so-called photovoltaic cells, or solar panels, found on things like spacecraft, rooftops, and handheld calculators. The cells are made of semiconductor materials like those found in computer chips. When sunlight hits the cells, it knocks electrons loose from their atoms. As the electrons flow through the cell, they generate electricity.

On a much larger scale, solar-thermal power plants employ various techniques to concentrate the sun's energy as a heat source. The heat is then used to boil water to drive a steam turbine that generates electricity in much the same fashion as coal and nuclear power plants, supplying electricity for thousands of people.

How to Harness Solar Power

In one technique, long troughs of U-shaped mirrors focus sunlight on a pipe of oil that runs through the middle. The hot oil then boils water for electricity generation. Another technique uses moveable mirrors to focus the sun's rays on a collector tower, where a receiver sits. Molten salt flowing through the receiver is heated to run a generator.

Other solar technologies are passive. For example, big windows placed on the sunny side of a building allow sunlight to heat-absorbent materials on the floor and walls. These surfaces then release the heat at night to keep the building warm. Similarly, absorbent plates on a roof can heat liquid in tubes that supply a house with hot water.

Solar energy is lauded as an inexhaustible fuel source that is pollution- and often noise-free. The technology is also versatile. For example, solar cells generate

energy for far-out places like satellites in Earth orbit and cabins deep in the Rocky Mountains as easily as they can power downtown buildings and futuristic cars.

Pitfalls

Solar energy doesn't work at night without a storage device such as a battery, and cloudy weather can make the technology unreliable during the day. Solar technologies are also very expensive and require a lot of land area to collect the sun's energy at rates useful to lots of people.

Despite the drawbacks, solar energy use has surged at about 20 percent a year over the past 15 years, thanks to rapidly falling prices and gains in efficiency. Japan, Germany, and the United States are major markets for solar cells. With tax incentives, and efficient coordination with energy companies, solar electricity can often pay for itself in five to ten years.

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BIOGAS PRODUCTION TECHNOLOGY

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Abstract: Biogas, a versatile fuel derived from organic waste, presents a promising solution to mitigate greenhouse gas emissions while generating clean energy. To harness its full potential, here are five innovative technologies driving the evolution of biogas extraction:

Key words: Biogas texnology, anearobic, gas, rotted, Algal Bioreactors, reactor.

Advanced Anaerobic Digestion Systems:

- High-Rate Digesters: These systems employ advanced microbial consortia to accelerate the breakdown of organic matter, significantly increasing biogas production rates.

- Two-Stage Digestion: By separating acidogenesis and methanogenesis phases, two-stage digestion systems optimize biogas yield and allow for the treatment of diverse feedstocks, including complex waste streams.

Next-Generation Gas Upgrading Techniques:

- Membrane Separation: Utilizing selective permeable membranes, this method efficiently removes impurities such as carbon dioxide and hydrogen sulfide from biogas, enhancing its purity and energy content.

- Pressure Swing Adsorption (PSA): PSA systems employ adsorbent materials to selectively capture contaminants from biogas under alternating pressure conditions, resulting in purified methane suitable for injection into natural gas pipelines or use as vehicle fuel.

Smart Monitoring and Control Systems:

- IoT Integration: Internet of Things (IoT) devices enable real-time monitoring of biogas production parameters such as temperature, pH, and gas composition, facilitating proactive management and optimization of anaerobic digestion processes.

- Predictive Analytics: By leveraging machine learning algorithms, predictive analytics platforms analyze historical data to forecast biogas production trends, anticipate operational inefficiencies, and optimize system performance.

Biogas Utilization Innovations:

- Combined Heat and Power (CHP) Systems: Integrated CHP units utilize biogas to generate both electricity and heat, maximizing energy efficiency and providing decentralized power generation solutions for remote or off-grid areas.

- Biomethane Injection Infrastructure: Development of infrastructure for injecting biomethane into existing natural gas grids enables seamless integration of renewable biogas into the mainstream energy supply, reducing reliance on fossil fuels.

Emerging Biogas Production Pathways:

- Algal Bioreactors: Algae-based bioreactors harness photosynthetic organisms to convert carbon dioxide into biomass, which can be subsequently digested to produce biogas, offering a sustainable approach to carbon capture and renewable energy generation.

- Microbial Electrolysis Cells (MECs): MECs utilize microbial communities to catalyze the electrolysis of organic compounds in wastewater, generating hydrogen that can be utilized directly or further metabolized to produce biogas, expanding the range of feedstocks suitable for anaerobic digestion. In conclusion, the ongoing advancements in biogaz extraction technology hold tremendous potential to revolutionize the renewable energy landscape. By embracing innovation and integrating cutting-edge solutions, we can accelerate the transition towards a sustainable energy future while addressing pressing environmental challenges. Anaerobic digestion (AD) is one of the most popular renewable energy technologies. The AD process produces sustainable energy using various low-cost wastes. Although AD technology is widely used, its low biodegradation efficiency and poor stability limit its commercial application. The use of additives has been shown to offer marked improvements in AD performance. However, in practice, the use of additives in AD is not fully understood. In this review, the principles and achievements of additives (including metal elements, carbon-based accelerants, biological additives, and alkali addition) promoting AD performance are summarized. The review also discusses the issues and development trend of each additive. There are still many challenges associated with using additives in AD systems owing to significant variations in digestion substrates and AD operational procedures. The dosage and types of additives have a great influence on the

efficiency of AD, which mainly depend on the substrate. Moreover, the implementation process of each additive is not perfect. Therefore, it is essential to better utilize additives to promote AD performance according to the merits of each material. The application of composite additives requires further exploration to optimize the implementation process. This paper deepens our understanding of flexible additives in the AD process and provides comprehensive information that can be used to promote renewable clean energy.

Microorganism attachment and fast growth, thereby resulting in reduced microbial lag phase and increased biogas production (Li et al., 2019a). Some additives (e.g., biochar, activated carbon) can remove gaseous impurities from biogas to help mitigate environment pollution (Choudhury and Lansing, 2020). The addition of additives in AD not only increases biogas production but also reduces air pollution during the production. Same/different additives have significant variations in the digestion of the various feedstocks. For example, addition of biochar (10 g/L) to AD with glucose or dairy manure as substrates increases the CH4 production rate by 21.4% or 37.35%, respectively; CH4 yield is increased by 13.1% or 7.3% in an AD system fed with sewage sludge when activated carbon (27 g/L) or Fe3O4 (27 g/L) is added, respectively (Peng et al., 2018).

Each additive offers unique advantages for promoting biogas production in AD. Information on additives for improving the performance of the AD process is urgently required. Although many additives have been shown to increase biogas production during the AD process, there are few comprehensive reviews on the use of additives to promote clean bioenergy efficiency. Many reviews only focused on a certain kind of additive (such as zero-valent iron, biochar, carbon-based accelerants) for improving the AD performance of specific substrates, such as food waste, solid waste, or waste water (Shen et al., 2021; Velimirovic et al., 2016; Ye et al., 2021). At present, a comprehensive understanding of the different kinds of additives to promote clean bioenergy efficiency is lacking. In particular, the dosages, effects, and applications of each additive need to be discussed. Therefore, summarizing the effects of different additives on the performance of anaerobic digesters has been an important topic of research in recent years (Habagil et al., 2020). The present paper reviews the use of additives (metal compounds, carbon-based functional materials, fungi, enzymes, etc.) for improving the performance of AD systems. The mechanisms and current state research progress for these additives are summarized. Recommendations for improvements and future research challenges are also

presented for consideration. This review is expected to provide a reference for further research on the application of additives in AD.

Alkali addition to AD systems can improve CH4 yield and rate. NaOH efficiently removes lignin and hemicellulose. Other caustic salts (e.g., lime, KOH) could be more advantageous because they are easily recovered and can be used as fertilizer. However, NaOH is more environmentally friendly and cheaper than KOH. The addition of 2% NaOH in briquetted wheat straw increased net energy production by 38.3%, whereas 4% NaOH increased it by 36.1% (Moset et al., 2018). AD batch experiments showed that 2%

Perspectives and prospects

Additives are shown to be beneficial for improving the performance and efficiency of AD systems. Certain trends have been summarized herein to facilitate appropriate additive application and selection. The combined addition of the different kinds of metals resulted in a high biogas yield in AD. In contrast, a high concentration of metals may inhibit the methanogens, thereby causing low methane production. Carbon-based materials accelerate the DIET behaviors and help in microbial immobilization

Conclusions

Biogas is one of the most popular sustainable clean energy sources. Additive provides a valuable method for efficient increase in biogas production. Metal elements (0.01–1000 mg/L) in AD process always as enzyme cofactors can increase CH4 yield by 7.0%–120%. Carbon-based accelerants (1–50 g/L) stimulated 13.1%–121.97% CH4 production by facilitating DIET and the enrichment of microorganisms during methanogenesis. Biological additives, including microorganisms and enzyme, accelerated CH4 yield by

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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ПОТЕРИ ЭНЕРГИИ В ТРАНСФОРМАТОРАХ

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Ключевые слова: Потери мощности, ферромагнитный сердечник, потери на гистерезис и вихревые токи, КПД, номинальные токи, магнитная индукция и переменные токи, железный сердечник, ламинированные сердечники.

Абстракт

В данной статье предоставлена информация о методах анализа и снижения потерь в трансформаторах. Потери в электрических машинах рассчитываются на основе потерь мощности, теплового воздействия токов и изменений магнитного потока. В трансформаторах происходят потери от конструкции магнитного сердечника и его материалов.

Главная часть

Как и в любых электрических машинах, трансформаторам также присуща часть потерь энергии. Эти потери мощности состоят из следующего:

1. Потери мощности из-за теплового воздействия токов в сопротивлениях обмоток:

$$P_m = I^2 R_1 + I^2 R_2$$

2. Потери мощности, потребляемые гистерезисом и вихревыми токами в железном сердечнике из-за переменности магнитного потока:

$$P_n = P_r + P_v$$

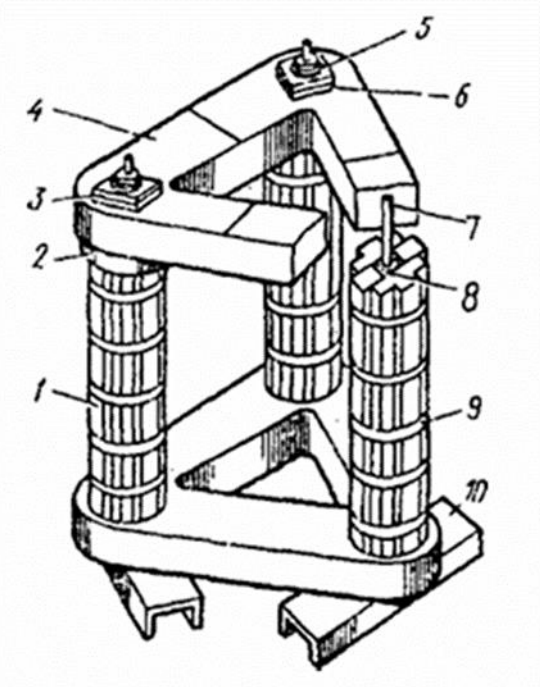
Эта потеря мощности зависит от материала железного сердечника, магнитной индукции и частоты переменных токов.

3. Потери мощности, связанные с конструкцией трансформатора (P_k).

Среди них (P_m) и (P_n) являются основными потерями. Потери мощности в обмотках (P_m) переменны и зависят от нагрузки, тогда как потери в железном сердечнике (P_n) постоянны в процессе работы трансформатора (в пределах номинальной нагрузки).

Магнитный сердечник трансформатора является важнейшим компонентом, отвечающим не только за усиление магнитной связи между обмотками, но также за их поддержку и фиксацию для обеспечения структурной целостности и стабилизации. Для снижения потерь энергии, возникающих из-за вихревых токов (частоты (f = 50) Гц) в переменном потоке, магнитопроводы трансформаторов собирают из холоднокатаных пластин из анизотропной электротехнической стали, обычно толщиной 0,35 мм. до 0,30 мм, покрыты специальным лаком и оксидными слоями для изоляции. Этот процесс ламинирования позволяет увеличить индукцию в магнитопроводе до 1,6–1,65 Тл (что невозможно в горячекатаной стали, где индукция не может превышать 1,4–1,45 Тл), тем самым уменьшая массу активного трансформатора (магнитные и электропроводящие) материалы и резко снижающие потери энергии.

Часть магнитной системы, где собираются пластины, называется «статором», а часть, образующая замкнутую магнитную цепь, тем самым усиливая магнитный поток, называется «ротором». Это магнитопроводы трехфазных трансформаторов. В трехфазной системе магнитный сердечник трансформатора модифицируется с учетом трехфазного потока и нагрузок. Если можно конструктивно изменить пластины однофазного трансформатора так, чтобы они образовали один общий сердечник, то это возможно и для трехфазной системы. Поскольку в общем сердечнике сумма синусоидальных плотностей магнитного потока за один цикл не равна нулю, то в этом сердечнике предусматривать зазор нет необходимости. Для упрощения конструкции три статора можно соединить вместе и соединить с верхним и нижним роторами, образуя трехфазный магнитопровод плоской формы. Если все пластины и роторы расположены в одной плоскости, магнитопровод трансформатора имеет плоскую форму; если они расположены в разных плоскостях, это называется ступенчатым ядром. В зависимости от сочетания пластин и роторов магнитные системы делятся на статор-ротор, сердечник-статор-ротор и броневые.



Компоненты фазового магнитопровода трансформатора (ТМ-250/6): 1- статор, 2 и 6 - изолирующие прокладки; 3- Трехфазная пластина, 4- ротор; 5- катушка; 7- штифт; 8- изолирующая сигнальная трубка; 9- зажимной зажим; 10- опорная плита.

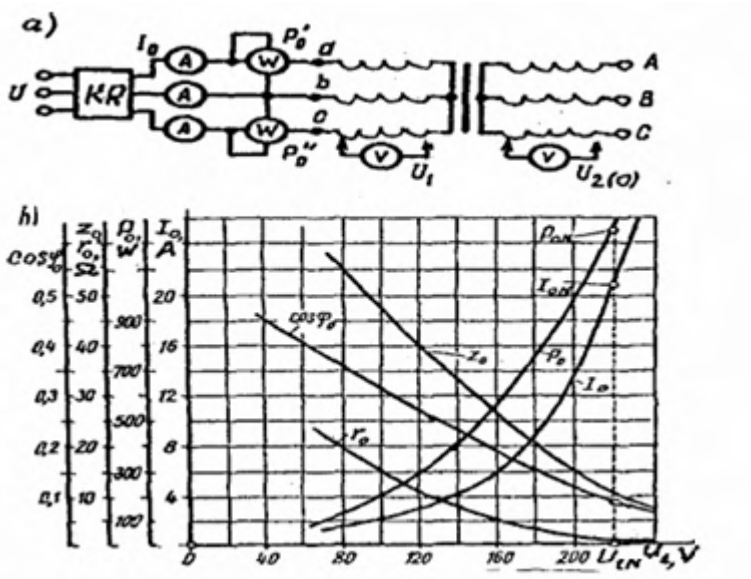
Отходы в установившемся режиме работы:

к ферромагнитному сердечнику трансформатора приложено синусоидальное напряжение [$u_1 = U_{(1)\,max}$ .sinwt и вызывает синусоидальное изменение магнитного потока [$Ф_1 = Ф_{(1)\,max}$ .sinwt), характеристика намагничивания ферромагнитного сердечника становится нелинейным из-за насыщения магнитопровода. В результате изменение тока намагничивания I0.r во времени $I_{0.r}$ *f (wt) не носит синусоидальный характер.

Стационарный эксперимент проводится без нагрузки на вторичную обмотку (l1= 0). К одной обмотке приложено синусоидальное напряжение U1, изменяющееся от 0 до 1,2 кратного $U_{1.H}$. Напряжение U_1 , ток I_0 и установившаяся мощность P0 измеряются в установившемся режиме, из чего в первую очередь рассчитывается коэффициент мощности cosф0.

На основе полученных и рассчитанных из эксперимента данных установлены зависимости I_0 - $f_{(U1)}$, $P_0 = f_{(U1)}$ и $cosф_0 = f_{(U1)}$ называются установившимися характеристиками работы.

Номинальная мощность: S_N = 100 кВ*А; Отношение первичного и вторичного напряжения: U_{1N}/U_{2N} = 6,3/0,22 кВ; Обмотки трехфазного трансформатора, соединенные по схеме Y/Y, проводят испытание без нагрузки; Принципиальная схема испытания на холостом ходу (а) и характеристики холостого хода (б); КР – коэффициент мощности при номинальной нагрузке.



В трехфазном трансформаторе значения U_1 и I_0 измеряются отдельно для каждой фазы, а их характеристики устанавливаются на основании их средних значений. Взаимное согласование фаз в трансформаторе, где они расположены в отдельных сердечниках, неравномерно, поскольку плотность магнитного потока в средней фазе является промежуточной по сравнению с плотностями потока во внешних фазах. Следовательно, MYK и ток Io.v в средней фазе ниже, чем во внешних фазах ($I_{0.B} < I_{0.A} = I_{0.C}$).

$I_0 = f(U_1)$. Увеличение приложенного напряжения U1 приводит к увеличению его магнитного потока Ф, поскольку $U_1 = E_1 = 4.44 f w_1 \Phi_{max}$. При малых значениях возбуждения магнитопровод остается невозбужденным, а ток Io изменяется линейно. Начиная со значений $U_1 = (0{,}5 + 0{,}6)U_{1N}$ возбуждение начинает насыщаться, уменьшая реактивное сопротивление Z0, реактивное сопротивление рассеяния x_0 и сопротивление $r_0 = r_m$ соответственно. В результате реактивная составляющая I_{0r} тока возбуждения быстро возрастает относительно приложенного напряжения U_1.

Ток возбуждения I0 состоит из реактивной (I0.r) и активной (I0.a) составляющих: $I_{0..r} = I_{0.a} + I_{0.x}$. Обычно для силовых трансформаторов I0 < 0,08 I1N, при этом активная составляющая I0.l составляет примерно от 10% до 0,5% от I0. По мере увеличения номинальной мощности силовых трансформаторов процент I0 относительно номинального тока имеет тенденцию к уменьшению.

$P_0 = f(U_1)$. В трансформаторах, работающих на холостом ходу, учитывают потери мощности в сердечнике из-за гистерезиса и вихревых токов, пренебрегая потерями из-за сопротивления первичной обмотки. Эти потери в сердечнике зависят от B² и примерно от квадрата частоты. При U_1 = const и f = const зависимость потерь в сердечнике от приложенного напряжения и частоты можно приближенно выразить как $P_m = P_0$ = const.

В современных силовых трансформаторах мощностью 10+1000000 кВ.А , даже если потери холостого хода составляют около 1,5–0,05% от номинальных потерь под нагрузкой, они существенно влияют на коэффициент полезной работы из-за сезонной нагрузки, так как отсутствие -нагрузочные характеристики зависят не от величины нагрузки, а от подключения трансформатора к сети через U21.

При испытании на холостом ходу важные параметры, такие как ток холостого хода ($I_{0.N}$) и потери ($P_{0.N}$), стандартизируются по отношению к номинальному напряжению U_{1N}.

$\cos\varphi_0 = f(U_1)$. Коэффициент мощности cosφ0 для трехфазного трансформатора определяется по следующей формуле:

$$cos\phi_0 = \frac{P_0}{\sqrt{3}U_1 I_0}$$

где P_0 – активная мощность трех фаз в ваттах.

В режиме холостого хода по мере увеличения возбуждения реактивная составляющая I0.r тока возбуждения увеличивается быстрее относительно приложенного напряжения, а активная составляющая I0.a уменьшается . Следовательно, за счет увеличения угла φ_0 между векторами U_1 и $I_o \cos\varphi_0$ уменьшается.

Важные параметры трансформатора определяются на основе значений U_{1N}, полученных в экспериментах на холостом ходу:

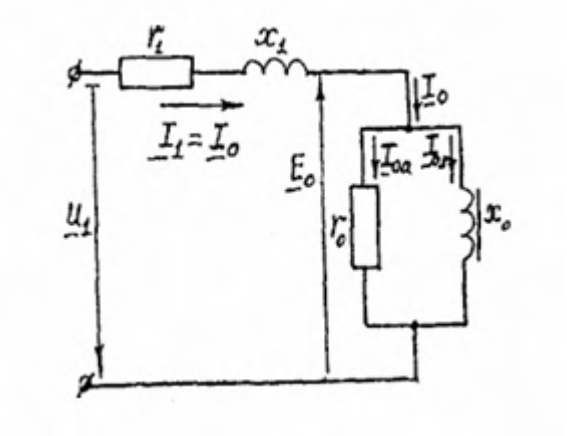
1) Коэффициент трансформации $k = U_{1N}/U_{2O}$, где U_{1H} – номинальное напряжение обмотки ЯК; U_{20} - напряжение холостого хода, соответствующее напряжению обмотки ПК при U_{1N};

2) Потери холостого хода R'_0;

3) Значение тока холостого хода $i_{0\%} \frac{I_0}{I_{1N}} * 100$;

4) Реактивное сопротивление цепи намагничивания r_0. Когда реактивное сопротивление первичной цепи r_2 в несколько сотен раз меньше расчетного реактивного сопротивления rm цепи намагничивания ($rm > r_1$), r_1 считается пренебрежимо малым ($r_1 = 0$), и, таким образом, $r_0 = p_м$.

Схема подключения для режима работы трансформатора на холостом ходу.



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ELIMINATION OF ELECTRICAL ENERGY WASTE IN RESIDENTIAL BUILDINGS OF 10-04 SQUARE METERS

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Abctrakt: In this article, you can get general information about the project, how to create the project , and why the project was created. Information about the first stages of project development, the necessary conditions for 10 and 0.4 kV projects in residential areas is also provided. The basic concepts of electrical design and design are presented.

Key words: power line, Project, transformer, Cable, autotransformers, measuring transformers, tires.

The purpose of electrical projects in residential areas is to provide residents with quality electricity. Because as the length of the electric line increases, the voltage decreases. Therefore, a project is developed, in which the transformer and line lengths are selected with the help of calculation books, according to the population, using table 4.1 , and then the optimal location for the transformer is selected. One of the main reasons for designing is to reduce wastage (waste). These transformers are important in the production and transmission of electricity . When designing power lines, contracts are concluded between the two parties and the design process is carried out. The project development process consists of several stages, in which work is carried out together with regional power networks. An application is submitted to the designing party by regional electric networks. The project site is surveyed and detailed information is obtained about the site. The most important part of the project is to choose the maximum length of the line depending on the location. The reason for this choice is that the waste in the line does not exceed the specified value. This indicator should not exceed 6% in a 0.4 network project. One of the most important aspects is choosing the optimal transformer installation location for the project site. The correctness of this process is to ensure that the length of the line does not exceed 500 meters. The main consideration in the design of line networks is waste.

Placement and installation of electrical equipment 5.1.11. The structure of EMX should allow convenient transportation and installation of equipment at any

height. In the basement of EMX , if its length is more than 1000 m , roads for electric cars and transport trucks should be provided. The clearance distance between the elements of the transported equipment and the elements of buildings or equipment should not be less than 0.3 m vertically and 0.5 m horizontally. 5.1.12. The lightness of transitions between foundations or machine bodies, between machines and parts of buildings or equipment should not be less than 1 m; local narrowing of the passages between protruding parts of machines and building constructions with a length of not more than 0.5 m and up to 0.6 m is allowed. 5.1.13. The clear distance between the machine body and the wall of the building or between the bodies and between the short sides of the machines standing next to each other (if there is a passage on the other side) is less than 0.3 m if the height of the machines is up to 1 m from the roll level. and the height of the machines should not be less than 0.6 m if they are more than 1 m. The width of the service passage between the machines and the front side (facade) of the control panel or the control panel should not be less than 2 m. When the panels are installed in the cabinet, this distance is chosen from the machine to the closed door or wall of the cabinet. These requirements do not apply to the posts of local management of operations. The width of the transition between the machine body and the control panel or the control panel should not be less than 1 m. 5.1.14. The width of the service passage between the rows of electrical cabinets with a voltage of up to 1 kV and parts of the building or equipment should not be less than 1 m, and with the cabinet doors open - not less than 0.6 m. , in the two-row arrangement of cabinets, the width of the passage between them should not be less than 1.2 m, and when the opposite doors are open, they should not be less than 0.6 m. The value of transitions is not less than 0.6 m in light due to the local narrowing of machines with a power of up to 10 kW and small-sized equipment distribution boards, remote controls and other similar distribution equipment up to 1 kV (Installation behind TU) elements is allowed, where the distance from the body of the machine or apparatus to the load-carrying parts of the roof is 4.1.21. b. It should not be less than specified in 2 . The dimensions of service expectations for TU, shields and other equipment must meet the requirements specified in 4.1.21-4.1.23 and 4.2.86. It is envisaged to carry out a cable floor or a cable tunnel in the open passage of more than 350 power and control cables in the basement floor (part) of the EMH or more than 150 power cables in the part of the basement that is most busy with cables need The width of passages in cable constructions should be accepted in accordance with 2.3.123 and 2.3.125. In these facilities, cable lines of cable structures may not form dead ends more than 7 m long. In order to prevent the

occurrence of dead ends, it is allowed to create a passage under the cables, the height of which is not less than 1.5 m above the floor. A reduced distance between planks (racks) of not less than 100 mm is allowed on such a passage, which provides the possibility of disassembling cables . 5.1.15. Open installation of the following directly with EMX is allowed: 1. Oil-filled starting and adjusting equipment for electric machines with a voltage of up to 1 kV and higher with an oil mass of up to 600 kg (autotransformers, reactors, and etc).

14:16 1.6 MV.A, with tanks of high strength and seals that do not allow oil leakage, and gas protection or pressure relay with signal processing (for transformers and autotransformers). measuring transformers and other equipment with oil mass up to 2 t.14:16 It is allowed to install no more than two groups of the indicated transformers (apparatus) together when the distance between individual groups is less than 10 m . 3. Power and number of transformers filled with dry or non-flammable liquid. 4. Metal complete distribution equipment (KTU), substations with a voltage of 1 kV and above, batteries of capacitors or some capacitors. 5. Accumulator batteries of closed type with the condition of carrying out charging (sucking) devices or in special rooms or cabinets. 6. Semiconductor switches. 7. Control, protection, measurement, signaling panels and control units and station panels with devices with open current-carrying parts on the front or back side. 8. Non-insulated current conductors with voltage up to 1 kV and higher. 9. Cooling equipment of electric machines. 5.1.16. In EMX, when electric equipment filled with oil is placed in closed chambers into which EMX is pushed, the mass of oil in electrical equipment installed in one chamber or in a group of adjacent chambers should not exceed 6.5 t, chambers or the distance in light between a group of cameras should not be less than - 50 m. If this distance cannot be ensured, or if the mass of oil in one chamber or in a group of adjacent chambers is more than 6.5 t, the electrical equipment filled with oil in the house is outside or specially designed for this purpose . should be placed in the corridor, or in the cells that can be pushed into the G or D class production room according to KMK. 5.1.17. The height of the upper mark of the surface of the base plates of the non-connected rotating machines (converter, generator, charging units, etc.) should not be less than 50 mm from the mark of the clean floor . The top mark of the surface of the base plates of the rotating machines connected with mechanical equipment is determined by the requirements for their installation . 5.1.18. Pipelines containing explosive gases, inflammable or flammable liquids cannot be passed through the EMX, only pipelines directly related to the equipment installed in it are allowed to be laid in the EMX. Cold

pipelines must be protected from sweating . In areas where personnel or equipment must be protected, hot pipelines must have non-combustible thermal insulation. Pipelines must have a separating rap . 5.1.19. In cases where the top mark of the base plate of the machine is more than 400 mm higher or lower than the mark of the EMX floor, a non-flammable platform with a handle and a step width of not less than 600 mm should be provided around the machine. The service areas (supache) located at a height of up to 2 m from the floor level should be fenced with fences, and at a height of more than 2 m - with fences and board fences. Steps should be provided to access the supachas (courtyards) . 5.1.20. In the case of the presence of a railway network in common use in the enterprise and the delivery of heavy equipment by rail, see the dead-end normal gauge railway branch entering the EMX It is recommended to keep It is necessary to ensure the possibility of removing the equipment from the open platform with the help of EMX lifting devices. If the delivery of the equipment is carried out by a motor vehicle, it is recommended to consider the possibility of entering the range of movement of the EMX with a motor transporter. 5.1.21. Electric machines must be installed in such a way that they do not cause noise above the level of operation and vibration of the machine itself, the foundation or parts of the building.

14:16 5.1.22. Special platforms (assembly platforms) must be provided for the implementation of assembly and repair work on EMX or the heaviest, practically possible, equipment platform that is calculated for the load and is located within the movement of EMX load-carrying devices. The name is distinguished by the color of the outer casing (appearance) compared to other parts of the floor

14:16 standing paint or tile. The sections of EMX where the equipment is being transported should be calculated for the weight of the equipment being transported. These plots should be marked with paint or tiles. The dimensions of the assembly areas are determined by the dimensions of the largest part intended for placement, with a margin of 1 m on each side. In assembly areas, the floors must be designed for the weight of the anchors of large electrical machines and have a separating rap. Installation sites must have records indicating the maximum possible load values. 5.1.23. In EMX, electric lights cannot be placed on open busbars of TU (distribution equipment) and open current conductors. Electric lights intended for floor service cannot be placed on rotating machinery.

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STUDYING THE PRODUCTION OF WIDE-BAND PHOTOCELLS

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Abstract. This article reviews advances in broadband photovoltaics. Various experiments are being conducted in the countries of the world to improve photovoltaics, and the progress of science provides advanced methods of using renewable energy sources.

Keywords: Photocells, Wideband, Advancements, Components, Materials

Photocells, also known as photodetectors, play a pivotal role in various applications ranging from telecommunications to environmental monitoring. Among the array of photocell types, wideband photocells stand out for their ability to detect a broad spectrum of light wavelengths. In this article, we delve into the functionalities, applications, and recent advancements of wideband photocells.

Understanding Wideband Photocells

Wideband photocells are semiconductor devices designed to detect light across a wide range of wavelengths, from ultraviolet (UV) to near-infrared (NIR) regions. Unlike narrowband photocells, which are optimized for specific wavelengths, wideband photocells offer versatility in light detection, making them ideal for diverse applications.

These photocells typically consist of a semiconductor material such as silicon, gallium arsenide, or indium gallium arsenide, with added dopants to enhance their sensitivity to a broader spectrum of light. They operate based on the principle of the photoelectric effect, where incident photons generate electron-hole pairs within the semiconductor material, leading to a measurable electrical signal.

Applications of Wideband Photocells

1. Spectroscopy: Wideband photocells are extensively used in spectroscopic techniques such as UV-visible spectroscopy and fluorescence spectroscopy, enabling precise analysis of chemical compounds and biological samples across different wavelengths.

2. Environmental Monitoring: In environmental monitoring systems, wideband photocells facilitate the detection of UV radiation levels, aiding in assessing UV exposure risks and monitoring atmospheric conditions.

3. Optical Communications: Wideband photocells play a crucial role in optical communication systems for detecting optical signals transmitted through optical fibers. Their broad wavelength range allows for efficient signal detection in various communication protocols.

4. Medical Imaging: In medical imaging applications, wideband photocells contribute to technologies like optical coherence tomography (OCT) and fluorescence imaging, enabling non-invasive visualization of tissues and biological structures with high resolution.

5. Solar Energy: Wideband photocells are integral components of solar photovoltaic systems, where they convert sunlight into electrical energy across a wide spectrum of wavelengths, maximizing energy harvesting efficiency.

Recent Advancements

Recent advancements in wideband photocells focus on enhancing their performance, sensitivity, and integration with other technologies. Researchers are exploring novel materials and fabrication techniques to improve the efficiency and reliability of wideband photocells. Additionally, advancements in nanotechnology and quantum mechanics have led to the development of nanostructured wideband photocells with enhanced light absorption properties and reduced noise levels.

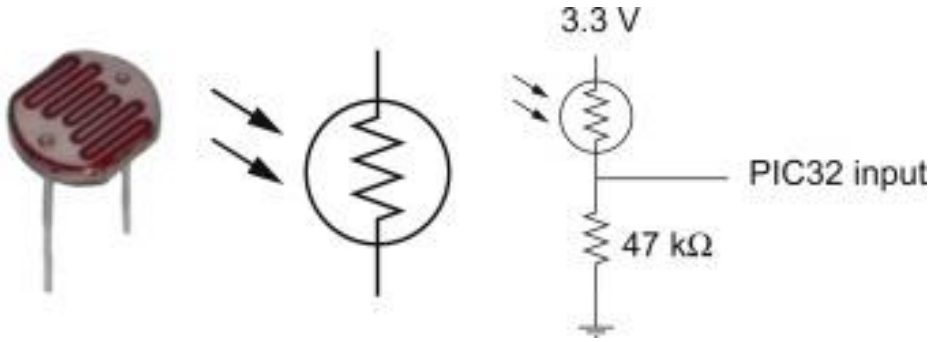
Furthermore, integration of wideband photocells with complementary metal-oxide-semiconductor (CMOS) technology enables the development of compact and low-power photonic integrated circuits for various applications, including wearable devices, biomedical sensors, and Internet-of-Things (IoT) systems.

In conclusion, wideband photocells represent a crucial class of photodetectors with versatile applications across diverse fields. With ongoing research and technological advancements, the capabilities of wideband photocells continue to expand, paving the way for innovations in optical sensing, communication, energy harvesting, and beyond.

A photocell is a resistor that changes resistance depending on the amount of light incident on it. A photocell operates on semiconductor photoconductivity: the energy of photons hitting the semiconductor frees electrons to flow, decreasing the resistance.

An example photocell is the Advanced Photonix PDV-P5002, shown in Figure 21.2. In the dark, this photocell has a resistance of approximately 500 kΩ, and in

bright light the resistance drops to approximately 10 kΩ. The PDV-P5002 is sensitive to light in the wavelengths 400-700 nm, approximately the same wavelengths the human eye is responsive to.Figure 21.2 shows a simple circuit illustrating how it can be used as an ambient light sensor feeding either a digital or an analog input to the PIC32.



Transducing components

A photocell is a light-to-electrical transducer, and there are many different types available. Light is an electromagnetic radiation of the same kind as radio waves, but with a very much shorter wavelength and hence a much higher frequency. Light radiation carries energy, and the amount of energy carried depends on the square of the amplitude of the wave. In addition, the unit energy depends on the frequency of the wave. The sensitivity of photocells can be quoted in either of two ways, either as the electrical output at a given illumination, using illumination figures in units of lux, often 50 lux and 1000 lux, or as a figure of power falling on the cell per square centimetre of sensitive area, a quantity known as irradiance. The lux figures for illumination are those obtained by using photometers, and a figure of 50 lux corresponds to a ‘normal’ domestic lighting level good enough for reading a newspaper. A value of 1000 lux is the level of illumination required for close inspection work and the reading of fine print; on this scale, direct sunlight registers at about 100 000 lux. The use of milliwatts per square centimetre looks more comprehensible to anyone brought up with electronics, but there is no simple direct conversion between power per square centimetre and lux unless other quantities such as spectral composition (colour balance) of light are maintained constant. For the range of wavelengths used in photocells, however, you will often see the approximate figure of 1 mW/cm2 = 200 lux used.

Another important point relating to the use of photocells is that they are not uniformly sensitive at all visible colours. For many types of sensors, the peak

sensitivity may be at either the red or the violet end of the visible spectrum, and some sensors will have their peak response for invisible radiation either in the infrared or the ultraviolet. A few devices, notably some silicon photodiodes, have their peak sensitivity for the same colour as the peak sensitivity of the human eye. The main classes of photocells are photoresistors, photovoltaic materials, and photoemitters.

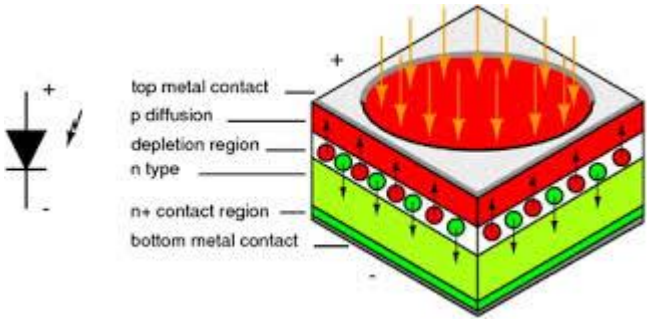
Sensor Materials, Technologies and Applications

Light Sensing Materials

A light sensor, as its name suggests, is a device that is used to detect light. Devices that include these sensors have many uses in scientific applications, but they are also found in items that people encounter each day. They are very simple and inexpensive, allowing their inclusion in a multitude of consumer products, including night lights, cell phones, burglar alarms, garage door openers, bar code readers, etc. There are many ways to detect light, and based on the working principle, light sensors can be of different types.

Photocell or Photoresistor

A photocell or photoresistor is a sensor that changes its resistance when light shines on it. The resistance generated varies depending on the light striking at his surface. A high intensity of light incident on the surface will cause a lower resistance, whereas a lower intensity of light will cause higher resistance. Cadmium sulfoselenide (CdS) is a photoconductive material commonly used in photoresistors



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OPTOELECTRONIC SENSORS

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Abstrackt: Examples of fiber optic applications include environmental and atmospheric monitoring, earth and aerospace sciences, industrial processing and biotechnology, digital imaging, and other fields. Optical fiber sensors differ in their small size and long-term operation. At the same time, the electromagnetic interference, multiplexing capability and high sensitivity of optical fibers also include the aerospace field. We will consider that fiber optic sensors also provide a wide range of applications for addressing electrical and electronic sensors and performing high-level sensing tasks. This article shows that the use of optical fiber sensors is effective.

Keywords: Source of radiation, elecktrical insulation, radio engineering ,semiconducktor devices, electroluminescent, light emitting diode and lazer diode illuminators.

Optron devices are semiconductor devices that have a radiation source and a receiver (a light emitter and a photoreceptor) that increase the interaction in one way or another.

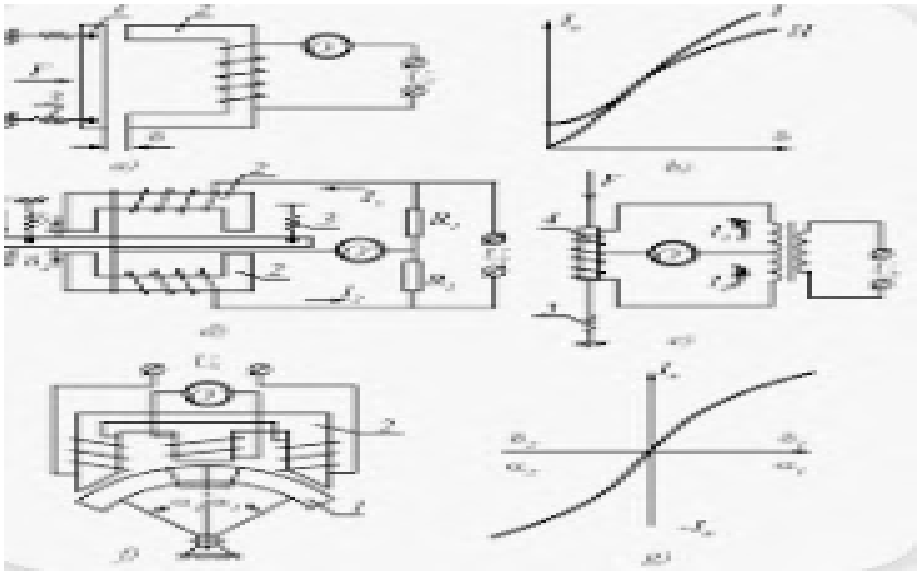
The principle of operation of any optocouplers is based on the following. In the illuminator, the electrical signal energy is converted into light, and in the photoreceptor, the light signal is converted into an electrical signal. Commonly used are optocouplers, which have a direct optical connection from the emitter to the photoreceptor, and there are no electrical connections of any kind between the elements. The presence of an optical connection provides electrical isolation between the input (radiator) and output (photoreceiver). Thus, such a device functions as a communication element in electronic circuits, while the input and output electrical (galvanic) solution is implemented.

The use of optoelectronic devices is quite diverse: for the connection of hardware blocks, which have a large potential difference between them; for protection of input circuits of measuring devices from surges and adjustment of high-voltage circuits, optical, non-contact control, power thyristors, starting triacs, control of electromechanical relay devices.

The creation of "long" optrons (long thin optical fiber devices as an optical channel) opened up the use of optron equipment in a completely new direction - remote communication over optical fiber.

Optoelectronic devices are used in modulation of radio engineering circuits, automatic gain control, etc. Here, as a result of the effect on the optical channel, to switch the circuit to the optimal mode, to adjust the contactless mode, and the like are used.

Conventional graphic designations of the main types of optrons are given in Figure 1



1-Fig.Optron electron pairs: a-diode-diode, b-diode-transistor, v-diode-transistor base, g-diode pair hybrid microcircuit

Optoelectronic devices are divided into classes according to the following characteristics.

Optocouplers depending on the type of illuminator used:

Lamps based on miniature heater bulbs. Optocouplers with such daughter resistors are inert, and currently not used in practice, but are used in optocouplers with resistors.

In neon light bulbs, which gas neon - argon mixture gas is used to emit an electric discharge. Such irradiators are not very high in radiation, resistant to mechanical impact, large in size, not compatible with integrated technology. However, separate types of optocouplers are used.

Electroluminescent light cells. Electroluminescent cells have a low activity of converting electricity into light, a short operating time, and complexity of control. The main advantage of these illuminators - constriction with photoresistors - technological compatibility, mainly because of this, it is possible to create multi-functional and multi-element optron structures. Currently, its availability is limited.

Light-emitting diode and laser diode illuminators. The most important of the used optocouplers is the light-emitting diode from the universal illuminators - the semiconductor injection light-emitting diode. It has several advantages: the high value of FIK in converting electricity into electricity; the spectrum of radiation is short, closing the width of the spectral range of different light-emitting diodes; direction of radiation; high speed; the value of the supply voltage and current is small; compatibility with transistors and integrated circuits; simplicity of radiation power modulation by changing direct current; the possibility of working in pulse and continuous mode; linearity of the watt-ampere characteristic in a wide range of input currents; high durability and long-term operation; small size; includes technological compatibility with microelectronic products.

Optrons depending on the type of photoreceptor used:

Optrons based on photoresistors, the properties of which change according to a complex law given by illumination, which allows for mathematical modeling and step-by-step creation of functional optoelectronics. However, optrons with photoresistors are inversion.

Optrons based on photodiode;

Optrons based on phototransistors;

Optrons based on photothyristors.

The last three are the most universal photodetectors, working with an open p-n junction.

In most cases, they are made on the basis of silicon, and their maximum spectral sensitivity is close to $\lambda = 0.7 \ldots 0.9$ μm.

Optocouplers are divided according to the type of use of the optical channel:

Optocouplers with open optical channels. In such optocouplers, the emitter and photoreceptor are separated by an air gap. They are widely used for synchronizing the number of rotations of rotating shafts, moving mechanical systems as position sensors, and others. Open-channel optocouplers are divided into optocouplers that work in return and transfer

Closed optical channel optrons. In this case, the optical channel is protected from any external influences. Such optocouplers are used for galvanic connection of inputs and outputs of electrical circuits. If powerful power devices (thyristors, circuit breakers, MOSFET field transistors) are used in output circuits, such optocouplers are called solid-state relays. Currently, such relays are an alternative to electromagnetic relays, and their technology is constantly being improved.

"Long" optical channel optocouplers. In such optocouplers, the emitter and photoreceiver can be placed at a certain distance from each other. In this case, the optical channel connecting the emitter and the photoreceiver is a light fiber. Such optoelectronic devices are widely used for information transmission in cellular networks of EHM.

According to the spectral range of the optical channel, optocouplers are divided into:

Optical radiation with a wavelength of 0.4 to 0.75 μm visible range optrons.

IR optical radiation with a wavelength of 0.8 to 1.2 μm is near-diaphason optrons. The open channel is effective for optoelectronic devices if such radiations are detected.

Optrons are divided into the following according to their structural and technological features:

Elementary optocouplers, which consist of one emitter and one elementary photoreceptor. Depending on the type of photoreceptor used, they can be resistive, diode, thyristor, transistor, etc.

Optoelectronic integrated microcircuits, in which the elementary optron contains additional electronic devices: amplifiers, comparators, logic circuits, etc.

Special type optocouplers: differential optocouplers, which are several emmiters and photereceiwers ;there will be optoelectronic sensors.

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ENERGY AUDIT OF AN INDUSTRIAL SITE: A CASE STUDY

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Abstract: In order to reduce energy consumptions for sustainable and energy-efficient manufacturing, continuous energy audit and process tracking of industrial machines are essential. Compared to other non-residential buildings that have been widely researched, industrial buildings are generally characterized by larger thermal loads, ventilation losses and pollution control requirements. This paper presents the results of a preliminary energy audit carried out on 8 large industrial buildings of a famous car manufacturing holding . Energy demand for heating varied from 6 to just over 74 kWh/m^{3}year among the buildings of the site. The energy audit enabled to build a specific factory energy model which has been used in order to analyze the impact of various energy saving actions on the primary energy consumptions of the site. It has been demonstrated that in this specific case the improvement of the building envelopes and the optimization of the performances of the existing HVAC systems can determine a reduction of gas consumption up to 15% per year with a predicted annual economic saving of the order of 100000 $; the total simple pay-back time of the proposed thermal retrofitting is evaluated to be less than 6 years..

Key words: Motion sensors, Renewable energy, Sustainability, Advancements, Technology, Photovoltaic systems, Wind turbines, Energy harvesting, Sensor integration, Data analytics.

Introduction

The latest European standards in the field of energy efficiency (i.e. 2022/27/EU Directive) [1] point to obtain ambitious goals in terms of the use of renewable sources and energy saving by indicating for all the Member States the obligation to establish a plan for upgrading the energy efficiency of public and private buildings. Starting from 2021, each year at least 3% of the public building surface area shall be retrofitted in order to improve their energy efficiency. Moreover, from December 2022, also the relevant companies will need to undergo an energy audit of their facilities, an audit that must be renewed every 4 years.

Cause to the economic crisis still ongoing, in Italy the total energy consumption in the industrial sector is decreasing during the last six years, from a requirement of 48.9 Mtoe of primary energy in 2020 to 37.4 Mtoe of primary energy in 2022 [2].

However, the impact of the industrial energy consumptions on the total primary energy requirement is equal to 21% and still remains significant. The purpose of the aforementioned EU Directive is mainly to encourage retrofit actions in the industrial sector, which often offers larger energy saving margins respect to the residential sector. For this reason, the EU Directive highlights the compulsoriness of industrial energy audits in order to promote a very efficient tool for monitoring energy consumption and to achieve energy savings by means of the individuation of specific retrofit actions.

An energy audit is the procedure by means of which it is possible to analyze the energy balance of a system in order to define possible improvements of its energy efficiency, to achieve the mitigation of its environmental impact and to reduce energy costs. The main steps of an auditing process have been recently collected and defined in the specific national technical recommendation UNI CEI TR 11428 appeared in October 2021. The auditing procedure is split by the Uzbekistan standard in the following steps [3]:

1. Complete energy analysis of the system
2. Identification of energy waste
3. Definition of the retrofitting plan needed to obtain a reduction of energy consumptions
4. Implementation of a systematic plan for the development of energy saving projects and monitoring of the results.

In this paper the main results of an energy audit made in the facilities of an important Uzbekistan Automotive company is described. In literature there exist other works addressed to the main topic, as for example the work of ADM . [4] in which typical energy consumptions of an automotive industry characterized by a large scale car production were critically analyzed. However, these data are not useful in order to establish reference energy indicators for the Uzbekistan company which is the target of the Audit described in this paper because this company is characterized by a low production volume of luxury cars per year and the energy profile consumptions are very different from those generally linked to the generalist car producers.

The data required to develop the energy audit were collected over a period of six months from June 2022 to January 2023. The input data concern the factory layout, the location of thermal and electric plants, the individuation of the main thermal zones in which the whole factory can be partitioned, the data needed for the complete characterization of the existing thermal and electrical plants, the historical trend of the factory energy consumptions and the energy costs through the readings of bills and the monitoring of the indication of the natural gas flow meters installed in the factory. In addition, with the aim to complete the overview of the thermal performances of the factory, an experimental campaign of measurements has been conducted in order to check the real values of the indoor temperature maintained

within each building of the factory and to test the thermal characteristics of the main elements of the building envelopes (windows, walls, roof).

As basis of the energy assessment about the factory thermal uses, the natural gas consumptions concerning the last three years 2020, 2021 and 2022 have been used.

Energy Analysis of the Plant

The factory analyzed in this paper is located in Emilia Romagna, close to Bologna, and it is very large and complex: it occupies a built-up area of about 10000 m^2, corresponding in a total heated volume of 20000 m^3. The total number of employees of the factory is about 900. In Figure 1 a schematic lay-out of the whole factory is given.

The factory is divided in several buildings, the most important of which were analyzed during the energy audit. More in detail, the energy audit presented in this paper concerns 8 buildings, each of them characterized by different envelops and heating systems. Only one building is heated by means of a electric heat pump system; the other buildings are heated by burning natural gas.

Fig. 1 Layout of the factory;

Asset rating evaluation

As first step of the energy audit a standard evaluation of the heating energy consumptions of the main buildings of the factory has been conducted. Accordingly with current Uzbekistan standards[5, 6, 7], this kind of evaluation is defined as "*Asset rating*" evaluation and it is considered as the basis for the computation of the

energy class of each building. In the Asset rating evaluation a standard use of the buildings is considered by taking into account all the constraints imposed by the Uzbekistan standards about the evaluation of the energy class of a building (i.e. a fixed indoor temperature equal to 18 °C for production zones and equal to 20 °C for offices, continuous operation 24h/24h of the heating system, standard assessment of the free thermal gains), standard weather conditions and the real conditions of the envelope elements of each building:

The Asset rating evaluation of the heating primary energy consumptions of each building has been obtained by using a commercial certified software (*MC4 Suite*) by means of which a tridimensional model of each building has been made. In Table 1 the main results obtained in terms of heating primary energy consumptions, of the value of the Energy Performance Indicator (EPi) linked to each heated building and of the Energy Class assigned to each building following the current energy building classification of Emilia Romagna are quoted. By observing the data reported in Table 1 it is evident that strong differences among the standard energy consumptions of the different buildings of the factory there exist; these differences are due to the characteristics of the thermal plants and of the envelopes associated to each building and hence to the year of construction of each building. As an example, building 6 is characterized by a very low specific primary energy consumptions (about 6 kWh/m^3 year); this building is the most recent building added to the factory in 2023 and its envelope and its heating plant have been optimized in order to guarantee low energy consumptions both for heating and cooling. On the other hand, building 5, built in 2020, presents a primary energy requirement for heating of about 74 kWh/m^3 year, one order of magnitude larger that building 6, and this large energy consumption is due to the combined effect of a old heat generation system and of an envelope scarcely insulated from a thermal point of view. An unexpected but interesting result of this asset rating evaluation is that buildings with worst energy performances are those in which the administration is located. In order to explain this fact it is important to observe that in the offices a higher indoor temperature is required (20°C against 18°C of the production zones) and, more important, the ventilation heat losses can be more significant in offices with respect to certain production zones due to the larger renewal air flow rates needed for the maintaining of the hygienic conditions.

Table 1. Asset rating evaluation of the factory energy consumptions for heating

Building	Heating Primary Energy consumptions (MWh/year)	EPi (kWh/m^3 year)	Energetic Class
1	2812.9	21.86	C
2	806.5	27.44	C
3	1185.2	28.82	C
4	255.0	45.80	E
5	3136.9	74.11	F
6	191.7	6.04	A
7	492.9	15.55	B
8	2528.1	26.05	C

The main goal of this preliminary asset rating evaluation has been to individuate for each building the main sources of energy waste. With the only exception of building number 6, all the buildings of the plant present more than one critical point in terms of envelope elements (i.e. high U-value of external walls, thermal bridges) and/or heating plant (low efficiency of the heat generation systems, heating emission, thermal regulation). Common energy waste elements are the thermal losses from the building envelope caused by a low level of walls thermal insulation, thermal losses from windows and skylights, a generalized oversize and oldness of the existing thermal plants (especially burners and generators), and finally the use of ventilation systems characterized by low energy efficiency. In this way, the results obtained during the asset rating evaluation have been used in order to individuate for each building the weak elements of the building envelope and of the existing heating plant for a more rational use of the thermal energy. In addition, the results obtained in this phase enable the comparison of the energy performance of the factory buildings because obtained by considering for each building standard conditions of use.

Conclusions

Energy audit is a powerful tool to achieve interesting energy savings. The reduction of energy costs is a key to improve companies competitiveness and for this reason the realization of an energy audit of industrial sites is not only a specific obligation foreseen by the European Directives but also a real opportunity for the companies.

In this paper the energy audit, limited to the heating plants of the factory, of an industrial site devoted to the production of luxury cars is described. It has been demonstrated how the energy audit enables to collect information which are very useful to define a factory energy model by means of which the energy balance of the site is analyzed. By means of the factory energy model it is possible to study the

impact of possible improvements of the site in order to achieve the mitigation of its environmental impact and to reduce energy costs.

A series of possible energy saving actions have been individuated; for each action the primary energy saving per year has been estimated by using the factory energy model. The pay-back time linked to a single action has been calculated; all the interventions with a pay-back time larger than 6 years have been considered as not suitable. The analysis has shown that it is possible to individuate a series of energy saving measures, like thermal insulation of walls and roof-tops, the replacement of old boilers and the use of heat recovery units in the HVAC systems that can produce a saving of about 100000 $ per year with a pay-back time less than 6 year. The results of this energy audit have been used by the company for the definition of its energy saving strategy for the next future.

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TECHNOLOGY OF MANUFACTURING CRYSTAL SILICON BASED SOLAR PANELS

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Abstract: this article describes the technologies of making crystalline silicon-based solar panels, improving their chemical, mechanical, and thermal properties, as well as methods of using and connecting solar cells.

Key words: solar cells, current, voltage, thermal properties, sum of voltages.

0.6V voltage and 2A current produced by solar cells are not enough for consumption. In addition, solar cells cannot be used outdoors. Because it is mechanically very delicate. Solar cells are assembled in the form of solar panels to protect them from external influences and increase their total current and voltage [1-2].

In solar panels, solar cells are connected in parallel and in series. Cu metal tapes are widely used to connect them together. Its sizes are mainly of two types. To connect the first two solar cells together, 1.6-2 mm wide and 0.12-0.2 mm thick metal tapes are used, and the second is to connect each row of solar cells with each other, 5-6 mm wide and 0.2-0.3 mm thick metal tapes are used. Metal tapes are not only made of Cu, their surface is coated with Sn96.5/Ag3/Cu0.5 alloy salts to improve its chemical, mechanical and thermal properties [3-4].

When solar cells are connected in parallel, their voltage does not change, but the current increases (Figure 1).

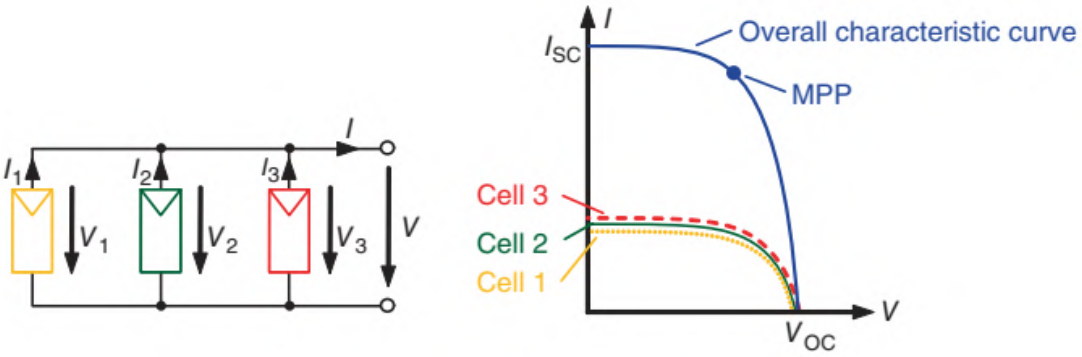

Figure 1. Parallel connection of solar cells

When solar cells are connected in series, the current does not change, and the voltage is the sum of the voltages of each solar cell (Figure 2).

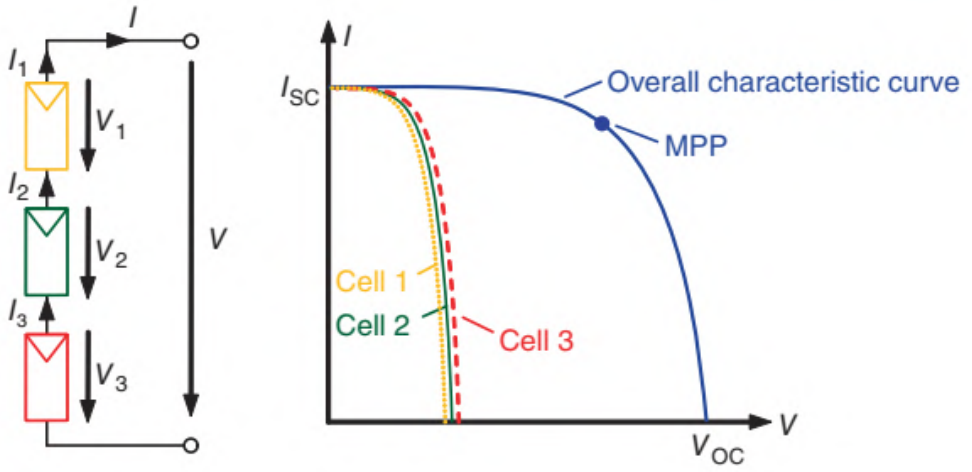

Figure 2. Series connection of solar cells

Modern solar panels consist of 36, 48, 60 or 72 solar cells. The next step is the encapsulation of the interconnected solar cells. EVA (Ethylene Vinyl Acetate) is used for encapsulation. The solar cell is sandwiched between two EVA films. And laminated at 1500C under pressure in vacuum through a laminating machine. One disadvantage of EVA film is that it is flexible, so it needs to be covered with an additional layer on top and bottom.EVA film protects the solar elements from moisture, dust and vibration. In addition, it ensures that the electric circuit created from solar cells does not break down. EVA layer is optically very transparent material. It transmits light very well.

The back of the solar panel is covered with an additional layer of PVF (Polyvinylfluoride). In addition to the EVA layer, the front part of the solar panels is covered with heated glass. Tempered glass is 6 times more resistant to mechanical stress than ordinary glass. Its surface is embossed. Because it is ensured that the light beam falling on its surface reaches the solar element perpendicularly.

Figure 3. Layers of a solar panel

The edge parts of the solar panel are mainly framed using aluminum profiles. It facilitates installation and hardening of solar panels.

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PROSPECTS OF MICRO- AND NANO-SIZED SILICON-BASED THERMOELECTRIC MATERIALS

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Abstract: In this article, the role of granulated semiconductors in the development of science and technology, their microstructure, thermoelectric properties, semiconductor devices made on their basis, electrophysical and thermoelectric properties of solar cells, thermocouples and integrated microcircuits, as well as the influence of atoms entering them, are analyzed and illuminated. is dedicated.

Key words: semiconductor, electrophysical properties, thermoelectric properties, granules, powder metallurgy, single crystals.

Research of electrophysical and thermoelectric properties of micro- and nano-sized particles formed from semiconductors and their compounds is one of the priority tasks facing these directions.

Granular materials are a collection of spherical, cylindrical, irregular square or powdery solid microscopic alloy or metallic constituent particles that lose energy when their particles interact. Powder metallurgy is a branch of science and technology that includes the production of metal powder, as well as products made from them or powders of their mixtures with non-metallic substances. Powder technology has always occupied an important place in the development of technology, it made it possible to obtain new materials and products that could not be produced using other traditional technologies. The use of powder technologies in modern micro- and nanotechnologies has a number of advantages and has made it possible to obtain almost unlimited nanostructures with relatively inexpensive technologies. Although it should be noted that until now there are no clear methods for their separation and placement. Another advantage of obtaining nanostructures from semiconductor materials is the possibility of combining the physical properties of single crystals with the properties of polycrystalline and amorphous materials. In addition, compounds formed with carbon nanostructures opened up the possibility of

creating unique devices made of organic materials with size heterogeneity, donor and acceptor. In recent decades, the importance of powder technology has increased significantly, as completely new materials with microcrystalline, nanoscale and amorphous structures have been created based on it. The possibilities of nanoscale silicon structures as promising elements of new generation electronics have increased significantly. These unique structures made it possible to increase the physical, mechanical and functional properties of the products. Powder technology has a 3500-year history, and during the Bronze Age, mankind used gold, copper, and bronze powders to make household items and jewelry. So far, many achievements have been made and scientific publications are being published by our Republic and foreign scientists in the study of properties and characteristics of granulated semiconductors obtained on the basis of powder technology. By now, powder technology, powder metallurgy, granulated semiconductors have covered all fields of science and technology. Studying the physical properties of micro- and nanoscale structures has become one of the main areas of condensed matter physics. The constant interest in nanostructures is related to the fact that certain materials partially or completely change their properties and properties during the transition to the nanocrystalline state. Granular semiconductor structures, consisting of nanometer-sized particles, serve as the basis for the creation of nanoelectronic devices, new types of solid-state catalysts, components for transparent electronics and transparent displays. The electrical properties of such structures largely depend on the size of nanoparticles and their arrangement density (volume or surface). If the average density of particles is small, the statistical conductivity of such a medium is also very low. Fabrication of nanosilicon multiphase quantum detectors using nanocrystalline silicon with a band gap of 1.12 eV with β-Si (1.1-1.3 eV) and α-Si:H (1.5-2.0 eV) gives the opportunity.

Increasing the efficiency of converting the non-photoactive part of solar radiation, i.e. natural and man-made thermal energy directly into electrical energy, is one of the urgent problems. In this context, a steady global trend in the development of photovoltaic materials is increasing attention to nanostructured and composite materials. Sometimes the useful properties of these materials can be combined, such combinations are called granular semiconductors, among which microgranular silicon is distinguished by its unique thermoelectric and thermovoltaic properties. In addition, the reason for the interest in various modifications of silicon, which is not a traditional thermoelectric material, was due to its high abundance in the earth's crust and the development of technologies related to "Big Alternative Energy" based

on thermoelectric conversion. In general, the thermoelectric properties of granular semiconductors can be analyzed using Landauer's principle. The development of semiconductor electronics has increased the demand for small-sized composite materials, as well as micro- and nano-sized semiconductors in various fields of science and technology. New methods of studying their functional, physical, thermoelectric and thermovoltaic properties, in particular, the mechanisms of the appearance of heat-voltaic effects introduced in them, were created, which in turn increased the possibilities of creating semiconductor devices, solar cells, thermocouples and integrated microcircuits based on micro- and nano-sized semiconductors. The physical properties of granulated semiconductor silicon under certain conditions, the control of the processes occurring in two adjacent areas, the influence of intergranular boundary conditions or defects on charge transfer processes, as well as the potential barrier height (φ), electrical conductivity, which are considered the main electrical and thermoelectric quantities. (σ), electrical resistance (ρ), thermoEYuK, thermal conductivity (χ) are being studied on temperature dependence and significant progress is being made.

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INCREASING THE ENERGY EFFICIENCY OF BUILDINGS AND STRUCTURES

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Annotatsiya: This article is about improving the energy efficiency of buildings and structures and focusing on the construction of buildings, and its impact on energy efficiency. Thermal-physical properties (IFX) or thermal-physical indicators (IFT) of substances, materials and products - thermal conductivity, temperature conductivity, thermal conductivity, heat transfer coefficients, thermal resistance of heat transfer, specific volume or weight heat capacity, black color. level, saturation temperature. The biggest concern in the construction of buildings is damage to the environment. The article provides information on the development and use of electricity in Uzbekistan, energy analysis in buildings and structures, mainly energy-efficient buildings currently being developed for buildings and structures. Information is given about the impact of modern houses on the environment and measures to prevent environmental damage. About conducting energy analysis.

Key words: energy analysis, insulated buildings, energy audit, environment, inspection, efficiency.

By 1914, the power of the Turkestan power industry had slightly exceeded 20,000, and the total number of electric motors in 51 power stations did not exceed 500. Until 1917, power plants in the territory of present-day Uzbekistan had a capacity of 3,000 kW and produced 3.3 million kWh of electricity in one year. The creation of the plan for the electrification of Turkestan became very important. In 1923, the construction of a hydroelectric power station (GES) began on the Bozsuv Canal on the outskirts of Tashkent. In 1926, the first 2,000 kW Gray water hydroelectric power station, the largest in Central Asia at that time, was put into operation. The basis of the power increase in the republic was the successive construction of hydropower plants with a capacity of 180 thousand kW in the Chirchik-Bozsuv direction when the energy system of Uzbekistan was created (1934). In 1939, a 12 KW condensing turbine unit of the Kuvasoy thermal power

plant (IES) and two 6 KW turbines of the thermal power plant of the Tashkent Textile Combine were put into operation at the base of the Kyzylkia coal basin. The construction of power plants and the development of industrial enterprises created the need for the construction of main power networks. Simultaneously with the commissioning of the Kadir HPP, the first in the Republic, a 35 kV two-system line transmitting electricity from this HPP to Tashkent was put into operation. In recent years, changes aimed at developing the economy and improving the lifestyle of the population are being implemented in our country. Modern free economic zones, technological parks, and clusters are being established in various regions of our republic. On the basis of such strategic programs as "Prosperous village", "Prosperous neighborhood", "Safe city", drastic improvements are being made in cities and villages, they are constantly being developed and completely renewed. Accordingly, tourism is developing rapidly. On the other hand, a lot of attention is being paid to the protection of the environment from harmful atmosphere and ensuring ecological stability.

Such development observed in all spheres of society and state life, economic growth, meeting the needs of the population, first of all, leads to an increase in the need for electricity.

What measures are being taken to eliminate the increasing need for electric power, ensure quality supply of electricity for users of industrial enterprises, and prevent unplanned outages (quick failure of devices in exceptional situations)? According to JSC "Uzbekenergo", which is responsible for the solution of these very important issues, all measures are being taken in this regard and they are being used in practice.

Well, let's go deeper into the topic through numbers and facts, pain points. 90 percent of the electricity in our republic is produced in thermal power plants. The devices used, of course, do not fully meet the requirements of the time. Because their wear and tear every year reduces the amount of electricity production, causes waste, and also causes a large amount of used fuel to be consumed. As a result, the cost of produced electricity is increasing. Ordinary consumers will hardly know about them. It is important for them that the light is on at home, but many people are not interested in how it is made and at what cost it is delivered. However, if the taxpayer reads all the information and draws a reasonable conclusion for himself, he will not be free of benefits. Currently, the length of power lines of energy systems in our country is 254,8 thousand kilometers. Of these, 218,400 kilometers are low-voltage distribution networks with a voltage of 0.4-10 kV. 62.4 percent of them have

been used for more than 30 years. The aging of the distribution networks leads to a significant loss of electricity. That is, at the same time, 20 percent of the total power output from thermal power plants to the electricity grid is lost. Let's put it in front of us: one fifth of the light and heat source produced for us is lost and becomes ultraviolet. What should be done to solve such shortcomings and avoid waste? First of all, the goal is to ensure the reliability and quality of electricity supply to consumers. Of course, it will be necessary to take into account the increase in the demand for electricity in the future.

Another necessary issue that needs to be resolved is that the cost of fuel and energy resources (natural gas, fuel oil, coal) constitutes the main part of the expenses for the production of electricity. This indicator is currently equal to 43%, and considering that their prices are increasing in the world market, how correct is it to maintain the current tariffs for electricity?! Because when you add the costs of use and arrears of payments to the price of resources, a painful picture of the problem is formed. Such problems can negatively affect the reliability and quality of electricity supply.

One of the most important components of the problem of effective use of energy (resource) wealth in specific areas of the republic's agriculture and water economy is the training of specialists with knowledge in the field of energy saving. Therefore, the purpose of the presented work is to form a general methodological approach to the problem of effective use of energy resources in the future energy industry based on the world experience in the field of energy saving and the state policy of the Republic of Uzbekistan. Issues of energy consumption management and the most important directions of state policy in the field of energy saving are highlighted. The possibilities and prospects of reducing energy consumption of technologies in the field of water management are shown. Carrying out energy analyzes in buildings and structures.

The sale of electricity to consumers of the republic is carried out by 14 regional distribution and sales enterprises operating as joint-stock companies in each regional structure. The total length of the enterprises is more than 226.2 thousand kilometers and the voltage is up to 110 kV. there are small stations. The most widespread are the 0.4-6-10 kV power lines with a total length of more than 196 thousand kilometers, through which most of the electricity is delivered to the consumers of the republic.

JSC "Uzbekenergo" is the only production complex that carries out design, construction, assembly and adjustment works, as well as repair and use of the main and auxiliary equipment of power plants and networks. The production base and the

presence of highly qualified employees allow to carry out construction works in the field of energy at a high level. In accordance with the decree of the President of the Republic of Uzbekistan on structural changes, modernization and diversification of production at Uzbekenergo JSC from 2018 to 2021, the total cost is 11 billion. It is envisaged to implement 52 investment projects worth US dollars, including 25 in thermal energy. With the implementation of activities in the field of thermal energy, the efficiency of energy blocks reaches 60%, allowing the introduction of modern energy production technologies based on highly efficient steam-gas and gas-turbine devices. Currently, Uzbekistan is one of the countries that fully meets its own energy needs. Almost 50% of the power generation capacity in the United Energy System of Central Asia belongs to the republic.

The conclusion is as follows: energy is important for the development of Uzbekistan. An energy-efficient house is a building that consumes very little energy to maintain a comfortable microclimate inside the building. Energy savings in such buildings reach up to 90%. Annual energy consumption in this type of buildings can be less than 15kWh per 1m2. As an example, most of the private houses built today (reinforced concrete foundation, "warm floor" system without additional heating, walls 1.5 bricks thick with cement plaster, conventional plastic windows, roof thermal insulation 150 mm and without an air handling device in the ventilation system) the amount of energy used for heating is 110-130kWh per year per 1 m2. The following classification of houses has been adopted in the European Union. In the field of energy efficiency, enough experiments and tests have been carried out in the world, and it is necessary to consider them in accordance with the climatic conditions of our Central Asia. The suggestions and solutions of Uzbek scientists should be taken into account in the implementation of the measures mentioned above. Based on world experience, it is necessary to study their achievements and shortcomings and adapt them to our conditions. Of course, taking into account all the above points, it is necessary to comply with the requirements of the QMQ and regulatory documents. When conducting energy analyzes in buildings and structures, we go to the enterprise, familiarize ourselves with the documents, make calculations, calculate the daily and monthly capacities and give suggestions depending on the situation. I went to "Keyvan textil Rivoj" JSC gray production enterprise, which belongs to Andijan district ETK, and analyzed daily and monthly energy consumption as a practical experiment. Energy audit organizations for conducting energy audits are determined on the basis of rating indicators. Analysis of energy balances plays an important role in determining energy saving

opportunities. The energy balance is an important description that determines the state of the enterprise's energy economy, and determines the relationship between the energy supplied to the enterprise and the energy used and waste. When developing energy saving measures or conducting an energy audit, the parameters of all elements of heating, ventilation and air purification systems and their design features are determined from the building project. It is also necessary to specify the annual operation mode of the control systems and the measurement of air parameters. The design load of ventilation and air conditioning devices is determined from the project of the enterprise or organization. In the absence of such data, it can be determined by analytical methods, taking into account the external and internal volume of buildings, specific ventilation characteristics and air temperature inside and outside the building. The main characteristics that should be determined when checking ventilation systems are: actual load moments, operating time of units during the day, indoor air load and average circulation temperature, air exchange in te Energy saving measures in heating, ventilation and air cleaning systems consists of the following.

1. Use of the economically feasible heat transfer resistance of external walls during the construction of external walls and additional insulation during the reconstruction of buildings. The event is aimed at increasing the thermal conductivity of the walls and improving the thermal protection properties of the building and reducing heat loss through the use of effective heat-insulating materials.

2. Plastering of ventilated external walls. The event is aimed at increasing the level of thermal protection of external walls.

3. Thermal protection of the outer wall at the place of installation of the heater. The event is designed to reduce heat loss from external barriers (walls) adjacent to heating devices.

4. Ventilated windows. The measurement is designed to reduce air permeability and increase thermal conductivity of window units.

5. Winding additional (triple) windows. The measurement is designed to reduce air permeability and increase thermal conductivity of window units.

6. Use of heat-absorbing and heat-reflecting windows. The measure is designed to reduce heat loss from solar radiation to buildings, which leads to comfort in buildings.

7. The device of shiny loggias. The event is designed to reduce the flow of external cold air entering the room in winter and increase the temperature in the loggia (behind the outer wall of the room).

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APPLICATION OF PHOTOVOLTAIC EFFECTS TO ENERGY SAVING MATERIALS

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Abstract: This paper provides information on how to apply photovoltaic effects to energy efficient materials. This article will show you how to focus on photovoltaic effects and their energy savers and choose the right materials to use them in their best form. The paper provides more knowledge on how to integrate photovoltaic effects into energy efficient materials and helps to create innovations in this field.

Key words: photovoltaic effect, photodiode, photovoltaic module, semiconductor, photoelectric effect.

Photovoltaic effects are experienced by energy-saving materials, which means that energy-saving materials for photovoltaic devices convert photon energy into electrical energy. When photons hit the photovoltaic material, they leave the electron beam by giving the electrons an energy level, displacing the electrons and thus creating a potential difference in the electrical charges. This potential difference is visible in electrical measurements and its stored energy can be stored in energy packs.

Photovoltaic effects can therefore have several useful directions, such as the following examples:

Electric power generation: Electric power generation can be done by converting photons into electricity through photovoltaic effect. This can be used to repair prototypes such as batteries and accumulators.

For weapon systems: Photovoltaic panels or modules can be an important resource for the maintenance of intelligent weapon systems.

Energy disclosure: Photovoltaic panels and modules can be used as a product according to the smart definition.

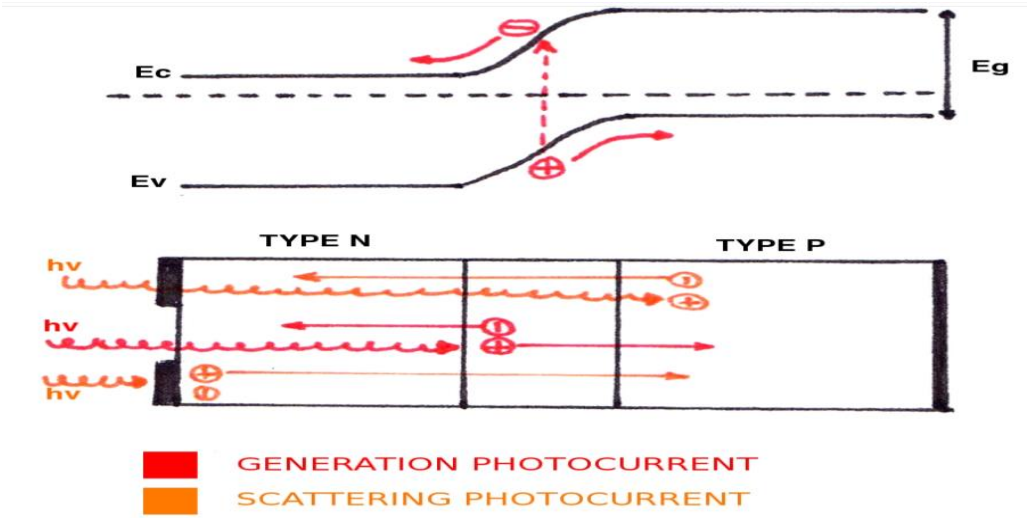
For application and utilities: Once the photovoltaic effect is accelerated, it can be used for applications and utilities.

In all ways, the application of photovoltaic effects to energy-saving materials continues to be tested, and these technologies are considered emerging phenomena.

Photovoltaic effect is the generation of voltage and electric current in the material under the influence of light. The photovoltaic effect is closely related to the photoelectric effect. For both events, light is absorbed, which excites an electron or other charge carrier to a higher energy state. The main difference is that the term photovoltaic effect is usually used when the electron is removed from the material (usually into a vacuum) and the photovoltaic effect is when the excited charge carrier is still inside the material. In both cases, the electric potential (or voltage) is created by the separation of charges, and light must have enough energy to overcome the potential barrier to be excited. The physical nature of the difference is usually that photoelectric emission separates charges by ballistic conduction and photovoltaic emission separates them by diffusion, but some concepts of "heat-carrying" photovoltaic devices blur the distinction [1-3].

The first demonstration of the photovoltaic effect was in 1839 by Edmond Becquerel using an electrochemical cell. In his Comtes rendus de l'Académie des Sciences, he explained his discovery of "the generation of an electric current when two platinum or gold plates immersed in an acid, neutral, or alkaline solution are unevenly exposed to solar radiation.

The first solar cell, consisting of a layer of selenium covered with a thin gold film, was tested by Charles Fritts in 1884, but it had very poor efficiency. However, the most familiar form of the photovoltaic effect comes from solid-state devices, mainly photodiodes. When sunlight or other light of sufficient energy falls on the photodiode, the electrons present in the valence band gain energy and become excited and move to the conduction band and become free. These excited electrons scatter and some reach the rectification junction (typically a diode p-n junction) where they are accelerated into the n-type semiconductor material by an applied potential (Galvani potential). This creates electromotive force and electric current, and thus some of the light energy is converted into electrical energy. The photovoltaic effect can also occur when two photons are absorbed simultaneously in a process called the two-photon photovoltaic effect [4-8].



Band diagram of the photovoltaic effect. Photons transfer their energy to electrons in quasi-neutral regions. These go from the valence band to the conduction band. Depending on their location, the electrons and holes are accelerated by the drift electric field E_{drift}, which gives the generation photocurrent, or the diffusion of the electric field E_{scatt}, which gives the emission photocurrent.

In addition to the direct photovoltaic excitation of free electrons, an electric current can also be generated through the Seebeck effect. When conductors or semiconductors are heated by the absorption of electromagnetic radiation, the heating can cause increased temperature gradients in the semiconductor material or differences between the materials. These thermal differences can in turn create voltages as electron energy levels shift differently in different regions, which in turn creates a potential difference between regions that creates an electric current. The relative contribution of the photovoltaic effect to the Seebeck effect depends on many properties of the constituent materials [9-11].

All of the above effects produce direct current, the first demonstration of the alternating current photovoltaic (AC PV) effect was made in 2017 by Dr. Haiyang Zou and Professor Zhong Lin Wang at the Georgia Institute of Technology. photo voltaic effect. An alternating current in non-equilibrium conditions that occasionally shines at a junction or interface of a material. Photovoltaic power effect is based on the capacitive model, the current is strongly dependent on the frequency of the chopper. The photovoltaic effect is the result of the relative shift and alignment between the quasi-Fermi levels of the semiconductors adjacent to the junction/interface under mismatch conditions. Electrons flow back and forth in the

external circuit to balance the potential difference between the two electrodes. An organic solar cell with no initial carrier concentration has no photovoltaic effect.

The operation of the photovoltaic module depends on the environmental conditions, mainly on the global incident radiation in the plane of the module. At the same time, the temperature of the p-n junction also affects the main electrical parameters: short-circuit current ISC, open-circuit voltage VOC and maximum power Pmax. The first studies on the behavior of PV cells under different conditions of G and T were several decades ago.1-4 In general, it is known that VOC shows a significant inverse correlation with T, while for ISC, this correlation is up to 'directly, but weaker, so this increase does not compensate for the decrease in VOC. As a result, Pmax decreases as T increases. This relationship between the output power of a solar cell and its junction operating temperature depends on the semiconductor material, and it is related to the effect of temperature on the concentration, lifetime and mobility of the internal carriers, that is, electrons and holes [12-13].

Semiconductors are a large group of substances. They include the following chemical elements: germanium, silicon, boron, carbon, phosphorus, sulfur, chromium selenium, gray tin, tellurium, iodine, some chemical compounds and a large number of organic substances. A limited number of semiconductor materials are used in electronics. is used. It is primarily silicon and gallium arsenide. A number of substances such as magnesium, boron, phosphorus is used as mixtures. Semiconductors used in electronics have a much more refined crystal structure, their atoms are located in a precise periodic sequence at constant distances from each other in space, forming a crystal lattice. The most common semiconductors in electronics - germanium and silicon - have a diamond-like structure. In such a lattice, each atom of a substance is surrounded by four such atoms and is located at the apex of a regular tetrahedron. Each atom in the crystal lattice is electrically neutral. The forces holding the atoms in the lattice nodes have a quantum mechanical character; they appear due to exchange of valence electrons of interacting atoms. Such a connection of atoms is called a covalent bond, for its creation a pair of electrons is needed. In the outer layer of germanium and silicon, which are tetravalent elements, there are four covalent bonds with four nearby atoms. In the seen ideal lattice, all electrons are connected to their atoms. Small energetic effects from heating or radiation can cause some valence bonds to break in the lattice. In this case, the valence electron is separated from its atom and moves to a new stable state, and it has the ability to move along the crystal lattice. The mobile electrons separated from such a valence bond are called

conduction electrons. They cause the semiconductor to conduct electricity, which is called electron conductivity [14-15].

The minimum amount of energy required to remove a valence electron from an atom and make it mobile depends on the structure of the DE lattice and is a parameter of the semiconductor. electrons occupy the entire zone of energy levels and is called the conduction zone.

The energy state of valence electrons also forms the so-called valence zone. Between the maximum value of the valence band and the minimum value of the conduction band, there cannot be electrons in the energy band; this is called the forbidden zone. The width of the band gap determines the energy required to release a valence electron to ΔE, that is, the ionization energy of a semiconductor atom. Thus, from an energetic point of view, the removal of a valence electron from an atom and its transformation into a conduction electron corresponds to the removal of electrons from the valence band to the conduction band. When a valence bond is broken and an electron goes from an atom to a lattice, an unfilled bond is formed, with valence electrons from adjacent bonds to the unfilled bond, which have an uncompensated positive charge equal to the electron charge. because of its easy transition, this is facilitated by thermal motion in the crystal, in which the position (called a hole) left by the valence electron moves chaotically in the lattice. In the presence of an external field, the hole also moves in the direction of the field, which corresponds to carrying a positive charge, that is, an electric current. The electrical conductivity of a semiconductor in this form is called the electrical conductivity with holes. The one seen above was called electron conduction, in which free electrons were the cause. It is accepted to call a semiconductor that has only its own atoms in lattice nodes a special conductor; all dimensions related to it are determined by the index I (intrinsic - private, taken from the English word).

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CONDITIONS OF INSTALLATION OF SOLAR PANELS IN ANDIJAN CITY AREA

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Abstract: Currently, the demand for electricity is increasing year by year. Therefore, the production of electricity must also increase. The most alternative option for this is the example of solar panels. Nowadays, solar panels are being installed in various regions of Uzbekistan. we can see that the installation work is being carried out. In this, we can see how much benefit the solar panel brings to the electricity.

Key words: Solar panels, installation conditions, inverters, sun, light, area, installation.

The use of solar energy as a renewable energy source cannot be denied. The reason for this is the unlimited source of energy that can be obtained from the sun and converted into electricity through solar panels. First of all, we need to know how to install solar panels.

The installation allows the panels to be adjusted to the optimal tilt based on latitude, season and even time of day to ensure maximum solar energy production. The most common places for installation are on the roof, using solar roof devices or with ground mounting options.

Fig1. Stanford University scientists have created unusual solar panels. They generate energy even at night. Most of the solar energy that hits the earth during the day is returned to space as radiation at night.

During this phenomenon, objects on the Earth's surface become cooler than the surrounding air. Studies have shown better results on cloudless nights. 50 MW of energy was produced from each square meter of the solar cell.

During the day, a square meter of solar panel produces about 150 watts of electricity.

First of all, we need to know what a solar cell is and how it works. These solar panels consist of photovoltaic cells made of different semiconductor materials. These materials allow us to convert energy from the sun into electricity for use in our homes.

Power inverter is responsible for converting the energy generated by the solar cells to activate it, so that the alternating current is useful for domestic use.

A solar panel is a device that converts solar radiation energy into electrical energy either directly or through the photoelectric or photochemical effect of absorbing sunlight. The main component of most solar panels is silicon, but the production cost is relatively low.

• Tempered glass is used to protect the power generation body and should be selected with high conductivity. Light transmittance should be high. (usually 91% or higher)

• EVA is used to glue and fix temperature glass and power generation body. The quality of transparent EVA material directly affects the life of the module. EVA exposed to air is prone to degradation over time.

• The main function of solar panel cells is to generate electricity, and the mainstream of the main power generation market is crystalline, silicon solar cells and thin film solar cells, both of which have their advantages and disadvantages. Crystalline silicon solar cells have relatively low equipment costs, but high consumption and battery costs, as well as high photoelectric conversion efficiency.

• EVA it mainly glues and packages the main part of the power generation and the back panel.

• Backplane function must be sealed, insulation and other waterproof materials resist aging. Most component manufacturers offer a 25-year warranty.

• Aluminum alloy protective laminate acts as a certain seal and support.

• The junction box protects the entire power generation system and acts as a power transfer station.

• The function of silicone sealant is used to seal the joint between the component and the aluminum alloy frame and the joint between the junction box

Installation of solar panels in the conditions of Uzbekistan: "Sunny house" program for installing small solar panels in houses is starting in Uzbekistan. It is planned to install panels in 37,000 households in 2023. A subsidy of 1,000 soums will be allocated for each kWh transferred to the unified electricity system.

From April 1, implementation of the "Sunny House" program will begin in Uzbekistan to encourage the installation of small-capacity solar panels (up to 50 kW) in households in the regions. This is provided for in the decision of President Shavkat Mirziyoyev dated February 16 "On measures to accelerate the introduction of renewable energy sources and energy-saving technologies in 2023".

The installation allows the panels to be adjusted to the optimal tilt based on latitude, season and even time of day to ensure maximum solar energy production. The most common places for installation are on the roof, using solar roof devices or with ground mounting options.

Mounting systems are metal racks that hold solar panels to the roof or ground.

The most common way to mount modules is to use a solar panel mounting bracket. Mounting brackets are heavy duty hardware and are usually made of stainless steel or aluminum. All solar panels and fixtures, whether rooftop or ground, must meet strict guidelines to withstand severe wind and weather events and ensure structural integrity.

According to the approved plan, in 2023, it is planned to install low-power renewable energy sources in 37,000 households. As part of the program, a subsidy

of 1,000 soums will be allocated for each kilowatt-hour of excess electricity produced by the population through solar panels.

In Uzbekistan, the "Sunny House" program to install small solar panels on houses will be launched. It is planned to install panels in 37,000 households in 2023. A subsidy of 1,000 soums will be allocated for each kWh transferred to the unified electricity system.

In case of less than the amount of electricity consumed from the single electric power system during the month, payments for electricity for this month are calculated based on the difference between consumed and transmitted electricity.

The presidential decision "On measures to accelerate the introduction of renewable energy sources and energy-saving technologies in 2023" was adopted.

According to it, renewable energy sources with a total capacity of 4,300 MW will be launched in 2023. In particular:

• 2,100 MW — large solar and wind power plants;

• 1,200 MW - solar panels installed in the social sector, farm buildings and structures, and apartments;

• 550 MW - small photoelectric plants built by entrepreneurs.

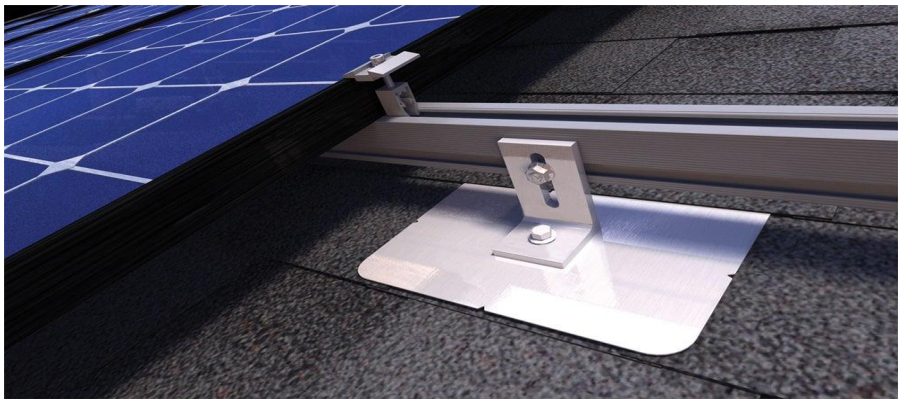
• In addition, solar panels will be installed in the buildings and facilities of 11,000 entrepreneurs, and small photoelectric plants will be built.

• 765 high-rise buildings will be supplied with renewable energy sources by installing small-capacity renewable energy sources devices in 37,000 households.

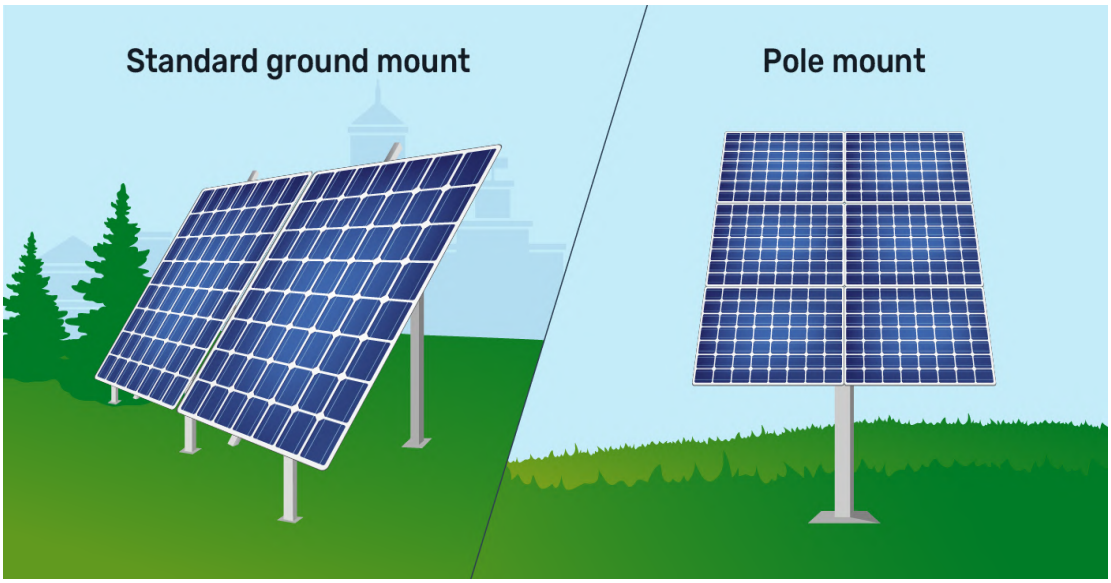
• 103 small and micro hydropower plants will be built in the regions and 5,407 social facilities will be heated with coal.

• From April 1, the "Sunny house" program will be implemented to encourage the installation of small power (total capacity up to 50 kW) solar panels in the territories of the republic.

• It is also planned to launch 7 power plants with a total capacity of 2910.6 MW in Uzbekistan. In Sirdarya, Navoi, Surkhandarya, Samarkand and Jizzakh, 1 thermal power plant, 1 wind, 3 solar and 2 hydroelectric power plants will be put into operation and connected to a single electricity grid.



They are built to be durable, flexible and weather resistant. They also come with a 25-year warranty. A ground-mounted solar energy system is just what it sounds like - a system of solar panels installed on your property, not on the roof of your home. Ground-mounted solar panels are your outdoor space and can be installed anywhere with good sunlight. The panels can be installed anywhere from a few inches to several feet high. The panels power a solar inverter, which is located behind the panels or on the house. Residential solar systems are typically built using 60-cell solar panels—typically used on rooftop solar systems on solar panels. However, large-scale ground-mounted systems use 72-cell solar panels, as in solar installations. Ground-mounted solar panels also include backyard solar panels, stand-alone solar panels, and ground-mounted PV. also known as systems



You can use a standard ground mount that holds the panels together, or a pole mount that places the panels higher off the ground.

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EFFECTIVE USE OF ELECTRICITY IN AGRICULTURE AND ITS IMPORTANCE

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Abstract This article describes the efficient use of electricity in agriculture and its importance.

Key words: agricultural electrification, labor productivity, lighting, heating greenhouses, water, pump, station electrification, stationary.

INTRODUCTION

Electricity is derived from the Latin word "electricus" (ancient Greek "ēlektron") and is a set of phenomena resulting from the interaction and orderly movement of charged free electron particles. English naturalist William Hilbert introduced this term into the scientific literature for the first time in 1600 in his book "On Magnet, Magnetic Bodies, and the Great Magnet - About the Earth".

The treatise explains in detail the workings of the magnetic compass and describes some of his experiments on magnetized bodies. In the author's work, he finds out that other substances in nature have the ability to be electrified, that is, to a certain extent, to create a magnetic field. Mainly measuring the consumption of electricity in everyday life and the national economy, as well as measuring the electricity produced in the electricity industry external unit of the amount of energy used for 1 kilowatt-hour is the amount of energy consumed (produced) in 1 hour by an electrical device with a capacity of 1 kilowatt.

(1 kW · h= 10^3 W × 3600 s = 3.6 MJ). Electric utilities measure energy using an electric meter that keeps track of the total amount of electricity delivered to the customer.

Energy is one of the main sectors of every economy and is a solid foundation of economic and technical development. The energy system of Uzbekistan consists of 37 thermal and hydraulic power plants with a total installed capacity of 11.5 mln. kW, 55 billion per year. It has the ability to generate more than 100 kW of electricity. The total length of electric networks of all voltages of the energy system of

Uzbekistan is about 228 thousand km. The total capacity of network transformers is 42.6 MVA. About 65,000 people work in the energy system of the republic. On September 25, 1934, the organizational base of the energy system of Uzbekistan, the "Uzbekenergiya" energy department (now the Ministry of Energy and Electrification of the Republic of Uzbekistan) was established.

Currently, the energy system of Uzbekistan provides energy to more than 20,000 industrial, 100,000 agricultural, 20,000 communal and 3.5 million household consumers. The total electricity consumption in the republic is 46.1 billion. kW is an hour. Hydropower. The total installed capacity of 27 HPPs in the energy system of Uzbekistan is 1420 MW. They have 6331.2 mln. kWh of electricity is being produced.

MAIN PART

As in all sectors of the national economy, the supply and use of electricity is of great importance in agriculture. In agriculture, electricity is mainly used for lighting, heating, that is, electrification of greenhouses, water pumping stations, electrification of stationary and mobile irrigation units, creation of microclimate in hatcheries and livestock farms, etc.The problems of using the quality of initial indicators to determine the effectiveness of agricultural electrification are currently relevant.

The initial indicators for determining the efficiency of agricultural electrification are the following: the production of agricultural products by crops on the land area and plowed land in kind and at the expense of money; production of livestock products in terms of their number according to the type of animals and in terms of money; the number and capacity of electric motors, electrical apparatus, devices by sectors and processes, the value of electrification means (substations, power transmission networks, mechanisms), annual energy consumption by all economic sectors, the value of 1 kW of power, the number of service personnel, labor costs for the production of agricultural products before and after electrification, the availability of electricity to farms, all these characterize the possibilities of electrification of production processes.

For example, if we take the example of animal husbandry: the use of electricity in animal husbandry leads to a sharp reduction in labor costs. The use of electricity can be used to perform a number of activities on the farm, including water supply, advance feeding of animals, milking cows, transportation of various loads, sheep shearing, preliminary processing of milk, incubation, etc. with the help of mechanization. allows to perform.

As long as the construction of electricity transmission networks and distribution and production facilities is solid and guaranteed, not only agriculture, but all sectors of the national economy will be ensured to function effectively. The role of this network in agriculture is very important because, firstly, it ensures continuous operation of water lifting devices in processes related to crop irrigation, and secondly, certain types of cultivated products are kept intact in warehouses and refrigerators. In addition, the power transmission network has its effect in increasing the quality and quantity of products grown in the livestock sector or in the poultry sector in the process of using electricity.

Construction of power plants shortens the payback period for electricity supply and improves the living conditions of rural residents. Fully electrifying agriculture improves the quality of crops and reduces the demand for labor. The use of electric energy in agriculture makes it possible to mechanize crop irrigation, reducing labor costs by 10-20% and operating costs by 10%. The use of electricity for heating and lighting greenhouses, and operating water pumps not only reduces labor costs, but also increases the yield per hectare of cultivated land. A product worth 100-150 soums is created for each soum of electricity.

6% of energy resources and 27% of electricity are consumed in the branches of the agro-industrial complex, which produce more than 32% of the republic's gross domestic product. Although these indicators are several times lower than in developed countries, the energy capacity of product production remains high. There are objective and subjective reasons for this situation.

CONCLUSION

A number of achievements can be achieved as a result of efficient and rational use of electricity in agriculture. Among them: industrial development, electronic machines that provide high productivity instead of manual labor, are of great importance in the acceleration of livestock, farming, horticulture and similar industries. For this reason, it is necessary to pay attention to the following when using electricity:

- development of a single program of the state energy policy aimed at the development of the agrarian sector and coordination of scientific research related to its implementation, organization of a scientific and technical team consisting of mature experts and scientists of the field; - assessment of efficiency of use of energy resources, including electricity, in production, processing and storage of products, creation of methodological bases, and in this regard energy resources and consumers are interrelated in a single system.

To eliminate these and other problems, to achieve an increase in gross production in the sectors of the agro-industrial complex by finding a solution, seed production, breeding development, increasing soil fertility, improving land reclamation and other agrotechnical measures, together with low productivity, high instead of manual labor it is necessary to create efficient, energy-efficient equipment, to accelerate technological processes, and to use electrophysical effects directly in work processes, which ensure the achievement of new technological results. Also, special attention should be paid to the use of non-traditional types of energy, i.e. "Solar energy", in order to increase the weight of energy in product production.

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IMPLEMENTING ENERGY MANAGEMENT SYSTEM TO INCREASE ENERGY EFFICIENCY IN MANUFACTURING COMPANIES

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Abstract

One of the main pillars of the modern industry is the uninterrupted supply of energy with a reasonable price. The energy production is based mostly on non-renewable energy resources that are getting more expensive progressively. This increase in energy cost consequently leads the companies to a more expensive production of goods. Therefore it has been established that energy efficiency is not only very important for the environment but also for the sustainable production in the manufacturing companies. Effective energy management plays an important role in the necessary increase of energy efficiency in industry. Next to the expansion of regenerative energies, it establishes a further pillar at closing the energy supply gap resulting from the energy transition. This paper presents the current energy situation in Germany and its impact on the German industry. Furthermore this paper presents a methodology which can be used by organizations to systematically implement energy management system. Eventually the paper provides a model that illustrates the realization of a PDCA cycle which is necessary for energy management in the organization.

Key words: Energy, Management, Organization, Responsibilities, Structure, Scheme, Committee, Standards, System, Support, Integration, Decision, Making, Leadership, Efficiency, Technical, Investment, Evaluation, Reporting Budget, Consumption

Introduction

The energy costs in Germany are high in international comparison. For instance, already at an inner-European comparison, the electricity prices for German industry are around 14% higher than the other European countries [1]. The reason is

especially a high tax component known as Renewable Energy Act (German: Erneuerbare-EnergienGesetz, EEG). Through the planned expansion of regenerative energies, a further increase of energy costs is predicted [2]. This is straining the manufacturing companies enormously. Because of a share in energy imports of about 72%, the German national economy is additionally exposed to staggering prices at global market and a supply risk [2]. The competitive advantage and the strength of German industry are the products with high quality standards. As labor is very expensive in Germany, this competitive advantage is achieved through a high degree of automation in the German industry. Therefore an undisturbed supply of energy is absolutely necessary for the German industry in order to stay competitive in the world market [3]. Hence energy is seen as a critical factor for the economic competitiveness [4] with 33%, the industry has the highest share in the total energy consumption [1]. In terms of electric energy consumption this share lies at 44% [5]. Beside politics, which is responsible for the attractiveness of the market location Germany, consequently the industrial itself must become active to stay attractive in the market. Energy management provides the industry a possibility to overcome these challenges and become energy efficient.

Current situation A wide range of different methods and measures are known in energy management but hardly systematized. However, the energy management in industrial companies is not purely a technical task, rather an interface function [6]. Usually the cross-sectional tasks in the areas of business administration, law and technology among others have to be processed alongside the steps of operational energy flow as shown in figure 1. Thereby, an increasing complexity is detectable. For example; even the concise energy law in Germany encompasses around 3000 paragraphs [7]. An appropriate organizational orientation of the company is necessary to achieve the objectives of energy management. Here the state of the art norms and standards provide assistance and guidelines to tackle this complex challenge.

Definition

Altogether there exists a wide range of definitions in academic literature concerning the energy management system for companies [8]. That is why a structured and summarized definition is proposed as follows:

Energy management is the targeted deployment of methods and measures for energy –related tasks, thereby implementing a continual energy efficiency improvement approach in companies while keeping the costs and uninterrupted energy supply in consideration.

An Energy management system comprises of

1. definition,
2. implementation
3. and controlling

of measures regarding energy-relevant issues. Here, the approach is

1. transparent,
2. systematic
3. and continuous.

goal is to guarantee the energy supply under the following economic and ecologic aspects:

1. adequate,
2. efficient
3. and sustainable.

2. Norms and standards

Energy management can be operated on the basis of standards and guidelines at different depths. It varies from individual, ad hoc implemented energy efficiency measures to certified energy management system. An energy management system is a systematic and continuous approach for sustainable energy improvements. However before implementing an energy management system in a company, a German Norm DIN EN 16247-1:2012 that provides guidelines to audit the company can be used to prepare for the internationally known energy management standard ISO 50001.

2.1. Energy audit Energy audit is based on the norm DIN EN 16247-1:2012. It is considered as a fundamental step for companies that want to increase their energy efficiency and reduce energy consumption. It is a systematic approach for inspection and analysis of energy consumption of a plant, a building, a system or an organization with the goal of identifying energy flows and the potential for energy efficiency improvements. The energy audit process, i.e. the process of actual audits must meet essential criteria suggested in the norm. It includes the individual steps .

Energy management norm

DIN EN ISO 50001:2011 defines energy management system as the sum of totally integrated or interacting elements leading to the introduction of an energy policy and strategic energy goals, as well as processes and procedures to achieve these strategic objectives. It thus creates the conditions for the full application of methods and measures of energy management. Design and structure correspond to the previously introduced management systems ISO 9001 for quality management

systems and ISO 14001 for environmental management systems. Thus, integration into existing management systems is possible. Here, the Deming cycle serves with the elements Plan, Do, Check and Act (PDCA) as a basis, which forces a continuous improvement program. Once the energy management system is fully implemented in a company, it is possible to get the company ISO 50001 certificate. This certificate brings next to the optimized energy efficiency additional benefits. Such as a simple proof of being environmental friendly so an improved brand image. Furthermore companies can get tax reliefs in Germany if they are ISO 50001 certified. The norm gives a list of criteria which a company must fulfill in order to get the certificate but the norm does not provide any guidelines or strategy to implement all these criteria in the company.

Conclusion

Energy management is both for the companies and for society as a whole, of great and ever increasing importance. Its core objectives are supply security, economic efficiency and environmental protection. For individual companies, there exist different reasons to apply energy management practices, to implement related measures and to establish an energy management system. Nevertheless there are a lot of barriers such as employee awareness, behavior and motivation, know-how and financial resources that hinder companies from implementing an energy management system and execute measures to increase energy efficiency. A variety of energy management methods are known in the literature. With the specific use of these methods existing barriers can generally be overcome. However, for a sustainable and continuous improvement a structured and systematic approach is required. Although standards and guidelines provide an appropriate guidance for energy management, still these do not offer any structure or method to implement them in companies. It is shown in this paper that the multi-stage-model provides an approach for the gradual introduction of an energy management system where different starting and ending points can be considered. Through the organization structure, proposed in this paper, a Plan-Do-Check-Act cycle for a sustainable and continuous improvement can be realized. The goal is to make optimal use of existing resources and existing expertise in the companies. Additionally through this the companies can qualify for the ISO 50001 certification. The essential foundation required to implement energy management system is to analyses the current situation and to identify optimization potential regarding the energy efficiency. Here DIN EN 16247 standard provides a good support. In Germany the application of standards in the companies not only provides a frame-work but also a possibility to avail other benefits, such as tax cuts

and eligibility for government support programs. Data on the energy situation for the implementation of energy management is of utmost importance. Properly collected and processed they create transparency and are the basis for business decisions. With adequately defined EnPIs, analyses and comparisons can be carried out and controlling methods and measures can be derived. The list of EnPIs provided in table 1 offers a good starting point

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ПРИМЕНЕНИЕ ПРЕДИКТИВНОЙ АНАЛИТИКИ В ГОСУДАРСТВЕННОМ УПРАВЛЕНИИ

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Аннотация. В статье рассматриваются понятие предиктивной аналитики, ее различные толкования в научно-экспертном сообществе, взаимосвязь с «big data» и «data mining», проанализированы преимущества и риски в использовании. Кроме того, изучен передовой опыт применения данного инструмента обработки и анализа данных в различных сферах общественно-государственной жизни в развитых странах, таких как США, Великобритания, Новая Зеландия и Сингапур. Также, отдельно проведен анализ в отношении нормативно-правовой базы Республики Узбекистан, регулирующей использование аналитических инструментов в государственных органах, перспектив развития и применения информационно-аналитических инструментов в республике.

Ключевые слова: предиктивная аналитика, «big data» и «data mining», опыт применения в развитых странах, аналитика в государственных органах Узбекистана, стратегия «Цифровой Узбекистан-2030», перспективы применения.

Охватившие весь мир за последние десятилетия информатизация и глобализация кардинально повлияли на многочисленные аспекты жизни и поведения человека, обществ и государств, в целом (Rosenau James N., 2003) (Huntington, 1996) (Ritzer, 1983). Эти тренды современности в силу сложного комплекса различных факторов и условий оказывают неоднозначное влияние на благополучие народов и стран, усиливая ответственность национальных правительств за обеспечение справедливой, достойной жизни для своих граждан, устойчивого долгосрочного роста и всеобъемлющей безопасности от угроз и вызовов (Waltz., 1999).В этой связи, принятие на государственном уровне уполномоченными органами и ведомствами эффективных решений, основанных на прогнозном или же предиктивном анализе имеющихся достоверных данных, приобретает большую актуальность (Ch. Lazaro, M. Rizzi, 2023).

В настоящее время принятие государственными органами в Узбекистане в определенных случаях решений, обуславливающих неэффективное использование ресурсов, сил и средств в преодолении какой-либо актуальной задачи, проблемы или вопроса общественно-политической, социально-экономической или культурно-гуманитарной сферы из-за недостаточного внедрения передовых аналитических инструментов представляет собой злободневную проблему.

На этом фоне видится важным изучение прогнозной или предиктивной аналитики как инструмента оптимизации издержек и эффективной мобилизации имеющегося потенциала – кадровых, финансовых, технических и иных ресурсов, снижения вероятности возникновения непредвиденных обстоятельств и негативных последствий того или иного административного решения, с учетом все большего ее применения по всему миру в различных сферах.

Так, по данным специалистов, если в 2019 году рынок предиктивной аналитики превысил показатели в 7,3 млрд. долл. США, то к 2027 г. эта цифра вырастет до 35 млрд. долл. Тем самым, ожидается рост сектора в 484%.[1].

В условиях отсутствия практики широкого применения данного вида аналитической деятельности в Узбекистане для выработки и внедрения обоснованных и целевых ответов на общественно-государственные потребности и запросы в различных областях, в исследовании изучаются сущность явления предиктивного анализа, опыт его использования в отдельных сферах жизнедеятельности и правовые основы применения в зарубежных странах, риски в применении, а также состояние и перспективы внедрения предиктивной аналитики, отдельные вопросы правового регулирования в нашей республике.

Структура настоящей статьи состоит из введения, литературного анализа и методов исследования, результатов изучения, имеющие в своем содержании тематические пункты, а также заключения.

Литературный анализ и методы исследования

В настоящем исследовании для определения понятия предиктивной аналитики, ее взаимосвязи с относительно новыми явлениями в глобальном информационном пространстве – «big data» и «data mining», преимуществ, рисков в применении, возможностей на основе изучения сфер адаптации были

[1]«Предиктивная аналитика: ключевые преимущества и перспективы рынка», официальная онлайн-страница «AM-БИТС», URL: https://am-bits.com/ru/2021/04/15/prediktivnaya-analitika-klyuchevye-preimushhestva-i-perspektivy-rynka

проанализированы работы J.W.Seifert (J.W.Seifert, 2006), (N.Krishnadoss, L.Ramasamy, 2023), (P.Selvaraj, P.Marudappa , 2018), M.Rustagi (M.Rustagi, 2022), Д.А.Плеханова (Д.Плеханов, 2017), Р.А.Гусева (Р.Гусев, 2022), В.А.Батоева (В.Батоев, 2022), Е.Е.Вагнера (Е.Вагнер, 2023), (Т.Соборнов, И.Ковалев, 2022), А.Р.Хасанова (Р.Хасанов, 2018), А.Тимофеева и О.Лебединской (А.Г.Тимофеев, О.Лебединская, 2017), Р.И.Дремлюги и В.В.Решетникова (Р.И.Дремлюга и В.В.Решетников, 2018), а также соответствующие сведения, размещенные на сайтах коммерческих компаний, специализирующихся на системах управления большими данными («АМ-БИТС»[2]), их анализе («Смарт-аналитикс»)[3], реализации соответствующих проектов («The behavioral insights team»)[4].

В рамках изучения литературы по исследуемой тематике были также рассмотрены материалы под авторством ряда отечественных ученых - Г.Шагиловой (Г.Шагилова, 2023), Ш.Жолдасовой (Ш.Жолдасова, 2022), И.Рустамбекова и С.Гулямова (И.Рустамбеков и С.Гулямов, 2021), а также A.Naeem Rakha (Rakha, 2023) (Rakha, TheEthicsofDataMining: LessonsfromtheCambridgeAnalyticaScandal, 2023) (Rakha, ArtificialIntelligencestrategyoftheUzbekistan: Policyframework, Preferences, andchallenges, 2023), которыми были проанализированы актуальные вопросы цифровизации правительства и результативного использования электронных данных при принятии управленческих решений, необходимости применения искусственного интеллекта (ИИ) для устойчивого развития в РУ, отдельные аспекты национальной политики в сфере внедрения ИИ.

Наряду с этим, изучен ряд национальных нормативно-правовых актов, регулирующих деятельность в сфере хранения, использования, распространения информации, в том числе, персональных данных, в большинстве случаев необходимых, для предиктивного анализа, определяющих применение методов анализа рисков в отдельных государственных органах, формирование цифрового, электронного правительства, перспективы использования искусственного интеллекта, больших данных в республике (закон «О персональных данных», указ Президента РУ «Об утверждении стратегии «цифровой Узбекистан-2030»

[2] «Предиктивная аналитика: ключевые преимущества и перспективы рынка», официальная онлайн-страница «АМ-БИТС», URL: https://am-bits.com/ru/2021/04/15/prediktivnaya-analitika-klyuchevye-preimushhestva-i-perspektivy-rynka
[3] «Что такое предиктивная аналитика?», официальная онлайн-страница «Смарт-аналитикс», URL:https://www.smartanalytics.ru/blog/what-predictive-analytics
[4] «What is Predictiv?», official website «The behavioral insights team», URL:https://www.bi.team/bi-ventures/predictiv/

и мерах по ее эффективной реализации», постановления Президента РУ «О мерах по созданию условий для ускоренного внедрения технологий искусственного интеллекта», «О мерах по повышению эффективности реформ, направленных на переход Республики Узбекистан на «зеленую» экономику до 2030 года», «О дополнительных мерах по улучшению рейтинга республики Узбекистан в отчете организации объединенных наций «исследование электронного правительства», постановление Кабмина «Об утверждении положения о порядке внедрения системы «риск-анализ» по контролю производства и оборота пищевого и технического этилового спирта, алкогольной и табачной продукции» и др.).

В проведенном исследовании были использованы эмпирические (наблюдение), общенаучные (анализ, качественный анализ, контент-анализ, синтез).

В частности, проведен обзор и качественный анализ опубликованных на данную тематику, преимущественно, научных статей, онлайн-сведений на отдельных информационных порталах и сайтах специализирующихся компаний, других соответствующих публикаций. Далее, осуществлен процесс синтеза полученных сведений с последующим их воспроизведением и интерпретацией по тематическим блокам. При этом, касательно ситуации с практикой принятия управленческих решений государственными органами в РУ использован метод наблюдения. В отношении состояния и перспектив применения технологий предиктивной аналитики в нашей стране использован контент-анализ в плане поиска в базе нормативно-правовых актов Узбекистана lex.uz словосочетаний «предиктивный анализ», «прогноз», «анализ рисков», «риск-анализ», «большие данные», «искусственный интеллект». Отдельные вопросы правового регулирования были рассмотрены через обзор литературы и анализ национальной нормативно-правовой базы.

Результаты

Понятие и сущность, возможности предиктивной аналитики на основе опыта отраслевого применения в зарубежных государствах, примеры правового регулирования, а также риски в использовании.

Предиктивная аналитика – относительное новый, отличный от других видов аналитической деятельности инструмент анализа данных, который на современном этапе многими экспертами и специалистами этой области воспринимается в неразрывной взаимосвязанности с такими явлениями как «big data» (большие данные), означающим совокупность бесконечных

массивов информации, постоянно генерируемой цифровыми устройствами (Д.Плеханов, 2017), а также «data mining» (добыча, интеллектуальный или глубинный анализ данных), предполагающим использование комплекса аналитических инструментов для работы с большими данными с целью выведения новых, ранее неизвестных знаний, трендов, моделей поведения в потоке постоянно накапливаемой информации (J.W.Seifert, 2006).

Так, большинство исследователей определяет предиктивную аналитику как один из видов аналитической деятельности, предполагающий анализ больших данных и дальнейшее их интерпретирование на основе автоматизированных математико-статистических моделей, искусственного интеллекта и специальных программ в целях определения трендов исследуемых показателей и прогнозирования будущих явлений (Р.Хасанов, 2018) (Р.Гусев, 2022) (А.Г.Тимофеев, О.Лебединская, 2017).

Отдельные ученые рассматривают предиктивную аналитику как разновидность аналитики «больших данных» из числа следующих его типов (N.Krishnadoss, L.Ramasamy, 2023):

1) дескриптивный или описательный анализ (отвечает на ключевой вопрос «Что произошло?» исходя из изучаемых данных, описывает, трактует, интерпретирует собранную информацию, визуализирует через использование различных графиков);

2) диагностический анализ (отвечает на ключевой вопрос «Почему?», обнаруживает причинно-следственные связи трендов и наблюдаемых шаблонов поведения);

3) предиктивный или прогностический анализ (отвечает на ключевой вопрос «Что вероятно произойдет?», определяет вероятную траекторию дальнейшего развития или появления трендов, событий, явлений на основе имеющихся структурированных или неструктурированных данных);

4) прескриптивный или предписывающий анализ (отвечает на ключевой вопрос «Что делать?», вырабатывает предложения и решения на основании выявленных трендов, прогноза их развития или возникновения явлений).

Также существует мнение, рассматривающее предиктивную и прескриптивную аналитику как составной элемент «data mining» (S.Poornima and M.Pushpalatha, 2018).

Из вышеизложенного становится понятным, что, в целом, предиктивная аналитика представляет собой инструмент для прогнозирования траектории

развития тенденций, появления новых явлений или трендов на основании обрабатываемых данных.

На сегодняшний день, несмотря на преимущественное применение данного вида аналитической деятельности в коммерческих целях компаниями и банковскими структурами, все больше стран активно внедряют и практикуют предиктивную аналитику в различных сферах общественно-государственной жизнедеятельности.

В частности, США, ряд стран Европы и Азии активно применяют предиктивную аналитику в целях формирования упреждающей модели правоохранительной деятельности (В.Батоев, 2022).

К примеру, в отдельных штатах США используется программное обеспечение «PredPol», которое, используя лишь 3 переменные: вид, время и место неблагоприятного события, подсказывает правоохранителям, на что имеет смысл обратить внимание в ближайшей перспективе, показывает «горячие точки» на карте и обобщенные данные о криминальной активности. Также, применяется алгоритм «Heat List» в структуре программного обеспечения «Command Central Predictive», который на основе анализа больших данных оценивает каждого жителя Чикаго в плане уровня риска быть застреленным или совершить преступление с использованием огнестрельного оружия. Точность прогнозов данного алгоритма характеризуется тем, что до 70% всех жертв насилия с применением огнестрельного оружия за последние несколько лет были отмечены в списке «Heat List» (Р.И.Дремлюга и В.В.Решетников, 2018). В США законодательное регулирование порядка использования как больших, так и персональных данных определяют отдельные разрозненные нормативно правовые акты ввиду отсутствия единого федерального специализированного закона, коими являются «Закон о конфиденциальности» от 1974 г. (устанавливает порядок сбора и использования данных индивидуумов федеральными агентствами в их внутренних системах), «Закон Калифорнии о конфиденциальности потребителей» от 2018 г. (предписывает правила сбора бизнес-структурами информации о потребителях и определяет права последних) и другие[5].

В Национальной службе здравоохранения Великобритании посредством внедрения алгоритмов предиктивной аналитики принимаются решения по

[5] U.S. Data Privacy Protection Laws: A Comprehensive Guide, C.Murray - Forbes magazine reporter, URL: https://www.forbes.com/sites/conormurray/2023/04/21/us-data-privacy-protection-laws-a-comprehensive-guide/?sh=7ad300aa5f92

дальнейшей организации работы по направлениям деятельности. Прогнозируются вспышки заболеваний, оценивается спрос на медицинские услуги и выявляются пациенты с высоким риском развития серьезных заболеваний.

Кроме того, в этой стране данный вид аналитической деятельности активно применяется в установлении мошеннических действий во избежание финансовых потерь физических и юридических лиц, а также выявлении ошибок в социальных выплатах, позволяя значительно сэкономить средства налогоплательщиков (Е.Вагнер, 2023).

В свою очередь, в этой стране правовым регулятором использования информации в различных сферах выступает «Закон о защите данных» от 2018 г., предоставляющий широкие права владельцам данных и устанавливающий четкие обязанности организаций, предприятий или правительства, использующих информацию, в т.ч персональную. Данный НПА был принят в целях реализации и имплементации положений «Общего регламента по защите данных» ЕС от 2016 г., представляющего собой всеобъемлющий документ в сфере защиты персональных данных на территории Европейского союза[6].

Управление наземного транспорта Сингапура применяет прогнозные аналитические модели в работе по управлению заторами на автодорогах и повышению эффективности транспортной системы. Так, анализ комплекса факторов, оказывающих влияние на дорожное движение (погодные условия, час пик, тенденции за последнее время и др.), в режиме реального времени позволяет гибко регулировать продолжительность времени сигналов светофора и принимать упреждающие меры для уменьшения заторов[7] Правовой основой использования данных в сингапурском государственном секторе выступают «Закон о государственном секторе» от 2018 г. и «Руководство по информационно-коммуникационным технологиям и управлению интеллектуальными системами» от 2003 г., определяющими порядок управления правительством данными, включая персональными, находящимися в его распоряжении, и их защиты[8].

[6] Официальный сайт правительства Великобритании, URL: https://www.gov.uk/data-protection#:~:text=The%20Data%20Protection%20Act%202018%20is%20the%20UK's%20implementation%20of,used%20fairly%2C%20lawfully%20and%20transparently

7 Predictive Analytics for Policy Decision Making: Shaping a Brighter Future, Daniele Paoletti LinkedIn profile, URL: https://www.linkedin.com/pulse/predictive-analytics-policy-decision/

[8] Ministry of Communications and Information of Singapore, URL: https://www.smartnation.gov.sg/about-smart-nation/sng/

Власти Новой Зеландии применением прогностического программного обеспечения «Интегрированный целевой анализ рисков» выявляет несовершеннолетних лиц, находящихся под риском жестокого обращения или безнадзорности, определяет меры вмешательства и поддержки через анализ данных медицинских, образовательных и социальных учреждений[9]. Ключевым законодательным актом в Новой Зеландии, определяющим правовые рамки пользования информацией, является «Закон о конфиденциальности» от 2020 года (первая редакция принята в 1993 г.), вобравший в себя стандарты европейского общего регламента[10].

Вместе с тем, использование различных автоматизированных аналитических технологий и систем обработки данных сопряжены рядом рисков, чему наглядным примером может быть кейс со скандалом с «Cambridge Analytica», которая в рамках предоставления политических консультаций использовала данные миллионов пользователей соцсети «Facebook» для оказания влияния на президентские выборы в США в 2016 г. Данное обстоятельство обуславливает необходимость более строгого законодательного контроля за использованием персональных данных и доступа к ним, разработки более ответственного подхода к интеллектуальному анализу данных, который уважает частную жизнь и права отдельных лиц (Rakha A. , The Ethics of Data Mining: Lessons from the Cambridge Analytica Scandal, 2023).

Другими призывающими политикоформирующие круги и научно-техническое сообщество к дальнейшему совершенствованию практики использования информации в процессах анализа и выработки решений на основе автоматизированных алгоритмов являются вопросы дискриминации, выражающиеся в использовании подобных технологий для отказа в доступе к услугам или возможностям на основе расы, пола или других характеристик человека (Rakha A. , The Ethics of Data Mining: Lessons from the Cambridge Analytica Scandal, 2023).

Более того, из-за постоянного совершенствования алгоритмов глубинного анализа в условиях необходимости решения новых задач наблюдается возрастание сложности уровня программирования, что может стать причиной

[9] Predictive Analytics for Policy Decision Making: Shaping a Brighter Future, D.Paoletti LinkedIn profile, URL: https://www.linkedin.com/pulse/predictive-analytics-policy-decision/

[10] Spotlight: how are data protection laws enforced in New Zealand?, Lexology Platform, URL: https://www.lexology.com/library/detail.aspx?g=74abebdf-65ee-4279-b32e-33e3a1a87345#:~:text=Under%20New%20Zealand%20privacy%20law,that%20a%20prescribed%20exception%20applies.

совершения ими ошибок или выведения непреднамеренных результатов, чреватых негативными последствиями для третьих сторон (Ch. Lazaro, M. Rizzi, 2023).

Состояние и перспективы использования автоматизированных аналитических инструментов в Узбекистане, а также отдельные вопросы правового регулирования.

Изучением национальной базы законодательства получено, что в Узбекистане отсутствует единый нормативно-правовой акт, определяющий организационно-правовые основы осуществления аналитической деятельности в государственной системе и порядка использования в этом процессе доступной информации, в т.ч. больших данных. Взамен, в республике был принят ряд указов и постановлений Президента и Кабинета министров, регламентирующих порядок внедрения механизмов риск-анализа и прогнозирования в отдельных сферах, в том числе, с активным использованием автоматизированных технологий, выполняющих также прогнозные функции.

В частности, согласно постановлению Кабмина «О создании единой системы мониторинга, обмена информацией и прогнозирования чрезвычайных ситуаций природного, техногенного и экологического характера» от 28.12.2017 г., в деятельность МЧС предусматривается внедрение механизмов постоянного отслеживания и контроля ситуации в сферах ответственности министерства, предупреждения возможных катаклизмов посредством использования автоматизированной географической информационной системы (ГИС). Наряду со сбором, обработкой, анализом, моделированием и отображением данных о географических объектах, данная система используется «для решения информационных и расчетных задач общегосударственного (межотраслевого) или отраслевого значения с использованием цифровой картографической, аналоговой и текстовой информации», тем самым упрощаются процессы адекватного оценивания ситуации, выработки и принятия упреждающих мер. На основании производимых данной программой данных осуществляется районирование территорий по степени риска возникновения опасных природно-техногенных процессов и явлений, что предоставляет возможность с наименьшим ущербом преодолеть чрезвычайные ситуации антропогенного или природного происхождения.

Постановлением Кабмина «Об утверждении положения о порядке внедрения системы «риск-анализ» по контролю производства и оборота пищевого и технического этилового спирта, алкогольной и табачной продукции» от 18.03.2020 г. устанавливается осуществление контрольных функций Инспекции по регулированию алкогольного и табачного рынка при Минфине (в июле 2020 г. преобразован в самостоятельное Агентство с последующим его упразднением с января 2023 г. соответствующим Указом Президента) посредством применения автоматизированных программ.

Через их возможности предполагается анализ риска нарушений в сфере производства и оборота продукции в соответствующих организациях, на основании имеющихся в Инспекции, Минфине, ГНК и ГТК данных, без вмешательства человека, а также формирование списка субъектов с высоким, средним и низким риском совершения правонарушений. В зависимости от градации предусматривается инициирование проверки деятельности субъектов соответствующими органами (высокий риск), направление предписания для устранения выявленных нарушений (средний и низкий риск).

С учетом осязаемого роста значимости передовых технологий в устойчивом и поступательном развитии общества и государства, за последние годы в Узбекистане были созданы нормативно-правовые основы для принятия системных мер по дальнейшей цифровизации социально-публичной сферы, повышения эффективности деятельности государственных органов путем активного использования больших данных, искусственного интеллекта в прогнозировании ситуации и потребностей в различных сферах (И.Рустамбеков и С.Гулямов, 2021) (Ш.Жолдасова, 2022) (Г.Шагилова, 2023).

Важным шагом, установившим дальнейший вектор политики в данном направлении, стало принятие указа Президента «Об утверждении стратегии «Цифровой Узбекистан-2030» и мерах по ее эффективной реализации» от 05.10.2020 г., определившего в качестве одного из приоритетных направлений деятельности профильных министерств – исследование возможностей применения технологий ИИ, машинного обучения, анализа больших данных и облачного вычисления в отраслях экономики.

Как результат, в последующие годы были приняты Постановления Президента РУ «О мерах по созданию условий для ускоренного внедрения технологий искусственного интеллекта» и «О дополнительных мерах по улучшению рейтинга Республики Узбекистан в отчете ООН «исследование

электронного правительства» в 2021 и 2023 гг. соответственно, направленные на ускорение процесса внедрения современных электронных технологий в систему цифрового правительства, социальную сферу и отрасли экономики, в том числе в прогностических целях для дальнейшего повышения эффективности принимаемых государственных решений.

В этом контексте, принимая во внимание фундаментальную и критическую роль информации в работе любой технологии, в особенности специализирующейся на анализе, статистических расчетах и выработке на основе них предложений, в республике были приняты отдельные законодательные акты, касающиеся порядка использования данных, в том числе, персональных, и системы гарантий их защиты. В частности, Закон «О персональных данных» от 02.07.2019 г. устанавливает порядок осуществления сбора, обработки, хранения и использования персональных данных, обязанности операторов баз данных, права владельцев на распоряжение и контроль данной категорией информации, а также механизм защиты от незаконного или нецелевого ее использования (Rakha, Cyber Law: Safeguarding Digital Spaces in Uzbekistan, 2023).

Выводы

На сегодня применение современных технологий в государственном секторе в целях повышения эффективности и результативности принимаемых решений приобретает большую актуальность. В этой связи, грамотное использование возможностей имеющейся информации и данных посредством широко внедрения передовых автоматизированных аналитических инструментов, способных объективно оценивать складывающуюся ситуацию, прогнозировать дальнейшее развитие событий и предлагать практические и обоснованные решения, в государственных органах могло бы в разы уменьшить издержки и нивелировать возможные непредвиденные негативные последствия административных решений.

Многие передовые зарубежные страны уже активно применяют подобные технологии в государственном секторе, увеличивая коэффициент полезности для общества принятых госорганами мер, повышая уровень общественного доверия к проводимой политике и получая другие бенефиции от этого. Вместе с тем, все они, без исключения, на законодательном уровне определяют порядок использования данных при осуществлении процесса обработки и использования информации

в различных секторах и областях жизнедеятельности, а также постоянно адаптируют законодательство к реалиям современности.

За последние годы в Узбекистане сделан ряд значительных шагов в направлении внедрения достижений современных технологий в государственных органах и определены перспективы их скорейшего широко использования.

Вместе с тем, в целях успешной реализации планов по внедрению передовых технологий, в том числе инструментов анализа и прогнозирования на основе больших данных в госсистему в условиях постоянного совершенствования методов взлома и незаконного завладения информацией, усложнения контроля за цифровым пространством, императивную значимость приобретает вопрос постоянного адаптирования законодательства к реалиям посредством системного изучения проблем и актуальных задач в рамках поиска путей решения, а также активного осуществления международного сотрудничества для обмена передовым опытом. В частности, принятый ЕС в 2016 г. «Общий регламент по защите данных» мог бы послужить предметом для глубокого анализа вопроса обеспечения всеобъемлющей защиты персональных данных, большей открытости и прозрачности процесса их обработки и использования, предоставления широких прав их владельцам, установления адекватной ответственности за нарушение предписанных правил в этой сфере (Rakha A. N., 2023).

Другими немаловажными и актуальными на сегодняшний день аспектами внедрения аналитических технологий в систему государственного управления в Узбекистане являются вопросы подготовки специалистов как технического, так и аналитического направления, создания необходимой технико-программной базы для их применения, в направлении решения которых необходимо активизировать принятие мер на правительственном уровне.

Также, с учетом отсутствия правовой основы использования передовых аналитических технологий на основе различных статистических моделей, машинного обучения и т.д. в государственном управлении, юридического определения понятий больших данных и других задействованных в данном процессе значимых явлений, не проработанности вопросов юридической значимости больших данных и др., а также юридической оценки последствий их использования, необходимо проработать, вопросы законодательного урегулирования этой сферы.

Тем самым будет повышена результативность государственной политики в сфере контроля за надлежащим использованием информации, в том числе персональной, устранены возможные нежелательные последствия широкого применения передовых аналитических автоматизированных технологий в общественно-государственной жизни, а также созданы необходимые нормативно-правовая база и условия для внедрения современных аналитических инструментов в государственном управлении.

В перспективе, дальнейшие исследования могли бы быть сконцентрированы на изучении вопросов законодательного урегулирования использования больших данных, технологий на основе их анализа и других взаимосвязанных аспектов в зарубежных странах с целью дальнейшего применения выявленной практики в Узбекистане.

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TRANSFORMERS ENERGY LOSSES

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Keywords: Power loss, ferromagnetic core, hysteresis and eddy current losses, efficiency, rated currents, magnetic induction and variable currents, iron core, laminated cores.

Abstract

This article provides information on the analysis and reduction methods of losses in transformers. The losses in electrical machines are calculated based on power losses, the thermal effect of currents, and the change in magnetic flux. In transformers, however, losses depend on the design of the magnetic core and its materials. Anisotropic electrical steel laminations allow reducing energy losses in magnetic cores. The article presents detailed information about the magnetic core part of the transformer and its design.

В этой статье предоставлена информация о методах анализа и снижения потерь в трансформаторах. Потери в электрических машинах рассчитываются на основе потерь мощности, теплового воздействия токов и изменения магнитного потока. В трансформаторах потери зависят от конструкции магнитного сердечника и его материалов. Анизотропные ламинированные стали для электротехнических целей позволяют снизить энергетические потери в магнитных сердечниках. В статье представлена подробная информация о части магнитного сердечника трансформатора и его конструкции.

Bu maqolada transformatorlardagi isrofning tahlili va kamaytirish usullari to'g'risida ma'lumot berilgan. Elektr mashinalardagi quvvat isroflari, tokning issiqlik ta'siri va magnit oqimining o'zgarishiga bog'liq hisoblanadi. Transformatorlarda esa, isrof magnit o'tkazgichning qurilishi va uning materiallari bilan bog'liqdir. Anizotropli elektrotexnik po'lat plastinalari bilan qoplangan magnit o'tkazgichlar

energiya isroflarini kamaytirishga imkon beradi. Maqolada transformatorning magnit o'tkazgich qismi va uning qurilishi tafsilotli ko'rsatilgan.

Main Part

Like in any electrical machines, transformers also have a portion of energy loss inherent within them. These power losses consist of the following:

1. Power loss due to the thermal effect of currents in the winding resistances:

$$P_m = I^2 R_1 + I^2 R_2$$

2. Power loss consumed by hysteresis and eddy currents in the iron core due to the variability of magnetic flux:

$$P_n = P_r + P_v$$

This power loss depends on the material of the iron core, magnetic induction, and the frequency of variable currents.

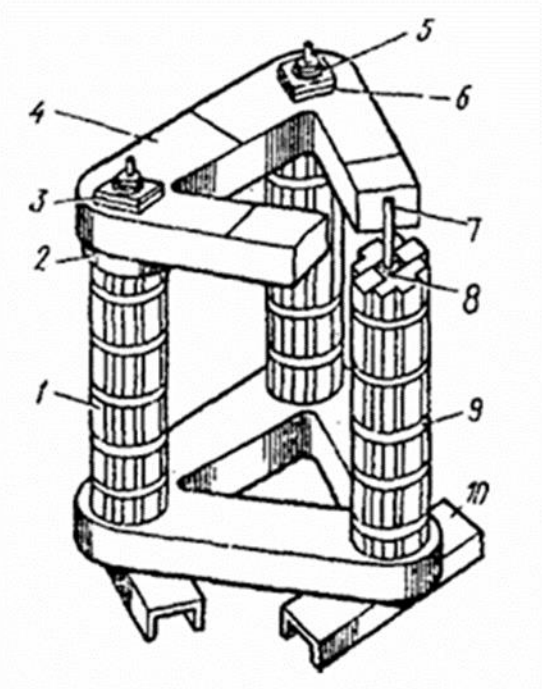
3. Power loss related to the construction of the transformer (P_k).

Among these, ($P_{\_m}$) and (P_n) are the main losses. Power losses in the windings (P_m) are variable and depend on the load, while losses in the iron core (P_n) are constant during the transformer's operation (within the rated load limit).

The magnetic core of the transformer is a crucial component, responsible not only for enhancing magnetic coupling between windings but also for supporting and anchoring them for structural integrity and stabilization. In order to reduce energy losses generated due to eddy currents (at a frequency of (f = 50) Hz) in variable flux, the magnetic cores of transformers are assembled with cold-rolled anisotropic electrical steel laminations, typically with a thickness of 0.35 mm to 0.30 mm, coated with special lacquer and oxide layers for insulation. This laminating process enables increasing the induction in the magnetic core up to 1.6 to 1.65 T (which would not be feasible in hot-rolled steel, where the induction could not exceed 1.4 to 1.45 T), thereby reducing the mass of the transformer's active (magnetic and electric conducting) materials and sharply decreasing energy losses.

The part of the magnetic system where laminations are assembled is called "stator," while the part forming a closed magnetic circuit, thereby enhancing

magnetic flux, is called "rotor." These are the magnetic cores of three-phase transformers. In a three-phase system, the magnetic core of the transformer is modified to accommodate the three-phase flux and loadings. If it is possible to modify the laminations of a single-phase transformer structurally to form a single common core, then it's possible for a three-phase system as well. Since the sum of sinusoidal magnetic flux densities over one cycle is not zero in the general core, it's unnecessary to provide a gap in this core. To simplify this construction, three stators can be placed together and connected with upper and lower rotors, forming a flat-shaped three-phase magnetic core. If all laminations and rotors are aligned in one plane, the magnetic core of the transformer is flat-shaped; if they are arranged in different planes, it's called a stepped core. Depending on the combination of laminations and rotors, magnetic systems are divided into stator-rotor, core-stator-rotor, and armored types.



Transformer (TM— 250/6) phase-shaped magnetic core components: 1- stator, 2 and 6 - insulating spacers; 3- Three-phase plate, 4- rotor; 5- coil; 7- pin; 8- insulating signaling tube; 9- clamping clamp; 10- base plate.

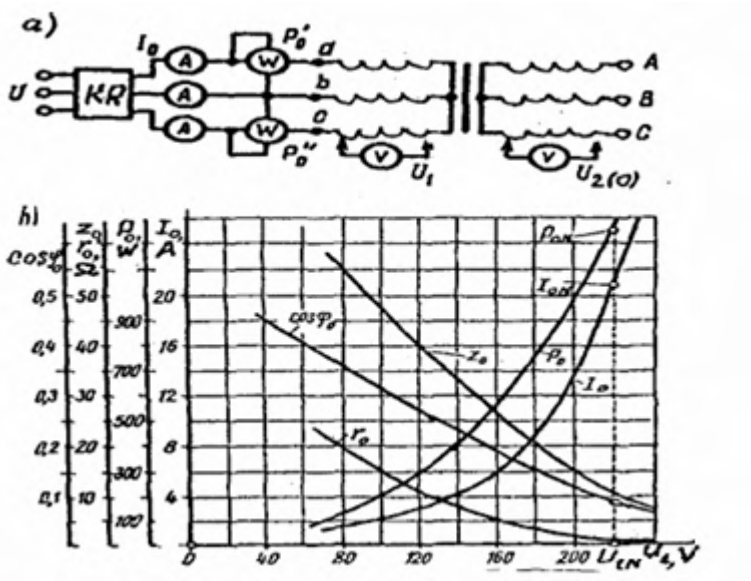
Wastes in the steady-state mode of operation:

Even if the sinusoidal voltage [$u_1=U_{(1)max}.\sin\omega t$] is applied to the ferromagnetic core of the transformer and causes the magnetic flux [$\Phi_1=\Phi_{(1)max}.\sin\omega t$] to vary sinusoidally, the magnetization characteristic of the ferromagnetic core becomes

nonlinear due to saturation of the magnetic core. As a result, the variation of the magnetizing current I0.r over time $I_{0.r}$*f (wt) is not sinusoidal.

The steady-state experiment is conducted with no load applied to the secondary winding (l1= 0). A sinusoidal voltage U1 is applied to one winding, varying from 0 to 1.2 times $U_{1.N}$. The voltage U_1, current I_0, and steady-state power P0 are measured during the steady-state operation, from which the power factor cosϕ0 is primarily calculated.

Based on the data obtained and calculated from the experiment, the relationships I_0 - $f_{(U1)}$, $P_0 = f_{(U1)}$, and $\cos\phi_0 = f_{(U1)}$ are referred to as the steady-state characteristics of the operation.



Power rating: S_N = 100 kV*A; Ratio of primary to secondary voltage: U_{1N}/U_{2N} = 6.3/0.22 kV; Y/Y-connected windings, three-phase transformer, conduct the no-load test; Circuit diagram of the no-load test (a) and no-load characteristics (b); KR - power factor at rated load.

In a three-phase transformer, the values of U_1 and I_0 are measured separately for each phase, and their characteristics are established based on their average values. The mutual agreement between the phases in the transformer where they are located in separate cores is not uniform because the magnetic flux density in the middle phase is intermediate, compared to the flux densities in the outer phases. Consequently, the MYK and the current Io.v in the middle phase are lower compared to those in the outer phases ($I_{0.B} < I_{0.A} = I_{0.C}$).

$I_0 = f(U_1)$. The increase in the applied voltage U1 leads to an increase in its magnetic flux Φ because $U_1 = E_1 = 4.44 f w_1 \Phi_{max}$. At low values of excitation, the magnetic circuit remains unexcited, and the Io current changes linearly. Starting from the values $U_1 = (0{,}5 + 0{,}6)U_{1N}$, the excitation starts to saturate, reducing the

reactance Z0, the leakage reactance x_0, and the resistance $r_0 = r_m$ correspondingly. As a result, the reactive component I_{0r} of the excitation current increases rapidly concerning the applied voltage U_1.

The excitation current I0 consists of reactive (I0.r) and active (I0.a) components: $I_{0..r} = I_{0.a} + I_{0.x}$. Typically, for power transformers, I0 < 0.08 I1N, with its active component I0.l constituting approximately 10% to 0.5% of I0. As the nominal power of power transformers increases, the percentage of I0 relative to the nominal current tends to decrease.

$P_0 = f(U_1)$. In transformers operating under no-load conditions, the power losses in the core due to hysteresis and eddy currents, neglecting the losses due to the primary winding resistance, are considered. These losses in the core depend on B^2 and approximately on the square of the frequency. When U_1 = const and f = const, the dependency of the core losses on the applied voltage and frequency can be approximately expressed as $P_m = P_0$ = const.

In modern power transformers with a power of 10+1000000 kV.A, even if the no-load losses are about 1.5% to 0.05% of the rated load losses, they significantly affect the useful work coefficient due to seasonal loading, as the no-load characteristics depend not on the load value but on the transformer's connection to the network through U21.

In the no-load test, important parameters such as the no-load current ($I_{0.N}$) and losses ($P_{0.N}$) are standardized with respect to the rated voltage U_{1N}.

$\cos\varphi_0 = f(U_1)$. The power factor cosφ0 for a three-phase transformer is determined by the following formula:

$$cos\phi_0 = \frac{P_0}{\sqrt{3}U_1 I_0}$$

where P_0 is the active power of the three phases in watts.

During no-load operation, as the excitation increases, the reactive component I0.r of the excitation current increases faster relative to the applied voltage, while the active component $I_{0.a}$ decreases. Consequently, due to the increase in the angle φ_0 between the U_1 and I_o vectors, $\cos\varphi_0$ decreases.

Important parameters for the transformer are determined based on the values at U_{1N} obtained from no-load experiments:

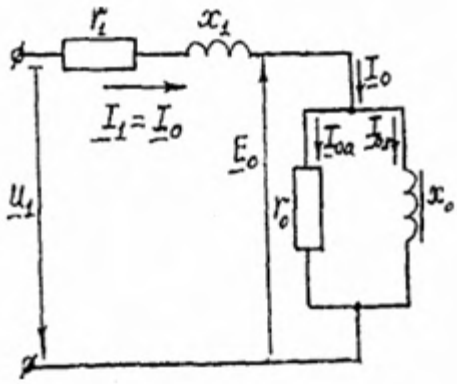
1) Transformation coefficient $k = U_{1N}/U_{2O}$, where U_{1N} is the nominal voltage of the YK winding; U_{20} is the no-load voltage corresponding to the PK winding voltage at U_{1N};

2) No-load losses R'_0;

3) The value of the no-load current $i_{0\%} \frac{I_0}{I_{1N}} * 100$;

4) The reactive resistance of the magnetizing circuit r_0. When the primary circuit's reactive resistance r_2 is several hundred times smaller than the calculated reactive resistance rm of the magnetizing circuit ($r_m > r_1$), r_1 is assumed to be negligible ($r_1 = 0$), and thus $r_0 = r_m$.

Connection diagram for transformer no-load operation mode.



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МЕХАНИЗМЫ РЕАЛИЗАЦИИ НАЦИОНАЛЬНОГО ВОСПИТАНИЯ В СЕМЬЕ

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Аннотация: Все мы знаем, что судьба человека, его успех или неудача в дальнейшей жизни, его счастье или несчастье, даже его настроение связаны с его семейным окружением. Конечно, судьба семьи зависит от самого человека. Давно известно, что духовный облик общества зависит от качества семьи. В данной статье говорится о том, что семья является социальным и духовным звеном общества.

Ключевые слова: семья, ребенок, воспитание, ценности, мораль, духовность, поведение, патриотизм, брак, традиция.

Annotation: We all know that a person’s fate, his success or failure in later life, his happiness or unhappiness, even his mood are connected with his family environment. Of course, the fate of the family depends on the person himself. It has long been known that the spiritual appearance of a society depends on the quality of the family. This article says that the family is the social and spiritual link of society.

Key words: family, child, education, values, morality, spirituality, behavior, patriotism, marriage, tradition.

«Семья – это группа людей, основанная на кровном родстве, общем имуществе и интересах, совместном удовлетворении потребностей и требований, имеющая единую цель. То есть это микросоциальная структура", - говорит узбекский ученый А. Олмасов.

Известно, что любая деятельность, направленная на конкретную цель, принесет свои плоды, поэтому выявление семей, нуждающихся в конкретной социально-педагогической поддержке, на основании социально-педагогического диагноза и оказание им реальной помощи, то есть формирование здорового образа жизни. в семье и желательно правильное

воспитание детей. Именно семейная диагностика имеет большое значение в семейном воспитании.

Учитывая потребности каждой семьи, важна специальная практическая работа по оказанию им социально-педагогической поддержки.

Практическая работа по стабилизации здорового образа жизни в семье проводится следующим образом:

- постановка цели, т. е. определение достижений семьи и, опираясь на них, определение того, есть ли у родителей какие-либо возможности и какая помощь им нужна;

- алгоритм действий, т.е. таких мероприятий, как раздача анкет родителям об установлении семейного диагноза, получение ответов на них, анализ их по их описанию, разделение родителей на небольшие группы и ознакомление их с результатами диагностики;

Уникальность этого семейного воспитания состоит в том, что оно передает детям особенности родителей, кровных родственников, потомков и предков, сохраняет его преемственность, формирует ребенка как личность, готовит его к жизни.

Педагогическое обеспечение связи уровня образования, предоставляемого в образовательных учреждениях, с семейным образом жизни обучающихся, а также достижениями обучающихся ускоряет формирование у них личностных качеств. Поведенческие дефекты молодежи: семейная диагностика имеет большое значение в реализации путей повышения эффективности образования в образовательных учреждениях по профилактике агрессии, правонарушений и преступности.

Все мы знаем, что судьба человека, его успех или неудача в дальнейшей жизни, его счастье или несчастье, даже его настроение связаны с его семейным окружением. Конечно, судьба семьи зависит от самого человека. Давно известно, что духовный облик общества зависит от качества семьи. Ведь семья является малым представителем социально-духовного звена общества, и на основе семьи строится настоящее и будущее нашей нации. Если в семье существует дисциплина, ее члены переносят эти качества в процесс служения и используют их в социальной работе. Это позволяет им выполнять свои обязанности на высоком уровне.

Международное сообщество признает, что наша страна придает большое значение этому вопросу в то время, когда семейный кризис происходит в быстро развивающихся социально-экономических и идеологических странах

Запада. Ни в одной другой стране мира не проводилось такого всестороннего изучения семьи и ее проблем и их устранения. Здесь исполняется несколько лет со дня обретения нашей страной независимости (1998 г. – «Год семьи», 1999 г. –

«Год женщины», 2000 г. – «Год здорового поколения», 2002 г. – «Год защиты интересов старшего поколения», 2005 г. – «Год здоровья», 2006 г. - «Год благотворительности и врачей», 2007 г. - «Год социальной защиты», 2008 г. - «Год молодежи», 2010 г. - «Год гармонично развитого поколения», 2012 г. - «Год семьи»,) Студенты – социально активная часть нашего молодежного общества. Не будет преувеличением сказать, что подготовка их к семейной жизни является весьма актуальной проблемой современности. «Семья имеет три аспекта: брак, который является ее непосредственным проявлением; семейное имущество и имущество и уход за ним; включает в себя образование детей. Согласно закону, важнейшими условиями заключения брака являются обоюдное согласие сторон и достижение ими брачного возраста. В нашем законе брачный возраст установлен в 18 лет для юношей и 17 лет для девушек. Это юридическая сторона дела. У него есть вторая моральная сторона, связанная с любовью. До брака между двумя молодыми людьми могут быть случаи открытой любви – регулярные встречи, заключение договоров или симпатия друг другу. В обоих случаях согласие является непреложным условием. Согласно повествованию, наш Пророк Мухаммад видел. Каждый раз, когда к ним в дом приходил жених, их дочери всегда отказывались, когда они просили согласия у Фатимы. Биби Фатима согласилась только тогда, когда у Хазрата Али появился поклонник. Из этого видно, что получение согласия ребенка является сунной нашего Пророка. Даже сегодня многие наши молодые люди женятся через сватов. Обычно, когда приезжает сваха, парень и девушка знакомятся, и только если они понравились друг другу, их благословляют и проводят обряд венчания. Любовь между Отабеком и Кумушем, описанная Абдуллой Кадыри в романе «Прошлое», можно назвать классическим примером настоящей любви, которая развивается позже между такими молодыми людьми. Есть уровень любви: любовь Лейли и Меджнуна не для всех влюбленных. Такая романтическая любовь редкость в реальной жизни. В определенном смысле семейная любовь проявляется более здоровым, более скрытым образом. Брак – хорошая цель направленная, воспроизводящая любовь — это социализированная форма любви. Любовь проявляется только в свободе. В этом смысле брак является в определенном смысле состоянием

любви, адаптированным к традициям, обычаям и верованиям. Поэтому каждый вступающий в брак должен осознавать, что отныне его свобода воли сосуществует с другой свободной волей, она будет существовать добровольно - ограниченно и релятивизированно. Кроме того, брак по своей сути является моральным событием. В нем страсти подчинены нравственности. Самое главное – правовой статус брака должен быть основан на любви. При этом не следует забывать, что любовь, как и все на свете, нуждается в уходе.

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VEGETATIV NERV TIZIMINING SIMPATIK QISMI. VEGETATIV NERV TIZIMINING PARASIMPATIK QISMI

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Annotatsiya: Maqolada avtonom nerv tizimining simpatik va parasempatik bo'linmalari o'rganilib, ularning anatomiyasi, funktsiyalari va turli organ tizimlari bilan o'zaro ta'siri yoritilgan. U simpatik bo'linmaning tananing "jang yoki parvoz" javobini, shu jumladan yurak tezligi, qon bosimi va nafas olish tezligiga ta'sirini mobilizatsiya qilishdagi rolini o'rganadi. Bundan tashqari, parasempatik bo'linmaning ovqat hazm qilish, siyish va jinsiy qo'zg'alish kabi "dam olish va hazm qilish" funktsiyalarini targ'ib qilishdagi roli va uning simpatik bo'linma bilan antagonistik aloqasi muhokama qilinadi. Bundan tashqari, maqola ushbu avtonom yo'llarga qaratilgan kasalliklar va farmakologik aralashuvlarni o'z ichiga olgan klinik ta'sirlarni o'rganadi. Umuman olganda, u simpatik va parasempatik bo'linmalarni har tomonlama ko'rib chiqadi, ularning fiziologik gomeostazni saqlash va ichki va tashqi ogohlantirishlarga javob berishdagi ahamiyatini ta'kidlaydi.

Kalit so’zlar: Mezentsefal , Bulbar, Torakolyumbal , Sakral, Vegetativ nerv sistemasi, yurak-qon tomir, nafas, hazm qilish, ajratish, ko‘payish, parasimpatik nerv sistemasi, vegetativ tugunlar, nervlar, simpatik poya.

Kirish

Avtonom nerv tizimi (ANT) ikkita asosiy bo'limdan iborat: simpatik va parasimpatik nerv tizimlari. Ushbu maqolada, biz bu ikki bo'limning anatomiya, vazifalari va o'rtasida munosabatlari, fiziologik jarayonlarni tartibga solish va ichki va tashqi raqobatlarga javob berishdagi ro'lari haqida gaplashamiz.

1. **Simpatik Bo'linish Anatomiyasi:

- Simpatik nerv tiziminin asosiy qismini, orqa miyanining torakolomber bo'limidan chiqib kelganini ta'riflash.
- Simpatik ganglionlar va ularning orqa miyadan maqsad organlarga postganglion fiberlar orqali signal uzatishdagi ro'li haqida tushuncha.

- Simpatik almashinuvda ishtirok etadigan nörotransmitterlar, norepinefrin va epinefrin, tahlili.

2. Simpatik Bo'linish Vazifalari:

- Simpatik bo'linishning stressorlarga qarshi turish uchun organizmning "urush yoki urish" javobini harakatga olib chiqarishdagi ro'li haqida ko'rib chiqish.

- Simpatik aktivatsiya bilan o'tkaziladigan fiziologik o'zgarishlar, masalan, qalb tezligi, og'riq bosimi, nafas tezligi va ko'zning ochilishi.

- Kardiovaskulyar, nafas, va gastrointestinal tizimlar kabi har xil organ tizimlarning simpatik innervatsiyasi tahlili.

3. Parasimpatik Bo'linish Anatomiyasi:

- Parasimpatik nerv tiziminin, craniosacral bo'limidan chiqib kelganini ta'riflash.

- Parasympathetic ganglionlar, cranial nervlar va sakral parasimpatik chiqishlar, haqida tushuncha.

- Asetilkolin nörotransmitter va uning parasimpatik almashinuvdagi ro'li tahlili.

4. Parasimpatik Bo'linish Vazifalari:

- Parasimpatik bo'linishning "dam olish va hazm qilish" vazifalari haqida ko'rib chiqish.

- Parasimpatik aktivatsiya bilan o'tkaziladigan fiziologik o'zgarishlar, masalan, qalb tezligi kamayishi, gastrointestinal motilitetni faollashtirish va ko'zni qisqartirishi.

- Digestiv, idrar, va janjal tizimlarning parasimpatik innervatsiyasi tahlili.

5. Munosabatlar va Tovush:

- Autonom nerv tizimining ikki bo'linmasi orasidagi tesadüfi munosabatlar, homeostazni saqlash, deb ataladigan avtonom o'zaro munosabatlar, taqqoslash tahlili.

- O'tkazib yuboriladigan autonim reflaksiyalar va ularning ko'ordinatsiyalangan simpatik va parasimpatik javoblar orqali ichki funksiyalarini tartibga solish haqida muloqot.

6. Klinik Natijalar:

- Autonomiy tomonlama zanjirlashning (ATZ) tizimlari bilan bog'liq tashqi vositalarni tibbiy ta'minlash, ortostatik pastligi, avtonomik diskinez va boshqa holatlar haqida umumiy ma'lumot.

- Simpatik va parasimpatik tizimlarni maqsadga qo'yishga qaratilgan farmakologik intervensiyalar, masalan, kardiovaskulyar hodisalarni va ansieti, simpatik faollarning sabablarini bartaraf qilish uchun ishlatiladi.

Yurak tezligining oshishi (taxikardiya). Simpatik faollashuv yurakdagi beta-adrenergik retseptorlari bilan bog'langan norepinefrin neyrotransmitterining chiqarilishiga olib keladi. Bu retseptorlarni stimulyatsiya qilish yurak qisqarishlarining tezligi va kuchini oshiradi, natijada yurak urishi tezlashadi. Taxikardiya yurak chiqishini kuchaytirishga yordam beradi va kislorodli qonni mushaklar va muhim organlarga etkazib beradi, bu esa tananing sezilgan xavfga javob berishini osonlashtiradi.

Ko'tarilgan qon bosimi (gipertoniya). Simpatik faollashuv vazokonstriksiyani keltirib chiqaradi, butun tanadagi qon tomirlarining diametrini toraytiradi. Qon tomirlari devorlaridagi alfa-adrenergik retseptorlarga ta'sir qiluvchi norepinefrin vositachiligidagi bu vazokonstriktiv ta'sir periferik qon oqimiga qarshilikni oshiradi. Ko'tarilgan qon bosimi fiziologik qo'zg'alishning kuchayishi davrida miya va yurak kabi muhim organlarning etarli darajada perfuziyasini ta'minlaydi.

Nafas olish tezligining oshishi. Simpatik faollashuv miya sopidagi nafas olish markazlarini rag'batlantiradi, bu nafas olish tezligi va chuqurligining oshishiga olib keladi. Kengaytirilgan shamollatish o'pkada gaz almashinuvini optimallashtirishga yordam beradi, kislorodni qabul qilishni va karbonat angidridni yo'q qilishni oshiradi. Nafas olish tezligining oshishi to'qimalarga kislorod etkazib berishni osonlashtiradi va jismoniy faollikning oshishi bilan bog'liq metabolik talablarni qo'llab-quvvatlaydi.

Ko‘z qorachig‘ining kengayishi. Simpatik faollashuv ko'zning ìrísídagi kengaytiruvchi pupilla mushaklarining qisqarishini keltirib chiqaradi. Bu ko'z qorachig'ining kengayishiga olib keladi, ko'zga ko'proq yorug'lik kirib boradi va ko'rish keskinligini oshiradi. Ko’z qorachig’i kengayishi periferik ko'rishni kuchaytiradi va atrof-muhitdagi potentsial tahdidlarni tezda aniqlashga yordam beradi.

Boshqa fiziologik javoblar. Simpatik faollashuv, shuningdek, jigarda glikogenoliz va glyukoneogenezga olib keladi, organizmning ortib borayotgan metabolik talablarini energiya bilan ta'minlash uchun qon glyukoza darajasini oshiradi. **S**impatik stimulyatsiya natijasida terlash (diaforez) paydo bo'lishi mumkin, bu jismoniy zo'riqish paytida hosil bo'lgan ortiqcha issiqlikni yo'qotishga yordam

beradi. Qon oqimi zarur bo'lmagan organlardan, masalan, oshqozon-ichak traktidan uzoqlashtiriladi va skelet mushaklari va stressga javob beradigan muhim organlarga yo'naltiriladi. Umuman olganda, simpatik faollashuv tananing stress va tahdidlarga dosh berish qobiliyatini oshirishga, qiyin vaziyatlarda omon qolishni ta'minlashga qaratilgan muvofiqlashtirilgan fiziologik javobni tashkil qiladi.

Avtonom muvozanat deb ataladigan avtonom nerv tizimining simpatik va parasempatik bo'linmalari o'rtasidagi o'zaro munosabatlar gomeostazni saqlash va optimal fiziologik faoliyatni ta'minlash uchun juda muhimdir. Mana bu munosabatlarni tekshirish:

•Gomeostaz va avtonom muvozanat

- Gomeostaz deganda organizmning tashqi tebranishlarga qaramasdan ichki barqarorlikni va nisbatan doimiy ichki muhitni saqlab turish qobiliyati tushuniladi.

- Avtonom muvozanat gomeostazga erishish va uni saqlab qolish uchun simpatik va parasempatik faoliyatni nozik muvofiqlashtirish va tartibga solishni o'z ichiga oladi.

- simpatik va parasempatik ohang o'rtasidagi muvozanat o'zgaruvchan ichki va tashqi sharoitlarga javoban fiziologik jarayonlarning mos ravishda modulyatsiya qilinishini ta'minlaydi.

•Dinamik tartibga solish

Simpatik va parasempatik bo'linmalar yurak urishi, qon bosimi va ovqat hazm qilish kabi turli fiziologik funktsiyalarga o'zaro ta'sir ko'rsatadi.

- Oddiy sharoitlarda simpatik va parasimpatik faoliyatlar umumiy barqarorlikni saqlagan holda organizm ehtiyojlarini qondirish uchun dinamik tartibga solinadi.

- Masalan, dam olish davrida parasempatik faoliyat ustunlik qiladi, bu esa bo'shashish, ovqat hazm qilish va energiyani tejashga yordam beradi. Bundan farqli o'laroq, stress yoki jismoniy zo'riqish paytida, resurslarni safarbar qilish va tanani harakatga tayyorlash uchun simpatik faollik kuchayadi.

•Avtonomik reflekslar

- vegetativ reflekslar fiziologik o'zgarishlar yoki atrof-muhit ta'siriga javoban simpatik va parasempatik faollikni tezda moslashtirib, avtonom muvozanatni saqlashda hal qiluvchi rol o'ynaydi.

- Masalan, baroreseptor refleksi arterial bosimning o'zgarishiga javoban simpatik va parasimpatik chiqishni modulyatsiya qilish orqali qon bosimini tartibga soladi.

- Xuddi shunday, xemoreseptor reflekslari qon kislorodi va karbonat angidrid miqdorining o'zgarishiga javoban simpatik va parasempatik faollikni o'zgartirib, nafas olish tezligini va qon pH ni moslashtiradi.

•Klinik oqibatlari

- Vegetativ ohangdagi nomutanosiblik, masalan, haddan tashqari simpatik faollik yoki parasempatik ustunlik gomeostazni buzishi va turli xil tibbiy holatlarning patogeneziga hissa qo'shishi mumkin.

- Masalan, vegetativ tartibga solishning buzilishi yurak-qon tomir kasalliklari, oshqozon-ichak disfunktsiyasi, metabolik kasalliklar va ruhiy salomatlik holati bilan bog'liq bo'lishi mumkin.

- Ushbu kasalliklarni davolashda beta-blokerlar yoki xolinergik agonistlar kabi vegetativ muvozanatni tiklashga qaratilgan farmakologik aralashuvlar qo'llaniladi.

Xulosa qilib aytganda, simpatik va parasempatik bo'linmalar o'rtasidagi avtonom muvozanat gomeostazni saqlash va optimal fiziologik faoliyatni ta'minlash uchun juda muhimdir. Simpatik va parasempatik faoliyatning dinamik tartibga solinishi, avtonom reflekslarning modulyatsiyasi bilan birga, ichki barqarorlikni saqlagan holda tananing o'zgaruvchan talablarga moslashishiga yordam beradi. Vegetativ muvozanatning buzilishi sezilarli klinik ta'sirga ega bo'lishi mumkin va turli xil kasalliklarning patogeneziga hissa qo'shishi mumkin.

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OYBEK “BOLALIK” QISSA VA HIKOYALAR

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Annotatsiya: Ushbu maqolada Oybekning “Bolalik” asari tahlil qilingan. Oybekning bolaligi ham barcha mehnatkash xalq bolalari kabi kechadi. U yoshlikdan uy-ro`zg`orga qarashish, guzardan narsa olib kelish, suv tashish, o`tin yorish, qor kurash kabi yumushlarni bajarishi haqida, Oybekning bolalar va o`smirlarga bag`ishlangan she`riy asarlarida bugungi qaynoq hayot, ilm, hunar va mehnatga bo`lgan muhabbat, vatanparvarlik, jamoatchilik, ijtimoiy burchni anglash kabi xususiyatlar aks etganligi haqida so`z boradi.

Kirish. Muso Toshmuhammad o‘g‘li Oybek adabiyotimizda o‘chmas iz qoldirgan adiblarimizdan hisoblanadi. Uning turli mavzulardagi ko‘plab asarlari nashr etilgan va mashhur bo‘lgan. “Bolalik” asari avtobiografik asar bo‘lib, unda yozuvchi o‘z ko‘rgan-kechirganlarini, hayotida sodir bo‘lgan voqealarini, bolalikdagi eng unutilmas damlarini bayon qiladi.

“1951-yilda Oybek og‘ir xastalikka chalindi. Gapirolmay qolgani, harakatlari cheklangani, xotirasi susayganiga qaramay, u umrining keyingi yillarida “Quyosh qoraymas”, “Ulug‘ yo‘l” romanlarini, “Nur qidirib”, “Bola Alisher”, “Bolalik” qissalarini yaratdi. Talay she’r va dostonlar bitdi”.

“Bolalik” kabi bir qator asarlari sog‘ligi yaxshi bo‘lmagan vaqtlarda yozilgan. Shunday bo‘lsa-da Oybek ijoddan, izlanishdan to‘xtamadi. Sog‘ligi sababli yozolmay qoladi va asarlarini oila a’zolariga aytib turib yozdiradi. “Bolalik” qissasi ham shunday qiyin davrda dunyoga keldi. Bu haqida Abdulla Qahhor shunday degan:

“Oybek 400 yilga teng keladigan 40 yillik ijodiy faoliyatining bir lahzasisni ham samarasiz o‘tkazgani yo‘q”. Oybek umrining oxiriga qadar ijoddan to‘xtamadi.

Asar bosh qahramoni -Musavoy. Uning bolaligi A’zam, Turg‘un kabi do‘stlari bilan o‘tadi. Oybek bo‘zchi oilasida tug‘iladi. Qissada yozilishicha ustoz –shogirdlar yig‘ilib o‘tirishib bo‘z to‘qishgan. “Ularning qo‘llari juda chaqqon, birpasda bigizni shartta-shartta tiqib, ipni u yoq bu yoqqa qulochlab, chok tikadilar”, -deb yozadi muallif.

Jon-jon Latifa
Gul maydon Latifa
Shoxida o‘ynang, bargida sayrang
Jon latifa”

Bu jumla ham shunday davralarda kuylangan. Odamlar zerikmasliklari uchun turli qo‘shiqlar xirgoyi qilishgan, latifalar aytishgan. Shuningdek, qissada xalq og‘zaki ijodi namunalaridan ham foydalanilgan. Yuqoridagi parcha hamfolklore namunasi hisoblanadi.

“G‘unchasin gul bulbulin qatlina paykon aylamish,
Bulbul ochilgan guli yuzini qalqon aylamish”

Yuqoridagi bayt Fuzuliy ijodidan olingan. Muso domlaga savod chiqarish uchun boradi. Bu davrda hamma bolalar ham o‘qitilmas edi. Musoning otasi-Toshmuhammad uni o‘qitishni xohlaydi va domlaga shogirdlikka beradi. Bu vaqtda Musoning opasi-Karomat ham savodli edi. Yuqoridagi g‘azal kabi asarda ko‘plab baytlar keltiriladi. Bular Musoni bolalikdan adabiyotga qiziqqanligini bildiradi.

Musoni otasi Yangibozorga chaqiradi. Muso A’zam bilan birga boradigan bo‘ladi. A’zamning ham otasi Yangibozorda savdogarlik qilardi. Qissada Yangibozordagi davrlari, sarguzashtlari va yo‘ldagi voqealar ham tashvirlanadi. Ularni tongda aravakash olib ketadi. Yo‘lda turli xil qo‘shiqlar aytib ketishadi:

Asosiy qisim. “Bolalikda ko‘rganlarim, eshitganlarim hammasi esimda. Ayrim hodisalar, xotiralar hozir ham quyoshdan bir tomchi kabi yalt etib ketadi xayolimda.Umuman olganda bizning bolalik hayotimiz bo‘sh, bema’ni zeriktirgich, qayg‘u-alamga to‘la bir hayot bo‘lgan”. Oybek bu qissasida qayg‘uli kunlarini ham keltirib o‘tadi. Musovoy qaysar va aytganini qildiradigan bola bo‘ladi. U bobosining erkasi bo‘lib ulg‘ayadi. Bobosi qancha avaylasa ham, ko‘ngliga qarasa ham baribir otasining o‘rni bilinib turgan. Otasi oilasidan uzoqda bo‘ladi va oylar davomida uch-to‘rt kunga kelib ketardi. Shuningdek, qissada eng qayg‘uli kunlaridan biri bo‘lgan-bobosining vafoti ham tasvirlanadi. Bu voqea ham bolalik yillarida sodir bo‘lgan edi. Domlada savod chiqaradigan vaqtlari xalqda urush boshlanadi. Yigitlarni qullikka olib ketmoqchi bo‘lishadi. Xalq turmushdan noliydi, boylar va zolim amaldorlardan zorlanadilar. O‘sha vaqtda oddiyb aholi zolim ellikboshilar haqida turli qo‘shiqlar ham to‘qigan.

“Saydahmad toming baland
Tomingdan noming baland
Yigitlarga qo‘l qo‘ygan
Padaringga ming la’nat

Shu kabi bir qancha qo‘shiqlar to‘qiladi. Bular xalqning, kambag‘allarning qiynalganligini, yigitlarni qul qilib olib ketganligini bildiradi.Oybek va asarlari haqida zamondoshlari ham iliq fikrlar bildirishadi. “Bolalik” qissasida yozuvchining hayotidagi baxtli, quvnoq kunlari bilan birgalikda qiyinchilikda o‘tgan kunlari haqida ham bilishimiz mumkin. “Xotira –hujjat degan so‘z. Biroq bu hujjat tagiga idora hokimi emas, balki qalb atalmish kotib imzo chekadi”. Oybek doimo boshqalarga yordam beradigan oliyjanob siymo edi. U haqida Saida Zunnunova shunday deydi:“Oybek she’rlarimni o‘qidi, maslahatlar berdi. Tirikchiligimni surishtirdi. Iliq gaplar aytib, dalda berdi. Matbuot organlari rahbarlariga mening she’rlarimga e’tibor berishlarini tayinladi”. Bu vaqtda Oybek Yozuvchilar uyushmasida rais edi. Oybekni tanimagan, bilmagan, o‘qimagan kishi kam. Ko‘plab yozuvchi va shoirlar uning ijodidan ruhlanib, adabiyotga kirib kelishdi.

Yozuvchi Oybekning bolaligi ham barcha mehnatkash xalq bolalari kabi kechadi. U yoshlikdan uy-ro`zg`orga qarashish, guzardan narsa olib kelish, suv tashish, o`tin yorish, qor kurash kabi yumushlarni bajaradi. Barcha bolalar kabi bahor vaqtlarida tomma-tom oshib, varrak uchirar, dovuchcha qoqar, qish bo`lsa oshiq o`ynar, xo`roz, tuxum va it urishtirishlarda qatnashar, yoz kunlari onasining pinjida qarindosh-urug`larining uylariga «mehmon»ga borar, hayit, sayil va boshqa milliy bayram kezlarida esa o`zida yo`q sevinib, dor o`yini, xalq qiziqchiliklarini, ko`ngil ochar tomoshalarni ko`rishga muyassar bo`lar edi. Keyinchalik «Shaharcha bolalariga», «Shoirning bolaligi» she`rlarida shu manzaralar o`z aksini topadi.Oybekning bolalar va o`smirlarga bag`ishlangan she`riy asarlarida bugungi qaynoq hayot, ilm, hunar va mehnatga bo`lgan muhabbat, vatanparvarlik, jamoatchilik, ijtimoiy burchni anglash kabi xususiyatlar aks etgan. Bu fazilatlar o`sha davrda Oybek asarlarining yetakchi mavzuiga aylanadi. Shoir g`oyaviy-badiiy kuchli she`rlar bilan birga,bolalar va o`smirlar hayotini tasvirlovchi hikoyalar ham yozdi. 1981 yilda adibning «Globus» nomli to`plami bosilib chiqdi. Bunda Oybekning shu vaqtgacha e`lon qilinmagan «Gulnor opa» (1930 yil), «Fanorchi ota» (1930 yil), «Singan umid» (1930 yil), «Tillatopar» (1930 yil) hikoyalari ham chop etilgan.Oybek kichik yoshdagi maktab bolalari uchun Pokiston bolalari hayotidan «Qonli barmoqlar» (1962 yil) hikoyasini yozdi. Hikoyada Pokistonda tinchlik uchun kurashuvchilardan qanday qasos olinayotganligi, ularning bolalari ko`chalarga chiqarib tashlanayotganligi, tilanchilikka va malaylikka mahkum etilayotganligi hikoya qilinadi. Yozuvchi buni asar qahramoni to`qqiz yoshli Alining sarguzashtiari orqali tasvirlaydi.Oybekning shaxsiy hayotinigina emas, balki bir-biriga munosib

ikki ulug' siymoning sevgi va vafo dostoni -"Oybegim mening" asarini o'qir ekansiz, ular boshidan o'tkazgan qiyinchiliklar, ularga qilingan tusxmatlardan lol qolasiz kitob sizni shunchalik qiziqtirob qo'yadiki, go'yo bu voqealar o'zingiz bilan yuz berayotganday tuyiladi.Ijodkor yaratgan asl badiiy manzarada doimo fikr bilan birgalikda tuyg'u, hissiyot ham bo'ladi. Yozuvchi hamisha yo nimanidir yoqlaydi, yoki inkor qiladi. Betaraf badiiy ijod bo'lishi mumkin emas. Chunki inson tafakkuri va ruhiyatida betaraflik tugagandan so'nggina chinakam badiiy asar yaratiladigan holat paydo bo'ladi.adibning tuyg'ulari nechog'lik kuchli, nigohi qanchalar o'tkir, tili qanchalik boy bo'lsa, o'quvchi uning asariga ta'siriga shunchalik qattiq beriladi. Yaratilgan badiiy matnning qanchalik hissiy, ta'sirchan bo'lishi uning timsoliyligi - obrazliligi darajasiga bog'liq. Shunday qilib, badiiy adabiyotning ilmiy adabiyotdan asosiy hal qiluvchi farqi uning obrazliligidadir.Oybek hikoyada Alilarning yashash sharoitini va qanday kun kechirishini quyidagicha tasvirlaydi: «Gorishov Lohurning baridagi bir daha. Lohur —qo`shiqlar, gullar diyori. Gorishov esa dahshat! Ali bu xaroba –vayronalar ichida yuguradi. Ko`cha, yo`lkadeydigan narsa yo`q, tutash xaroba kulbalar. Shunday xaroba kulbalarning birisida Ali bilan onasi, otasi qamalgandan so`nghaydalib, ko`chaga tashlangan edi».Pokiston shaharlarining ko`cha-ko`ylarida to`da-to`da tilanchi bolalar yuradi. Gadoylar odatda «baxshish» deyilsa, o`zlarini tomdan tashlab yuborishga tayyor ekanligi hikoyada bo`rtib turadi.Ali bir parcha non qidirib, besh-olti kundan buyon rastalarni kezib yurganda gulobchi do`kondor uni chaqirib «jahl aralash dedi: —Mana bu yashiklarni bo`shat!» Buning evaziga esa haq to`lashga va`da qiladi. Ali: «rostdanmi?»,–deb so`radi va do`kondorning «ha» degan tovushini eshitgach, bola uzun xo`rsindi, jilmaydi. Kir, kalta ko`ylagining yenglarini shimarib, ishga tushdi». Ali yashiklardagi siniq gulob shishalarini tashiydi: «Siniq, cheti uchgan shishalar va berahm quyoshning issig`i xunob qilar, kichik barmoqlari tilingan, qo`llari qon. Ammo och, tentirab yurishdan charchagan bola bu xizmatdan vaqti xush edi. Isqirt, juldur, cho`pday oriq bolalar bolaning qonagan qo`llariga tikildilar. Bolalar Aliga ko`mak bermoqchi bo`lganlarida u «rahmat», deb javob berdi. Ali och-nahor, barmoqlarini shisha siniqlari kesib achitishiga, bir parcha non topishning nihoyatda azob-uqubatlari va mashaqqatlariga qaramay, do`kondor gulobchining og`ir ishini bajardi. Do`kondor bir qutini ochib, yupqa «chapati» nonni uloqtirdi.Ali ilib oldi, quvonib dedi:•Darrov borib, ayamga beraman, u kasal!

•Aya, men keldim, non topib keldim. Turing, non yeng, non Kampir onaning yuzini ochdi:

•O`tdi olamdan!

Dard bilan, yo`qchilik bilan, ochlik bilan, g`am bilan hamisha kurashgan bu g`arib ayolning yuzida baxtsiz hayotning eng so`nggi nafasida o`lim bilan kurash dahshati ko`rinar edi».Bu hayotiy parcha faqat pokistonlik Aining hayoti uchun xos hodisa bo`libgina qolmay, balki kambag`al mehnatkash bolalarining hayoti uchun ham tipik hol edi.Kitobxon Alining sarguzashtlari bilan tanishar ekan, unda oddiy insoniy huquqlardan ham mahrum etilgan bolaning ayanchli taqdiri orqali yovuzlikka nisbatan nafrat tuyg`ulari shakllanadi.

Xulosa. Xulosa qilib aytsak adibning «Bolalik» qissasi avtobiografik xarakterga ega bo`lib, uning markazida yosh Musaning sarguzashtlari yotadi. Musa obrazining hayotdagi asosi adib Oybekning o`zidir. Asarda Musavoyning yetti yoshgacha bo`lgan davrdagi xarakteri sho`xlik, tegajoqlik, tinibtinchimaslik va o`yinqaroqlikdan tashqari, ochiq ko`ngil, dangalchi o`tkir zehnliligi Oybekona tasvirga ega.Oybek o`sha davr tashvishlari bolalar hayoti va taqdirida ham ma`lum darajada aks etganligini mahorat bilan tasvirlaydi.

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DIGITAL ACCOUNTING

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Abstract. The nature, advantages, and disadvantages of forms of accounting organization based on innovative technologies in the conditions of the digital economy are described. the essence of the concept of the digital economy and the conveniences and disadvantages of using software, national technologies, and blockchain technologies used in accounting in foreign countries at the present time are researched.

Key words: Digital economy, informatization, accounting, cloud technology, accounting, computer.

Introduction

Accounting consists of a system of continuous and interrelated monitoring and control over the economic activities of enterprises, organizations and institutions with the acquisition of current and final information for the purposes of internal management and external consumers. With the help of accounting, information is obtained about the various types of material values and amounts of money available in the farm, the status of settlements with other enterprises and organizations, and the total amount of other resources in it; the prepared materials, volume and cost of manufactured and sold products are determined; financial results of economic activity - profit or loss are calculated; profitability of the enterprise and a number of other indicators of the enterprise and its components are determined. One of the most important features of accounting is that all business transactions are recorded in it. This is necessary to obtain a complete description of all economic processes. Another feature of accounting is its documentation. Each transaction recorded in the accounting system must be documented first. The document is the only source of accounting information. The availability of documents that cover all operations provides an opportunity to use accounting information to control the activities of materially responsible persons and obtain information based on management.

Due to the rapid economic changes in our country, the sharp development and improvement of the economy in our country. The introduction of digital technologies in production (providing services) in the new Uzbekistan, that is, in economic

entities, is one of the urgent issues of today. remains. Development strategy of New Uzbekistan for 2022-2026 (hereinafter - development strategy) for 2022-2026 consisting of 7 priority directions developed based on the principle of "From action strategy to development strategy" as a result of recently approved public discussion and its The state program (hereinafter referred to as the State Program) for the implementation of the "Year of Human Dignity and Active Neighborhood" was duly approved. According to it, the Development Strategy - Section 3 is aimed at rapid development of the national economy and high growth. It is called ensuring the speed of the economy, and it is precisely in the 25th goal of this section that it is necessary to turn the digital economy into the main "driver" sector and carry out work aimed at increasing its volume by at least 2.5 times. It is known that today the digital economy is gaining importance in the creation of added value. Various algorithms, processes and digital information are having the main decisive power in the strategic development of corporate business. is using the software, including 1uz, 1c, uzasbo, estat programs. For some objects of accounting, he regularly uses the sites my.soliq.uz, faktur.uz, internet banking, didox.uz.

The main technical tool of information processing technology in modern society is a personal computer [4]. In many organizations, accounting is carried out using special software products designed for convenient storage of information, creation of documents and reports, analysis of accounting data [11]. They allow accountants to manage interdependent accounting departments, and executives can access up-to-date information and make management decisions. Accounting automation greatly simplifies the work of accountants and provides the following advantages over manual information processing:

- automatic filling of requisites in main documents;
- fast processing of large amounts of data;
- presentation of analytical data in a form that is easy to understand (diagrams, graphs, tables);
- creation of reporting registers (billing and payment statements, balance sheets, cash book);
- reducing the number of paper carriers;
- immediate exchange of information between management and subordinates, organizational units;
- exclusion of arithmetic errors;
- online communication with supervisory state bodies and banks;
- the ability to quickly respond to changes in legislation.

Research methodology

In this study, statistical data, logical and comparative analysis, grouping methods, as well as research works of foreign and local scientists on the subject and official statistical websites were widely used.

Analysis and results

Types of software. As a result of the digitization of the economy in our country, the following methods of accounting can be used:

• Conducting activities by connecting software such as 1.uz, 1c, uzasbo, estat to the database;

• Use of cloud technologies, use of Googledrive (disk), yandyexdisk, Onedrive, dropbox technologies;

• Use of blockchain technology.

Today, there are many software products for processing accounting data. Criteria by which an accounting program can be evaluated against desired benefits:

1. Functional completeness.

2. A comprehensive service that includes timely updating of software products based on changes in regulatory documents, reporting forms, billing rules, etc.

3. Ease of use of the system. Special attention should be paid to the program's intuitive interface, quick start-up capabilities, and independent learning of the program.

4. Technical support.

5. Professionalism of the supplier.

6. The ability to work remotely, which allows you to work with one database at the same time on several local networks.

7. The main task of automation is to enter data into the system once, so the criteria for selecting the program is the availability of data exchange and synchronization.

8. Ability to adapt to business development and introduction of new accounting systems.

9. Protection of information.

10. The ability to adapt to the expansion of the presented accounting requirements and the increase in the volume of tasks to be solved.

11. Software product price.

Today, the leading company in the delivery of accounting software is the 1C firm. The company's product "1C: ACCOUNTING" allows you to adjust the parameters of the accounting policy, taking into account the specific characteristics

of the organization, creating preliminary documents, compiling reports, and adjusting catalogs in accordance with accounting requirements in organizations.

Conclusions and suggestions

The digital economy expands the capabilities of a modern accountant, increases the quality and speed of accounting, and forms modern innovative approaches to the integration of various calculations. With the help of personal computers and special accounting programs, the replacement of paper work with automated accounting made it possible to free the accountant from regular work and improve their work results.

Today, special Internet services have appeared that allow the production of all online accounting operations, banks and information technology portfolios that apply to the daily activities of an accountant. Cloud technologies - a service for renting space on the Internet for storing and processing information. Cloud technologies have enough advantages to be used for accounting, but there are also disadvantages, the main part of which is an uninterrupted Internet connection.

Changes in technology have led to a change in accounting, which requires scientists and practitioners to formulate a model of basic concepts, develop legislation, regulations, guidelines and regulations for accounting in the new digital economy.

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IMPROVING THE ENERGY EFFICIENCY OF ELECTRIC CARS USING THERMOELECTRIC MATERIALS

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Abstract: Currently, microchips that perform important tasks in the field of electric vehicles are made of semiconductor materials and thermoelectric materials, and are important for manufacturers of all electronic devices and gadgets. One of the most important tasks for the manufacturers of electronic devices and gadgets is to receive and reprocess semiconductor materials in the delivery of orders for microcircuits, and to repair electrical panels and interior lighting lamps as a result of waste heat processing.

Key words: automotive engineering, electronic device, semiconductors, semiconductor microchips, microcircuits, thermoelectric material.

ENTER

As a result of the development of science and technology, the economy and the machine-building industry are developing rapidly. The development of the economy and industry requires serious research on the creation of high-strength, easy-to-use, cheap, precise materials and on increasing the durability of the connection. In the coming years, we can see that energy consumption in the world is increasing at a high level. This, in turn, has an impact on the automobile industry. Measures to reduce various harmful gases released into the environment and nature have not bypassed the auto industry (Figure 1). In this regard, it has led to the development of electric vehicles such as Hybrid and electric vehicles, battery electric vehicles. Electric cars presented by the world's leading automobile manufacturers such as Mercedes-Benz, Toyota, Honda, BMW, Chevrolet, and Mitsubishi have managed to gain a place in the world market. As a result of re-equipment of electrical parts of the internal combustion engine on the basis of thermoelectric materials of different levels, researches aimed at reducing electricity consumption are being carried out [1-2].

LITERATURE ANALYSIS:

All types of vehicles using internal combustion engines emit waste heat energy into the environment. About 25% energy efficiency can be achieved by placing

thermoelectric materials in heat pipes. Depending on the location of thermoelectric materials and their efficiency, energy savings can vary from 35% to 45%. In recent years, there has been an increase in demand for electric cars, and interest in developing this efficient system has increased [3-4]. This is due to the advantages of offering no moving mechanical parts, which results in low maintenance, smaller size, light weight and noiseless system. Thermoelectric materials directly reduce heat loss. converts into electricity [5-6].

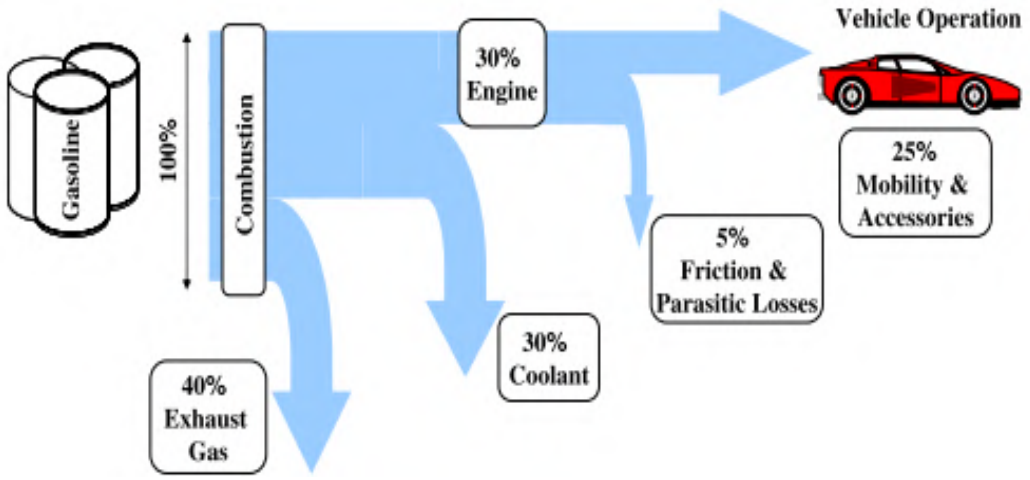

Figure 1. Energy consumption of a car with an internal combustion engine.

All types of vehicles using internal combustion engines emit waste heat energy into the environment. About 25% energy efficiency can be achieved by placing thermoelectric materials in heat pipes. Depending on the location of thermoelectric materials and their efficiency, energy savings can vary from 35% to 45%. In recent years, there has been an increase in demand for electric cars, and interest in developing this efficient system has increased. This is due to the advantages of offering no moving mechanical parts, which results in low maintenance, smaller size, light weight and noiseless system. Thermoelectric materials directly reduce heat loss. converts into electricity [7-8].

By managing waste heat in the vehicle, thermoelectric generators are placed in the heat pipes, and thermoelectric materials are additionally used to recycle waste heat in heater compartments and mechanical stacks (Figure 2).

RESEARCH METHOD

In this article, effective methods of converting waste heat into electricity through thermal electric generators and their various solutions are considered. The thermoelectric generator module is connected to an internal combustion engine vapor heat exchanger for heat exchange [9-12]. The temperature difference between the hot and cold surface was maintained from 10°C to 80°C. The resulting estimate of output voltage and power is obtained through thermoelectric generators.

Modern material science occupies an important place in the study of the composition, structure and properties of material alloys, as well as the relationship between the structure and properties of the material [10-12]. Metals and semiconductors are the most used materials in our daily life. Semiconductor materials and metals play an important role in the development of human material culture. In fact, there is no sector of the economy where semiconductors and metals are not used [12-15].

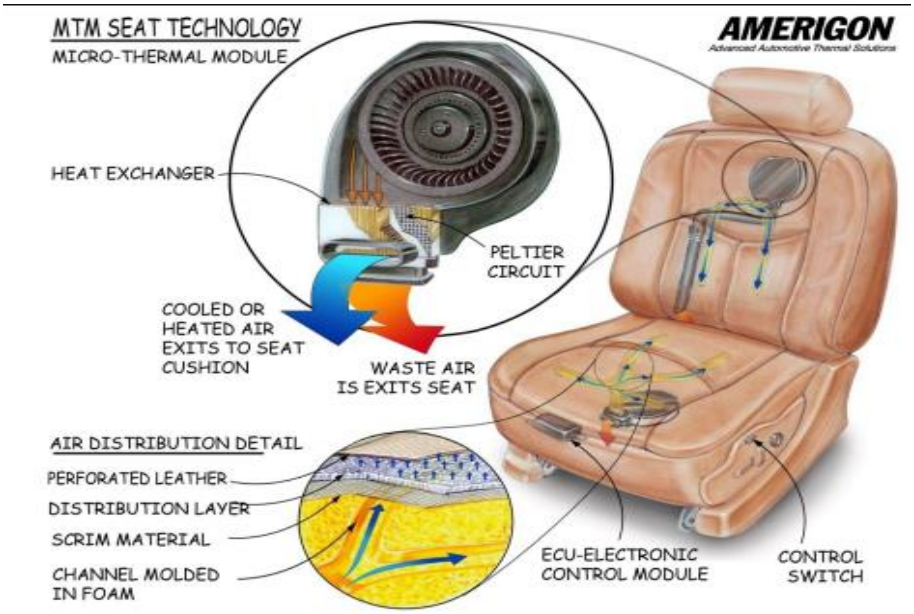

Figure 2. Methods of heating seat parts using thermoelectric materials.

There are conflicting issues in the selection of materials for machine parts and in the technological process of processing them. For example, the details used in the creation of machines and mechanisms that can ensure safe operation for a long time should be cheap, compact, neat, and made of high-quality materials [14-20]. It goes without saying that the processing of such materials causes a sharp increase in cost.

In solving such complex engineering problems, materials science and materials science of semiconductors, as well as technology of construction materials, are of great importance (Fig. 3).

To date, microchips and thermoelectric materials that perform important tasks in the automotive industry are made of semiconductor materials, and thermoelectric materials and chips are important for manufacturers of all electronic devices and gadgets. Manufacturers of electronic devices, microcircuits and thermoelectric generators face many problems in obtaining and remanufacturing semiconductor materials to deliver orders [16-18]. This, in turn, delays the car manufacturers' ability to provide customer service and the delivery of cars to their owners. It leads to the creation of artificial barriers by itself [19-20]. The failure of microchips to arrive on time forces the suspension of some branches of the automotive company. When resuming operations, chipmakers lag behind existing demand due to the fact that it takes more than six months to produce. Because of this, there is a shortage of semiconductor microchips for cars [20-25].

A shortage of semiconductors and a shortage of quality thermoelectric generators are a concern for hybrid and electric vehicle manufacturers around the world. The lack of such small but irreplaceable details has had serious consequences for car manufacturers. Another example is Volkswagen's plant in Kaluga, which stopped production of cars due to a shortage of semiconductors. Also, assembly of "Volkswagen" and "Skoda" cars was temporarily stopped in Nizhny Novgorod. Many of the world's largest automotive manufacturers have been forced to shut down their factories in Asia, Europe and North America due to shortages of semiconductors and thermoelectric materials. These include Ford Motor, Nissan Motor, Toyota Motor, Volkswagen, Honda Motor and Volvo. The US automotive industry warned about the consequences of improper use of microcircuits and asked for help from the government. Asia is speeding up microchip production to reduce semiconductor shortages.

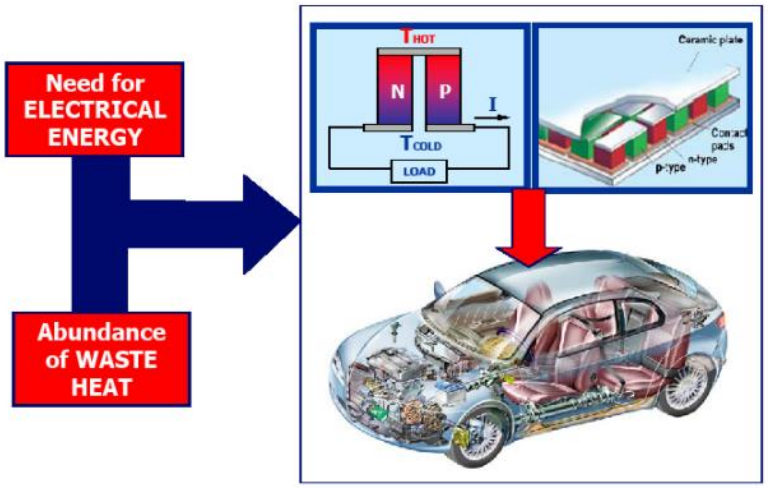

Figure 3. Application of semiconductor microchips and t hermoelectric materials.

CONCLUSIONS.

In conclusion, it shows that semiconductor physics and semiconductor materials science are given great attention and that large investments should be allocated to the development of these fields. The shortage of semiconductors is a concern for the automotive industry. The lack of such irreplaceable details has had serious consequences for car manufacturers. We can see that the use of thermoelectric materials in cars can increase the capabilities of future cars. Although vehicle electrification may challenge thermoelectric prospects for waste heat recovery, they increase thermoelectric capabilities in heat management.

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DEVICES USING WIND ENERGY

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Abstract. Wind energy is the most common clean form of renewable energy in the earth's crust. Wind turbines produce electricity by using the force of the wind to drive an electrical generator. The project includes both a gravity configuration like a Savonius wind turbine and a Darrieus wind turbine configuration. The Savonius wind rotor has many advantages over others, as its construction is simple and inexpensive. It is independent of wind direction and has good starting torque at low wind speeds.

Key words: Wind, wind wheel, ANSYS 13.0, generator, propeller, operating speed, Vertical wind generator, Working axis.

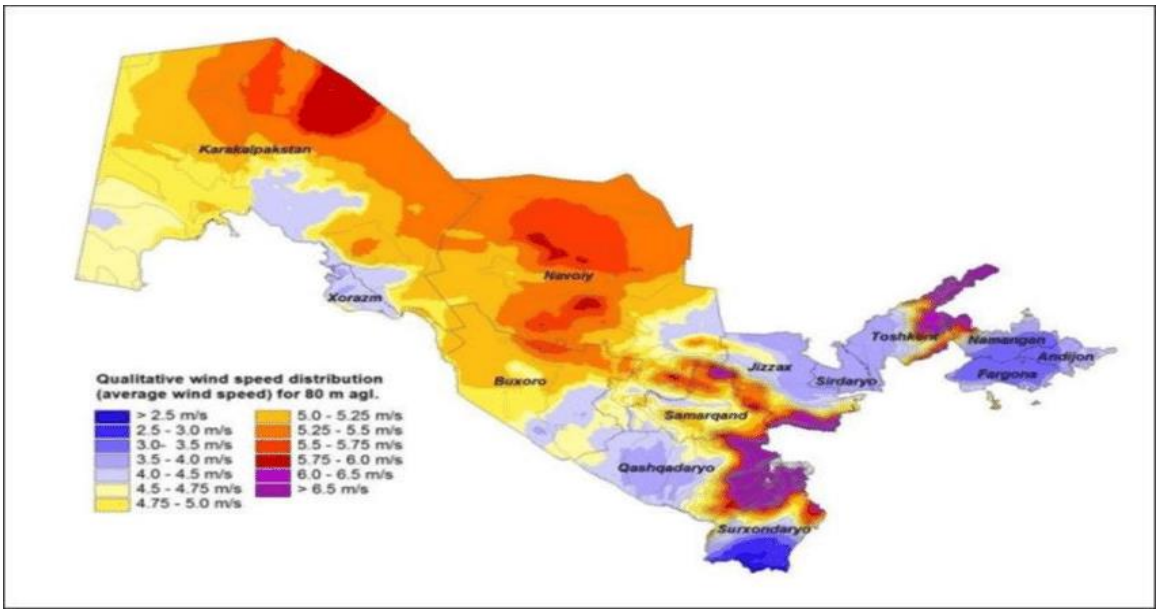

Figure 1. Wind speed in our republic

The experimental research carried out in this article is aimed at studying the effect of the number of Parracks on the performance of the Savonius type wind turbine model. Experiments were used to compare 2, 3 and 4 Blade wind turbines to show the speed ratio, torque and power factor related to wind speed. The simulation using the ANSYS 13.0 program shows the pressure distribution of the wind turbine. The results of the study showed that the number of blades affects the performance of

the wind turbine. The three-bladed Savonius model has the best performance in terms of high speed ratio. Makes the highest flying speed for wind speed. Generator (lat. генератор) is a device that produces any product, generates electricity or converts one type of energy into another. An electric generator is a device that converts non-electric energy types (mechanical, chemical, thermal) into electrical energy. Wind turbines are classified according to wind speed, from class I to class III. Groups A to C indicate the turbulent intensity of the wind.

There are classifications of wind turbines by the number of blades, by the materials they are made of, by the axis of rotation and the height of the propeller.

According to the number of wings

• Two-bladed and three-bladed wind turbines

• Multi-bladed wind turbines

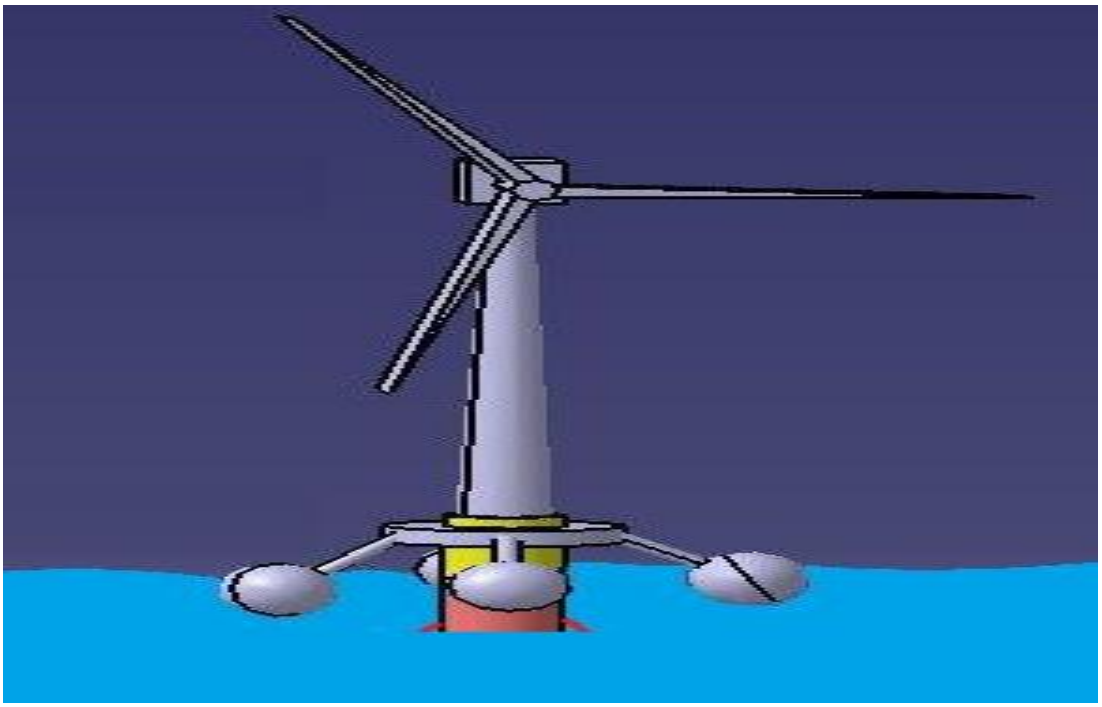

Figure 2. Hybrid wind hydro device.

Multi-bladed wind turbines actually spin at a lower speed than two- and three-bladed ones, but the electricity output is higher. Getting out at the right speed is important. Each additional blade increases the total driving force of the wind wheel, making it more difficult to get the generator up to speed and increasing the required power rate.

So, many blades spin at really low speeds, but they are used more where the actual spin is important, such as water hauling or other similar operations. The design

of the wind generator will be complicated, and secondly, the gearbox will have additional voltage.

Figure 3. Hybrid solar-wind device with vertical axis.

The blades are made of solid fiberglass and are much less expensive and easier to manufacture than metal. But this affordability can turn into a big expense. At the operating speed of the generator (400-600 rpm) and the blade tip of the turbine with a diameter of 3 meters moves at a speed of 500 km/h. Even under ideal conditions, this is a serious test, and if you always take into account the presence of dust and sand in the air. Even hard coats require annual maintenance. The ends of the blades are covered with anti-corrosion films. Without maintenance, the hard drive will continue to work but will lose some of its performance. A full replacement may be required after the first strong winds, not after a year. Therefore, the components of the system are adapted for autonomous power supply, which requires significant and reliable.

The working principle of wind turbines with a vertical working axis.

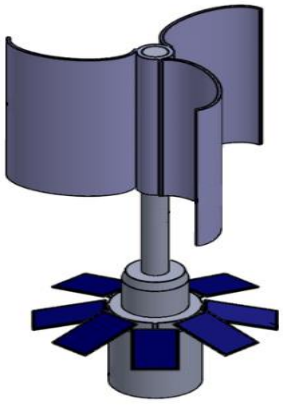

Figure 4. Hybrid solar-wind device with vertical axis.

Vertical wind turbines do not really require a specific wind direction, but any vertical wind turbine will operate at a lower efficiency than a classic horizontal wind turbine with a uniform wind field. This means that twice the size of the wind turbine is needed to produce the same amount of power. In addition, a certain part of the wings moves against the wind.

This significantly increases the movement of the wind turbine, which increases the operating wind speed. A vertical wind generator has all the advantages for an autonomous power supply, given that the wind direction of the vertical wind generator is sufficient. The variable step of the base allows to increase the speed of effective work. But the introduction of this mechanism inevitably leads to the complexity of the structure of the wind turbine, the decrease in the overall reliability of the wind turbine, the increase in the weight of the wind turbine, which means the need to strengthen additional structures. All this leads to an increase in the entire system both during acquisition and during operation. Anemometer (from Greek anemos - wind, metero - measure) is a device that measures wind and gas speed (sometimes direction). The speed of wind and gas is determined by the number of revolutions of the rotating bowls under their influence. Wind and gas velocity can be determined either manometrically or electrically.

Vortex is a new wind generator with different features than normal wind turbines. This can improve the utilization of clean wind energy source. Wind-elastic resonance phenomena are generally considered a problem, but they can also form the basis of wind energy conversion technology. It avoids the use of racks or shafts.

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PRODUCTION AND ASSEMBLY OF PHOTOVOLTAIC CELLS

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Abstract. The photoelectric effect, or photoeffect, is the phenomenon of the interaction of light or other electromagnetic radiation with matter, in which photon energy is transferred to the electrons of the matter. The photo effect is of several types.

Key words: External photoeffect, photoelectron emission, radiation, Photocell, optical rays.

In practice, the external photoeffect is important. The external photoeffect is the release of electrons from a substance under the influence of light or any radiation. The phenomenon of external photoeffect is widely used in practice. An example is a photocell. A photocell is an electrical device that absorbs light falling on it and generates an electric current (photocurrent) or photoelectric driving force. The work is based on the phenomenon of photoelectron emission or external photoeffect. A photoelectric cell operating on the basis of photoelectron emission consists of an electrovacuum device with 2 electrodes, a photocathode and an anode placed in a vacuum-formed or gas-filled glass or quartz tube. The light flux falling on the photocathode creates photoelectron emission on its surface; when the photocell circuit is connected, a photocurrent flow opposite to the light current is generated. In a gas-filled photocell, the photocurrent increases as a result of ionization of the gas and the formation of an independent strong discharge. A photocell operating on the basis of the internal photoeffect consists of a semiconductor device with a homogeneous electron-hole junction, a heterojunction or a metal-semiconductor contact semiconductor device. Optical rays are absorbed in such a photocell, the concentration of charge carriers increases and an electric current is generated.

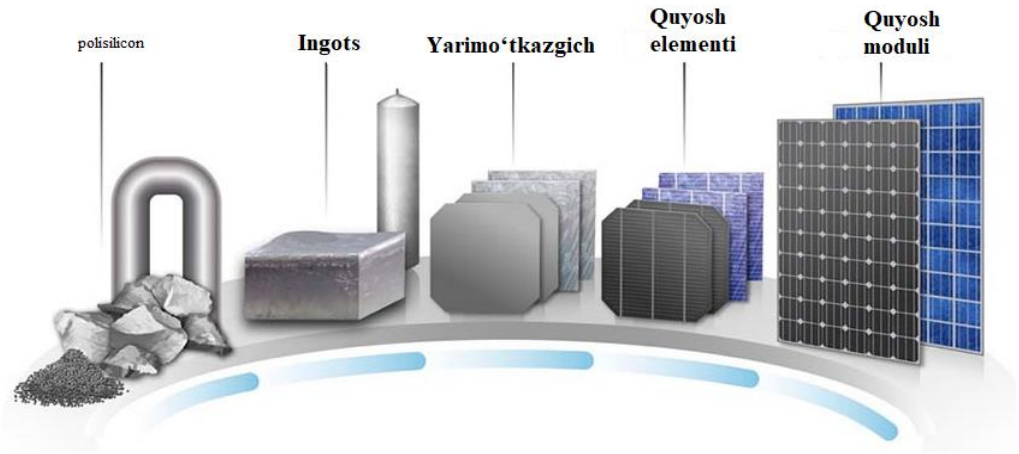

Figure 1. The formation sequence of the solar module.

The picture above shows the stages of solar modules from the polysilicon state to the formation of a solar module.

Photocells usually act as radiation or light receivers. Semiconductor photocells are used to convert solar energy directly into electricity in solar cells and photoelectric generators. The photocell is used in automation, telemechanics, photometry, measuring techniques, metrology, cosmonautics, phototechnics, cinematography and other fields. Photovoltaics is defined as an electrical device that has the ability to turn off electricity when a certain amount of light is present through a certain device, and a photovoltaic cell is also capable of generating energy when exposed to direct sunlight. The most common use it might have is controlling the on and off of various devices, a prime example being a light. It is capable of generating enough electricity to recharge any type of battery or any type of device that can be recharged using voltage. A photocell is used to control the automatic switching on of general lighting. It is also commonly used in electronic metering circuits for objects and people, signaling, etc. The factors that characterize photovoltaic cells may differ depending on the type of operation of each of them, we will learn the main characteristics that describe them below:

- All photocells consist of a standard LDR photoresistor.
- It has cadmium cells in it, which makes them drop in resistance more when exposed to more sunlight.
- They consist only of automatic control elements.
- In order to finish, it is necessary to show that the photocells are configured with relays.

For some people, the way a photocell works can be a bit complicated, the main thing is to have a 120 to 220 volt connection, that way you have a contact left over that can be a device. The one you want to control is connected, the most common of which would be a light bulb in contact with a relay. The power that a photocell can handle is usually completely variable and it all depends on the relay you have, you can get 1800W, which means it can power up to 100 15W bulbs.

In order for a photovoltaic cell to work, it must have a control connection with the device or device it is capable of controlling, which is not a complicated setup as it is basically like connecting a switch to a light bulb. already made photovoltaic cells work efficiently and do their job perfectly, they are distinguished by the fact that they are the artefact that has created innovations in the use of renewable energy at the moment. The main purpose of any photovoltaic cell is to generate electricity, which is mainly achieved by passing sunlight through it. In general, sunlight is made up of photons that strike semiconductors when they strike inside a device, resulting in a completely renewable form of energy that is very useful for a variety of devices. It's important to note that there are many different types of photovoltaic cells in the world, and they usually depend on the function each one is assigned to, another factor that can differentiate them is how they're designed to perform their energy-generating function. Because they are usually used in many technological procedures adapted to work in currently known systems, these systems are mainly used for the automated control of various electrical devices, but they are also very often used in public lighting, as mentioned in the previous lines. To conclude this point, it should be noted that photovoltaic cells can also be used in mobile devices, for example; mobile phones or digital cameras, because with the help of different photovoltaic cells, it is possible to achieve great energy savings for all the devices that we usually carry with us, this phenomenon creates a highly efficient energy system for our devices and therefore they can be charged uniformly. the way you can avoid overloading with impressive electricity. In the world, the importance of photovoltaic cells belongs to public servants, because it has a great positive recognition today, and in public organizations, as well as private ones, they are of great importance, because they are the main part that contributes greatly to energy savings. required at the world level. These processes represent a major technological advance due to the fact that several previously manual loading and unloading functions have been automated.

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PECULIARITIES OF MEDICATION PREPARATION IN GYNAECOLOGICAL PRACTICE

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Abstract: The review considers the ways of ensuring the main tasks of different groups of pharmacological agents as part of premedication, their positive and negative sides. Surgical stress is a state of polyfunctional changes occurring in the patient's body under the influence of aggressive factors of surgical intervention. The functions of the central nervous system, endocrine system, blood circulation and respiration, liver and kidneys, immunity and metabolism are changed.

Key words: premedication, psychoemotional level, anxiolytics, benzodiazepines, literature review.

Introduction: Premedication before surgical gynaecological interventions performed under general and regional anaesthesia is known, based on parenteral administration of sedatives to ensure the psycho-emotional state of the patient and drugs for the prevention of postoperative pain syndrome (‘proactive analgesia’). It is common to experience anxiety before surgery. Anxiety is a normal defence reaction that allows the organism to adapt to conditions of increased danger. The degree of anxiety is different and depends on the psycho-emotional features of the organism of women with menopausal syndrome. This condition leads to psychological tension, which is manifested by insomnia, rapid fatigue, irritability, fear, hot flashes.

Psychological adaptive capabilities are reduced in patients with a high degree of anxiety, which leads to high surgical risk and subsequently to a difficult postoperative period [19]. To relieve anxiety before surgery and anaesthesia, premedication is a mandatory therapeutic tool [26]. Premedication (from Latin pre - before; Latin medicamentum - medicine) is a preliminary medical preparation of the patient for general anaesthesia and surgical intervention. The purpose of this training is 1) prevention of preoperative, surgical stress; 2) achievement of neurovegetative stabilisation; 3) reduction of reaction to external stimuli; 4) reduction of glandular secretion; 5) creation of optimal conditions for manifestation of the effect of general anaesthetics; 6) prevention of allergic reactions in response to the use of drugs and infusion media during anaesthesia. Premedication is performed by a combination of

drugs and in most cases includes narcotic analgesics, sedatives and antihistamines.

Premedication most often consists of two stages. In the evening before the operation, sleeping pills in combination with tranquillisers and antihistamines are administered orally. Particularly excitable patients these drugs are repeated 2 hours before surgery. In addition, anticholinergic agents and analgesics are usually administered to all patients 30-40 minutes before surgery. If cholinergic drugs are not included in the anaesthetic plan, the administration of atropine before surgery can be neglected, but the anaesthetist should always be able to administer it during anaesthesia. It should be remembered that if during anaesthesia it is planned to use cholinolytic drugs (succinylcholine, phoran) or instrumental irritation of the respiratory tract (tracheal intubation, bronchoscopy), there is a risk of bradycardia with a possible drop in BP and the development of more serious cardiac arrhythmias. In this case, premedication with anticholinergic drugs (atropine, methacin, glycopyrrolate, hyoscine) is indicated to block vagal reflexes [1,4,6].

Premedication may not always be adequate depending on the tactics of its implementation, taking into account many factors and defence-adaptive mechanisms of the body.

Inadequate premedication does not relieve the existing psycho-emotional tension and negatively affects the postoperative period, leading to various complications that may appear even after the cure of the underlying disease or healing of the surgical wound [1]. According to a number of authors, premedication should be divided into therapeutic and prophylactic, which, in turn, are divided into individualised, proactive and others. According to the generally accepted opinion, therapeutic premedication is carried out in order to correct the disturbed vital functions of the organism. organism before surgical intervention, as well as prophylactic measures to prevent complications that may arise during surgery and anaesthesia [11,15]. To determine the tactical orientation of premedication, dosages and drugs, it is necessary to identify the existing pathology, as well as to assess the level of anxiety of the body. And here we should admit that, despite the large number of works, the problem of studying individual mental assessment of menopausal patients before gynaecological surgeries remains relevant.

For this purpose, the authors mainly used various scales to assess the psychoemotional state of the organism, determined the stress index of regulatory systems on the basis of the method of variation pulse oximetry [5,13,14], used as a test the integrative test of anxiety, the criterion of adaptation level [5,16], studied neurovegetative, respiratory and haemodynamic indices [15,16], assessed the

psychoemotional state of patients and its manifestations. The conducted studies allowed us to establish that the syndrome of psychoemotional tension is manifested by different degrees of tension - from a feeling of discomfort to a neurotic breakdown [2,4,5]. These states can be divided into different types of mental reactions.

When determining the psychoemotional state of a patient according to clinical signs, 5 types of reactions are distinguished (according to A.F. Bizyaev): asthenic, depressive, anxious, hypochondriacal, hysterical.

1. asthenic reaction is characterised by vegetative lability, headaches, rapid fatigue, irritability, tearfulness.

2. In connection with the depressive reaction is noted depressed mood, low voice, uncertainty in the success of treatment, the patient is a little verbal.

3. Anxiety reaction is manifested by anxiety, excitement, fear, fear of failure, poor sleep, increased pulse rate.

4. In hypochondriacal reaction, the patient presents many complaints, details them, describes in detail the sensations and events in chronological order, is willingly examined; there is a discrepancy between the abundance of complaints and the pathological changes determined.

5. Hysterical - vegetative reactions (lump in the throat, shortness of breath, tremor of fingers, red spots on the skin of the face and neck). The behaviour of such patients is marked by demonstrativeness, theatricality, the desire to attract attention to themselves, to cause sympathy. The latter are more common in women.

In-depth analysis revealed that psychoemotional stress can be divided depending on the degree of CNS damage into central (difficulties in concentration of attention and control of consciousness over external manifestations of emotions) and peripheral (increased muscle tension, increased vascular response). It has been established that the experience of patients before surgery is a classic variant of emotional stress, which affects the functioning of organs and systems of the body - cardiovascular, respiratory, urinary, endocrine and especially autonomic [14]. As can be seen from the above, psychological reactions in women with menopausal syndrome are heterogeneous and vary in severity, which requires an individual approach when prescribing premedication.

Therapeutic premedication consists in the correction of identified disorders of various organs and systems of the body and is determined by the anaesthesiologist together with the therapist, gynaecologist and other specialists. Preventive, individualised and proactive premedication requires closer attention. Concepts such as standard, classical premedication should have no place in the vocabulary and

actions of the anaesthesiologist. Assessing the effectiveness of preoperative preparation of patients with concomitant menopausal syndrome, we can conclude the advantage of using low doses of estrogens (2 mg/day) for 5-7 days as part of therapeutic premedication. Having a specific hormonal effect, estrogen therapy contributes to stabilisation of psycho-emotional disorders, as well as normalisation of cardiovascular system function. All this reduces the time of preparation of patients for surgery, leads to its favourable course and decreases the incidence of postoperative complications [10,15,17].

Prophylactic premedication. To fulfil the basic requirements of prophylactic premedication, neuroleptics, narcotic analgesics, choline-blocking and antihistamine agents are used in the form of universal drug regimens, sleeping pills, psychotropic drugs. The most well-known combinations of drugs are as follows: narcotic analgesic + vagolytic; narcotic analgesic + vagolytic + barbiturates; narcotic analgesic + vagolytic + small tranquiliser; large tranquiliser + vagolytic; narcotic analgesic + vagolytic + antihistamine + small tranquiliser [2]. The introduction of narcotic analgesics in premedication to reduce psychoemotional preoperative tension has already become generally accepted and necessary. The mechanism of action of this group of drugs is due to a decrease in the perception of pain impulses in the CNS, an increase in the threshold of pain sensitivity with the elimination of the destructive nature of pain [15]. At the same time, it was found that the use of narcotic analgesics and antihistamines alone does not lead to a decrease in anxiety, to a decrease in activation of the sympathetic nervous system, and the presence of negative effects of opioid analgesics forces authors to search for drugs with increased respiratory safety [16]. As a psychotropic agent in premedication, droperidol is administered, which causes the so-called neuroleptic syndrome characterised by complete emotional calmness, absence of active movements, indifference to events, and autonomic stabilisation [15]. As a psychotropic agent in the aspect of premedication, droperidol is significantly inferior to diazepam, because despite clinically pronounced tranquilisation and autonomic stabilisation, it often causes mental discomfort, internal anxiety, irritability, low mood, and communication deficit. In connection with the above, droperidol is not considered as an optimal psychotropic drug for premedication.

Benzodiazepine tranquilisers, traditionally used for premedication, have the necessary qualities to eliminate symptoms of anxiety, fear, mild depressive disorders, sleep disorders (anxiolytic (Latin anxius - anxiety and Greek lysis - dissolution), sedative, sleeping, myorelaxant, anticonvulsant, vegetostabilising effects) [13]. The

drugs provide a complete blockade of psychoemotional stress reactions due to suppression of brain structures responsible for emotion regulation [12].

The use of benzodiazepines is accompanied by the restoration of autonomic balance only in patients with low and average levels of personality anxiety, whereas in patients with high levels of anxiety against the background of chronic stress, the use of benzodiazepines disrupts autonomic mechanisms of heart rhythm regulation and reduces heart function due to the depletion of sympathetic activity [11].

Assessment of the quality of premedication also poses a certain problem. Adequate premedication is understood as a complex of therapeutic and preventive measures that normalise psychoemotional status, increase reactivity and resistance to the upcoming surgical intervention [1,13]. The effectiveness of psychotropic therapy is assessed using a special unified point system for evaluating the effect of psychotropic drugs with simultaneous mathematical analysis of heart rate, according to the results of the ninhydrin test, in determining the amount of sweating, using a prognostic approach. 11].

In order to determine the effectiveness of premedication, we use the ball scale, the method of registration of skin-galvanic reactions, measuring the volume of gas exchange before the operation (in this case, an increase in gas exchange by 10-12% is considered as a sign of negative emotion), by changing somatosensory and auditory evoked potentials of the brain [9], comparative assessment of the intensity of processes, changes in the level of cortisol [5], the study of changes in blood circulation, determination of the temperature difference in the oral cavity and skin of the hand, corresponding to the severity of ego methods of sensorimetry and sensorography that reliably detect sympathetic activation, determination of catecholamines, 11- and 17-oxycorticosteroids in blood serum [13] were introduced, since there is a reliable correlation between the concentration of catecholamines in the blood serum of patients and the level of anxiety in the preoperative period.

Activation of the hormonal link of the sympathetic nervous system outside of surgical trauma is considered to be a consequence of a general nonspecific reaction of the organism to emotional stress before surgery, which cannot be completely suppressed by premedication. Other researchers consider hypercatecholemia before the upcoming surgery as necessary, capable of compensating for future haemodynamic changes. At the same time, there are no studies determining the pathological level of corticosteroids in this situation [15].

Thus, the development of medical science and surgical technology requires modern anaesthesiology to optimise adequate protection of menopausal women

already at the premedication stage. The solution to this problem consists, based on the literature review, in several aspects:

a) preventive premedication based on an objective assessment of the preoperative psychoemotional status of a particular patient (due to a certain type of mental reactions);

b) individual selection of drugs for premedication;

c) development and improvement of the existing objective criteria of its adequacy.

d) development of new drugs, not differing in efficacy from classical anxiolytics, but at the same time devoid of their disadvantages.

Summarising the literature review, the following conclusions can be drawn. There remain a number of controversial and contradictory judgements in determining the mechanisms and patterns of development of preoperative psychoemotional state of patients with menopausal syndrome. There is still no consensus on the objective assessment of preoperative psychoemotional state of gynaecological patients with menopausal syndrome, and the available classifications are based on one criterion - symptomatology. Although there is a consensus among researchers on the need for individualised (depending on preoperative psychoemotional status) premedication, the methods of assessing its effectiveness are highly controversial and difficult to define, and interpretation remains controversial. The presence of various drugs and their combinations for the purpose of premedication indicates the insufficient effectiveness of preoperative protection of patients. The identified problems are relevant and are the subject of new research.

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WASTE OF ELECTRICAL ENERGY IN LINES AND TRANSFORMERS

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Abstract; Consumers downloads day , year during changed standing because of power waste The value also changes stands In the transformer magnet of the conductor interest , magnet of the conductor free leaving , transformer oil , insulation of paper , varnish from work output wear and tear to account in the transformer energy a waste surface will come . This in the article downloads graph and in transformers electricity energy waste boasting and reduce measures given .

Key words : electricity energy , average square power , power waste of downloads yearly graph , voltage , magnet conductor , just work power wasteful , small connection [1].

Main part

Power time in unity energy that it was because of in the network energy waste power waste network given in download worked on time by multiplying determination can :

$$\Delta W = 3I^2Rt = \Delta Pt \qquad (1)$$

if separate shown consumer of downloads yearly graph in Figure 1 (curve 1 line) as described if , then on the network energy a waste downloads square of the graph to the surface proportional will be (curve 2 line) and according to the tune expression can :

$$\Delta W = \int_0^1 \Delta P dt (2)$$

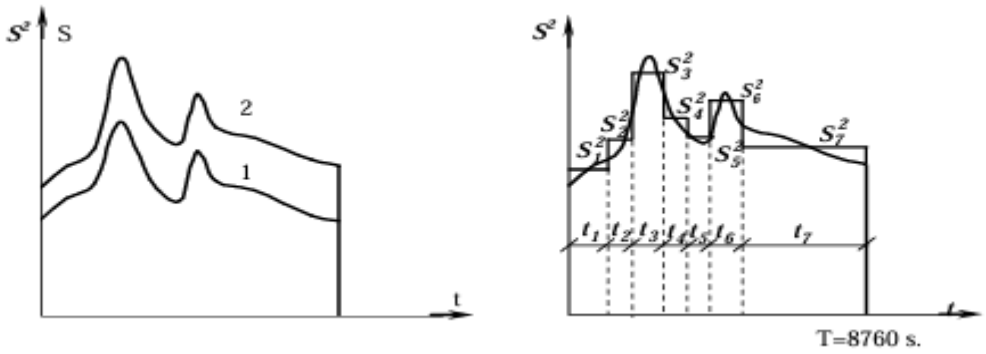


Figure 1. Separately shown of the consumer yearly upload graph for in tune expression harvest will be [2-3]:

Figure 2. Stepped yearly upload graph yes a waste

Power waste expression if we put , in that case energy a waste for the following expression harvest will be :

$$\Delta W = \int_0^T (\frac{P^2+Q^2}{U^2} r)dt = \frac{r}{U^2}\int_0^T (P^2+Q^2)dt = \frac{r}{U^2}\int_0^T S^2 dt (3)$$

Here T is the consumer connection time If the consumer one year during connecting standing if , i.e. T-8760 hours if , then yearly energy waste determination curve 2 for with limited surface determination is enough In practice downloads square yearly graph small , S1, S2, S3... (Fig. 3) loads in intervals 11 , 12, 13. to the value of belongs to has been paid approximate graph with replacement can In it yearly energy a waste according to the tune total in the form of defined as :

$$\Delta W = \frac{r}{U^2}(S_1^2 t + S_2^2 t_2 + S_3^2 t_3 + \ldots + S_n^2 t_n)(4)$$

On the network energy waste to determine next method average

square power to the values based on method (Fig. 3). Average square

power so power that it is the whole T time during immutable from the line

flowing while standing face giver energy a waste that's it time T on the line during upload to the graph according to power flowing when standing equal to will be From this come came out without coordinate arrows ,$S_{ur.kv}^2$ and with T limited right of the rectangle surface coordinate axes , of S² graph and with T bordered of the figure to the surface equal to will be [4-5].

$S_{ur.kv}$ of value determine the energy waste in tune from the expression to find can

$$\Delta W = \frac{r}{U^2} S_{ur.kv}^2 * T (5)$$

Above given energy waste determination methods one series to shortcomings have is only downloads graph just in case use can Widespread maximum wastes time to the concept based on method energy waste count much is simple .

Downloads yearly graph for (Fig. 4) so T $_{max}$ the time to find maybe it is time during consumer immutable S $_{max}$ upload with working , from the network acceptance doer energy is one year during upload according to the graph S(t). work from the network acceptance doer to energy equal to be [6-7].

$$W = P_{maks}T_{maks} = S_{maks}cos\varphi_{ur}T_{maks} = cos\varphi_{ur} * \int_0^{i=8760} Sdt (6)$$

Here the shadow Fur is the year during presumably accepted as immutable done power of the coefficient average value ; Tmax maximum in download work it 's time Hence, from (6).

$$T_{maks} = \frac{\int_0^{i=8760} Sdt}{S_{maks}} (7)$$

From the line being transmitted yearly energy the amount and maximum asset power knowing , from expression (6). maximum in power work the time determination can :

$$T_{maks} = \frac{W}{P_{maks}} = \frac{W}{S_{maks}cos\varphi_{ur}} \quad (8)$$

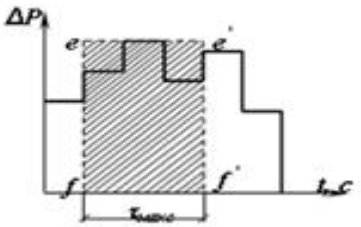
Any consumer his own maximum in download work time size with is characteristic . In calculations this size statistics to information basically acceptance to do possible [8-9].

To the above similar way such time t determination maybe it is time during on the line maximum power wasted DR max immutable has been without face giver energy a waste that's it line one year during upload to the graph according to without variable power a waste with worked in the case energy wasted equal to be (Fig. 5). Such a time t maximum wastes it is called time . DR. max and t is known when energy a waste sides this to quantities equal to has been right of the rectangle surface with is determined (Figure 5):

$$\Delta W = \Delta P_{maks}\tau = \frac{r}{U^2} S_{maks}^2 \tau = \frac{r}{U^2} \int_0^{i=8760} Sdt (9)$$

From here maximum wasted work time defined as :

$$\tau = \frac{\Delta W}{\Delta P} = \frac{\int_0^{i=8760} Sdt}{S_{maks}^2} (10)$$



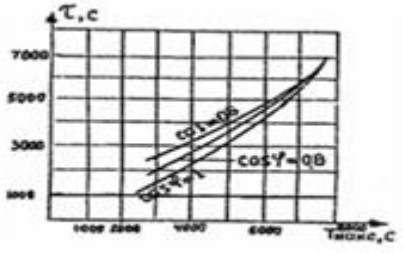


Figure 5. Maximum a waste the time determination

Figure 6. Maximum wastes time t maximum upload with work time Dependence on T $_{max}$ there is .

In practice τ the T $_{max}$ through determination because it is possible they are between certain dependence there is .

From formulas (1) and (10). apparently as T $_{max}$ downloads of the graph change to the character , that is this to the function S(t) under the integral in the expressions dependτ of that T depends on $_{max}$ determination for each character of consumers each character Tmax to sizes have has been one series downloads graphics and S²(t) curve the line determine that graphics Integrating , then expressions (7) and (10). using t that T depends on $_{max}$ sof of each character values for determination necessary [12-13].

It's a curve from the lines using , max wastes time method using energy waste determination can

Calculation order as follows . Active whose resistance was r being viewed

of the line asset power coefficient $cos\varphi = \frac{P_{maks}}{S_{maks}}$has been maximum download $S_{maks} = \sqrt{P_{maks}^2\, Q_{maks}^2}$ the and given categorical of the consumer

maximum in download work time T $_{max}$ the determined and given $cos\varphi$and identified T is presented in Figure 6 for curve lines through maximum a waste time τ the is found . of the line at a certain nominal voltage U $_n$ in it yearly electricity energy a waste ΔW is the formula (9). using we find can :

$$\Delta W = \frac{r}{U^2}\, S_{maks}^2 \tau$$

Or

$$\Delta W = \frac{P_{maks}^2\, Q_{maks}^2}{U_n^2} r * \tau (11)$$

Line during one how many downloads connected in case in it energy a waste xar one in the plot energy waste to add based on is determined .

if being viewed line plot through each hil R $_{1max}$, R $_{2max}$, R $_{3max}$ and to them suitable maximum in download work time T $_1$ T $_2$ T $_3$ has been to consumers power being transmitted if so , to him waste determination for being transmitted energy average value account received in case , (8) by formula defined maximum in power work of time average value get should [14-15]:

$$T_{maks} = \frac{W}{P_{maks}} = \frac{P_{1\,maks}T_{1maks}+P_{2\,maks}T_{2\,maks}\dots+P_{n\,maks}T_{n\,maks}}{K_{\rho}(P_{1maks}+P_{2maks}+\dots+P_{n\,maks}} = \frac{\sum_1^n P_{i.maks}T_{i\,maks}}{K_0\sum_1^n P_{i.maks}}$$

Here , K $_o$ is the loads of the group from the graph defined one timeliness coefficient of . Steel conductive on the lines energy waste in the calculation of current change because of to be asset resistance account get necessary

In the transformer energy a waste In the transformer energy a waste two from the part organize found :

1. to downloads depends has been a waste $\Delta R_k\tau$,
2. to downloads depends didn't happen a waste $\Delta R_S\tau$.

So, $$\Delta W = \Delta P_S T + \Delta P_k\tau (13)$$

Here is the T- transformer work time (if transformer year during connected if , then T=8760 s).

Hard work power a waste ΔR_s from the transformer flowing to power connection maybe not given of the transformer to the structure depends is the voltage and of power something in values immutable size organize reaches [16].

Short connection power waste , that is in my lap power a waste ΔR_k q iska connection to the nominal value of waste equal to without , from the transformer flowing to power depends without will change . So so that 's it a waste of powers per square is proportional , that is :

$$\frac{\Delta P_k}{\Delta P_{X.n}} = \frac{S_t^2}{S_{t.n}^2} (14)$$

Here - from the transformer flowing real power ; S $_{tn}$

nominal power of the transformer .

In it real short connection power according to the tune defined as :

$$\Delta P_k = \Delta P_{X.n}\frac{S_t^2}{S_{t.n}^2} \qquad (15)$$

ΔR_S and ΔR_kThe values of are given in the manual tables as catalog data of transformers. $\tau$the value of T $_{max}$ and $cos\varphi$ of values with will be identified .

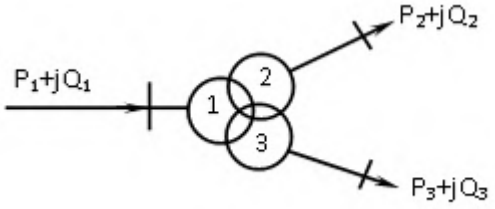
n transformers operate in parallel them a waste divisor common energy to (13) and (15). basically according to the tune found :

$$n\Delta W_1 = n\Delta P_s T + \Delta P_{k.n}\left(\frac{S_t^2}{S_{t.n}^2}\right)(16)$$

Here S $_t$ from transformers flowing powers sum ;$S_{t.n}$ each one some nominal power of the transformer .

Three chubby in transformers common power waste to find for (Fig. 7) eng 2 and 3 first wastes is determined , then this power waste both from the crucibles flowing to powers in addition to the 1st chulgam a waste is determined . Divided chubby power in transformers as well a waste each one my stomach for separately account is obtained [17-18].

7-picture. Scheme of a three-phase transformer



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DESIGN ISSUES OF AUTOMATION SYSTEMS AND THEIR FUNCTION

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Abstract: Modernization of existing enterprises of chemical, food and other branches of industry and creation of new ones envisages the implementation of large-scale works related to solving various issues of automation of production processes. Development of automation systems and implementation directly into production processes is a multi-stage process. It includes scientific research, design and assembly-adjustment works, as well as a set of activities that ensure reliable operation of automation systems during operation.

Key words: Automation, production, technological processes, Energy control and calculation automation systems, technological waste.

The issues to be solved in the automation of the production processes of modern production require experts to know the principles of the structure and operation of various automation devices, the methods of making different types and classes of automatic systems, as well as work in the field of automation of technological processes. also requires mastery of technical language. This means that a logically calculated and technically based system of automation of a technological process should be expressed in a language that is equally understandable for specialists who are engaged in the issues of installation, adjustment and use of automation systems. In this case, all specialists should have a unified understanding of the automation system being created with tools, implementation of given adjustment laws, methods of assembling tools and automation tools, transfer of impulse and command lines, and source lines. This is to understand in a word, for example, how installation workers can be achieved without the direct participation of installers in the process of developing or using the system. Such mutual understanding is provided by means of a specially developed technical document, which is called a technological process automation project.

Construction of new industrial facilities and reconstruction of existing enterprises is carried out on a project basis. The project consists of a complex of technical documentation, which includes notes that fundamentally justify the need for construction or reconstruction of the object, calculations and drawings necessary for the preparation of non-standard equipment, as well as for the implementation of

all types of construction, assembly and adjustment work. Depending on the complexity of the object under construction, the project will consist of certain parts. The project may have engineering - economic, technological, construction, plumbing, electrical, automatic parts. Controlling and automatic adjustment and management of technological processes, which is a part of the automation project, is carried out by the automation department (group) of the organization or technological design institute specialized in this field. This project includes control-measuring devices, adjusters, automation and signaling devices that ensure the rational operation of technological processes and safety in the operation of equipment, technical documents used in the object being designed. The basis for the implementation of the design is the order given by the organization that creates the technological part of the project and/or the customer. Sometimes the automation project organization is also involved in the creation of the task. Design tasks include:

a) the composition of the object being designed, a brief description of the technological process, the characteristics of devices and equipment;

b) the result of controlled and adjusted quantities, indicating the description of the environment;

c) errors allowed in control and correction and functional signs of devices (display, recording, integration, signaling, etc.). The design of control, automatic adjustment and control systems can be carried out according to special instructions. In the design of automation systems of technological processes using computers, as well as in the automation of objects that have not yet been mastered, or with very complex technological production, or in the automation of objects where new equipment is used, scientific-testing or experimental-design works are carried out before the above-mentioned design stages, and from their results It is used in creating a project. In the process of creating a technical project, it is necessary to justify the selection of the size of automation systems, the basis of their creation and the complex of technical tools that implement them, as well as to determine the estimated prices of automation systems. In addition, at the stages of the technical project, issues of conformity of technological processes and basic technological equipment to the conditions of automation are considered, and if necessary, measures are taken to modernize or reconstruct them in order to create conditions suitable for automation. When creating working drawings, the tasks of the technical project, which are sufficient for the preparation of the board and remote control, the selection of automation tools and devices, and the implementation of the order, as well as construction and assembly work, are determined and detailed. The size and

composition of the working drawings of automation systems should allow for the implementation of construction and assembly works in modern ways and include the use of blocks prepared outside the assembly area.

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ANALYSIS OF THE AUTOMATION PROCESS OF TWO-RATE CONSUMERS IN ELECTRICITY SUPPLY

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Abstract: Today, increasing the share of renewable energy sources in the energy sector of our country is becoming one of the most important tasks. The above-mentioned large investment projects are among the first steps taken to expand the scope of "green energy" use. Alternative energy sources created in cooperation with foreign partners will provide economic sectors, regions and population with continuous electricity and reduce harmful emissions to the environment.

Key words: Automation, production, technological processes, Energy control and calculation automation systems, technological waste.

At the beginning of the 17th century, the term "electricity" became popular, and various experiments began. In 1747, the famous scientist and statesman Benjamin Franklin in his work "Experiments and Observations with Electricity" described electricity as an "intangible fluid", an "invisible current". He also introduced the concept of positive and negative charge in his work and represented them with the mathematical symbols (+) → positive and (–) → negative. Benjamin Franklin invents an anti-lightning device - a lightning conductor, and with its help proves the compatibility of lightning with electricity, creates the theory of electricity.

Our ancient ancestors observed the natural phenomena of lightning, i.e. lightning strikes, and the characteristics of some electric fish. For example, in ancient Egyptian inscriptions dating back to 2750 BC, electric fish were called "Nile Thunderbirds". In addition, Pliny the Elder wrote that the electric fish had a "paralyzing ray". Thus, in 1785, thanks to the discoveries of the French military engineer Charles de Coulomb, the Italian scientist Michael Faraday, Luigi Galvani, Alessandro Volta, and several other scientists, the understanding of electricity improved. Russian scientist Vasily Petrov, Pavel Yablochkov and Alexander Lodigin, Norman scientist Warren De la Rue, Heinrich Gebel, Joseph Swann and in 1879 the first electric light bulb appeared thanks to the experiments conducted by the inventor Thomas Edison.

he first equipment of electricity supply, in general, this term itself came to Turkestan at the beginning of the 20th century. Until 1917, under the rule of Tsarist

Russia, Uzbekistan produced an average of 3.3 million kWh of electricity per year. By the 1920s and 1930s, diesel power plants were built in Tashkent, Samarkand, Bukhara and other cities.

Until 1917, power plants in the territory of present-day Uzbekistan had a capacity of 3,000 kW and produced 3.3 mln. KVT electricity was produced. The structure of the plan for the electrification of the Turkestan region was of great importance. In 1923, the construction of a hydroelectric power station (GES) began in the Bozsuv canal on the outskirts of Tashkent. In 1926, the first 2,000 kW Bozsuv hydroelectric power station, the largest in Central Asia at that time, was put into operation. He established successively built hydroelectric power stations with a capacity of 180 thousand kW in the Chirchik-Bozsuv direction.

In 1939, a 12-MW condensing turbine unit of the Kuvasoy State District Power Station (GRES) and two 6-MW turbines of the thermal power station of the Tashkent Textile Combine were commissioned on the basis of the Kyzylqiya coal basin. caused the need to build. Simultaneously with the commissioning of the Kadir HPP, the first in the Republic, a 35 kV power transmission line from this HPP to Tashkent was put into operation.

In 1939-1940, 110 kV overhead lines were connected to Kuvasoy GRES and Andijan. with the city, and connected Tovaqsai SES with the city of Chirchik.

During the years of the Patriotic War, a 35 kV ring-shaped overhead line connecting the Tashkent area was completed, and a high-power "North" substation was built to supply the northern industrial district with electricity.

In 1943, Farhod HPP with a capacity of 125,000 kW was built on the Syrdarya River.

made it possible to develop the chemical industry and supply water to irrigated lands. 700,000 water dams were built, allowing the development of the lands of Uzbekistan and neighboring republics. Development of the Angren coal basin became the basis for the establishment of two thermal power plants with a capacity of 600 thousand kW - Angren DRES and Almalyk Thermal Power Center (EIM). In 1972, the first large critical parameters in Central Asia in the Syrdarya GRES:

A 300 MW power unit operating at a steam pressure of 240 and a temperature of 545°C was commissioned. At present, there are 10 power units of Sirdarya GRES. Today, 4 organizations are responsible for the electric power network of Uzbekistan, and the Ministry of Energy of the Republic of Uzbekistan is the coordinating body that determines the strategy of future plans in the network.

Electricity in our country is mainly produced by the joint-stock company "Issiklik elektr stansiya" and partially by the joint-stock company "Uzbekgidroenergo", as well as by solar photoelectric plants that are currently operating at a slightly smaller capacity and are being commissioned. It is transmitted through high-voltage electric networks and substations of the joint-stock company "Uzbekistan National Electric Networks" and distributed and delivered to consumers by the joint-stock company "Regional Electric Networks". To explain it more simply, when the water collected in the water reservoir is discharged to the lower basins, a magnetic field is generated due to the rotational mechanical movement and electricity is produced. In thermal power plants, natural gas, underground gas, coal and fuel oil are burned, water is brought to a high temperature, then thermal energy is converted into mechanical energy (with the movement of turbines), and mechanical energy is converted into electrical energy.

Energy is a field of public economy, science and technology, which includes the creation of various types of energy, their transformation from one type to another, their transmission and delivery over a certain distance, their use in all areas, and the solution of theoretical and practical problems related to them. In the course of human development, people's needs for various sources of energy forced them to use natural sources - wood, coal, peat, etc., as well as wind and water flow energy (mills, wind and water mills). Later, due to the progress of science and technology, the scientific and technical revolution, the need for electricity increased greatly, mainly from the second half of the 20th century. These factors required rapid development of the energy industry. The development of science and technology is expressed through the development of new methods of energy production and its transformation, the creation of new efficient equipment and technologies, the centralization of energy distribution, etc. The science of energy deals with the issues of converting the potential energy of natural energy resources into usable and useful energy types in the national economy and solving related scientific and technical problems.

The development of energy depends in many ways on the extent to which the country is provided with energy resources. Coal, oil, natural gas, peat, wood, shale, water, electric and nuclear energy, wind and solar energy are energy resources. Energy resources are divided into fuel (coal, oil, gas, nuclear, peat, shale, wood) and non-fuel means (water, wind, solar energy, etc.). E. resources related to fuel are non-renewable, and those not related to fuel are renewable resources.

To compare the amount of different fuel energy resources on a global scale, a conditional fuel unit (7000 kcal of heat release when 1 kg of fuel is burned) is

adopted. The potential reserves of all fuel resources in the world (except for nuclear energy) are 25,000 billion. t is equal to conventional fuel. 95% of it corresponds to solid types of fuel. The reserves of uranium and thorium, which are the main source of nuclear energy, together with the reserves in the waters of the world ocean, are 69,000 billion. t is equal to conventional fuel. Natural resources of the most used energy (coal, oil, gas) are unevenly distributed among the countries of the world. In this regard, taking into account the energy resources of Uzbekistan, the country's energy sector is the basic sector of the national economy. The energy system of Uzbekistan fully meets the needs of the national economy and population for fuel (coal, gas, oil), electricity, and is also exported. There are 20 thermal power plants and 27 hydroelectric power plants (HPS) operating in Uzbekistan. Their total installed capacity is 11.5 mln. kWh (with the possibility of producing 55 billion kWh of electricity per year), the total capacity of transformers is 44850 MVA, the total length of electrical networks. 232 thousand km, including 1660 km of high power (500 kV).

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ANALYSIS OF THE AUTOMATION PROCESS OF TWO-RATE CONSUMERS

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Abstract: The most responsible work in terms of automation, without a doubt, falls on personnel. Today's personnel should be able to use new equipment and technology, to widely introduce automation of technological processes, to identify and accelerate production reserves, to know their native language, the State language, at a high technical and technological level. In particular, young personnel have the responsible task of becoming pioneers of science and technology development. Therefore, it is important that not only specialists in this field know the basics of control and automation of technological processes, but also technologists-designers, economists and others

Key words: Automation, production, technological processes, Energy control and calculation automation systems, technological waste.

It envisages the implementation of a large volume of work related to the solution of various automation issues. Development of automation systems and implementation directly into production processes is a multi-stage process. It includes scientific research, design and assembly-adjustment works, as well as a set of activities that ensure reliable operation of automation systems during operation. The issues to be solved in the automation of the production processes of modern production require experts to know the principles of the structure and operation of various automation devices, the methods of making different types and classes of automatic systems, as well as the work in the field of automation of technological processes. also requires mastery of technical language. This means that a logically calculated and technically based system of automation of a technological process should be expressed in a language that is equally understandable for specialists who are engaged in the issues of installation, adjustment and use of automation systems. In this case, all specialists should have the same understanding in the field of equipment supply of the automation system being created, implementation of the given adjustment laws, methods of assembly of tools and automation tools, transfer of impulse and command lines, and source lines.

It leads to the emergence of energy control and calculation automation systems (ENHAT). ENHAT performs continuous control based on transmission of liquid, gas and electric energy, etc., in the form of a continuous, digital signal to any distance. This system provides continuous control and management of commercial consumption and all desired quantities when provided with appropriate EHM software. It allows to completely eliminate technological waste (losses) and waste caused by the "human factor". Information and communication technologies reduce the consumption of fuel, gas, electricity and reduce wastage, thus solving the problem of energy saving. The automatic control and registration system serves as the most necessary tool of the market economy, it clarifies the mutual problems of the parties. Modernization, technical and technological re-equipment of the leading sectors of the economy is carried out on the basis of information and communication technologies.

It was reported that until 2030, the production of electricity will be increased from 5900 MW to 29200 MW, the consumption of natural gas in the production of electricity will be reduced from 16.5 billion cubic meters to 12.1 billion cubic meters, and the losses in the transmission of electricity will be reduced by 2.35%. , and it is planned to reduce it by 6.5% in distribution.

According to the report, this strategy sets medium-term and long-term goals for the country's electricity supply in the period from 2020 to 2030 and will be analyzed as necessary based on continuous analysis.

The strategic goal of the document is to provide the population and economy of Uzbekistan with electricity on the basis of competitive prices, to develop a balanced energy sector that includes the best world practices and modern trends in global electricity.

• modernization and reconstruction of existing power plants, construction of new power plants using energy-efficient technologies for power generation;

• improvement of the electricity accounting system;

• development of renewable, especially solar energy sources; implementation of legal reforms to improve the tariff policy and ensure access to the wholesale market.

Also, in this strategy, in the development of renewable energy sources, special attention is paid to the improvement of energy supply to the regions that currently have a shortage of electricity. For this purpose, it was announced that measures for wide application of public-private partnership in this field are defined in the strategy.

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VOYAGA YETMAGANLAR JINOYATCHILIGINING VUJUDGA KELISH SABABLARI VA ULARNING JAMIYATGA TASIRI

Usmonov Jaloliddin Sherzod o'gli

Kalit so'zlar: voyaga yetmagan, oila , sog,lom muxit , jamiyat , tarbiya , oilaviy muxit

Anotatsiya

Ushbu maqola voyaga yetmaganlar o'rtasida nazoratsizlik va huquqbuzarliklar profilaktikasini amalga oshirish faoliyatining tushunchasi, voyaga yetmaganlar o'rtasida nazoratsizlik va huquqbuzarliklar profilaktikasining turlari, chora- tadbirlari, bu chora- tadbirlarni tashkil etish tartibi, bugungi kundagi xolati va voyaga yetmaganlar o'rtasida huquqbuzarliklar profilaktikasini tashkil etishning o'ziga xos xususiyatlar, bundan tashkari voyaga yetmaganlar o'rtasida nazoratsizlik va huquqbuzarliklar profilaktikasini tartibga soluvchi huquqiy asoslar, voyaga yetmaganlar bilan ishlashning amaliyoti tahlili va ularga nisbatan ko'llaniladigan chora-tadbirlar, huquqbuzarlik sodir etgan voyaga yetmaganlar bilan ishlashdagi muammo va kamchiliklar, shuningdek ayrim turdagi mavjud muammo va kamchiliklarni bartaraf etish bo'yicha bir kator takliflar, voyaga yetmaganlar o'rtasida nazoratsizlik va huquqbuzarliklar profilaktikasi faoliyati buyicha boshka xorijiy davlatlarning ilg'or xorijiy tajribasi xamda milliy konunchiligimizdan farkli va o'xshash tomonlari, shuningdek, yukorida keltirib o'tilgan jixatlardan foydalangan xolda ushbu faoliyatni takomillashtirish yunalishlari yoritilgan.

ANNOTATION

In this graduating moral work, the followings are described the concept of the inspector of prevention for teenage misbehavior, the types of teenage crime prevention, the ways of carrying out these types, their current situations unique methods of carrying out teenage crime prevention on side of inspector of crime prevention, as well as basis of laws that controls teenage crime prevention, the analysis of practice of working with teenagers and the procedural documents used in in this practice, mistakes and omissions observed while working with previously convicted people, a set of suggestions to deal with a number of mistakes and faults, developed experience of foreign countries to carry out teenage crime prevention and similarities and contrasts with them in our national

law system, with the approaches to develop the field by using the above-mentioned aspects.

KIRISH: Ma’lumki, barcha shaxslar birinchi tarbiyani oilada oladi va jamiyatga mustaqil qadamni oila orqali qo‘yadi. Oiladagi muhit sog‘lom bo‘lsa, u yerda tarbiyalanayotgan voyaga yetmaganlar tarbiyasi to‘g‘ri tashkil etilgan, xulqatvori va ta’lim olish jarayoni nazorat ostiga olingan bo‘ladi. Bunday oilalarda ota-ona va oilaning boshqa a’zolari tomonidan g‘ayriijtimoiy xatti-harakatlar qilish, voyaga yetmaganlarni turli g‘ayriijtimoiy illatlarga jalb etish kabi salbiy harakatlar sodir etilmaydi. Chunki, bu toifadagi oilalar jamiyat uchun xavf-xatar keltiradigan farzandlarni tarbiya qilmaydi. Biroq, jamiyatda shunday oilalar ham borki ular jamiyat hayoti uchun keltirayotgan salbiy oqibatlarni tasavvur etish ham, juda qiyin. Bunday oilalar «ijtimoiy jihatdan xavfli ahvolda bo‘lgan oila» deb e’tirof etilib, alohida toifadagi oila hisoblanadi. Garchi «ijtimoiy jihatdan xavfli ahvolda bo‘lgan oila» tushunchasi mazmun-mohiyati bilan keng ma’noga ega bo‘lsa-da, ammo noto‘liq bo‘lgan va ba’zan huquqbuzarliklar sodir etilib turiluvchi oilalarni ijtimoiy jihatdan xavfli ahvolda bo‘lgan oila deb e’tirof etish noto‘g‘ridir. Negaki, O‘zbekiston Respublikasining «Voyaga yetmaganlar o‘rtasida nazoratsizlik va huquqbuzarliklarning profilaktikasi to‘g‘risida»gi[1] qonunining 3-moddasida ijtimoiy jihatdan xavfli ahvolda bo‘lgan oila tushunchasiga quyidagicha ta’rif berilgan: «ijtimoiy jihatdan xavfli ahvolda bo‘lgan oila –ota-ona yoki ota-ona o‘rnini bosuvchi shaxslar voyaga yetmaganlarni ta’minlash, tarbiyalash va ularga ta’lim berish bo‘yicha o‘z majburiyatlarini bajarishdan bo‘yin tovlayotgan yoki lozim darajada bajarmayotgan yoxud ularning xulq-atvoriga salbiy ta’sir ko‘rsatayotgan yoki ular bilan shafqatsiz muomalada bo‘layotgan oila»[2].

Ijtimoiy jihatdan xavfli ahvolda bo‘lgan oiladayashovchi er-xotin o‘rtasida vujudga keladigan nizolarning kriminologik va psixologik xususiyatlari, oqibatlari hamda o‘ziga xos jihatlari bevosita boshqa nizolardan tubdan farq qiladi. Tahlillar shuni ko‘rsatmoqdaki, oilaning ijtimoiy jihatdan xavfli ahvolga kelishiga oilada nosog‘lom turmush tarzini yuritish, oila a’zolari o‘rtasida samimiy munosabatlarning mavjud emasligi, erkakning o‘z manfaatini ayollar manfaatidan

[1]ЎзбекистонРеспубликасининг 2010 йил 29 сентябрдаги «Воягаетмаганларўртасиданазоратсизликваҳуқуқбузарликларнингпрофилактикаситўғрисида»гиқонуни.http://www.lex.uz

[2] Ўзбекистон Республикаси Президентининг «Вояга етмаганлар ўртасида назоратсизлик ва ҳуқуқбузарликларнинг профилактикаси тўғрисида»ги қонуни. http://www.lex.uz

ustun qo‘yishi kabi holatlar birmuncha ko‘proq kuzatiladi. Bunday holatlar oilada shaxs huquqlari poymol bo‘lishiga olib keladi. Ta’kidlash joizki, fuqarolar oilaviy munosabatlardan kelib chiqib huquqlarni o‘z xohishiga ko‘ra tasarruf etadilar.

Oila a’zolarining o‘z huquqlarini amalga oshirishlari hamda o‘z majburiyatlarini bajarishlari oilaning boshqa a’zolari va o‘zga shaxslarning huquqlari, erkinliklari va qonuniy manfaatlarini buzmasligi shart. Zero, har qanday huquqbuzarlikning sodir etilishida shaxsning konstitutsiyaviy huquq va erkinligi, sha’ni, qadr-qimmati poymol etilgan bo‘ladi. Bu ayrim huquqiy ongi va madaniyat darajasi rivojlanmagan shaxslar ma’lum sabablarga ko‘ra, o‘z huquq va erkinligini himoya qilish u yoqda tursin, ularni bilish va anglashga ham qodir emasligidan dalolat beradi.

Ma’lumki, profilaktika inspektorlarining ijtimoiy jihatdan xavfli ahvolda bo‘lgan oilalarni aniqlash, oila-turmush doirasida sodir etiladigan huquqbuzarliklarni oldini olish, hisobga olish, tegishli jazo choralarini qo‘llash hamda ular bilan yakka tartibdagi tarbiyaviy ahamiyatga ega bo‘lgan ishlarni amalga oshirishda bir qator jamoat tuzilmalari bilan tasdiqlangan reja asosida hamkorlikni amalga oshiradi. Fuqarolarning o‘zini o‘zi boshqarish organlari mahalla qo‘mitalarida yarashtirish komissiyalari tomonidan oilada huquqbuzarliklarni bartaraf qilish, er-xotin o‘rtasida buzilgan munosabatlarni ko‘rib chiqish, ularni yarashtirish borasidagi ishlar fuqarolarning o‘zini o‘zi boshqarish huzuridagi yarashtirish komissiyalarida ko‘rib chiqilayotganligi o‘zining samarasini bermoqda.

Ushbu hamkorliklar natijasida o‘tgan yillar mobaynida qanchadan qancha oilaviy mojarolar, ajralishlar, nizoli holatlar, janjallar kabi masalalar ko‘rib chiqilib ularni muhokama qilish natijasida oilalardagi notinchliklarga va voyaga yetmaganlar tomonidan sodir etiladigan va sodir etilgan huquqbuzarliklarning oqibatlariga barham berilmoqda. Kolversa, jamiyatda xukukbuzarliklarning oldini olish, jinoyatchilikka karshi kurash maksadida maxalla jamoatchilak posponi va xukukbuzariliklar profilaktikasi inspektorlari ko‘rsatmalariga ko‘ra xar bir mahallalarda fidokor yoshlar jamoat tuzilmalari O‘zbekiston Respublikasi Prezidentining 2018 yil 24 dekabrdagi 4075-sonli «Jamoat xavfsizligini ta’minlash samaradorligini oshirish bo‘yicha qo‘shimcha chora-tadbirlar to‘g‘risida»gi qarori bilan xam jamiyatimizda xukukbuzarliklarning oldini olish va jinoyatchilikka karshi kurashish maksadida har bir mahallada «Fidokor yoshlar» jamoatchilik patrul guruhlarini shakllantirish va ularning faoliyatini tashkil etish sohasidagi Toshkent shahrining ijobiy tajribasi respublikaning barcha hududlariga tatbiq

etilishi voyaga yetmaganlar va yoshlarning o‘zlari qatori barcha tengdoshlariga namuna sifatida va xar bir ota-onalarning farzand tarbiyasida u kabi tengdoshlarining o‘rnak kilib kursatishlarining o‘zi xam voyaga yetmaganlar va yoshlar o‘rtasida profilatikasi inspektori faoliyatida yakindan yordam hisoblanib qolversa, ular o‘rtasida hukubuzarliklarning keskin darajada kamayishiga o‘z xissasini ko‘shgan xisoblanadi[3].

Mamlaktimizda voyaga yetmaganlar va yoshlarning keng qamrovli ahamiyatini yanada orttirish va ularni rolini kuchaytirish maqsadida O‘zbekiston Respublikasi Prezidentining farmoni bilan vasiylik va homiylik tizimini isloh qilish yo‘li bilan bolalarning oilada yashash va tarbiyalanish huquqini ta’minlash, yetim va ota-ona qaramog‘isiz qolgan bolalarni ijtimoiy himoya qilishni kuchaytirish, bola huquqlariga oid xalqaro standartlar qoidalarini implementatsiya qilish va mazkur sohada huquqlarni qo‘llash amaliyoti ustidan samarali parlament va jamoatchilik nazoratini ta’minlash, maktabgacha ta’lim va umumta’lim muassasalarida “Ayollar huquqlari” va “Bola huquqlari” o‘quv kurslari joriy etilishi beogilab berildi. [4]

Qabul qilingan normativ-huquqiy hujjatlar ya’ni ayni paytda ularni har tomonlama ijtimioy himoyalash masalasiga alog‘ida etibor qaratgan desam yanglishmagan bo‘laman. O‘zbekiston Respublikasi Prezidentining «Bola huquqlarining kafolatlari to‘g‘risida»gi Qonuni O‘zbekistonning huquq tarixida bola huquqlariga oid birinchi maxsus qonun bo‘ldi. Mazkur Qonun bolaning huquqiy ahvolini yaxshilashga doir munosabatlarni tartibga solishga, bola huquqlarini va erkinliklarini yuridik kafolatlashga qaratilgan. Unga binoan, bola huquqlari va manfaatlarini amalga tatbiq etilishini ta’minlaydigan kafolatlarni beligilash qonun bilan tartibga solinadigan asosiy ob’ekt hisoblanadi.

O‘zbekiston Respublikasining Konstitutsiyasidahamda qonunchilikka muvofiq har bir voyaga yetmagan va yosh fuqaroning huquqlari va erkinliklari kafolatlanishi va bola huquqlarini himoya qilish bo‘yicha davlat siyosatining asosiy yo‘nalishlari belgilab berilgan:

–bolaning kamsitilishiga yo‘l qo‘ymaslik;

[3] Ўзбекистон Республикаси Президентининг 2018 йил 24 декабрдаги «Жамоат хавфсизлигини таъминлаш самарадорлигини ошириш бўйича қўшимча чора-тадбирлар тўғрисидаги» ПҚ-4075-сонли қарори.http://www.lex.uz

[4] Ўзбекистон Республикаси Президентининг 2022 йил 28 январдаги «2022—2026 йилларга мўлжалланган янги Ўзбекистоннинг тараққиёт стратегияси тўғрисида»ги ПФ-60 сонли Фармон.http://www.lex.uz

–bolaning sha’ni va qadr-qimmatini himoya qilish;

–bolalar huquqlari va imkoniyatlarining tengligini ta’minlash[5]. Yosh fuqarolarning huquqlari va erkinliklari cheklanishi mumkin emas, qonunda belgilangan hollar bundan mustasno. Jinsi, irqi, millati, tili, dini, ijtimoiy kelib chiqishi, e’tiqodi, shaxsi va ijtimoiy mavqeidan qat’i nazar, yoshlarning huquqlari va erkinliklarini biror bir tarzda bevosita yoki bilvosita cheklashga yo‘l qo‘yilmaydi hamda bunday cheklash qonun hujjatlariga muvofiq javobgarlikka sabab bo‘ladi. Davlat voyaga yetmaganlarni jazoni ijro etish muassasalarida va ixtisoslashtirilgan o‘quv-tarbiya muassasalarida saqlashda shaxsning huquqlariga va qadr-qimmati hurmat qilinishiga, insonparvarlik prinsiplariga rioya etilishini kafolatlaydi. Voyaga yetmaganlar uchun ular sodir etgan huquqbuzarlikning og‘irlik darajasi va ularning yoshi hisobga olingan holda jazoni ijro etish muassasalarida va ixtisoslashtirilgan o‘quv-tarbiya muassasalarida qonun hujjatlariga muvofiq rejimda saqlash nazarda tutiladi[6].

Qonun hujjatlarida belgilangan tartibda voyaga yetmaganlar va yoshlar uchun quyidagilar kafolatlanadi:

bepul tibbiy xizmat ko‘rsatilishi; bepul umumiy o‘rta va o‘rta maxsus ta’lim olish;

davlat ta’lim muassasalarida davlat grantlari doirasida bepul kasb-hunar va oliy ta’lim olish; davlat sport-sog‘lomlashtirish va madaniy-ma’rifiy muassasalariga

borish uchun shart-sharoitlar yaratish; uy-joy qurish, olish va uni rekonstruksiya qilish uchun imtiyozli

kreditlar berish; ta’lim muassasalarida o‘qish uchun imtiyozli kreditlar berish; yetim bolalarni va ota-onasining qaramog‘idan mahrum bo‘lgan bolalarni

turar joylar bilan ta’minlash; o‘rta maxsus, kasb-hunar yoki oliy ta’lim muassasasini bitirganidan

keyin bandlikni ta’minlash bo‘yicha chora-tadbirlar ko‘rish; mehnat sohasida yoshga doir o‘ziga xosliklarni inobatga olgan holda

imtiyozlar berish va ishni ta’lim bilan qo‘shib olib borish uchun shart-sharoitlar yaratish; jamoat transportidan foydalanishda imtiyozlar berish.

[5] Ўзбекистон Республикасининг 2008 йил 7 январдаги «Бола ҳуқуқларининг кафолатлари тўғрисида»ги қонуни.http://www.lex.uz

[6] Ўзбекистон Республикасининг 2016 йил 12 августдаги “Ёшларга оид давлат сиёсати тўғрисида”ги Қонуни.http://www.lex.uz

Ish topishda qiynalayotgan va mehnat bozorida teng sharoitlarda raqobatlashishga qodir bo‘lmagan yosh fuqarolarni ishga joylashtirishga yordam qo‘shimcha ish o‘rinlari va ixtisoslashtirilgan korxonalarni barpo etish, o‘qitish bo‘yicha maxsus dasturlarni tashkil etish, shuningdek ijtimoiy himoyaga muhtoj bo‘lgan yoshlarni ishga joylashtirish uchun korxonalar, muassasalar, tashkilotlarda ish joylarining eng kam miqdori zaxirasini yaratish yo‘li bilan ta’minlanadi. O‘quv jarayoni vaqtida o‘quvchilar va talabalarni jamoatchilik ishlariga jalb etishga yo‘l qo‘yilmaydi, bundan ular tomonidan tanlangan mutaxassislikka mos va o‘quvishlab chiqarish amaliyotining shakli bo‘lgan hollar yoxud o‘quvchilar va talabalar o‘qishdan bo‘sh vaqtida ixtiyoriy mehnat qilgan hollar mustasno. Yoshlar ijtimoiy xizmati o‘z faoliyatini qonun hujjatlariga muvofiq boshqa yo‘nalishlar bo‘yicha ham amalga oshirishi mumkin. Bu kabi normativ-huquqiy asoslar zamonlari rivojlangani sayin rivojlanib sayqallanib va yanada takomillashib boradi, albatta. O‘zbekiston Respublikasi Prezidenti Shavkat Mirziyoev Miromonovichning tashabbuslari bilan isloxotlarning dastlabki yillarida mamlaktimizda voyaga yetmaganlarning va yoshlarning, hamda uyushmagan yoshlarning bo‘sh vaktlarni mazmunli o‘tkazish va ularning ongini qamrab olgan turli hil aksariyat salbiy vayronkor g‘oyalar hurujidan tozalash maksadida respublikamizning har bir viloyatlarida kitobxonlikni keng targ‘ib kilish va ommalashtirish bu orkali yoshlarimizini va voyaga yetmaganlarni kitobni sevishga hamda ona vatanga muhabbat va ajdodlarimiz tarixini mukammal o‘rganish shu asnoda jamiyatda voyaga yetmaganlar tomonidan hukukbuzarliklar va jinoyatlarning oldini olish kabi vazifalarni xal etish muxim dasturilamal bo‘lib xizmat qildi desak xech yanglishmagan bo‘lamiz.Voyaga yetmaganlarning bo‘sh vaqtlarida huquqiy madaniyati, xuquqiy ongini oshirish maqsadida qonunlar ruxi ostida tarbiyalash uchun umumiy o‘rta talim tizmiga shu yo‘nalish bilan bog‘liq fan kiritilishi va o‘qitish kuchaytirish, shuningdek, ommaviy axborat vositalarida ham shu mavzu bilan bog‘liq ko‘rsatuvlar tashkil etish.

Voyaga yetmaganlar bilan ishlash faoliyatiga oid nazariy bilimlarni kuchaytirishga oid taklif va tavsiyalar:

Birinchidan, faoliyatning o‘ziga xususiyatlariniinobatga olgan xoldajinoyat sodir etgan voyaga yetmaganlar bilan ishlash faoliyatining o‘ziga xos xususiyatlaridan biri bo‘lgan *targ‘ibotni* tashkil eta olishdir. Targ‘ibot qanday ko‘rinishda bo‘lmasin, kishi ongi, dunyoqarashi kaliti hisoblanadi. Bosh qonundan tortib qabul qilinayotgan qonunlarning mazmun-mohiyatini tushunib yetish, fuqarolik va turli huquqiy ko‘rsatmalarni bilish, huquqiy targ‘ibotlarni qanday

ko‘rinishi bo‘lmasin uni tahlil qila olish, o‘z huquqini himoya qila olishida namoyon bo‘ladi. Bu esa qonunni buzish nechog‘lik xatoligini, unga nisbatan doimo hurmatda bo‘lish kerakligini tushunishga olib keladi.

Ikkinchidan, hududdagi yoki mahalladagi ***oilalar bilan hamkorlik*** ham muhim o‘rin tutadi. Voyaga yetmaganlar qonunga nisbatan hurmat hissini

uyg‘otib tarbiyalash muhim omil sanaladi. Buning uchun esa ota-ona huquqiy madaniyatdan, qolaversa ma’naviyatdan voqif bo‘lishi lozim. Ushbu kerakli “ozuqa”lar ta’sirida voyaga yetgan farzand qonun ustuvorligini anglab yetishi, oilasi, avlod-ajdodlari tarixini ulug‘lashi, o‘z o‘lkasi, millati, xalqi, tili, dini, madaniyatidan g‘ururlanishi, uni avaylab-asrashi, dunyoga ko‘z-ko‘z qilishi tabiiydir[7].

Uchinchidan, huquqiy tarbiya uzluksiz ekanligini inobatga olish lozimdir.U yoshlikdan boshlab qo‘llanib borilishi maqsadga muvofiqdir. Voyaga yetmaganlar maktabgacha tarbiya muassasalaridayoq xulq-atvor qoidalaridan xabardor bo‘lishi, ma’naviy va ba’zi huquqiy normalar to‘g‘risida boshlang‘ich tushunchalar olishi, kelgusida o‘quv davomida esa bu bilimlar kengaytirilishi va chuqurlashtirilishi huquqiy maqom kasb etishi zarur. Voyaga yetmaganlarga huquqiy tarbiya berishdan ko‘zlangan maqsadlardan biri – har bir yosh inson huquqiy madaniyatni o‘zlashtirib olishiga erishishdan iboratdir. Xulosa qilib aytganda, ichki ishlar organlari tizimida amalga oshirilayotgan islohotlar voyaga yetmaganlar bilan ishlash va huquqbuzarliklar profilaktikasini amalga oshirish bo‘yicha hamkorlikning yangi usul va shakllarini ishlab chiqish, va faoliyatga yangicha tarzda yondashishni talab etmokda.

Foydalanilgan adabiyotlar:

1. http://www.lex.uz(O‘zbekiston Respublikasi Qonun hujjatlari ma’lumotlari milliy bazasi).
2. http://press-service.uz/uz O‘zbekiston Respublikasi Prezidentining rasmiy veb-sayti.
3. http://natlib.uz (Alisher Navoiy Nomidagi O‘zbekiston Milliy kutubxonasi).
4. http://akadmvd.uz (O‘zbekiston Respublikasi IIV Akademiyasi).
5. http://ziyonet.uz (ZiyoNET ta’lim portali).
6. http://utube.uz/ru (Utube.uz ta’lim videoportali).
7. http://book.uz/ (Elektron adabiyotlar kutubxonasi).
8. http://www.xs.uz («Xalq so‘zi» gazetasi).

[7] Севаров О. «Оилада ота-оналар ҳуқуқий саводхонлигини оширишнинг ўзига хос усули // Аёл маънавият гулшани: Илмий-амалий конференция тўплами.

VOYAGA YETMAGANLAR TOMONIDAN SODIR ETILAYOTGAN HUQUQBUZARLIKLAR VA UNING PROFILAKTIKASINI AMALGA OSHIRISHDA VUJUDGA KELAYOTGAN MUAMMOLAR

Usmonov Jaloliddin Sherzod o`g`li

Kalit so`zlar: voyaga yetmaganlar jinoyatchiligi , voyaga yetagan , tajriba , rivojlangan davlatlar, profilaktka

Anotatsiya

Ushbu bitiruv malakaviy ishida voyaga yetmaganlar o‘rtasida nazoratsizlik va huquqbuzarliklar profilaktikasini amalga oshirish faoliyatining tushunchasi, voyaga yetmaganlar o‘rtasida nazoratsizlik va huquqbuzarliklar profilaktikasining turlari, chora- tadbirlari, bu chora- tadbirlarni tashkil etish tartibi, bugungi kundagi xolati va voyaga yetmaganlar o‘rtasida huquqbuzarliklar profilaktikasini tashkil etishning o‘ziga xos xususiyatlar, bundan tashkari voyaga yetmaganlar o‘rtasida nazoratsizlik va huquqbuzarliklar profilaktikasini tartibga soluvchi huquqiy asoslar, voyaga yetmaganlar bilan ishlashning amaliyoti tahlili va ularga nisbatan ko‘llaniladigan chora-tadbirlar, huquqbuzarlik sodir etgan voyaga yetmaganlar bilan ishlashdagi muammo va kamchiliklar, shuningdek ayrim turdagi mavjud muammo va kamchiliklarni bartaraf etish bo‘yicha bir kator takliflar, voyaga yetmaganlar o‘rtasida nazoratsizlik va huquqbuzarliklar profilaktikasi faoliyati buyicha boshka xorijiy davlatlarning ilg‘or xorijiy tajribasi xamda milliy konunchiligimizdan farkli va o‘xshash tomonlari, shuningdek, yukorida keltirib o‘tilgan jixatlardan foydalangan xolda ushbu faoliyatni takomillashtirish yunalishlari yoritilgan.

ANNOTATION

In this graduating moral work, the followings are described the concept of the inspector of prevention for teenage misbehavior, the types of teenage crime prevention, the ways of carrying out these types, their current situations unique methods of carrying out teenage crime prevention on side of inspector of crime prevention, as well as basis of laws that controls teenage crime prevention, the analysis of practice of working with teenagers and the procedural documents used in in this practice, mistakes and omissions observed while working with previously convicted people, a set of suggestions to deal with a number of mistakes and faults, developed experience of foreign countries to carry out

teenage crime prevention and similarities and contrasts with them in our national law system, with the approaches to develop the field by using the above-mentioned aspects.

Voyaga yetmaganlar o‘rtasida nazoratsizlik va huquqbuzarliklar profilaktikasi faoliyati bo‘yicha ilg‘or xorij tajribasi misolida boshqa davlatlarning voyaga yetmaganlar o‘rtasida huquqbuzarliklar profilaktikasi misolida ko‘rib o‘tadigan bo‘lsak bu davlatlarda ham profilaktik chora tadbirlarni amalga oshirilishini belgilab o‘tgan.

Jumladan, **Qozog‘iston** davlati misolida ko‘rib chiqqanimizda unda bu faoliyatga oid bir qator amalga oshirilgan chora-tadbrlar ko‘rsatib o‘tigan.

Qozog‘iston Respubliksining “Voyaga yetmaganlar o‘rtasida huquqbuzarliklarning oldini olish va bolalar qarovsizligi va uysiz qolishning oldini olish to‘g‘risida”gi qonunida voyaga yetmaganlar o‘rtasida huquqbuzarliklar, qarovsizlik va uy-joysizlikning oldini olish sohasida davlat siyosati quyidagi tamoyillar asosida olib boriladi.[1]

1) Qonuniylik;
2) Voyaga yetmaganlarga insoniy munosabatda bo‘lish;
3) Oilani qo‘llab-quvvatlash;
4) Voyaga yetmaganlar o‘rtasida huquqbuzarliklar, qarovsiz vauy-joysizlikni oldini olish choralarining murakkabligi;
5) Qiyin hayotiy vaziyatga tushib qolgan har bir voyaga yetmaganga individual yondashish;
6) Maxfiylik; 7)Ilmiy asoslilik; 8)Izchillik.

“Voyaga yetmaganlar o‘rtasida huquqbuzarliklarning oldini olish va bolalar qarovsizligi va uysiz qolishning oldini olish to‘g‘risida”gi Qozog‘iston davlatining qonunida voyaga yetmaganlarni saqlash uchun mo‘ljallangan 3 toifadagi muassasalar belgilab berilgan.

Birinchisi, *voyaga yetmaganlarni moslashtirish markazlari* – voyaga yetmaganlarni qabul qilish va vaqtincha saqlashni ta’minlaydigan ta’lim organlarining tasarrufidagi tashkilotlar ham faoliyat yuritib, ularga quyidagi toifadagi voyaga yetmaganlar joylashtiriladi:

- ota-onasini yoki boshqa qonuniy vakillarini aniqlash uchun 3 yoshdan 18 yoshgacha bo‘lgan qarovsiz bolalar;

[1] Қозоғистон Республикасининг 2004 йил 9 июлда “Вояга етмаганлар ўртасида ҳуқуқбузарликларнинг олдини олиш ва болалар қаровсизлиги ва уйсиз қолишнинг олдини олиш тўғрисида” ги қонун.http://www.

- ota-onasining yoki ularning o‘rnini bosuvchi shaxslarning qaramog‘isiz qolgan, ularning hayoti va sog‘lig‘iga ota-onalari, vasiylik va homiylik organlari tomonidan bevosita tahdid qilingan voyaga yetmaganlar; - maxsus ta’lim tashkilotlariga yuborilgan voyaga yetmaganlar;
- ijtimoiy nomutanosiblik va ijtimoiy mahrumlikka olib kelgan yomon munosabat natijasida og‘ir hayotiy vaziyatda bo‘lgan bolalar.

Kozog‘iston davlatining qonunida voyaga yetmaganlarni mazkur markazga joylashtirish uchun zarur bo‘lgan hujjatlarni yig‘ish ichki ishlar organlari yoki vasiylik va homiylik organlari tomonidan amalga oshiriladi. Voyaga yetmaganlar markazda 3 oydan ortiq bo‘lmagan muddatga qolishlari mumkin. Voyaga yetmaganlarning markazda bo‘lish muddatiga sog‘liqni saqlash sohasidagi vakolatli organ tomonidan e’lon qilingan karantin muddati, shuningdek voyaga yetmaganlarning kasallligi sababli statsionar tibbiyot muassasasida bo‘lgan vaqt kirmaydi.

Ikkinchisi, *Maxsus ta’lim tashkilotlari*. Mazkur tashkilot 11 yoshdan 18 yoshgacha bo‘lgan voyaga yetmaganlarni muntazam ravishda ma’muriy choralar ko‘rishga olib keladigan huquqbuzarliklar sodir etgan, boshlang‘ich, asosiy o‘rta va umumiy o‘rta ta’lim olishdan qasddan bo‘yin tovlagan shaxslarni tarbiyalash, o‘qitish va ijtimoiy reabilitatsiya qilishni ta’minlash maqsadida ta’lim yoki ta’lim muassasalari hisoblanadi. Voyaga yetmaganlarni maxsus ta’lim muassasasiga yuborishning maqsadga muvofiqligi to‘g‘risidagi qaror vasiylik va homiylik funksiyalarini amalga oshiruvchi organning yoki ichki ishlar organining talabiga binoan sud tomonidan qabul qilinadi. Voyaga yetmagan shaxs mazkur tashkilotda 1 oydan 1 yilgacha bo‘lgan muddatga yuborilishi mumkin.

Uchinchisi, *alohida saqlash rejimiga ega bo‘lgan ta’lim tashkilotlari* bo‘lib, alohida shart-sharoitlarga muhtoj va alohida pedagogik yondashuvni talab qiladigan voyaga yetmaganlarni alohida qamoqda saqlash rejimidagi ta’lim tashkiloti hisoblanadi. Mazkur tashkiloti quyidagi toifadagi voyaga yetmaganlar uchun mo‘ljallangan:

1) o‘ta og‘ir jinoyatlar, 2 yoki undan ortiq ijtimoiy xavfli qilmishlar sodir etgan, jinoiy javobgarlik yoshiga yetmaganligi tufayli yoki yarashuv tufayli dastlabki tergov to‘xtatilgan voyaga yetmaganlar;

2) o‘rtacha og‘irlikdagi jinoyat yoki og‘ir jinoyat sodir etganlikda aybdor deb topilgan va Kozog‘iston Respublikasi JKning

83-moddasida nazarda tutilgan tartibda sud tomonidan jinoiy javobgarlik va jazodan ozod qilingan voyaga yetmaganlar.[2]

Qonunda voyaga yetmaganlar o‘rtasida huquqbuzarliklar, qarovsizlik va uy-joysizlikning individual profilaktikasini amalga oshirish chora-tadbirlari keltirilgan.

- Profilaktik suhbat;
- Huquqbuzarliklar sodir etilishiga yordam beruvchi sabablar va shart-sharoitlarni bartaraf etish to‘g‘risidagi xabar;
- Profilaktik hisob va nazorat;
- Maxsus ta’lim muassasalariga va alohida rejimiga ega bo‘lgan ta’lim muassasalariga yuborish;
- Tarbiyaviy ta’sir choralari;
- Himoya tartibi;
- Ma’muriy jazo;
- Sud qarori asosida ko‘rilgan choralar; -Tibbiy- ijtimoiy hisob.

Voyaga yetmaganlar o‘rtasida huquqbuzarliklar, qarovsiz va uy-joysizlikning individual profilaktikasi chora-tadbirlari ularga nisbatan qo‘llaniladigan voyaga yetmaganlarning individual xususiyatlarini, ular tomonidan sodir etilgan huquqbuzarliklarining xarakteri va jamoat xavflilik darajasini hisobga olgan holda belgilanadi.

Bundan tashqari **Rossiya Federatsiyasi** misolida ham ko‘rib o‘tadigan bo‘lsak, Rossiyada qabul qilingan “Voyaga yetmaganlar o‘rtasida nazoratsizilk va huquqbuzarliklarning oldini olish tizimining asoslari to‘g‘risida”gi qonunning 5 moddasiga ko‘ra voyaga yetmaganlarning qarovsizligi va huquqbuzarliklarining profilaktikasi tizimi organlari va muassasalari quyidagi toifadagi voyaga yetmaganlarga nisbatan yakka tartibdagi profilaktika ishlarini amalga oshiradilar.[3]:

1) qarovsizlar;
2) tilanchilik bilan shug‘ullanganlar;
3) voyaga yetmaganlar uchun ijtimoiy reabilitatsiya markazlarida, ijtimoiy boshpanalarda, ota-ona qaramog‘isiz qolgan bolalarga yordam berish markazlarida,

[2] Қозоғистон Республикасининг 2004 йил 9 июлдаги “Вояга етмаганлар ўртасида ҳуқуқбузарликларнинг олдини олиш ва болалар қаровсизлиги ва уйсиз қолишнинг олдини олиш тўғрисида”ги қонуни. .http://www.

[3] Россия Федерациясининг 1999 йил 24 июнда “Вояга етмаганлар ўртасида назоратсизилк ва ҳуқуқбузарликларнинг олдини олиш тизимининг асослари тўғрисида”ги қонун. .http://www.

ijtimoiy yordamga yoki reabilitatsiyaga muhtoj voyaga yetmaganlar uchun maxsus ta'lim va tarbiya muassasalarida bo'lganlar; 4) giyoxvandlik vositalari yoki psixotrop moddalarini shifokorning retsepisiz iste'mol qilish yoki mast qiluvchi moddalarni, alkogolli va alkogol mahsulotlarini iste'mol qiluvchi;

5) ma'muriy javobgarlik choralarini qo'llashga sabab bo'lgan huquqbuzarlik sodir etgan;

6) ma'muriy javobgarlik yuzaga keladigan yoshga yetgunga qadar huquqbuzarlik sodir etgan bo'lsa;

7) amnistiya aktiga asosan yoki vaziyat o'zgarganligi munosabati bilan jinoiy javobgarlikdan ozod qilingan, shuningdek voyaga yetmagan shaxsni axloq tuzatishga tarbiyaviy ta'sir ko'rsatishning majburlov choralarini qo'llash orqali rishish mumkinligi e'tirof etilgan hollarda;

8) ijtimoiy xavfli qilmish sodir etgan va jinoiy javobgarlik vujudga keladigan yoshga yetmaganligi yoki ruhiy nuqsoni bilan bog'liq bo'lmagan aqliy zaifligi sababli jinoiy javobgarlikka tortilmaydigan; 9) Rossiya Federatsiyasi jinoyat-protsessual kodeksida nazarda tutilgan profilaktika choralari tanlangan jinoyatlarni sodir etishda ayblanayotgan yoki gumon qilinayotgan shaxslar;

10) tarbiya koloniyalarida ozodlikdan mahrum qilish tariqasidagi jazoni o'taganlar;

11) jazoni o'tashdan shartli ravishda ozod qilingan, amnitsiya aktiga ko'ra afv etish munosabati bilan jazodan ozod qilinganlar.

Shuningdek, ijtimoiy reabilitatsiyaga muhtoj voyaga yetmaganlarni ixtisoslashtirilgan muassasalarida, ochiq va yopiq turdagi maxsus ta'lim va tarbiya muassasalarida hamda ichki ishlar organlarining voyaga yetmagan huquqbuzarlarni vaqtincha saqlash hibsxonalarida saqlashning belgilangan tartibini buzganlik uchun voyaga yetmaganlarga nisbatan *ogohlantirish, tanbeh berish, qattiq tanbeh* kabi jazolar, ochiq va yopiq turdagi maxsus ta'lim va tarbiya muassasalarida bo'lgan voyaga yetmaganlarga nisbatan ota-onalarga yoki qonuniy vakillarga xabar berish kabi intizomiy jazolar ham qo'llaniladi.

Qonunga asosan, voyaga yetmaganlarga nisbatan quyidagi harakatlar sodir etishga yo'l qo'yilmaydi:

- jismoniy va ruhiy zo'ravonlikdan foydalanish;
- voyaga yetmaganlarning yoshini hisobga olmagan holda ta'sir choralarini qo'llash;
- aksilpedagogik xususiyatga ega, inson qadr-qimmatini kamsituvchi choralarni qo'llash;

- voyaga yetmaganlarning ota-onalari yoki qonuniy vakillari bilan aloqalarini cheklash yoki ular bilan aloqa qilishdan mahrum etish;
- ovqatlanish standartlarini kamaytirish;
- sayr qilishlardan mahrum qilish.[4]

Voyaga yetmaganlar o‘rtasida nazoratsizilk va huquqbuzarliklarning oldini olish tizimining asoslari to‘g‘risida”gi qonunning 13 moddasiga ko‘ra ijtimoiy reabilitatsiyaga muhtoj voyaga yetmaganlar uchun ixtisoslashtirilgan muassasalar, aholini ijtimoiy muhofaza qilish boshqaruv organlariga quyidagilar kiradi:

1. Voyaga yetmaganlarning qarovsizligini oldini olish va og‘ir hayotiy vaziyatga tushib qolgan voyaga yetmaganlarni ijtimoiy reabilitatsiya qilishni amalga oshiradigan ijtimoiy reabilitatsiya markazlari;
2. Og‘ir hayotiy vaziyatga tushib qolgan va davlat tomonidan shoshilinch ijtimoiy yordamga muhtoj bo‘lgan voyaga yetmaganlar vaqtincha yashashi va reabilitatsiya qilinishi uchun mo‘ljallangan ijtimoiy boshpanalar;
3. Ota-ona qaramog‘isiz qolgan voyaga yetmaganlarni yoki qonuniy vakillarini vaqtincha ushlab turish uchun mo‘ljallangan ota-ona qaramog‘isiz qolgan bolalarga yordam berish markazlari. Mazkur muassasalarga qabul qilish uchun quyidagilar asos bo‘ladi:

Voyaga yetmaganning shaxsiy murojaati;

Voyaga yetmaganning ota-onasi yoki uning qonuniy vakillarining 10 yoshga to‘lgan voyaga yetmaganning fikrini hisobga olgan holda ariza, voyaga yetmaganning manfaatlariga zid bo‘lgan hollar bundan mustasno; Voyaga yetmaganning ota-onasi yoki uning qonuniy vakillarini qamoqqa olish, ozodlikni cheklash, ozodlikdan mahrum qilish to‘g‘risidagi ishlar bo‘yicha surishtiruvni olib boryotgan shaxs, tergovchi yoki sudning qarori.[5]

Rossiya qonunchiligining bizni qonunchilikka o‘xshash tomoni, Rossiya davlatida ham voyaga yetmaganlar uchun tarbiya koloniyalari mavjud bo‘lib, tarbiya koloniyalarining vazifasi voyaga yetmagan mahkumlarni tuzatish bo‘yicha ishlarni amalga oshiradilar, ularga qonunchilikka muvofiq tibbiy yordam

[4] Россия Федерациясининг 1999 йил 24 июнда “Вояга етмаганлар ўртасида назоратсизилк ва ҳуқуқбузарликларнинг олдини олиш тизимининг асослари тўғрисида”ги қонун.http://www.lex.uz

[5] Россия Федерациясининг 1999 йил 24 июнда қабул қилинган “Вояга етмаганлар ўртасида назоратсизилк ва ҳуқуқбузарликларнинг олдини олиш тизимининг асослари тўғрисида”ги қонуни. http://www.lex.uz

ko‘rsatishni tashkil etish, ularni boshlang‘ich, umumiy, asosiy umumiy ta’lim dasturlari bo‘yicha, shuningdek ularga ijtimoiy moslashishda yordam berish, huquqbuzarliklarning oldini olish bo‘yicha boshqa chora-tadbirlarni amalga oshirish belgilab berilgan. Shunday qilib Kozog‘iston va Rossiya davlatlarida bir qator yakka tartibdagi chora tadbirlar amalga oshirilishini ko‘rib chiqdik. Shu bilan birgalikda boshqa xorijiy davlatlarning misolida ham ko‘rib chiqadigan bo‘lsak.

Xitoyda jinoyat sodir etishda aybdor deb topilgan, lekin jinoiy javobgarlik yoshiga yetmaganligi sababli jinoiy jazodan ozod qilingan voyaga yetmaganlar tegishli ekspert komissiyasi tomonidan baholangandan keyin maxsus axloq tuzatish ta’lim muassasalarida ta’lim olishlari mumkin.[6] Shu jumladan mazkur muassasalar psixologlarni ishga olishlari va voyaga yetmaganlarning ruhiy salomatligini yaxshilash uchun ota-onalari yoki vasiylar bilan aloqa va hamkorlikni kuchaytirishlari kerak.

Turkiya Respublikasida ham yosh avlod farovonligini ta’minlash, bilimli yoshlarni tarbiyalash, xalqaro standartlar asosida voyaga yetmagan shaxslar huquqlari va qonuniy manfaatlarini ta’minlashga e’tibor qaratilgan. Bu boradagi ishlar Turkiyada “Voyaga etmaganlar huquqlari to‘g‘risida”gi Qonun bilan bog‘liq bo‘lib, unda balog‘atga etmagan bolalarga nisbatan odil sudlov tizimi yaratish, yuvinal sudlov tizimini ishlab chiqishni nazarda tutgan[78]. Shuningdek, Turkiya 1994 yilga kelib Birlashgan

Millatlar Tashkilotining “Bola huqulari to‘g‘risida”gi Konvensiyasini ratifikasiya qilgan. Shundan so‘ng mazkur davlatda voyaga yetmaganlar tomonidan sodir etiladigan jinoyatlarni oldini olish sohasida sezilarni o‘zgarishlar amalga oshirilgan bo‘lib, unga ko‘ra mamalakatda yuvinal adliya (juvinile justice) tizimi yaratilgan, jinoyat sodir etgan voyaga yetmagan shaxslarga nisbatan majburlov choralarini qo‘llash, ularni qamoqda ushlab turish muddatlari, asoslarini qayta ko‘rib chiqish, jazoni o‘tab chiqqan voyaga yetmagan shaxslarni reabilitasiya qilish masalalarini huquqiy jihat aniq belgilab qo‘yilishini ta’minladi[9]. 2005 yilda «Voyaga yetmaganlarni himoya qilish to‘g‘risida»gi qonun qabul qilinib, unda: - ayblanuvchi bolaning protsessual huquqlari belgilab qo‘yildi; - jinoyat subekti eng

[6] Хитой Халқ Республикасининг 2020 йил декабрдаги янги таҳрирдаги “Вояга етмаганлар ўртасида ҳуқуқбузарликлар профилактикаси тўғрисида”ги қонуни. http://www.lex.uz

[7] Juvenile protection law Law No: 5395 Adoption Date : 3/7/2005 Published in O.G. Dated:
[8] /7/2005 Numbered : 25876 Batch : 5 Volume

[9] Development of Work with Juveniles and Victims by the Turkish Probation Service

kichik yoshi 11 dan 12 ga oshirilgan; - voyaga yetmagan gumon qilinuvchi va ayblanuvchining dastlabki tergov, sud bosqichida bepul huquqiy yordam olish kafolatlangan; - voyaga yetmagan shaxslar tomonidan sodir etilgan jinoyatlarni ixtisoslashgan sud –yuvenal sudlar tomonidan ko‘rilishining joriy etilishi; - voyaga yetmagan shaxsga jazo tayinlashda ozodlikdan mahrum qilish bilan bog‘liq jazolarni kamroq qo‘llash, ozodlikdan mahrum qilish bilan bog‘liq bo‘lmagan jazo choralari yoki huquqiy ta’sir choralarini kengroq qo‘llash; - voyaga yetmaganlarga nisbatan tayinlanadigan jazo choralari miqdori yoki muddatlarini, o‘tash tartibini liberallashtirish; - voyaga yetmaganlar jinoyatchiligiga qarshi kurashishda fuqarolik jamiyatining o‘rnini oshirish kabi o‘zgarish nazarda turilgan[10].

Yevropa mamlakatlari orasida *jinoyat sodir etgan voyaga yetmaganlar huquqiy ongi va huquqiy madaniyatini yuksaltirishni ta’minlash sohasida* yana bir o‘ziga xos jihatga ega bo‘lgan tizim **Fransiya**[63]da shakllangan. Fransiyaning to‘liq mahalliy budjet hisobidan ta’minlanadigan munitsipal politsiyasi shaharlar va boshqa aholi turar joylarida jamoat tartibini saqlaydi hamda voyaga yetmagan shaxslar bilan shug‘ullanadi va bu borada ular Milliy politsiya bilan uzluksiz hamkorlikda faoliyat olib boradilar. Fransiya Milliy politsiyasiga politsiyaning barcha funksiyalari, jumladan, *voyaga yetmaganlar huquqiy ongi va huquqiy madaniyati masalalari* vazifasi ham yuklatilgan bo‘lib, ularni samarali ta’minlash maqsadida, uning tarkibida yigirmaga yaqin bosh boshqarma, boshqarma, markaz, institut va xizmatlar faoliyat olib boradi. Milliy politsiya tarkibidagi yoshlar bilan ishlash boshqarmasining asosiy vazifasi bevosita voyaga yetmaganlarning huquqiy ongi va huquqiy madaniyatini ko‘tarish masalalari bilan ham shug‘ullanadi. Bosh boshqarmaning faoliyati quyidagi asosiy vazifalarni amalga oshirishga yo‘naltirilgan: ijtimoiy huquqiy yordam ko‘rsatish, huquqiy savodxonligini oshirish, ularning mamlakatda o‘rnatilgan huquq normalariga rioya qilish bo‘yicha tartib qoidani nazoratini amalga oshirish, aholiga yordam ko‘rsatish, huquqbuzarliklarning profilaktikasini amalga oshirish, huquqni muhofaza qilish, xususan katta bo‘lmagan miqdordagi zarar yetkazilishi bilan bog‘liq jinoyatlarni surishtirish va tergov qilish; jamoat tartibini saqlash va qayta tiklash.

Amerika Qo‘shma Shtatlari federal hukumati voyaga yetmagan huquqbuzar bolalar bilan ishlashni, 1974 yilgi voyaga yetmaganlarga nisbatan odil sudlovni va huquqbuzarlik aktini birlashtiruvchi qonunlarni qabul qilishdan

[10] Development of Work with Juveniles and Victims by the Turkish Probation Service [63] http://book.uz/ (Электронадабиётларкутубхонаси).

boshlagan. Ushbu harakat Adolat Departamenti huzuridagi Voyaga yetmaganlar adliya va jinoyatlarga qarshi kurash boshqarmasi (UNISEF) tomonidan voyaga yetmaganlar jinoyatchiligiga qarshi kurash bo‘yicha grantlar (yiliga 900.000 AQSh dollari atrofida) dasturlar, voyaga jinoyati bo‘yicha milliy statistikani yig‘ish, yoshlar jinoyati bo‘yicha tadqiqotlarni mablag‘ bilan ta’minlash va voyaga ni himoya qilish bo‘yicha to‘rtta antikonferensiya mandatini boshqarishdan iborat. Ayniqsa, harakat buyruqlarida quyidagilar aks yetgan:

1) Institutsionalizatsiya: masalan voyaga yetmaganlar tomonidan yolg‘onchilik, qochish va alkogol va tamaki bilan qamoqqa tushish kabi jinoyat hisoblanmaydigan, ya’ni “muqim” sodir yetib turiladigan huquqbuzarliklari uchun ayblangan yoshlar-politsiya tomonidan ushlab turilishi yoki qamalishi mumkin yemas (qurolga yega bo‘lgan voyaga yetmagan shaxsni ushlash bundan mustasno). Ushbu buyruq bilan bog‘liq bo‘lgan tahlikali muammolar shtat va mahalliy qonunlarni bekor qiladi.

2) Ajralish: Hibsga olingan yoshlar qamoqda bo‘lgan katta yoshdagilardan qat’iy ravishda ajratilishi kerak. Ushbu “ko‘zdan va ovozdan yiroq” buyrug‘iga ko‘ra, voyaga yetmagan bolalardan birontasi qamoqda saqlanayotgan kattalarga xizmat qiladigan holatda ularga ovqat berilmaydi va voyaga yetmagan bola kattalar so‘roq qilinadigan xonani kesib o‘tgan yo‘lak bo‘ylab yurishi mumkin yemas. Ushbu talab mahalliy hokimiyat organlariga voyaga ga va katta yoshdagi jinoyat sodir yetgan shaxslarga nisbatan alohida tartibda ish ko‘rish lozimligini nazarda tutadi.

Hindistonda ham voyaga yetmaganlar tomonidan sodir yetiladigan jinoyatlarni oldini olish davlat organlari, xususan huquqni muhofaza qiluvchi organlar faoliyatining asosiy yo‘nalishlaridan biri hisoblanadi. Ushbu davlatda voyaga yetmaganlar jinoyatchiligini oldini olish huquqiy aktlar, hukumat dasturlari, amaliy tadbirlar bilan tartibga solib kelinadi[11]. Hindistonda balog‘atga yetmagan shaxslar huquqbuzarliklarini oldini olishning yeng samarali va birlamchi usuli sifatida ota-onalar, ularning o‘rnini bosuvchi shaxslar yoki bolani vasiylikka olgan muassasalarga maslaxat berish, yo‘l-yo‘riq ko‘rsatish yekanligi ko‘rsatilgan. Shuningdek, mazkur davlatda jinoyatchilik dinamikasi ortishiga ta’sir etuvchi turli omillar, shuningdek jinoyatchilikning oldini olish bo‘yicha kompleks yondashuvlar ishlab chiqilgan. Mazkur tadbirlar voyaga yetmaganlar

[11] International Centre for Prevention of Crime, Urban Crime Prevention and Youth at Risk: Compendium of promising strategies and programs from around the world, Montreal, 2005

jinoyat sodir yetishini oldini olish, ta'lim-tarbiya ishlari, ruhiypsixologik davolash, oila a'zolariga maslaxatlar berish, ularni qo'llabquvvatlash, rag'batlantirish kabilarni nazarda tutadi[12]. Hindistonda voyaga yetmagan bolalar jinoyatchiligiga qarshi kurashish dasturlari ikkita turga bo'lingan bo'lib, ular:

– individual dastur, bunda voyaga yetmaganlar jinoyatchiligiga qarshi kurashish ta'lim, maslaxat va psixoterapiya orqali amalga oshiriladi;

–atrof-muhit dasturi, ekologiya dasturining maqsadi voyaga yetmaganlar jinoyatchiligi sonining ortishi bir daraja ular yashayotgan tabiiy muhit bilan bo'g'liq bo'lishi bilan izohlanadi. Shunga ko'ra hukumat tomonidan mazkur yo'nalishda ishlab chiqiladigan dasturlar yoshlarning tabiatga nisbatan ijobiy munosabatini rag'batlantirishni nazarda tutadi.

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2. http://press-service.uz/uz O'zbekiston Respublikasi Prezidentining rasmiy veb-sayti.
3. http://natlib.uz (Alisher Navoiy Nomidagi O'zbekiston Milliy kutubxonasi).
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5. http://ziyonet.uz (ZiyoNET ta'lim portali).
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7. http://book.uz/ (Elektron adabiyotlar kutubxonasi).
8. http://www.xs.uz («Xalq so'zi» gazetasi).

[12] National crime records Bureau

ПРОФИЛАКТИКА ИНСПЕКТОРИНИНГ УҚУҚБУЗАРЛИКЛАРНИНГ ЯККА ТАРТИБДАГИ ПРОФИЛАКТИКАСИНИ ТАШКИЛ ЭТИШ ВА АМАЛГА ОШИРИШДА РАСМИЙЛАШТИРИЛАДИГАН ҲУЖЖАТЛАР ВА УЛАРНИ ЮРИТИЛИШИ

Очилова Дилсуз Собировна

Калит сузлар: якка тартибдаги профилактика, профилактика, ҳуқуқбузарлик, ҳуқуқбузрликдан жабирланувчи, якка тартибдаги профилактика

Анотация: Ушбу мақолада ҳуқуқбузарликларнинг якка тартибдаги профилактикаси тушунчаси , уни амалга ошириш усуллари турлари , якка тартибда шахслар билан ишлаш тартиб тамоиллари ҳамда уни профилактика инспекторлари томонидан амалг ошришда юзага келаётган муаммолар ва уларнинг олдини олиш юзасидан айрим мулоҳазаларимиз мавжуд

Annotation: This article contains the concept of individual prevention of crimes, types of methods of its implementation, principles of working with individuals individually, problems arising in its implementation by prevention inspectors, and some comments on their prevention.

Ўзбекистон республикасининг «Ҳуқуқбузарликлар профилактикаси тўғрисида»ги қонуннинг 29-моддасида ҳуқуқбузарликларнинг якка тартибдаги профилактикаси чора-тадбирлари тизими белгилаб берилган. Биз юқорида мазкур чора-тадбирлар тизимини мазмунан кўриб чиқдик. 43 Ўзбекистон Республикаси Ички ишлар вазирлигининг 2017 йил 25 августдаги «Ички ишлар органлари томонидан ҳуқуқбузарликлар профилактикасини амалга ошириш тартиби тўғрисидаги йўриқномани тасдиқлаш ҳақида»ги 191-сон буйруғи. 44 Ўзбекистон Республикасининг 2014 йил 14 майдаги «Ҳуқуқбузарликлар профилактикаси тўғрисида» ги қонуни// URL: http://www.lex.uz. 45 Мазкур парагрифимизда ушбу чора-тадбирларнинг ҳуқуқий тартиби масаласига тўхталиб, уларни қуйидаги тартибда кўриб чиқамиз: - профилактика суҳбат; - расмий огоҳлантириш; - ҳуқуқбузарликларнинг содир этилиш сабаблари ва уларга имкон бераётган шарт-шароитлар ҳақида хабардор қилиш; - ижтимоий реабилитация қилиш ва ижтимоий мослаштириш; - профилактик ҳисобга олиш; - мажбурий даволанишга юбориш; - маьмурий назорат. «Профилактик суҳбат» чора-

тадбирларнинг дастлабкиси ҳисобланади. Профилактика суҳбати давомида шахснинг ўзига ҳусусиятлари, унинг турмуш тарзи ва ижтимоий-маиший яшаш шароитлари, шунингдек, ғайриижтимоий ҳулқ-атворнинг ёки содир этилган ҳуқуқбузарликнинг сабаблари ва шарт-шароитлари аниқланади. Профилактика суҳбати шахсни жамиятда қабул қилинган хулқ-атвор нормалари ва қоидаларига риоя этишга ишонтиришдан, ғайриижтимоий хулқатворнинг ижтимоий ва ҳуқуқий оқибатларини ҳамда ҳуқуқбузарлик содир этганлик учун қонунда белгиланган жавобгарликни тушунтиришдан иборат бўлади. Профилактика суҳбати ички ишлар органларининг ҳуқуқбузарликлар профилактикасини бевосита амалга оширувчи соҳавий хизматлари ходимлари томонидан ўтказилади. Профилактика суҳбати ҳуқуқбузарликлар профилактикасини бевосита амалга оширувчи орган ёки муассаса жойлашган ерда, шунингдек шахснинг яшаш, ўқиш, ишлаш жойида ёхуд бевосита ғайриижтимоий хулқ-атвор ёки ҳуқуқбузарлик аниқланган жойда ўтказилади. Ўзбекистон Республикаси Ички ишлар вазирлигининг 2017 йил 25 августдаги «Ички ишлар органлари томонидан ҳуқуқбузарликлар профилактикасини амалга ошириш тартиби тўғрисидаги йўриқномани тасдиқлаш ҳақида»ги 191 сон буйруғи. 46 Профилактика суҳбати давомида шахснинг ўзига хос хусусиятлари, унинг турмуш тарзи ва ижтимоий-маиший яшаш шароитлари, шунингдек ғайриижтимоий хулқ-атворнинг ёки содир этилган ҳуқуқбузарликнинг сабаблари ва шарт-шароитлари аниқланади. Якка тартибдаги ёндашиш (индивидуаллаштириш) профилактик суҳбатни ўзига нисбатан якка тартибдаги профилактика олиб борилаётган шахсларнинг қизиқиши, характери, темпераменти, дунёқараши, жамиятга, ижтимоий муносабатларга, умуминсоний, миллий ёки диний қадриятларга нисбатан муносабатига, орзу-истакларига асосланиб ишлаб чиқиш ва амалга ошириш керак бўлади. Суҳбат ўтказувчи ходим профилактика қилинаётган шахснинг аввалги ва ҳозирги ҳаёти, ижобий ва салбий томонлари, унинг қизиқишларини инобатга олган ҳолда режа тузиб, уни қачон, қаерда ўтказишни белгилаб олиши шарт. Суҳбатнинг асосий талабларидан бири профилактика қилинаётган шахс билан доимий равишда уни ўтказиб боришни таъминлашдан иборатдир. Суҳбат мавзуси профилактика қилинаётган шахснинг ҳулқ-атвори, ижобий ҳаракатлари, иш ва ўқишдаги натижалари ҳақида бўлиши мумкин. Таъсир кўрсатиш чора-тадбирларини фарқлаш (дифференсиатсия), бунда профилактик суҳбатни ўзига нисбатан якка тартибдаги профилактика олиб борилаётган шахсларнинг профилактик ҳисоб тури, жинси, ёши, касби

(машғулот тури), маъмурий ёки жиноий ҳуқуқбузарлик содир этганлигига доир хусусиятларидан келиб чиққан ҳолда ишлаб чиқиш ва амалга ошириш талаб этилади. Мисол учун, профилактик суҳбат – вояга етмаган ёки катта ёшдагиларга, маъмурий ёхуд жиноий ҳуқуқбузарлик содир этганларга, шунингдек ҳуқуқбузарликлардан жабрланиш эҳтимоли (виктимлиги) юқори бўлган шахсларга нисбатан турлича амалга оширилиши лозим ҳисобланади. Суҳбат жамоатчи тарбиячилар, ҳомийлар, оталиққа олган шахслар, мураббийлар ҳам таклиф этилиши, вояга етмаганлар билан суҳбатда эса ўқитувчилар, психолог, ота-оналар, маҳалла фаоллари, хотин қизлар қўмитасининг раислари таклиф этилади. Профилактика инспектори шахс 47 билан профилактика суҳбатини амалга оширганлиги ҳақида «Профилактика суҳбатини қайд этиш» китобига қайд этади ҳамда унга келгусида жамиятда қабул қилинган хулқ-атвор нормалари ва қоидаларига риоя этмаслик ҳолатларини давом эттирмаслик, акс ҳолда қонунда белгиланган маъмурий жавобгарлик келиб чиқиши мумкинлигини тушунтиради. Ундан ташқари профилактик суҳбатни қайд этиш китоби мавжуд булиб, бу китобга ҳуқуқбузарликлар профилактикасини бевосита амалга оширувчи соҳавий хизмати номи, китобнинг бошланиш ва тамомланиш вақти (йил, ой, сана) кўрсатилади, китобнинг ўнг томонига қуйидвги маълумотлар киритилади: профилактика суҳбати ўтказилган сана ва жойи; профилактика суҳбати ўтказилган шахснинг Ф.И.Ш.; профилактик суҳбат ўтказиш сабаби ва мақсади; профилактика суҳбатини ўтказган масъул ходимнинг лавозими (унвони) Ф.И.Ш.; китобнинг чап томонига эса: профилактика суҳбати ўтказилган шахснинг ўзига хос хусусиятлари, турмуш тарзи ва ижтимоий-маиший яшаш шароити; ғайриижтимоий хулқ-атвор ва содир этилган ҳуқуқбузарликнинг сабаб ва шароити. Профилактика суҳбати ўтказилган шахснинг иш, ўқиш ёки яшаш жойига хабар қилинганлиги ҳақида белги киритилади. Шахс ўзининг ғайриижтимоий хулқ-атворини ёки содир этган ҳуқуқбузарлигининг моҳиятини англаб этса ва пушаймон бўлса, профилактика инспектори профилактик суҳбат билан чегараланади. Аксинча, шахс ўзининг ғайриижтимоий хулқ-атворини ёки ҳуқуқбузарлик содир этишининг моҳиятини англаб этмаса ва пушаймон бўлмаса, шунингдек профилактика инспектори аниқланган ғайриижтимоий хулқ-атворни давом эттиришга 48 йўл қўйиб бўлмайди деб топса, у ҳолда шахсга нисбатан расмий огоҳлантириш қўллаши ҳам мумкин ҳисобланади. «Мураббийлик» профилактика қилинаётган шахс меҳнат қилаётган ишлаб чиқариш

корхоналарида кўпроқ қўлланилади. Бунда профилактика қилинаётган шахсни меҳнат ва маънавий тарбиявий тадбирлар аньаналари, касб- ҳунарга ўргатиш орқали тарбиялашга эътибор қаратилади. «Ёрдам кўрсатиш» профилактика қилинаётган шахсни иш билан таъминлаш, маиший муаммоларини ҳал этиш, ўқишга кириб олиш, бўш вақтларини банд этиш, ижтимоий- фойдали аловаларни тиклаб олишда ёрдам кўрсатишдан иборат. Расмий огоҳлантириш – шахсга ғайриижтимоий хулқ-атворини давом эттиришига йўл қўйиб бўлмаслиги тўғрисида ёзма равишда тушунтириш, шунингдек ҳуқуқбузарлик содир этишга мойил бўлган шахсни ҳуқуқбузарлик содир этганлик учун жавобгарлик ҳақида огоҳлантиришдан иборат бўлган процессуал ҳаракат. «Расмий огоҳлантириш» шахсга унинг ғайриижтимоий хулқ-атворни давом эттиришига йўл қўйиб бўлмаслиги тўғрисида ёзма равишда тушунтиришдан, шунингдек ҳуқуқбузарлик содир этишга мойил бўлган шахсни ҳуқуқбузарлик содир этганлик учун жавобгарлик ҳақида огоҳлантиришдан иборат бўлади. Профилактика суҳбати ижобий натижа бермаган ва шахс ғайриижтимоий хулқ-атворни ёки ҳуқуқбузарлик содир этишга мойилликни давом эттирган ҳолларда ёхуд жамиятда қабул қилинган хулқ-атвор нормалари ва қоидаларини бузувчи турмуш тарзи, ҳаракати ёки ҳаракатсизлигини ёхуд ўзининг ғайриижтимоий хулқ-атвори хавфлилиги туфайли ҳуқуқбузарлик содир этиш эҳтимоли ҳолатида бўлган жисмоний шахс аниқланган жойнинг ўзида масъул ходим томонидан расмий огоҳлантирилади. Расмий огоҳлантириш масъул ходим томонидан ўз хизмат вазифасини бажараётган пайтда, олиб борилаётган профилактик 49 тадбирлар жараёнида, мурожаатларни кўриб чиқиш жараёнида, терговга қадар текширув, суриштирув ва тергов ҳаракатларини олиб бориш вақтида шунингдек қонун ҳужжатларида назарда тутилган бошқа ҳолларда чиқарилади. Расмий огоҳлантириш бланкасининг шакли икки қисмдан – фуқарога тақдим қилинадиган расмий огоҳлантириш ҳамда масъул ходимда қоладиган унинг қирқиб олинадиган қисмидан иборат бўлади46 . Расмий огоҳлантириш бланкаси расмийлаштирилганда унга барча ёзувлар қора ёки ҳаворанг сиёҳда, тушунарли қилиб ёзилади. Масъул ходим расмий огоҳлантириш бланкасини расмийлаштираётган пайтда шахснинг ёнида унинг шахсини тасдиқловчи ҳужжат бўлмаса, расмий огоҳлантириш бланкасининг тегишли графалари шахснинг сўзидан тўлдиради. Масъул ходим расмий огоҳлантириш бланкасини расмийлаштирганидан сўнг уни имзолайди. Расмий огоҳлантириш бланкасининг қирқиб олинадиган қисми расмий огоҳлантирилаётган шахс

томонидан ҳам имзоланади. Расмий огоҳлантирилаётган шахс бланкага имзо қўйишдан бош тортган тақдирда масъул ходим томонидан расмий огоҳлантириш бланкасига бу ҳақда ёзиб қўйилади. Расмий огоҳлантириш бланкаси расмийлаштирилганидан сўнг унинг фуқарога тақдим қиладиган қисми расмий огоҳлантирилган шахсга берилади, бланканинг қирқиб олинадиган қисми масъул ходимда қолади, ходим расмий огоҳлантириш бланкасининг қирқма қисмини мазкур йўналишни умумлаштирилиб, ҳисобот юритишга масъул бўлган ходимга топширади. Масъул ходим, расмий огоҳлантириш чиқарилганлиги тўғрисида у қайси шахсга эълон қилинган бўлса, ўша шахснинг иш (ўқиш) жойидаги иш берувчига (маъмуриятга) ёки яшаш жойидаги фуқароларнинг ўзини ўзи бошқариш органларига хабар қилишга ҳақли. Ҳуқуқбузарликлар профилактикасини бевосита амалга оширувчи ёки 46 Ўзбекистон Республикаси Ички ишлар вазирлигининг 2017 йил 25 августдаги «Ички ишлар органлари томонидан ҳуқуқбузарликлар профилактикасини амалга ошириш тартиби тўғрисидаги йўриқномани тасдиқлаш ҳақида»ги 191 сон буйруғи. 50 унда иштирок этувчи орган ва муассаса, ўз ваколатлари доирасида, ғайриижтимоий хулқ-атворли шахслар, ҳуқуқбузарликлар содир этишга мойил бўлган, ҳуқуқбузарлик содир этган шахслар ҳақида иш, ўқиш жойидаги иш берувчини (маъмуриятни), яшаш жойидаги фуқароларнинг ўзини ўзи бошқариш органини ғайриижтимоий хулқ-атворнинг ва содир этилган ҳуқуқбузарлик ҳолатларини, шунингдек уларга имкон бераётган сабаблар ва шарт-шароитларни кўрсатган ҳолда хабардор қилишга ҳақли. Бундай чора-тадбирларни амалга оширишда ушбу тоифадаги шахслар томонидан ҳуқуқбузарлик ёки жиноят содир этилган тақдирда ҳуқуқбузарликларнинг содир этилиши сабаблари ва уларга имкон бераётган шарт-шароитларни бартараф қилиш тўғрисида корхона, муассаса ва ташкилот рахбарларига шу жумладан фуқароларнинг ўзини ўзи бошқариш органларига тақдимнома юборади. Бу ҳолат бевосита МЖТКнинг 313-моддасида кўрсатиб ўтилган бўлиб, ушбу тақдимномага асосан корхона, муассаса хамда ташкилотлар бир ой муддат ичида ушбу ҳолатни бартараф этиш чораларини кўрмаган тақдирда уларга нисбатан ушбу кодекснинг 196-моддасида келтириб ўтилган жавобгарликни юзага келтиради. Ушбу нормада таъсир кучининг чегараланганлиги кўзга ташланади. Негаки ушбу норманинг диспозициясида «Ҳуқуқбузарликлар содир этиш сабабларини ҳамда уларга олиб келувчи шартшароитларни бартараф этиш юзасидан ички ишлар органлари ёзма тақдимномаларини бажариш» 47 чораларини мазмуни

кўрсатиб ўтилган. МЖТК ЖПК талаблари асосида нафақат ички ишлар органлари, балки бошқа ҳуқуқни муҳофаза қилиш органлари ҳам ҳуқуқбузарликларга оид ишлар юритувини амалга ошириш ваколатига эга шунингдек, ишни кўриб чиқаётган мансабдор шахс сифатида сабаб шароитларини аниқлаб, уларни бартараф этиш юзасидан тегишли жойларга тақдимномалар киритиш лозимлиги бўйича мажбуриятларга эгадир. 47 Ўзбекистон Республикасининг Маъмурий жавобгарлик тўғрисидаги кодекси // URL: http://www.lex.uz. 51 «Ҳуқуқбузарликлар профилактикаси тўғрисида»ги қонуннинг 32-моддасида келтирилган ҳуқуқбузарликларнинг содир этилиши сабаблари ва уларга имкон бераётган шарт-шароитлар тўғрисида хабардор қилиш, 23-моддадаги ҳуқуқбузарликларнинг содир этилиши сабаблари ва уларга имкон бераётган шарт-шароитларни бартараф этиш тўғрисидаги тақдимнома киритишдан мазмунан фарқ қилади. Сабаби ушбу ҳолатда содир этилган ҳуқуқбузарликларнинг содир этилиши сабаблари ва уларга имкон бераётган шарт-шароитлари бевосита ғайриижтимоий ҳулқ-атворли шахс, ҳуқуқбузарлик содир этишга мойил бўлган, ҳуқуқбузарлик содир этган шахснинг ўқиш, иш ёки яшаш жойидан биридаги мухитга тўғридантўғри (бевосита) алоқадор бўлмаслиги мумкин.

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ҒАРБДА ҲУҚУҚБУЗАРЛИКЛАР ПРОФИЛАКТИКАСИ ҲАҚИДАГИ ТАЪЛИМОТЛАРНИ ПАЙДО БЎЛИШ ЖАРАЁНИ

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Аннотация: ушбу мақолада ғарбда вужудга келган ҳуқуқий таьлимотлар, уларнинг ташкил топиши, шаклланиши, ҳуқуқий таьлимотларнинг тарихий ва назарий жихатларини ўрганишнинг моҳияти ёритиб берилган.

Калит сўзлар: номиналистлар, универсалий, Арасту таьлимотлари, Суқрот, Афлотун, Платон қарашлари, моддийлик, ғоявийлик.

Аннотация: в данной статье описывается сущность изучения правовых доктрин, их организация, формирование, исторические и теоретические аспекты правовых доктрин, возникших на Западе.

Ключевые слова: номиналисты, универсалии, учение Аристотеля, Сократ, Платон, взгляды Платона, материализм, идеализм.

Abstract: this article describes the essence of studying the legal doctrines, their organization, formation, historical and theoretical aspects of legal doctrines that arose in the West.

Key words: nominalists, universal, Aristotle's teachings, Socrates, Plato, Plato's views, materialism, idealism.

Инсоният тарққиётининг барча босқичларида ҳуқуқбузарлик, шу жумладан жиноятлар, уларнинг сабаб ва шароитлари инсонлар учун энг салбий ва ижтимоий хавфли ҳодисалар сифатида азал-азалдан унга нисбатан профилактик чора-тадбирларни амалга оширишни талаб қилиб келган.

Ўзбек халқининг энг қадимги тарихи ҳақидаги бизгача етиб келган манбаларда ҳам ҳуқуқбузарликлар, уларнинг сабаб ва шароитлари ҳамда профилактикаси ҳақидаги масалаларни ўрганишга ҳаракат қилганимизда доимо инсон таълим-тарбиясига оид таълимотларга асосий эътибор берилганлигининг гувоҳи бўламиз.

Буюк файласуф Арастунинг «жиноятларнинг олдини олиш – бу аввалambор бузуқ ва ақлга зид бўлган одатлар билан курашдир, яъни жамиятни шундай қуриш керакки, у ақлга зид бўлган, бузилган ахлоқ, урф ва одатларга қарши

курашсин» деган таълимоти ҳуқуқбузарликлар профилактикасида муҳим аҳамият касб этади[1].

Мазкур таълимотлар истиқлол йилларида шаклланиб, бугунги кунда ислоҳотлар натижасида ҳар томонлама такомиллашиб бораётган Ўзбекистон ҳуқуқбузарликлар профилактикаси миллий тизимининг маънавий асослари сифатида давлат сиёсатининг ўзаги бўлиб хизмат қилмоқда.

Ҳуқуқбузарликлар профилактикасининг аҳамияти ҳам шундаки, агар ҳуқуқбузарликларга нисбатан профилактик чора-тадбирлар барча давлат органлари, ташкилот, муассаса, корхоналар, барча нодавлат ташкилотлар ва фуқаролар томонидан ўзаро ҳамкорликда ва комплекс ёндашув ҳамда қамраб олиш асосида амалга оширилсагина, жамиятда ҳуқуқбузарликларнинг камайишига, Ўзбекистон халқининг тинч, осойишта ва фаровон турмуш тарзи таъминланишига эришилади. Зеро, “ҳуқуқбузарликларнинг барвақт олдини олиш соҳасидаги ислоҳотларни янги босқичга кўтариш зарур”[2].

Бугунги кунда ҳуқуқбузарликлар профилактикаси ҳақидаги таълимотларни ўрганиш орқали ҳуқуқбузарликлар профилактикаси ҳақидаги қадимий қараш ва ғояларни ўрганиш масаласига алоҳида эътибор қаратилмоқда. Чунки, бугунги даврда инсониятнинг дунёқараши тобора ривожланиб, турлича илмий-назарий кашфиётлар олиб бормоқда.

Дунёқараш масалаларида ахлоқий муаммолар асосий ўринни эгаллаган. Чунки унда инсон олдида кундалик ҳаётда кўндаланг бўлиб турадиган муаммолар қўйилади: моддий-иқтисодий ва маънавий-ахлоқий. Маълумки, этикада кишилар нима яхши, нима ёмон, ахлоқий нуқтаи назардан инсоннинг қандай хатти-ҳаракатларида тўғри ва қайсилари ноахлоқий каби масалаларга жавоб топадилар. Антик даврнинг машҳур мутафаккири Арасту ахлоқнинг жамият ҳаётидаги муҳим аҳамиятига тўхталиб шундай деган эди: “Табиат инсон қўлига қурол – ақлий ва ахлоқий куч берган, аммо у шу қуролни тескари томонга нисбатан ҳам ишлатиши мумкин; шу сабабли ахлоқий таянчлари бўлмаган одам, энг инсофсиз ва ёввойи, ўзининг жинсий ва дид майлларида энг тубан мавжудод бўлиб қолади”.[3]

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[1] *Алимов Б.* Ҳуқуқбузарликлар профилактикасида ҳамкорлик: Ўзбекистонда оила, оналик ва болаликни муҳофаза қилишнинг концептуал масалалари // Республика илмий-амалий конференция материаллари тўплами. – Т., 2016. –Б. 42.

[2] Ўзбекистон Республикаси Президенти Шавкат Мирзиёевнинг Олий Мажлисга Мурожаатномаси. Ҳалқ сўзи. 2019 йил.

[3] Насафий Азизиддин. Буюк сиймолар. –Т.: 2005. –Б. 14.

Мутафаккирнинг бу фикрларини таҳлил қилар эканмиз, ахлоқ дарҳақиқат, жамият тараққиётида, шахс ҳаётида муҳим аҳамият касб этади. Инсонний камолот босқичига кўтаришда ижтимоий онг шакли бўлган ахлоқнинг роли инсоният тарихининг ҳар бир тараққиёт даврида ўзига хос тарзда ривож топиб боради. Инсон ўзининг ахлоқий қиёфаси, фазилатлари билан жамиятга таъсир этади. Шу билан жамият ҳам инсонийлашиб, етуклашиб боради. Ибтидоий жамиятда иқтисодий ҳаёт, моддий турмуш даражаси ниҳоятда мураккаб, қийин бўлганлиги туфайли қарияларни, касалларни ўлдириб, гўштини ейиш одат бўлган. Ўз синглисига уйланиш эса уят, айб ҳисобланмаган.

Одамлар уруғ, қабила, элат бўлиб яшаб бориши билан, тузум, давр ўзгариши билан одамларнинг ахлоқий муносабатлари ўзгариб, ривож топиб боради, ахлоқий тушунчалар, принциплар, қоидалар янгича маъно касб этиб боради. Жумладан, яхшилик ва ёмонлик, бурч, бахт, ҳалоллик, виждон каби ахлоқий тушунчалар даврдан даврга ўтиб ўзгариб, ҳатто бир-бирини истисно қилиб боради. Аммо таъкидлаш лозимки, кишилик жамиятининг илк даврида юқорида баён этилган, ҳозирги замон нуқтаи назаридан қораланган ахлоқий хатти-ҳаракатлар билан бирга ижобий, яъни меҳнатсеварлик, бирдамлик, тўғрилик, содиқлик, ҳалоллик каби жиҳатлар ҳам бўлган. Агар бошқага аталган таомни билмасдан тановил қилиб қўйган бўлса, бир суткага бормай ҳалок бўлган, улар учун энг оғир жазо жамоадан ҳайдалиш бўлган, чунки уларнинг бир ўзи ҳаёт кечира олмаганлар.

Шунинг учун ҳам бу жамиятни ахлоқ жамияти деб аталган, ахлоқий нормалар қонун даражасида қаралган. Давр ўзгариши, ақлий меҳнат жисмоний меҳнатдан ажралиб чиқиши ва жамият тизими ўзгариши билан кишиларнинг ижтимоий ҳаёти ҳам, инсонларга бўлган муносабат ҳам ўзгариб боради[4].

Юқоридаги ахлоқий иллатларга чек қўйилади, ахлоқий онги ўзгариб, ахлоқий муносабатларида, амалий фаолиятида ҳам бу ўзгариш ўз инъикосини топиб боради. Ахлоқ ҳақидаги фан – “этика”га асос солган Аристотел (бизда у Арасту деб аталади) антик даврнинг бошқа файласуфларига нисбатан ахлоқий муносабатларнинг табиатини теран тадқиқ эта олди. Унинг фикрича, ахлоқий фазилат руҳнинг ҳолати бўла олмайди, уни инсонларга табиатнинг ўзи бермайди, балки табиат фазилатли бўлишнинг имкониятларини яратади, холос. Барча ахлоқий фазилатлар – адолат, дўстлик, муҳаббат, мардлик, мўътадиллик,

[4] Аристотель. Политика. –М., 1991. –С. 8-9.

саҳийлик, сулҳпарварлик, хушфеъллик ва ҳоказолар фақат инсон фаолиятида намоён бўлади.

Ахлоқий фазилат фаолият, хатти-ҳаракат демакдир. Адолатли ишларни бунёд этиш билан, - таъкидлайди Арасту, - одам адолатли бўлиб боради, мардона ҳаракат билан мард бўлади. Одам жамиятда яшагани сабабли унинг ахлоқий фазилатлари ҳеч қачон соф, холис ҳолда намоён бўлмайди, балки фақат ижтимоий фаолиятдагина амалга ошади. Шунинг учун барча ахлоқий фазилатлар – ижтимоийдир, дейди Арасту.

Юнон олимларидан Суқрот ҳам, Демокрит ҳам, Афлотун ҳам ахлоқ масалаларига алоҳида тўхталганлар. Жумладан, бу мутафаккирларнинг қуйидаги фикрлари, ҳикматлари диққатга сазовор: “Мард бўлиш учун, мардлик ҳақидаги билимни эгаллаш керак”, “Қаноатли бўлиш учун, ҳиссиётларга йўл қўймаслик керак”, “Адолатли бўлиш учун, бировларга қандай қилиб яхшилик қилишни ўрганиш керак”, – деб Суқрот таълим берса, ахлоқни биринчи марта билим билан узвий боғлиқлигини таъкидласа, Афлотун яхшилик ғояси ҳақида фикр юритиб, “яхшилик ғоясида гўзаллик, меъёр, ҳақиқат” каби тушунчалар уйғунлашган бўлишини баён этади.

Демокрит эса “инсонни бахтли қиладиган нарса пул ҳам эмас, жисмоний куч ҳам эмас, балки ҳақиқат ва ҳар томонлама доноликдир”, “Энг оғир пайтда ўз бурчига содиқ бўлиб қолиш, буюк ишдир”, “Меъёрдан ўтиб кетса, ширин нарса ҳам аччиқдир”, – дейди. Фақат Ғарб мутафаккирлари эмас, балки Шарқ мутафаккирлари ҳам жамият тараққиётида ахлоқнинг ролига жуда катта диққат-эътибор қаратган. “Инсоният тафаккури тараққиётида илк бора эзгу ният, эзгу сўз ва эзгуликка асосланган амалиёт бирлиги ҳар қандай ижтимоий ривожланишнинг асоси эканлиги тўғрисидаги буюк таълимот Зардўшт гоҳларида шакллантирилган эди.

Фуқаролари бошқа фикрни ўйлаб, бошқа сўзларни айтишга ва яна бошқа амалий ишлар қилишга йўналтирилган жамият муқаррар тарзда таназзулга юз тутиши мумкинлиги тўғрисидаги инқилобий ғоя ҳам айнан шу таълимотга мансуб. Инсоният эзгу ният, эзгу сўз ва эзгу амалиётга изчил амал қилибгина инқироздан қутилиши ва фаровон ҳаётга етишиши мумкин, деган пурҳикмат хулосалар чиқарилган”[5] .

[5] Юлдашева М.М. Ҳозирги даврда мафкуравий таҳдидлар намоён бўлишининг хусусиятлари ва уларнинг олдини олиш йўллари: фалсафа 12ил. Номз. … дис. – Т., 2011. – 155 б.

Европа Уйғониш даврининг мутафаккирлари ахлоқий қадриятларга трансцендентал ахлоқ нуқтаи назардан эмас, балки реал, амалий ахлоқ, ҳаётий, дунёвий нуқтаи назаридан қарай бошладилар. Голланд файласуфи Спиноза ахлоқни илоҳийлаштириб талқин этишни танқид қилди. У ақлни ахлоқнинг асоси деб эътироф этиб, кишининг хатти-ҳаракатлари фақат унинг ўзига боғлиқ, одамнинг ўзи яхши-ёмонни ажратишга қодир эканлигини таъкидлайди, инсоннинг тафаккури қудратига ишонч унинг ахлоқий таълимоти ютуғидир.

Англияда янги даврнинг мафкурачиси бўлган Жорж Беркли Ирландиянинг оғир ҳолатига бефарқ бўлиб қолмаган. Чунки Ирландия Англиянинг биринчи колониясига айланган эди. Бунга унинг Ирландиянинг иқтисодий жиҳатдан юксалишига бағишланган асари мисол бўла олади. Беркли бу асарида иқтисодий сиёсатнинг долзарб масалаларини риторик саволлар шаклида ҳал этишга уринади. Унинг диққат-эътибори марказида бойликнинг асосий манбаи нима? Ер бойликми? – деган саволлар туради. Ахир биз аввало, халқнинг меҳнат фаолиятини қадрлашимиз керак эмасми, чунки халқнинг меҳнат фаолияти бойликни яратмайдими ва ҳатто, ерни ҳам бой қилмайдими? Халқнинг оғир иқтисодий аҳволига сабаб, - дейди Беркли, - кишиларнинг дангасалиги, меҳнат қилишдан бўйин товлашлари, деган фикрни ўртага ташлайди.

Шунинг учун ҳам камбағалларни ва дайдиларни меҳнат уйларига жўнатишни таклиф этади. Иқтисодни кўтариш ва миллий бойликни ўстириш тўғрисидаги Берклининг таклифлари эътиборга лойиқ. Агар XVII аср фалсафаси инсонни ақлли мавжудот сифатида талқин этган бўлса, XVIII аср фалсафаси инсонни кўпроқ эмоционал ҳиссий томондан ўрганишга уринади. Француз файласуфлари Спиноза сингари киши яхши бўлиб ҳам, ёмон бўлиб ҳам туғилмайди, деб таъкидлайдилар. Одам ўзининг шахсий манфаати учун яхши ёки ёмон ишга юради. Гельвеций ўзининг “Ақл тўғрисида”, “Инсон, унинг ақлий қобилиятлари ва тарбияси ҳақида” асарларида шахсий манфаат принципи ахлоқнинг асоси эканлигини ҳар томонлама асослаб беради.

Инсоннинг ҳар қандай муҳокамаларини манфаат бошқаради, манфаат инсон фазилатларининг ягона мезонидир, деб исботлашга уриндилар. Кишиларнинг фазилатлари ва нуқсонлари фақат шахсий манфаатнинг қандайлигига боғлиқ. Аммо шахсий манфаат ижтимоий манфаатга мувофиқ келгандагина яхшиликдир, акс ҳолда у ёмонликка айланади. Шахсий манфаатларни ижтимоий манфаатлардан айирадиган ахлоқ бемаъни, инсон табиатига зид бўлган ахлоқдир, деб таъкидлайдилар. Манфаат бамисоли инсон

фаолиятидаги пружина сингари объектив ижтимоий детерминизмга йўналтирилган эди. Улар уч турли манфаатлар ҳақида фикр юритадилар.

Индивидуал ёки шахсий манфаатлар, хусусий манфаатлар муайян бир жамиятдаги баъзи ижтимоий гуруҳлар ёки бирлашган гуруҳларнинг манфаатлари ва ниҳоят, жамият манфаатлари ёки ижтимоий манфаатлар бунга мисол бўлади. Мазкур учта манфаат турининг ўзига хослигини аниқлаш учун ва улар ўртасидаги мутаносибликни ўрганиш ва рационал таҳлил этишга алоҳида аҳамият берадилар. Француз файласуфлари шахсий ва ижтимоий манфаатлар бирлигига эришиш ахлоқнинг асосий мақсади деб айтдилар.

Инсон хулқи, уларнинг назарида, ижтимоий ахлоқнинг асосий қисми эди, одамларнинг фароғати ҳамиша ижтимоий бахт-саодатга, ижтимоий тараққиётга боғлиқ ҳолда талқин этилди. Улар этика сиёсат билан, қонунлар билан мустаҳкам боғланган дедилар. Француз файласуфлари кишиларнинг салбий хатти-ҳаракатлари учун жавобгарликни ҳукумат ва у чиқарадиган ёмон қонунлар зиммасига юклайди[6]. Улар ахлоқни мукаммаллаштирмоқ учун бошқаришнинг ижтимоий шаклларини ва қонунларини ўзгартириш зарур деб ҳисоблаганлар, чунки тарбия ва маърифат кўп жиҳатдан уларга боғлиқ, дейдилар.

Француз мутафаккирларининг бу фикрларида жон бор, албатта. Уларни чуқурроқ мушоҳада қилсак, бугунги цивилизация даврида, глобаллашув шароитида ахлоқнинг роли, маърифатнинг қадр-қиммати ниҳоятда зарур.

Забардаст инглиз мутафаккири ва ёзувчиси Бернард Шоу ўзининг: “Агар Муҳаммад пайғамбар тирик бўлганида, замонамиз муаммоларини бир пиёла чой устида ҳал қилган бўлар эди” деган сўзлари билан ифодалаган эди. Буюк олмон шоири Волфганг Гёте бундай деб ёзган: “Мен дунё тарихини ўқиб шундай хулосага келдим: дунё подшоҳлари тўплаган жами салтанату бойлик, қаср-лару саройлар Муҳаммад алайҳиссаломнинг ямоқ яктакларига ҳам арзимас экан... Биз Оврупа миллатлари маданий имконимиз юқори бўлишига қарамай, Муҳаммад (алайҳиссалом) сўнгги поғонасига қадар чиқа олган зинанинг биринчи пиллапоясидамиз, холос. Ҳеч шубҳа йўққи, бирон кимса у зотдан юқорироққа ўта олмайди”.

Бернард Шоу “Агар Муҳаммад (алайҳиссалом)дек бир одам ҳозирги дунёни бошқарганида эди, бу дунёнинг мушкулотларини ҳал қилишга

[6] Ҳуқуқбузарликларнинг сабаб ва шароитларини аниқлаш, таҳлил қилиш ва бартараф этиш: Ўқув қўлланма / И. Исмаилов, Д. М. Миразов, Ж. С. Мухторов ва бошқ.; проф. Ў. Ҳ. Мухамедовнинг умумий таҳрири остида. Т., 2017. Б. 22–24.

муваффақ бўлар эди, бу эса, ўз навбатида, ҳозирги дунёга етишмаётган хотиржамлик ва бахтни олиб келган бўларди", деган эди.

Томас Карлайл тан олиб айтишича, Араб халқи учун бу зулматдан н ургa чиқиш эди. Бу билан араблар илк маротаба бошқалар назарида жонландилар. Дунёнинг яратилишидан буён кўзга ташланмай, ўз саҳроларида изғиб юрган қашшоқ подачи халқ! Қаранг, кўзга ташланмаган халқ бугун дунёга кўз-кўз бўлди, кичик ди, оламий улуғликка эришди. Борйўғи юз йил ичида араблар ғарбда Гранадагача, шарқда Деҳлигача етишди, жасорат ва улуғворлик нури ила Арабистон олам кенг ликларини ёритмоқда".

Францияниng таниқли олимларидан Ламартиннинг мана бундай сўзлари бор: "Агар кишининг буюклиги унинг қилган ишларига, қозонган зафарларига, имконияти оз бўлса-да, ўпиш қилганига қараб баҳоланадиган бўлса, у инсонларнинг энг буюгидир. У киши ҳам пайғамбар, ҳам нотиқ, ҳам даъватчи, сиёсатчи, жангчи, қалблар ҳимоячиси, ғоялар тарғиботчиси, имом (яъни, раҳбар), давлат арбоби, ер юзининг йигирмата минтақасида исломий салтанат қура олган...".

Арасту шундай асосни яратган эдики, унга таянган Фома христианлик тушунчаси бўлган ***ғоявийлик*** ва ***моддийлик*** нисбатини аввалдан берилган шакл қоидаси (тартиб қоидаси) билан ***беқарор*** ва тўла ***барқарор*** бўлмаган модда қоидаси (борлиқнинг энг заиф кўриниши) ўртасидаги нисбатни қоидага айлантирди. Якка кўринишдаги ҳодисалар дунёси, Аквиналик Фома нуқтаи назарича шаклнинг биринчи қоидаси ва модданинг қўшилишидан туғилади. Инсоннинг руҳи эса, шакл ташкил қилувчи қоида бўлиб, ўзининг якка тарзда намоён бўлишини фақат бадан билан қўшилган ҳолатдагина қўлга киритади.

Ушбу хулосавий қоида христианлик схоластикасининг энг кескин масалаларидан бирини муросасизлик жиҳатдан якунлади. Шаклланаётган христианлик, схоластика каби, идеалистик тизим бўлиб, ўзининг моддага бўлган муносабатини талқин қилишда чуқур ташвишда эди, негаки Худонинг учинчи кўриниши бўлган Исо Масиҳ, инсон сиймосида намоён бўлган эди, яъни ўзида ҳам илоҳий (ғоявий), ва ҳам инсоний (моддий-жисмий) табиатни бирлаштирган эди. Илоҳийлик ва инсонийликнинг қўшилиши ёлғон борлиқ сифатида моддани тўла инкор этишга, уни «ҳеч нима» (уни «ҳеч нимадан» яратилганлигини ақида талаб қилар эди) деб эълон қилишга имкон бермас эди. Шунинг учун Аквиналик Фома томонидан моддани «борлиқнинг энг заиф кўриниши» сифатида талқин қилиниши черков томонидан вужудга келган услубий ва мантиқий боши берк кўчадан чиқиш сифатида қабул қилинди.

Натижада модда схоластикада тобелик ҳолатида бўлса ҳам, қисман мавжуд бўлиш ҳуқуқини қўлга киритди.

Ғоявийлик ва моддийлик ҳақидаги энг кескин баҳс *реалистлар* (лот. realis–ҳақиқий, ашёвий) ва ***номиналистлар*** (лот. nomen–исм, ном) ўртасидаги машҳур мунозарада намоён бўлди. Гап ***универсалий*** (лот. - умумий) умумий ёки тур деб аталган тушунчаларининг табиати ҳақида борар эди. Реалистлар (Иоанн Скотт Эригуна, Кентерберийлик Ансельм, Аквиналик Фома) Арастунинг умумийлик ягоналик билан боғлиқ равишда мавжуд бўлиб, унинг шаклидир деган қоидасига асосланадилар.

Аквиналик Фомада универсалийлар уч хил кўринишда мавжуд эдилар: «ашёларгача» илоҳий ақлда; «ашёларнинг ўзида» уларнинг моҳияти сифатида; ва «ашёлардан сўнг» абстракт фикрлаш натижаси сифатида инсон ақлида. Бундай Ҳукм юритиш фалсафа тарихида «умумий» фақат ашёлардан ташқарида мавжуд бўлади деган *«ўта кескин реализм»* дан фарқли ўлароқ, «мўътадил реализм» номини олди.

Ўта кескин реализм ўзининг илдизлари билан Афлотун таълимотига бориб тақалар эди ва ўзининг идеалистик схоластикага яқин бўлиб кўринишга қарамасдан черков томонидан айнан шунинг учун қабул қилина олмас эдики, модда христианлик томонидан Исо Масиҳнинг икки табиатидан бири сифатида оқланган.

Номиналистлар эса (Росцелин, Пьер Абеляр) «умумий» нинг объектив мавжудлигини рад этиб, универсалийлар фақат тафаккурдагина мавжуд деб ҳисоблар эдилар. Улар умумийнинг борлигини фақат муайян якка ашёлардагина эмас, балки уни «ашёларгача» ҳам мавжудлигини рад этар эдилар ва бу эса модданинг олдин келишлиги ҳақидаги шиорни қабул қилиш билан баробар эди. Росцелин фикрича, универсалийлар фақат ашёларнинг исмларидир. Фақат якка олинган нарсалар мавжуддир. Росцелин ва бошқаларнинг номиналистик қарашлари черков томонидан маҳкум этилди.

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VOYAGA YETMAGANLAR O`G`RILIK JINOYATINING KELIB CHIQISH OMILLARI VA ULARGA QARSHI PROFILAKTIK CHORA-TADBIRLAR

Mo`minjonov Muhammadrashod Sherzodbek o`g`li

Annotatsiya: Ushbu maqolada o`g`rilik jinoyati tushunchasi va ko`p hollarda qanday toifadagi shaxslar tomonidan sodir etilayotgani,ayniqsa voyaga yetmaganlar tomonidan sodir etilayotgan o`grilik jinoyati va boshqa turdagi huquqbuzarliklarni keltirib chiqaruvchi omillar va ma`sul shaxslar tomonidan yo`l qo`yilayotgan kamchiliklar va ularni bartaraf etish usullari haqida ma`lumot berilgan.Bundan tashqari respublikamizda va jahondagi jinoyatchilik haqida ham statistik ma`lumotlar berib o`tilgan.

Annotation: In this article,the concept of the crime of theft and in many cases what category of persons it is committed by,especially the crime of theft committed by minors and the factors that cause other types of offenses and what is allowed by the responsible persons.Information about shortcomings and ways to eliminate them is given.In addition,statistical information about crime in our republic and in the world is also given.

Keys words: O`g`rilik tushunchasi,voyaga yetmagan,jinoyat, ayollar jinoyatchiligi,voyaga yetmaganlar jinoyatchiligi,bola,ota-ona,ma`sul shaxslar.

Shiddat bilan globallashib borayotgan ayni davrda,shaxslarning dunyoqarashi ham shunga monant tarzda yuksalib bormoqda.Jinoyat olami va unda faoliyat yuritayotgan kimsalarning intelektual salohiyatida ham ushbu globallashuv bilan birga rang-barang tarzda rivojlanish jarayoni davom etmoqda.Xususan,ushbu toifa shaxslardan bo`lgan “Sahiy insonlar”(o`g`rilar) tomonidan sodir etilayotgan jinoyatlar va keltirib chiqarayotgan salbiy holatlar hali hanuzgacha soni ortsa ortib bormoqdaki,kamaygani yo`q.

Shaxslarga moddiy zarar ko`rishi va ularning ko`rgan zararlarni qoplash jaroyoni murakkab bo`lgan,aksariyat hollarda zararni qaytarmaslik holatlari ham ko`p uchraydigan salbiy holat bevosita o`g`rilik jinoyatini sodir etilishi bilan bog`liqdir. Ushbu jinoyat davlatning iqtisodiyot sohasiga zarar yetkazishi bilan harakterlanadi.Shuning uchun ham O`zbekiston Respublikasi Jinoyat kodeksining 3-bo`limidan joy olgan.Ushbu jinoyatga O`zbekiston Respublikasi Jinoyat kodeksi 169-moddasida quyidagicha ta`rif berilgan:

O`g`rilik-o`zganing mulkini yashirin ravishda talon-taroj qilishdir.[1] Demak,yuqoridagi ta`rifdan ham ko`rinadiki, jinoyatchi tomonidan o`zganing mulkini unga bildirmagan holda bevosita olishida ifodalanadigan xatti-harakat.

Ushbu jinoyatni sodir etayotgan shaxslar toifasi ham turlichadir.Ushbu toifalarga quyidagilarni misol qilsak bo`ladi:

- Ilgari sudlangan yoki ushbu qilmishni qilib yurgan turli toifadagi shaxslar
- Turli xildagi shaxslardan iborat guruhlar yoki uyushgan guruh tomonidan
- Ayollar tomonidan
- Voyaga yetmaganlar va boshqalar
- Turli moddiy yetishmovchilik sababli kun ko`rayotgan qiyin ahvoldagi oila vakillari.

O`g`rilik jinoyatining subyektiga yosh chegarasi 14 yosh aqli raso jismoniy shaxs qilib belgilab qo`yilgan[2].

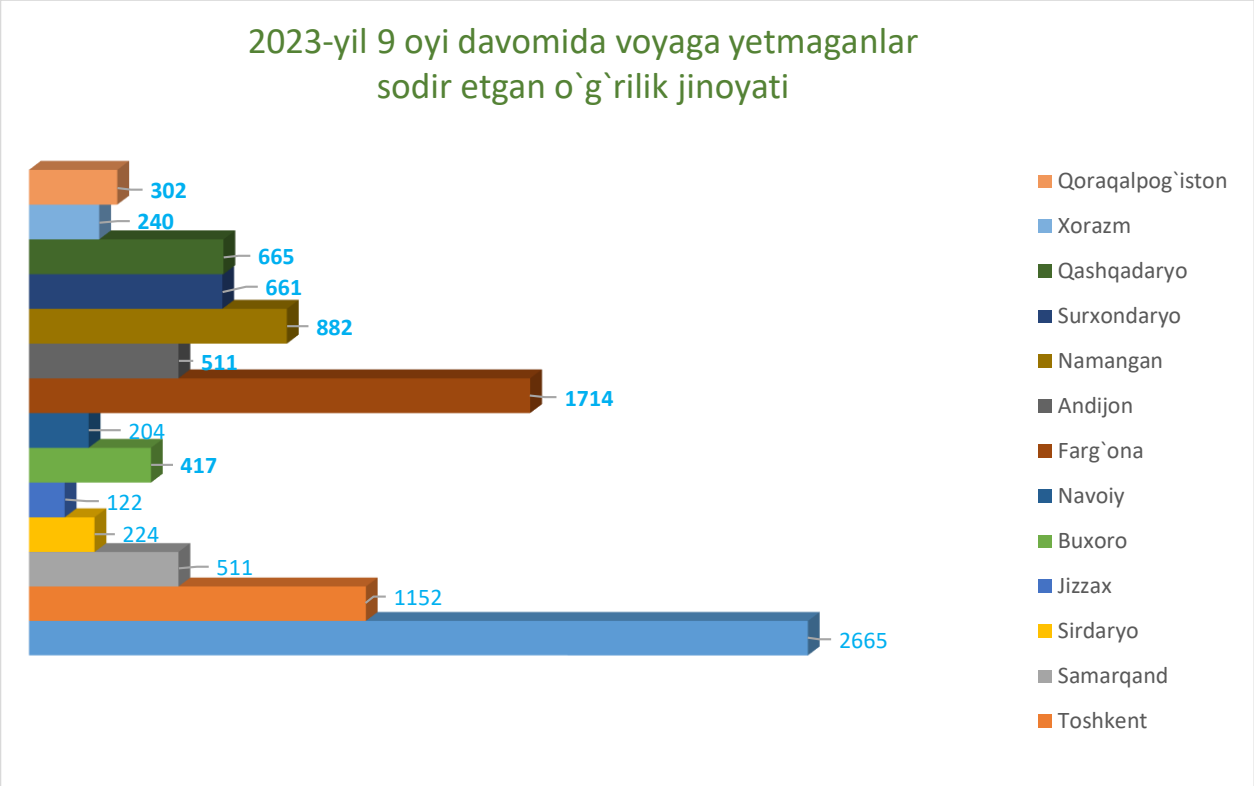
14 yoshga to`lmagan shaxslar tomonidan sodir etilgan bo`lsa,ushbu qilmishni amalga oshirgan voyaga yetmagan shaxsning qilmishi o`g`rilik jinoyati subyekti sifatida baholanmaydi va javobgarlikdan ozod etilishiga sabab bo`ladi.Chunki, mantiqiy o`ylaydigan bo`lsak ham ushbu yoshdagi bola hali o`z qilmishlarini haqiqatdan ham oqibatini tushunib yetmagan bo`ladi.

Voyaga yetmaganlarning xatti-harakatlarini bevosita ota-onalari yoki ularning o`rnini bosuvchi shaxslar nazorat qilib boradi. Shuning uchun ham O`zbekiston Respublikasi Ma`muriy javobgarlik to`g`risidagi kodeksning 47-moddasiga asosan ota-onalar yoki ularning o‘rnini bosuvchi shaxslar tomonidan voyaga yetmagan bolalarni tarbiyalash va ularga ta’lim berish borasidagi majburiyatlari belgilab qo`yilgan.Agar bunday majburiyatni lozim darajada yoki umuman bajarmasalar sud tomonidan,bolaning kelajaki yaxshi bo`lishi uchun ota-onaga nisbatan ularni ota-onalik huquqidan mahrum qilishgacha bo`lgan chorani ko`rishi mumkin.

Ayni vaqtda o`g`rilik jinoyatini yoki boshqa turdagi g`ayriijtimoiy qilmishlarga jalb qilish katta yoshdagilar tomonidan amalga oshiralayotganini guvohi bo`lamiz.Misol tariqasida ayrim g`araz maqsadli shaxslar tomonidan voyaga yetmagan shaxslardan o`z manfaatlari yo`lida ularni ishontirib, boshqalarning moddiy boyliklarini qo`lga kiritishmoqda.Bu esa haqiqiy jinoyatchilarning o`z maqsadlari yo`lida javobgarlikdan qutulib qolish maqsadida bolalardan foydalanib kelishlarida ko`zga tashlanadi.Bu esa voyaga yetmagan shaxsning o`zida keyinchalik

[1] http://www.lex.uz (O‘zbekiston Respublikasi Qonun hujjatlari ma’lumotlari milliy bazasi).
[2] 4 http://akadmvd.uz (O‘zbekiston Respublikasi IIV Akademiyasi).

g`ayrihuquqiy xulq-atvor shakllaninb qolishiga sabab bo`lmoqda.Voyaga yetmaganlar tomonidan sodir etilayotgan o`g`rilik jinoyatining viloyatlar kesimida quyidagi statistikasiga e`tibor berishimiz orqali hushyor bo`lishga chorallaydi:



Yuqoridagi statistik ma`lumotlardan ham ko`rinadiki, voyaga yetmaganlar tomonidan sodir etilayotgan huqubuzarliklarni kamaytirishimiz dardkor.Shu maqsadda barchamiz birlagalashib, “Bir bolaga yetti mahalla ham ota,ham ona”degan naqlga amal qilgan holda,kata hayotda muvaffaqiyatli qadam bosishlariga sababchi bo`lmog`imiz lozim.Shuning uchun ot-onalar va jamiyatning boshqa a`zolari tomonidan bolalarni huquqbuzarlik sodir qilishdan saqlanish uchun quyidagi profilaktik chora-tadbirlar amalga oshirish tavsiya qilinadi:

- Farzandlarni bolalik davrida ijtiomoiy tarmoqlar yoki televidenyada qanday ko`rsatuv yoki filmlarni ko`rayotganiga hamda qanday o`yinlar bilan band ekanligiga e`tibor qaratish;
- Bolalarning do`stlari kim ekanligi haqida ma`lumotga ega bo`lish;
- O`qishdan bo`sh davrlarida vaqtlarini behuda sarf qilmaslik uchun turli xildagi mashg`ulot turlari (fanlar yoki kasb-xunarlar hamda sport va musiqa to`garaklari)dan birini o`rganishga jalb qilish;

- Farzandlar o`zlarini yaxshi tomondan ko`rsatsalar,turli xildagi rag`bantlantirish choralarini amalga oshirish;
- Ota-onalar bolalar bilan munosabatda ularning ishonchiga kirishi natijasida,muammo va kamchilik hamda qiziqishlari haqida bilish va shu yuzasidan o`z maslahatlarini berishi zarur.

Yuqoridagi tavsiyalarni quyidagi faktlar bilan asoslab, uni o`z mulohazalarim bilan yanada quyidagicha yetkazishga harakat qilaman.

Avvalo respublikamiz hududidagi mavjud voyaga yetmaganlar tomonidan sodir etilgan birgina umumiy jinoyatchilikning quyidagi statistikasi orqali ham bu borada qilishimiz kerak bo`lgan ishlar ko`p ekanligidan dalolat beradi.

Umumiy jinoyatchilikning yanada ortib ketish oldini olish qiyin bo`lsada,farzandlarimizni ma`lum darajada nazoratini kuchaytirishimiz zarur.Ayniqsa,hozirgi axborot asrida mavjud bo`lgan ma`lumotlardan hayrli maqsad yo`lida foydalanishni o`rgatishimiz kerak.Ushbu fiklarni yanada aniqlashtirish uchun quyidagi ma`lumotlarnui keltirib o`taman.

Hozirda jahonda 8 milliard 19 million 875 mingdan ortiq insonlar mavjud bo`lib,shulardan 53%ni, ya`ni 3,196 mlrd.ni ijtimoiy tarmoqlardan foydalanuvchilar

tashkil etadi.Bu ko`rsatkichdan ko`rinadiki, ijtiomoiy tarmoqni insonlar orasida roli oshib borayotganligini.Bu esa yoshlar orasida ommalashgan bo`lib,ular tomonidan nato`g`ri foydalanish natijasida turli xildagi salbiy g`oyalarni targ`ib qiluvchi o`yinlar va ko`rsatuvlar orqali foydalanayotgan g`arazli kimsalar o`z maqsadlarini amalga oshirishga omil bo`lmoqda.Birgina 2017-yilgi ma`lumotlarga ko`ra,suiqasd qilishga chorlovchi onlayn o`yinlar qamrovidan 900 mingdan ortiq foydalanuvchi ro`yxatdan o`tgan bo`lsa,shundan 600 nafaridan ko`prog`i vatandosh yoshlarimiz tashkil etadi.Bu miqdor bugunki kunga kelib yanada ortgan bo`lsa ortganki, kamaygani yo`q.

Shuning uchun axborot mahsulotlarini yoshga doir tasniflangan holda uzatish zarur.Misol uchun, bolalar yoshiga qarab (0+,7+,12+,16+,18+) ommaga taqdim qilishi kerak.

Farzandlarimiz kim bilan do`st bo`lgani haqida ma`lumotga ega bo`lsak,ularni nazorat qilishimiz shunchalik osonlashadi.Agarda, uning do`stlari yomon axloqli bolalar bo`lsa ulardan uzoqlashtirish va ilmga hamda na`muna bo`ladigan bolalar bilan faoliya olib borishini ta`minlashimiz zarur.Bunday qilinmasa,ushbu bola kelajakda jinoyatchi yoki yalqov bo`lib qoladi.Ushbu holatga ilk qadamalr quyidagilarda namoyon bo`ladi:

- Bolaning jahldor bo`lib qolishi;
- Kattalarning gapiga kirmaslik yoki ularga nisbatan hurmatsizlik qilish;
- Boshqalar bilan munosabatda qo`pol bo`lishi yoki ulardan o`zlarini chetga olishi;
- Darslarga va belgilangan vazifalarga masu`liyatsiz bo`lishi yoki ularni bajarmaslik;
- Salbiy illatlarni shakllanishi(uyga kech kelishi,ta`maki va spirtli mahsulotlar iste`mol qilishi va h.k) kabi holatlar.

Yuqoridagi omillarni sezgan zahotimiz ma`sul shaxslar tomonidan qo`limizdan kelgan barcha choralarni ko`rishimiz zarur.Buning uchun farzandlarimizni bo`sh vaqtlarida mazmunli va foydali bo`lgan mashg`ulotlarga jalb qilishimiz zamon talabi bo`lib qolmoqda.Chunki,Yaponiya tajribasida bolalarni qobiliyatlariga ular 3 yoshga to`lgunga qadar aniqlab,yo`naltirishadi.Buning uchun samarali usullaridan biri,bolalar uydagi mavjud narsalarni qay biriga qiziqishi yoki o`yinchoqlarga qiziqishini bilib olish maqsadida o`z xonadonlarini turli xildagi buyum va o`yinchoqlar bilan boyitishadi.Shuningdek,yaponlar o`z uylarini farzandining qiziqishi bilishi uchun ham, bola ma`lum yoshga yetgunga qadar ta`mirlamay turishadi.Chunki. bola turli xildagi rasmlarni yoki tasvirlarni har xil rangdagi

markerlardan foydalanib bo`yashadi.Bu bilan ularni kelajakdagi qaysi sohaga yo`naltirishga asoslardan biri bo`lib xizmat qilmoqda.

Biz farzandlarimizni kelajakda jinoyatchi bo`lib yetishmasligi uchun,yana bir jihatga e`tibor berishimiz zarur.Ushbu holat bolalarni yaxshi amallariga qarab rag`bantlantirish kerak.Misol tariqasida, dam olish kunlarida turli xildagi dam olish yoki ko`ngil ochar joylarga olib borish,kitob yoki turli xildagi foydali manbaalar sovg`a qilish,nimadir qilishga ruxsat so`raydigan holati bo`lsa,uni ma`lum vazifani ado qilib bo`lgandan keyin bajarish va h.k.Agarda ular bilan bunday ishlarni olib bormasak,ularni bunday amallarni qilishga ishtiyoqi kamayishiga olib keladi.Agarda aksi bo`lsa,bolalar biz kutganimizdan ham foydali ishlarni qilishadi va hayratlantirishda davom etaverishadi.

Shunday ekan har biz yosh avlodni tarbiyalashda har bir insonni o`rni beqiyosdir.Xattoki, u yeti yot begona inson bo`lsa ham.Chunki,ertangi kelajakda avlod yangilanib borishi natijasida biz tarbiya qilgan insonlarimiz bizlarga va bizdan keyingi avlodlarga g`amxo`rlik qiladi,qachonki ularga to`g`ri tarbiya va bilim o`rgata olsak.Agarda aksi bo`lsa,hayot bizni o`z manzilimiz va maqsadimizga yetmasdan o`z ummoniga cho`ktirib yuboradi.

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- http://press-service.uz/uz O‘zbekiston Respublikasi Prezidentining rasmiy veb-sayti.
- http://natlib.uz (Alisher Navoiy Nomidagi O‘zbekiston Milliy kutubxonasi).
- 4 http://akadmvd.uz (O‘zbekiston Respublikasi IIV Akademiyasi).
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CORRELATION BETWEEN THE GUM BIOTYPE AND ITS PREDISPOSITION TO RECESSION (Literature review)

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One of the main factors on which the success of dental treatment will depend is the gingival biotype. Different biotypes react differently to inflammation, surgical and restorative treatment. Therefore, it is very important to determine the gum biotype before starting treatment. Special attention should be paid to patients with a thin gum biotype when planning treatment.

The purpose of this article is to consider the characteristics of various gingival biotypes, the prevalence of various forms and to describe the main methods of their identification.

Key words: gum biotype, mucous membrane, gum, gum recession.

Summary. One of the main factors on which the success of dental treatment will depend is the gingival biotype. Different biotypes respond differently to inflammation, surgical and reconstructive treat to prevent complications due to orthodontic treatment, which helps to achieve predictable and aesthetic results in implantology. To maintain the clinical health of the periodontal, a functionally adequate keratinized zone of the attached gum is necessary. A wide band of dense gums prevents the spread of the inflammatory process. A narrow zone of keratinized gums leads to the development of destructive processes in the periodontium, exposure of the necks of teeth, and the development of recessions. The correlation between the width of the keratinized attached gum and the periodontal biotype has been proven.

Recently, scientific interest has focused on determining the influence of gingival biotypes on the outcome of dental treatment, as well as the potential for gingival recession. Gum recession is a common gum disease of various etiologies, manifested by displacement of its vestibular edge in the apical direction with exposure of the surface of the tooth root. Gingival biotype is a term used to describe the thickness of the gingiva in the vestibular direction. It includes a number of clinical parameters, of which the main ones are: the thickness of the attached gum, the height of the gingival papillae, the shape of the tooth crowns. Knowledge of the

above parameters is an important factor in order to take it into account when diagnosing dental treatment, predicting the likelihood of gum recession, preventing complications due to orthodontic treatment, which helps to achieve predictable and aesthetic results in implantology. To maintain clinical periodontal health, a functionally adequate zone of keratinized attached gingiva is necessary. A wide strip of dense gum prevents the spread of the inflammatory process. A narrow zone of keratinized gums leads to the development of destructive processes in the periodontium, exposure of the necks of teeth, and the development of recessions. A correlation has been proven between the width of the keratinized attached gingiva and the periodontal biotype.

LITERATURE REVIEW

Most authors agree that there are two gum phenotypes (thin and thick). The thin gum biotype is characterized by a thin gum, a pronounced scalloped gingival contour, high interdental papillae, high and narrow crowns of teeth with punctate proximal contacts; the thickness of the attached gum is 1 mm. The thick gum biotype is characterized by: a significant thickness of keratinisir significant thickness of the keratinized gum (1.5-2 mm), slight curvature of the gingival contour and low short and wide interdental papillae. However, in the works of D.R.Cook et al. (2014); M.Rathee et al. The authors also cite the average gum biotype, interpreting it as an intermediate state between a thin and thick phenotype (the thickness of the attached gum is about 1.5 mm). It is often impossible to attribute the patient's mucous membrane to one or another biotype of the structure, therefore, studies conducted by N.Maria et al. (2015) allowed us to identify another biotype of the gum, called “mixed". The authors characterize it as a combination of several phenotypes. The thin gum biotype is the most difficult, because the collagen content in the tissues is low and the area of the keratinized attached gum is much smaller than with a thick phenotype, which makes the results of surgical intervention unpredictable. According to a number of authors, a thin gum biotype is found in 75% of the population. In the works of R.Shah (2015), K.R.Fischer (2015) the thin biotype occurs in 43-48% of cases, and in 52-57% — the thick phenotype. In the work of A.Joshi et al. (2017), the distribution of gingival biotypes among men and women was studied: for example, 75.8% of men and 16% of women had a thick gum biotype and, respectively, 24.2% of men and 84% of women had a thin biotype.

In addition, studies conducted by M.Cuny-Houchmand et al. show that the thick gum biotype is most often identified on the upper jaw than on the lower (44.87% vs. 32.65%, respectively). The formation of a thin or thick gum biotype in humans

occurs at the time of growth and restructuring of the jaw bones and depends on the mechanical load directed from the teeth to the jaw bones. According to a number of researchers, the thickness of the vestibular cortical plate in the anterior part rarely reaches 1 mm. For this purpose, intraoral tissue scanning and impression scanning are used.

CONCLUSION

Thus, it can be concluded that many researchers have proven a correlation between the gum biotype and its predisposition to recession after surgical and reconstructive procedures. The delicate gum biotype is the most prone to this phenomenon. The correct diagnosis of the periodontal biotype is of great interest for the adoption of surgical treatment tactics and can be a tool for dentists to quantify gum changes at treatment stages.

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КОНСТИТУЦИЯЛАРНИНГ РИВОЖЛАНИШ ТАРИХИ ВА УЛАРНИ ҲУҚУҚБУЗАРЛИКЛАР ПРОФИЛАКТИКАСИ ФАОЛИЯТИГА ТАЪСИРИ

Мамажанов Жахонгир Жамолиддин ўғли

Кириш сўз: конституция, ислоҳот, ҳуқуқбузарлик, ҳуқуқбузарликлар профилактикаси, амалий тажриба , Темур тузуклари, Салон қонунлари, "Сиёсатнома", конституцион қонун, Референдум, "Тараққиёт стратегияси ",

Аннотация - Мақолада “конституция биноси”нинг барпо бўлиши тарихи, илк конституциявий қонун ҳужжатлари, шунингдек, жаҳон конституциялари ҳамда конституциявий ислоҳотлар, шу билан бирга, Узбекистон Республикаси конституциясига қўшимча ва ўзгартишлар киритиш борасида давом этаётган жараёнлар, қолаверса фуқароларнинг ҳуқуқ ва эркинликлари, қонуний манфаатлари шахсий дахлсизликларини ҳимоя қилиш янги босқичга кўтирилгинлиги ифодалаб ўтилади ва ушбу ислоҳотлар замирида ҳуқуқбузарликларнинг олдини олиш бўйича тафсиялар ва таклифлар келтириб ўтилган.

Annotation - The article describes the history of the establishment of the "constitutional building", the first constitutional legislation, as well as world constitutions and constitutional reforms, as well as the ongoing processes of introducing additions and changes to the Constitution of the Republic of Uzbekistan, as well as the rights and freedoms of citizens, legal interests and personal It is expressed that the protection of human rights will be taken to a new level, and the definitions and proposals for the prevention of violations are presented under these reforms.

Конституциялар, уни кабул килган мамлакатларнинг асосий конуни бўлиб, давлат ва жамият қурилиши, инсоннинг хукук ва мажбуриятларини у ёки бу тарзда ўзида акс эттирган олий юридик кучга эга ҳужжат ҳисобланади. Конституция биносининг барпо қилиниши ва ҳозирги кўринишга келиши узоқ тарихий даврни ўз ичига олади. Шунингдек, фанга маълум бўлишича, дастлабки конституцияга хос жиҳатлар бундан тўрт минг йил аввал қадимги Бобилда пайдо бўлган подшо “**Хаммураппи қонунлари”** кодексидир. Кейинги даврларда юзага келган **"Салон қонунлари",** мўғул **"Ясок"**лари, **"Темур тузуклари"** хам, муайян маънода, ўз даврига хос конституцион қонун ҳужжатлари бўлган, дейиш мумкин.

Давлатлар тарихига назар ташлайдиган бўлсак, ҳозир биз тасаввур этадиган конституцияларнинг пайдо бўлганига ҳали унча кўп вакт бўлган эмас. Баъзи манбаларда дастлабки конституция сифатида 1787-йили Филадельфияда қабул қилинган АҚШ конституцияси тилга олинади. Аслида ундан олдин қабул қилинган конституциялар ҳам бор. Бу дунёдаги энг кичик давлатлардан бири Сан-Марино Республикасининг 1600-йилда қабул қилинган асосий қонунидир. Айнан шу вақтдан бошлаб, демократик давлатларнинг асосий бош қонуни расмий юридик номга эга бўлди ва бугунги кунга қадар Конституция деб аталиб келмоқда.

Давлатимизнинг конституциявий биносини қуришда уч минг йилликдан зиёд миллий давлатчилик тажрибасига таянилган. Бугунги янги Ўзбекистон конституцияси ўзида қадимги Хоразм ва Суғдиёна, Бақтрия, Қорахонийлар, Хоразмшохлар, Амир Темур ва Темурийлар, Ўзбек хонликларининг, миллий руҳдаги тарихий анъаналарини мужассам этган.

Асосий қонунимиз Шарқий ва Ғарбий свилизацияларни ўз ичига олган жаҳон конституциявий тажрибалари, 100 дан ортиқ мамлакатлар тўплаган илғор конституциявий тажрибаларидан фойдаланган ҳолда яратилган.Шунинг учун хам Узбекистон конституциясининг ғоя ва нормаларида халқимизнинг кўп асрлик тажриба ва маънавий кадриятлари, бой тарихий-ҳукукий мероси акс эттирилгани унинг хаётийлигининг кафолатидир. Шу билан бирга, асосий қонунимиз кўплаб демократик давлатларда конституциявий қурилиш соҳасидаги илғор тажрибанинг энг яхши жиҳатларини, Инсон ҳукуклари умумжаҳон декларациясининг умумэътироф этилган нормалари ҳамда мазкур соҳадаги бошқа халкаро ҳужжатларга асосланган инсон ҳукук ва манфаатларини, эркинлигини таъминлаш ва ҳимоя қилиш механизмини ўзида мужассам этган.

Конституциянинг қабул қилиниши ижтимоий ва давлат қурилишининг барча жабҳаларидаги муносабатларини, миллий қонунчилигимизнинг барча соҳаларини тартибга солувчи аниқ ҳукукий тизимни ташкил этди. Ўтган давр мобайнида мамлакатимиз парламенти конституция нормаларига мувофиқ 700 га яқин қонунларни қабул қилди, 200 дан ортиқ кўп томонлама халқаро шартномани ратификация қилди ва шу тариқа асосий қонунимизни амалга оширишнинг яхлит ҳукуқий механизми яратилди. Унинг самарадорлигини вакт ўзи кўрсатиб турибди ва бу бутун жаҳон ҳамжамияти томонидан эътироф этилмокда.

Академик А.Х.Саидов таъкидлаганларидек, асосий қонунимизга нисбатан бундай юксак ва холис баҳолар берилиши беьжиз эмас. Жумладан қуйидаги сабаблар билан изоҳлаш мумкин:

Биринчидан, бизнинг конституция ҳақиқатан ҳам демократик конституциядир. Тарихда синалган умуминсоний, умумбашарий кадриятларни, халкаро андозаларни ўзида мужассам этган ҳужжатдир.

Иккинчидан, бизнинг конституция энг ривожланган, тараққий топган давлатларнинг тарихий тажрибасига таянган ҳолда яратилган. Бунда қайсидир давлатнинг тайёр конституциясини кўр-кўрона кўчириб олиш йўлидан бормай, балки энг илғор хорижий конституциявий тажрибаларни ўргандик ва эътиборга олдик. Натижада эндиликда бош қомусимиз дунё миқёсида ҳам ҳар қандай тараққий топган давлат конституцияси билан бемалол куч синашмоқда.

Учинчидан, конституциянинг ғоя ва нормалари ўзбек халкининг теран тарихий илдизларига асосланган бўлиб, у кўп асрлик тажриба ва маънавий қадриятларни, улуғ аждодларимизнинг ҳуқуқий меросини ўз ичига олган. Конституциямиз асосида мамлакатимизда миллий қонунчилик тизими, давлат органлари, фуқаролик жамияти институтлари шаклланди. Бугунги кунда барча жабҳаларда кенг кўламли ислоҳотлар амалга оширилмокда. Ижтимоий-иқтисодий, сиёсий ва харбий салоҳиятимиз юксалиб, фуқароларимизнинг дунёқараши тобора ўсиб бормокда. Буларнинг барчаси, энг аввало, бош қонунимизнинг ҳаётбахш куч-қудрати натижасидир.

Мамлакатимиз давлати ва ҳуқуқи тарихига мурожаат қиладиган бўлсак, конституцияга хос бўлган жиҳатларни ўзида мужассам этган илк китобларнинг вужудга келиши узоқ ўтмишга бориб тақалишига гувоҳ бўламиз. Хусусан, Амир Темурнинг “Темур тузуклари" асарида давлат бошқаруви, хокимиятнинг бўлиниши, ижро ҳокимиятини шакллантириш, амалдорларни вазифасига тайинлаб, вазифасидан озод қилиш, давлат ва фуқаро ўртасидаги муносабатлар, солиқ ва молия тизимини шакллантириш билан боғлик кўплаб жихатлар ёритилган. Мустатақилликдан сўнг Ўзбекистон конституциясининг яратилишида шу каби тарихий асарлар, шунингдек, 100 дан ортик давлатлар тажрибаси чукур ўрганилган ҳамда мамлакатимиз тараққиёти учун аҳамиятли бўлган жиҳатлар инобатга олинган.

Ўзбекистон Республикасининг Конституциясини яратиш борасидаги энг муҳим қадамлардан бири 1990-йил 21-июн куни Ўзбекистон Республикасининг биринчи президенти Ислом Каримов раислигида давлат

арбоблари, депутатлари ва мутахасисларининг 64 нафар аъзосидан иборат конституциявий комиссиянинг тузилиши бўлган.

Бу ўринда мазкур кенгаш таркибида Ўзбекистон Республикасининг Президенти Шавкат Миромонович Мирзиёев ҳам бўлганлиги ҳамда қомусимизнинг яратилишига жуда катта ҳисса қўшганлиги алоҳида эътиборга лойиқ. Ушбу комиссия томонидан 2 йилдан кўпроқ вакт давомида олиб борилган меҳнат натижасида мамлакатимиз конституцияси лойиҳаси тайёрланган.

Конституциянинг биринчи лойиҳаси 1992-йил 26-сентабрь куни матбуотда чоп этилиб, умумхалқ муҳокамасига қўйилди. Тарихий маълумотларга назар ташлайдиган бўлсак, конституциявий комиссияга қомусимиз лойиҳаси юзасидан турли-хил фикрлар билдирилган 600 га яқин хат келиб тушган. Бунда мамлакатимиз фуқаролари томонидан билдирилган фикрлар 5000 мингдан ортиқни ташкил этган. Фуқаролар томонидан билдирилган фикрлар инобатга олинган ҳолда конституция лойиҳаси тўлдирилган ва 1992-йил 21-ноябрда иккинчи марта умумхалқ муҳокамасига қуйилди. 1992-йил 8 декабрда эса қабул қилинган. Маълумки Конституция мамлакатимиз тарихидаги энг оғир даврда қабул қилинган. Умуман илк мустақиллик йиллари сиёсий барқарорлигимизга турли-хил таҳдидларнинг мавжудлиги, Наманган, Тошкент каби вилоятларда этник можаролар чиқариш учун террористик ҳаракатларининг амалга оширилиши, иқтисодий қийинчиликлар, жумладан озиқ-овкат хавфсизлигини таъминлаш борасида жиддий муаммоларнинг юзага келиши даври хисобланади. Бундай таҳликали даврда Ўзбекистон Республикаси Конституцияси инсон манфаатларини энг олий кадрият деб биладиган, барча фуқаролар ўзларига муносиб тарзда, фаровон ҳаёт кечира оладиган, тинчлик ва тотувлик таъминланган давлат барпо этиш йўлида қабул қилинган.

Мамлакатимиз конституцияси инсон ҳуқуқларини олий кадрият сифатида қуриб, демократия тамойилларини ўзида мужассам этган ва юртимизда яшаётган ҳар бир фуқаронинг фаровон ҳаёт кечиришини, қонун устуворлигини, барчанинг қонун олдида тенглигини таъминлашга қаратилган тарихий ҳужжат ҳисобланади.

Конституциямизга бугунги кунга қадар кўплаб ўзгартириш ва қўшимчалар киритилган бўлиб, улар қуйидагилардан иборат ҳисобланади:

2011-йил 18-апрелда қабул қилинган қонун билан конституциясининг **78, 80, 93, 96, 98-моддаларига** узгартириш ва қўшимчалар киритилган;

2011-йил 12-декабрда қабул қилинган қонун билан конституциянинг **90-моддаси иккинчи кисмига** тузатиш киритилган;

2014-йил 16-апрелда қабул қилинган қонун билан конституциянинг **32, 78. 93, 98, 103, 117-моддаларига** ўзгартиш ва қўшимчалар киритилган;

2017-йил 6-апрелда қабул қилинган қонун билан Конституциянинг **80, 81, 83, 93, 107, 110, 111-моддаларига** ўзгартиш, кушимчалар киритилган;

2017-йил 31-майда қабул қилинган қонун билан Конституциянинг **80, 93, 108, 109-моддаларига** ўзгартиш, кўшимчалар киритилган;

2017-йил 29-августда қабул қилинган қонун билан **Конституциянинг 99, 102-моддаларига** ўзгартиш, кўшимчалар киритилган;

2018-йил 15-октябрда қабул қилинган қонун билан **105-модданинг биринчи қисми**даги икки ярим йил муддатга раисни (оқсоқолни) унинг маслаҳатчиларини деган сўзлар раисни (оқсоқолни) деган сўзлар билан алмаштирилган;

2019-йил 18-февралда қабул қилинган қонун билан **80, 93-моддаларига** ўзгартириш киритилиб, Миллий хавфсизлик хизмати Давлат хавфсизлик хизмати деб юритила бошланди;

2019-йил 5-мартда қабул қилинган қонунга асосан **79, 93, 98-моддаларга** ўзгартиришлар киритилган;

2019-йил 4-сентябрда қабул қилинган қонунга асосан сайлов тўғрисидаги қонун ҳужжатлари такомиллаштирилиши муносабати билан **96, 117-моддаларга** ўзгартиришлар киритилган.

2021-йилнинг 8-февралида қабул қилинган қонунга асосан Конституциямизнинг **7, 33, 85, 86, 93, 98, 100, 107 ва 117-моддаларига** ўзгартиришлар ва тўлдиришлар киритилди.

2023-йилнинг 30-апрел куни Ўзбекистон Республикаси Конституциясининг янги таҳририни қабул қилиш учун референдум бўлиб ўтди. Деферендум натижасига кўра 11 та моддадан иборат тегишли қонуннинг қабул қилиниши асос бўлди.

Бунга қадар 1992 йилдан буён конституцияга жами 15 марта ўзгартиш киритилган эди. Бу сафар эса ўзгаришлар кўлами катталиги сабаб ҳужжатнинг янги таҳрири қабул қилинди. Янгиланиш натижасида, бош қомусдаги моддалар сони 128 тадан 155 тага, ундаги нормалар эса 275 тадан 434 тага ошди. Умуман, расмийларга кўра, конституция 65 фоизга янгиланганди. Шундай қилиб, 2023-йил 1-майдан эътиборан янги таҳрирдаги конституция кучга кирди.

Юртимизда аҳолининг тинч-осойишта ҳаёт кечиришини таъминлаш, ҳуқуқбузарликлар профилактикаси самарадорлигини ошириш, шунинг-дек, бошқа ҳаётий муҳим масалаларни ҳал этиш бўйича кенг кўламли ҳаракатлар бошлангани ва янги тизим яратилгани ижобий натижалар бермоқда. Ҳуқуқбузарликлар профилактикаси соҳасида амалга оширилган кенг кўламли конститутсион ислоҳотлар натижасида мустаҳкам меъёрий-ҳуқуқий ва моддий-техник база яратилди, профилактика инспекторларининг иши ғоят масъулиятли ва шарафли касбга айланди.[1].

Ўтган қисқа давр ичида ички ишлар тизими ва унинг фаолиятини тубдан янгилаш, хамда конститутсиямизга мослаш борасида кенг кўламли ислоҳотлар амалга оширилди. Қабул қилинган норматив-ҳуқуқий ҳужжатларнинг таҳлилига таяниб, шунингдек, ички ишлар органлари фаолиятига янги тартиблар ва механизмларнинг жорий этилганлигини инобатга олган ҳолда айтиш мумкинки, тизимдаги ислоҳотларнинг биринчи босқичи якунланди. Ушбу босқич якунларини сарҳисоб қилар эканмиз, соҳада дастлабки самаралар кузатилаётганлигини қайд этиш жоиз. Жиноятчиликка қарши курашиш ва ҳуқуқбузарликлар профилактикаси соҳасида салмоқли натижаларга эришилди.

«Бугун биз давлат ва жамият ҳаётининг барча соҳаларини тубдан янгилашга қаратилган инновацион ривожланиш йўлига ўтмоқдамиз. Бу бежиз эмас, албатта. Чунки замон шиддат билан ривожланиб бораётган ҳозирги даврда ким ютади? Янги фикр, янги ғояга, инновацияга таянган давлат ютади»[2] Президентимиз томонидан бундай фикрларнинг ўртага ташланиши бежиз эмас. Бугунги ҳаёт, тараққиёт янги ғояларни, янги фикрларни, ҳар бир соҳада илм-фан билан ҳамкорликни талаб қилмоқда. Инновацион ривожланиш ҳаётий заруратга айланмоқда. Бу жараён бевосита ички ишлар тизими фаолияти билан ҳам боғлиқ. Зеро, мамлакатимизда 2018 йил «Фаол тадбиркорлик, инновацион ғоялар ва технологияларни қўллаб-қувватлаш йили» деб эълон қилиниши ҳам ички ишлар тизимида жиддий ислоҳотларни амалга оширишни талаб этади.

Хўш, бу борада мамлакатимизда фуқароларнинг ишончи ва меҳрини қозонадиган, халққа хизмат қиладиган ички ишлар тизимини яратиш учун

[1] Мирзиёев Шавкат Миромонович. Конституция – эркин ва фаровон ҳаётимиз, мамлакатимизни янада тараққий эттиришнинг мустаҳкам пойдеворидир. – Тошкент. «Ўзбекистон» НМИУ, 2018. – 64 б.

[2] Ўзбекистон Республикаси Президенти Шавкат Мирзиёевнинг Олий Мажлисга Мурожаатномаси // Халқ сўзи. – 2017. – 23 дек.

ислоҳотларнинг келгуси босқичида қандай аниқ вазифаларни бажариш муҳим ва зарур? Бунинг учун бир неча йўналишларда иш олиб бориш талаб этилади.

Биринчидан, тизимда ходимларнинг иш фаолиятини эски «қолип»лар асосида ташкил этишга бутунлай барҳам бериб, уларнинг хизмат бурчини **халқ манфаатларига хизмат қилиш** тамойили асосида бажаришини амалда тўлиқ таъминлаш зарур.

Маълумки, тизимда тартиб-интизом ва масъулиятнинг бўшаштириб юборилиши, фаолиятнинг замон талаблари асосида ташкил этилмаслиги, хизмат вазифасига лоқайдлик ва бепарволик билан муносабатда бўлиш каби ҳолатлар жиноятчиликка қарши кураш ва ҳуқуқбузарликлар профилактикаси фаолиятидаги умумий натижадорликка салбий таъсир кўрсатади.

Бу хусусда Ўзбекистон Республикаси Президенти Шавкат Мирзиёев раислигида 2017 йил 9 февраль куни ўтказилган ички ишлар органлари фаолияти, тизимда мавжуд муаммо ва камчиликлар, истиқболдаги вазифаларга бағишланган видеоселектор йиғилишида ниҳоятда тўғри таъкидланган эди:

инсон манфаатлари билан боғлиқ масалаларни кечиктирмасдан ҳал қилиш лозим бўлган бугунги кунда эскича фикрлаш, ишни эски «қолип»лар асосида ташкил қилиш, ўз бурчини элга хизмат тамойилига асосланиб эмас, балки шахсий манфаатлардан келиб чиққан ҳолда бажариш каби амалиётлар давом этмоқда;

ички ишлар органлари шундай ишлаши керакки, токи халқ давлатдан рози бўлсин. Лекин айрим жойларда уларнинг фаолияти одамлар эътирозига сабаб бўлмоқда;

танқидий таҳлил, қатъий тартиб-интизом ва шахсий жавобгарлик ҳар бир раҳбар фаолиятининг кундалик қоидаси бўлиб қолиши, муаммоларни кабинетда ўтириб эмас, балки халқ орасида юриб аниқлашга ва уларнинг ечимини топишга қаратиш, якуний натижа учун раҳбарларнинг шахсий жавобгарлигини ошириш, фуқаролар мурожаатларини қисқа муддатларда ҳал қилиш, ишда аниқ тартиб ва қатъий интизом ўрнатиш, соҳани малакали кадрлар билан таъминлаш, ишдаги ҳар қандай салбий ҳолатларнинг олдини олиш ва бундай иллатлар илдизини қуритиш – ички ишлар органларининг устувор вазифаси ҳисобланади;

мурожаатлар билан ишлаш тизимини тубдан такомиллаштириш энг долзарб вазифалардан биридир. Шу боис фуқаролар билан муносабатларни тубдан қайта кўриб чиқиш, одамлар билан доимий мулоқотни йўлга қўйиш,

халқ билан ҳамнафас бўлиб яшаш ва инсон манфаатларидан келиб чиқиб ишлаш лозим хисобланади.

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КОНСТИТУЦИЯ — ФАРОВОН ХАЁТИМИЗНИНГ АСОСИЙ МЕЗОНИ

Мамажанов Жаҳонгир Жамолиддин ўғли
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Калит сўзлар: конституция, конституциявий норма, конституциявий қонун, ҳуқуқбузарликлар профилактикаси, профилактика.

Аннотация—конституциявий нормаларнинг ҳуқуқий давлатда тутган ўрни ва ахамияти, фуқаролик жамиятининг асосий белгиси сифатида намоён бўлиши, давлат томонидан фуқароларнинг тинчлиги осойишталаги ва фаровонлигини таминлаш, жисмоний ва юридик шахсларнинг мол-мулкининг хавфсизлигини самарали таъминлаш, мақсадида ишлаб чиқиладиган қонуности хужжатларининг пойдевор эканлиги, шундай экан фуқароларимизга конституция ва конституциявий нормаларга сйзсиз риоя этишларини, ёшларни конституция ва унинг нормаларига риоя этишлари ва республиканинг исталган жойида конститусиявий ҳуқуқларидан фойдалана олишлари тушунтириб ўтилган.

Annotation - the role and importance of constitutional norms in a legal state, manifestation as the main sign of civil society, ensuring the peace and well-being of citizens by the state, effectively ensuring the security of the property of individuals and legal entities, and the fact that it is the foundation of legal documents developed for our citizens it was explained that they will strictly follow the constitution and constitutional norms, that young people should follow the constitution and its norms, and that they can use their constitutional rights anywhere in the republic.

Мустақилликнинг дастлабки кунларидан бошлаб Конституция ва бқонунларимизда, айниқса, умумэътироф этилган халқаро ҳуқуқий нормаларда мустаҳкамланган инсон хуқуқ ва эркинликларини таъминлаш, унинг ҳаёти, соғлиғи, қадр-қиммати ва бошқа қонуний манфаатларини ҳимоя қилиш масалалари устувор вазифалардан бирига айланди. Қонун устуворлигини таъминлаш, шаҳс, оила, жамият ва давлатнинг ҳуқуқ ва манфаатларини ҳимоя қилиш, аҳолининг ҳуқуқий маданият ва ҳуқуқий онгини ошириш, фуқароларни қонунга бўйсуниш ва ҳурмат руҳида тарбиялаш асосий вазифамиз ҳисобланди. Бугунги кунда ривожланган бозор иқтисодиётига асосланган чинакам демократик ҳуқуқий давлат ва эркин фуқаролик жамияти қуриш мамлакатимизнинг мақсади, балки унинг вазифаси, энг олий бурчи

ҳисобланади.[1] Шу билан бир каторда давлат бошкарувига Ш.М.Мирзиёевнинг келиши билан Ички ишлар органлари соҳасида амалга оширилаётган ислоҳотлар замирида фукароларнинг хукук ва эркинликларини, уларнинг тичлиги,осойишталиги, ҳаётининг фаровонлигини, соғлиғини, мулкий ҳуқйқларини таминлаш жараёнида қўлланиладиган усул, услуб ва воситалар,уларнинг қйлланилиш принсипларида рўй бераётан жамийки ислоҳотлар фақатгина фуқароларимизнинг манфаатларига ҳизмат қилиб келмоқда десак ҳеч муболаға бўлмайди.

Конституцияий норма – асосий ижтимоий муносабатларни тартибга солувяи ҳуқуқий нормалар йиғиндиси ҳуқуқ тизимининг йетакчи сохаси. Конститусиявий ҳуқуқ нормалари давлатнинг ижтимоий-иқтисодий сиёсий ва ҳудудий тузилишини, унинг фуқаролик жамияти институтлари билан муносабатларини тартибини, фуқаро ва шахс ҳуқуқ ҳамда эркинликларини аиалга оширишнинг асосий тамойилларини, давлат ҳокимяти органлари тизимини белгилайди.

Конституция – давдатнинг асосий қонуни унда инсон ва фуқароларнинг ҳуқуқ ва эркинликлари эълон қилинади, эътироф этилади ва кафолатланади давлат бошқаруви шакли ва ҳудудий тузилиши ҳокимят марказий ва жойлардаги маҳаллий органларни ташкил этиш тизими ва уларнинг ваколати белгилаб қўйилди. Шунингдек, ҳокимиятнинг ижро этувчи органлари ва суд хокимяти органларининг тузилиши тартибга солиб турилади, сайлов тизими давлат рамзлари ва конституцияга ўзгартиришлар киритиш тартиби белгиланади.

Бугунги кунда мамлакатимизда олиб борилаётган ислоҳотлар замирида ҳуқуқбузарликлар профилактикаси ва жиноятчиликка қарши курашиш тамойилига алоҳида эътибор қаратилмоқда. Зеро, Президентимиз таьбири билан айтганда 10 та жиноятнинг иссиқ изини очгандан кўра 1 та жиноятнинг олдини олган афзал.

Жамиятимизда фуқароларни қонунга итоаткор рухда тарбиялаш ва уларнинг ҳуқуқ ва еркинликларини уларнинг осойишта турмуш-тарзини таъминлиш мақсадида турли-ҳил ички идоравий норматив-ҳуқуқий хужжатлар ишлаб чиқилади. Ушбу доирадаги норматив-ҳуқуқий хужжатларнинг барчаси

[1] Мирзиёев Ш.М. Қонун устуворлиги ва инсон манфаатларини таъминлаш – юрт тараққиёти ва ҳалқ фаровонлигининг гарови // Ўзбекистон Республикаси Конституция-сининг 24 йиллик тантанали маросимдаги марузаси. –Ҳалқ сўзи, 6 дек. 2016 йил.

Ўзбакистон Республикасининг конституциясига ва халқаро шартномаларига мос келиши талаб этилади.

Ҳусусан олиб қараганда қонунчилик жараёнида икки томонлама ёндашув назарда тутилади:

Биринчи томондан, қабул қилинаётган норматив-ҳуқуқий хужжатлар конституция орқали мустаҳкам таянчига эга бўлади ва унинг ижро этилиши барча учун мажбурият юклайди. Маълум бир даражада жиноий ёки маъмурий жавобгарликлар келтириб чиқаради.

Иккинчи томондан, эса фуқароларнинг ҳуқуқлари, эркинликлари ва қонуний манфаатларини, шахс, жамият ва давлат манфаатларини бош қомусимиз конституция орқали мустаҳкамлаб қўйилиши, инсон унинг шаъни, ор-номуси, қадр-қиммати, ҳуқуқлари, эркинликлари ва қонуний манфаатларини биринчи ўринга қўйилиши, ҳеч бир шахс ёки ҳеч қайси орган қонунда белгиланмаган тартибда ва суднинг қарорисиз фуқароларнинг эркинликларини чеклаши мумкин эмаслиги қатьиян мустаҳкамлаб қўйилди(қонунчилигимизда белгилаб қўйилган тартибда жиноятларни олдини олиш, тўҳтатиш мақсадида ушлаб туриш бундан мустасно).

Бугунги кунга келиб ривожлинган демократик замонда барча фуқароларнинг ҳуқуқларини конституция орқали таъминлаш балки, жиноятчиликда айбланаётган, ёки гумон қилиниётган шахсларнинг хам ҳуқуқлари конституцияда белгилаб ўтилишини талаб этмоқда. Хусусан:

Ўзбекистон Республикаси Президентининг 2017 йил 19 январдаги «Юридик хизмат фаолиятини тубдан такомиллаштириш чора-тадбирлари тўғрисида»ги ПҚ-2733-сонли Қарорининг 1-бандида давлат органлари ва ташкилотлари юридик хизматлари фаолиятининг асосий йўналишларидан бири этиб давлат органлари ва ташкилотларининг ҳуқуқни қўллаш фаолиятида қонун устуворлиги ва қонунийликни таъминлашни ташкил этиш белгиланганди.

Ушбу қонуннинг қарор қисмида эса давлат органлари ва ташкилотлари ҳамда уларнинг таркибий ва ҳудудий бўлинмалари раҳбарларига ҳар йили кўрсатиб ўтилган органлар ва ташкилотлар фаолиятида қонун устуворлиги ва қонунийликни таъминлаш бўйича ишлар тўғрисида юридик хизматнинг ҳисоботини эшитиш бўйича шахсий жавобгарлик юклатилди.[2]

[2] Ўз. Рес. Президентининг 2017 йил 19 январдаги «Юридик хизмат фаолиятини тубдан такомиллаштириш чора-тадбирлари тўғрисида»ги ПҚ-2733-сонли Қарори

Бундан ташқари 2023-йил 30-июнда қабул қилинган янги таҳрирдаги Ўзбекистон Республикаси конституциямизга хам кўплаб ўзгартиришлар киритилди. Мисол тариқасида 29-моддасига шахсларнинг процессуал жараёнлардаги ҳуқуқлари киритиб ўтилгин бўлиб, улар қуйидагилардан иборат ҳисобланади:

ҳар кимга малакали юридик ёрдам олиш ҳуқуқи кафолатланади. Қонунда назарда тутилган ҳолларда юридик ёрдам давлат ҳисобидан кўрсатилади.

ҳар бир шахс жиноят процессининг ҳар қандай босқичида, шахс ушланганида эса унинг ҳаракатланиш эркинлиги ҳуқуқи амалда чекланган пайтдан эътиборан ўз танловига кўра адвокат ёрдамидан фойдаланиш ҳуқуқига эга.

гумон қилинувчи, айбланувчи ёки судланувчи айбловнинг моҳияти ва асослари тўғрисида хабардор қилиниш, унга қарши ёки унинг фойдасига гувоҳлик бераётган шахсларнинг сўроқ қилинишини талаб этиш, таржимон ёрдамидан фойдаланиш ҳуқуқига эга.

қонунни бузган ҳолда олинган далиллардан одил судловни амалга ошириш чоғида фойдаланишга йўл қўйилмайди.

жиноят учун ҳукм қилинган ҳар ким қонунда белгиланган тартибда ҳукмнинг юқори турувчи суд томонидан қайта кўриб чиқилиши ҳуқуқига, шунингдек афв этиш ёки жазони енгиллаштириш тўғрисида илтимос қилиш ҳуқуқига эга.

ҳуқуқбузарликлардан жабрланганларнинг ҳуқуқлари қонун билан муҳофаза қилинади. Давлат жабрланганларга ҳимояланишни ва одил судловдан фойдаланишни таъминлайди, уларга етказилган зарарнинг ўрни қопланиши учун шарт-шароитлар яратади.

Хулоса ўрнида шуни айтиш жоизки, бугунги кунда амалга оширилаётган барча ислоҳотлар фақат ва фақат инсон омили учун хизмат қилади.Президентимиз айтганларидек “халқ давлат органлари учун эмас давлат органлари халқ учун хизмат қилиш” таьмойили асосида ўз фаолиятларини амалга оширишлари лозим.

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SILICON MANGANESE LIGHT SENSORS IN OPTICAL SENSING TECHNOLOGY

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Abstract

Silicon manganese light sensors, a recent breakthrough in optical sensing technology, have emerged as a promising solution for precise and reliable light detection. These sensors, based on the unique properties of silicon manganese (SiMn), exhibit enhanced sensitivity, a wide dynamic range, fast response times, and temperature stability. This article provides an overview of silicon manganese light sensors, highlighting their characteristics and advantages. The versatile nature of these sensors enables their application in various industries, including automotive, consumer electronics, industrial automation, and medical devices. Silicon manganese light sensors offer improved performance, cost-effectiveness, and versatility, making them a valuable addition to the field of optical sensing technology.

Key words: Silicon manganese light sensors, temperature stability**,** optical sensing technology, SiMn

Introduction: Silicon manganese light sensors represent a significant breakthrough in optical sensing technology. These sensors, based on the unique properties of silicon manganese (SiMn), offer enhanced sensitivity, improved performance, and expanded application possibilities in the field of light sensing. In this article, we will explore the characteristics and advantages of silicon manganese light sensors, as well as their potential applications in various industries.

Understanding Silicon Manganese (SiMn): Silicon manganese is an alloy composed of silicon (Si) and manganese (Mn). It is widely used in the steelmaking industry as a deoxidizer and desulfurizer due to its ability to remove impurities and improve the properties of steel. However, recent advancements have revealed that

silicon manganese also possesses remarkable properties for light sensing applications.

Characteristics of Silicon Manganese Light Sensors:

1. Enhanced Sensitivity: Silicon manganese light sensors exhibit high sensitivity to light across a broad spectrum, including visible and near-infrared wavelengths. They can detect even small changes in light intensity, making them suitable for applications requiring precise measurements.
2. Wide Dynamic Range: These sensors offer a wide dynamic range, enabling them to capture both low and high-intensity light. This versatility makes them suitable for various lighting conditions and environments.
3. Fast Response Time: Silicon manganese light sensors demonstrate rapid response times, allowing them to capture and process changes in light levels quickly. This feature is particularly valuable in applications that require real-time monitoring or high-speed data acquisition.
4. Temperature Stability: Silicon manganese light sensors exhibit excellent temperature stability, maintaining their accuracy and performance even in extreme temperature conditions. This characteristic makes them reliable for use in environments with varying temperatures.

Applications of Silicon Manganese Light Sensors:

1. Automotive Industry: Silicon manganese light sensors can be utilized in automotive applications such as automatic headlights, adaptive lighting systems, and ambient light detection for interior lighting control. Their high sensitivity and dynamic range contribute to improved driver safety and enhanced user experience.
2. Consumer Electronics: In smartphones, tablets, and wearable devices, silicon manganese light sensors enable automatic brightness adjustment, optimizing screen visibility in different lighting conditions. They also facilitate gesture recognition and proximity sensing, enhancing user interaction.
3. Industrial Automation: Silicon manganese light sensors find applications in industrial automation for tasks such as object detection, quality control, and sorting. Their fast response time and temperature stability make them suitable for demanding industrial environments.
4. Medical Devices: These sensors can be integrated into medical devices for applications like pulse oximetry, where accurate and reliable monitoring of light absorption by blood is essential. The high sensitivity and wide dynamic range of silicon manganese light sensors contribute to precise measurements in medical diagnostics.

Advantages of Silicon Manganese Light Sensors:

1. Improved Performance: Silicon manganese light sensors offer enhanced sensitivity, wider dynamic range, and faster response times compared to traditional light sensors. This results in more accurate and reliable measurements, leading to improved performance in various applications.
2. Cost-Effectiveness: The use of silicon manganese, which is readily available and widely used in the steelmaking industry, contributes to the cost-effectiveness of these sensors. Manufacturers can benefit from the scalability and affordability of silicon manganese light sensors.
3. Versatility: Silicon manganese light sensors can operate across a wide range of wavelengths, making them versatile for different applications and industries. Their adaptability to various lighting conditions and environments expands their usability in diverse scenarios.

Material and sensor: Obtaining light- and temperature-sensitive materials based on compensated silicon by the diffusion method and studying their sensitivity to infrared rays.

1. Mechanical processing of semiconductor Si<B> based material (cutting, physical and chemical cleaning, polishing);
2. Diffusion of Mn atoms into the KDB-3 element;
3. Calculation of electrophysical parameters of samples sensitive to light and temperature as a result of diffusion;
4. To study the sensitivity of materials to infrared rays

The main issue in obtaining light and temperature sensitive materials is to increase their sensitivity to infrared rays. The ability to perceive low-power infrared rays depends on the diffusion process. It depends on the temperature range of 1030÷1050 ºC, the cooling rate of the capsule and the concentration of Mn atoms. That is, it is important to keep the same temperature, the degree to which the air is absorbed by the capsule, and the cooling rate of the capsule in exact values.

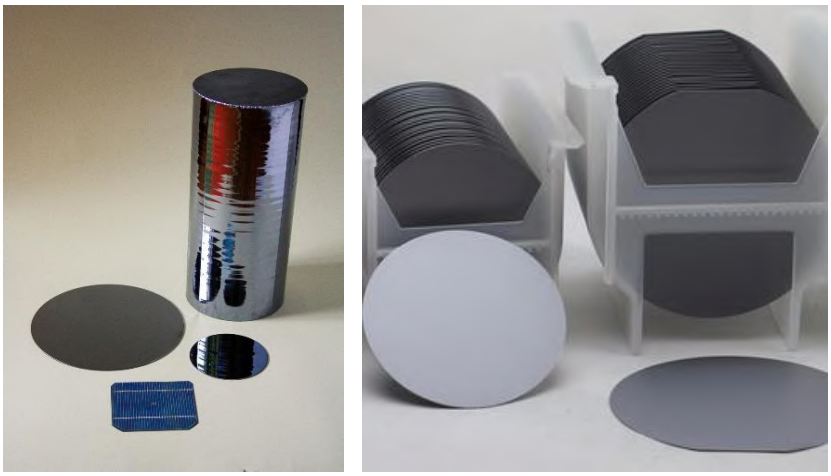
Methods of introducing dopant atoms into semiconductor materials:

The main way to control the physical properties of semiconductors, i.e., their conductivity, photosensitivity and magnetic properties on a very large scale, is to introduce dopant atoms into such materials in the required and precise concentration.

According to the current technology, the input atoms are introduced in 3 different ways. In the process of crystal growth, by diffusion and ion implantation method.

One of the most basic methods of growing single crystals in a given direction is the Chochral method.

A silicon monocrystal grown by this method is shown in Figure 1 below. In this case, polycrystalline silicon is a liquid semiconductor material in special quartz grains (T>1415 ºC), a thin single crystal (zatravka) is dropped. After it (Zatravka) touches the liquid semiconductor, it starts to move up slowly (1÷3) mm/min while rotating on its axis. As a result, the liquid body turns into a crystal in accordance with the direction of the growth.



1 - picture. Si single crystal obtained by Chochral method

In this case, the required amount of boron, phosphorus, arsenic or other input atoms is added to the liquid solution, which ensures the physical parameters of the future single crystal, and their even distribution throughout the liquid is ensured. This method of introduction of impurity atoms is used to obtain single crystals of different sizes, but with the same physical parameters.

The second method of introducing dopant atoms into semiconductor crystals is done using the diffusion method.

In this method, it is mainly used to form the input atoms in certain thin layers. The concentration of input atoms introduced by the diffusion method depends on their solubility at the temperature of diffusion. How much thickness it penetrates is limited by the diffusion coefficient. The diffusion method is the main technological process in the creation of modern microcircuits and discrete semiconductor devices.

The third method of introducing dopant atoms is to bombard the crystal surface with ions of dopant atoms, increasing their energy in a vacuum in special ways.

As a result, in accordance with the energy of the ions, the entrance atoms penetrate from the surface to a depth of several 10 Å to several 100 Å, that is, a very thin layer on the surface of the semiconductor material is enriched with entrance atoms. In order to make the introduced atoms electrically active in this way, the crystal is heated to a certain temperature, in addition, when bombarded with the ions of the incoming atoms, radiation defects are formed until the incoming atoms reach, if the energy and dose of the ions is high, then the surface of the crystal becomes amorphous. can come Using this method, it is possible to create the desired concentration of dopant atoms on the surface of the crystal.

Conclusion: Silicon manganese light sensors represent a significant advancement in the field of optical sensing technology. With their enhanced sensitivity, wide dynamic range, fast response times, and temperature stability, these sensors find applications in automotive, consumer electronics, industrial automation, and medical devices. As the demand for high-performance light sensors continues to grow, silicon manganese light sensors offer a promising solution for precise and reliable light sensing in various industries, paving the way for further advancements in optical sensing technology.

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POCHTA ALOQALARI TARAQQIYOTIDA TARIXIY VA ZAMONAVIY ASOSLAR

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TATU Qarshi filiali dotsenti
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Pochta aloqalari texnologiyalari yo'nalishi talabasi

Annotatsiya: Ushbu maqolada, pochta aloqalari rivoji uning tarixi va bugungi kunda rivojlanish omillarining biri sifatida telekommunikatsiya texnologiyalarining roli va ahamiyati haqida ushbu maqolada so'z yuritildi. Shuningdek, pochta aloqalari tarixida buyuk davlat arbobi Amir Temurning xissasi, O'zbekiston Respublikasida pochta aloqalarining huquqiy asoslari sifatida qabul qilingan qonunda keltirilgan asosiy tushunchalar haqida fikr yuritildi.

Kalit so'zlar: *pochta aloqalari, adresat, kurerlik jo'natmalari, posilka, Amir Temur.*

Kirish: Avvalo, dastlabki yozishmalarni tashigan kabutarlar ekanligini juda yaxshi anglaymiz. Bugungi kunga kelib esa pochta tushunchasiga maxsus jo'natmalarni ham kiritib misol keltira olamiz. Boiski, taraqqiyot o'zaro xat almashishning yanada qulay va zamonaviy vositalarini, telekommunikatsiya texnologiyalari va ayni kunlarda xatto sun'iy intelekt yordamida taraqqiy etish sir asrorlarini bizga hadya etib etib ulgurdi. Bu soha rivoji tarixiga nazar tashlasak, turli millat vakillari aloqa almashinuvida nafaqat kabutarlar, balki choparlar, elchialr, vakillar, xatto iste'mol mahsulotalri orqali amalga oshirganliklarining ham guvohi bo'lamiz, Jumladan, Movorounnaxr tarixida o'z qurgan saltanatda xat almashinuvgina emas, balki aloqa, ma'lumot almashinish vositalarining turli tumanligi va g;ayritabiiyligi bilan bugungi kunda ko'pchilik olimlar va soha vakillarini hayratlantirgan Amir Temurning tadbirlari talaygina. Jumladan, Amir Temur saroyida mehmon bo'lgan Rui Gonsales de Kalavixoning sayohat kundaliklarida keltirilishicha, Temur saroyida xatlar shunchalik tez yetkazilar ediki, unshu xatlarni yetkazuvchi choparlar, har bir davlatda minib kelgan ulovlarini almashtirish imkoni mavjud edi. Shuningdek, afsonalarga ko'ra yigirma olti davlatni muxtasar aylagan Amir Temur davlatida osoyishtalik va karvon yo'llaridagi qaroqchilarga qarshi kurashish choralari bu xat tashuv aloqalarida as qotar edi. O'zbekiston xalq yozuvchisi Muhammad Alining "Ulug' saltanat" tetralogiyasida yozilishicha "Temurbek zamonida Samarqanddan chiqqan bola boshida bir lagan tillo bilan yo'lga chiqar ekan Rum davlatiga qadar brogan taqdirda ham uning bir tillosi kamamymay borar edi". Mana shunday osuda zamon bo'lishiga qaramasdan, Sohibqiron Amir Temur har bir malakatda oddiy tilanchi, savdogar, mirob kiyimidagi shaxslardan josuslar, xat tashuvchilar, ma'lumot yetkazuvchilar, xabarchilar sifatida foydalanar ediki, ular bir birini tanimas, Temurbekka xalqning

xolidan xolis xabar yetkazishlari uchun esa ular bir hududdan uch kishidan tashkil topgan edi. Bu esa yetkazilgan axborotning xolisligini, shaffofligini ta’minlashga xizmat qilar edi. Mana shunday buyuk o’tmishimiz vakillari tashkil etgan aloqa almashinish strategiyalari keyingi asrlarda ham Yevropa va Sharq mamlakatlari podshohlani o’rgangan muhim ilmlardan sanalgan.

Barcha soha vakillariga yaxshi ma’lumki, har yili butunjahon pochta aloqal hodimlari 9 oktyabrni — Butunjahon pochta kuni sifatida nishonlashadi. Bu kunning tarixiga nazar tashlaydigan bo‘lsak, 1874 yil 9 oktyabr kuni Shveysariya poytaxti Bern shahrida Butunjahon pochta ittifoqi (BPI) tashkil topgan edi. Bu kunni “Butunjahon pochta kuni” deb e’lon qilish haqida 1969 yili Tokioda bo‘lib o‘tgan Butunjahon pochta ittifoqining navbatdagi Kongressida rasman qaror qabul qilingan edi.

Butunjahon pochta kuni tashkil etilishining asosiy maqsadlaridan biri pochta sohasini davlatlar ijtimoiy-iqtisodiy va davlatlararo aloqalarni texnologik tez suratlar bilan taraqqiy etib boryorgan sohani rivojlanishiga qo‘shayotgan hissasini tatbiq etish edi. Ikkinchi maqsad esa, Butunjahon pochta ittifoqigaga a’zo davlatlar tomonidan milliy pochta xizmati faoliyatiga oid tadbir dasturlari qabul qilinib, ommaviy axborot vositalari orqali aholini tanishtirishdan iborat edi.

Ayni mana shu maqsadlarga ergashgan holda 1994 yili O‘zbekiston Respublikasi Butunjahon pochta ittifoqiga to‘la huquqli a’zo davlat sifatida qabul qilinib, bugungi kunda dunyoning deyarli barcha davlatlari bilan xalqaro pochta almashinuvlarini texnologik rivojlangan vositalr- tez va sifatli amalga oshirib kelmoqda.

Pochta xizmatlarini texno usullar vositasida mamlakatimizda rivojlanish omillari deganimizda qo’yidagilar fikrimizni oydinlashtiradi: Avvalo bu sohaning har taraflama rivojlanishini yo’lga qo’yish maqsadida sohaning Qonuniy faoliyati mustahkamlandi. Bu yo’lda 2022 yil 9 iyunda qabul qilingan “O‘zbekiston Respublikasi pochta aloqasi to‘g‘risida»gi qonun qabul qilindi. Ushbu qonun to’laqonli ushbu soha rivojining huquqiy poydevosi bo’la oldi. Teranroq anglash uchun esa ushbu qonunning 3-moddasiga ko‘ra, yurtimizda pochta haqida asosiy tushunchalar qo‘yidagicha belgilangan:

adresat — o‘ziga pochta yoki kurerlik jo‘natmasi jo‘natilayotgan yuridik yoki jismoniy shaxs;

yozma xat-xabarlar — oddiy va ro‘yxatga olinadigan xatlar, pochta varaqchalari, banderollar, mayda paketlar, ko‘zi ojizlar uchun jo‘natmalar va “M” qoplari;

kurerlik jo‘natmalari — jo‘natilishi pochta kureri orqali amalga oshiriladigan, hujjatlar va (yoki) tovar joylanmasi mavjud bo‘lgan jo‘natmalar;

posilka — belgilangan o‘lchamdagi, og‘irlikdagi va o‘rovdagi tovar joylanmasi mavjud bo‘lgan, ro‘yxatga olinadigan pochta jo‘natmasi;

pochta aloqasi — pochta aloqasi vositalari va ob'ektlarining yagona ishlab chiqarish-texnologiya majmuidan iborat bo'lgan, pochta aloqasi xizmatlari ko'rsatilishini ta'minlaydigan aloqa turi;

pochta aloqasi vositalari — pochta aloqasi xizmatlari ko'rsatish uchun foydalaniladigan binolar, yashash uchun mo'ljallanmagan joylar, uskunalar, taralar, texnika va transport vositalari;

pochta aloqasining milliy operatori — O'zbekiston Respublikasi doirasida pochta aloqasi xizmatlari bozoridagi talabni qanoatlantirish, majburiy ravishda universal pochta xizmatlari ko'rsatish bo'yicha vazifalarni va Umumjahon pochta ittifoqining hujjatlaridan kelib chiqadigan majburiyatlarni bajarish vazifalari O'zbekiston Respublikasi Vazirlar Mahkamasi tomonidan o'z zimmasiga yuklatilgan pochta aloqasi operatori;

pochta aloqasi ob'ektlari — pochta aloqasi operatorining alohida bo'linmalari (pochtamtlar, pochta aloqasi bog'lamalari, bo'limlari, punktlari, shuningdek boshqa bo'linmalar);

pochta aloqasi operatori — mulk huquqi yoki boshqa ashyoviy huquqlar asosida pochta aloqasi tarmog'iga egalik qiluvchi va faoliyatning asosiy turi sifatida pochta aloqasi xizmatlari ko'rsatuvchi yuridik shaxs;

pochta aloqasi provayderi — pochta aloqasi operatorlarining tarmog'i orqali pochta aloqasi xizmatlari ko'rsatuvchi yuridik shaxs;

pochta aloqasi tarmog'i — pochta aloqasi vositalari, ob'ektlari va pochta yo'nalishlarining majmui;

pochta va kurerlik jo'natmalarini jo'natish — pochta va kurerlik jo'natmalarini qabul qilish, ularga ishlov berish, ularni saqlash, tashish, yetkazib berish (topshirish) bo'yicha texnologik operatsiyalar majmui;

pochta jo'natmalari — pochta jo'natmasida ko'rsatilgan pochta manzili bo'yicha adresatga jo'natish uchun pochta aloqasi operatori yoki provayderi tomonidan qabul qilingan yozma xat-xabar jo'natmalari, posilkalar, pul mablag'larining pochta o'tkazmalari…

Bugungi kunda telekommunikatsiya texnologiyalari takomili xususan, Internet rivoji va butun dunyoda pochtaning an'anaviy xizmatlariga talab kamayishi dunyoda pochta operatorlarining daromadiga ham salbiy ta'sir eta boshlagach, ba'zi mamlakatlar buni davlat subsidiyalari bilan hal qilsa, boshqa operatorlar yangi muqobil daromad manbalarini topish maqsadida transformatsiya jarayonlarini boshdan kechirishmoqda.

Har bir soha zamon bilan hamnafas bo'lib, o'z faoliyatiga yangiliklarni singdira olsagina jamiyatda o'rnini mustahkamlab boraveradi. Shu ma'noda ko'plab davlatlarda, xususan, O'zbekistonda ham pochta mijozlari o'z uylaridan chiqmasdan turib jo'natmalarini veb-sayt, mobil ilova yoki Telegram bot orqali rasmiylashtirishlari uchun imkoniyatlar yaratilgan. Kompaniya vakillari bu tizim ortiqcha qog'ozbozlikni qisqartirishga yordam beradi. Shuningdek, logistika tizimi

orqali mijozlarga o‘zlarining jo‘natmalarini onlayn kuzatib borish (tracking) imkoniyati ham mavjud. Bu esa jo‘natmalarning qaysi bosqichlardan o‘tib kelayotgani haqida ma’lumot berib boradi. Shu o‘rinda pochta bilan bog‘liq yana bir texnika imkoniyatlari ham sinab kelinmoqda: bu pochtachi-dronlar bo‘lib, 100 kilogrammgacha yuk tashiy olar va bir kunda 2 ta reysni amalga oshira olar ekan.

Xulosa qilib aytganda, kecha insoniyat tasavvurlariga sig’,as darajadagi pochta aloqalari tarixida ma’lumotlar va xabarlar almashinishi qanchalik soda bo’lsa, bugun hayoliy qarashlari real hayotga ko’chib bormoqda. Ertangi kelajakda esa, dronlar maktublarni aholi punktigacha olib borishi, qabul qiluvchiga esa mahalliy pochtachilar yetkazib berishi lozim bo‘ladi. Bir paytlari kabutarlar qilgan xizmatni dronlar to‘liq “qo‘lga olib”, yuk jo‘natmalari osmon bo‘ylab yetkazilayotganiga ko‘zingiz tushsa, ajabmas.

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TIBBIY TA’LIM SIFATINI OSHIRISHDA RAQAMLI TEXNOLOGIYALAR

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Angren Abu Ali ibn Sino nomidagi jamoat salomatligi texnikumi mutahassis fan o’qituvchi
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Annotatsiya. Hozirgi zamon raqamli texnologiyalar va texnikalar davri hisoblanadi. Tibbiy axborot va aynan zamonaviy texnologiyalar orqali inson organlarining qanchalik sog‘lom yoki nosog‘lomligini aniqlash, kasallikni aynan qayerda bo‘layotganini aniqlash, ularga qarshi chora tadbirlarni korib chiqish imkoniyatini beradi. Ushbu maqola texnologiyalari faol kirib kelgan sohalardan biri, tibbiyot sohasida kompyuter apparatlarini keng qo’llanilishi haqida yoritib berilgan.

Kalit so’zlar. Texnologiya, raqamlar, tibbiy ta’lim, kasallik, diagnostika, o’quvchi.

Annotation. Today is the era of digital technologies and techniques. Through medical information and modern technologies, it is possible to determine how healthy or unhealthy human organs are, to determine exactly where the disease occurs, and to consider countermeasures. This article describes the widespread use of computer equipment in the field of medicine, one of the fields in which technology has actively entered.

Key words. Technology, healthy, computer, diseases, diagnosis, treatment.

Hozirgi kunda axborot texnologiyalari faol kirib kelgan sohalardan biri - tibbiyot. Tashxis qo‘yish, muolaja olib borish va profilaktik ko‘riklar taqozosidan kompyuter apparaturalari keng qo‘llaniladi. Masalan, kompyuter tomografiyasi, yadroli tibbiy tashxislash, ultratovushli tashxislash, mikrokompyuter texnologiyalari asosidagi rentgen tadqiqotlari shular jumlasidandir. Shu sababli ham kelajak avlod tibbiyot xodimlarini bilm va malakasini oshirish maqsadida zamonaviy raqamli texnologiyalardan foydalanib o`qitish lozim.

Kompyuterlashtirilgan texnika tibbiyot xodimlariga bilimlarini oshirish, qo’llash, professional ta’lim olgan nazariy ilmlarini amaliyotda sinab ko’rish imkoniyatini taqdim etmoqda. Shuningdek, zamonaviy tibbiyotchilar kompyuter vositasida epidemik kasalliklarning tarqalish tezligini ko‘rsatuvchi xarita yaratmoqdalar. Masofaviy tashxislash dasturlari esa shifokor va bemor aloqalarida

uzviylik kasb etdi. Jumladan, tibbiyotning stomatologiya yo‘nalishiga ham axborot texnologiyalari keng kirib kelib, tishlarni davolash va protezlash kompyuter yordamida bajarilmoqda. Tish va prodontni raqamli rentgenografiya qilish amaliyoti shifokorga va bemorga osonlik tug‘dirdi, tish holatidan to’liq xabardor bo’lib, to’g’ri davolashga yetakladi. Dental videokameralar muolaja qay darajada ta’sir qilayotganini kuzatib borish imkonini beradi. Shifokor va hamshiralarni qiynab kelayotgan muammolardan biri tibbiyotdagi qog‘ozbozlik edi. Ishi shunda ham ko‘p va mas’uliyatli sanalmish xodimlar harakatlarini ipidan-ignasigacha qog’ozga tushirishga majbur edilar. Ammo sohadagi har bir harakat inson salomatligi va hatto hayotini hal qilar darajada muhim bo‘lgani bois yozuv-chizuvdan voz kechib ham bo‘lmaydi. Barchasi fakt sifatida qayd etilishi shart, ertaga isbot bo‘lishidan tashqari kelasi muolajalar uchun ham asqotadi. Bu boradagi baxs hamda ikkillanishlarga axborot texnologiyalari uzil-kesil nuqta qo‘ydi: Bemor va muolajalarga oid tibbiy tarix qayd etiladi, faqat buni shifokor emas, kompyuter va internet bajaradi. Doktor esa blankalarni to‘ldirishga ketkazadigan vaqti hisobidan ham bemorni kuzatadi, davo choralarini izlaydi. Shu tariqa xizmat sifati yaxshilanadi. Robotlarning operatsiya qilishi, telefondagi mobil ilovalar orqali salomatlik holatini tekshirish, texnik qurilmalar orqali laboratorik tahlillarni uy sharoitida o‘tkazish. Bugungi kunda afsona emas, haqiqatga aylangan ushbu voqealar atrofida bir savol paydo bo‘ladi: Hamma ish texnikaga yuklansa, tibbiyotchilar va ayniqsa jarroh, terapevt, laborantlar ishsiz qoldmaydimi? Birinchidan, tibbiyotda mas’uliyat texnikaga to‘liq yuklanmaydi. Jarayonni kuzatib borish, tashxisni tasdiqlash baribir shifokorning zimmasida qolaveradi. Ikkinchidan, o‘z sohasida yutuqqa erishish istagidagi tibbiyotchi texnika bilan ko‘proq do‘st tutinadi, uning imkoniyatlaridan to‘lig‘icha foydalanishga urinadi. Shunda uning noni yarimta bo’lmaydi, balki texnologiyalar vositasida ishi yanada unum topadi, mijozlari ko‘payadi, obro‘si oshadi. Onlayn navbat va ro‘yxatdan o‘tish tizimlaridan poliklinikalar yo‘laklaridagi asabbuzar kutishlarga barham berish ko‘zlangan. Tadqiqotlardan biri shuni ko‘rsatdiki, bemorlarning aksariyati turnaqator navbat chog‘i zerikkanlaridan bir-birlari bilan gaplashadilar, dardlarini aytadilar va bir-biriga davo bo‘yicha maslahat berishni boshlashadi. U ma’lumotlar esa har doim ham asosli bo‘lavermaydi. Kasallikni boshidan o‘tkazgan odamning gapiga ishongan sherigi o‘zini u kabi davolashga tushadi. Vaholanki, har bir organizm o‘ziga xos, muolajalar shundan kelib chiqqan holda mutaxassis tomonidan tavsiya etilishi kerak.

CONSTRUCTING MICRO HYDROELECTRIC POWER PLANTS

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Abstract

In this article we are going touch on some of the topics about the way micro hydroelectric generators and power plants function , and what components they are actually consist of. Also we are going do discuss what are the advantages and disadvantages of building constructing a power plant like hydroelectric power plants. In addition to that the overall cost and prices are going to be discussed as well as in what conditions it's best to build them

Key words: MHP, AC, DC , Reaction Turbines, Wiring, Regulator, efficiency, monobloc, thermos, solar cells, solar radiation

Introduction

Microhydropower can be one of the most simple and consistent forms or renewable energy on your property.

If you have water flowing through your property, you might consider building a small hydropower system to generate electricity. Microhydropower systems usually generate up to 100 kilowatts of electricity. Most of the hydropower systems used by homeowners and small business owners, including farmers and ranchers, would qualify as microhydropower systems. But a 10-kilowatt microhydropower system generally can provide enough power for a large home, a small resort, or a hobby farm.

A microhydropower system needs a turbine, pump, or waterwheel to transform the energy of flowing water into rotational energy, which is converted into electricity.

How a Microhydropower System Works

Microhydropower System Components

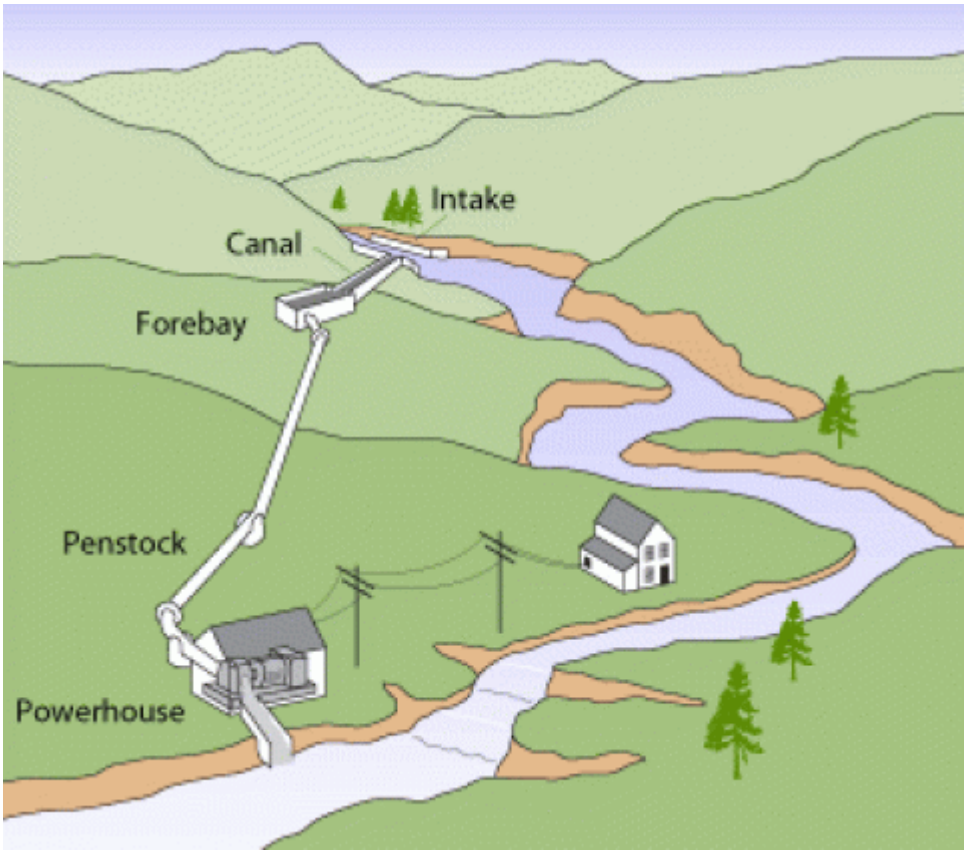
Run-of-the-river microhydropower systems consist of these basic components:

Water conveyance -- channel, pipeline, or pressurized pipeline (penstock) that delivers the water

Turbine, pump, or waterwheel -- transforms the energy of flowing water into rotational energy

Alternator or generator -- transforms the rotational energy into electricity
Regulator -- controls the generator
Wiring -- delivers the electricity.

Image



Commercially available turbines and generators are usually sold as a package. Do-it-yourself systems require careful matching of a generator with the turbine horsepower and speed.

Many systems also use an inverter to convert the low-voltage direct current (DC) electricity produced by the system into 120 or 240 volts of alternating current (AC) electricity. (Alternatively, you can buy household appliances that run on DC electricity.)

Whether a microhydropower system will be grid-connected or stand-alone will determine many of its balance of system components.

For example, some stand-alone systems use batteries to store the electricity generated by the system. However, because hydropower resources tend to be more seasonal in nature than wind or solar resources, batteries may not always be practical for microhydropower systems. If you do use batteries, they should be located as close

to the turbine as possible because it is difficult to transmit low-voltage power over long distances.

Turbine Types

Impulse Turbines

Impulse turbines, which have the least complex design, are most commonly used for high-head microhydro systems. They rely on the velocity of water to move the turbine wheel, which is called the runner. The most common types of impulse turbines include the Pelton wheel and the Turgo wheel.

Pelton wheel -- uses the concept of jet force to create energy. Water is funneled into a pressurized pipeline with a narrow nozzle at one end. The water sprays out of the nozzle in a jet, striking the double-cupped buckets attached to the wheel. The impact of the jet spray on the curved buckets creates a force that rotates the wheel at high efficiency rates of 70–90%. Pelton wheel turbines are available in various sizes and operate best under low-flow and high-head conditions.

Turgo impulse wheel -- an upgraded version of the Pelton. It uses the same jet spray concept, but the Turgo jet, which is half the size of the Pelton, is angled so that the spray hits three buckets at once. As a result, the Turgo wheel moves twice as fast. It's also less bulky, needs few or no gears, and has a good reputation for trouble-free operations. The Turgo can operate under low-flow conditions but requires a medium or high head.

Jack Rabbit turbine -- a drop-in-the-creek turbine that can generate power from a stream with as little as 13 inches of water and no head. Output from the Jack Rabbit is a maximum of 100 Watts, so daily output averages 1.5–2.4 kilowatt-hours, depending on your site. Sometimes referred to as the Aquair UW Submersible Hydro Generator.

Reaction Turbines

Reaction turbines, which are highly efficient, depend on pressure rather than velocity to produce energy. All blades of the reaction turbine maintain constant contact with the water. These turbines are often used in large-scale hydropower sites.

Because of their complexity and high cost, reaction turbines aren't usually used for microhydropower projects. An exception is the propeller turbine, which comes in many different designs and works much like a boat's propeller.

Propeller turbines have three to six usually fixed blades set at different angles aligned on the runner. The bulb, tubular, and Kaplan tubular are variations of the propeller turbine. The Kaplan turbine, which is a highly adaptable propeller system, can be used for microhydro sites.

Pumps and Waterwheels

Conventional pumps can be used as substitutes for hydraulic turbines. When the action of a pump is reversed, it operates like a turbine. Since pumps are mass produced, you'll find them more readily than turbines. Pumps are also less expensive. For adequate pump performance, however, your microhydropower site must have fairly constant head and flow. Pumps are also less efficient and more prone to damage.

The waterwheel is the oldest hydropower system component. Waterwheels are still available, but they aren't very practical for generating electricity because of their slow speed and bulky structure.

Micro Hydro Pros – Advantages

MHP is decentalised, renewable, robust, and simple technology.

It only takes a small amount of flow (as little as few litres per minute) or a drop as low as 1 m to generate electricity with micro hydro. Electricity can be delivered as far as 1 km away to the location where it is being used. If planned carefully and well adapted to the environmental conditions, micro hydropower schemes produce a continuous and predictable supply of electrical energy in comparison to other small-scale renewable technologies. The peak energy season is during the winter months when large quantities of electricity are required. MHP is considered to function as a 'run-of-river' system, meaning that the water passing through the generator is directed back into the stream with relatively little impact on the surrounding ecology. In comparison to large hydropower, MHP thus only has a little negative environmental impact. Negative socio-economic impacts are even insignificant in comparison. Further advantages include low distribution and running costs (requires no fuel and only low maintenance) as well as local implemenation and management. Moreover, hydropower is a durable and robust technology; systems typically last for 50 years or more without major new investments

Micro Hydro Cons – Disadvantages

There are, however, a number of disadvantages that need to be taken into account. MHP plants require certain site conditions and are thus not suitable for any location. In order to take full advantage of the electrical potential of small streams, a suitable site is needed. Factors to consider are: distance from the power source to the location where energy is required, stream size (including flow rate, output and drop), and a balance of system components — inverter, batteries, controller, transmission line and pipelines. Limited technical know-how especially in resource-rich locations might impede hydropower development.[2] Furthermore, the size and flow of small

streams may restrict future site expansion as the power demand increases. As MHP plants require no reservoir, electricity generation is highly dependant on an constantly sufficient river discharge. In many locations stream size will fluctuate seasonally. During the summer months there will likely be less flow and therefore less power output. Advanced planning and research will be needed to ensure adequate energy requirements are met. Finally, environmental impacts need to be taken into account. The ecological impact of small-scale hydro is minimal; however the low-level environmental effects must be taken into consideration before construction begins. Stream water will be diverted away from a portion of the stream, and proper caution must be exercised to ensure there will be no damaging impact on the local ecology or civil infrastructure.

Conclusion

Micro-hydro power systems typically cost between $1,500 and $4,000 per kilowatt of installed capacity. However, the cost can vary depending on several factors, such as: The manufacturer, The quality of the components, Installation costs, Location, The site.

A 1 kW micro hydro generator can cost anywhere from a few thousand dollars to over ten thousand dollars. A 5 kW micro hydro turbine system for residential or commercial sites typically costs between $15,000 to $55,000 including equipment, installation, and auxiliary components.

Hydro power plants are classified as micro (100 kW and below), mini (101 kW and 2000 kW) and small (2001 kW and 25000 kW) according to their power.

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