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ОБОСНОВАНИЕ ПАРАМЕТРОВ РАБОЧЕГО ОРГАНА СО СЛОЖНОЙ, ПОВЫШЕНИЕ ЭФФЕКТИВНОСТИ РАБОТЫ ПОВЕРХНОСТЬЮ УСТРОЙСТВО ДЛЯ СОЗДАНИЯ ДЫРЯВОГО ДРЕНАЖА

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Аннотация: В данной статье с учетом параметров рабочих органов и технологий применения разработано воосберегающее усовершенствованное дренажно кротовые орудия, используемое для улучшения мелиоративного состояния бедных и засоленных почв. Также были определены и исследованы силы сопротивления, действующие на рабочие органы при обработке дренажно кротовые орудия.

Ключевые слова: дренажно кротовые орудия, засоленные земли, пахотный пласт, рабочие органы, силы сопротивления, стальной канат, конический цилиндр, рабочий орган со сложной поверхностью, рабочие колонны.

Размягчение подпочвенного слоя и дренажно кротовые орудия сегодня остается одним из важнейших агротехнических мероприятий и актуальных проблем в сельском хозяйстве Узбекистана. Поэтому важно разработать теоретические и технологические основы дренажно кротовые орудия в подпочвенном слое, т.е. на землях с повышенным уровнем засоления, провести научно-исследовательские работы по созданию некоторых математических моделей поглощения подземных фильтрационных вод[1,2]

По данным, полученным в результате анализа и исследований, отмечено, что подземные фильтрационные воды выходят на поверхность, уровень засоления

высокий, а также отмечается, что создание кротового дренажа в подпочвенном слое засоленных земель имеет важное значение. хороший эффект. По этой причине многими учеными и специалистами подчеркивалось, что найти решение проблемы и устранить ее можно, применяя форму и размеры рабочего органа драйнано кротовые орудия теоретическим и экспериментальным путем и применяя его к производства, и оно было осуществлено нами, можно увидеть в выводах исследований[3,4]

В целях снижения предела прочности рекомендуемого устройства обеспечить устойчивый ход рабочего органа в процессе работы, снизить металлоемкость, создать качественный перфорированный слив, обеспечить эффективное длительное функционирование. кротовые дренажа в процессе промывки солью формируется кротовые дренаж, спроектирован усовершенствованный вариант устройства, на основании его размеров составлены рабочие и конструктивные, технологические чертежи, а также рассмотрены вопросы изготовления опытных вариантов, применения его в производство и получение результатов ждут своего решения.

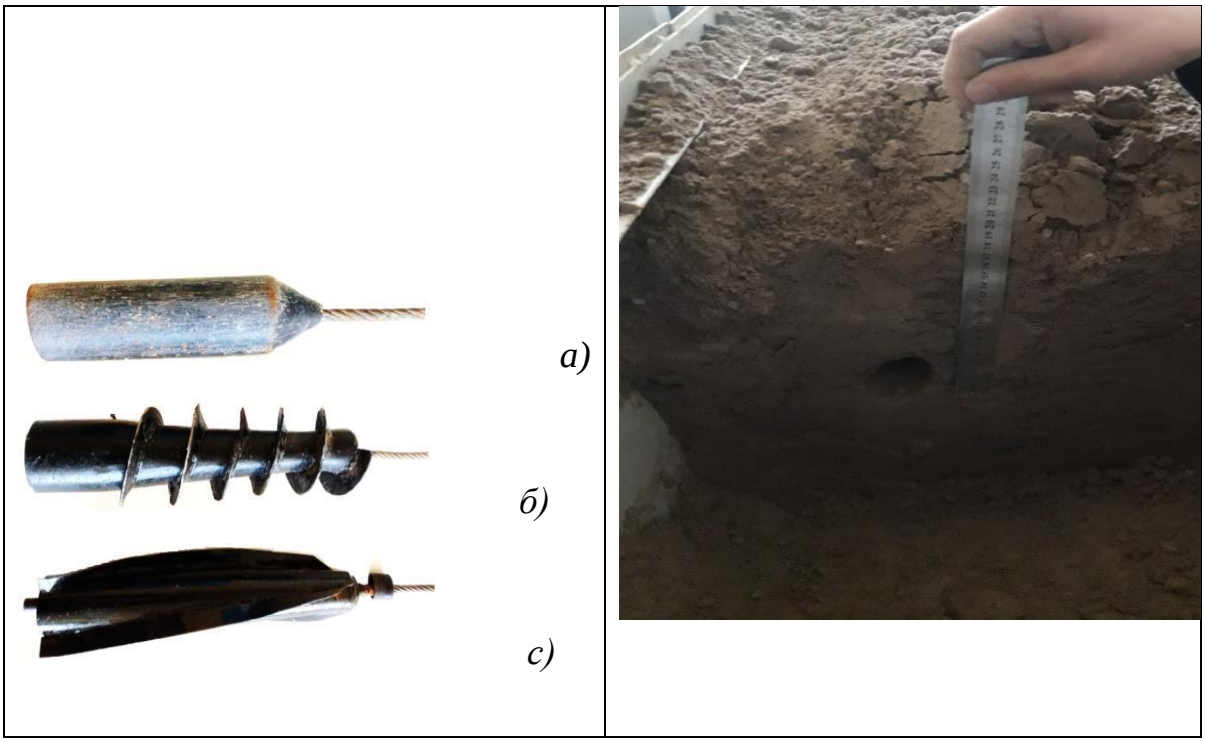

Рисунок 1. Кротовые орудия подготовлены для проведения экспериментов и экспериментальных работ в лабораторных условиях.

а — плоская рабочая поверхность с конусным наконечником; *б* - рабочая поверхность в форме сверла с коническим наконечником, *с* - винтовая рабочая поверхность с коническим наконечником.

При движении рабочего органа на качество дренажа оказывают влияние длина стального каната, диаметр конического цилиндра, физико-механические свойства почвы.

Экспериментальные и экспериментальные результаты научных исследований показали, что уровень засоления почвы повышается в местах расположения подземных фильтрационных вод, а частицы соли достигают верхнего слоя земли. В результате формируются разные уровни засоления почвы.

Теоретическими и экспериментальными исследованиями доказано, что диаметр кротовые дренажа составляет $d_m = 50-150$ мм для средних песчаных почв и $d_m = 100-300$ мм для мелких и тяжелых песчаных почв[5,6]

Шаг винтовой навивки, сформированной на винтовой поверхности кротовые орудия, составляет 28 мм, угол кривизны - 35 градусов, длина навивки, равная 900 мм, позволяет удовлетворить агротехнические требования к формированию отверстия. К параметрам кротовые орудия содержать в себе (Рисунок 2):

d_t – диаметр кротовые орудия, м;
2γ – угол заточки кротовые орудия;
l_s – длина цилиндрической части кротовые орудия, m;
γ_o и l_z – длина заднего конуса () и угол заточки соответственно;
l_t – длина трос, м.

Диаметр кротовые орудия определяем следующим образом:

$$d_m = \frac{d_a}{k}, \qquad (1)$$

здесь d_a – диаметр кротовые трубы по агротехническим требованиям, м;

k – коэффициент смягчения почвы, k = 1,06-1,1 коэффициент [8].

Взяв d_a = 7,5 см и k = 1,08, определяем, что диаметр цилиндрической части кротовые орудия должен составлять 6,94 см, и используем значение d_t=7 см.

Предполагается, что угол конусности кротовые орудия должен составлять 45-52° при условии минимального сопротивления выдергиванию. В качестве оптимального значения получаем $2\gamma_k$= 50°.

Из литературы известно, что длина цилиндрической части кротовые орудия зависит от его диаметра и ее можно определить по следующему выражению[12,14]

$$l_к = (1{,}5 - 2{,}0)d_к \qquad (2)$$

Из литературы известно, что длина цилиндрической части кротовые орудия зависит от его диаметра и ее можно определить по следующему выражению[15,17]

$$l_к = (1{,}5 - 2{,}0)d_к \qquad (3)$$

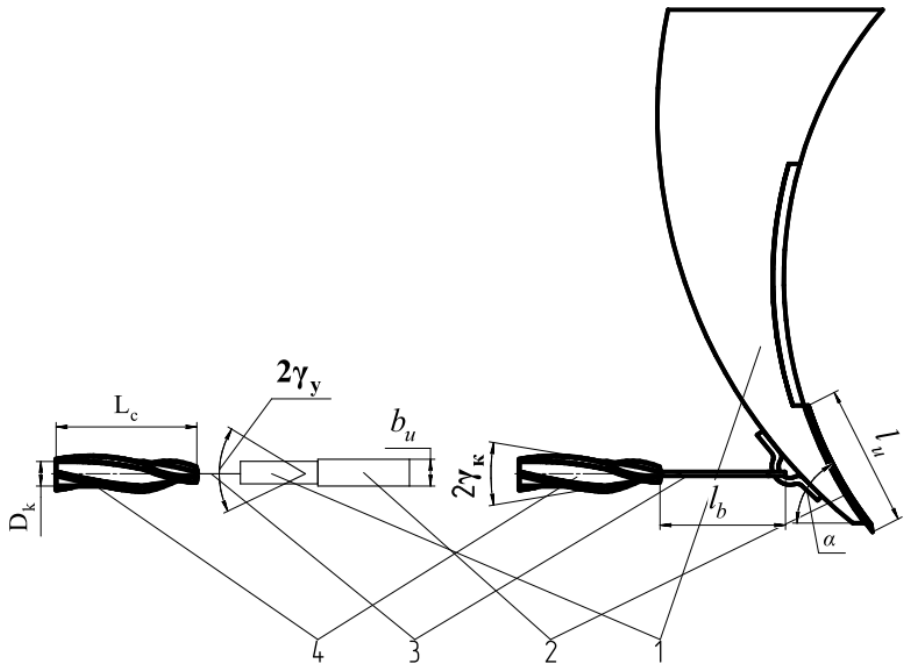

Рисунок 2. Параметры кротовые орудия

Подставляя в это выражение значение d_t, определенное выше, определяем, что длина цилиндрической части кротовые орудия находится в пределах 105-240 мм. Принимаем l_s =180 мм. Длина стального каната рекомендуется в пределах 100-150 мм. Длину троси принимаем l_t= 120-130 мм.

Длина обратного конуса и угол заточки не влияют на предел прочности орудия. Длина заднего конуса – в пределах 25-50 мм, угол конуса рекомендуется в пределах 20-25° [7]. Лучше, чтобы длина заднего конуса была l_z = 30 мм, а угол заточки γ_o = 25°.

Определяем предел прочности кротовые орудия по следующему выражению [18,20]

$$R_m = 10^3 k_\partial S_\partial + 10^3 \rho_л \pi d_m l_ц \qquad (4)$$

Здесь k_d – относительное сопротивление почвы движению кротовые, MPa;

S_d – поперечная поверхность кротовые, м^2;

ρ_l – относительная устойчивость к прилипанию почвы, MPa;

k_d = 0,1 MPa, ρ_l = 0,008 MPa [7],

l_s = 0,18 м, d_t = 0,07 м помещать, определяем, что предел прочности кротовые должен составлять 0,696 кН.

Таблица 1

Рекомендуемые параметры устройства, создающего кротовые дренаж

№	Параметры	Единица измерения	Обозначение	Цена
1	Диаметр цилиндра с коническим наконечником	Мм	D	100-110

2	Длина стального троса, соединяющего колонну и конический цилиндр	Мм	l_a	300-350
3	Угол наклона краевых рабочих колонн	Град.	β	30-35 ^{0}
4	Угол установки рабочего органа	Град.	α	27-30 ^{0}
5	Высота колонны рабочего органа	Мм	N_c	1000-1200

Определим предел прочности стального каната по следующим выражениям

$$F_a = 10^{-3} k_a l_a + k_б, \qquad (5)$$

Здесь k_a – удельное сопротивление трос, Н/м;

l_a – длина трос, м;

k_b – начальное сопротивление трос, Н.

k_a = 54 Н/м, k_b = 15 Н, l_a = 0,2 м qo‘yib, определяем, что сопротивление трос должно быть 15,1 Н. Поэтому при длине трос менее 1 м ее сопротивление тяге не учитывается.

Исследования показывают, что кротовые дренажное устройство рекомендуется размещать на заданных глубинах перпендикулярно направлению траншей на участках, где подземные фильтрационные воды расположены близко к поверхности и имеют повышенный уровень минерализации. В результате применения данной технологии обработки можно направлять подземные фильтрационные воды в канавы.
В таблице 2 приведены результаты эксперимента по обоснованию длины троса.

Таблица 2

Изменение сопротивления рабочих органов в зависимости от длины троса

длина троса $l_{пўл.}$, мм	Сопротивление рабочего органа тяге, F, кН.	Устойчивая ходьба на указанной глубине, h, мм.	Диаметр формируемого кротовые дренажа, мм	Коэффициент поглощения подземных вод кротовые дренажем, м/сутка
200	5,2	± 30	90	0,42
300	5,1	± 60	100	0,45
400	5,7	± 80	101	0,43
500	6,8	± 100	98	0,43

По результатам эксперимента видно, что цилиндр диаметром 100 мм с коническим наконечником имеет наименьшую величину (5,1 кН) при натяжении стальным трос длиной 300 мм, а образующийся дренаж дренажных кротовые хорошего качества, и подземное фильтрационное водопоглощение составило 0,45 м/сут.

При перемещении рабочего органа на заданную глубину просачивающаяся вода в поверхностном слое почвы поглощается через дренажные кротовые с образующейся под землей буровидной рабочей поверхностью, снижается уровень засоления почвы, происходит водно-воздушный обмен. улучшается, а для роста и развития растений создаются комфортные условия.

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Медьсодержащие электропроводящие текстильные волокна

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В настоящее время наблюдается активный интерес к функциональным текстильным материалам с добавлением металлов для придания им электропроводящих, антимикробных, противовоспалительных и других специальных свойств [1,2]. Одним из перспективных направлений является получение медьсодержащих текстильных волокон, так как медь обладает выраженными антимикробными свойствами и способностью ингибировать рост патогенных микроорганизмов [3,4].

Основные методы получения медьсодержащих текстильных волокон включают:

1. Импрегнацию готовых текстильных волокон растворами солей меди, таких как хлорид [5,6], нитрат [7] и сульфат [8] меди. Этот метод прост в реализации, но имеет недостаток в виде низкой прочности связи меди с волокном и возможности вымывания при стирке.
2. Получение медьсодержащих нановолокон методом электрофибриляции из расплавов полимеров с добавлением солей меди [9,10]. Этот метод позволяет получать волокна с равномерным распределением меди, но требует сложного оборудования.
3. Встраивание частиц оксидов меди в структуру полимерных волокон при их формовании, например, при экструзии полиамида с добавлением оксида меди CuO [11,12]. Этот метод обеспечивает прочную связь меди с полимерной матрицей.
4. Модификация поверхности синтетических волокон плазмой, содержащей ионы меди [13,14]. Этот метод позволяет получить тонкие пленки меди на поверхности волокон.

В работе [5] была проведена импрегнация хлоридом меди шерстяных и полиэстерных волокон. Было показано, что полученные материалы обладают высокой антимикробной активностью в течение 30 стирок.

В [9] описано получение нановолокон полиамида-6 с добавлением хлорида меди методом электрофибриляции. Было установлено, что содержание меди до 5% не влияет на морфологию волокон.

Работа [11] посвящена встраиванию частиц CuO в полиамид-6 при его экструзии. Было показано, что такие волокна сохраняют антимикробную активность после 50 стирок.

В [13] описано напыление пленок Cu на поверхность полиэфирных волокон при их обработке кислородной плазмой. Была установлена высокая эффективность полученных материалов против Staphylococcus aureus.

Учеными из ташкентского института текстильной и легкой промышленности разработана технология получения медьсодержащих электропроводящих волокон (МЭВ).

Процесс получения МЭВ отличается от традиционных методов производства и является более простым и экономичным. В отличие от классических процессов, требующих использования солей драгоценных металлов и дорогих химических реактивов, технология получения МЭВ основана на непрерывном процессе, состоящем из трех стадий. При этом используются относительно дешевые химические реактивы и материалы.

МЭВ относится к классу высокопроводящих волокон и может использоваться во всех областях, где требуется высокая электропроводность. Стоимость МЭВ значительно ниже, чем у аналогов, а его физико-механические свойства близки к свойствам натуральных и химических волокон. Это позволяет перерабатывать МЭВ в электропроводящую пряжу на серийном текстильном оборудовании и использовать его в смешанном виде с другими обычными волокнами.

МЭВ применяется в различных областях техники и технологии, включая создание материалов и изделий со стабильными антистатическими свойствами, радиопоглощающих, радиорассеивающих и радиоотражающих материалов, а также материалов и изделий, экранирующих электрические поля высокой напряженности. Кроме того, МЭВ используется для создания легких и гибких электронагревательных систем, таких как электрообогреваемая одежда и бытовые электрообогреваемые изделия.

В настоящее время существует экспериментальная установка для получения небольших опытных образцов МЭВ, которая может быть использована для дальнейшего исследования и развития этого перспективного материала.

Таким образом, существует несколько перспективных подходов к получению функциональных медьсодержащих текстильных материалов с

целенаправленными свойствами. Дальнейшие исследования должны быть направлены на оптимизацию процессов, повышение стабильности свойств и разработку промышленных технологий.

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АНАЛИЗ СОВРЕМЕННОЙ СИТУАЦИИ НАСОСНЫХ СТАНЦИЙ И УПРАВЛЕНИЯ ЭНЕРГЕТИКИ АМУ-КАШКАДАРЬИНСКОЙ ИРРИГАЦИОННОЙ СИСТЕМЫ МИНВОДХОЗЯЙСТВА

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Annotatsiya: В данной статье современное состояние насосной станции «Пахтакор» сосредоточено на исследовании гидравлического процесса в каналах водоподающих и водовозящих машин насосной станции, расчете и снижении сопротивления. В условиях водного дефицита и ограниченности ресурсов в республике, в процессе углубления реформ рыночной экономики, выращивания сельскохозяйственной продукции, повышения ее качества, использования передового опыта и новых технологий орошения, рациональное и эффективное использование земельных и водных ресурсов имеют стратегическое значение.с учетом того, что это маршрут, способы экономии воды при эффективном использовании воды, в данном случае не в области орошения, а для экономии воды перед Доходит до поля или поднятой воды, которую следует подавать, вода машинных каналов Состоит из научно обоснованных предложений и рекомендаций по разработке мероприятий по повышению пропускной способности и снижению эксплуатационных затрат в системе машинного орошения.
Ключевые слова: Аванкамера, агрегат, характеристики, гидротехническое сооружение, водоносный канал, насосный агрегат, горизонталь, кавитация, клапан, клапан.
Abstract: In this article, the current state of the Pakhtakor pumping station is focused on the study of the hydraulic process in the channels of the pumping station water-carrying and water-carrying machines, the calculation and reduction of resistance. In the conditions of water scarcity and limited resources in the republic, in the process of deepening the reforms of the market economy, the cultivation of agricultural products, the improvement of their quality, the use of advanced practices and new irrigation technologies, the rational and efficient use of land and water resources are of strategic importance. taking into account the fact that it is a route, ways to save water in the efficient use of water, in this case, not in the irrigation field, but to save the water before it reaches the field or the raised water that should be given, the water of the machine channels It consists of scientifically based proposals and recommendations for the development of measures to improve the carrying capacity and to reduce the operating costs in the machine irrigation system.
Keywords: Avankamera, unit, characteristics, hydrotechnical structure, water-carrying channel, pump unit, horizontal, cavitation, valve, valve.

Насосная станция «Пахтакор» построена для орошения сельскохозяйственных культур в Чиракчинском и Шахрисабзском районах. Насосная станция «Пахтакор» введена в эксплуатацию в 1977 году. Предполагается орошать 2500 гектаров земель, принадлежащих Шахрисабзскому и Чиракчинскому районам. На насосной станции установлено 7 насосных агрегатов, из них 5 по 1000 насосов передают воду на расстояние 3,2 км по напорному трубопроводу, а 2 из них по 1600 насосов по напорному трубопроводу передают воду на расстояние 5,6 км. трубопровод. Один - запасной насос, исходя из потребности графика перекачки воды.Марка этих насосов - 24НДС, производительность по перекачке воды 1 агрегата = 1-1,2 м/сек, высота подъема воды Н-39 м. Он оснащен электродвигателем модели СДН-32-17-4 У со скоростью n= 600 об/мин и мощностью 1250 кВт/ч. Статус: Насосная станция «Пахтакор» — насосная станция, принадлежащая Управлению насосных станций и энергетики Бассейнового управления Аму-Кашкадарьинской оросительной системы Министерства водного хозяйства. Насосная станция введена в эксплуатацию в 1977 году. В насосной станции 7 насосных агрегатов и работают они в основном в период вегетации.В данный момент происходит очистка предкамерной и воротниковой части насосной станции от отложений, то есть подготовка к вегетации. . Основные показатели: На насосной станции установлено 7 насосных агрегатов 24НДС. Производительность по воде 1,1 м3/сек, высота подъема воды 39 метров, общая площадь 2500 га, тип электродвигателя СДН-32-17-4У, мощность электродвигателя 1250 кВт/ч, обороты электродвигателя 600 об/мин, диаметр напорного трубопровода 1220 мм, и его длина составляет 4,4 км. Проблемы: Насосная станция принимает воду из канала Эскянхор, изменение уровня воды в канале отрицательно влияет на работу насосной станции, то есть подъем уровня воды приводит к подъему горизонта в лопастной камере, в результате чего наблюдается помутнение и отложение осадка в лопастной камере. Падение уровня воды вызывает кавитацию в насосах. Высокий уровень мутности воды в канале Эскиханхор и длина напорного трубопровода.

Предложения: Необходимо поддерживать уровень воды в канале водоснабжения на одном уровне, не допускать потери давления по длине, разработать современные технологии очистки отложений и различных видов стоков. Требования к насосной станции: Совершенствование использования насосных станций может дать положительные результаты, если будет осуществляться по следующим направлениям: - разработка и использование рациональной структуры управления - хорошая организация обслуживания; - научно-технические достижения, использование передового зарубежного опыта - научная организация и награждение труда сотрудников; - разработка и внедрение совершенной автоматизированной системы технического управления насосными станциями; - разработка и внедрение новых усовершенствованных контрольно-измерительных приборов; - создание

передовых (прогрессивных) технологий и механизмов, обеспечивающих комплексную механизацию ремонтных и эксплуатационных работ; - исследование гидравлических процессов в сооружениях насосных станций, напорных трубопроводах, оценка порядка использования энергии; - разработка и внедрение усовершенствованных типовых инструкций, инструкций и правил эксплуатации насосных станций (со всеми помещениями и оборудованием). Каналы подачи воды используются для подачи воды к насосным станциям, ирригации, энергетическим целям или водохранилищам. При заборе воды из реки каналы строятся только при благоприятных условиях – гидрологических, топографических и геологических. Однако на практике при высокой мутности воды в реке в водозаборных каналах устанавливают умягчители и защищают каналы от заиливания. Водозаборные каналы обычно проектируются водозаборными сооружениями, в истоке канала рекомендуется устанавливать клапаны регулирования расхода воды. Водозаборное сооружение в истоке канала: При аварийном паводке восстановить его невозможно, в этом случае станция может быть затоплена в случае аварии. Работу основного сооружения необходимо согласовать с работой насосной станции. Подающие каналы обычно прокладывают по кратчайшему пути от источника воды до насосной станции. Основные условия использования каналов водоснабжения: - строительство канала водоснабжения для уменьшения длины напорных труб; - относительная точность расхода воды в канале, непрерывная работа канала; - очистка канала от осадочных пород, обеспечение нормальной работы насосной станции; - сравнительно небольшая изменчивость уровня воды в русле и в истоке, что не приводит к экономически необоснованным затратам на строительство насосной станции;

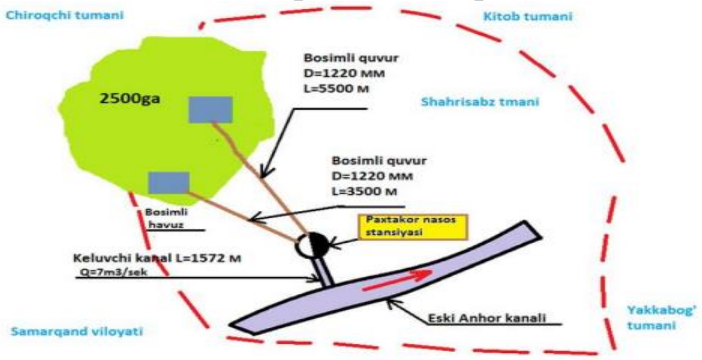

Фото: Районы «Шахрисабз» и «Чиракчи» через насосную станцию «Пахтакор» Схема водоснабжения района.

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3D SCANNING OF HISTORICAL MONUMENTS

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Abstract. In this article, the purposes of using terrestrial laser devices, the sequence of their use, the precautions to be taken when using them, the sequence of creating a 3D format of historical monuments and buildings with the help of a laser, and the current role of this 3D laser in our time are considered.

Currently, technical devices are developing, as a result of which surface lasers create a lot of convenience in working with the ground. The sequence of 3D scanning of historical monuments and buildings using a terrestrial laser is as follows:

1. Preparation: Identify the object to be scanned and make sure you have all the necessary equipment. This includes a surface laser scanner, a tripod or stand for installing the scanner, a computer for data processing, and software for working with 3D models.

2. Scanner Installation: Placing the surface laser scanner on a tripod or stand and making sure that it works stably and safely.

3. Adjust scan settings: Adjust scan parameters such as resolution, scan speed, etc. using the software. This may vary depending on the required accuracy and size of the monument.

4. Scanning: Start the scanning process by moving the ground scanner around the monument to cover all its aspects and details. A laser scanner creates data points in a point cloud format that represent the shape and surface of the monument.

5. Data processing: Using point cloud processing software to transfer scan data to a computer and create a 3D model of the monument. It is possible to clean the data of noise and unwanted elements, combine different scans of different aspects of the monument and combine them into a single model.

6. Model optimization and completion: post-processing of the 3D model, smoothing of surfaces, smoothing of planes and correction of errors that occurred during scanning. Textures and colors can be added from memorial photos for a more accurate display.

7. Results: After the data processing and optimization is complete, export the 3D model of the monument in suitable formats such as STL or OBJ so that it can be used for various purposes such as virtual tours, 3D printing or archiving.

This is just a general sequence of steps that can be used to scan historical sites with a terrestrial laser. Note that each monument may present unique challenges and requirements, so some steps and settings may vary depending on the situation.

3D scanning with ground-based lasers provides extensive and accurate building information with speed and efficiency. It is based on the principle of measuring distances and angles using special laser emitters that scan the environment. Next, the received data is processed and converted into a three-dimensional model using special software.

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Technologies for the development of children's speech in the process of familiarization with the environment

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In the education system, preschool children are assisted in specialized specialized kindergartens in accordance with the nature of the child's developmental disorder. These kindergartens specialize in the education, upbringing and correction of the development of children with various disabilities, which is reflected in the relevant classifications (T. A. Vlasova, M. S. Pevsner, V. A. Lapshin, B. P. Puzanov). In preschool childhood, a base is formed for the development of speech, motor skills, all mental processes, and various types of activities.

If the child has no special developmental disorders, then he masters the program of a mass preschool institution, but children with disabilities cannot cope with it and require special attention and special correctional training, special programs using a system of special methods and techniques. In this regard, almost all special programs have sections "Sensory education (development)" and "Familiarization with the outside world".

Sensory education is the basis for the formation of all types of children's activities and is aimed at the formation of perceptual actions (Latin regsero — perception, direct reflection of objective reality by the senses). Perceptual actions (viewing, listening, feeling) ensure the development of systems of sensory standards (measurement samples) and help to form generalized ideas about the color, shape, size and properties of objects, their location in space. Familiarization with the environment, in turn, is aimed at clarifying, expanding and systematizing knowledge and ideas about objects and phenomena of the surrounding reality. In our article, we would like to correlate the content side of CCA with sensory and, above all, with the speech development of preschoolers, since in the programs of special preschool institutions, familiarization with the environment, sensory education and speech development often have different tasks, and in universities one subject is read for students of speech pathologists - "Familiarization with the outside world. The methodology of speech development".

The CCA section in special programs is allocated separately or is part of other sections. For example, in the program of preschool educational institutions for children with mental retardation (DD), this section is called "Familiarization with

the outside world and speech development" and includes the following subsections: familiarization with nature, familiarization with the life and work of people, sensory development, development of spatial perception, mental development, speech development.

In pre-school programs of a compensatory type for children with speech disorders, "Speech development and familiarization with the surrounding nature" is included in speech therapy work with stuttering children. For children with general speech underdevelopment, the task of CCA is highlighted as a special one in the section "Speech development": expanding and activating children's speech reserve based on deepening their understanding of the environment. In addition, the direction "Speech development in connection with environmental education" is highlighted here (by the way, this direction is included in many general education programs of preschool educational institutions, and the tasks included in it largely correspond to the tasks of the CCA).

I would like to focus separately on the analysis of the program of preschool educational institutions of a compensatory type for children with intellectual disabilities. In it, "Familiarization with the environment" is included in the section "Cognitive development" along with such subsections as "Sensory education", "Formation of thinking", "Formation of elementary quantitative representations", "Speech development and formation of communicative abilities", "Literacy training". It is in this program, despite the separation of tasks of CCA, speech development and sensory education, that the close connection of all three directions in the education and upbringing of preschoolers with developmental disabilities is presented: "Familiarization with the environment enriches the child's sensory experience — teaches him to be attentive to what surrounds him: to look and see, listen and hear, touch and touch, the enrichment of sensory experience is inextricably linked with the development of sensory cognition — sensations, perceptions, representations. By forming adequate representations of the environment, we create a sensory basis for the word and prepare the child for the perception of verbal descriptions of objects, phenomena and relationships".

The purpose of CCA in different programs is presented in almost the same way: the formation of children's holistic perception and understanding of various objects and phenomena of the surrounding reality. And the content of the discipline is limited to a certain range of topics with some variations: a person (a child in kindergarten, family, life and work of people, holidays), the objective world, wildlife (animals, plants), inanimate nature. But only in the program for children with intellectual disabilities the dependence of the formation of knowledge and ideas about the

surrounding reality on the connection of the child's sensory experience with the word is most clearly traced. Therefore, it is very important, in our opinion, to understand that the development of speech in CCA classes is largely based on the principle of the interrelation of sensory, mental and speech development of preschoolers. The correct and timely connection with the word of what the child perceives with the preserved senses helps to correlate the word with the object, then associate the word with a certain concept and correlate it with other lexical units. This is how you can master the structure of the lexical meaning of a word: its subject relationship (nomination) and the system of generalizations and abstractions that stands behind each specific word.

It is difficult to identify the main direction of speech development in CCA classes (integrated in nature), they are all interconnected: correction of sound reproduction is impossible without lexical work, the latter, in turn, underlies the formation of a grammatical system, which serves as the basis for the development of coherent speech. However, an analysis of the programs of special preschool educational institutions and the practice of working in kindergartens allow us to conclude that vocabulary work based on sensory perception is of particular importance here. The main task remains to fix in the word the basic properties of objects and phenomena of the surrounding reality. Vocabulary work within the framework of the CCA should be carried out in stages: direct acquaintance with the subject or phenomenon, understanding its verbal designation based on a sample (teacher's speech), organization of speech practice in the process of various types of children's activities. Practically all programs provide for the formation of ideas about the basic properties of objects (color, shape, size, properties of materials, purpose of objects), their location in space, the formation of generalizing concepts, preparing children for analysis, comparison, generalization of objects and phenomena (formation of analytical and synthetic activity in speech), etc. Therefore, in as an example of the speech development of children in CCA classes, we can consider the formation of ideas about color (based on visual perception) in preschoolers with OCD.

There are several classes on this topic (from 7 to 9). Their goal is to teach them to distinguish and name the main and intermediate colors, their shades, and then independently determine the color of any object, which is important for other topics: vegetables, fruits, plants, seasonal changes in nature, etc. First, you are introduced to the three main colors — red, blue, and yellow. The presentation of their samples is associated with the display of well-known objects with unchanged coloring of a saturated, intense color: a red fire truck or a poppy flower, a blue cornflower, a yellow dandelion or a chicken. The display of a sensory standard (measuring sample)

is necessarily accompanied by a word or phrase, which records not only the name of the color, but also the correct grammatical form of the adjective in combination with the noun.

Then the children independently find an object, a picture with an image of an object of the same color, accompanying their actions with the word: red apple, yellow lemon, blue car. To find out if the color of an object is correctly named, it is compared with a sample (sample table). It is important to draw children's attention to the fact that an object can be of different colors, change it: an apple is red and yellow, a leaf is green, red and yellow.

They consistently study intermediate colors that children can create themselves by mixing watercolor paints or superimposing colored transparent plates on each other: orange is red and yellow, green is blue and yellow, purple is blue and red, brown is blue, red and yellow. Intermediate colors are shown simultaneously with the main ones. The consolidation of knowledge about the color of objects takes place in individual and frontal classes in gaming and practical activities. Children lay out objects or pictures oriented to a table of colors, play dominoes (cards with flowers), name the colors of the specified object, determine the color (common feature) of a group of objects, answer the questions: "What happens in red, blue, green?". The methodology for forming ideas about the color, shape, size of objects, and their location in space has been developed in sufficient detail [6]. However, it should be emphasized that these representations are formed not only to characterize the signs and properties of individual objects, but also to create a holistic view of them as part of the surrounding world, where everything is in causal relationships. In the future, the accumulated dictionary will serve as a basis for children to develop coherent speech: describing objects and phenomena of reality, highlighting their essential and non-essential features, establishing a connection between phenomena and events in the surrounding world, etc.

In CCA classes, children get acquainted with the subject world created by human hands, expand their knowledge of living and inanimate nature, they are introduced to the world of social relations, get a holistic view of the environment, which reflects significant connections and dependencies in different areas. And among the complex tasks of the CCA: the formation of a holistic view of the objects and phenomena of the surrounding reality, the development of analytical and synthetic thinking, environmental education - the most important, in our opinion, in the aspect of speech development is filling the vocabulary of preschoolers with vocabulary and phraseology reflecting and forming ideas and concepts about the surrounding world based on sensory perception. Therefore, when planning classes on CCA, it is

necessary to clearly understand the specifics of this task — to fix in the word the main properties, signs of an object or phenomenon perceived by preschoolers with developmental disabilities with their preserved sensory organs.

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CULTURAL PAREMIOLOGICAL EXPRESSIONS RELATED TO TIME IN UZBEK AND ENGLISH LANGUAGES RELATIONSHIPS ABOUT THEIR IMPORTANCE IN REFLECTING CHANGE

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Annotation: The proverb, which is considered one of the ancient examples of folklore, is different .It is different from other genres due to its short, concise, figurative and deep content stands out. The ancient and rich spirituality of each nation through proverbs appears. Proverbs are extremely rich and diverse in terms of subject matter can be used literally or figuratively. For proverbs as an object, persons, things, and at the same time, animals are taken. The proverbs are mainly didactic in nature and are written by Bahadir Sarimsakov stated that "proverbs can also be used figuratively has This feature defines the thematic scope of proverbs, the level of application expands".

Key words: folklore, proverb, negative character, image, content, figurative meaning.

This is definitely the unity of the spiritual culture created by the people are proverbs of the people. The oral or personal memory of each nation let's take a look at it, the myths that are vividly preserved in the memory of mankind, primitive ideas and concepts from the depths of long history, centuries .The cream of life wisdom derived from observations during the course is human we see the reflection of thought experience. There are also English and Uzbek folk proverbs it is a product of scientific and artistic thinking that has been collected and polished over thousands of years It is the best that has arisen as, is said among the people, refined, and passed from generation to generation. It is one of the spiritual heritages. Created and used in the past the best proverbs of the bride, as an example of folk wisdom, now is also of great educational value. Such proverbs and wise words it is a precious treasure of the spiritual wealth of every nation.

There are a lot of animal names, that is, zoonyms, in folk proverbs occurs. Zoonyms are figurative in almost all proverbs is expressed. By citing animal images, human characteristics are animals it is shown through, that is, the instructive idea given in the proverbs is given in the proverb it is not said about animals, but about people.

Mostly animals people with a negative character are criticized. Each There are proverbs that express the unique characteristics of the nation. We are this structure and semantics of Uzbek and English folk proverbs in our small study We will do a comparative analysis. There are a lot of animal names, that is, zoonyms, in folk proverbs occurs. Zoonyms are figurative in almost all proverbs is expressed. By citing animal images, human characteristics are animals it is shown through, that is, the instructive idea given in the proverbs is given in the proverb it is not said about animals, but about people. Mostly animals people with a negative character are criticized. Each there are proverbs that express the unique characteristics of the nation. We are this structure and semantics of Uzbek and English folk proverbs in our small study .We will do a comparative analysis. A deeper analysis of proverbs and their national-cultural meanings in different languages and learning through the reflection of universal values is the present time is an urgent problem of linguistics. Comparatively speaking, we can see that all languages in the world have their own characteristics and it is this phenomenon that separates different languages from each other. But this is known as language Learners of a foreign language know the difference between their mother tongue and this language adopts on the basis of dependence. These languages are united under certain categories. These categories include grammatical categories, lexical-semantic categories, includes linguistic signs similar to functional categories. So, generalizing categories ensure universality in languages. Meanwhile, proverbs are a unique linguistic unit found in every language, and they also have a commonality there is. G. L. Permiakov thinks about it as follows: circumstances the property of generalization, that is, combining the same or similar situations with different ones found in folk proverbs. This uniformity in proverbs ensures universality and in many cases they have a special logical meaning. It follows tha the proverbial world is related to world civilization, which belongs to only one nation it is absolutely wrong to say. Universality in proverbs is the main edge of paremiology is, it summarizes similar and identical situations in proverbs and even it occurs in unrelated languages, regardless of their history and ethnicity.

So there is a lot about the possession of universal and national characteristics of proverbs studies have been conducted. Universal features in the structure of proverbs, one

if it is manifested in its spirituality and multi-spirituality and its themes, it is

the reason is historical development, increasing international relations and universality growth of values. National characteristics - national character, national spirit on the contrary, they are characteristics of a certain ethnic group. Of a certain

ethnicity without knowing the necessary aspects such as place of residence, history and nationality it is absolutely impossible to understand the essence and meaning of proverbs. Proverbs to be alert, to distinguish a friend from an enemy, to be humane, to be kind, sweet words, loyal, parents, relatives and friends to appreciate, to respect the elders, to be kind to the little ones teaches: "If you walk with good, you will be good, if you walk with bad, you will stay shame", "If you respect, you will be respected". Proverbs that call people to cleanliness and health are short and simple words, but is deep, deeply meaningful and aimed at the same goal: "If your eyes hurt, put your hand stop, if your stomach hurts, stop your lust!", "A person is tougher than steel, more delicate than a flower", "Health If you wish, don't say too much, if you wish for honor, don't say too much!", "Your purity is your health". It is widespread in our nation and is one of our best spiritual heritages. That's it while inculcating the idea of national independence in the minds of young people, making them a perfect generation included wise thoughts so that it would be easy for students to understand it is appropriate to decorate our conversations with proverbs and use them effectively.

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AXBOROT TEXNOLOGIYALARIDAN SAMARALI FOYDALANISH

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Mustaqillik yillarining dastlabki kunlaridan boshlab mamlakatimizda axborotlashgan jamiyat qurish borasida keng islohatlar olib borilayotgan davrda yoshlarning axborot madaniyatini shakillantirish ta'lim tizimining muhim vazifalaridan biridir. O'quvchi va talabalarning axborot madaniyatini shakillantirish ta'lim muassasalarida va keying bosqichda Oliy ta'lim muassasalarida "Informatika va axborot texnologiyalari" fanini o'qitish davrida amalga oshiriladi. Shuning uchun, ta'lim muassasalarida "Informatika va axborot texnalogiyalari" fanini zamonaviy pedagogik va axborot texnologiyalari asosida o'qitish muhim ahamiyat kasb etadi.Ushbu fan, birinchidan umum ta'lim fanlardan biri bo'lib hisoblansa, ikkinchidan fan doirasida olingan bilim, malaka va ko'nikmalarni o'quvchilar bo'lg'usi kasbiy faoliyatlarida qo'llay olishlari kerak. Shuning uchun, ta'lim tizimidagi har qanday umum ta'lim fanning xususiyatlaridan kelib chiqqan holda, "Informatika va axborot texnologiylari" fanidan ham o'qitishning samaradorligini oshirish uchun kelgusida biz kasbiy faoliyatimizda o'quv maqsadlarimizni aniq va ravshan qo'yishimiz, o'qitishdan kuzatiladigan natijani belgilashimiz va o'quv jarayonida innovatsion ta'lim texnologiyalarini joriy etishimiz lozim.

Hozirgi davrda olimlar innovatsion ta'lim texnologiyalari tarkibini samarali usul va vositalar asosida tizimlashtirib, ularning tub mohiyatini ochib berishga erishmoqdalar. Ayniqsa, axborot-kommunikatsiya texnologiyalarning jadal rivojlanishi axborot-ta'lim muhitini shakillantirishga va innovatsion darslarni tashkil etishga keng imkoniyatlarni ochib bermoqda.

Axborot tizimlarining asosiy vazifasi hodisa va jarayonlar kechishini boshqarish imkoniyatlarini yaratishdan iborat. Shuningdek, axborotlarga asoslangan, maqsadi oldindan belgilangan va shu maqsadga erishish dasturi ishlab chiqarilgan boshqariluvchi jarayonga maqsadli ta'sir ko'rsatadi. Axborotlarni avloddan-avlodga uzatishning ahamiyati ta'lim – tarbiya ishining ahamiyati bilan hamohangdir. Axborot texnologiyalari (AT) – bu tizim masalalar yechimini topish maqsadida axborotlarni yig'ish, qayta yig'ish, qayta tiklash, saqlash, ifodalash, tizimlash, uzatish va uni iste'molchiga foydalanishga qulay holga keltirsh jarayonini kompyuter va telekommunikatsiya vositalari yordamida amalga oshiriladigan,

tartibga solingan amaliy dasturlar majmuasidir. Axborot texnologiyalari – jarayonlarni boshqarishdagi asosiy manba bo'lib hisoblanadi. Tayyorlangan ma'lumotlarni tizimga ajratish va qayta ishlash hamda kerakli maqsadlar bo'yicha qayta ishlangan ma'lumotlarni uzatishni o'z ichiga oladi. Axborotlashtirish faqatgina fan va texnika yutug'i bo'lmasdan, balki ular ta'lim, tarbiya, san'at, tibbiyot, iqtisodiyot, qishloq xo'jaligi, sanoat va shu kabi sohalarning rivojlanishida ham doimo omil bo'la oladi. Axborot-kommunikatsiya texnologiyalari esa o'z navbatida motivlarni yuzaga keltiruvchi eng muhim omillardan biridir. Chunki, axborotlarning jamlanganligi, ko'rgazmaliligi, ya'ni turli xil taqdim etish imkoniyatlarining mavjudligi, animatsiyalardan foydalanish, ta'lim-tarbiya oluvchilarning yoshi va fiziologik xususiyatlariga mos axborotlarni taqdim etib borish o'quvchilarda ta'limga bo'lgan qiziqishni va bilim olishga bo'lgan ichki harakatlantiruvchi kuchlar (motiv) ni yuzaga keltiradi. Bu borada olib boriladigan ishlar mazmuni motivni o'stirishga, uni qo'ya bilishni o'rgatishdan iborat. Axborotlashtirish axborot jarayonlarini rivojlantirish vosita va sharoitlarining butun majmui bo'lib, tegishli texnik, bazani yaratish, tashkiliy, iqtisodiy, madaniy-ma'rifiy islohotlar qilishni o'z ichiga oluvchi jarayon bo'lib, u ta'limni texnologiyalashtirishga keng imkoniyatlar yaratadi. Axborotlardan samarali foydalanish asosida faoliyat ko'rsatish quyidagi vazifalarni hal etishning ma'qul yo'llarini ta'minlab beradi:

- manba va unda kechadigan jarayon to'g'risidagi ma'lumotlarni qayta ishlash;
- jarayonlar kechishi haqidagi davriy ma'lumotlarni muntazam olib turish va ular asosida nazoratlar olib borish.

Eng so'nggi texnik yutuqlar ko'pincha ta'lim jarayonida o'zining munosib o'rnini egallagan, bu ma'noda axborot-kommunikatsiya texnologiyalari ham istisno emas.O'quv jarayonida kompyuterlardan foydalanish bo'yicha dastlabki tajribalar hisoblash texnikasidan foydalanish ta'lim jarayoni samaradorligini sezilarli darajada oshirishi, bilimlarni hisobga olish va baholashni yaxshilashi, qiyin vazifalarni hal qilishda o'qituvchining har bir ta'lim oluvchiga yakka tartibda yordam berishini ta'minlash kabi imkoniyatlarni yaratadi.

Xulosa qilib aytish kerakki zamonaviy axborot texnologiyalari qo'llanilayotgan bugun har yerda, har qadamda uchratish mumkin. O'quvchi-yoshlarni zamonaviy axborot texnologiyalari va zamonaviy pedagogik texnologiyalardan foydalanishni o'rgatish, ularda o'z faoliyat sohasida yangi axborot texnologiyalari va interfaol usullardan foydalanish o'rganilayotgan mavzuning yana keng qamrovli tushunib olishga , bilim ko'nikma va malakalarning mustahkamlanishiga olib keladi. Yana shuni aytish mumkin, ta'lim

muassasalarida Informatika va axborot texnologiyalari fanini zamonaviy pedagogik texnologiyalar va interfaol usullardan foydalanish darslarning mazmunli tashkil etilishi va talabalarda o'zlashtirish ko'rsatkichlarini oshirish hamda mustahkam bilim olishlariga yordam beradi.

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The activities of the internal affairs bodies in the 70s of the 20th century in order to ensure order in the society

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Abstract: In 1970, a number of works were carried out to provide the internal affairs bodies with highly qualified and leaders, and the operation of a number of educational institutions at the level of the union affects the increase of experience and qualified personnel in police bodies. a very difficult situation has come. The article talks about the activities of the internal affairs body in maintaining peace in the society.

Key words: Surkhandarya district, Soviet authorities, internal affairs bodies, criminal investigation department, Workers' militia.

Introduction. The Regulation on the militia, approved in August 1962, played an important role in improving the activities of the militia. According to the regulation, it is stipulated that mature citizens with work ethic and loyalty to the Motherland will be admitted to the police force. In the regulation, it is noted that the police officers should be dignified, brave, vigilant and well-trained, they should selflessly perform their duties without sacrificing their knowledge and strength, if necessary, even their lives.

Materials and Methods.

Based on the decision of the party and the government, in 1963 the Presidium of the Supreme Soviet of the Republic approved the Regulation on the Red Flag of the police. Based on the decisions of the party and the government and the requirements of the new Regulation, great work has been done to provide personnel to the militia[1;100]. The presidium of the former Supreme Soviet of the USSR granted the right to conduct preliminary investigations in public order agencies with the decree of April 6, 1963, in order to strengthen the fight against crime, further strengthen the legislation and expand the democratic basis of criminal justice. Based on this decree, the Presidium of the Supreme Soviet of the Uz.SSR issued a decree on April 27, 1963 "On Amendments to the Code of Criminal Procedure of the Uzbek SSR"[2;95]. In it, the types of crimes that the investigators of the JTS offices carry out preliminary investigations were determined. According to this, an investigative department was created in the Ministry of Internal Affairs of our region, and first,

internal service lieutenant colonel Georgy Aleksandrovich Brook was appointed as its head.

The task of strengthening the fight against crime and strengthening public order in the country requires that it can be solved only when the political educational work is improved in the internal affairs bodies, first of all, in the police. Therefore, on the basis of the decision of the Central Committee of the former party on August 25, 1965, services dealing with political and educational work were established in the police.

On the basis of the above-mentioned decisions, highly educated, conscientious lawyers, Komsomol and party members of various specialties began to work at the Surkhan militia with referrals. For example: Ulash Saimov, Rozi Norkulov, Holli Javliyev, Qambar Mirzayev, Valiqul Kattayev, Muhammad Boboyev, Tukhta Mamatkulov, Ramazon Haynazarov, Norqul Nuraliyev, Jura Arniyazov, Abray Musurmongulov, Ibrahim Bobojonov, Chori Karayev, Valijon Dadabov and others are among them[4] .

It should be noted that from the beginning of the 60s, local women began to work as officers in police departments. Khurramova Almos Avazovna (1962), Choriyeva Muqaddam (1966), Arziyeva Ugiloy (1969) are the first. They worked flawlessly for the peace of our nation for many years in the internal affairs agencies [5].

Life experience has shown that the dissolution of the Union and Republic Ministries of Internal Affairs has led to difficulties in maintaining public order, coordinating the work of republican agencies, and in determining the internal structure and staff of some police departments in the normative solution of some issues of the law enforcement service. The inter-republic popularization of the experiences of the fight against crime and the use of the latest achievements of science and technology in this fight [3; 66]. Therefore, in July 1966, the party and the government considered the issue of strengthening the fight against the violation of public order in the country. In the decision taken on this issue, the wishes of workers, public organizations and state bodies to end bullying and other anti-social events were expressed. As a result, in accordance with the Decree of OSP dated July 26, 1966, the Union-Republican Ministry of Public Order Preservation was established in order to provide unified operational leadership of the activities of public order preservation agencies in the fight against crime. By the decree of the OSP of Uzbekistan dated July 29, 1966, the Republican JTSV was transformed into the Union-Republic Ministry of Public Order Maintenance of the Uzbek SSR[6].

By 1966, the Ministry of Public Order of the Republic issued an order to transform the criminal investigation and investigative teams of the large police departments

with difficult operational conditions into units in order to strengthen the fight against crime. Accordingly, for the first time in the police stations of Termiz city and Denov district of our region, criminal investigation and criminal investigation units were established [7].

Results and discussion.

Ne'matjon Kuchukov, Yevgeiy Nikolayevich Kuzovchikov, the first heads of the criminal investigation unit worked in the Termiz city police department, and Rahmat Ahmedov, Muhammad Otakulovych Boboyev worked in the BHSS unit[1;204]. In November 1968, by the Decree of the OSP, JTSB was transformed into the Ministry of Internal Affairs, and the main issue was focused on improving the organizational structure of internal affairs agencies and improving its management. As a result of the reconstruction, the Department of Internal Affairs was established in Surkhandarya region [8]. Departments of internal affairs were created on the basis of city and district police departments, and the apparatuses of investigation, state fire control and correctional work were integrated into them.

As a result, now not only the police, but all internal affairs bodies have become departments of executive committees. On November 19, 1968, a decision was made to strengthen the militia. In it, it was demanded to strengthen and expand the connection of the police bodies with the people, public organizations and collectives of workers. Police bodies are tasked with relying on the public's support in preventing crime and fighting crime.

Conclusion.

For this purpose, in 1969, a decision was made to send 20,000 communists and Komsomol members to work in police bodies. It was decided to send workers to the police. With this, a principled new procedure was introduced to send the best representatives of workers' communities to the police bodies, after discussing them at the meetings of the former party, Komsomol and trade unions. In this regard, the party and executive committees of the Surkhandarya region also made relevant decisions, and as a result, on the initiative of the party, Komsomol and trade unions, hundreds of local personnel were sent to serve in internal affairs agencies.

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Tilshunoslikda lingvokulturologiya sohasining rivojlanishi

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Annotatsiya: Ushbu maqolada lingvokulturologiya fanining yuzaga kelishi, rivojlanish bosqichlari va boshqa fanlar bilan o'zaro aloqadorliklari haqida ma'lumot keltirilgan bo'lib, ushbu sohaning hozirgi davrdagi ahamiyati keng yoritib berilgan.
Kalit so'zlar: madaniyat, lingvokulturologiya, etnolingvistika, psixolingvistika, lingvomamlakatshunoslik, moddiy va ma'naviy madaniyat.
Abstract: This article provides information about the emergence of the science of linguoculturology, its development stages, and its interrelationships with other sciences, and the importance of this field at the present time is widely explained.
Key words: culture, linguoculturology, ethnolinguistics, psycholinguistics, linguo-national studies, material and spiritual culture.
Аннотация: В данной статье приводятся сведения о возникновении науки лингвокультурологии, этапах ее развития, взаимосвязях с другими науками, а также широко объясняется значение этой области в настоящее время.
Ключевые слова: культура, лингвокультурология, этнолингвистика, психолингвистика, лингвонациональное изучение, материальная и духовная культура.

Lingvokulturologiya sohasi tilshunoslikda shiddat bilan rivojlanayotgan zamonaviy sohalardan biri hisoblanadi. Ushbu yo'nalishning yuzaga kelishi tilshunoslik va madaniyatshunoslik fanlari bilan bog'liq. Dastlab madaniyat so'ziga ta'rif beradigan bo'lsak, ushbu tushuncha ma'lum bir xalq yoki millatning urf-odatlari, an'analari va qadriyatlarining aksi deb tasvirlash mumkin. Madaniyat so'ziga turli olimlar har xil ta'rif berganlar. Ularning barchasini umumlashtiradigan bo'lsak, "*Madaniyatga butun tarixiy taraqqiyot jarayonida insoniyat tomononidan yaratilgan va yaratilayotgan barcha moddiy va ma'naviy boyliklar yig'indisi*" deb ta'rif berish mumkin.[1] "Lingvokulturologiya" atamasidagi *"kultura"* ya'ni "madaniyat" so'zi lotincha "*colere"* so'zidan olingan bo'lib, *"ishlov berish,*

[1] Komilova Gulmira Temirovna. Lingvokulturologiya yangi soha sifatida.- "Экономика и социум" №12(91) 2021

tarbiyalash, rivojlanish, hurmat qilish” degan ma’nolarni anglatadi. Hozirda madaniyat so‘zining juda ko‘p ma’nolari mavjud. Shunga asosan madaniyatning ikki turini farqlash mumkin: moddiy va ma’naviy madaniyat. Moddiy madaniyat insonning yashash faoliyati davomida paydo bo‘ladigan ehtiyojlarini o‘z ichiga oladi. Ma’naviy madaniyatning ko‘plab shakllari mavjud bo‘lib, u ilmiy, ijtimoiy, falsafiy, diniy, huquqiy, axloqiy, ta’limiy va tarbiyaviy turlarni qamrab oladi. Shu tufayli madaniyatning ushbu ikkita turi (moddiy madaniyat va ma’naviy madaniyat) bir-biri bilan chambarchas bog‘liqdir.

Lingvokulturologiya ya’ni lingvomadaniyatshunoslik fani XX asrning 90-yillarida yuzaga kelgan fan bo‘lib, u tilshunoslik va madaniyatshunoslik fanlarining jipslashuvi natijasida paydo bo‘ldi. Bu sohaning asosiy predmetlari til va madaniyat hisoblanadi. Agar madaniyatshunoslik insonning tarix, hayot, tabiat va ijtimoiy sohalardagi xususiyatlarini o‘rgansa, tilshunoslik tilda insonning dunyoqarashini o‘rganadi. Ushbu atama lotincha *“lingua”- til,* “*cultura”- ishlov berish* va yunoncha “*logos”- fan, ta’limot* so‘zlaridan olingan bo‘lib, til va madaniyatning uzviy aloqadorligini, uning shakllanishi va rivojlanishini o‘zida aks ettirgan hodisalar – til va madaniyatni birgalikda o‘rganadigan alohida ilmiy soha sanaladi. U madaniyatshunoslik va tilshunoslik fanlari o‘rtasida yuzaga kelgan umumlashma fan bo‘lib, til va madaniyatning o‘zaro ta’siri va bog‘liqligi, bu bog‘liqlikning shakllanishi hamda yaxlit bir sistema sifatida til va tildan tashqarida aks etishi kabi hodisalarni o‘rganish bilan shug‘ullanadi. Bir tomondan lingvokulturologiya insoniyatning madaniy til faktoridagi o‘rni, ikkinchi tomondan esa, til faktoridagi insonning o‘rnini o‘rganadi.

“Lingvokulturologiya” atamasi dastlab frazeologik maktab asoschisi V.N. Teliya va V.V. Vorobyov, V.A. Maslova va boshqalarning ishlarida ko‘rindi. Ushbu sohaning shakllanishi haqida fikr yuritilganda, deyarli barcha tadqiqotchilar bu nazariyaning ildizi V.F. Gumboldtga borib taqalishini ta’kidlaydilar[2]. Ushbu adabiyotlarda bu sohaning rivojlanishida A.A. Potebnya, L. Vaysgerber, X. Glins, X. Xols, D. Uitni, D.U. Pauell, F. Boas, E. Sepir, B.L. Uorf, G. Brutyan, A. Vejbiskaya, D. Xaymz kabi mashhur tilshunoslarning fikrlari alohida ahamiyatga ega ekanligi ta’kidlanadi[3]. Turli xil nazariyalarga asosan til nafaqat madaniyat bilan bog‘liq, balki u o‘zida madaniyatning taraqqiy etishini ham ifodalashydi. Shu kabi ko‘plab g‘oyalar asosida

[2] Nurmonov A. Ovrupoda umumiy va qiyosiy tilshunoslikning maydonga kelishi. Nurmonov A. Tanlangan asarlar. 2- jildlik.-Toshkent: Akademnashr, 2012. - B.23-40.

[3] Маслова В.В. Лингвокультурология в системе гуманитарного знания / Критика и семиотика.- М., 1987.Стр 69-70

XX asrning oxirlariga kelib, yangi soha tilshunoslik va madaniyatshunoslik fanlari negizida lingvokuturologiya maxsus soha sifatida shakllandi.

Mazkur sohaning rivojlanishi o'zining muayyan bosqichlariga ega. Lingvokulturologiya sohasida jiddiy tadqiqotlar olib borgan V.V. Maslova ushbu sohaning taraqqiy etishini 3 bosqichga bo'ladi:

1) fan shakllanishiga sabab bo'lgan dastlabki tadqiqotlarning yaratilishi (V.fon Gumboldt, E. Benvenist, L. Vaysgerber, A.A. Potebnya, A. Sepir kabi tilshunoslarning ishlari);

2) lingvokulturologiyaning alohida soha sifatida ajratilishi;

3) lingvokulturologiyaning rivojlanish bosqichi[4].

Lingvokulturologiya bugungi kunda bir necha yo'nalishlarda namoyon bo'ladi:

1. Lingvokulturologiya yorqin madaniy munosabatlarni, lingvomadaniy holatlarni, ilmiy izlanishlarni o'z ichiga oladigan alohida sotsial guruh.

2. Diaxronik lingvokulturologiya. Lingvomadaniyatning etnos holatidagi aniq o'tish vaqtining o'zgarishlarini o'rganadi.

3. Qiyosiy lingvokulturologiya. Lingvomadaniyatda paydo bo'ladigan turli xil etnoslarning ikki tomonlama qiyoslash bilan shug'ullanadi.

4. Tavsifiy lingvokuturologiya. Bu sohada amalga oshirilayotgan ishlar unchalik ko'p emas. Ular orasida M.K. Golovanivskaning "Rus tilida so'zlashuvchilar nuqtai nazarida fransuz mentaliteti" nomli ishi katta ahamiyatga ega. Ishning obyekti sifatida rus va fransuz tillaridagi abstrakt tushunchalar: taqdir, xavf, omad, qalb, ong, tafakkur, g'oya va boshqalar o'rganiladi.

5. Lingvokulturologik leksikografiya. Lingvoo'lkashunoslik lug'atlarini tuzish bilan asosiy vazifasi hisoblanadi.

Lingvokulturologiyaning asosiy maqsadlaridan biri shuki, madaniyat, xalq tafakkuri, uning olamni idrok etishida o'ziga xos jihatlarining tilda aks etishini o'rganishdan iborat.

Hayotimiz davomida til va madaniyat shaxsiyatimizga sezilarli ta'sir ko'rsatadi. Madaniyat boshqa insonlar bilan qanday munosabatda bo'lishni aytib, e'tiqod va axloqni shakllantiradi. Bundan tashqari, bu shaxsning jamiyatga tegishlilik tuyg'usini kuchaytiradi. Boshqa tomondan, til o'z madaniyatingizga muloqot qilish imkonini beradigan manbadir. Aslida til madaniy g'oyalar va e'tiqodlarni yetkazish uchun xizmat qiladi. Shuningdek, madaniyat ham, til ham tarixga nazar tashlash imkonini va fikrlarimizni shakllantirishga yordam beradi.

[4] Маслова В.А. Лингиокультурология. -М: Академия, 2001. Стр 53

Xulosa qilib aytadigan bo‘lsak, XIX asrda V. Gumboltning til va tafakkur munosabatlarini o‘rganishda millat madaniyatiga asosiy e’tibor berilishi lozimligi haqida mulohazalari XX asrning 90-yillarida ko‘plab tilshunoslar tomonidan yangi fan ya’ni lingvokulturologiyaning yuzaga kelishiga sabab bo‘ldi. Ushbu fan hozirgi zamon tilshunosligida tez sur’atlarda rivojlanib, umumiy tilshunoslikda alohida o‘rin egalladi.

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Determination of inhibition efficiency of corrosion inhibitor based on Polymethyl Methacrylate

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Abstract. In this article, the inhibition efficiency of the corrosion inhibitor obtained on the basis of monoethanolamine, methyl methacrylate and phosphoric acid was studied by electrochemical methods, Electrochemical impedance spectroscopy (EIS) measurements and potentiodynamic polarization measurements.

Keywords: monoethanolamine, methyl methacrylate, phosphoric acid, electrochemical methods, Electrochemical impedance spectroscopy.

Introduction; Corrosion is a reversible process, which converts pure metal to different chemical compounds[1]. Nowadays, corrosion is turning into a major issue in many industries, building materials, infrastructure, tools, ships, trains, vehicles, machines, and appliances[2]. Carbon steel experiences extensive corrosion during the cleansing process with acids. The NACE 2016 reported that across the world about 2.5 trillion U.S. dollars economic fall due to corrosion and Every year 10% of metal is lost due to corrosion which severely affects the country's economy[3]. Corrosion is not only responsible for an economic loss but also related with safety issues because it decreases the shelf life of steel[4]. It has already been recognized as a major issue for the entire world, so researchers are trying to protect the corrosion process in various ways[5]. Mostly inhibitor is typically used to protect metal from corrosion and environmental friendly inhibitors have wide application in corrosion

fields and it is generally added in the metal as a low concentration[6]. We believe this study is a small initiative to find a suitable corrosion inhibitor which can able to protect materials form corrosion process. According to this study, a corrosion inhibitors were prepared based on poly(methyl methacrylate-maleic anhydride)P(MMA-MAH)s accompanied with different percentage of methyl methacrylate and maleic anhydride and the inhibitory potentiality of this inhibitor has checked on simple carbon steel in a 0.5 M HCl [7-10].

Materials: To synthesize this composite corrosion inhibitor, monoethanolamine and methyl methacrylate monomers (purified by driving in inert nitrogen atmosphere) and phosphoric acid, such as 1 M HCl for aggressive environments, were used. Steel composition: Fe 97.755-97.215%, C 0.17-0.24%, Si 0.17-0.37, Mn 0.35-0.65%, Ni 0.3%, S 0.04 %, P 0.035 %, Cr 0.25 %, Cu 0.3 %, As 0.08 %. 2×2.5 cm^2 samples of steel with this composition were taken, the surface was cleaned with sandpapers, washed several times in acetone and dried.

Methods: Ushbu korroziya ingibitorining ingibirlash samaradorligini aniqlash uchun electrochemical studies was performed using devices such as the CS-350 Corrosion test.

Experimental part

Electrochemical studies

Electrochemical impedance spectroscopy (EIS) measurements are a valuable method for characterizing various electrochemical systems and understanding the function of electrolytic processes such as batteries and the behavior of molecules during corrosion. Figure 1 shows the Nyquist plots of St20 at different concentrations for the corrosion study.

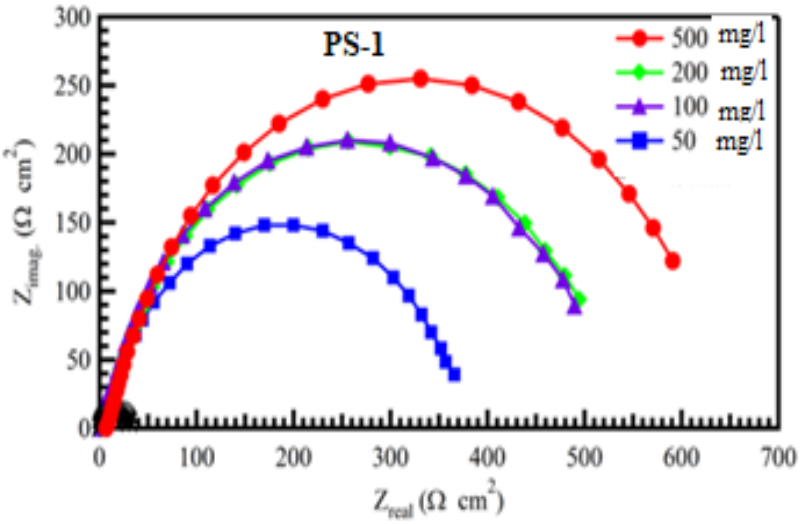

Figure 1 . Nyquist plots of St20 steel in solutions in 1.0 M HCl without and in the presence of different concentrations of the MMF-1 inhibitor at 298 K

Table 1. Electrochemical impedance spectroscopy parameters of St20 in different concentrations of MMF-1 compounds and in 1.0 M HCl solutions without inhibitor at 298 K.

Inhibitor	**Inhibitor Concentration mg/l**	**E_a, kJ/mol**	**ΔH* kJ/mol**	**ΔS* kJ/mol·K**
Without an inhibitor	0,00	-54,38	-53,69	-12,37
MMF-1	50	-97,56	-94,52	-121,64
	100	-106,67	-101,79	-144,68
	200	-125,31	-122,36	-203,56
	500	-144,89	-137,65	-262,17

The curved rings showed that the corrosion of St20 steel and the formation of surface barriers were mainly controlled by the electron transfer process. The equivalent circuit model shows in Figure 1. and was used to compare the experimental data on the impedance of St20 steel in the presence of inhibitors in 1 M HCl. According to model, the solution resistance Rs, charge transfer resistance, R_{ct} and the double layer capacitance (C_{dl}) on the metal surface were determined. Table 2 clearly explains that when additives were added to the 1M HCl solution then resistance to charge transfer, R_{ct} and values for ST20 increased as a result the charge transfer pathways were hindered.

Inhibition efficiency, IE(EIS) and θ were calculated using the following formula (1 and 2):

$$E_{EIS} = \theta \times 100 = \left[\frac{R_{ct(inh)} - R_{ct(ninh)}}{R_{ct(inh)}}\right] \times 100 \qquad (1)$$

Here: R_{ct}(inh) and R_{ct}(ninh) were the resistance to charge transfer in the presence and absence of inhibitor respectively.

$$C_{dl} = (Y_0 R_{ct}^{1-n})^{\frac{1}{n}} \qquad (2)$$

where n was the constant phase element (CPE) indicator and Y_0 was also the CPE constant. n value between 0 and 1was represented a deviation from ideal behavior. When the inhibitor was applied then the value of C_{dl} decreased which indicated the decreased of the local dielectric constant and also increased the thickness of the electrical double layer due to forming a protective layer on the metal surface.

Electrochemical frequency modulation (EFM) is an electrochemical method for calculating corrosion rates without prior knowledge of Tafel constants. Electrochemical requency modulation (EFM) has attracted the attention of corrosion researchers as a promising technique with high sensitivity due to the measurement of corrosion parameters at harmonics and intermodulations of input frequencies, as well as high accuracy due to the inherent calculation of causality factors. The ability of this method is to estimate corrosion rates, Tafel parameters, and causal factors in a single data set. Table 3 shows the corrosion parameters for protection efficiency, corrosion current density, Tafel constant, causal factors (CF-2) and (CF-3) for different concentrations in 1M HCl at 298 K.

Table 2. EFM parameters of CT20 in 1.0 M HCl in the absence and presence of different concentrations of compounds MMF-1 at 298 K

Inhibitor	**C**	**I_{corr}**	**βa**	**βc**	**K**	**CF (2)**	**CF (3)**	**θ**	**% IE (EFM)**
	mg/l	(uA)	(mV dec^{-1})	(mV dec^{-1})	mm·y				
Without an inhibitor	–	1071	72,53	94,36	459,87	2,12	3,24	0,92	92,31
MMF-1	50	82,64	52,41	61,25	39,62	1,63	1,95	0,93	93,42
	100	74,22	47,62	49,54	32,44	1,49	2,46	0,94	94,33
	200	60,56	29,54	33,17	26,53	1,15	2,97	0,95	95,15
	500	49,67	15,75	21,48	23,69	1,08	3,12	0,96	96,48

The equation can be used to calculate surface coverage and absorption efficiency %IE(EFM):

$$\%IE(EFM) = \theta \times 100 = \left(1 - \frac{i_{corr(inhibitors)}}{i_{corr(blank)}}\right) \times 100 (3)$$

where $i_{corr\ (inhibitors)}$ and $i_{corr\ (blank)}$ are corrosion current density.

According to Table 3 results, the I_{corr} values has decreased with increasing inhibitor concentration, indicating that, when IE(EFM)) increases then these inhibitors can able to prevent corrosion by absorbing ST20 on the surface and forming physical and chemical bonds. As a result the corrosion coefficient decreased and created a protective barrier.

As per the EFM theory, the values of the causal factors (CF-2 and CF-3) were very close to their theoretical values (according to equation 2 and 3), indicating that the Tafel slopes and the corrosion current density were correct[.

Table 3. Corrosion parameters obtained from potentiodynamic polarization measurements of St2 steel in 1.0 M HCl at different concentrations of MMF-1 inhibitor at 298 K

Inhibitor	C, mg/l	βa (mV dec^{-1})	βc (mV dec^{-1})	I_{corr}, (uA)	Ecorr vs.SCE	K (mpy)	Chi Squared	θ	IE
Without an inhibitor	–	315	187	4076	-342	1822	87,62	–	–
MMF-1	50	214	238	409	-406	175,6	72,36	0,91	91,13
	100	237	223	316	-418	138,4	68,45	0,92	92,37
	200	221	289	253	-422	116,3	79,64	0,93	93,46
	500	235	302	218	-428	104,5	84,73	0,94	94,72

The polarization curves of St20 in 1 M HCl solution at 298 K with different inhibitor concentrations were determined using Equation 4.

$$\%IE\ (PDP) = \theta \times 100 = \left(1 - \frac{i_{corr(inhibition)}}{i_{corr(free)}}\right) \times 100 \quad (4)$$

Graphs (Figure 6) of the logarithm of the current density were used to draw the polarization curve. The results of corrosion properties, including corrosion potential (E_{corr}), corrosion current density (I_{corr}), anode and cathode Tafel slopes (If we plotted potential, E on the vertical axis and log i horizontally the gradients would be equal to b_a and b_c.) and inhibition efficiency percent, %IE (PDP) are included in the table-3. It has revealed that with the increase in the concentration of inhibitors in the anode and cathode reactions process, the inhibition efficiency has.

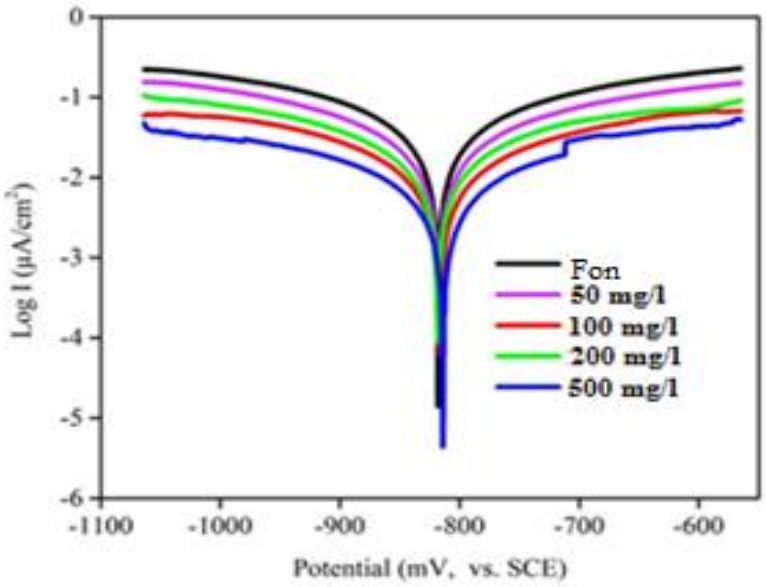

Figure 6. Tafel plot of CT20 at different inhibitor concentrations in 1.0 M HCl solution at 298 K.

increased significantly. This protective barrier was formed by unsaturated bonds to the heteroatom and inhibitors on the surface of carbon steel. Depending on the type of reaction that often occurs in an acidic solution, the inhibitor can be an anode, cathode, or mixture. The cathodic process in which hydrogen gas evolution is observed and the dissolution of metals and the release of electrons are also happened at anodic process[17-22]. The plausible explanation is that the hydrogen evolution and electrochemical results usually confirm the potential ability of metal dissolution process. In addition that by controlling the charge transfer charge, hydrogen gas developed in the cathodic reaction is successfully used as a variable to separate the contribution of hydrogen gas and hydroxyl ions to the cathodic delamination of the organic coating / inhibitor film.

3. Conclusion.

The MMF-1 corrosion inhibitor based on methyl methacrylate, monoethanolamine, and phosphoric acid was obtained with a yield of 87% and its structure was firmly established by spectroscopic techniques. Thermal and electrochemical properties have been studied as well. The main target of this works is to establish a newly corrosion inhibitor in terms of efficiency against corrosion process. The final postulations are made by authors which are listed below: The noteworthy observation was that the obtained composite corrosion inhibitor has been established

as 94.72% Inhibitor efficiency (IE) based on electrochemical analysis method. MMF-1 corrosion inhibitor can easily use it commercially as a corrosion inhibitor based on its efficiency. However, the authors have suggested that further testing of the inhibitor's efficiency should be done prior to establish as a corrosion inhibitor.

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