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Anila Jançe[1], Valentin Bogoev[1], Admir Jançe[2]

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ABSTRACT: Microbiological features given in this survey are received in Elbasani town, ancient and significant town positioned in central Albania. It is one of the largest cities of Albania, with a population of around 140000 and an area of 900 km². It lies down along Shkumbini River at elevation around 150 m above sea level. Microbiological data on air pollution are given in this study, focusing on the choice of stations to be in different areas and key points of the Elbasan city, thus attempting to contaminate microbiological areas. In recent years, mainly in the last two decades, many microbiological studies have been conducted for the Elbasan city.
The purpose of this study is to present the current state of microbiological contamination of air as an important parameter with a direct impact on the health of the population of Elbasani town. For this purpose, we have received multiple samples with representatives of M.P.A. and Capek from three stations, during a three-month period of 2017. Laboratory sample processing as well as microscopic observation were performed in "Aleksander Xhuvani" University, Elbasan.
We think that emphasis should be placed on the fact that the Elbasani town has been dominated by a significant microbiological contamination, which comes mainly from different markets of food and industrial character. In our point of view, interesting data were found that clearly show the air microbiological quality.

Keywords: Air contamination, M.P.A., Capek, Microbiological, Elbasan city – Albania

O 2. MECHANICAL BEHAVIOR OF ENGINEERING CEMENTITIOUS COMPOSITES (ECC) CONTAINING FLY ASH AT HIGH RATE

Arife Akın[1*], Ahmad Javid Zia[2], Abdulkerim İlgün[2], S. Kamil Akın[2]

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ABSTRACT: Usage of waste materials in construction sector has made it possible to produce surplus amount of economical materials with less use of energy. The fly ash obtained from thermal power plants is an industrial waste material and causes significant environmental pollution. For this reason, depleting of fly ash tend to become incontrovertible obligation in various areas in industry. The use of fly ash as additives in concrete production processes due to its pozzolanic properties, increases the importance of this waste materials in terms of reducing the energy and environmental pollution required to produce cement. In this study, Engineering Cementitious Composites (ECC) has been designed by utilizing fly ashes with classification of F and C according to ASTM standards which has been obtained from different thermal power plants in Turkey. While designing of composites, four different mixtures were acquired by using two different types of fly ash (F and C) in two different orientations (FA / C = 1.2 and 2.2). Consequent to compressive experiments at specific ages 3, 7 and 28 days, the strengths of the samples formed using F class fly ash were higher than those of samples prepared using C class of fly ash therewithal. At the same time, F class fly ash had a positive contribution on workability of composites.

Keywords: cementitious composites, fly ash, pozzolanic materials

O 3. GREENHOUSE GAS EMISSIONS FROM CEMENT INDUSTRY

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ABSTRACT: Air pollution is one of the most important problems of our time. Measures that can be taken to air pollution vary according to pollution source. Sources of pollution are industries, thermal powerplants, vehicles and domestic heating.
The cement industry is generally considered responsible for upwards of 5% of anthropogenic greenhouse gas emissions. This is a result of the high energy intensity of the process, significant CO2 release from the raw materials used. In this study, GHGs emissions released from the cement industry were calculated based on the IPCC 2006 Guidelines.

Keywords: Air pollution, cement industry, IPCC

ÇİMENTO SEKTÖRÜNDEN KAYNAKLANAN SERA GAZI EMİSYONLARI

ÖZET: Hava kirliği günümüzün en önemli sorunlarından birisidir. Hava kirliliğine karşı alınabilecek önlemler, kirlilik kaynağına göre değişir.
Çimento sektörünün antropojenik sera gazı emisyonlarının %5inden sorumlu olduğu bilinmektedir. Bu, üretim proseslerinde fazla miktarda enerji kullanımı, kullanılan hammaddeden önemli miktarda CO_2 salınmasının bir sonucudur. Bu çalışmada, çimento sektöründen salınan sera gazı emisyonları IPCC 2006 Kılavuzlarına göre hesaplanmıştır.

Anahtar Kelimeler: Hava Kirliliği, Çimento sektörü, IPCC

O 4. THE STATUS OF GHGS EMISSIONS FROM LIVESTOCK MANURE IN KONYA/TURKEY

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ABSTRACT: The increase in the amount of greenhouse gases we know as gas compounds that can absorb infrared radiation in the atmosphere leads to global warming and climate change. GHGs are one of the main reasons for the climate change our universe. Animal husbandry is the most source of GHGs emission. In this study, GHGs emissions released due to livestock activities in Konya were calculated based on the IPCC 2006 Guidelines.

Keywords: Livestock emissions, Greenhouse gas, IPCC, Konya

KONYA İLİ HAYVANSAL GÜBRE KAYNAKLI SERA GAZI EMİSYONLARI DURUMU

ÖZET: Atmosferde kızıl ötesi ışınları absorbe edebilen gaz bileşimleri olarak bildiğimiz sera gazı miktarının artması küresel ısınmaya ve iklim değişikliğine yol açmaktadır. Sera gazları küresel boyuttaki iklim değişikliğinin en başlıca sebeplerinden biri olarak düşünülmektedir. Hayvancılık faaliyetleri de en önemli sera gazı emisyon kaynağıdır. Bu çalışmada, Konya'daki hayvancılık faaliyetler sonucu üretilen sera gazı emisyonları IPCC 2006 Kılavuzlarına göre hesaplanmıştır.

Anahtar Kelimeler: Gübre kaynaklı emisyonlar, Sera gazı, IPCC, Konya.

O 5. INFLUENCE OF SOME METEOROLOGICAL FACTORS ON AIR POLLUTION IN KONYA CITY

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ABSTRACT: Air pollution, rapid population growth, irregular urbanization, poor quality fuel use, rapid industrialization and the ever-increasing number of motor vehicles have brought significant environmental problems in recent years. Konya province is located in Central Anatolia region. SO_2, PM_{10} and meteorological parameters have been measured in many regions in Konya since 1990. Measurements were carried out in 4 fixed stations located in different regions of Konya. In the present study, the relationship between daily average PM_{10} and sulphur dioxide (SO_2) concentrations with meteorological factors, such as wind speed, temperature, relative humidity, pressure and precipitation, in 2012–2017 was statistically analyzed. The average pollution values obtained in this study was compared with Limit Values in the Air Quality Assessment and Management Regulation No. 26898 dated 06.06.2008.

Key words: Air Quality, PM_{10}, SO_2, Konya

KONYA İLİNİN HAVA KİRLİLİĞİNE BAZI METEROLOJİK FAKTÖRLERİN ETKİSİ

ÖZET: Hava kirliliği, hızlı nüfus artışı, düzensiz şehirleşme, kalitesiz yakıt kullanımı, hızlı sanayileşme ve motorlu taşıt sayısının sürekli artması, son yıllarda önemli çevre sorunlarını beraberinde getirmektedir. Bu çalışma da 2012-2017 yıllarındaki günlük ortalama PM_{10} ve SO_2 konsantrasyonları ile meterolojik faktörler (rüzgar hızı, sıcaklık, bağıl nem, basınç ve yağış) arasındaki ilişki istatistiksel olarak incelenmiştir. Çalışmada elde edilen günlük ve yıllık ortalamaları 06.06.2008 tarih ve 26898 sayılı Hava Kalitesi Değerlendirme ve Yönetimi Yönetmeliği'nde bulunan Limit Değerleri ile karşılaştırılmıştır.

Anahtar Kelimeler: Hava Kalitesi, PM_{10}, SO_2, Konya

O 6. DETERMINATION OF PUBLIC AWARENESS LEVELS ON AIR POLLUTION IN KONYA

Gülnihal Kara[1], Çiğdem Bozkurt[1], Yasin Çay[1]

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ABSTRACT: Air quality is decreased due to the increase in air pollution, and air pollution is tried to be eliminated by local, regional, national and global arrangements. Laws are enacted for cleaner air, various organizations are established, economic and educational measures are taken. The most important steps on these subjects are making the public more conscious. A survey study containing 27 questions was applied to 400 people for determining public awareness on air pollution in Selçuklu, Meram and Karatay central districts of Konya.
Most of the participants indicated that air pollution is the most significant environmental problem in Konya, and also most people pointed out that they are more affected from industry related air pollution than other pollution sources.

Keywords: Air Pollution, Konya, Awareness

KONYA'DA HAVA KİRLİLİĞİ KONUSUNDA FARKINDALIK DÜZEYİNİN BELİRLENMESİ

ÖZET: Hava kirliliğindeki artışa bağlı olarak hava kalitesi azalmakta, yerel, bölgesel, ulusal ve küresel ölçekte yapılan düzenlemelerle hava kirliliği giderilmeye çalışılmaktadır. Bu anlamda daha temiz bir hava için yasalar çıkarılmakta, çeşitli örgütler oluşturulmakta, ekonomik ve eğitimsel önlemler alınmaktadır. Bu konudaki en büyük adımlardan biride halkın bilinçlendirilmesidir. Bu çalışma da Konya'nın Selçuklu, Meram ve Karatay merkez ilçelerinde hava kirliliğine karşı halkın duyarlılığını ve bilinç düzeyini belirlemek amacıyla 400 kişiye birebir görüşme yöntemiyle 27 soruluk bir anket uygulanmıştır. Ankete katılanların önemli bir kısmı Konya'daki en önemli çevre sorununun hava kirliliği olduğunu ve bu kirliliğin en çok sanayi tesislerinden kaynaklandığını belirtmiştir.

Anahtar Kelimeler: Hava Kirliliği, Konya, Farkındalık.

O 7. AIR QUALITY MODELING WITH OPS MODEL

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ABSTRACT: Modeling atmospheric processes has been the subject of many studies. In this study, different program types such as Meteo Pre-Proccessor, ArcGIS and EMEP required for the OPS were examined. In this study, OPS modeling Programme which is using for estimating for a future air pollution level and usability in our country was also investigated.

Keywords: OPS, EMEP, ArcGIS, air pollution

OPS MODEL İLE HAVA KALİTESİ MODELLEMESİ

ÖZET: Atmosferik proseslerin modellenmesi pek çok çalışmanın konusu olmuştur. Bu çalışmada, OPS model için gerekli, Meteo Pre-Proccessor, ArcGIS EMEP gibi farklı program türleri incelenmiştir. Bu çalışma da, ayrıca gelecekteki hava kirliliği seviyelerini tahmin etmek için kullanılan OPS modelleme programı ve bu model programının ülkemizde kullanılabilirliği araştırılmıştır.

Anahtar Kelimeler: OPS, EMEP, ArcGIS, hava kirliliği

O 8. CLIMATE CHANGE IMPACTS ON WATER RESOURCES

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ABSTRACT: Increasing population and increasing demands threaten natural resources. The most important natural resource is water. Water is a resource that all biological diversity depends. Current activities adversely affect water resources that are exacerbated by increased impacts of climate change. Water use in Turkey for various purposes reaches 112 billion m3 in total from surface and groundwater resources. This much of water potential is allocated by four main sectors that include drinking water, industrial water, irrigation and ecosystem services. The main source of water potential is precipitation. Decreasing trend of precipitation for the entire country has been pointed in the projections. That means a decrease in the amount of gross water in many basins. Given these circumstances, water shortage is foreseen in the coming years that the amount of available water will not be able to meet the total water demand. Turkey is consisted of 25 hydrological basins; therefore, rainfall regime varies greatly even within a specific basin. Water scarcity risk plays an important socio-economic role in these basins. Water demand will increase by the population growth; therefore, water stress will increase gradually in these basins.

Keywords: Climate change, Basin, Water resources

İKLİM DEĞİŞİKLİĞİNİN SU KAYNAKLARINA ETKİSİ

ÖZET: Artan nüfus ve buna paralel olarak artan ihtiyaçlar ve endüstriyel faaliyetler doğal kaynakları tehlikeye atmaktadır. Mevcut doğal kaynakların en önemlisi sudur. Su; tüm biyolojik çeşitliliğin bağlı olduğu bir kaynaktır. Gerçekleştirilen faaliyetler sonucu günümüzde artan iklim değişikliğinin etkilerine maruz kalan su kaynakları olumsuz etkilenmektedir. Türkiye'de çeşitli amaçlara yönelik su kullanımında, toplam yüzeysel ve yeraltı su kaynaklarının toplam miktarı 112 milyar m^3'tür. Bu su potansiyeli; içme suyu, sanayi suyu, sulama suyu, ekosistem hizmetleri olmak üzere 4 ana sektör tarafından kullanılmaktadır. Su potansiyelinin en büyük kaynağı yağışlardır. Yapılan projeksiyonlarda Türkiye geneli için yağış miktarlarının azalma eğiliminde olduğu görülmektedir. Bu da birçok havzadaki brüt su miktarlarında azalma anlamına gelmektedir. Bu koşullar göz önüne alındığında gelecek yıllarda kullanılabilir su miktarının toplam su ihtiyacını karşılamayacağı ve bunun sonucunda su kıtlığı olması öngörülmektedir. Türkiye toplam 25 hidrolojik havzaya bölünmüş olup yağış rejimi havzalara göre büyük farklılıklar göstermektedir. Bu havzalarda su kıtlığı yaşanma riski sosyo-ekonomik bir önem taşımaktadır. Nüfus artışı ile su ihtiyacının artması ve iklim değişikliği etkisi ile havzalardaki su stresinin giderek artacağı görülmektedir.

Anahtar Kelimeler: İklim değişikliği, Havza, Su kaynakları

O 9. THE USAGE OF ACRYLAMIDE BASED HYDROGELS REINFORCED WITH POTASSIUM HUMATE FOR REMOVAL OF METHYLENE BLUE FROM AQUEOUS SOLUTIONS

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ABSTRACT: Developments in technology related with population growth cause a pollution resulted from discharging of waste water into the environment without any treatment. Waste water generated by different industries such as pharmaceutical, dye, textile and so on damages the environment. Aromatic and azo groups in dyes pose a danger due to their toxicity in water. Methylene blue is one of the most common used dyes which is toxic, resistant to breakdown with time, risk to human health and aquatic life. Adsorption process is generally preferred due to effective and low-cost method. Recently, different types of hydrogels have been applied as an adsorbent for removal of dyes in addition to clays, carbon based materials and natural compounds. In this study, the methylene blue adsorption performance of hydrogels which are three-dimensional networks of crosslinked hydrophilic materials with high absorption capacity of water was investigated.

In the synthesis of hydrogels, acrylamide and N-vinyl-2-pyrrolidone, N,N'-methylenebisacrylamide, potassium humate, ammonium persulfate and N,N,N',N'-tetra-methylethylenediamine were used as monomers, crosslinker, filler, initiator and accelerator, respectively. The structural and morphological characterization of the hydrogels was carried out by FTIR and SEM analyses. And also, swelling behavior of the hydrogels was determined. With the addition of potassium humate to the hydrogel that showed the highest swelling capacity, the swelling capacity increased up to maximum value as 1727%. In the last stage, the hydrogel including potassium humate was used as adsorbent for methylene blue adsorption studies.

Keywords: Hydrogel, Acrylamide, N-vinyl-2-pyrrolidone, Potassium humate, Methylene blue

O 10. CARBON NANOTUBE SUPPORTED PT, BI AND RU; SYNTHESIS AND ETHANOL ELECTROOXIDATION PERFORMANCE

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ABSTRACT: A fuel cell is an electrochemical cell that converts the chemical energy from a fuel into electricity through an electrochemical reaction. Direct ethanol fuel cell (DEFC) is a direct liquid feed fuel cell in which liquid ethanol feeds into the anode. In this work, carbon nanotube supported Pt, Bi and Ru monometallic catalysts were synthesized by NaBH4 reduction method. The ethanol electrooxidation activity of as-prepared catalysts were investigated in alkaline environment. The performance of carbon nanotube supported Pt, Bi, and Ru catalysts was determined using cyclic voltammetry (CV). In addition, ratio of forward peak to backward peaks was calculated in order to determine catalyst that show the highest electrocatalytic activity. These results indicate that Pt/CNT has the highest electrocatalytic activity and CO tolerance.

Keywords: electrocatalyst; fuel cell; etanol; NaBH4 reduction method

O 11. HYDROGEN PEROXIDE SENSOR APPLICATION OF TI AND TINI CATALYSTS

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ABSTRACT: Hydrogen peroxide is a typical product of oxidase based enzymatic reactions, and a substrate for peroxidases. Therefore, its determination is still too important. In comparison with other methods, electrochemical sensors offer fast, simple, sensitive and cheap application. In this study, hydrogen peroxide sensor activity of commercial Ti and TiNi catalysts were investigated. The performance of the commercial Ti and TiNi catalyst for the hydrogen peroxide sensor was determined using cyclic voltammetry (CV) and chronoamperometry (CA). As a result of the electrochemical measurements made, TiNi (51:49) catalyst showed the best activity and long term stability.

Keywords: sensor; hydrogen peroxide, Ti;TiNi

O 12. ELECTROCHEMICAL CHARACTERIZATION OF PD-M (M: MN, ZN, V, CO) BIMETALLIC NANOPARTICLES FOR SENSOR APPLICATION

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ABSTRACT: Bimetallic nanoparticles, formed by the combination of two different metals, are the multifunctional nanomaterials with applications in different fields. These nanoparticles have attracted great attention as compared to monometallic nanoparticles due to their enhanced properties. They show better stability, selectivity and catalytic activity over monometallic ones due to the synergistic effect that exists between two metals. Bimetallic nanoparticles can be synthesized in different shape, size and structure. To produce bimetallic nanoparticles with tunable and enhanced properties, different synthesis methods can be used. Researchers are trying to synthesize new materials with desired and controlled structure with different properties. These particles have excellent properties that they act as catalyst and help in effectively catalyzing various reactions. Those bimetallic nanoparticles can be used in different electrochemical sensors towards the enzymeless detection of many substrates. The replacement of enzymes with bimetallic catalysts, tuned to facilitate the direct electrocatalytic oxidation/reduction of substrate at a non-enzymatic electrode, prevents the necessity of using enzymes. They play diverse roles in improving the sensing performances, highly depended on their nanostructure and composition. Owing to their high sensitivity, selectivity, stability, fast response time, etc., these bimetallic nanoparticles modified electrodes can be used as sensors for detection of different substrates. Noble metals for preparing nanomaterials for non-enzymatic detection include Pt, Pd, Au, Ag, etc. Among these palladium is usually preferred to modify the electrodes due to its excellent electrocatalytic activity and low cost. In this study palladium based Pd-M (M: Mn, Zn, V, Co) bimetallic catalysts were prepared by NaBH4 reduction method. Electrochemical methods such as cyclic voltammetry, chronoamperometry and impedance spectroscopy were used to evaluate the electrocatalytic activities of the catalysts towards hydrogen peroxide detection (H2O2) oxidation/reduction reactions.

Keywords: Nanomaterials, bimetallic catalysts, non-enzymatic sensor, hydrogen peroxide detection

O 13. CORE-SHELL NANOPARTICLES FOR DETECTION OF HYDROGEN PEROXIDE

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ABSTRACT: Fast and accurate determination of hydrogen peroxide is important in many fields, such as clinical chemistry, biotechnology, environmental monitoring, pharmaceuticals, and food analysis. Various techniques including spectrometry, chemiluminescence, chromatography and electro-chemistry have been widely used to detect hydrogen peroxide due to its low cost, simplicity, high sensitivity and good selectivity. Therefore, various chemically modified electrodes, especially enzyme-based electrodes have been widely established for the detection of hydrogen peroxide. However, the activity of enzymes is limited due to ease of denaturation, leakage, time-consuming, costly preparation. In order to resolve these problems, numerous efforts have focused on developing non-enzymatic electrodes. Various nanostructured metals, alloys, and metal oxides had been explored extensively because of their unique physical and chemical properties. Moreover, the stability, chemical activity, and poisoning resistance of bimetallic electrode materials can be adjusted by controlling their morphologies, structures, compositions, or sizes. In recent years, especially nanoparticles with core–shell structures are attracting great attention due to their enhanced catalytic activities. On the other hand, carbon materials have been used as a matrix to enhance electron transfer rates and electrocatalytic activities. As one important carbon material, carbon nanotubes reveal a significant impact in fields of science and technology because of its remarkable physical and chemical properties. The unique properties of carbon nanotubes, such as remarkable surface area, excellent conductivity, and wide electrochemical range, make it an ideal material in electrochemical sensors.
In the present study, CNTs supported palladium based bimetallic core-shell nanocatalysts were prepared to detect hydrogen peroxide. Electrochemical methods (cyclic voltammetry and chronoamperometry) were used to evaluate the electrocatalytic activities of the catalysts towards H_2O_2 oxidation.

Keywords: non-enzymatic sensor, hydrogen peroxide detection, core-shell nanoparticles

O 14. ELECTRO-SPUN NYLON 6,6-ORGANOCLAY MATS FOR OIL-WATER SEPARATION

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ABSTRACT: Separation of oil from water is a worldwide challenge due to the increasing industrial oily wastewaters and polluted oceanic waters. Oil spills, shipping accidents, offshore or marine vessel leakage, and illegal discharges of oily wastes cause significant environmental damage. To deal with this problem various strategies have been employed for developing cost-effective and environment-friendly ways to oil spill cleanup. A wide variety of natural materials can be used as sorbents for this aim. However, synthetic oil absorbers are the generally most effective in removing oil. Different types of synthetic oil absorber materials are designed to remove oil content from water sources due to their oleophilic properties. In recent years, nanotechnology-based approaches have been applied and various nanomaterials can be fabricated which have exhibited good performance. Among these nanomaterials, non-woven fibrous mats are widely used for oil cleanups due to their scalable production. Fibrous mats are successfully fabricated by the electro-spinning technique which utilizes high electrostatic forces for fiber production. This technique allows developing novel nanofibrous materials having small fiber diameter, high surface-to-volume ratio, and controllable porous structures to be applied for a variety of applications.

In the present work, oil absorbent nanofiber mats having high oleophilicity were prepared by electro-spinning technique. For this purpose, nylon 6,6 was selected because it is a crystalline polymer containing oleophilic hydrocarbon chains connected by hydrophilic functional amide groups. Additionally, there has been a little investigation of the use of electro-spun nylon 6,6 as a sorbent for removal of oil from water. For that reason, two different organically modified montmorillonites (o-MMT, with commercial names; Tixogel VP and Cloisite 20A) are incorporated into nylon 6,6 polymer separately, in order to fabricate new mats having more oleophilic properties. Dispersion and exfoliation of o-MMTs in nylon 6,6/formic acid solution were achieved by ultrasonic treatment during 20 min followed by mixing overnight with magnetic stirrer. After reaching the more homogenous solution, it was placed in a 10-ml syringe with 19-gauge needle tip and electrospun onto an aluminum foil to produce nylon 6,6-organoclay nanofiber mats. The surface morphologies of generated mats were observed by SEM analysis. Motor oil and other domestic oils absorption behaviors of mats were investigated and absorption capacities were calculated in terms of weight gain. These novel nanofiber mats exhibited excellent absorption capacities up to 60-80 times their own weights for motor oil. As a result, it can be reported that these novel oil absorbent materials are promising candidates for oily wastewater treatments.

Keywords: Nylon 6,6, organoclay, oil separation, nanofiber, electro-spun

O 15. DESIGN AND EVALUATION OF ORGANO-MONTMORILLONITE NANOCLAY LOADED PVB/PAN NANOFIBROUS MEMBRANE WITH A SANDWICH STRUCTURE FOR HEAVY METAL REMOVAL

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ABSTRACT: Water pollution in aquatic system has become a major challenge today. Because, hazardous chemicals especially heavy metals which are mainly produced by industries can cause many problems. High concentrations of heavy metals have a terrible effect on both living microorganisms and environment. Heavy metals such as nickel, copper, cobalt, zinc and chromium are detected in water coming from tanning, electroplating, mining operations, petrochemical industries and textile products. Pollution by chromium (Cr) is a widespread in aquatic systems. This heavy metal ion occurs in two oxidation states; Cr^{6+} such as chromate and bichromate (CrO_4^{2-}, $HCrO_4^-$) and trivalent chromium (Cr^{3+}). Cr^{6+} is more carcinogenic and toxic to human health than Cr^{3+} . So these toxic metals should be removed from wastewaters using some methods. Adsorption is the most common method for removal of heavy metals by using proper and effective adsorbent. In recent years, usage of nanofibrous materials has recently been increased due to their some characteristics such as fine diameters (ranging from submicron to several nanometers), large surface area, high porosity, high gas permeability, and small interfibrous pore size. Nanofibers can be generated by an electro-spinning technique which provides the capacity to lace together types of nanofillers, nanoparticles or other additives to be incorporated into an electrospun nanofiber matrix. This application method allows to create new nanofiber composites having various properties to be used in different fields. In this respect, the main goal of the study is to design organo-montmorillonite nanoclay (Cloisite 20A) loaded PVB (*Polyvinyl butyral) and PAN (*polyacrylonitrile) nanofiber membrane with sandwich structure for hexavalent chromium (Cr^{6+}) removal. Briefly, this fabrication was carried out by sandwiching the nanoclay incorporated PVB nanofiber mat between two layers of PAN electro-spun mats. To achieve a good binding performance of metal ions, membrane was functionalized with ethylenediamine and ethylene glycol in the presence of catalyst. This treatment method allows to create a high amine loading that is necessary for chromium binding onto membrane surface. After that, adsorption of hexavalent chromium (Cr^{6+}) ions were evaluated in a batch arrangement. Experiments were performed as a function of contact time, solution pH, and initial Cr^{6+} ion concentration. The maximum adsorption capacity of membrane was obtained at pH=2 and it tends to diminish with increasing pH from 1.0 to 5.0. The applicability of the adsorption isotherms was tested and it can be reported that the adsorption capacity was very satisfying. As a result, this work demonstrated that the novel electrospun membrane has potential for membrane applications in wastewater treatment systems.

Keywords: Polyacrylonitrile*, polyvinyl butyral, hexavalent chromium, nanofiber, electro-spun*

O 16. SANDWICH-TYPE N-OMMT CLAY INCORPORATED PVB/PAN NANOFIBROUS FUNCTIONALIZED MEMBRANE WITH HIGH OIL ABSORPTION CAPACITY

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ABSTRACT*:* Today, oil pollution in water is a major challenge due to the processes of oil being explored, stored, transported, and used in many industries. Removal or the collection of oil from water surfaces has attracted worldwide attention. With the increasing level of awareness focused on the protection of the environment, researchers have fabricated a great deal of nanomaterials as oil absorber materials to concentrate, transfer, and absorb spilled oils. Oil sorbents are very commonly used during oil spills for their cost-effectiveness and affordability. An ideal sorbent material should have high hydrophobicity, high oleophilicity, high uptake capacity and rate, adequate buoyancy, and good recoverability of the absorbed oil. A wide variety of natural materials can be used as sorbents for this purpose. However, synthetic oil absorbers are the generally most effective in removing oil. Design of synthetic oil absorber materials which have oleophilic properties and good absorption performance for removal of oil can be performed by nanotechnology based approaches like electro-spinning technique. This technique allows to fabricate non-woven fibrous mats which are widely used for oil cleanups due to their scalable production.

The main goal of this study was to fabricate a sandwich-type nanofibrous membrane with high oil absorption capacity. The membrane was created by sandwiching the nanosized organoclay (Cloisite 20A, C20A) loaded polyvinyl butyral (PVB) nanofiber mats between two layers of polyacrylonitrile (PAN) electro-spun mats like conventional membranes. Firstly, dispersion and exfoliation of C20A in ethanol were achieved by ultrasonic treatment during 30 min followed by mixing with certain amount of PVB polymer with magnetic stirrer, during 18 hours. After receiving more homogenous solution, it was transferred into the syringe, then electrospun onto PAN nanofiber mats. In the last stage of the fabrication, PAN/DMF (N,N dimethyl formamide) solution was electrospun onto PVB-organoclay mats as a top layer. This trio layer membrane has hydrophobic and oleophilic characteristics. However, the use of alcoholysis reaction was investigated in order to enhance these properties of membrane. This process made the surface of the membrane rougher than that of the non-modified membrane. Oil absorption tests of the functionalized membrane for motor oil and various oils such as sunflower oil, soybean oil and corn oil were carried out in batch tank. Oil absorption capacities were calculated in terms of weight gain. According to the results, functionalized membrane having more hydrophobic and oleophilic surface exhibited excellent oil absorption capacities. It can be reported that it has an enough stability and absorption ability for water cleanup methods within scalable production.

Keywords: *Oil absorbent, nanofibers, electro-spun*, *electro-spinning, hydrophobic, oleophilic*

O 17. REMOVAL OF Cr (VI) FROM AQUEOUS SOLUTIONS USING APRICOT STONE BASED ACTIVATED CARBON-IRON OXIDE MAGNETIC COMPOSITE

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ABSTRACT: This work examines the adsorption of chromium ions on the magnetic-apricot stone shell-activated carbon (m-ASAC). ASAC was produced by the chemical activation of the apricot stone shell (AS) with phosphoric acid (H_3PO_4) in N_2 inert atmosphere. m-ASAC was regulated by co-precipitation method which is a combination of ASAC with Fe^{2+}: Fe^{3+} salts. The prepared m-ASAC was characterized by Fourier Transform infrared spectrophotometer (FT-IR). The impacts of initial pH, amount of m-ASAC, temperature, contact time, and the beginning concentration of Cr (VI) were explored during the equilibrium studies. Adsorption isotherms of the Cr (VI) on m-ASAC was determined and correlated with Langmuir, Freundlich, Scatchard and D-R isotherm equations. Adsorption information appeared that the adsorption of Cr (VI) was equipped with Langmuir isotherm model. Under optimal conditions, the maximum adsorption capacity of Cr (VI) ions determined by Langmuir model was recorded as 69.44 mg/g. Thermodynamic parameters such as ΔG°, ΔH°, ΔS°, and Ea were calculated and the interaction of Cr (VI) with m-ASAC was found to be endothermic and spontaneous in nature.

Keywords: Activated carbon, Apricot stone, Fe_3O_4, Isotherm

O 18. COMPARISON OF OLIVE STONE CHARCOAL AND ITS CHITOSAN MODIFIED MICROCAPSULES FOR THE REMOVAL OF CR(VI)

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ABSTRACT: The agricultural wastes themselves are potential candidates for sorption of contaminants from aqueous medium. Olive stone which is the waste of olive oil production is one of the alternatives for this kind of materials. Since it does not have a high sorption efficiency for Cr(VI), it was first pyrolyzed to get a biocharcoal (OSCC) and then it was modified via chitosan with gluteraldehyde crosslinking (OSCG) to be used as alternative sorbents. These two sorbents were compared for their Cr(VI) removal capacity under different parameters. The experiments were performed as batch experiments by taking the effects of contact time, pH, concentration, into consideration. The sorption capacities of both sorbents were determined in terms of different isotherm models such as Langmuir, Freundlich and Scatchard. The Langmuir isotherm model was found the best model to represent the experimental data of Cr(VI) sorption. Moreover, sorption kinetic was also evaluated using the pseudo-first and pseudo-second order models while the second one was found to agree well with the data. As a consequence of this study, both sorbents but especially OSCG can be an alternative sorbent to remove Cr(VI) ions from aqueous medium while evaluation of a biomass as a high-potential sorbent should be mentioned instead of disposal of such an agricultural waste.

Keywords: olive stone, charcoal, modification, Cr (VI), chitosan, isotherm

O 19. CR(VI) REMOVAL FROM SYNTHETIC WASTEWATERS USING ALMOND SHELL CHARCOAL (AS400) AND CHITOSAN-COATED ALMOND SHELL CHARCOAL CROSS-LINKED WITH GLUTARALDEHYDE

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ABSTRACT: In this study, biocharcoal produced by pyrolysis of almond shell at 400 °C (AS400) and chitosan-coated, cross-linked with glutaraldehyde almond shell biocharcoal prepared from this bioadsorbent (CAS400) have been used as potential bioadsorbents for the removal of Cr(VI) from aqueous solutions with batch experiments. Composite beads were prepared with chitosan and AS400 to improve the separation performance (CAS400). The results of Cr (VI) removal performance of adsorbents are compared. Batch adsorption experiments were carried out as a function of initial Cr (VI) concentration, contact time, bioadsorbent concentration, and initial pH of solution. The contact time for Cr (VI) adsorption with AS400 and CAS400 was 120 minutes. The maximum Cr (VI) removal was achieved at an initial pH of 2.03 for both adsorbents. Optimum adsorbent doses for Cr (VI) removal were found to be 0.015 and 0.05 g for AS400 and CAS400, respectively. Maximum Cr (VI) removal under optimum conditions is 95-100%. CAS400 bead bioadsorbent has been shown to be able to remove Cr (VI) better than AS400 bioadsorbent. The adsorption capacity of Cr (VI) of CAS400 bead bioadsorbent was found to be higher than that of raw almond shell charcoal (AS400). This is due to the increased adsorption sites on the surface of the adsorbent for Cr (VI) adsorption by coating the biochar with chitosan and cross-linking with gluteraldehyde. Langmuir, Freundlich and D-R models were used for adsorption isotherms and the Langmuir model well defined for the adsorption data.

Keywords: biocharcoal, composite, Cr (VI), chitosan, adsorption, isotherm

O 20. RELATIVE RATE OF DURABILITY TOWARDS INFLUENCE OF WATER IN STONE DEGRADATION CASE STUDY OF "LEAD MOSQUE" IN SHKODRA (NORTHWEST ALBANIA)

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ABSTRACT: The Lead Mosque is located in the northwest of Albania into a humid Mediterranean environment. It was built in 1773 by the Albanian pasha Mehmed Bushati who was vizier of Shkodra at the time. Through this act, he intended to give his city of birth, the feeling of the capital. The mosque has numerous cultural importances and represents a building built with calcareous stone based materials which have suffered degradation process due to long exposure periods to the existing environmental conditions.

The main purpose of this paper is to present the influence of water and relative humidity on stone degradation. Water circulation in stones and water flow between stones and atmosphere or ground are one of the main driving factors in the building degradation processes in other historical monuments of Albania including other religious. It is well known that porous building materials absorb and desorbs water as a function of the weather conditions (temperature, relative humidity, and rainwater), that is why water plays a fundamental role in the phenomena of stone deterioration. The construction of hydropower plants in Drini River (Vau i Dejes) accelerated the water presence through flooding along with diverse water bodies proximity of the mosque location (Adriatic coast, Shkodra Lake and Drini/Buna system). The experimental tests through temperature and humidity were determined using data loggers from selected walls of Lead Mosque. Air temperature and relative humidity were measured every 30 min and processed to obtain average, maximum, and minimum monthly data. The flood history was also considered following archival data of Institute of Geo-science in Tirana.

Keywords: Limestone, degradation, Mediterranean climate, water, humidity

O 21. PLASTIC SPACER USED IN FIELD CONCRETE AND ITS GAINS

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ABSTRACT: Due to the development of technology and the expectations of mankind, changes in the classical reinforced concrete concept have been changing over time. There is a need to make new arrangements on building components due to reasons such as reducing construction cost, removing lighter concrete areas in reinforced concrete sections, using fewer raw materials, shortening construction period, designing sustainable and ecological conveying system and using factory production products. Plastic spacers one of the newest methods developed on construction elements have found various application areas for this reason. Especially in Scandinavian countries and Western Europe, these types of applications are seen in story slabs. In this study, the application principles, details and advantages of the plastic spacer formers developed for the field concrete poured in a thickness of about 20 cm on the ground will be mentioned. In the scope of the study, the results obtained from the loading experiments on specimen samples will be discussed. At the end of the study, it was observed that the use of the recommended plastic material to reduce the cost in the site concretes did not result in a decrease in the load-carrying capacities under design loads. It has also been observed that the plastic spacer used in the site concrete reduce the use of concrete by about 3-9%.

Keywords: Field Concrete, Plastic Spacer, Cost, Load.

SAHA BETONLARINDA KULLANILAN PLASTİK BOŞLUK OLUŞTURUCULAR

ÖZET: Teknolojinin gelişmesi ve insanoğlunun beklentileri nedeniyle klasik betonarme anlayışında zaman içinde değişiklikler meydana gelmiştir. İnşaat maliyetini azaltabilmek, betonarme kesitlerde gerek duyulmayan beton bölgesini kaldırarak daha hafif yapılar oluşturmak, daha az hammadde kullanmak, inşa süresini kısaltmak, sürdürülebilir ve ekolojik taşıyıcı sistem tasarlamak ve fabrika üretimli ürünler kullanmak gibi sebeplerden dolayı yapı bileşenleri üzerinde yeni düzenlemeler yapma ihtiyacı duyulmaktadır. Yapı elemanları üzerinde geliştirilen en yeni yöntemlerden biri olan plastik boşluk oluşturucular bu nedenle çeşitli uygulama alanları bulmuşlardır. Özellikle İskandinav ülkeleri ile Batı Avrupa'da kat döşemelerinde bu tarz uygulamalar görülmektedir. Bu çalışmada ise zemin üzerinde yaklaşık 20 cm'lik bir kalınlıkta dökülen saha betonları için geliştirilen plastik boşluk oluşturucuların uygulama esasları, detayları ve avantajlarından bahsedilecektir. Çalışma kapsamında örnek numuneler üzerinde yapılan yükleme deneylerinden elde edilen sonuçlar tartışılacaktır. Çalışma sonuncunda saha betonlarında maliyeti azaltmak için tavsiye edilen plastik malzemenin kullanılması durumunda tasarım yükleri altında yük taşıma kapasitelerinde bir azalma meydana gelmediği görülmüştür. Saha betonu içinde kullanılan plastik oluşturucuların beton kullanımını yaklaşık %3-%9 oranında azalttığı da görülmüştür.

Anahtar Kelimeler: Saha Betonu, Plastik Boşluk Oluşturucular, Maliyet, Yük

O 22. CORROSION DAMAGES IN STEEL STRUCTURES AND CORROSION PREVENTION METHODS

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ABSTRACT: Corrosion is one of the most important problems of steel structures under aggresive environmental conditions. Corrosion deterioration usually forms in steel and steel-concrete composite bridges and marine structures. Also, corrosion of reinforcing steel is a main cause of deterioration of reinforced concrete bridge decks under environmental effects. The effects of corrosion on the structural members and, material losses and damages can be minimized by taking precautions. Although these precautions increase the cost of construction, the service life of structure extends and it is economical in long-term. In this study, a general information is presented about the formation of corrosion damages in steel structural systems and steel connection members, and the effects of these damages on the behaviour of structure are explained. Additionally, the precautions that can be taken to prevent corrosion formation or to minimize the occurrence of corrosion are presented. Also, the structural behaviour of steel beams having corrosion damages at different regions (web or flange) and reference beam (no corrosion) under vertical loading are investigated theorotically.

Keywords: Steel structures, corrosion, damage, beam

O 23. EXPERIMENTAL AND NUMERICAL MODELLING OF HYDRAULIC STRUCTURES

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ABSTRACT: Each hydraulic project, which is a sub-division of civil engineering requires that the building to be constructed be designed differently according to the topography and climatic conditions of the intended purpose and the region to be constructed. These conditions cause each water structure to be unique and to be projected differently.
In the process of designing hydraulic structures, it is not possible to define the entire parameters affecting the project mathematically, so it is possible to avoid the mistakes and find the most appropriate solution in these structures, which are very expensive to construct, only through physical model studies. The problems that can be seen in the construction completed and opened to operation can be caused by loss of life and property which cannot be compensated.
The compatibility of experimental studies with mathematical models in hydraulic studies is a large measure of the accuracy of the study. The differences that arise from this may be due to scale effects in experimental work, errors that may arise from measurements, errors in computation, while in mathematical modeling, simplification of the phenomenon results from acceptance made with purpose. As a result, any modeling within the possibilities before the construction of the hydraulic structures is important in terms of preventing actual damages, life and property losses. In this study, experimental and numerical study of a dam spillway will be presented. Differences and similarities are shown.

Keywords: Dam spillway design, Experimental study, Numerical study, Spillway structure

HİDROLİK YAPILARIN DENEYSEL VE SAYISAL MODELLENMESİ

ÖZET: İnşaat mühendisliğinin bir alt bölümü olan hidrolik projeler, inşa edilecek yapıya, planlanan bölgenin topografya ve iklim koşullarına göre farklı şekilde tasarlanmasını gerektirmektedir. Bu koşullar, her bir su yapısının eşsiz ve farklı şekilde yansıtılmasına neden olur.
Hidrolik yapıların planlanmasında, projeyi matematiksel olarak etkileyen tüm parametrelerin tanımlanması mümkün değildir, bu yüzden, bu yapılarda hatalardan kaçınmak ve en uygun çözümü bulmak model çalışmaları ile mümkündür. Tamamlanan ve işletmeye açılan inşaatta görülebilecek problemler, can ve mal kaybına neden olur.
Hidrolik çalışmalarda deneysel çalışmaların matematiksel modellerle uyumluluğu, çalışmanın doğruluğunun büyük bir ölçüsüdür. Deneysel çalışma sonuçlarında karşılaşılan farkların sebebi, deneysel çalışmadaki ölçek etkilerinden, ölçümlerden kaynaklanabilecek ve hesaplamadaki hatalardan kaynaklanırken, matematiksel modellemelerde bu hatalar olayın tam tarif edilemeyerek basitleştirilmesi ve yapılan kabullerden kaynaklanmaktadır.
Sonuç olarak, hidrolik yapıların inşa edilmesinden önce imkanlar dahilinde herhangi bir modelleme yapılması önemlidir. Bu çalışmada baraj dolusavaklarının deneysel ve sayısal çalışması sunularak, farklılıklar ve benzerlikler gösterilecektir.

Anahtar Kelimeler: Dolusavak tasarımı, deneysel modelleme, sayısal modelleme, baraj dolusavak yapısı

O 24. SOME SYSTEMATICS AND ECOLOGICAL DATA FOR TRUE BUGS (HEMIPTERA) IN SOME HABITATS IN FIERI (ALBANIA)

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ABSTRACT: This study presents a contribution to the knowledge some the systematics and ecological data on the species true bugs (Hemiptera) collected in some ecosystems in Fieri region.
The collection of biological material is performed during the period 2016-2017 in 6 stations. In this study we report for Fieri's stations 110 individuals, 24 species, 21 genres and 10 families.
By analyzing the collected material, the *Miridae* is the most represented family with 5 species and a frequency of 20.8% and with 5 genders or 23.8%.
Habitats of Zharrzws station are represented by more species than the other stations, with 10 species or 41.6%. This indicates that these habitats are comparatively more favorable, creating optimal environmental conditions for these species.
Based on the Jaccard Index of Similarity Coefficient, Zharrwz and Ardenica habitats have 3 species in common, and a higher similarity coefficient than the other areas (23.03%), showing a similarity of the ecological factors between these stations, which means a similarity between these habitats.

Keywords: Hemiptera, species dominance, habitat

O 25. ORGANOCHLORINATED PESTICIDES AND PCB IN SOME MEDICINAL PLANTS FROM SOUTH-EAST ALBANIA

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ABSTRACT: In this paper are presented concentrations of organochlorinated pesticides and polychlorinated biphenyls (PCB) in some medicinal plants from South-East Albania. Many medicinal plants grow in Albania due to appropriate Mediterranean climate. Twelve different species of medicinal plants were taken in May 2017 in Pogradeci-Korca-Kolonja-Permeti region (South-East Albania).
Ultrasonic extraction used for extracting organochlorinated pesticides, their residues and PCBs from medicinal plant samples. Clean-up procedure was performed using firstly silicagel with sulfuric acid and a second clean-up procedure in an "open" florisil column. Qualitative and quantitative analysis was realized in HP 6890 Series II, gas chromatograph equipped with μECD detector. For separation of organochlorinated pesticides and PCB markers was used Rtx-5 capillary column (30m x 0.32mm x 0.25μm).
The highest level of organochlorine pollutants was found to the samples of Mentha longifoglia because these plans were grow near the agricultural areas. The main origin of organochlorine pesticides could be as result of their previous uses for agricultural purposes. Profile PCB marker were as following: PCB 28 > PCB 138 > PCB 153. This fact confirms atmospheric origin of these compounds in the wild ecosystem of medicinal plants.

Keywords: Organoclorined pesticides; PCBs; Medicinal plants; GC/ECD

O 26. WHAT CAN MULTI-BIOMARKER APPROACH TELLS US ABOUT THE IMPACT OF POLLUTION ON FRESHWATER BIOTA HEALTH?

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ABSTRACT: The health of freshwater ecosystems and their biota exposed to continuous detrimental effects of environmental contaminants can be better assessed by integrating analytical chemical analysis with carefully selected biological endpoints measured in tissues of species of concern. These biological endpoints include molecular, biochemical and physiological markers (i.e. biomarkers) that when integrated, can clarify issues of contaminant bioavailability, bioaccumulation and ecological effects while enabling a better understanding of the effects of non-chemical stressors. Here, a battery of biomarkers, devised to measure cellular damage, antioxidant enzyme activity and physiological impairment, were combined with chemical analysis of water column, sediment and tissue, to determine exposure to and the effects of pollution at sites within Sitnica River (Kosovo). Carp fish, Cyprinus carpio, collected in situ through electrofishing were used as test species to determine the possible alterations in biochemical and physiological biomarkers. Our results confirmed a significant increase of hepatic alanine transaminase (ALT), aspartate transaminase (AST), glutathione-S-transferase (GST), catalase (CAT) and superoxide-dismutase (SOD) in blood. Both, blood glucose (GLU) and cortisol concentration were also significantly increased. Alteration in liver histological structure, increased in the frequency of micronuclei (MN) and nuclear abnormalities (ENA) in erythrocytes, were the most discriminating biomarkers among sites. This holistic approach to environmental assessment is encouraged as it helps to identify the integrated impact of chemical contamination on organisms and to provide a realistic measure of environmental quality.

Keywords: Multi-biomarker approach, Freshwater biota health, Pollution

O 27. DOES EGG JELLY COAT INDUCE SPERM MOTILITY-FACTS FROM IN-VITRO FERTILIZATION OF ALBANIAN FROG, *PELOPHYLAX SHQIPERICUS*

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ABSTRACT: Amphibian egg-jelly is essential to successful fertilization and development. The sperm-egg interactions occur in the egg-jelly at fertilization and the egg-jelly prevents excess sperm from reaching the egg-surface after the egg is spawned into water. Sperm–egg interactions are important in generating nonrandom fertilization. Here, we ask whether proteins in the jelly coats of frog eggs might influence sperm performance. Using in vitro fertilization of Albanian water frog, Pelophylax shqipericus, we found that eggs enrobed by jelly coat were not fertilized, compromising the success of in vitro fertilization procedure. When de-jellied eggs were inseminated with sperm through the gelatin gel, the fertilization efficiency is dramatically increased, suggesting that the gel structure is one of the major factors in the achievement of fertilization in the frogs. Such a result suggests that egg jelly coat probably guides the sperm to the egg surface while maintaining the fertilization ability, which results in the sperm having a chance to contribute to a successful fertilization. Also, it influences the onset of motility and swimming velocity of motile sperm in the frog Pelophylax shqipericus. This study suggests that sperm–egg interactions are important in generating nonrandom fertilization and are crucial to in-vitro fertilization process.

Keywords: Pelophylax shqipericus, egg-jelly coat; sperm–egg interactions

O 28. EXTRUSION TECHNOLOGY OF EXTRUDE FEED OF RAINBOW TROUT (ONCHORYNCHYS MYKISS WALBAUM, 1792)

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ABSTRACT: The objective of our research is to develop an efficient and ecological rainbow trout (*Onchorynchys Mykiss*) food formulation, which can meet the rainbow trout metabolic needs. The comparative testing of three fish food formulation (A, B and C) revealed that food B is the most efficient formulation. This was reflected by the zootechnical performances with the least fish discard than food A and C. Based on results of this experience; we have taken food B as a reference to develop a new formulation according to the eco requirement and social economy.
Two types foods of rainbow trout extruded (F1 and F2) have been formulated and prepared using a variety of animal and plant-derived raw materials.
F1 was formulated with fish meal as the main source of protein and F2 with a high percentage of corn gluten.
The two formulas developed for rainbow trout give significant growth for a short period in 34-days, better zootechnical performances and low fish releases.

Keywords: Extruded, food, rainbow trout, formulation, zootechnical performance, ecological

O 29. CARYOPHYLLACEAE HOLOCENE LAYOUT IN ELBASAN CITY – ALBANIA

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ABSTRACT: The study is performed in Elbasani region; cities in which many biological studies carried out in recent years.
Palynological information featured in this paper are provided in earth depositions of last XX centuries - last Quaternary or last period of New Holocene.
Through this study we try to provide paleopalynological information for the layout of this family during Holocene period, for the geographical location in which the Elbasan city is located.
The goal of this presented paper is to provide information about the Holocene distribution of Caryophyllaceae spores and pollens, bearing in mind that different ground depths correspond to certain time periods. For this purpose we taken different sediment samples in each station, every 25 cm from the surface up to 4 m deepness. Approximate data about sedimentation rate are given, from about 1.87 mm/yr (during 1500 years at the Basilica of Bezistani) and up to 2.5 mm/year at the depths 2.8-4 m (0-V centuries).
Paleopalynological information given for this family are provided for the first time exclusively in this work and does not exist any similar work of this nature and for this family in the Albanian Palinology literature.
Sample treatment and microscopic examinations were carried on at the Study University "La Sapienza", Rome. Survey and palynomorphs photos it was carried on using Motic BA310 microscopes with 1000x magnification.
In conclusion we can say that the data provided is sufficiently clear for the Holocene layout of this family.

Keywords: Caryophyllaceae, Holocene, Palynological, Palynomorphs, Elbasan City

O 30. THE EFFECT OF OVA AGING ON EMBRYOS' SURVIVAL OF SILVER CARP

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ABSTRACT: This study aims to determine the influence of the in vivo aging of silver carp eggs on the embryos survival ability at Deroua fish farm (Morocco). Results showed that the retention time of the ova has a significant impact on the embryos 'survival. High survivals have been recorded for the ova stripped at the ovulation time (0 minutes post-ovulation time). While the lowest level of the survival embryos was observed for the ova stripped after 90 minutes after ovulation time. The study is carried out to optimize time, labour and costs of the production of silver carp seed without impacting the yield of production.

Keywords: aging, ova, embryos, seed, fisheries

O 31. STUDY OF INTRA-VARIETAL DIVERSITY IN BIOTYPES OF ALBANIAN AUTOCHTHONOUS (VITIS VINIFERA L) CULTIVARS 'SHESH I BARDHË' AND 'SHESH I ZI' BY RAPD-PCR

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ABSTRACT: Spontaneous somatic mutations that occur in the process of vegetative propagation of *Vitis vinifera L.* cultivars are the major source of intra-varietal variability. 'Shesh i Bardhë' and 'Shesh i Zi' are two Albanian grape cultivars used mainly for wine production, showing ampelographical diversity among grape biotypes grown in different regions of Albania. In order to assess the genetic diversity among accessions of these two cultivars, 18 selected accessions that showed variability in ampelographic evaluation were analysed by means of 10 RAPD markers. Genetic similarity-dissimilarity among individuals was calculated using Dice's coefficient. Cluster analysis was done based on UPGMA algorithm by means of NTSYS software. The analysis generated over 137 polymorphic fragments, with a mean of 13.7. Intra-varietal diversity has been detected in both cultivars. The mean similarity coefficent among biotypes of 'Shesh i Bardhë'and 'Shesh i Zi' was 0.72 and 0.63, respectively. Two main group were observed in cluster analysis, however there were no grouping based on the geographical origine or the berry colour. This study confirms the intra-cultivar variability among biotypes of the two important grape cultivars, which is valuable regarding the identification and conservation of biotypes of valuable grape cultivars.

Keywords: Grape, Biotypes, RAPD, Albania

O 32. AN EVOLUTIONARY FRAMEWORK ON MALADAPTIVE CONSUMPTION BEHAVIOURS

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ABSTRACT: Obesity is caused by the interaction between genetic and cultural or behavioural predispositions. Thus, both genes and culture are products of evolutionary processes, hence cultural selection acts on eating behaviours and perceptions. Nowadays, more and more scientific studies are being conducted on obesogenic phenomena owing to health concerns arising in western countries and eastern European countries, which, in recent decades, have experienced a cultural shift in food consumption and perceptions about what it is considered healthy. Heredity, changes in diet, leisure-time behaviours, and the quality of physical activity are the main factors involved in overweight and obesity. Additionally, other factors involved in obesogenic phenomena are related to family, economic factors, lifestyle, preferred foods, and nutritional beliefs regarding food consumption. Considerable cross-cultural variation exists – even among different ethnicities living in the same geographical area – and cultural selection is the principal cause. One previous study conducted on Albanian citizens aged 2 to 20 years revealed the numbers of overweight and obese Albanian children and adolescents to be among the highest in Europe. Overweight and obesity are caused by food habits and cultural perceptions regarding health. While genetics plays a significant role, it is mostly major cultural changes in post-communist countries that are responsible for obesogenic phenomena. Consumption behaviours regarding food and health in Albania are the principal factors involved in the spread of obesogenic phenomena across the post-communist states.

Keywords: evolution, consumption behaviours, transmitted culture, obesity, Balkan area, Albanians

O 33. MOLECULAR CHARACTERIZATION OF ALBANIAN GRAPEVINE VARIETIES BY MICROSATELLITE MARKERS

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ABSTRACT: Six Albanian grapevine accessions were genotyped by microsatellite profiling using microsatellite loci, in order to identify their molecular profile and to evaluate the relationships among them.
6 most cultivated grapevine cultivars including Shesh i Zi, Shesh i Bardhe, Kallmet, Vlosh, etc., were tested using a set of 8 microsatellite markers, widely used in other studies.
The study was conducted at the national grapevine collection held at the Agricultural Technology Transfer Centre of Vlore.
Based on the microsatellite loci, the Albanian accessions of grapevine show a great diversity. Microsatellite profiling resulted in 6 single profiles for the 6 accessions. Clustering analyses based on the proportion of shared alleles resulted in two clusters containing all accessions.
The study aimed at determination of the grapevine accessions identity by molecular markers, confirmation of identity of previosly studied morphological characteristics with the future objective to assess the genetic diversity of Albanian grapevine germplasm.

Keywords : Albanian germplasm, grapevine, microsatellite, genetic profile

O 34. TOXICITY ASSESSMENT OF NANOFIBER PREPARED WITHTARRAGON

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ABSTRACT: Nanofiber materials are not only used in many areas but also impregnate various plant extracts, thus providing advantages for the pharmaceutical, medical and biomedical sectors. In our study, we evaluated the toxic effect of Tarragon (*Artemesia dracunculus*, 600 - 2000 µg / L) and the nanofiber (260 nm) prepared by electrospinning method on 3rd instar larvae of *Drosophila melanogaster*. Controlled experiments were carried out in the laboratory between 24-120 hours. Statistical analyzes were performed among the groups, including positive and negative controls. It has been observed that the application of nanofiber with Tarragon reduces mortality at all concentrations compared to only tarragon application and increases the formation of pupa and adult individual in the same direction.

Keywords: Drosophila melanogaster, Tarragon, Nanofiber, toxicity, larval mortality

TARHUNLA HAZIRLANAN NANOFIBERIN TOKSISITE DEĞERLENDIRMESI

ÖZET: Nanofiber materyaller bir çok alanda kullanılmakla kalmayıp çeşitli bitki ekstraktlarının da emdirilmesiyle eczacılık, tıp, biyomedikal sektörü için avantaj sağlamaktadır. Çalışmamızda elektrospin yöntemi ile Tarhunla (*Artemesia dracunculus*, 600- 2000 µg/L) hazırlanan nanofiber (260 nm) model olarak kullanılan meyve sineği *Drosophila melanogaster*'in üçüncü evre larvalarında toksik etki değerlendirilmiştir. Laboratuarda 24-120 saat aralığında kontrollü deneyler yapılmıştır. Pozitif ve negatif kontrollerin de yer aldığı gruplar arasında istatistiki analizler gerçekleştirilmiştir. Tarhun'lu nanofiber uygulamasının sadece tarhun uygulamasına kıyasla tüm konsantrasyonlarda mortaliteyi azalttığı, pupa ve ergin birey oluşumunu da aynı doğrultuda artırdığı görülmüştür.

Anahtar Kelimeler: Drosophila melanogaster, Tarhun, Nanofiber, toksisite, larval mortalite

O 35. REVIEW ON BIOREMEDIATION PROCESS OF A CRUDE OIL IN CONTAMINATED SOIL BY LEACHING AND TOXICITY ASSESSMENTS

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ABSTRACT: The most widely used chemicals in society today are Petroleum products. With the massive quantity of fuel required to power automobiles and heat homes, and the number of times each gallon of petroleum is stored, transported, or transferred, accidents and leakages are unavoidable. All the results of Petroleum contamination from leaking aboveground and underground storage tanks, spillage during transport of petroleum products, abandoned manufactured gasoline sites, other unplanned releases, and current industrial processes. As petroleum contains hazardous chemicals such as benzene, toluene, ethylbenzene, xylenes, phenols and naphthalene, this contamination can be hazardous to the health of plants, animals, and humans.

Hydrocarbons (HC) entrance into the soil environment can take place by pipeline blow-outs, road accidents, leaking of underground storage tanks, land farming fields and uncontrolled landfilling. When released on the soil surface, HC adsorb on the organo-mineral matter (OMM) of the soil, The Removal of HC from soils can be performed using biological treatments like bioremediation if the environmental conditions are optimum (temperature, soil moisture, nutrients). The presence of high rates of organic matter and clay may affect the extent of biodegradation due to a priming effect on microbial communities and to a decrease of accessibility to microorganisms High concentrations of HC can eliminate vegetation due to their phytotoxic properties.

Most country's environmental legislations are now focused on treatment and disposal of polluted soils, especially with respect to hazardous waste management. As there are no universal HC cleanup standards, the remediation end points might be in the evaluation of the impact of residual HC on the soil ecosystem and on the water quality.

Petroleum-contaminated soil is currently treated using three processes: physical, chemical, and biological. The most common physical methods of treatment of contaminated soils, such as disposal in a landfill, and incineration are expensive. Incineration is also a source of air pollution Chemical treatment includes direct injection of chemical oxidants into contaminated soil and groundwater thereby altering native aquatic chemistry. Biological treatment most commonly involves the breakdown of contamination into nontoxic forms using microbiological processes

Keywords: Petroleum, soil pollution, Leached, Hydrocarbons, Hazard Waste Management

O 36. ENVIRONMENTAL TAXATION – THE EFECTS ON ENVIRONMENTAL EFFECTIVENESS AND ECONOMIC EFFICIENCY

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ABSTRACT: Environmental taxes have many important advantages, such as environmental effectiveness, economic efficiency, the ability to raise public revenue, and transparency. Also, environmental taxes have been successfully used to address a wide range of issues including waste disposal, water pollution and air emissions. Regardless of the policy area, the design of environmental taxes and political economy considerations in their implementation are crucial determinants of their overall success. Environmental economic accounts data are important for understanding the situation of the Environment sector in Albania and its economy. These data can be used to analyze and evaluate different economic instruments related to the environment. Data provided by the Ministry of Finance, Ministry of Tourism and Environment, Ministry of Infrastructure and Energy show that the average increase of revenues from environmental taxes in the period 2008 - 2015 is 4.7 % and the average annual share of environmental tax revenues in the gross domestic product (GDP) is 2.77 %. In Albania the environmental taxes are energy taxes, transport taxes, pollution taxes and resource taxes. From the structure of 2015 for the environmental tax revenue, the greatest share of revenues came from the energy taxes by 56.64 %. In Albania, these kinds of taxes have begun to be collected since 2001, while the statistical processing of their revenues started in 2008. In total for the four types of taxes and for 8 years (2008-20015), in the state budget have come about 300 million Euros. So taxes can be extremely effective when they are properly designed, are levied as close to the environmentally damaging pollutant or activity as possible, and are set at an adequate rate. Also taxes may need to be combined with other instruments to obtain the most efficient and effective environmental policy package, but care should be taken to assess the impact of overlapping instruments.

Keywords: Environmental taxation, Economic efficiency, Environmental Economic Accounts, Tax revenues

O 37. INTELLIGENT SYSTEMS WHERE AIR, LIGHT AND NOISE POLLUTION IN THE CITY IS DETECTED AND SENT TO THE MANAGEMENT CENTER

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ABSTRACT: Parallel to the ever-increasing world population, environmental problems are also increasing. In parallel with the increasing population, the increase in demand brings with it the many possible problems together the insatiable human beings in our world. They are benefiting from the central government and local governments to ease their obligations in the face of growing population and workforce from the opportunities it provides technology and power. Emerging technology, new software and devices are instantly aware of the events around us and we are improving our ability to intervene in a short time with a little performance by minimizing the time it takes to counter it. With the local administrations acquaintance these possibilities and starting to use these systems in every area of the city, the term "Smart City" has begun to enter into our lives. These systems, which are widely used in; traffic, infrastructure systems, environmental problems (noise pollution, air pollution, irrigation systems, etc.), perform necessary measurements and report their results to central govenments and/or local administrations. In this study, in Turkey and in the world; air, light and noise pollution after making the necessary measurements, the intelligent system examples that transmit the report to the management centers and the differences in the systems used will be discussed.

Keywords: Smart City, Air Pollution Control, Noise Pollution Control, Light Control.

ŞEHIR IÇINDE HAVA, IŞIK VE GÜRÜLTÜ KIRLILIĞININ TESPIT EDILIP YÖNETIM MERKEZINE ILETILDIĞI AKILLI SISTEMLER

ÖZET: Her geçen gün artan dünya nüfusuna paralel olarak çevresel sorunlar da artmaktadır. Artan nüfusa karşılık talepteki artışta insanoğlunun doyumsuzluğu ile birleşince dünyamızda olası birçok sorunu beraberinde getirmektedir. Merkezi hükümetler ve yerel yönetimler artan nüfus karşısında kendi yükümlülüklerini hafifletmek ve iş gücünü olağan gücüyle düşürmek için teknolojinin sağlamış olduğu imkânlardan faydalanmaktadırlar. Gelişen teknoloji, yeni yazılımlar ve cihazlar etrafımızda ki olaylardan anlık haberdar olup, buna karşı koyma süresini minimize ederek az bir performans ile kısa sürede olaylara müdahale yeteneğimizi geliştirmektedir. Yerel yönetimlerin bu imkânlarla tanışması ve bu sistemleri şehrin her alanında kullanmaya başlaması ile "Akıllı Kent" terimi hayatımıza girmeye başlamıştır. Trafikte, Alt yapı sistemlerinde, Çevresel problemlerde (gürültü kirliliği, hava kirliliği, sulama sistemleri vb.) de yaygın olarak kullanılan bu sistemler gerekli ölçümleri gerçekleştirip sonuçlarını merkezi hükümetlere ve/veya yerel yönetimlere bildirip anlık tepkiler ile sorunlara karşı mücadele edilmektedir. Bu çalışmada Türkiye'de ve Dünya'da; hava, ışık ve gürültü kirliliğinin tespit edilip, gerekli ölçümü yaptıktan sonra, raporunu yönetim merkezlerine ileten akıllı sistem örnekleri ve kullanılan sistemlerdeki farklılıklar ele alınacaktır.

Anahtar Kelimeler: Akıllı Kent, Hava kirliliği kontrolü, Gürültü Kirliliği Kontrolü, Işık Kontrolü.

O 38. WATER EFFICIENT TOOLS AND METHODS FOR DOMESTIC AND INDUSTRIAL USE

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ABSTRACT: Water resources are getting worse every other day in terms of quality and quantity due to the global warming and population increase. Therefore, the rational management of water resources which includes reuse and recycle will become even more important in the coming years. It is crucial to increase public awareness and education levels for effective and conservative use of water. At the same time, it is necessary to further develop innovative equipment and methods by collaboration between universities and industries for water conservation while water is rapidly becoming the future's oil. In this study, internet based intelligent water systems applied to prevent water shortage in some water stressed countries were investigated. In addition, smart and effective water usage applications and water management strategies in some sectors have been assessed. Some best practices of conservative water consumption for domestic, urban, agricultural purposes as well as in food and chemical industry sectors were explained.

Keywords: Water scarcity, Water conservation, Water management

EVSEL VE ENDÜSTRİYEL KULLANIMDA AZ SU TÜKETEN TEÇHİZAT VE YÖNTEMLER

ÖZET: Dünyada küresel ısınma ve nüfus artışı sebebiyle su kaynakları kalite ve miktar açısından her geçen gün daha kötüye gitmektedir. Bu yüzden su kaynaklarının akılcı yönetilmesi ve yeniden kullanımının ve geri dönüşümünün sağlanması önümüzdeki yıllarda daha da önemli bir hale gelecektir. Suyun etkili ve tasarruflu kullanımı için insanların bilinç ve eğitim seviyelerinin arttırılması önemlidir. Bununla birlikte, üniversite-sanayi ve üniversiteler arası işbirliği yapılarak yenilikçi teçhizat ve yöntemlerin daha da geliştirilmesi, geleceğin petrolü olma yolunda hızla ilerleyen su için uygun tasarruf ve yönetim sistemlerinin ortaya konulması gerekmektedir. Bu çalışmada başta su kıtlığı yaşayan ülkelerde su israfını önlemek için uygulanan internet tabanlı akıllı su sistemleri incelenmiştir. Bununla birlikte işletmelerde suyun akılcı ve verimli yönetim stratejileri değerlendirilmiştir. Evsel kullanımda, şehir peyzajında, tarımda, gıda endüstrisinde, temizlik endüstrisinde, kimya endüstrisinde az su tüketen teçhizat ve uygulamalara örnekler verilmiştir.

Anahtar Kelimeler: Su kıtlığı, Su tasarrufu, Su yönetimi

O 39. THE COMPARISON OF REFRACTION YEARS WITH THE TREND STARTING YEARS OF KONYA CITY PRECIPITATION

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ABSTRACT: Precipitation is one of the most varying parameter among the climatic parameters. As a result of global warming, the long-year average precipitation value of 643 mm for Turkey gradually decreases every passing year. Moreover, the ongoing factors provoking drought will cause serious problems related to water and water resources in the future. The accurate forecasting of precipitation has great importance for effective planning and management of water resources.
In this study, the cumulative precipitation data of the precipitation gauging station of Konya Region (No.17244) between years 1929-2006 were subjected to homogeneity analyses of Standard Normal Homogeneity Test (SNHT), Pettitt and Buishand Tests to determine the years at which homogeneity presents refraction. After checking the existence of trend for the data set by using Mann Kendall Trend Analysis, the trend starting years and the refraction years are compared using the Mann-Kendall Range Correlation Analysis.
According to the test results, the years determined as the refraction years were observed in accordance with the trend starting years determined by the Range Correlation Analysis.

Keywords: Konya, Precipitation, Trend Analysis, SNHT, Range Correlation Analysis

KONYA İLI YAĞIŞ VERILERININ KIRILMA YILLARI ILE TREND BAŞLANGIÇ YILLARI KARŞILAŞTIRMASI

ÖZET: Yağış, iklim elemanları içerisinde en fazla değişkenlik gösteren parametrelerden biridir. Küresel ısınmanın etkisiyle Türkiye'nin 643 mm olan uzun yıllar yağış ortalaması giderek azalmaktadır. Ayrıca, kuraklığa sebep olan etmenlerin devam etmesiyle gelecekte su ve su kaynakları ile ilgili ciddi sıkıntılar meydana gelecektir. Su kaynaklarının etkin bir şekilde planlanması ve yönetimi için yağışın doğru bir şekilde tahmin edilmesi büyük önem taşımaktadır.
Bu çalışmada 1929-2006 yılları arasında Konya Bölgesinde yer alan 17244 No'lu istasyondan alınan toplam yağış verilerine homojenlik analizlerinden Standart Normal Homojenlik (SNHT), Pettitt ve Buishand testleri uygulanarak homojenliğin kırılmaya uğradı yıllar belirlenerek, Mann-Kendall trend analizi ile kullanılan veri setinde trend olup olmadığı kontrol edildikten sonra Mann-Kendall Mertebe Korelasyon analizi ile trend başlangıç yılları ile kırılma yılları karşılaştırılmıştır.
Test sonuçlarına göre, kırılma yılı olarak belirlenen yılların mertebe korelasyon ile bulunan trend başlangıç yılları ile paralellik gösterdiği belirlenmiştir.

Anahtar Kelimeler: Konya, Mann-Kendall Mertebe Korelasyon SNHT, Trend Analizi, Yağış

O 40. NON-PARAMETRIC TREND ANALYSIS ON KONYA CITY PRECIPITATION

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ABSTRACT: The decreasing or increasing tendency of a random variable depending on time is called "trend". The investigation of the trend for the hydrological and meteorological data, i.e. the determination of decreasing or increasing tendency of water amount, has great significance in terms of planning and managing of water resources.
Parametric and non-parametric tests are used to determine the trends. Beside the parametric tests give best results when the data is in accordance with the normal distribution, non-parametric tests are independent from the distribution of the population's random variable and parameters. Since the distributions are not normal in general, the results obtained by the non-parametric tests are better than those obtained by the parametric ones.
Therefore, the parametric trend analysis methods of Mann-Kendall Test, Modified Mann-Kendall Test, Spearman Rho Test, Sen's t-test and Sen's Trend Test were used to perform the trend analysis of the total precipitation data of the precipitation gauging station (No.17244) of Konya Region between years 1929-2006. The data set obtained by the gauging station is considered as monthly total precipitation, annual total precipitation and all the data set, then they were investigated considering the significance level of 0.05 whether they have any meaningful trend or not. Additionally, the slope directions obtained by the trend analyses were checked by the aid of the Sen's Trend Slope method used to determine the slopes of the trends.
As a result of the trend analyses, it is concluded that the trend analysis methods used in this study presented test results in good agreement with each other, and their slope directions were obtained as the same as the slope directions of Sen's Trend Slope Method.

Keywords: Konya, Trend Analysis, Precipitation, Non-parametric, Slope Direction

KONYA İLİ YAĞIŞ VERİLERİNDE PARAMETRİK OLMAYAN TREND ANALİZLERİ

ÖZET: Bir rastgele değişkenin değerlerinde zamana bağlı olarak azalma ya da artma olmasına trend denir. Hidrolojik ve meteorolojik verilerde ki trendin incelenmesi, diğer bir deyişle su miktarındaki artma veya azalmanın belirlenmesi su kaynaklarının planlanması ve işletilmesi açısından son derece önemlidir.
Trendlerin belirlenmesinde parametrik ya da parametrik olmayan testler uygulanır. Parametrik testler, verilerin normal dağılıma uygun olması halinde iyi sonuçlar verir. Parametrik olmayan testler ise toplumun rastgele değişkeninin dağılımından ve parametrelerinden bağımsızdırlar. Dağılımların genellikle normal olmaması nedeniyle parametrik olmayan testlerle elde edilen sonuçlar parametrik testlere göre elde edilen sonuçlara göre çok daha iyidir.
Bu sebepten dolayı bu çalışmada Konya bölgesinde bulunan 17244 No'lu istasyona ait 1929-2006 yılları arasında ki toplam yağış verilerinin trend araştırmasını yapmak için parametrik olmayan trend analizlerinden Mann-Kendall testi, Modifiye Mann-Kendall testi, Spearman Rho testi, Sen'in T testi ve Şen Eğilim testi kullanılmıştır. İstasyondan alınan veri seti aylık toplam yağış, yıllık toplam yağış ve tüm veri sistemi olarak ele alınmış, 0.05 anlamlılık seviyesine göre anlamlı bir değişim gösterip göstermediğine bakılmıştır. Ayrıca eğimleri belirlemede kullanılan Sen'in Trend Eğim metodu kullanılarak trend analizlerinden elde edilen eğim yönlerinin kontrolü yapılmıştır.
Trend analizleri sonucunda kullanılan yöntemlerinin birbiri ile örtüşen sonuçlar gösterdiği ve eğim yönlerinin' in Trend Eğim Metodu ile bulunan yön ile aynı yönlü olduğu gözlenmiştir.

Anahtar Kelime: Konya, Sen' in Trend Eğim Metodu, Trend Analizi, Yağış

O 41. ESTIMATION OF MONTHLY PAN EVAPORATION USING ANFIS TECHNIQUE

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ABSTRACT: Evaporation is one of the most important components of the hydrological cycle. The accurate determination of the amount of evaporation is very important for the planning and management of water resources. There are many meteorological parameters that affect the amount of evaporation. Among all the components of the hydrological cycle, the estimation of evaporation is very difficult because of complex interactions between the components of the land±plant±atmosphere system. The amount of evaporation can be determined by direct measurements and various empirical equations. In addition, as well as the prediction of many meteorological and hydrological parameters, artificial intelligence methods such as ANN, SVM, ANFIS are widely used in evaporation prediction. In this study, monthly evaporation estimation were studied using meteorological parameters of three stations (Konya, Karaman, Aksaray) on Konya Closed Basin in Turkey. For this aim, ANFIS models were used. In ANFIS models, backpropagation and hybrid learning algorithms were employed. In addition, Subtractive Clustering (ANFIS-SC) techniques were utilized to set up the rules. The number of epochs was taken as 100 in ANFIS models. While the most successful prediction was obtained with the hybrid learning algorithm for the Aksaray station, the backpropagation learning algorithm was more successful in evaporation estimation at Konya and Karaman stations.

Keywords: Evaporation, Meteorology, ANFIS, Backpropagation

O 42. DESIGN OF ENERGY DISSIPATION STRUCTURES OF IRRIGATION CHANNELS CONTROLLED BY HOWELL BUNGER VANES

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ABSTRACT: In Bahçelik Dam, water for irrigation and drinking water is discharged from the bottom outlet to main diversion channel when the reservoir water surface elevation is between1472 m-1500 m. During the operating stage, it is planned that the flow discharge will be controlled and released by the valves automatically depending on the water demand at the downstream of the main diversion channel. In this system; the valve type is characterized by opening, closing and regulating time of the valves for controlling system placed at the downstream of the main diversion channel and also compatibility of the valves with electronically steering working principals. Because of these objectives, Howell-Bunger valves which have not velocity limitation, are resisting to cavitation and water hammer, and can be manufactured in all diameters, and also are controlled by electronically are selected for water control system. In the experimental study, four Howell-Bunger valves each having D=1400 mm and maximum discharge capacities Q=8.5 m^3/s were placed at the upstream part of the main diversion channel and they were tested in various valve openings to obtain optimum operating conditions of valves for all reservoir water levels during the operating of the dam in a 1/10 scaled model. In original project, flow measurements cannot be measured clearly as there is not uniform flow condition because of turbulence and flow jet flushing from the pumps. For this reason, there are some energy reducing structures have been added just upstream of the pumps. For this aim various shapes of energy dissipation structures at various distances from the pumps have been tested in order to find the one reduces the maximum energy.
The final shape of the energy dissipater obtained by experimentally has supplied uniform flow conditions in the irrigation channel.
In this study, the application of the energy dissipater structure was tested, and the results of the experimental studies are given.

Keywords: Bahçelik dam, Howell-Bunger valves, optimum valve operating systems, bottom outlet, energy dissipaters

HOWELL-BUNGER VANALARI ILE KONTROL EDILEN SULAMA KANALLARINDA KULLANILAN ENERJI KIRICI YAPILARIN TASARIMI

ÖZET: Bahçelik Barajı su temini projesi kapsamında yapılan çalışmalarda, rezervuar çıkışından ana derivasyon kanalına temin edilecek akımın, rezervuar su yüzeyi yüksekliği 1472 m-1500 m arasında olduğu zamanda işletme yapılacağı planlanmıştır. İşletme aşamasında, ana deşarj kanalının akım debisi sulamada kullanılacak su talebine bağlı olarak vanalar tarafından otomatik olarak kontrol edilmesi planlanmaktadır.
Bu sistemde; ana kanala yerleştirilen vanaların açılması, kapatılması ve düzenlenmesi elektronik olarak kontrol edilmektedir. Bu nedenle, akım hızı sınırlaması olmayan, kavitasyona ve su darbesine dayanıklı olan ve her çapta üretilebilen, ayrıca elektronik olarak kontrol edilerek su kontrol sistemini en iyi şekilde sağlayan Howell-Bunger vanaları seçilmiştir. Deneysel çalışmada, her biri D = 1400 mm ve maksimum deşarj kapasiteleri Q = 8,5 m^3 / s olan dört adet Howell-Bunger vana ana kanlın giriş kısmına yerleştirilmiş ve optimum çalışma koşullarını elde etmek için çeşitli vana açıklıklarında test edilmiştir. Ölçek 1/10 seçilerek, barajın çalışması sırasında tüm rezervuar su seviyeleri için vanalar test edilmiştir. Yapılan çalışmalarda, orijinal projeye göre, pompalardan türbülans ve jet şeklinde püskürerek çıkan akım nedeniyle düzgün olmayan bir akış durumu olduğu için debi ölçümleri düzgün yapılamamaktadır. Bu nedenle, pompaların hemen yukarısına bazı enerji azaltma yapıları eklenmiştir. Bu amaçla, pompadan çeşitli mesafelerde enerji yayılım yapılarının çeşitli şekilleri, maksimum enerjiyi azaltacak şekilde test edilmiştir.
Deneysel olarak elde edilen final enerji kırıcı şekli ile sulama kanalında düzgün akım koşulları sağlamıştır. Bu çalışma kapsamında test edilen enerji kırıcı yapısının uygulanması ve deneysel çalışmalar sonucu uygulama şeklinin tespiti ve sonuçları verilmiştir.

Anahtar Kelimeler: Bahçelik Barajı, Howell-Bunger vanalar, optimum vana işletimi, dipsavak, enerji kırıcılar

O 43. PREDICTION OF DAILY MEAN AIR TEMPERATURE USING GRNN AND SVM MODELS

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ABSTRACT: Artificial intelligence applications are widely used to predict meteorological phenomena, today. In particular, successful results have been obtained using artificial intelligence techniques such as Artificial Neural Networks (ANN), Adaptive Neuro-Fuzzy Inference System (ANFIS) and Support Vector Machine (SVM). Air temperature is an important parameter for hydrological, meteorological, ecological, agricultural and climate models. In this study, the applicability of SVM and Generalized Regression Neural Network (GRNN) models was investigated for estimating daily mean air temperature using meteorological parameters as input data. For this purpose, atmospheric pressure, relative humidity, wind speed, vapor pressure, precipitation and evaporation data belonging to Seydisehir meteorology station on Konya Closed Basin were used. The SVM and GRNN models, which are composed of six different input combinations, were tested for the daily mean air temperature estimation. According to the results, GRNN models were generally more successful than SVM models in predicting daily air temperature.

Keywords: Air Temperature, Climate, Artificial Neural Networks, Support Vector Machine

O 44. MANAGEMENT PANEL APPLICATION FOR INTEGRATION OF INDUSTRIAL SYMBIOSIS TO INDUSTRY 4.0

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ABSTRACT: The increasing industrial requirements as a result of developing technology, has rapidly raise the energy and water sources consumption and increased the produced waste as well. Therefore, new methods were searched to protect water sources, waste recycling/reuse, energy saving and efficiency. Industrial symbiosis approaches has the power to increase of environmental performance by producing more reusable materials and the energy saving processes. In this study, potential of industrial symbiosis was determined by survey on some firms in the Konya city. It has been created a network of Industrial Symbiosis Management System by using the collected data. As a result, it was aimed to create easily accessible web-based management system by matching the wastes of the firms which have symbiotic potential with the raw materials they needed. Some targets of this system are reducing of waste production and disposal cost, increasing of energy efficiency and adaptation to the environment by reuse of waste.

Keywords: Reuse, Recycling, Industrial Symbiosis, Management System (ESYS)

ENDİSTÜRİYEL SİMBİYOZUN ENDÜSTİRİ 4.0'A ENTEGRE EDİLMESİ İÇİN YÖNETİM PANELİ UYGULAMASI

ÖZET: Günümüzde gelişen teknoloji ile birlikte artan sanayi enerji ve su kaynaklarının tüketimine, buna bağlı olarak da oluşan atık miktarlarını hızla artırmasına sebep olmuştur. Bu nedenle enerji tasarrufu ve verimliliği, atık geri kazanımı/yeniden kullanımı ve su kaynaklarının korunması için yeni çözüm yöntemleri aranmaktadır. Endüstriyel simbiyoz yaklaşımları yeni simbiyoz ürünlerinin geliştirilmesi, daha fazla malzeme ve enerji verimli prosesler de dahil olmak üzere çevresel performansı artırma gücüne sahiptir. Bu çalışmada Konya Bölgesi'nde anket çalışması yapılarak endüstriyel simbiyoz yapma potansiyeline sahip firmalar ile potansiyel belirlenmiştir. Toplanan veriler ışığında Endüstriyel Simbiyoz Yönetim Sistemi (ESYS) ağı oluşturulmuştur. Böylece simbiyotik potansiyeli olan firmaların oluşan atıklarının ve ihtiyaç duydukları hammaddelerin eşleştirilerek kolay ulaşılabilir web tabanlı bir yönetim sistemi oluşturulması amaçlanmıştır. Bu sistem ile atıkların yeniden kullanılması yoluyla atık miktarında ve maliyetinde azalma, enerji verimliliğinde artış ve çevreye uyum hedeflenmiştir.

Anahtar kelimeler: Yeniden Kullanım, Geri Kazanım, Endüstriyel Simbiyoz, Yönetim Sistemi (ESYS)

O 45. ESTIMATION OF SUSPENDED SEDIMENT LOAD BY MULTI LINEAR REGRESSION ANALYSIS

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ABSTRACT: Suspended sediment load (SSL) is defined as the rate of sediment transported by a running water stream. It is essential to have an idea about the rate of sediment transported for the solution of river engineering problems. There is no standard specified method for estimating SSL. In last decades, researchers often have been using machine learning methods in order to predict SSL with increasing the development of the computer technology.
In this study, the monthly flow rate and suspended sediment load (Q_s) of Karamenderes Stream in Turkey between the years of 1996-2004 were estimated by using multi linear regression (MLR) analysis on SPSS program is studied. The load of the SSL is determined by using depending parameters of water temperature (C^o) and flow discharge (m^3/s) and corresponding independing values of suspended sediment load. Performance of the MLR model is measured by using coefficient of determination (R^2). In multi linear regression analysis, most effecting parameters of the prediction of the SSL are flow discharge and temperature according to order of importance. Data of model are predicted with 85 % approximation.

Keywords: Multi Linear Regression Modeling, suspended sediment load, discharge measurement, sediment transport

ASKIDAKİ SEDİMENT MİKTARININ TOPLU LİNEER REGRESYON ANALİZİ İLE TAHMİN EDİLMESİ

ÖZET: Nehirlerdeki askıdaki malzeme miktarı (SSL), akım tarafından taşınan malzeme olarak tanımlanır. Hidrolik yapıların tasarımında ve hidrolik mühendisliğinde sediment problemlerinin çözümü için askıdaki sediment taşınımı ile ilgili verilein elde edilmiş olması gerekir. Askıdaki sediment miktarı (SSL)' i tahmin etmek için standart bir yöntem yoktur. Son yıllarda, araştırmacılar, bilgisayar teknolojisinin gelişimini de dikkate alarak SSL'i tahmin etmek için makine öğrenme yöntemlerini de kullanmaktadırlar.
Bu çalışmada, 1996-2004 yılları arasında Karamenderes Çayı'na ait aylık akım miktarı, debi ve bu debinin taşıdığı askıdaki sediment miktarı SPSS programının kullanıldığı çoklu doğrusal regresyon (MLR) analizi ile tahmin edilmiştir. SSL yükü, su sıcaklığı (C^o) ve debi (m^3/s) nin bağımsız parametreler ve askıdaki sediment yükünün bağımlı parameter olarak seçildiği bir model ile tahmin edilmiştir. MLR modelinin performansı R^2 ile ölçülmüştür.
Çoklu doğrusal regresyon analizinde, SSL'nin tahmin parametrelerini etkileyen en önemli parameter debidir. Model verileri 85% yaklaşımla tahmin edilmiştir.

Anahtar Kelimeler: Çoklu lineer regresyon modeli, sediment taşınımı, debi ölçümü, askıdaki sediment yükü

O 46. SUSTAINABILITY ASSESSMENT OF ENVIRONMENTAL LABORATORIES IN TURKEY USING ECO LABEL SYSTEM

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ABSTRACT: It is known that environmental labels provide significant risk methods and competitive advantages within countries and regions, not just individual organizations or companies. European Union's environmental label application is an initiative launched to help consumers differentiate greener products and services. The EU environmental label can be provided for any service or product in areas other than food, beverages, pharmaceuticals and medicinal products.
This paper aims to conduct the process of sustainability assessment of environmental laboratories to achieve 29 points to go beyond eco label standards.

Keywords: Environmental laboratories, energy Efficiency, Eco Label, Turkey

EKO ETİKET SİSTEMİNİ KULLANARAK TÜRKİYE'DEKİ ÇEVRE LABORATUVARLARININ SÜRDÜRÜLEBİLİRLİK DEĞERLENDİRMESİ

ÖZET: Eko-Etiketin, sadece kuruluş veya firmalar değil, ülke ve bölgeler içinde önemli risk yöntemi ve rekabet avantajları sağladığı bilinmektedir. Avrupa Birliği'nin Eko-Etiket uygulaması, tüketicilerin daha yeşil ürün ve hizmetleri ayırt edebilmelerine yardımcı olmak amacıyla başlatılmış bir uygulamadır. AB Çevre etiketi, gıda, içecek, ilaç ve tıbbi ürünler dışındaki alanlarda herhangi bir hizmet ya da ürün için verilebilmektedir.
Bu makale, çevre laboratuarlarının 29 husus da eko etiket standartlarına ulaşmadaki sürdürülebilirlikdeğerlendirmesini yapmayı hedeflemiştir.

Anahtar Kelimeler: Çevre laboratuarları, enerji etkinliği, eko etiket, Türkiye

O 47. AKAGANEITE

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ABSTRACT: In this study it was aimed to introduce akaganeite, which is a recently produced alternative adsorbent obtained from natural materials. Its structure, properties and use in environmental works are mentioned. Akaganeite is an iron (Fe) based adsorbent found in mine ores, oceans, groundwater, hot springs, brine water bodies, acid soils and in some other natural bodies containing chloride. Although its cost is high for the time being, it is produced at temperatures much lower than activated carbon, so consuming much less energy, and it has high adsorption capacity. The physical and chemical properties of akaganeite change with its particle size, shape and morphology. Smaller particle size results in higher adsorption capacity. Heavy metals, phosphate, arsenic, uranium, surfactants are among the pollutants that can be removed from water by adsorption onto akaganeite. It can also be used in the modification of red mud used in bromine removal. It has not any adverse effects onto human and the environment. By these properties akaganeite is an environmentally important treatment material that is becoming common.

Keywords: Akaganeite, adsorption, treatment

AKAGANEİT

ÖZET: Bu çalşmada doğal malzemeden üretilen alternatif bir adsorban madde olarak ‘akaganeit’in tanıtılması amaçlanmıştır. Malzemenin yapısı, özellikleri, çevre çalışmalarında kullanım örnekleri üzerinde durulacaktır. Akaganeit demir esaslı adsorban bir maddedir. Madenler, okyanuslar, yer altı suları, sıcak tuzlu su ve asitli topraklar gibi klorür açısından zengin olan ortamlar çoğunlukla akaganeit içermektedir. Akaganeitin, maliyeti diğer adsorban maddelere göre şimdilik yüksek olsa da düşük sıcaklıklarda elde edilmektedir ve başarılı bir adsorbandır. Akaganeitin fiziksel ve kimyasal özellikleri büyüklüğüne, şekline ve morfolojisine göre değişmektedir. Akaganeitin tanecik boyutu küçük olduğu için diğer adsorban maddelere göre adsorblama kapasitesi daha yüksektir. Ağır metal, fosfat, arsenik, uranyum, yüzey aktif madde, krom(VI) gibi kirleticilerin uzaklaştırılmasında kullanılmaktadır. Aynı zamanda çamurdan bromatın uzaklaştırılmasında kullanılan kızıl çamurun modifiyesinde kullanılmaktadır. Sudan kirleticilerin uzaklaştırılmasında kullanıldığında çevreye ve insan sağlığına herhangi bir zararı bulunmamaktadır. Bu özellikleri ile akaganeit çevresel açıdan önemli bir alternatif arıtım malzemesi olarak yaygınlaşmaktadır.

Anahtar Kelimeler: Akaganeit, adsorpsiyon, arıtım

O 48. MAPPING APPROACH FOR DEVELOPMENT OF INDUSTRIAL SYMBIOSYS SYSTEMATICS: MARBLE INDUSTRY CASE STUDY

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ABSTRACT: Waste is generated after many industrial production processes. If the wastes are not managed correctly, it pollutes the environment and damages it. Some industrial wastes can be used for another industry. They can carry the value of the material. They can interact with each other and evaluate the wastes they create. The purpose of this study is to develop an approach to help the development of an industrial symbiosis system in order to enlarge the scope and borders of industrial symbiosis which has being done mainly in local and limited scale. The approach is depended on estabishment of sectoral maps and overlaying the maps of sectors which have potential for symbiosis. Marble industry in Turkey was selected as the example data. Locations, capacities and waste quantities data of the marble producers were collected and located on the Turkey map. After mapping, the spatial analyses will help to determine the convenient regions where the symbiosis investments would be more economical and environmentally important. This study was a part of the research on large scale mapping and spatial analysis project that is being performed for industries in country-wide.

Keywords: Industrial symbiosis, marble wastes, mapping

ENDÜSTRİYEL SİMBİYOZ SİSTEMATİĞİ GELİŞTİRMEK İÇİN HARİTALAMA YAKLAŞIMI: MERMER ENDÜSTRİSİ ÖRNEĞİ

ÖZET: Bir çok endüstride üretim prosesleri sonrası atıklar oluşmaktadır. Bu atıklar doğru yönetilmez ise çevreyi kirletmekte ve zarar vermektedir. Bazı endüstrilerin atıkları bir başka endüstri için kullanılabilir nitelikte madde değeri taşıyabilmektedir. Bu endüstriler birbirleri etkileşim içine girip, oluşturdukları atıkları değerlendirebilir. Bu etkileşime endüstriyel simbiyoz denir. Bu çalışmanın amacı bireysel veya yerel ölçekte ve sınırlı ölçüde yapılmakta olan endüstriyel simbiyozu daha geniş ölçeklere taşıyabilmek için sistematik geliştirilmesine yardımcı olacak bir yaklaşım geliştirilmesidir. Endüstrilerin sektör bazında haritalama yapılması ve birbiriyle simbiyoz ilişkisi olabilecek alternatiflerin üst üste haritalar yöntemiyle çakıştırılması esasına dayanan bu yaklaşım için bu çalışmada Türkiye'deki mermer endüstrisi seçilmiştir. Kayıtlı mermer üreticilerinin üretim kapasiteleri mermer çıkarma ve mermer kesimi prosesleri sonucu oluşan mermer atıkları miktarı ve hangi illerde oluştuğu tespit edilmiş ve haritalanmıştır. Haritalama sonrasında konumsal analizler ile yer tespiti, simbiyoz yatırımlarının daha ekonomik ve daha çevreci olacağı uygun yerlerin tespitine yardımcı olacaktır. Bu çalışma Türkiye'deki diğer endüstrileri de kapsayan geniş ölçekli bir haritalama altyapısı ve konumsal analiz çalışmasının bir parçası olarak tamamlanmıştır.

Anahtar Kelimeler: Endüstriyel simbiyoz, mermer atıkları, haritalama

O 49. MOBILE APPLICATION PROJECT THAT MAKES ENVIRONMENTAL AUDITING MORE EFFICIENT AND PROVIDES LOCATION AND TIME DETAIL PHOTO SHARING

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ABSTRACT: Environmental pollution and environmental problems are one of the problems that people have to solve urgently and worry about their negative consequences. The existing mechanisms to prevent environmental pollution are inadequate. The development and dissemination of technology makes it possible to effectively use smartphones and mass media. As an alternative to existing solutions and control systems in order to prevent and struggle environmental pollution, a time and location based mobile application has been developed that enables one to record the environmental pollution and share it. The mobile application aims to facilitate communication between individuals and public institutions for collective environmental action.
Through the application, the individuals can photograph and comment on the points where the pollution is detected, and the images are stored in the cloud system after the sharing process. With the help of the system, the authorities in the region can see the pollution on the map with time and location information. Pollution can be detected instantaneously 7 days and 24 hours by application.

Keywords: Environmental awareness, Auditing, Mobile Application

TÜRKİYEDE ÇEVRE DENETİMLERİNİ DAHA ETKİN HALE GETİRMEK AMACI İLE ANLIK KONUM TABANLI FOTOĞRAF PAYLAŞIMI YAPABİLEN MOBİL UYGULAMA PROJESİ

ÖZET: Çevre kirliliği ve çevre sorunları insanoğlunun acilen çözüm bulması ve olumsuz sonuçları dolayısı ile kaygılanması gereken problemlerin başında gelmektedir. Çevre kirliliklerinin tespiti ve önlenmesi konusunda ihbar hatları gibi mevcut mekanizmalar yetersiz kalmaktadır. Teknolojinin gelişmesi ve yaygınlaşması akabinde akıllı telefon ve kitlesel haberleşme kavramı da hayatımıza girmiştir. Çevre kirliliğini önleme ve müdahale etme konularında mevcut çözüm yolları ve denetim sistemlerine alternatif bir yol olarak, çevre kirliliklerini akıllı telefonlar aracılığı ile konumu ve zamanı kayıtlı olarak görüntülenip, paylaşımına olanak sağlayan bir mobil uygulama geliştirilmiştir. Mobil uygulamanın bireyler ve kurumlar arasında çevre kirliliğini önleme ve müdahale etmede bir köprü görevi görmesi ve kitlesel olarak çevre mücadelesine olanak sağlaması amaçlanmıştır.
Uygulama aracılığı ile bireyler, kirliliklerin tespit edildiği noktalarda fotoğraflayabilir, yorum ve açıklama yaparak paylaşabilir, paylaşma işleminin ardından görseller bulut sisteminde depolanır, oluşturduğumuz web arayüzü sayesinde o bölgede yer alan yetkili kurumlar ilgili kirlilikleri konum ve zaman tabanlı olarak harita üzerinden görebilir. Uygulama sayesinde 7 gün 24 saat anlık olarak kirlilikler tespit edilebilmektedir.

Anahtar Kelimeler: Çevre Duyarlılığı, Denetim, Mobil Uygulama

O 50. EVALUATION OF URBAN HEAT ISLAND INTERACTION WITH URBANIZATION IN KONYA CITY

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ABSTRACT: The proportion of urban green spaces in urban structured environment directly affects the urban climate, especially the urban heat island effect. With the decrease of this ratio in the cities, the humidity of the air decreases and the evaporation decreases accordingly. The increase in the structural areas at different heights of impervious urban surfaces (concrete buildings and asphalt coverings) creates local and regional differences in the urban micro-climate. Metropolitan cities have their own unique climatic spaces. This situation, which can also affect global warming, can eliminate the temperature increasing effect of urban heat island with the optimization of building solar relation in city planning and single structure scale. Rapid urbanization in Konya is based on the hypothesis that there are variations in climate parameters resulting from intensive construction and urban expansion. The study was based on spatial development based on the planning activities of Konya in 1940, 1980, 2000 and 2017. The meteorological values of past and present and the change of urban heat islands in these years will be determined. Relations between meteorological parameters, green areas and density of deposition will be revealed by evaluating the deposition and solar relationships in the two selected areas. As a result, strategies will be developed to eliminate the urban heat island effect for the Konya Metropolis.

Keywords: Konya, Urban Planning, Buildings, Urban Heat Iseland.

KONYA KENTİNDE KENTLEŞME İLE ISI ADASI ETKİLEŞİMİNİN DEĞERLENDİRİLMESİ

ÖZET: Kentsel yeşil alanların kentsel yapılaşmış çevre içindeki oranı, kentlerin iklimini özellikle de kentsel ısı adası etkisini doğrudan etkilemektedir. Kentlerde bu oranının azalması ile havanın nemi, buharlaşma da ona bağlı olarak azalmakta, geçirimsiz kentsel yüzeylerin (beton binalar ve asfalt kaplamalar) farklı yükseklikteki yapısal alanların artması ile kent mikro klimasında yerel ve bölgesel farklılıklar oluşmakta, metropoliten kentlerde kendine özgü iklimsel mekânlar meydana gelmektedir. Küresel ısınmayı da etkileyebilen bu durum, şehir planlama ve tek yapı ölçeğinde bina güneş ilişkisinin optimazyonu ile kentsel ısı adalarının sıcaklık arttırıcı etkisini bertaraf edebilecektir. Konya kentinde hızlı kentleşme, yoğun yapılaşma ve kentsel yayılma sonucu iklim parametrelerinde farklılaşmalar olduğu hipotezine dayalı olarak, çalışmada 1940, 1980, 2000 ve 2017 yıllarına ait Konya kenti planlama faaliyetlerine dayalı olarak gerçekleşen mekânsal gelişim baz alınarak, geçmiş ve günümüz meteorolojik değerleri ile kentsel ısı adalarının bu yıllar içindeki değişimi tespit edilecek, seçilen iki bölgede yapılaşma ve güneş ilişkileri değerlendirilerek, meteorolojik parametreler, yeşil alanlar ve yapılaşma yoğunluğu arasındaki ilişkiler ortaya konulacaktır. Sonuçta Konya Metropolü için kentsel ısı adası etkisini bertaraf etmeye yönelik stratejiler geliştirilecektir.

Anahtar Kelimeler: Konya, Kent Planlama, Yapılaşma, Kentsel Isı Adası.

O 51. INVESTIGATION OF SUSTAINABLE TRANSPORTATION STRATEGIES IN CAMPUS

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ABSTRACT: Interest and need for motor vehicles have increased in recent years. The rapidly increasing number of motor vehicles in Turkey is also observed in Selcuk University Campus as well. An average of 20,000 vehicles enter the campus daily. Exhaust gases from motor vehicles are harmful to the atmosphere which also creates soil, water and air pollution. The increase of these pollutions in the environment can reach a level which threaten the environmental health. Environment-friendly transportation methods and alternative solutions should be proposed to prevent the pollution in order to ensure sustainability of university campus and the surrounding environment for being an ideal living place in the future. In this study, preferred transportation type by the personnel and students that come to Selcuk University campus was investigated. The awareness of "sustainable university" concept among the students and employees in the campus was surveyed. Requirements for a more sustainable campus and ways to encourage alternative methods of transportation were discussed.

Keywords: Transportation, Campus, Sustainability

YERLEŞKEDE SÜRDÜRÜLEBİLİR ULAŞIM STRATEJİLERİNİN İNCELENMESİ

ÖZET: Son yıllarda motorlu taşıtlara olan ilgi ve ihtiyaç günden güne artmaktadır. Türkiye'de hızla artan motorlu taşıt sayısı Selçuk Üniversitesi Alaaddin Keykubat Yerleşkesinde de gözlenmektedir. Yerleşke içerisine günlük ortalama 20000 araç giriş-çıkış yapmaktadır. Motorlu taşıtlardan kaynaklı egzoz gazları atmosfere zarar vermekte; toprağın, suyun ve havanın kirlenmesine sebep olmaktadır. Çevrede artış gösteren bu maddeler çevre sağlığını tehdit eder boyutlara ulaşabilmektedir. Üniversite yerleşkesinin ve yaşanılan çevrenin sürdürülebilirliğin sağlanması ve gelecekte ideal bir yaşam alanı olarak kalabilmesi için bu kirliliği önlemek amacıyla çevreci ulaşım yöntemleri ve alternatif çözüm önerilerinden faydalanılmalıdır. Bu çalışmada öncelikle Selçuk Üniversitesi merkez yerleşkesine gelen personel ve öğrencilerin hangi ulaşım yollarını tercih ettikleri belirlenmiştir. Yerleşke içinde bulunan öğrenci ve çalışanların "sürdürülebilir üniversite" bilgileri anket yapılarak ortaya konulmuştur. Bunun yanında, daha sürdürülebilir bir yerleşke için ulaşım konusunda neler yapılması gerektiği ve alternatif ulaşımı teşvik edici yöntemler tartışılmıştır.

Anahtar Kelimeler: Ulaşım, Yerleşke, Sürdürülebilirlik

O 52. HYDROPOWER POTENTIAL IN TURKEY WITH THE COMPARISON OF OTHER COUNTRIES

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ABSTRACT: Nowadays as the growing of the population, the demand of energy also increases. Therefore, producing energy is necessary to meet the energy demand. However, current way of energy production and usage is not sustainable. For this reason, many countries seek renewable energy sources and set their own policies. As one of these renewable energy sources, hydropower is based on the principle of generating electricity by utilizing the potential energy of falling or flowing water. For this purpose, hydroelectric power plants which can produce energy by taking advantages of reserved water, are used. Water turbines are used in converting the potential energy to electricity. In this study, water turbines which are used in hydroelectric power plants, have been compared and Hydropower potential in the world, Europe and Turkey have been examined. An overview of the status of Turkey with comparison to other countries is presented.

Keywords: Hydropower potential, Renewable energy, Hydroelectric power plant, Turbines

TÜRKİYE'DEKİ HİDROGÜÇ POTANSİYELİ VE DÜNYA ÜLKELERİYLE KIYASLANMASI

ÖZET: Günümüzde nüfusun artmasıyla enerjiye olan gereksinim de artmaktadır. Dolayısıyla birçok ülkenin enerji tüketimini karşılayabilmesi için enerji üretmesi gerekmektedir. Ancak mevcut enerji üretimi ve kullanımı sürdürülebilir değildir. Bu nedenle birçok ülke kendi politikalarını belirleyerek yenilenebilir enerji kaynaklarına yönelmektedir. Bu yenilenebilir enerji kaynaklarından biri olan hidrogüç; düşen veya akan suyun akış gücünden yararlanarak elektrik enerji elde edilmesi esasına dayanır. Bu amaçla barajlarda biriken suyun potansiyelinden enerji elde edilmesini sağlayan hidroelektrik santraller kurulmaktadır. Bu noktada enerjinin elektriğe dönüştürülmesinde su türbinleri kullanılmaktadır. Bu çalışma kapsamında; hidroelektrik santrallerde kullanılan su türbinleri karşılaştırılmış olup Dünya, Avrupa ve Türkiye'deki hidrogüç potansiyeli incelenmiştir. Türkiye'deki mevcut durumun dünya ülkeleriyle kıyaslanması bakımından genel bir değerlendirme yapılmıştır.

Anahtar Kelimeler: Hidrogüç potansiyeli, Yenilenebilir enerji, Hidroelektrik santral, Su türbinleri

O 53. REUSE OF TREATED WASTEWATER FOR GOLF COURSES IRRIGATION: THE CASE OF ANTALYA (TURKEY)

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ABSTRACT: The amount of water consumed is rapidly increasing due to factors such as population growth, industrial development, rapid technological progress. Although water is easy to access, the water resources are increasingly decreasing. This brings about the reuse of wastewater. One of the most important applications in the urban reuse of treated wastewater is the irrigation of golf courses.
In this study, a questionnaire about irrigation criteria and reuse of irrigation was issued to golf courses located in Belek, Antalya province. The information obtained from this map shows the quality of the water used by the golf courses for irrigation, the times when the irrigation is required, the resources they meet, and the unit and payment for the irrigation.
Process flow schemes and effluent water quality were obtained from the treatment plants in the Belek district. As a result, the required standards have been achieved for the wastewater in the watering of golf courses.

Keywords: Golf Courses, Irrigation, Wastewater, Reuse of Wastewater, Antalya.

ARITILMIŞ ATIKSULARIN GOLF SAHALARININ SULANMASINDA YENİDEN KULLANIMI: ANTALYA ÖRNEĞİ

ÖZET: Tüketilen su miktarı; nüfus artışı, sanayinin gelişimi, hızlı teknoloji ilerlemesi gibi etkenlerden dolayı hızla artmaktadır. Talep edilen su ihtiyacına ulaşım şu an kolay olsa bile Dünyada bulunan su kaynakları giderek azalmaktadır. Bu durum ise atıksuların yeniden kullanılmasını gündeme getirmektedir. Arıtılmış atıksuların kentsel yeniden kullanımında en önemli uygulamalardan biri de golf sahalarının sulanmasıdır.
Bu çalışmada Antalya ili Belek ilçesinde bulunan turistik otellerden golf sahası işletmesi bulunan tesislere arıtılmış atıksuyun yeniden kullanımı hakkında bir anket düzenlenmiştir. Bu anketten elde edilen bilgiler ışığında golf sahalarının sulama için kullandıkları suyun kalitesi, sulama yapılması gereken zamanlar, sulama ihtiyaçlarını karşıladıkları kaynaklar ve bu sulama için ödeme yapılması gereken birim ve ödeme miktarları incelenmiştir.
Belek ilçesinde bulunan atıksu arıtma tesisleri incelenerek proses akım şemaları ve arıtılmış atıksu kaliteleri incelenerek golf sahalarının sulanmasındaki uygunluğu değerlendirilmiştir.

Anahtar Kelimeler: Golf Sahası, Sulama, Atıksu, Atıksuyun Yeniden Kullanımı, Antalya

O 54. GETTING DRINKING WATER FROM SEA AND WASTEWATER: COST AND SOCIAL ANALYSIS

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ABSTRACT: Pressures and impacts on water resources are increasing day by day due to the increasing population, industry, drought, climate change. In addition, there is a decrease in water resources in some countries due to the increase in tourism activities. For all these reasons, many international organizations have started economic and administrative studies for the sustainability of water resources and for the production of healthy water. In today's countries exposed to drought and water poverty, the acquisition of drinking water from non-conventional sources with today's technology has been an acceptable solution in many respects. In some countries where water is not poor yet but is under water stress or is rich in water, they have started to take measures through the elimination of drinking water from unconventional sources. These resources can be called home waste and sea water. It is not possible to realize these treatments without using membrane systems. Operating and initial investment costs are very high, and these treatment systems are decreasing due to the development of membrane technology. The use of these processes is becoming more and more common day by day. Membrane processes that operate with high treatment efficiency produce high concentrations of waste. The disposal or recycling of this waste must be acceptable by the ecosystem. Although the membranes meet the criteria for drinking water, the purified drinking water can attract the public's reaction from the point of view of the water resources. As a result of all these positive and negative situations, drinking water from wastewater and sea water is an important solution to water scarcity.

Keywords: water scarcity, membrane, water, wastewater, sea water, drinking water

DENİZDEN VE ATIKSUDAN İÇME SUYU ELDE EDİLMESİ: MALİYET VE SOSYAL AÇIDAN İNCELEME

ÖZET: Su kaynakları üzerindeki baskılar ve etkiler; artan nüfus, sanayi, kuraklık, iklim değişiklikleri gibi bir çok faktöre bağlı olarak gün geçtikçe artmaktadır. Ayrıca bazı ülkelerde turizm faaliyetlerinin artması ile birlikte su kaynaklarında azalma gözlenmektedir. Tüm bu sebeplerden dolayı uluslararası birçok örgüt su kaynaklarının sürekliliği güvenilirliği ve sağlıklı su üretimi için ekonomik ve idari çalışmalar başlatmıştır. Günümüzde kuraklığa maruz kalan ve su fakiri olan ülkelerde günümüz teknolojisi ile konvansiyonel olmayan kaynaklardan içme suyu eldesi birçok açıdan kabul edilebilir bir çözüm önerisi olmuştur. Henüz su fakiri olmayan fakat su stresi altında olan veya su zengini olan bazı ülkelerde konvansiyonel olmayan kaynaklardan içme suyu eldesiyle kendilerine önlem almaya başlamışlardır. Bu kaynaklar evsel atık sular ve deniz suyu olarak adlandırılabilir. Uygun arıtımların membran sistemler kullanılmadan gerçekleştirilmesi pekte mümkün değildir. İşletim ve ilk yatırım maliyetleri oldukça yüksek olan bu arıtım sistemleri membran teknolojisindeki gelişmeye bağlı olarak azalmaktadır. Bu proseslerin kullanımı gün geçtikçe daha yaygın hale gelmeye başlamıştır. Yüksek arıtım verimiyle çalışan membran prosesler yüksek konsantrasyonda atık meydana getirmektedir. Bu atığın bertarafı veya geri dönüşümü ise ekosistem tarafından kabul edilebilir olmalıdır. Membranlar her ne kadar içme suyu kriterlerini sağlasa da su kaynakları açısından arıtılmış içme suyu halkın tepkisini çekebilmektedir. Tüm bu olumlu ve olumsuz durumlar sonucundan atık sudan ve deniz suyundan içme suyu eldesi su kıtlığı için getirilmiş önemli bir çözüm önerisidir . Bu bildiride, atıksudan ve deniz suyundan içmesuyu temininde maliyet ve sosyal kabul edilebilirlik değerlendirilmiştir.

Anahtar Kelimeler: su kıtlığı, membran, su, atık su, deniz suyu, içme suyu

O 55. PUBLIC PARTICIPATION IN REUSE OF TREATED WASTEWATER

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ABSTRACT: Recycled waste water; domestic, industrial waste water treated by physical, chemical, biological methods for beneficial purposes. Recycled wastewater is an option for water shortage. Research and studies are being carried out about recycled water in Turkey and many places in the World. At the same time, success of reuse practices depends on the public acceptance. Public participation starts with a clear understanding of reuse. Some projects has failed because there is no public support even they are good enough for economically, scientifically and technically. Our paper goal is to assess the public participation and public impact of the recycled wastewater. Public has some concerns about using recycled wastewater. These worries are about the political situation, geographical situation, educational status, ethnicity, gender and age difference, misuse of terminology, disgust factor. For example, common terms like " tap to the toilet " can negatively affect people. The terms should be used easy to understand for public. It is recommended to use more understandable terms to accept recycled wastewater. Another negativity is the "yuck factor". Thoughts about drinking recycled waste water making people's uncomfortable. The recycled water is actually gives the same taste as drinking water, although it makes people's uncomfortable. It is possible to earn the trust of the public by involving them in to this process. In many communities it has been widely acknowledged despite the fact that recycled wastewater has been countered. Recycled wastewater is available in various fields in countries such as America, Australia, Singapore, Spain, Israel, Japan. Some areas recycling practices and public participation activities are carried out in Turkey. In this paper, outstanding studies and survey results has been researched and investigated.

Keywords: Recycled waste water, Public Participation, Water Reuse, Yuck Factor

ARITILMIŞ ATIK SULARIN YENİDEN KULLANIMINDA HALKIN KATILIMI

ÖZET: Yeniden kazanılmış atık su; evsel, endüstriyel kaynaklardan gelen atık suların faydalı bir amaç için fiziksel, kimyasal, biyolojik yöntemlerle arıtılmasıdır. Yeniden kazanılmış atık su, su kıtlığı için bir seçenek oluşturmaktadır. Türkiye'de ve Dünya'nın birçok yerinde atık suyun yeniden kullanılması hakkında çalışmalar yapılmaktadır. Bununla birlikte yeniden kullanım uygulamalarının başarısı halkın kabulüne bağlıdır. Halkın katılımı yeniden kullanım uygulamasının net bir şekilde anlamasıyla başlar. Halkın desteği olmadığı için son yıllarda yapılan bazı projeler ekonomik, bilimsel ve teknik açıdan yeterli olsa bile başarısız olmuştur. Bu bildiride amacımız geri kazanılmış atık suların yeniden kullanımında halkın katılımının ve etkisinin değerlendirilmesidir. Halkın geri kazanılmış atık suyun kullanımıyla ilgili bazı endişeleri vardır. Bu endişeler; siyasi durum, coğrafi durum, eğitim durumu, etnik durum, cinsiyet ve yaş farklılığı, terminolojinin yanlış kullanımı, iğrençlik faktörü gibi durumları içermektedir. Bu durumlardan, ''tuvaletten musluğa'' gibi yaygın terimler insanları olumsuz şekilde etkileyebilir. Terimlerin mümkün olduğunca halkın anlayacağı şekilde kullanılması gereklidir. Geri kazanılmış atık suyun kabul edilmesi için daha anlaşılır terimlerin kullanılması önerilir. Bir diğer etken ise ''iğrençlik faktörü'' dür. Geri kazanılmış atık suyu içme düşüncesi insanları rahatsız etmektedir. Her ne kadar rahatsız etse de yeniden kazanılmış su aslında içme suyu ile aynı tadı vermektedir. Halkın bu sürece katılımını sağlayarak güvenlerini kazanmak mümkündür. Birçok toplulukta yeniden kazanılmış atık suya karşı çıkılmış olmasına rağmen yine de yaygın bir şekilde kabul edilmiştir. Amerika, Avusturalya, Singapur, İspanya, Belçika, İsrail, Japonya gibi ülkelerde yeniden kazanılmış atık suyun çeşitli alanlarda kullanımı mevcuttur. Türkiye'de ise bazı bölgelerde yeniden kazanım uygulamaları ve halkın katılımı çalışmaları yapılmaktadır. Bu bildiri kapsamında öne çıkan çalışmalar ve bu konuda yapılan anket sonuçları araştırılıp incelenmiştir.

Anahtar Kelimeler: Geri Kazanılmış Atık Su, Halkın Katılımı, Yeniden Kullanım, İğrençlik Faktörü.

O 56. ENVIRONMENTAL RISKS IN INDUSTRIAL SECTOR HOW CAN IT BE MINIMIZED?

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ABSTRACT: Since the 1970s, sustainability has not been thought of using our natural resources with industrialization as if they were never going to end. However, in addition to the level of welfare of the industry, the damage to the environment is too numerous to be ignored and solutions should be applied. After the Stockholm environment conference in 1972, environmental awareness began. In 1992, the environmental conference held in Rio de Janeiro and the principle of sustainable development was adopted by the world and environmental management systems were developed.ISO 14001 environmental management system is a series of standards implemented to control and minimize environmental impacts of enterprises.In this study, the evaluation of environmental risks within the scope of ISO 14001 and the use of cloud technology as a solution proposal will be taken into consideration by selecting a specified industrial sector.

Keywords: ISO 14001, Industry and Environment, Cloud Technology

SANAYİ SEKTÖRÜNDE ÇEVRESEL RİSKLER NASIL EN AZA İNDİRİLEBİLİR?

ÖZET: 1970'li yıllardan itibaren sanayileşmeyle birlikte doğal kaynaklarımız hiç bitmeyecekmiş gibi kullanılarak sürdürülebilirlik düşünülmemiştir. Oysa ki sanayinin sağlamış olduğu refah seviyesinin yanında çevreye vermiş olduğu zarar göz ardı edilmeyecek kadar çoktur ve çözüm yollarına başvurulmalıdır. 1972'de Stockholm Çevre Konferans'ından sonra çevre konusunda hassasiyet başlamıştır. 1992 yılında Rio de Janerio'da düzenlenen Çevre Konferansı ile sürdürülebilir kalkınma prensibi dünya tarafından benimsenmiştir ve çevre yönetim sistemleri geliştirilmiştir. ISO 14001 Çevre Yönetim Sistemi işletmelerin çevresel etkilerini kontrol altına alabilme ve en aza indirebilmek için uygulanan bir standartlar serisidir. Bu çalışmada belirlenen bir sanayi sektörü seçilerek ISO 14001 kapsamında çevresel risklerinin değerlendirilmesi ve çözüm önerisi olarak bulut teknolojinin kullanılması ele alınacaktır.

Anahtar Kelimeler: ISO 14001, Sanayi ve Çevre, Bulut Teknoloji

O 57. FRESHWATER SPECIES INVASION: SPECIFIC PATTERNS OF DRESISSENA IN CASCADE RESERVOIRS OF DRINI RIVER IN THE NORTHERN ALBANIA

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ABSTRACT: The zebra mussel, Dreissena polymorpha is an aquatic invasive species originally native to the Ponto-Caspian region where it is found in lakes and delta areas of large rivers draining into the Black and Caspian seas. The dispersal of D. polymorpha began at the end of the 18th century, at a time when navigation was becoming an important transportation mean in Europe. The relatively late invasion of northern Albanian freshwater systems was caused by the construction of new reservoirs for energy purposes and hydrological connection with natural water bodies. The purpose of this paper is to present the current trends of Dressena invasion in the artificial water bodies and offer hypotheses on predictable patterns driven by invasion based on Lakes data. The affection of bivalves (in an accelerated invasion of tributaries the aquatic cave livings might be considered) is predicted here. Presence, distribution and abundance of Dreissena larvae in the plankton of lakes Komani and Fierza, confluence parts of the streams Shala and Curraj were studied in spring and late summer 2015. Quantitative samples were collected in late May and early September from 2 sites in each lake and lower rivers part. We revealed that Dreissena larvae were present at different depths of the water column in four lakes sites. It has been assessed that the abundance was almost four of that recorded for the Lake Ohrid and 1, 5 from the data of Presp Lake, respectively in Koman 5800 individuals/m3 and in Fierza 5500 individuals/m3. During the autumn the abundance was significantly low with a maximum at the level from 4-0 m. The invasions of Dreissena are transforming benthic macroinvertebrate com¬munities in lakes and rivers throughout Europe and in case of north Albanian reservoirs and associated tributaries. The extensive overgrowth of unionids by Dreissena, resulting in mass mortality, is characteristic of periods of rapid population growth, when Dreissena invade new reservoirs.

Key words: Freshwater, invasion, bivalve, Drini river, streams

O 58. MANURE MANAGEMENT SYSTEMS OF DAIRY CATTLE FARMS IN ILGIN-KONYA AND ENVIRONMENTAL EFFECTS

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ABSTRACT: Environmental pollution is one of the most important problems that threaten human life. The effects of the gases from the wrong manure management practices in livestock farms in greenhouse gas production are too high to be overlooked. This study was carried out in 2017-2018 in order to identify manure management practices and problems of dairy cattle farm in Ilgın-Konya and to develop solution suggestions. In the study, 20 enterprises with the ability to represent the dairy cattle farms in the region determined using the objective sampling method were examined. No biogas plants were found in the study area. A significant part of the dairy farms collects the manure with automatic scrapers and stores them in an open area within the farm. In the dairy farms, obtained manures were evaluated by applying to their own agricultural land. As a result of the research, it is recommended that indoor air quality can be kept under hazardous levels for animals and working people in the livestock building, and in terms of environmental pollution, the animal manure management system should be constructed and managed in accordance with the planning principles.

Keywords: Dairy cattle farm, Ilgın, Manure management, manure collection

O 59. KONYA SUGAR INDUSTRY AND TRADE INC. STRUCTURAL CHARACTERISTICS OF DAIRY CATTLE FARMS

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ABSTRACT: Milk has a very important for human nutrition. In order to produce high quality milk, it is necessary to determine the appropriate to animal welfare of the dairy farms with the researches and to propose solutions. The dairy farms of Konya Sugar Industry and Trade Inc. are the biggest farms in the Konya region, as well as important for the region's animal husbandry in order to support and develop the region's animal husbandry.
This study was carried out between 2017-2018 in order to determine the structural characteristics of dairy cattle farms in Konya Sugar Industry and Trade Inc. and to determine the suitability for animal welfare. Sugar Industry and Trade Inc. carries out animal husbandry activities on 6 separate farms under the name of Meram campus. From these farms, Şekersüt and Çumpaş are dairy cattle farms. Şekersüt dairy farm was built in 2005 while Çumpaş dairy farm was built in 2006. They had an animal capacity of 9 thousand and 1000 thousand, respectively. The farms are in semi-open loose and free-stall houses with high technology usage. Increasing the number of high-capacity dairy farm using high technology and information should be beneficial in raising the region and country's animal husbandry to the desired level.

Keywords: Dairy cattle farms, Çumpaş, Şekersüt, structural analysis.

KONYA ŞEKER SANAYİ VE TİCARET A.Ş BÜNYESİNDEKİ SÜT SIĞIRI İŞLETMELERİNİN YAPISAL ÖZELLİKLERİ

ÖZET: Süt insan beslenmesinde oldukça önemli bir yere sahiptir. Kaliteli süt üretimi için süt sığırı barınaklarının hayvan refahına uygunluklarının yerinde yapılan araştırmalarla tespit edilmesi ve çözüm önerilerinin geliştirilmesi gerekmektedir. Konya Şeker Sanayi ve Ticaret A.Ş bünyesindeki çiftliklerin, Konya Bölgesinde en yüksek kapasiteye sahip çiftlikler olması yanı sıra bölge hayvancılığını desteklemek ve geliştirmek amacına sahip olması bölge hayvancılığı için önemlidir. Bu çalışma, Konya Şeker Sanayi ve Ticaret A.Ş bünyesindeki süt sığırı işletmelerindeki barınaklarının yapısal özelliklerinin belirlenmesi ve hayvan refahına uygunluğunun tespit edilmesi amacıyla 2017-2018 yılları arasında yürütülmüştür. Konya Şeker, Meram kampüsü adı altında hayvancılık faaliyetlerini 6 ayrı çiftlikte yürütmektedir. Bunlardan Şekersüt ve Çumpaş çiftliklerinde ise süt üretimi yapılmaktadır. Şeker çiftliği 2005 yılında faaliyete geçmiş 9.000 baş kapasiteye sahip iken Çumpaş çiftliği 2006 yılında faaliyete geçmiş 1.000 baş kapasiteye sahiptir. İşletmeler teknoloji kullanım düzeyi yüksek, yarı açık serbest ve serbest duraklı barınaklardan oluşmaktadır. Bölge ve ülke hayvancılığının istenilen kalite ve verim düzeyine yükseltilmesinde, bilgi ve teknolojiyi üst düzeyde kullanan yüksek kapasiteli işletmelerin sayılarının artması faydalı olacaktır.

Anahtar Kelimeler: Süt sığırı barınağı, Çumpaş, Şekersüt, yapısal analiz.

O 60. DETECTION OF ANTI-IgE SPECIFIC FOR ALLERGIC DISORDERS THROUGH ALLEISASCREEN IMMUNOBLOT ASSAY

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ABSTRACT: The aim of this study is to understand and identify allergic reactions as well as the allergens responsible for their development through immunological methods. This knowledge will improve establishing the diagnosis, optimize treatments against specific allergies as well as reduce or even avoid their occurrence. The first two cities in Albania with the highest presence of allergens are Tirana, the capital, and Elbasan, third largest city in Albania. It has been observed an increase in the percentage of the population experiencing allergic diseases, with the highest incidence of the respiratory and food allergies. The elevated levels of air pollution, especially due to the increased number of private automobiles, and malnutrition including fast- and canned- food have negatively influenced the development of allergies among the population. In our study, three groups between the ages of 0-10, 11-20 and over 21 years old were screened using the Alleisascreen immunoblot assay. A total number of 100 patients were tested for respiratory and food allergy. In parallel 50 persons from both cities were randomly questioned about their personal knowledge regarding allergies. Our results demonstrated that 66% of the population showed positive reactions. Among them, almost 43% were sensitive to respiratory allergens, while 56% to food allergens. The first age groups (0-10 years old) was the most affected from allergic reactions. Of great interest was the fact that despite the high incidence of positive allergic reactions, there is a lack of information about allergies leading to a mishandling of the disease.

Keywords: allergens, pollution, immunological methods, allergy

O 61. ESTIMATION OF FOOD ALLERGIES THROUGH THE EIA TEST

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ABSTRACT: For more than 50 years, many children with food protein allergies and other forms of dietary protein intolerance have been treated successfully with protein hydrolysates with highly reduced allergenicity and, more recently, also with products based on amino acid mixtures. In this article, we summarize the general state of knowledge about the healthy immune response to antigens in the diet as well as the basis of immune deviation that results in IgE sensitization and allergic reactivity to foods. The increasing prevalence of food allergies cannot be explained by genetic factors. Thus, external factors such as environmental factors are considered to play a role in the development of food allergies. The interface between the external environment and the immune system is formed by the intestinal epithelium. Emerging data suggest that the interaction between intestinal epithelial cells and mucosal dendritic cells is of particular importance and determines the outcome of immune responses to dietary antigens. Nine hundred Albanian children from the age of 6 to 11 years old from two different elementary schools in Tirana served as a representative sample group in our study. They were first requested to fill in a questionnaire reporting all food allergies they had experienced. Afterwards, all children were examined for blood levels of immunoglobulin E (IgE) using the Enzyme Immunoassay (EIA) kits.

Keywords: immune response; food allergy; immunoglobulin; antigen

O 62. PRENATAL DETERMINATION OF FETAL RHESUS D STATUS IN ALLOIMMUNIZED RH D-NEGATIVE PREGNANT WOMEN

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ABSTRACT: RHD genotyping based on the control of only a specific RHD sequence, exon 7, may be a reasonable and non high-cost test for the Albanian population. In most countries D typing is routinely performed in all blood donors, transfusion recipients and pregnant women. Consequently, clinical complications due to mismatched transfusions are infrequent, but despite the use of immunosuppressive therapy with anti-D immunoglobulin prophylaxis, D alloimmunization in pregnancy still occurs. The present paper aims at determining Rhesus D status of the foetus in the alloimunized D-negative pregnant women. Twenty eight positive IAT mothers with high value of antibodies titration were in the present investigation selected. With consent, DNA was extracted from amniocytes to identify the foetal RHD gene-specific sequence with the use of PCR. Identification of RHD exon 7 was performed via polymerase chain reaction (PCR) with sequence-specific primers (SSP) RHD exon7s and RHD exon7a that generates a 93-base pair (bp) product, while a 97-bp GAPDH gene sequence was amplified in parallel with primers GAPDH R7s and GAPDH R7a to serve as a control of amplification. A normal D-positive sample, a normal D negative sample and a no template control (NTC) comprised the internal controls for PCR amplification. All amplifications were subsequently analysed using agarose gel electrophoresis. Seventeen samples (85%) amplified the RHD exon 7 sequence. Only 4 samples (15%) did not amplify. The foetuses were respectively qualified as RhD positive and RhD negative. These results correlated perfectly with the serological Rh typing of the new-borns. In this study, a molecular analysis was standardized to identify a specific sequence of the fetal RHD gene.

Keywords: RhD alloimmunization, Rh-blood system, RHD genotyping

O 63. EVALUATION OF NOISE POLLUTION IN URBAN AREAS, REVIEW STUDY

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ABSTRACT: Noise pollution is an unsettling influence on the human condition that is heightening at such a high rate, to the point that it will end up being a noteworthy danger to the nature of human lives. In the previous thirty years, Noise in all territories, particularly in urban zones, has been expanding quickly. There are various consequences for the human condition because of the expansion in clamor contamination. Gradually, apathetically, it appears to acknowledge commotion and the physiological and mental decay that goes with it as an inescapable piece of our lives. In spite of the fact that we endeavor to set principles for the absolute most real wellsprings of clamor, we frequently can't screen them. Group attention to natural commotion has expanded and there is a higher desire for state and neighborhood government to diminish clamor levels, The Environmental noise has become an important issue in urban life quality. Policy makers, local authorities and researchers have been trying to solve this issue in a new and smart way.

The present review provides an evaluation of noise pollution in generality areas, also Noise contamination can be characterized as undesirable or hostile sounds that absurdly interfere with our day to day exercises. It has numerous sources, the majority of which are related to urban advancement: street, air and rail transport; modern commotion; neighborhood and recreational clamor. Various elements add to issues of high commotion levels, including: expanding populace, especially where it prompts expanding urbanization and urban union; exercises related to urban living for the most part prompt expanded Noise levels.

The expanding volumes of the street, rail, and air activity. noise can affect human health and well-being in a number of ways, including annoyance reaction, sleep disturbance, interference with communication, performance effects, effects on social behavior and hearing loss. Research into the effects of noise on human health indicates a variety of health effects. People experiencing high noise levels (especially around airports or along road/rail corridors) differ from those with less noise exposure in terms of: increased number of headaches, greater susceptibility to minor accidents, increased reliance on sedatives and sleeping pills, increased mental hospital admission rates.

Keywords: Environmental Noise, Health, Noise pollution, Urban spaces, sound, equivalent noise levels

O 64. MOLECULAR STRUCTURE AND SECOND-ORDER NONLINEAR OPTICAL PHENOMENA OF 4-NITROPHENYLMETHYL-4-METHOXY BENZOATE

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ABSTRACT: To understand the linear optical and microscopic second-order nonlinear optical (NLO) behaviour of 4-nitrophenylmethyl-4-methoxy benzoate, the electric dipole moment and dispersion-free first hyperpolarizability values have been computed using density functional theory (DFT). There are rather strong relationship among the calculated electric dipole moment and first hyperpolarizability values. Therefore, the electric dipole moment value of the title compound may be responsible for enhancing and decreasing the first hyperpolarizability value. The highest occupied molecular orbitals (HOMO), the lowest unoccupied molecular orbitals (LUMO) and the HOMO-LUMO band gaps for first and second frontier orbitals have been evaluated by means of DFT.

Keywords: Second-order Optical Nonlinearity, Electric Dipole Moment, First Hyperpolarizability, Quantum Chemical Calculations, HOMO-LUMO energies

O 65. COMPUTATIONS ON STATIC LINEAR POLARIZABILITY, FIRST HYPERPOLARIZABILITY, FIRST AND SECOND FRONTIER MOLECULAR ORBITALS OF N-(4-AMINOBENZENESULFONYL) ACETAMIDE

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ABSTRACT: To investigate linear optical and microscopic second-order nonlinear optical (NLO) behaviour of N-(4-aminobenzenesulfonyl) acetamide; the electric dipole moment, static dipole polarizability and first hyperpolarizability tensor components have been computed using density functional theory (DFT). The calculated non-zero electric dipole moment value shows that the examined compound might have microscopic static dipole polarizability and first hyperpolarizability with non-zero values. In this talk, after a short introduction on the methodologies used for computing the examined properties; the results of theoretical studies performed on DFT quantum mechanical calculations of linear optical and nonlinear optical values for the title molecule will be explained. The first and second frontier molecular orbital energies have been also revealed by DFT at B3LYP level of theory.

Keywords: Optical Nonlinearity, Linear Polarizability, First Hyperpolarizability, Electric Dipole Moment, Density Functional Theory

O 66. THEORETICAL STUDIES ON LINEAR OPTICAL CHARACTERIZATION OF 4-NITROPHENYL CARBAMIC ACID ETHYLESTER

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ABSTRACT: To estimate the potential for linear optical properties, the dispersion-free dipole polarizability and maximum one-photon absorption (OPA) wavelength values have been determined by density functional theory (DFT) quantum chemical calculations at B3LYP level. Systematic investigations have provided adequate evidence for the potential of DFT methods in the calculations of electric properties. We rely on the widely used B3LYP which denotes the hybrid functional, a linear combination of the gradient functionals together with the Hartree-Fock local exchange function. In addition to linear optical properties, the highest occupied molecular orbital (HOMO) and the lowest unoccupied molecular orbital (LUMO) energies have been also examined by DFT/ B3LYP method.

Keywords: UV-Vis Spectroscopy, Theoretical Studies, Dipole Polarizability, Vertical Transition Wavelength, HOMO-LUMO Band Gaps

O 67. AB-INITIO COMPUTATIONS ON ELECTRIC DIPOLE MOMENT, DIPOLE POLARIZABILITY AND VERTICAL TRANSITION WAVELENGTHS OF ISOPROPYL-4-(4-METHOXYPHENYL METHYLAMINO) BENZOATE

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ABSTRACT: To provide an insight into the linear optical behaviour of isopropyl-4-(4-methoxyphenyl methylamino) benzoate; the electric dipole moment and static linear polarizability values have been theoretically investigated by means of finite field (FF) method. The ab-initio calculated non-zero electric dipole moment value shows that the title compound might have dispersion-free dipole polarizability with non-zero value obtained by the numerical derivative of the electric dipole moment according to the applied field strength. The electronic transition wavelengths of the lowest lying transitions have been also calculated for the examined molecule.

Keywords: Electric dipole moment, Static Linear Polarizability, One-photon Absorption, Ab-initio, Finite Field

O 68. RECYCLING MANAGEMENT OF CONSTRUCTION WASTE RESULTING FROM THE HOSTILITIES

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ABSTRACT: The building waste resulting from the destruction of the buildings in the hostilities is a great danger to the environment and public health, especially if there is no integrated plans developed for recycling and benefiting from it, turning it from a curse on health and the environment into a blessing and a great source of income , recruit those who have no income, and to those Who have been affected by such actions as is the case in developed countries, which is keen to recycling the remnants of construction in order to remedy the dangers and damages that result from them.
The waste is a huge economic resource that can generate millions if it is best exploited, and factories have been set up to be recycled and remanufactured again, which should be aware of many of the owners of money. This will return to the country, society and the environment with useful results.
Experts warned of the danger of increasing the volume of waste in our cities, especially those which pose a threat to the environment, which resulting from factories and workshops. This demanding the development of a national and regional strategy to address the contaminants, that are responsible the health and technical specifications, stressing the importance of transform them into small industrial cities with the potential for recycling of various kinds. These sites must be highly efficient, with adequate projects for disposal. That needs the establishment of factories to accommodate this, this requires a strategic plan that takes into consideration the strengths, weaknesses, opportunities and threats that can be faced the administration of the disposal of the remnants of buildings destroyed as a result of the hostilities, and what may contain remnants of war. The research plan will be as follows:
• Identification of types of solid waste resulting from military operations and disasters
• construction waste management,
• Immediate planning and strategic planning for waste management and addressing organizational structures for waste management, financial resources and funding foundations,
• Personnel management and human resources required,
• To complete the introduction of control of waste disposal and landfill management and recycling plants, and
• Conclusions and recommendations

O 69. BIOGAS PRODUCTION FROM FOOD WASTE

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ABSTRACT: The energy consumption per person is increasing day by day due to the development of technology and the increase of living standard of people. The reduction in energy obtained from fossil fuels in our country suggests the need to utilize renewable energy sources with economically suitable technologies. In this study, the potential of biogas energy which is one of the renewable and clean energy sources, was investigated through the anaerobic transformation in the climatic conditions from the wastes obtained from the staff and student kitchens in the social facilities of our university. It is aimed that the reactor has low investment, operation and maintenance costs, easy installation and usage features. Classically, most of these wastes are sent to the landfill, composted or burned together with other urban wastes. In the study, the wastes are crushed and homogenized after the inorganic substances in the food waste are distinguished. In the two-phase anaerobic reactor, the feed operation was carried out regularly and continuously at a flow rate of 50 L / day. The total hydraulic retention time in both reactors was 48 days. Volatile fatty acid analysis was performed on samples taken from the methane reactor outlet. These analyzes are important in determining the organic load and hydraulic retention times at the reactor feed. Depending on the content of the food wastes used in the feeding, samples were taken at certain times and total solids and volatile solids analyzes were carried out on these samples. The fertilizer value of liquid wastes to be obtained after digestion can be evaluated by considering the watering of the trees and grass in the campus. In this study, it is aimed to evaluate the organic wastes and to propose solutions to the problems that may arise for application of this system

Keywords: Waste, Biogas, Energy, Renewable Energy

YEMEKHANE ATIKLARINDAN BİYOGAZ ELDESİ

ÖZET: Teknolojinin gelişmesine ve insanların yaşam standartlarının artmasına bağlı olarak kişi başına düşen enerji tüketimi de her geçen gün artmaktadır. Ülkemizde fosil yakıtlardan elde edilen enerjinin azalması, ekonomik olarak kullanıma uygun teknolojilerle yenilenebilir enerji kaynaklarından yararlanılması gerekliliğini ortaya koymaktadır. Bu çalışmada, üniversitemiz sosyal tesislerinde bulunan personel ve öğrenci yemekhanesinin mutfağından elde edilen atıklardan, iklimsel koşullarda anaerobik dönüşüm ile yenilenebilir ve temiz enerji kaynaklarından biri olan biyogaz enerjisi elde edilmesi potansiyeli araştırılmıştır. Reaktörün yatırım, işletim ve bakım maliyetleri düşük, kolay kurulum ve kullanım özelliklerine sahip olması amaçlanmıştır. Klasik olarak bu atıkların çoğu diğer atıklar ile birlikte deponi alanına gönderilmekte, kompostlama işlemine tabii tutulmakta ya da diğer kentsel katı atıklar ile birlikte yakılmaktadır. Çalışmada, yemekhaneden toplanan yemek atıkları içerisindeki inorganik maddeler ayırt edildikten sonra parçalanarak homojenize edilmiştir. İki fazlı olarak tasarlanan anaerobik reaktörde besleme işlemi düzenli ve sürekli bir şekilde 50 L/gün'lük debi ile gerçekleştirilmiştir. Her iki reaktörde toplam hidrolik alınma süresi 48 gün olarak belirlenmiştir. Metan reaktörü çıkışından alınan numunelerde uçucu yağ asiti analizleri gerçekleştirilmiştir. Söz konusu analizler reaktörün beslenmesinde organik yük ve hidrolik alıkonma sürelerinin belirlenmesi açısından önem taşımaktadır. Beslemede kullanılan yemek atıklarından, içeriklerinin farklılık göstermesine bağlı olarak belirli zamanlarda numuneler alınmış ve bu numunelerde de toplam katı madde ve uçucu katı madde analizleri gerçekleştirilmiştir. Çürütme sonrası elde edilecek sıvı atıkların gübre değeri de kampüs içerisindeki ağaç ve çimenlerin sulanması dikkate alınarak değerlendirilebilmektedir. Bu çalışma ile organik atıkların değerlendirilmesi ve bu sistemin uygulamaya yönelik ortaya çıkabilecek problemlerine çözüm önerileri oluşturulması amaçlanmaktadır.

Anahtar Kelimeler: Atık, Biyogaz, Enerji, Yenilenebilir Enerji

O 70. ASSESSMENT OF SUSTAINABLE ZERO WASTE STRATEGIES AND INTEGRATION OF THE COUNTRY

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ABSTRACT: Increasing population, rising living standards, technological developments, industrialization and as a result of urbanization are increasing the need for packaged food products. Gradually with increasing needs, resources are used unconsciously, and wastes are consisted after this consumption. These wastes consist a danger for environmental and human health, a solid waste management are provided including reuse, recycling, recovery, disposal and monitoring-control processes of wastes without damage to the environment. In order to provide waste management, the concept of "zero waste" has been adopted, which is a sustainable approach to reduce the expenditure of both producers and consumers and to solve environmental problems. In recent years, individual or institutional "zero waste" practices have become widespread throughout the world. In this study, on solid waste management by scanning Internet-based resources the scope of "zero waste" concept has been evaluated Turkey and the world situation. Various sustainable solid waste management methods in different countries have been approached. With this study, from the world and Turkey some "zero waste" practices have been revealed on a comparative basis.

Keywords: Waste, Waste Management, Zero Waste, Sustainable

SÜRDÜRÜLEBİLİR SIFIR ATIK STRATEJİLERİNİN DEĞERLENDİRİLMESİ VE ÜLKEMİZE ENTEGRASYONU

ÖZET: Artan nüfus, yaşam standartlarının yükselmesi, teknolojik gelişmeler, sanayileşme ve kentleşmenin sonucunda ambalajlanmış gıda maddelerine duyulan ihtiyaç artmaktadır. Gittikçe artan ihtiyaçla birlikte kaynaklar bilinçsizce kullanılmakta ve bu tüketim sonucu atıklar oluşmaktadır. Bu atıklar çevre ve insan sağlığı açısından potansiyel tehlike oluşturmakta, atıkların çevreye zarar vermeden yeniden kullanımı, geri dönüşümü, geri kazanımı, bertarafı ve izleme-kontrol süreçlerini içeren bir katı atık yönetimi sağlanmaktadır. Atık yönetimini sağlamak amacıyla, hem üreticilerin hem de tüketicilerin harcamalarını azaltmak ve çevresel sorunların giderilmesine yardımcı olmak için sürdürülebilir bir yaklaşım olan "sıfır atık" kavramı benimsenmektedir. Son yıllarda dünya çapında bireysel ya da kurumsal sıfır atık uygulama çalışmaları yaygınlaşmaktadır.

Bu çalışmada internet tabanlı kaynaklar taranarak katı atık yönetimi konusunda "sıfır atık" kavramı kapsamında Türkiye ve dünyadaki durum değerlendirilmiştir. Farklı ülkelerdeki çeşitli sürdürülebilir atık yönetimi yöntemleri ele alınmıştır. Bu çalışma ile dünyadan ve Türkiye'den "sıfır atık" konusundaki bazı uygulama örnekleri karşılaştırmalı olarak ortaya konmuştur.

Anahtar Kelimeler: Atık, Atık Yönetimi, Sıfır Atık, Sürdürülebilir

O 71. UTILIZATON OF SEWAGE SLUDGE IN AGRICULTURAL LAND

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ABSTRACT: While the use of sewage sludge is common for agriculture application in worldwide, the case is reverse in Konya city. In Turkey, incentive studies will be made about the use of sewage sludge in agriculture land, country economy will be improved and disposal of treatment mud will be provided. In addition, as a result of unsuitable production techniques on agricultural land, the soil loses with its elements which are important for the plant growth in the course of time, leading to inefficiency of the soil. The most important reason for this inefficiency arises from the release of atmospheric carbon. In this context, the use of sewage sludge in agriculture can regulate the structure of the soil as well as provide the disposal of sewage sludge. Since the nutrient elements in the sludge contain the necessary elements for the soil which they can regulate the structure of the land. The use of these sewage sludge in agriculture will make the land in the inadequate regions more efficient in terms of organic matter for the soil.

Keywords: sewage sludge, solid waste, recycling, soil quality

ARITMA ÇAMURLARININ TARIM ARAZİLERİNDE KULLANIMI

ÖZET: Dünya genelinde arıtma çamurlarının tarımda kullanımı yaygınken Türkiye'de bu durum tam tersidir. Ülkemizde arıtma çamurlarının tarımda kullanımı ile ilgili teşvik edici çalışmalar yapılarak hem ülke ekonomisi kalkındırılacak hem de arıtma çamurunun bertaraftı sağlanacaktır. Ayrıca tarım arazilerinde uygun olmayan üretim teknikleri sonucunda toprak zamanla bünyesindeki bitki gelişimi için önemli olan elementlerini kaybetmekte ve bu da toprağın verimsizleşmesine yol açmaktadır. Bu verimsizliğin en önemli nedeni karbonun atmosfere salınmasından kaynaklanmaktadır. Bu bağlamda arıtma çamurlarının tarımda kullanımı, hem toprak strüktür yapısını düzenleyebilmekte hem de çamurun bertarafını sağlayabilmektedir. Arıtma çamurları içeriğindeki besleyici elementler toprak için gerekli elementleri barındırdığı için toprağın strüktür yapısını düzenleyebilmektedir. Bu çamurların tarımda kullanımı; topraktaki organik madde bakımından yetersiz bölgelerde toprağı daha verimli hale getirebilecektir.

Anahtar kelimeler: Arıtma çamuru, katı atık, geri dönüşüm, toprak kalitesi

O 72. INVESTIGATION OF CO-DIGESTION POTENTIAL OF PRIMARY AND SECONDARY SEWAGE SLUDGE FRACTIONS WITH FOOD WASTE

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ABSTRACT: Rapid increase in sewage and sewage sludge production paralel to industrialization and urbanization necessitated spreading of anaerobic digestion technology in the last decade. A special interest found its place as co-digestion of food wastes in anaerobic sludge digesters operating in municipal wastewater plants (WWTPs) in place of landfilling as it provides much faster conversion to energy. Municipal WWTPs are comprised of two fractions as primary settling sludge (rich in protein and fatty matter) and secondary (waste biological) sludge mostly bacterial biomass. Each fraction has different a biodegradability character and a potential for separate anaerobic stabilization exists. Co-digestion of food waste with primary and/or secondary sludge fraction has been gaining an increasing interest and appllication in the last years to increase energy yield in anaerobic sludge digesters operating in municipal WWTPs. This study investigated co-digestion of fruit waste with primary and secondary sludge fractions in paralel to control sequential batch reactors to determine biochemical methane potential and alkalinity addition has been found sufficient to eliminate the negative effect on the co-digestion process.

Keywords: Anaerobic, sewage sludge fractions, stabilization, methane

PRİMER VE SEKONDER ARITMA ÇAMURLARININ İLAVE YİYECEK ATIKLARI İLE BİRLİKTE ÇÜRÜTME POTANSİYELİNİN ARAŞTIRILMASI

ÖZET: Sanayileşme ve şehirleşmenin hızlı bir şekilde artması sonucu oluşan atıksu ve arıtım çamurları miktarındaki yükseliş anaerobik arıtma teknolojilerinin kullanım alanının genişletilmesini zorunlu kılmaktadır. Özellikle yüksek organik madde içeriğine sahip çeşitli atıkların çöp depolama sahaları yerine atıksu arıtma tesislerinde (AAT) kurulu anaerobik çamur çürütücülere yönlendirilmesi kısa sürede enerjiye dönüşümlerini sağlayacaktır. Kentsel AAT'lerde oluşan arıtma çamurları iki fraksiyondan oluşmaktadır; ham çamur tipinde oluşan ön çöktürme çamuru (primer çamur) organik madde ve özellikle protein ve yağ içeriği bakımından zenginken biyolojik arıtma sonucu oluşan fazla biyolojik (sekonder) çamur bakteri biyokütlesinden oluşmaktadır. Her iki çamur fraksiyonu da farklı anaerobik stabilizasyon özelliklerine sahiptir ve ayrık sistem çürütme potansiyeli yüksektir. Kentsel AAT'lerde kurulu anaerobik çamur çürütücülerin enerji eldesini arttırmak için çeşitli yiyecek atıklarının öğütülerek çürütücülere beslenmesi çalışmaları birçok ülkede yürütülmekte ve olumlu sonuçlar alınmaktadır. Bu çalışma kapsamında, kentsel AAT'de oluşan ön çöktürme (primer) ve fazla biyolojik (sekonder) çamur fraksiyonlarının tek ve meyve atıkları ile birlikte anaerobik çürütme çalışması biyokimyasal metan potansiyeli (BMP) biyo-deneyi kapsamında yürütülmüş ve prosesin optimizasyonu için alkalinite ilavesinin yeterli olacağı metan üretimine katkısı ile belirlenmiştir.

Anahtar Kelimeler: Anaerobik, arıtma çamuru fraksiyonları, stabilizasyon, metan

O 73. STUDY OF TOXICITY CONTROL STRATEGIES ON THE ANAEROBIC SLUDGE DIGESTION PROCESS AND STABILIZED SLUDGE QUALITY

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ABSTRACT: Mesophilic anaerobic digestion of sewage sludge was conducted in a continuously fed mixed lab-scale reactor implementing hydrogen sulphide control strategies as T: 35 ve 38˚C, 75 and 150 rpm, hydraulic retention time (HRT) (25 and 30 d) and iron chloride dosing (20, 25 ve 50 mg/L) to investigate any potential for improvement in system performance parameters as methane production, volatile solid (VS) removal and dewaterability of the effluent sludge. Higher mixing rate and iron chloride addition had a positive effect on the system performance in addition to reduction in H_2S concentration. Volatile fatty acid (VFA)/alkalinity rate changed between 0.01-0.1 at operational parameters of 35 ºC, 75 and 150 rpm and VS loading rate of 0.72-0.95 kg VS/m^3.d. Dewaterability improved at higher mixing level and iron chloride dosing. Control strategies and reduction in HRT resulted in a reduction VFA and pH increase and stabilization at 7.44-7.52. Maximum methane production and VS removal were obtained as 0.6 L methane/VS_{fed} and 54%, respectively, for HRT 30 d, 150 rpm and 25 mg/L iron chloride.

Keywords: mesophilic, anaerobic, sewage sludge, stabilization, hydrogen sulphide, operation

ANAEROBİK ÇAMUR ÇÜRÜTME PROSESİ VE STABİLİZE ÇAMUR ÜZERİNE TOKSİSİTE KONTROLÜ STRATEJİLERİNİN ETKİSİNİN BELİRLENMESİ

ÖZET: Lisans bitirme çalışması kapsamında, mezofilik şartlarda sürekli beslemeli tam karışımlı laboratuvar ölçekli anaerobik çamur çürütücü reaktörde farklı sıcaklık (35 ve 38˚C), karışım (75 ve 150 rpm), hidrolik bekletme süresi (HBS) (25 ve 30 gün) ve demir klorür dozlaması (20, 25 ve 50 mg/L) gibi farklı hidrojen sülfür kontrol stratejileri uygulanarak, metan verimi, uçucu katı madde (UKM) giderimi ve çamur susuzlaşma özelliğinde artma potansiyelinin belirlenmesi amaçlanmıştır. Karıştırma hızı artışı ve demir (Fe^{3+}) ilavesi metan verimi ve UKM giderimini arttırırken hidrojen sülfür (H_2S) konsantrasyonunu azaltmıştır. Uçucu yağ asidi/Alkalinite (UYA/TA) oranı 35 ºC, 75 ve 150 rpm karıştırma hızı ve organik yükleme hızı 0.72-0.95 kg UKM/m^3.g aralığında 0.01 – 0.1 şeklinde değişim göstermiştir. Kısalan filtrelenme süreleri çamur susuzlaşma özelliğinde de 150 rpm karıştırma hızı ve demir ilavesinde iyileşme olduğunu göstermiştir. Kontrol stratejileri ve HBS'nin UYA'da azalma, pH'da ise artış sonrasında 7.44-7.52 arasında sabitlendiği gözlenmiştir. Sonuçlar göstermiştir ki; mezofilik anaerobik çamur çürütmede farklı işletim stratejileri uygulanmasında en yüksek metan üretim verimi ve UKM giderimi sırasıyla 0.6 L metan/UKM ilave edilen ve %54 olarak HBS 30 g, 150 rpm ve 25 mg/L demir klorür şartlarında elde edilmiştir.

Anahtar Kelimeler: Mezofilik, anaerobik, arıtma çamuru, çürütme, hidrojen sülfür, işletim

O 74. THERMOCHEMICAL RECYCLING OF AGRICULTURAL WASTES TO USEFUL PRODUCTS

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ABSTRACT: In this study, the recycling of corn wastes from corn production by pyrolysis method was investigated. Corn wastes after the corn harvest were pyrolyzed in laboratory scale fixed bed pyrolysis system and pyrolysis product analyzes were carried out. FTIR and SEM analyzes were used for characterization of the solid product. FTIR analysis revealed some aromatic functional groups. As a result of SEM images, it was observed that as the pyrolysis temperature increases, the organic waste becomes more granular by decomposition. GC-MS analysis was used to determine the composition of the liquid pyrolysis products. According to GC-MS results, compounds with a high degree of aromaticity were observed in the whole liquid products. As the pyrolysis rate and temperature increased, the compounds in the liquid product were broken down into other compounds. From all the data obtained, corn waste has been found to be used as fuel and as a source of raw materials in different areas because of the high thermal value of liquid pyrolysis products.

Keywords: Corn waste, pyrolysis, FTIR, SEM, GC-MS

ZİRAİ ATIKLARIN FAYDALI YENİ ÜRÜNLERE TERMOKİMYASAL GERİ DÖNÜŞÜMÜ

ÖZET: Bu çalışmada mısır üretiminden kaynaklanan mısır atıklarının piroliz yöntemi ile geri dönüşümü araştırılmıştır. Mısır hasadı sonrası meydana gelen mısır atıkları laboratuvar ölçekli sabit yataklı piroliz sisteminde piroliz edilmiş ve piroliz ürünü analizleri gerçekleştirilmiştir. İlk olarak piroliz işleminden sonra meydana gelen katı ürün kokun karakterizasyonu için FTIR ve SEM analizleri yapılmıştır. FTIR analizi sonucunda bazı aromatik fonksiyonel gruplara rastlanmıştır. SEM görüntüleri sonucunda piroliz sıcaklığı arttıkça organik atık parçalanarak daha tanecikli bir hale geldiği gözlemlenmiştir. Sıvı piroliz ürünlerinin bileşimini tespit etmek için GC-MS analizi kullanılmıştır. GC-MS sonuçlarına göre tüm sıvı ürünlerin bünyesinde yüksek aromatiklik derecesine sahip bileşikler gözlenmiştir. Piroliz hızı ve sıcaklığı arttıkça sıvı ürün bünyesindeki bileşiklerin parçalanarak diğer bileşiklere dönüştüğü gözlenmiştir. Elde edilen tüm verilerden yola çıkılarak mısır atıkları sıvı piroliz ürünlerinin ısıl değeri yüksek olduğu için yakıt olarak ve farklı alanlarda hammadde kaynağı olarak kullanılabileceği sonuçlarına varılmıştır.

Anahtar Kelimeler: Mısır atığı, piroliz, FTIR, SEM, GC-MS

O 75. RECOVERY APPLICATIONS OF WASTE FOUNDRY SAND

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ABSTRACT: İncreasing waste amounts due to waste and industrial by-products, solid waste management is the biggest concern in the World. Waste casting sand is such an industrial by-product. The casting process is considered to be sand waste used at the and it is formed in very high quantities. Used casting sands, which are stored as waste material, constitute additional costs to the casting industry. Therefore, the casting industry is also seeking suitable methods for the use of waste casting sand. İt is very important to convert the recycled waste into economically valuable products by using environmentally friendly methods instead of disposing of waste casting sand. İn this study, recovery methods of waste casting sand found during casting in foundry facilities were investigated.

Keywords: Recovery, Reuse, Solid Waste, Waste Casting Sand, Waste Foundry Sand

ATIK DÖKÜM KUMUNUN GERİ KAZANIM UYGULAMALARI

ÖZET: Artan miktarda atık madde ve endüstriyel yan ürünlere bağlı olarak katı atık yönetimi Dünya'daki en büyük endişe kaynağıdır. Atık döküm kumu da bu tür bir endüstriyel yan üründür. Döküm işlemi sonucu kullanılan kum atık olarak kabul edilmektedir ve oldukça yüksek miktarlarda oluşmaktadır. Atık malzeme olarak depo edilen kullanılmış döküm kumları, döküm endüstrisine ek maliyet oluşturmaktadır. Bundan dolayı döküm endüstrisi atık döküm kumlarının kullanımı için uygun yöntemler aramaktadır. Atık döküm kumunun bertaraf edilmesi yerine çevre dostu yöntemlerle geri kazanımı, ekonomik değeri olan ürünlere dönüştürülmesi oldukça önemlidir. Bu çalışmada dökümhane tesislerinde döküm işlemleri sırasında ortaya çıkan atık döküm kumunun geri kazanım yöntemleri araştırılmıştır.

Anahtar Kelimeler: Atık Döküm Kumu, Dökümhane Atığı, Geri Kazanım, Katı Atık, Yeniden Kullanım

O 76. USING OF TREATMENT SLUDGE FOR AGRICULTURE

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ABSTRACT: In this study, the possibility of evaluating sludge from domestic and urban wastewater treatment plants was investigated. In Turkey, a large part of the sludge is sent to landfill. However, these muds can be used with organic matter content. The results of the analysis of the seasonal variation of nitrogen, phosphorus, pH, conductivity, organic carbon parameters of the plants covered in the study were examined and its usability in the agricultural activities of the regions where these treatment sludges occurred took place.

Keywords: Treatment plant, treatment sludge, fertilizer.

ARITMA ÇAMURLARININ TARIMSAL ALANDA KULLANILABİLİRLİĞİ

ÖZET: Bu çalışmada evsel ve kentsel atıksu arıtma tesislerinden çıkan arıtma çamurlarının değerlendirebilirliği araştırılmıştır. Türkiye'de arıtma çamurlarının büyük bir kısmı deponi sahalarına gönderilmektedir. Ancak içerisindeki organik madde içeriği ile bu çamurlar kullanılabilir niteliktedir. Çalışma kapsamında ele alınan tesislerin azot, fosfor, pH, iletkenlik, organik karbon parametrelerinin mevsimsel değişikliğinin analiz sonuçları incelenmiş ve bu arıtma çamurlarının meydana geldiği bölgelerin tarımsal faaliyetlerinde kullanılabilirliği değerlendirilmiştir.

Anahtar Kelimeler: Arıtma tesisi, arıtma çamuru, gübre

O 77. PNEUMATIC WASTE COLLECTION SYSTEMS

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ABSTRACT: The rapid increase in urbanization and technology is, leading to increas in wastes and required to find innovative solutions on the waste minimization/recycling, decreasing of greenhouse gas emissions, less traffic, and increasing of aesthetical and ecological quality of municipalities. The transfer of wastes by using underground and pneumatic system, which is used by some cities in the world, is getting increasing interest every day. The working principle of this system, which may has a high cost of installation, is to collect waste from living and working areas by vacuuming with underground pipelines and to store them in different fractions in determined terminals. This system has been proven to be feasible and enhance the quality of social life. It has been observed from experimental studies that the emission per capita is reduced at high points, the recycling rates are increased, traffic from collecting trucks is decreased and the application areas have a more aesthetic structure. Also, the annual cost per house is reduced to about 1/3 of the conventional collection system. The efficiency of the system in local areas depends on the size of the collection network established. In addition, saving of time and ease of operation are considered to be some other advantages of the system, which increase the qualityo of human life and environment.

Keywords: Pneumatic, Underground Transport, Waste Collection, Vacuum

PNOMATİK ATIK TOPLAMA SİSTEMLERİ

ÖZET: Kentsel yaşamın hızla artığı, kentleşme ve gelişmeye bağlı, günlük yaşamda kullanılan her maddenin bir atık potansiyeline sahip olduğu günümüz şartlarında yönetimler daha az atık, daha az sera gazı salımı, daha az trafik, kullanılan atıklardan daha fazla geri dönüşüm ve daha estetik çevresel yaşam alanları oluşturabilme adına farklı çözümler üretmeye çalışmaktadır. Ülkemizde henüz fark edilmeyen ancak dünyada bazı şehir ve belediyeler tarafından önemsenen ve kullanılan, atıkların yer altından pnömatik sistemle taşınması her geçen gün daha fazla değer kazanmaktadır. Kurulum maliyeti nisbeten yüksek olabilen bu sistemin çalışma prensibi, yaşam ve çalışma alanlarında üretilen atıkların yer altından döşenen boru hatları ile vakum uygulanarak toplanması ve sabit terminallerdeki konteynırlarda farklı fraksiyonlarda depolanmasıdır. Sistemin uygulanabilirliği ve sosyal yaşam kalitesini artırdığı kanıtlanmıştır. Yapılan farklı çalışmalarda, sistemin uygulandığı noktalarda karbon emisyonu salımının yüksek oranda azaldığı, geri dönüşüm oranlarında artış sağlandığı, toplama kamyonlarından kaynaklı trafiğin azaldığı ve uygulama alanlarının daha estetik bir yapıya kavuştuğu gözlemlenmiştir. Ayrıca, yıllık konut başına maliyetin klasik toplama sistemine göre 1/3 civarına düştüğü hesaplanmıştır. Sistemin lokal alanlarda verimli olması kurulan toplama ağının genişliğine bağlıdır. Bununla birlikte zaman tasarrufu sağlaması ve işletim kolaylığı gibi insan yaşamını etkileyen ve çevresel yapıyı değiştiren olumlu yönleri de avantajları içerisinde sayılmalıdır.

Anahtar Kelimeler: Pnömatik, Yeraltı Taşıma, Atık Toplama, Vakum

O 78. EXPERIMENTAL DETERMINATION OF THE EFFECT OF WASTE CARPET ON THE STRENGTH AND DEFORMATION AT FAILURE OF CLAYEY SOILS WITH FLY ASH AND CEMENT

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ABSTRACT: In this study, the effects of waste carpet on the strength and deformation at failure of clayey soil with cement and fly ash were investigated in laboratory. Experimental designs were established using response surface method (RSM) to create experimental program. Considering the previous studies; cement ratio (CR), fly ash ratio (FR), waste carpet ratio (WCR) and waste carpet aspect ratio (WCAR) have been selected as the parameters of these designs. The levels of these parameters were selected in the following ranges: 0% to 10% for CR, 0% to 30% for FR, 0% to 2% for WCR by total mixture weights and 15-75 for WCAR. In the laboratory, unconsolidated-undrained triaxial shear strength tests (UU) and splitting tensile strength tests (STS) were conducted on the specimens of 50 mm diameter. UU tests were conducted to determine shear strength and STS tests were conducted to determine tensile strength of the specimens. According to the results of the tests and the analysis of these results by RSM, the increase of cement and fly ash contents in the soil matrix caused both the increase of the shear strength obtained from the UU tests and the splitting tensile strength values obtained from the STS tests. In both STS and UU tests, WCR had the greatest influence on the change in deformation at failure.

Keywords: Waste Carpet, Shear Strength, Splitting Tensile Strength, Deformation at Failure.

O 79. USING OF FLY ASH INTO GROUTING MIXTURE

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ABSTRACT: Grouting mixture has many applications and various methods in civil engineering which can improve soil properties such as; permeation grouting, compaction grouting, hydro fracture grouting, jet grouting, rock grouting, compensation grouting, deep mixing methods, Ras-Columns. In this study, grouting mixture mainly contains three admixtures. The first admixture is cement which is a binder that sets, hardens and adheres to other materials. The second admixture is fly ash which is one of the byproducts of the coal combustion process. The most common use of fly ash is as a partial replacement for portland cement used in producing concrete. Concrete made with fly ash is stronger and more durable than traditional concrete made exclusively with portland cement. Since Fly ash is one of the byproducts of coal combustion it is considered to be. Using Fly ash into mixture will help in decreasing pollution of the environment as it is a waste that has to be recycled. The third admixture is super plasticizer which is a high range water reducer. It is used as a dispersant to avoid particle segregation and to improve the flow characteristics of suspensions such as in concrete or grouting applications. In this study, Taguchi Method will be used as a reference method in order to define the parameters of designs and investigate the factors of the grouting consistency (Marsh funnel viscosity test and sedimentation test).

Keywords: cement, fly ash, grout, Marsh funnel viscosity, super plasticizer

O 80. EFFECTS OF FLY ASH AND SUPER PLASTICIZER ON STRENGTH OF SOIL-CEMENT MIXING MATERIALS

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ABSTRACT: In this study, the effects of fly ash and super plasticizer, improver materials by adding into the grout, on soil-cement mixing columns called as deep mixing columns (DMC) were investigated. Fly ash is a waste product emerging from burning in the thermal power plant. By evaluating waste materials in this way, environmental pollution will be reduced directly and cement usage and carbon emissions caused by cement production will be reduced indirectly. By using super plasticizer into the grout, more strength structural element will be manufactured as decreasing water/binder ratio of grout. In order to achieve these goals, an experimental program was developed using statistical and experimental design methods. It is desired to determine the optimum grout quantity and consistency required to maximize the strength of the column manufactured with DMM in silty soils. For this purpose, the amounts of fly ash (0-40%), cement (3-11%), super plasticizer additive (0.5-2%) and water/binder percentage (0.5-1.25%) were chosen as variable to form grouting material. Experimental studies have been carried out using Taguchi method, which is a powerful optimization technique, using 5-parameter and 4-level L16 design table. Permeability test specimens were prepared in PVC tubes with diameter of 5 cm and length of 10 cm for each design for different curing times of 7 and 28 days. As a result of the experiments, the unified compression strength (q_u) of the soil-binder mixture were found for each design. As a result of the statistical analysis, the optimum values of grouting materials to obtain maximum strength of DMC was found with 7% cement, 10% fly ash, 1.5% super plasticizer additive and 0.75% water/binder ratio for 7 days cure time. For 28 days of curing time, optimum parameters were obtained with 7% cement, 25% fly ash, 1.5% super plasticizer additive and 1% water / binder. These results show that cement requirement may be reduced at %25 for soil stabilization works especially in DMM.

Keywords: cement, deep mixing method, environmental pollution, fly ash, super plasticizer, Taguchi method, silty soil

O 81. COLOR REMOVAL FROM LEACHATE BY PHOTO-FENTON PROCESS

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ABSTRACT: Leachate forms as a result of rainwater falling into the solid waste dumping site and decompositon of organics. The leachate contains high amounts of organic matter, inorganic matter and heavy metals. Leachate must be treated to prevent pollution of surface water, groundwater and soil.
In this study, the treatment of leachate is discussed by using advanced oxidation methods. Fenton process and UV irradiation was used simultaneously (Photo-Fenton) to determine the color removal efficiency. The purpose of the Photo-Fenton process is to form more OH radicals as a strong oxidizer.
The color values of the leachate sample taken from the solid waste landfill site was obtained as 37.68 m^{-1} at 436 nm, 14.85 m^{-1} at 525 nm and 6.89 m^{-1} at 620 nm. Experimental studies have been carried out to determine the effect of pH, reaction time, Fe(II) and H_2O_2 d on the removal efficiency. Maximum color removal efficiency was obtained at pH 3, 2550 mg/L Fe(II) and 25500 mg/L H_2O_2 doses. Maximum color removal efficiencies at 436 nm,525 nm; and 620 nm were obtained as 98.8%, 99.4% and 99.4%, respectively.

Keywords: Solid waste, Leachate, Photo-Fenton, Oxidation, Color removal

SIZINTI SULARINDAN FOTO-FENTON PROSESİ İLE RENK GİDERİMİ

ÖZET: Sızıntı suları genel olarak katı atık depolama sahasındaki organiklerin ayrışması sonucunda ve depolama alanına düşen yağmur sularından oluşur. Sızıntı suları yüksek miktarda organik madde, inorganik madde ve ağır metal içermektedir. Bu atıksuların yüzeysel ve yer altı suyu kirliliği, toprak kirliliği gibi çevresel sorunlara sebep olmaması için arıtımı gerekmektedir.
Bu çalışma kapsamında katı atık depolama sahası sızıntı sularının arıtımı için ileri oksidasyon metotları kullanılmıştır. Fenton oksidasyonu ve UV radyasyonu aynı anda kullanılarak sızıntı suyundan renk giderimi araştırılmıştır. Foto-Fenton prosesindeki amaç kuvvetli bir oksitleyici olan OH radikallerinin daha fazla oluşturulmasıdır.
Katı atık depolama sahasından alınan sızıntı suyu numunesinin renk değerleri 436 nm'de 37,68 m^{-1}, 525 nm'de 14,85 m^{-1}, 620 nm'de 6,89 m^{-1} olarak bulunmuştur. Deneysel çalışmalar, pH, reaksiyon süresi, Fe(II) ve H_2O_2 dozunun giderim verimi üzerine etkisini belirlemek için yapılmıştır. Yapılan çalışmalar sonucunda en iyi renk giderimi pH 3 değerinde, 2550 mg/L Fe(II) ve 25500 mg/L H_2O_2 dozunda elde edilmiştir. Optimum şartlarda 436 nm, 525 nm ve 620 nm dalga boylarında sırası ile %98,8, %99,4ve %99,4 renk giderim verimleri elde edilmiştir.

Anahtar Kelimeler: Katı atık, Sızıntı suyu, Foto-Fenton, Oksidasyon, Renk giderimi

O 82. TREATMENT OF SOLID WASTE LANDFILL LEACHATE BY FENTON OXIDATION

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ABSTRACT: In this study; the applicability of Fenton process, which is an advanced oxidation process, for the treatment of landfill leachate has been investigated. Even though new applications have been developed for disposal of solid wastes, treatment of leachate which is formed by decomposition of the wastes, is difficult by classical treatment processes. Discharging the leachate to the sewage without being purified at the desired level threatens the operation of the domestic wastewater treatment plants. Therefore, advanced oxidation processes are promising alternative for treatment of leachate with high COD value to prevent inverse effect on treatment plants and environment. In this study, COD and color removal efficiencies were investigated after Fenton treatment (Fe+2 and H2O2 in different doses) of the leachate. It was observed that the COD removal efficiencies changed between 267% and 64% and high color removal was determined.

Keywords: Leachate water, Advanced oxidation process, Fenton process

KATI ATIK DEPOLAMA SAHASI SIZINTI SUYUNUN FENTON OKSİDASYONU İLE ARITIMI

ÖZET: Bu çalışmada; ileri oksidasyon prosesi olan Fenton prosesinin katı atık depolama sahalarında oluşan sızıntı sularının arıtımında uygulanılabilirliği incelenmiştir. Katı atıkların bertarafı konusunda gün geçtikçe yeni uygulamalar geliştirilse de, çöplerin ayrışması ve bozunması sonucu oluşan, çok yüksek KOİ değerlerine sahip sızıntı sularının giderimi klasik arıtma yöntemleri ile istenilen ölçüde yapılamamaktadır. Sızıntı sularının istenilen seviyede arıtılmadan kanalizasyon hatlarına deşarj edilmesi, evsel nitelikli atıksu arıtma tesislerinin işleyişini büyük ölçüde tehdit etmektedir. Bu nedenle yüksek kirlilik yüküne sahip sızıntı sularının kirlilik yükünü azaltmak, çevreye ve atıksu arıtma tesislerine yapacağı olumsuz etkileri engellemek amacıyla ileri oksidasyon prosesleri umut verici bir çözüm olmaktadır. Yapılan bu çalışmada sızıntı suyu numunelerine Fenton oksidasyonu (Farklı dozlarda Fe+2 ve H2O2) uygulanarak KOİ giderimi ve renk giderimi incelenmiştir. Analiz sonuçlarına göre, KOİ gideriminin %27 ile %64 arasında değiştiği ve yüksek ölçüde renk giderimi gerçekleştiği belirlenmiştir.

Anahtar Kelimeler: Sızıntı suyu, İleri oksidasyon prosesi, Fenton prosesi

O 83. EVALUATION OF FLAVOBACTERIUM PSYCHROPHILUM ABILITY OF BIOFILM FORMATION IN AQUACULTURE - MOROCCO.

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ABSTRACT: The most important bacterial pathology currently occurring in the world freshwater salmonids farming is the cold-water disease produced by the psychrotrophic bacteria *Flavobacterium psychrophilum*.
In aquatic environments, bacteria rarely occur in planktonic form, however their presence are associated with surface microbial communities known as biofilms (Huq et al. 2008). Biofilm formation is of importance to several pathogenic bacterial species, especially those living in water, conferring a selective advantage by increasing their ability to persist under adverse environmental conditions (Duchaud et al. 2007). Adherence to surfaces is the first stage in the formation of biofilms (Sauer et al 2002).
In aquaculture, biofilms can form on many of the components of the aquaculture system, and these are composed of various microflora present in the water, also they are ubiquitous, appearing on the surfaces of water and even in the internal and external surfaces of fish, Not only bacterial biofilms are frequently resistant to antibacterials and biocides, but they also have an important role as reservoirs of pathogens, enabling these to persist in aquaculture environments for a long period of time (Wingender and Flemming 2011).
The main aim of the present study is to evaluate the ability of F. psychrophilum to adhere to and form biofilms, and to get a better understanding of the survival of this bacterium in the aquaculture environment.

Keywords: Flavobacterium psychrophilum, bacterial cold-water disease, rainbow trout fry syndrome, biofilm formation, aquaculture.

O 84. THE BIODEGRADATION PROCESSES OF OIL LEAKAGE, REVIEW STUDY

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ABSTRACT: All the Bioremediation processes have become the main method utilized in restoration of oil-polluted environments that make use of natural microbial bio degradative activities. The generalization of Bioremediation for petroleum pollutants overcomes the factors limiting rates of microbial hydrocarbon biodegradation. Regularly this includes utilizing the enzymatic capacities of the indigenous hydrocarbon-degrading microbial populaces and adjusting natural components, specific convergences of molecular oxygen, fixed forms of nitrogen, and phosphate to achieve enhanced rates of hydrocarbon biodegradation. Biodegradation of sleek slop and bioremediation of oil-contaminated locales has been accomplished by oxygen option e.g., by working soils inland cultivating and by including hydrogen peroxide or directing oxygen into oiled aquifers alongside the expansion of nitrogen- and phosphorus-containing composts. The achievement of seeding oil slicks with microbial arrangements is questionable. Fruitful bioremediation of a noteworthy marine oil slick has been accomplished in view of the expansion of nitrogen and phosphorus composts. In-situ bioremediation processes of crude oil Leakage and spills rely on either the indigenous microbes at the polluted site, whose degradative abilities are accelerated by adding such agents as fertilizers or dispersants, or on introducing pollutant-degrading microbes into the site (possibly accompanied by stimulatory chemicals). The bioremediation technique to be utilized at a particular site must be chosen to be reasonable for that site and its natural conditions. The essential parts of bioremediation are laid out and the foundation data expected to comprehend the synthetic and organic confinements of the method are displayed. In particular, the microbial group, the raw petroleum substrate synthesis, and natural restricting components are talked about. Summed up cases of bioremediation applications are delineated

Keyword: Bioremediation, Petroleum pollution, oil Leakage, Spills Water contamination.

O 85. ODOR PROBLEMS IN WASTEWATER TREATMENT PLANTS IN TURKEY

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ABSTRACT: Odor occurring from wastewater treatment plants occurs in entrance, in sludge thickening and digestion, in sludge dewatering units, in dewatered activated sludge conveying, storage and drying phases. The first step in this study has been identified all the potential odor sources in a waste water treatment plant. In this study, the cause of the odor problem of the wastewater treatment plant in Turkey and removal methods have been investigated. A survey study was applied to the wastewater treatment plant in Turkey for determining potential odor sources and odor removal processes in a waste water treatment plant.

Keywords: odor problems, wastewater treatment plants, air pollution.

TÜRKİYE'DEKİ ATIKSU ARITMA TESİSLERİNDE KOKU PROBLEMLERİ

ÖZET: Atıksu arıtma tesislerinde koku, giriş yapılarında, çamur yoğunlaştırma ve çürütme, çamur susuzlaştırma ünitelerinde, susuzlaştırılmış aktif çamurun iletilmesinde, depolanmasında, kurutulması aşamalarında oluşmaktadır. Bu çalışma da ilk aşamada atıksu arıtma tesislerindeki potansiyel koku kaynakları araştırılmıştır. Bu çalışma da Türkiye'de mevcut Atıksu Arıtma Tesislerine atıksu arıtma tesislerindeki potansiyel koku kaynaklarını ve koku giderim belirlemek amacıyla anket uygulanmıştır.

Anahtar Kelimeler: koku problemleri, atıksu arıtma tesisi, hava kirliliği.

O 86. HYDROCHEMICAL AND PIEZOMETRIC STUDY OF THE ALLUVIAL AQUIFER OF THE GUERRARA REGION, ALGERIA

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ABSTRACT: This study is interested in the degradation of the water quality of the alluvial aquifer of Guerrara region, Algeria , and examines the processes that affect the physicochemical and hydrodynamic quality of the waters of this surface water table. 30 water samples were taken in October 2011, 18 in April 2012, 30 in October 2012 and 30 in April 2013. It is a hydro-chemical and hydrodynamic (piezometric) study of groundwater. The parameters studied are: EC, pH, mineralization, total hardness and the ionic balance of the water. The physico-chemical study of the waters indicates a great variability of the EC of the water in time and space, with values varying from 0.91 to 11.63 dS / m (October 2011) and from 2.25 to 19.04 dS/m (April 2013). the pH is slightly alkaline, with values changing from 7.4 to 8.4 (October 2011) and from 6.51 to 7.61 (April 2013). The chemical facies of waters is chlorinated and sulphated, and the most represented facies is the sulphated sodium facies. The piezometric study of the aquifer over four companions of monitoring shows that the direction of flow is from South West to North East in a general way. Seasonal fluctuations in the piezometric surface oscillate between 0.2 and 5 m. These fluctuations are subject to the climatic characteristics of the region: low rainfall and high evaporation on the one hand, and on the other hand, and pumping.

Key words: alluvial water, physico-chemical quality, piezometry, Guerrara, Algeria.

O 87. THE IMPORTANCE OF WATER AND WASTEWATER TREATMENT OF ELECTROOXIDATION PROCESS

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ABSTRACT: In this study, the location of the electrooxidation process in water and wastewater treatment was investigated. The aim of the studies is to show what kind of parameters affect the different types of wastewater by electrooxidation method. Electrooxidation process, color removal, pharmaceutical industry, solid waste landfill leachate, olive wastewater, food industry wastewater. Some of the studies on the subject such as pH, COD (chemical oxygen demand), TOC (total organic carbon), TK (total carbon), TN (total nitrogen), TF (total phenol), turbidity, electrolyte concentration the effects on the parameters have been evaluated.

Keywords: Wastewater treatment, Electrooxidation, Chemical oxygen demand, Total organic carbon

ELEKTROOKSİDASYON PROSESİNİN SU VE ATIKSU ARITIMINDAKİ YERİ

ÖZET: Bu çalışmada elektrooksidasyon prosesinin su ve atıksu arıtımındaki yeri araştırılmıştır. Çalışmalar farklı tipte atıksuların, elektrooksidasyon yöntemiyle hangi parametreler üzerinde etkili olduğunu göstermeyi amaçlamaktadır. Elektrooksidasyon prosesi, renk giderimi, ilaç endüstrisi, katı atık düzenli depolama tesisi sızıntı suyu, zeytin karasuyu, gıda endüstrisi atıksuları gibi suların arıtımında kullanılmaktadır. Konu ile ilgili yapılmış çeşitli çalışmalarda yer alan boyar maddeler, pH, KOİ (kimyasal oksijen ihtiyacı), TOK (toplam organik karbon), TK (toplam karbon), TN (toplam azot), TF (toplam fenol), bulanıklık, elektrolit konsantrasyonu gibi parametreler üzerindeki etkileri değerlendirilmiştir.

Anahtar Kelimeler: Atıksu arıtımı, Elektrooksidasyon, Kimyasal oksijen ihtiyacı, Toplam organik karbon

O 88. ORGANIC POLLUTANTS IN SURFACE WATERS OF ERSEKA REGION, ALBANIA

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ABSTRACT: In this paper are presented concentrations of organochlorine pesticides, polychlorinated biphenyls (PCB), polycyclic aromatic hydrocarbons (PAH) and BTEX – benzene, toluene, ethylbenzene and xylenes in surface water samples of Erseka region, Albania. Erseka region is situated in South-East of Albania. Water samples were taken in December 2017 in different steams that flowing from Gramozi Mountain. These steams are part of water basin for Devolli and Osumi rivers.

Liquid-liquid extraction was used for extracting organochlorine pesticides, PCBs and PAHs from water samples. Clean-up procedure was realized in an "open" florisil column for chlorinated pollutants. Analysis of pesticides and PCBs were realized in HP 6890 Series II, gas chromatograph equipped with μECD detector. For separation of organochlorinated pesticides and PCB markers was used Rtx-5 capillary column. Analysis of PAH and BTEX were realized in Varian 450 GC, gas chromatograph equipped with FID detector and VF-1ms capillary column. BTEX were analyzed using HS-SPME method.

The highest levels of organic pollutants in surface waters of Erseka region was found for organochlorine pesticides because of their previous uses in agricultural areas near these streams. Volatile PCBs were found in higher concentrations because of their atmospheric origin. PAH and BTEX were found only for 20% of water samples. Their concentration could be because of natural origin or some mechanical business that discharge their wastes directly in these steams. Found levels were lower than reported studies for other water basin areas in Albania.

Keywords: Organoclorined pesticides; PCBs; PAH; BTEX; water samples; GC/ECD/FID.

O 89. MODIFICATIONS ON TiO_2 FOR IMPROVING PHOTOCATALYTIC ACTIVITY

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ABSTRACT: TiO_2 is one of the mostly used photocatalyst for providing the photocatalytic oxidation process in which hydroxyl radicals arise from cleavage of water for decomposition of the air pollutants. Mainly organic air pollutants are removed successfully with this method. Photocatalyst is the fundamental part of photocatalytic oxidation because it triggers the electron movement and formation of hydroxyl radicals for the removal process. TiO_2 has some disadvantages such as limitations to use under high wavelengths and reduction of photonic activity although it is cost effective, easy to produce and highly stable. Therefore, for effective photocatalytic activity some modifications are necessary for improving TiO_2. Especially morphological and electronic design are suggested by the researchers. Morphological modifications supplies increasing the surface area of TiO_2 so usage of nano materials may be helpful. Moreover, electronical modifications like metal, non-metal and composite doping are more effective when its used together with the morphological changes. In this study, modifications which may be used to improve photocatalytic activity of TiO_2 were investigated to remove organic air pollutants and results from previous studies were given for the comparison purposes to evaluate performance of modified TiO_2.

Keywords: TiO_2, photocatalytic activity, photocatalyst, modification

O 90. CHEMICHAL CARACTERISATION OF ESSENTIAL OIL FOR SATUREA MONTANA POPULATION FROM BURRELI, ALBANIA

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ABSTRACT: In this study was present data about chemical analysis of essential oil for *Saturea Montana* plant populations from the Burreli area (Central Albania). Saturea Montana is native to the Mediterranean region, though it has naturalized in many places around the world. It has a long history of medicinal and culinary use, and as an ornamental garden plant. Saturea Montana plants from Burreli area were collected in July 2017. Plants were collected in nine different stations of Burreli areas. The air dried plant samples were cut in small pieces (1-2 cm) and after that were subjected to European Pharmacopoeia apparatus (Clevenger type) for 4 hours to obtain *Saturea Montana* essential oil. The chemical composition of the essential oils was analyzed using GC/FID technique. The oil of each *Saturea Montana* sample was injected in a Varian 450 GC. VF-1ms capillary column (30 m x 0.33 mm x 0.25 um) were used for separation of compounds.
Conclusion: p-Cimene, Linalool, Timol and Carvacrol were identified as main constituents and all analyzed essential oils of *Saturea Montana* samples from Burreli area. Their total concentrations were found to be between 35 to 70 % related mainly with geographical position of samples and the time of sampling.

Keywords: Saturea Montana, Essential oils, p-Cimene, Linalool, Timol, GC/FID.

O 91. THE EVALUATION OF HOT WATERS FOR THE HYDROCHEMICAL AND POLLUTION OF ILICA KAPLICASI (KAHRAMANMARAŞ)

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ABSTRACT: Ilıca hot sprıng is 70 km from Kahramanmaraş city centre. Formation of Permian age-old Dedeardıçgediği formation in the area of investigation This tectonic lithologic units on the Jurassic-Cretaceous ophiolite rocks and Tertiarry comes elderly. Ophiolitic units are located in the study area and Miocene sediments of Mesozoic limestone aquifer where groundwater is to create quality rocks. Ilıca hot waters in the study area North of the town are exposed along the east-west trending faults. However, in recent years, sources close to the source because it is made by drilling wells dried up. Ilıca thermal plants in the surrounding waters is taken from the drlling performed by the MTA. Source Ilıca creek valley in the flow stream 3,44 l/s temperature 41 ºC pH ı 8,2 total mineralization of 270 mg/l. This is done due to resource drlling dry. The temperature of the waters wells around Ilıca Spa is made of 41 ºC- 49 ºC. In the hot waters of Ilıca Ca and HCO_3 ions predominate anda re in the $CaHCO_3$ facies. Hot waters are in the class of poor mineral acroterm waters.
NO_2, NO_3, NH_4, PO_4 and heavy metal analyzes were carried out in the hot waters. NO_2, PO_4 NH_4 values are below the limit value. The NO_3 value in the stream is higher than the limit value. This ion, which is high in the water, is derived from human and animal wastes, as well as magmatic and volcanic gases. According to the heavy metal analyzes, Mn: 0.05-1.71, Cu: 0.2-0.9, Cr: 8,9-15.7, Zn: 0.5-3.5, Cd: 0.03-0 , 05, Pb is o, 1 =, 3 mg / l. The geological structure, tectonism and hydrogeological conditions and the protection zones against contamination and the precautions to be taken in these zones have been determined around the source and drilling areas.

Keywords: Kahramanmaraş, Hot water, Protection zone, Pollution, Spa.

ILICA KAPLICASI (KAHRAMANMARAŞ) SICAK SULARININ HİDROKİMYASAL VE KİRLİLİK AÇISINDAN DEĞERLENDİRİLMESİ

ÖZET: Ilıca kaplıcası Kahramanmaraş İline yaklaşık 70 km uzaklıktadır. İnceleme alanında temeli Permiyen yaşlı Dedeardıçgediği formasyonu oluşturmaktadır. Bu birim üzerine tektonik dokanakla Jura-Kretase yaşlı ofiyolitik kayaçlar ve Tersiyer yaşlı kayaçlar gelmektedir. İnceleme alanında yer alan Ofiyolitik birimler ile, Mesozoyik kireçtaşları ve Miyosen çökelleri yeraltısuyu için akifer nitelikli kayaçları oluşturmaktadır. İnceleme alanındaki sıcak sular ılıca beldesi kuzeyindeki doğu-batı uzanımlı fay boyunca kaynaklar şeklinde açığa çıkmışlardır Ancak son yıllarda kaynaklar yakınına yapılan sondaj kuyuları nedeniyle kaynaklar kurumuştur. Ilıca çevresindeki termal tesislerde MTA tarafından yapılan sondajlardan su alınmaktadır. Ilıca dere vadisi içerisindeki kaynağın debisi 3,44 l/s sıcaklığı 41 ºC pH ı 8,2 toplam mineralizasyonu 270 mg/l arasındadır. Bu kaynak yapılan sondaj nedeniyle kurumuştur. Ilıca kaplıcası çevresine yapılan sondaj kuyu sularının sıcaklığı 41 ºC- 49 ºC arasındadır. Ilıca sıcak sularında hakim iyon Ca ve HCO_3 iyonu hakim olup $CaHCO_3$ fasiyesindedir. Sıcak sular mineralce fakir akroterm sular sınıfındadır.
Sıcak sularda NO_2, NO_3; NH_4, PO_4 ve ağır metal analizleri yaptırılmıştır. NO_2, PO_4 NH_4 değerleri sınır değerinin altındadır. Sularda NO_3 değeri ise sınır değerinden yüksektir. Sularda yüksek değerlerde olan bu iyonun insan ve hayvan atıklarından ayrıca mağmatik ve volkanik gazlardan kaynaklanmaktadır. Ağır metal analizlerine göre Mn : 0,05- 1.71 ,Cu,: 0,2- 0,9 , Cr :8,9-15,7 , Zn:0,5-3,5, Cd :0,03-0,05, Pb ise o,1 =,3 mg/l arasındadır. Kaynak ve sondajlar çevresinde jeolojik yapıya, tektonizmaya ve hidrojeoloji şartlarına ve kirlenmeye karşı koruma zonları ile bu zonlarda alınması gereken önlemler belirlenmiştir.

Anahtar Kelimeler: Kahramanmaraş, Sıcak su, Koruma zonu, Kirlilik, Kaplıca

O 92. THE SITUATION OF AGRICULTURE AND PERSPECTIVES TO DEVELOP SUSTAINABLE AGROECOSYSTEMS IN ALBANIA

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ABSTRACT: Albanian agriculture is in a growing phase and in qualitative changes. The growth of revenue from crop production, livestock, agro industry, fishery and forestry remain the main alternative for the country social-economic development. In Albania apply three types of Agro ecosystem :1.The traditional agro ecosystem (family , more work); 2.The intensives agro ecosystems (more inputs); 3.The mix agro ecosystem (combination system); In the future : the agricultural production in Albania should be guided by constructed policies which will favor farm efficient systems; encouraging the necessary process of land distribution; supporting adequate schema of the input use and livestock ; agriculture offers through marketing systems development; apply models of agricultural systems slow cimestry inputs; the general physiognomy of farms is characterized by :Their big number: 440,000 farms. The area in ownership of farm families varies from 0.3-3.5 ha, with an average of 1.5 ha/farm. Critical fragmentation of land. According to a study, it results that the area of a single farm is fragmented into 3 to 5 parcels. Overpopulation of farming families. On average the farming family is composed of 4-6 persons. Farmers face financial difficulties to purchase required inputs, due to a lack of input supplies, and high input prices. High level of credit interests.

Key words: Types of Agro ecosystem, Albanian Agriculture;

O 93. INVESTIGATION OF POLYCYCLIC AROMATICS HYDROCARBON (PAH) POLLUTION IN PAZARSUYU STREAM (GIRESUN, TURKEY)

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ABSTRACT: This study covers the investigation of Polycyclic Aromatic Hydrocarbons (PAHs) pollution in Pazarsuyu Stream which is located in East-Black Sea Basin. 14 PAHs analyzes were performed on water samples taken from a station on the Pazarsuyu Stream every month, covering the period of February 2017 - December 2017. The results of PAH analysis were evaluated according to annual average and maximum values of PAH parameters given in Water Quality Regulation. The results of the analysis showed that PAHs values change periodically, especially the amount of PAH increases in rainy periods. According to the results, it was seen that 5 PAH parameters (benzo (b) floranten, benzo (k) floranten, benzo (a) piren, benzo (g, h, i) perilen ve indeno piren) among 14 PAH parameters, exceeded the annual mean values given in Water Quality Regulation.

Keywords: Chromatography, PAH, Pazarsuyu Stream, water quality.

PAZARSUYU DERESININ (GIRESUN, TÜRKIYE) POLISIKLIK AROMATIK HIDROKARBON (PAH) KIRLILIĞI AÇISINDAN İNCELENMESI

ÖZET: Bu çalışmada, Doğu Karedeniz Havzası'nda yer alan Pazarsuyu Deresi'nin su kalitesi, Polisiklik Aromatik Hidrokarbonlar (PAH) açısından incelenmiştir. Pazarsuyu Deresi üzerindeki bir istasyondan, Şubat 2017 - Aralık 2017 dönemini kapsayacak şekilde her ay alınan su numuneleri üzerinde, 14 adet PAH analizi gerçekleştirilmiştir. Su numunelerinin PAH analiz sonuçları, Su Kalitesi Yönetmeliği'nde verilen PAH parametrelerinin yıllık ortalama ve maksimum değerlerine göre değerlendirilmiştir. Elde edilen analiz sonuçları, PAH değerlerinin dönemsel olarak değiştiğini, özellikle yağmurlu dönemlerde PAH miktarının arttığını göstermektedir. Sonuçlara göre, yapılan 14 adet PAH parametresinden 5 adet PAH parametresinin (benzo (b) floranten, benzo (k) floranten, benzo (a) piren, benzo (g,h,i) perilen ve indeno piren) Yerüstü Su Kalitesi Yönetmeliği'nde verilen yıllık ortalama değerlerinin üzerinde çıktığı görülmüştür.

Anahtar Kelimeler: Kromatografi, PAH, Pazarsuyu Deresi, su kalitesi.

O 94. INVESTIGATION OF HEAVY METAL POLLUTION IN KARADERE STREAM (TRABZON, TURKEY) BY USING HEAVY METAL POLLUTION INDEX MODEL

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ABSTRACT: This study covers the investigation of heavy metal pollution in Karadere Stream which is located in Trabzon, East-Black Sea Basin. 10 heavy metal parameters (Pb, Zn, Cr, Fe, Cu, Ni, Al, As, B and Ba) were analyzed on water samples taken from two stations on Karadere Stream every month, covering the period of February 2017 - July 2017. The results of heavy metal analysis were evaluated according to maximum values given in Water Quality Regulation. The results of the analysis showed that Fe, Cu and Al values were exceeded the limit values for both station. The heavy metal pollution index model was found useful to assess the overall pollution level with respect to heavy metals and the values were found above the critical pollution index value of 100 for both station.

Keywords: Heavy metal, index model, Karadere Stream.

KARADERE DERESININ (TRABZON, TÜRKIYE) AĞIR METAL KIRLILIĞININ AĞIR METAL KIRLILIK İNDEKS MODELI KULLANILARAK DEĞERLENDIRILMESI

ÖZET: Bu çalışma, Trabzon, Doğu Karedeniz Havzası'nda yer alan Karadere Deresi'nin ağır metal kirliliği açısından incelenmesini içermektedir. Karadere Deresi üzerindeki iki istasyon noktasında, Şubat 2017 - Temmuz 2017 dönemini kapsayacak şekilde her ay alınan su numuneleri üzerinde, 10 adet ağır metal (Pb, Zn, Cr, Fe, Cu, Ni, Al, As, B and Ba) analizi gerçekleştirilmiştir. Su numunelerinin ağır metal analiz sonuçları, Su Kalitesi Yönetmeliği'nde verilen maksimum değerlere göre değerlendirilmiştir. Elde edilen analiz sonuçları, her iki istasyonda da Fe, Cu ve Al değerlerinin, limit değerleri aştığını göstermiştir. Ağır metal kirlilik indeks modelinin, ağır metale göre kirlilik seviyesinin değerlendirilmesinde kullanımının faydalı olduğu görülmüş ve her iki istasyon için de indeks değerinin, kritik kirlilik indeks değeri 100'ün üzerinde olduğu bulunmuştur.

Anahtar Kelimeler: Ağır metal, indeks modeli, Karadere Deresi.

O 95. ECOTOURISM IN TURKEY AND THE WORLD: SOCIAL, CULTURAL AND ECONOMIC BENEFITS

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ABSTRACT: The tourism sector, which is one of the most successful sectors in Turkey, entered into a new phase of increasing demand of nature, active holidays, and unique identity searches. Turkey has a great potential with its history, culture, natural beauties and nature sports. When the data of recent years are examined, the number of tourists and ecotourists coming to the country and the continuous increases in tourism revenues indicate that the sector is developing steadily.
In this research, ecotourism's significant place for Turkey's tourism sector in recent years, its contribution to the national economy and environment and the tourism policies for more gains from ecotourism are mentioned.

Keywords: Tourism, ecotourism, ecotourist, economy, Turkey

DÜNYADA VE TÜRKİYE'DE EKOTRUZİM, SOSYAL-KÜLTÜREL VE EKONOMİK KATKILARI

ÖZET: Son yıllarda ülkemizin, dünya ekonomisiyle bütünleşme yolunda en başarılı olduğu sektörlerden biri olan turizm sektörü, doğa, özgü kimlik ve aktif tatil arayışının giderek arttığı yeni bir süreç içine girmiştir. Ülkemiz tarihi, kültürü ve doğal güzellikleri ile doğa sporlarına sahip büyük bir potansiyeli de bünyesinde barındırmaktadır. Son yıllardaki veriler incelendiğinde ülkemize gelen turist, ekoturist sayısı ve turizm gelirlerinde sağlanan sürekli artışlar, sektörde istikrarlı bir gelişmenin olduğunu göstermektedir.
Bu çalışmada; son yıllarda Türkiye'nin turizm sektörü içinde önemli ölçüde yer tutan ekoturizmin, ülke ekonomisine ve çevreye olan katkılarından, uluslararası turizm gelirinden daha fazla pay alma yolundaki turizm politikalarından bahsedilmektedir.

Anahtar kelimeler: Turizm, Ekoturizm, Ekoturist, Ekonomi, Türkiye

O 96. THE RESEARCH ON THE LIGHTING IN PLANT DESIGN

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ABSTRACT: One of the most important elements of the landscape design is the plant design which is a series of processes involving the selection and editing of plant material required for a specific purpose, space and time. In this context, the plant design should have a remarkable clarity in all elements that should be seen at night, as well as the daytime. For a landscape design to be attractive and strong, the illumination of a design is an important factor, both in the exterior and interior spaces.
The aim of this research is to reveal the plant design effects of living materials within the scope of the direction and quality of the light on the users.

Keywords: Plant design, Space, Light, Lighting, Illumination

BİTKİSEL TASARIMDA IŞIĞIN KULLANIMI

ÖZET: Peyzaj tasarımının en önemli öğelerinden biri olan bitkisel tasarım; belirli bir amaç, mekan ve zaman içinde gerekli olan bitki materyalinin seçimi ve düzenlenmesini kapsayan işlemler dizinidir. Bu doğrultuda yapılan bitkisel peyzaj tasarımlarının mekanda, gündüz olduğu gibi gece de görünmesi gereken bütün öğelerin dikkat çekici belirginliğe sahip olması, tasarımda çarpıcı bir görüntü oluşturmaktadır. Gerek dış mekanda, gerekse iç mekanda, yaratılmak istenen bu tasarımların etkisinin güçlü olması için, aydınlatma önemli bir faktördür.
Bu çalışmada; bitkisel tasarımdaki canlı objelerin, ışığın yön ve niteliğiyle birlikte, kullanıcı üzerindeki etkilerinin ortaya konulması hedeflemiştir.

Anahtar kelimeler: Bitkisel Tasarım, Mekan, Işık, Aydınlatma

O 97. THE INFLUENCE OF THE ENVIRONMENTAL MANAGEMENT SYSTEM ON THE ENVIRONMENTAL IMPACT OF AIRPORTS

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ABSTRACT: Today's communication and transportation networks develop together with technology. Transportation is an important and indispensable part of modern life that determines the quality of life of modern people. In addition to the social changes brought about by the development of transport, there are also significant environmental impacts. One of the important elements of the transportation that causes these effects is transportation by air.
The air transportation, as one of the most important sectors, is showing an increasing trend globally. The airports, which are considered as the connection points of the air transportation, open new doors into the economic, social and cultural development of the regions. On the contrary, they have negative effects on the environment.
In this research, the importance of continuity of the environmental management system and environmental protection measures is addressed in order to ensure that the damage caused by airports is minimized. As a result, proposals on this issue have been put forward.

Keywords: Airports, Environmental Pollution, Environmental Management System

HAVAALANLARININ ÇEVREYE OLAN ETKİLERİNDE ÇEVRE YÖNETİM SİSTEMİNİN ÖNEMİ

ÖZET: Günümüz dünyasında iletişim ve ulaşım teknolojiyle birlikte gelişerek artmaktadır. Ulaşım; çağdaş insanın yaşam kalitesini belirleyen, modern yaşamın önemli ve vazgeçilemeyen bir parçasıdır. Ulaşımın gelişmesinin getirdiği toplumsal değişmelerin yansıra, önemli çevresel etkilenmeler de yaşanmaktadır. Bu etkilenmelere sebep olan ulaşımın önemli unsurlarından birisi ise havayoluyla ulaşımdır.
Günümüzde önemli bir konuma sahip hava taşımacılığı sektörü giderek artan bir gelişme göstermektedir. Hava taşımacılığının bağlantı noktaları olarak kabul edilen havaalanları, bir yandan bulunduğu bölgelere ekonomik, sosyal ve kültürel bakımdan gelişmenin yolunu açarken aynı zamanda da çevreye olumsuz etkiler vermektedir.
Bu çalışmada; hava alanlarının çevreye verdiği zararlar, bu zararların en aza indirgenebilmesini sağlamak için çevre yönetim sisteminin ve çevre koruma önlemlerinin sürekliliğinin önemine değinilmiş; bu konu ile ilgili öneriler ortaya konmuştur.

Anahtar kelimeler: Havaalanı, Çevre Kirliliği, Çevre Yönetim Sistemi

O 98. THE OLYMPIC VILLAGES AND THEIR BENEFITS FOR THE COUNTRIES IN THE EXAMPLES OF TURKEY AND OTHERS

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ABSTRACT: The Olympic Villages are centers that accommodate athletes and officials, usually built near the fields where the competitions in the Olympic Games will take place. The Olympic Games are divided into summer and winter Olympics and they are held every 4 years. Each year, the interest in the Olympic Games and therefore the number of participating countries and athletes are increasing. Recently, the Olympic Villages show similarities with small cities.
In this research, the historical development of Olympic Villages is mentioned in the examples around the world and Turkey. In addition, it has been revealed with data that such organizations provide social, cultural and tourism gains for countries. As a result, proposals have been suggested about the subject.

Keywords: Olympic Games, Olympic Villages, Socio-cultural benefits, Tourism benefits

OLİMPİYAT KÖYLERİ, ÜLKEYE KATKILARI, DÜNYADAN TÜRKİYEDEN ÖRNEKLER

ÖZET: Olimpiyat köyleri, genellikle Olimpiyat Oyunlarındaki yarışmaların gerçekleştirileceği sahaların yakınlarına inşa edilen, sporcuları, görevlileri, yetkilileri barındıracak konaklama merkezleridir. Bu günün olimpiyat köyleri birer küçük şehir gibidirler. Günümüzde olimpiyat oyunları yaz ve kış olimpiyatları olmak üzere ikiye ayrılmakta ve 4 yılda bir yapılmaktadır. Her geçen yıl olimpiyat oyunlarına ilgi ve dolayısıyla da katılan ülke ve sporcu sayısı artmaktadır.
Bu çalışmada; olimpiyat köylerinin tarihsel gelişimi, Dünya'daki ve Türkiye'deki örneklerinden bahsedilmektedir. Ayrıca bu tür organizasyonların ülkelere; sosyal, kültürel ve turizm açısından kazandırdıkları, veriler doğrultusunda ortaya konulmuş ve konu ile ilgili öneriler getirilmiştir.

Anahtar kelimeler: Olimpiyat oyunları, Olimpiyat köyleri, Sosyo-kültürel katkılar, Turizm katkıları

P 1. INVESTIGATION OF KARABÜK CITY CENTRE AIR QUALITY LEVEL

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ABSTRACT: This study has been presented for last year project of Selcuk University Department of Environmental Engineering department. In this work, Karabuk province Air Pollution Situation was studied and the causes of air pollution in Karabuk were investigated in this regard. Daily pollutant values Karabuk air pollution over the last 5 years have been examined This value comparison is made in Turkey and has been checked for conformity with European standards. In addition, the effects of the parameters examined on human health and socioeconomic values were examined. When Karabuk is considered as a city, it has reached to high levels in the iron and steel industry in our country and the main air problem is also due to this reason. However, thanks to the advanced chimney and remediation systems that have been created in recent years, these problems have begun to come from the upper level. These sector investments are expected to increase further in the coming years due to the fact that the main source of livelihood in the people living in the region is industrial workmanship. This percentage should be considered and should be carefully investigated for sectoral air pollution.

Keywords: Karabük, Air Pollution, Air Quality, City centre, Clean industry

KARABÜK'ÜN HAVA KALİTESİ DURUMUNUN İNCELENMESİ

ÖZET: Selçuk Üniversitesi Mühendislik Fakültesi Çevre Mühendisliği Bölümü 2017 – 2018 yılı bitirme tezi olarak belirlenen konu gereğince Karabük ilinin hava kalitesi durumu araştırılmıştır. Karabük ülkemizin Batı Karadeniz bölgesinde bulunan ve başlıca geçim kaynağı sanayi denebilecek bir şehirdir. Karabük deki hava kalitesine etkiyen başlıca sebepte aslın budur. Geçmişten günümüze gelişen teknoloji ve yeni temiz üretim prosesleri sayesinde bu sorunun yüksek ölçüde üstesinden gelinmeye çalışılsa da henüz bu sorun tam olarak aşılamamıştır. Bölgedeki sanayi çeşitliliğinin büyük çoğunluğu demir – çelik den oluşmaktadır ve yılın tüm günleri aktif haldedir. Bu yüzden Bölgedeki hava kalitesi de yılın tüm günlerinde şehrin farklı 3 noktasından takip edilmekte ve anlık rapor edilmektedir. Biz ise bu araştırmamızda şehirdeki hava kalitesi durumunun sağlığa, ekolojik hayata, sosyal hayata ve yaşanılan çevrenin hava kalitesi standartlarıyla karşılaştırmasına ve etkilerine baktık.

Anahtar Kelimeler: Karabük, Hava Kirliliği, Hava Kalitesi, İl merkezi, Temiz üretim

P 2. GREENHOUSE GASES EMISSIONS AND LEVELS

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ABSTRACT: The greenhouse effect in a natural phenomen linked to the absorption of solar energy by the earth's atmosphere. Part of the long-wave infrared radiation emitted by the sun is not reflected back into space by the Earth's surface but is absorbed by greenhouse gases (GHGs) naturally occuring in the atmosphere. This radiation is transformed into heat, resulting in a stable average temperature of 15ºC in the Earth's atmosphere. The current trend of climate change is warming the planet towards its highest temperatures in the last 1–40 million years. The Intergovernmental Panel on Climate Change (IPCC) projects a minimum temperature increase of 1.4 ˚C and projected sea level increase of 0.2m by 2100 resulting from anthropogenic climate change.
The main contributors regarding GHGs are fossil fuels (such as oil, coal and natural gas) burning for electricity production and its utilisation in industry, deforestation, transportation systems, agricultural waste burning, livestock emissions as well as evolved gases from sanitary landfill.
Animal husbandry is also an important source of greenhouse gas emissions. Two important greenhouse gases, methane (CH4) and nitrous oxide (N2O), are released into the atmospheres of livestock activities. Turkey is an important country in the world in terms of the number of animals and is also due to the total greenhouse gas production 7% of value of agricultural and livestock activities. The lack of proper livestock models increases the amount of greenhouse gases. Methane emissions are mainly due to enteric fermentation and manure management. On the other hand, the main source of N_2O emissions is the burning of agricultural land and stubble. 70% of agricultural N_2O emissions are based on the use of nitrogen and natural fertilizers. Turkey, CH4 emissions from enteric fermentation calculating the Intergovernmental Panel on Climate Change (IPCC) determined by the methods given first tier uses a technical name. This study includes literature on the source and effects of greenhouse gases and calculation methods for livestock and agriculture

Keywords: global heating, greenhouse gases, livestock, IPCC

P 3. HEAVY METALS POLLUTION IN AIR AND SOIL

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ABSTRACT: Since ancient times, heavy metals have begun to spread into the atmosphere and the earth as natural consequences of human activities. Water and air pollutants that form during industrial activities tend to mix with the soil by chemical means. Industrialization has brought about heavy metal pollution and has reached great dimensions over time. There are more 35 metal exposed in the outdoors, of which 23 are heavy metals. The definition of heavy metal is used for metals with a density of 5g /cm3. Lead (Pb), cadmium (Cd), chromium (Cr), iron (Fe), cobalt (Co), copper (Cu), nickel (Ni), mercury (Hg) and zinc are the heavy metals frequently encountered. Heavy metals are spread from the very different sources and from different process stages to the atmosphere. The atmospheric heavy metals released from different sources can harm the ecological balance by w dry and wet accumulation and surface waters followed by groundwater. This study focuses on methods for the sources, accumulation and remediation methods of heavy metals in the air and soil.

Keywords: Heavy metals, Air pollution, Soil pollution, Remediation

P 4. MINING ACTVITIES AND AIR POLLLUTION

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ABSTRACT: The requirement of raw material and energy are increasing day by day in the world. Most of this energy and raw material are provided by the removal of mines from nature. Today, China, Russia, United States, as the country is priority of obtaining energy from coal. Coal is the most suitable fuels for its efficiency and price among fossil fuels,**.** There are major changes in the natural environment during the removal of coal from the mining areas**.** These changes can sometimes turn into areas where the environment has become completely unusable. The requirement of coal has increased the production of coal, environmental problems caused by coal mining have increased. One of these problems is air pollution. Emissions of Particulate Matter (PM) and Methane (CH4) gases, especially in open and underground mining, are important. For this reason, it is necessary to evaluate the risk-producing emissions during the preparation phase of the mining and to develop the best technology-friendly measures for the prevention of emissions. In the cases where the amount of dust emission due to the activities of the mining operations is determined and the measurement methods can not be used, the calculation method is applied with the emission factors. Emission factors, the characteristic value of the relationship between the amount of material and the amount of leakage dust emitted to the atmosphere**,** have been determined within the framework of legislation and regulations. In this study, it is aimed to investigate the status, levels and precautions to be taken of the possible emissions in open and closed mines.

Keywords: air pollution, coal mine, underground mining, methane gas and particulate matter

P 5. CLIMATE CHANGE IMPACTS ON INFRASTRUCTURE OF KONYA

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ABSTRACT: Existing and possible effects of climate change may emerge locally in different forms. These effects appear both on nature and living creatures. Climate change on global and regional scale and their causes are discussed in this study. The greenhouse gases and aerosols which play an important role in climate change are explained in detail. The current status of Turkey and expected effects of climate change in the future are discussed. The current climate, precipitation regime and temperature distribution of Konya and projected conditions that shift by climate change effects were explained. The effect of climate change on the infrastructure of Konya, which the main topic of this study, is evaluated under three headings: sewage network, wastewater treatment plant and drinking water treatment plant. The past and the present status of sewage network was discussed. Information about wastewater treatment plant of Konya and reuse practices were mentioned. Water demand and the sources of water supplies of Konya were explained. Potential impacts of climate change on sewage network, water and wastewater treatment plants were then separately investigated.

Keywords: Konya, Climate change, Infrastructure

İKLİM DEĞİŞİKLİĞİNİN KONYA ALTYAPISI ÜZERİNE ETKİSİ

ÖZET: İklim değişikliğinin var olan ve olası etkileri bölgesel olarak farklılıklar gösterebilmektedir. Bu etkiler hem doğa üzerinde hem de canlı yaşamı üzerinde görülebilmektedir. Bu çalışmada küresel ve bölgesel ölçekli iklim değişikliğinden ve iklim değişikliğinin nedenlerinden bahsedilmiştir. İklim değişiminde önemli rol oynayan sera gazı ve aerosoller hakkında detaylı bilgi verilmiştir. Türkiye'nin mevcut durumu ve gelecekte beklenen iklim değişikliği etkilerine değinilmiştir. Konya'nın mevcut iklimi, yağış rejimi ve sıcaklık dağılımı ve iklim değişikliğinin etkileri ile değişen durumlar açıklanmıştır. Çalışmanın asıl konusu olan iklim değişikliğinin Konya altyapısına etkisi kanalizasyon şebekesi, atıksu arıtma tesisi ve içme suyu arıtma tesisi olmak üzere üç ana başlıkta değerlendirilmiştir. İlk olarak kanalizasyon şebekesinin geçmişten günümüze kadar olan durumundan bahsedilmiştir. Konya atıksu arıtma tesisi ve tesisteki geri kazanım uygulamalarına dair bilgi verilmiştir. Konya'nın içme suyunu karşıladığı kaynaklardan ve su ihtiyacı durumundan bahsedilmiştir. İklim değişikliğinin kanalizasyon şebekesi, su ve atıksu arıtma tesisleri üzerindeki olası etkileri daha sonra ayrı ayrı incelenmiştir.

Anahtar Kelimeler: Konya, İklim değişikliği, Altyapı

P 6. SPATIAL DISTRIBUTION OF AIR POLLUTANTS MEASURED BY THE MINISTRY OF ENVIRONMENT AND URBANIZATION IN KONYA REGION

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ABSTRACT: Air pollution with high population growth, irregular urbanization, poor quality fuel consumption, rapid industrialization and the increase in the number of motor vehicles have brought significant environmental problems in recent years. The emission sources that cause air pollution are generally emissions from heating systems, motor vehicles and industry. When these emission sources are considered, the importance of air quality stations for monitoring pollutants was increased. Establishment of a basis for the determination of exposure to air pollutants, detection of pollutants in the settlement and industrial zones and development of an air quality action plan for this subject, determination of pollutant sources and risks, traffic management, temporal and spatial exposure, determination of long- air quality monitoring stations have an important place in order to be informed. Konya province is located in Central Anatolia region of Turkey. With the geographical structure of the province and the intense meteorological events in the winter months, the potential for air pollution increases. Konya city air pollution measurements are carried out automatically with fixed devices. Measurements are made on sulphur dioxide and particulate matter parameters. When the air pollution of the Konya City centre was examined, it was firstly analysed in the charts and tables by comparing the air quality limit values, which are accepted in the Regulation of Air Quality Protection, for the Long Term Limit Values (LTV), Short Term Limit Values (STV) and Winter Season Mean Limit Values will be processed and evaluated.

Keywords: Konya, Air Pollution, City centre, temporal change

KONYA BÖLGESİNDE ÇEVRE VE ŞEHİRCİLİK BAKANLIĞI İSTASYONLARINDA ÖLÇÜLEN KİRLETİCİLERİN ZAMANLA DEĞİŞİMİ

ÖZET: Hava kirliliği, hızlı nüfus artışı, düzensiz şehirleşme, kalitesiz yakıt kullanımı, hızlı sanayileşme ve motorlu taşıt sayısının sürekli artması son yıllarda önemli çevre sorunlarını beraberinde getirmektedir. Hava kirliliğine neden olan emisyon kaynakları genel olarak ısınma, motorlu taşıtlar ve endüstri den kaynaklı emisyonlardır. Bu emisyon kaynakları dikkate alındığında, kirleticilerin izlenmesi için hava kalitesi istasyonlarının önemi artmaktadır. Hava kirleticilerine maruz kalma oranının belirlenmesi, yerleşim ve sanayi bölgelerindeki kirleticilerin tespit edilmesi ve buna yönelik hava kalitesi eylem planının geliştirilmesi için bir temel oluşturulması, kirletici kaynaklarının ve risklerinin belirlenmesi, trafik yönetimi, zamansal ve mekânsal maruz kalma, uzun vadeli eğitimlerin belirlenmesi ve toplumun hava kalitesi konusunda bilgilendirilmesi amacıyla hava kalitesi izleme istasyonlarının önemli bir yeri vardır. Konya ili, İç Anadolu bölgesinde yer almaktadır. İlimizin coğrafik yapısı ve kış aylarında yaşanan yoğun meteorolojik olaylar ile birlikte hava kirliliği potansiyeli artmaktadır. Konya şehri hava kirliliği ölçümleri sabit cihazlar ile yarı otomatik şekilde gerçekleştirilmektedir. Ölçümler kükürt dioksit ve partikül madde üzerinden yapılmaktadır. Konya İl Merkezinin hava kirliliği incelenirken öncelikle, Hava Kalitesinin Korunması Yönetmeliğince kabul edilen ve hava kalitesi sınır değerleri olan, Uzun Vadeli Sınır Değerler (UVS), Kısa Vadeli Sınır Değerler (KVS) ve Kış Sezonu Ortalama Sınır Değerleri ile kıyaslanarak grafik ve tablolarda işlenecek ve değerlendirme yapılacaktır.

*Anahtar kelimeler: Konya, Hava Kirliliği, Şehir merkezi, zamansal değişi*m

P 7. THEORETICAL INVESTIGATIONS ON STATIC FIRST HYPERPOLARIZABILITIES OF N,N'-DIBENZYLIDENE-4-BROMOBENZENE-1,2-DIAMINE

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ABSTRACT: To investigate second-order nonlinear optical (NLO) phenomena of N,N'-dibenzylidene-4-bromobenzene-1,2-diamine, the electric dipole moment and static second-order hyperpolarizability values have been calculated by means of Finite Field (FF) procedure. The basic structure of the title material is based on the π-bond system, due to the overlap of π-orbital delocalization of electronic charge distribution leads to a high mobility of the electron density. The computation results with non-zero values on first hyperpolarizability indicate that the examined compound might possess microscopic second-order NLO behaviour.

Keywords: Second-order Optical Nonlinearity, Electric Dipole Moment, Finite Field, π-bond system, First Hyperpolarizability.

P 8. COMPUTATIONAL STUDIES ON ELECTRIC DIPOLE MOMENT AND QUADRATIC HYPERPOLARIZABILITY OF (5-BROMOPYRIDINE-2,3-DIYL)BIS(SALICYLIDENEAMIN)

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ABSTRACT: To investigate the linear optical and microscopic second-order nonlinear optical (NLO) behaviour of (5-bromopyridine-2,3-diyl)bis(salicylideneamin), we have computed the electric dipole moment and dispersion-free quadratic hyperpolarizability values using density functional theory (DFT). The calculated non-zero electric dipole moment value shows that the title compound might have first hyperpolarizability with non-zero value. The highest occupied molecular orbitals (HOMO), the lowest unoccupied molecular orbitals (LUMO) and the HOMO-LUMO band gaps for first and second frontier orbitals have been also examined by means of DFT.

Keywords: Density Functional Theory, Electric Dipole Moment, Quadratic Hyperpolarizability, HOMO-LUMO Energies, Nonlinear Optics

P 9. QUANTUM CHEMICAL COMPUTATIONS ON LINEAR OPTICAL PHENOMENA OF 2,2'-(6-CHLORO-1,3,5-TRIAZINE-2,4-DIYL)BIS(AZANEDIYL)DIPYRIDIN-3-OL

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ABSTRACT: To provide an insight into the linear optical properties of 2,2'-(6-chloro-1,3,5-triazine-2,4-diyl)bis(azanediyl)dipyridin-3-ol, static linear polarizability and maximum one-photon absorption (OPA) wavelength values have been calculated by density functional theory (DFT) quantum mechanical computations at B3LYP level. Using DFT at B3LYP level, one can obtain a reasonably accurate description of the static dipole polarizability and optical spectrum of the examined structure. In addition to the linear optical properties, the highest occupied molecular orbital (HOMO) and the lowest unoccupied molecular orbital (LUMO) energies have been evaluated by DFT/ B3LYP method.

Keywords: One-photon Absorption, HOMO-LUMO Band Gaps, Density Functional Theory, Linear Polarizability, Linear Optics.

P 10. RECOVERY OF WASTEWATER IN ÇANKIRI FOR AGRICULTURAL IRRIGATION

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ABSTRACT: This study aimed to determine the effluent quality required to irrigate local agricultural products in a year scale using Çankırı Şabanözü wastewater treatment plant (WWTP) effluent in place of discharge to a receiving water body. Anaerobic and facultative stabilization pond was chosen as the WWTP type and removal degrees were accepted as 73, 67 and 83% respectively for Biochemical Oxygen Demand (BOD), chemical Oxygen Demand (COD), suspended solid (SS) parameters. AWWTP effluent wastewater did not meet the standart according to WWTP Technical Methods Regulation in electrical conductivity (EC) and therefore, was not suitable for agricultural irrigation. Agricultural products grown in Çankırı were evaluated based on their water need and quality and sugar beet and wheat were chosen to be suitable for irrigation after a 90% EC removal via ultra membrane filtration unit. The additional unit was designed with a solar energy unit of 630 m^2 area to supply the operational energy of the mebrane filtration and the irrigation need for wheat during January-March and November-December and sugar beet during the rest of the year to compensate the shortage of water from natural precipitation.

Keywords: Irrigation, treated wastewater, recovery, membrane filtration, solar energy.

ÇANKIRI İLİ ATIKSU ARITMA TESİSİ ÇIKIŞ SUYUNUN TARIMSAL SULAMADA KULLANILMASI

ÖZET: Bu çalışmada, Çankırı Şabanözü Atıksu Arıtma Tesisi (AAT) çıkış sularının alıcı ortama deşarj edilmesi yerine bölgede yetişen bitkilerin tarımsal sulamasında kullanımını sağlamak üzere çıkış suyu kalitesinin eldesi amaçlanmıştır. Çalışmada arıtma yöntemi olarak anaerobik ve fakültatif stabilizasyon havuzu seçilmiştir. AAT verimi Biyokimyasal Oksijen İhtiyacı (BOİ), Kimyasal Oksijen İhtiyacı (KOİ), Askıda Katı Madde (AKM) parametreleri için sırasıyla %73, 67 ve 83 olarak kabul edilmiştir. Arıtma tesisi çıkış suları analiz sonuçları AAT Teknik Usuller Tebliği Ek7 kapsamında değerlendirildiğinde de elektriksel iletkenlik parametresinin standartları sağlamadığı ve bu nedenle bu suların tarımsal sulamada kullanımının uygun olmadığı belirlenmiştir. Çankırı ilinde yetişen başlıca bitki türlerinden (Buğday, Arpa, Mısır, Fasulye, Mercimek, Burçak, Fiğ, Patates ve Şeker Pancarı) Şeker Pancarı ve Buğday seçilerek AAT çıkış suyu değerleri ile bu bitkilerin su kalite parametreleri değerlendirilerek tesise eklenecek sistem olarak %90 iletkenlik giderimi için Ultrafiltrasyon (UF) tipi membran proses kullanımı uygun görülmüş, tesis tasarımı yapılarak enerji ihtiyacı için düz açık arazide 630 m^2'lik alan güneş paneli hesabı elde edilmiştir. Seçilen tasarım sonrası tesis çıkış suyunun Ocak, Şubat, Mart, Kasım ve Aralık aylarında buğday bitkisi için; Nisan, Mayıs, Haziran, Temmuz, Ağustos, Eylül ve Ekim aylarında ise şeker pancarı için sulanması mümkün olacak alan hesabı yapılmıştır.

Anahtar Kelimeler: Sulama suyu, arıtılmış atıksu, geri kazanım, membran, güneş enerjisi.

P 11. DRINKING WATER SUPPLY FROM SEA WATER USING SOLAR

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ABSTRACT: Unconventional water sources are being used due to global climate change and water scarcity, such as sea water in many countries in recent years. Countries of extreme dry regions like Middle-East increase water supply from sea water using advanced technologies as reverse osmose and reduced costs. A reverse osmose treatment plant was designed for Datça, Muğla at a capacity of 14000 m^3 /d with solar energy unit at a suitable cost. Datça peninsula is a highly touristic area with a high water demand during the hot season. The water treatment plant was designed for a 35 year service life including pretreatment and desalination units, process details, environmental impact, investment and operational costs and energy use.

Keywords: Sea water, drinking water, solar energy, reverse osmose, Datça.

ENERGYGÜNEŞ ENERJİSİ KULLANILARAK DENİZ SUYUNDAN İÇME SUYU ELDE EDİLMESİ

ÖZET: Dünyada iklim değişikliği ve kuraklığın etkisiyle konvansiyonel olmayan su kaynaklarından faydalanılmasına yönelik bir eğilim söz konusudur. Konvansiyonel su kaynağı olmayan deniz suyundan, içme suyu üretilebilmektedir. Son yıllarda birçok ülke, deniz suyundan tuz giderme ile içme suyu elde etmektedir. Özellikle aşırı kurak bölgeler içeren Ortadoğu ülkelerinde, deniz suyundan tatlı su üretiminde günümüzde artış olduğu görülmektedir. Son yıllardaki teknolojik gelişmeler ile üretim maliyetlerindeki düşüşler sebebiyle deniz suyu arıtımında ters ozmoz membranları tercih edilmektedir. Bu çalışmada Muğla ilinin Datça ilçesine hizmet verecek olan 14000 m^3 /gün kapasiteli güneş enerjili ters ozmoz sistemi tasarlanmış ve deniz suyundan içme suyu elde edilmesi hakkında maliyet araştırması yapılmıştır. Yapılan araştırmada turistik bir bölge olan Datça yarımadasının yaz aylarında içme suyu ihtiyacı artmaktadır. Bu amaçla Datça yarımadasının içme suyu ihtiyacının yarısını karşılayacak şekilde 35 yıl hizmet verebilecek güneş enerjili ters ozmoz tesisi tasarımı yapılmıştır. Bu çalışma kapsamında; küresel ölçekteki tuz giderme tesisleri, tesislerin proses detayları, çevresel etkileri, yatırım ve üretim maliyetleri, enerji kullanımları, ters ozmoz sistemlerin işletim biçimi incelenmiştir.

Anahtar Kelimeler: Deniz suyu, içme suyu, güneş enerjisi, ters ozmoz, Datça.

P 12. EFFECTS OF CLIMATE CHANGE AND DROUGHT ON KONYA

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ABSTRACT: Konya Closed Basin has an area of 53,850 km^2 that is located in Central Anatolia and occupies 7% of the total area of Turkey. The basin is recognized as one of the Global 200 Eco-regions and has 2 national parks, 15 important bird areas and 6 important plant areas. However, the stress on the water resources is exacerbated by recurring droughts in the basin. Monitoring droughts are necessary to minimize environmental, hydrological and agricultural threats. In this research, it was aimed to determine the effects of climate change and drought on Konya closed basin. For this purpose, literature review has been done and tried to evaluate the subject in the light of new literature. Literature search results are both thoughtful and sad dimensions. It appeared that living the climate change of Konya is an inevitable true. Drought, immigration, lack of water, becoming desert extinct of some ecological species, decreasing agricultural fields will be natural and social problems lived. If we do not have solutions such as using renewable energy resources, preventing uncontrolled industrialization and preventing forest destruction for bad rıdge it won't be possible to find a clean environment which can be lived.

Keywords: Climate change, drought, Konya Closed Basin

İKLİM DEĞİŞİKLİĞİ VE KURAKLIĞIN KONYA'DA ETKİLERİ

ÖZET: Konya kapalı havzası, Anadolu'nun ortasında 53.850 km2 alan kaplar. Kapladığı bu alan Türkiye'nin %7'sine karşılık gelmektedir. Havza, küresel 200 eko-bölge arasında olup içerisinde 2 adet milli park, 15 adet önemli kuş alanı, 6 adet önemli bitki alanı bulunmaktadır. Ancak tekrarlayan kuraklıklar havzadaki var olan su kaynakları sorunlarını daha da kötü bir duruma sokmaktadır. Havzanın çevresel, hidrolojik ve tarımsal sorunlarını en aza indirmek için kuraklığın izlenmesine ihtiyaç vardır. Bu araştırmada iklim değişikliği ve kuraklığın Konya kapalı havzası üzerindeki etkilerinin belirlenmesi amaçlanmıştır. Bu amaçla literatür taraması yapılarak, yeni literatürler ışığında konu değerlendirilmeye çalışılmıştır. Literatür tarama sonuçları hem düşündürücü hem de üzücü boyutlardadır. Konya'nın iklim değişikliği felaketini ciddi bir biçimde yaşayacağı kaçınılmaz bir gerçek olarak ortaya çıkmaktadır. Kuraklık, göç, susuzluk, çölleşme, bazı ekolojik türlerinin yok olması, tarım alanlarının azalması yaşanabilecek önemli çevresel ve toplumsal sorunlar olarak karşımıza çıkacaktır. Eğer hızla değişmekte olan iklimin kötü gidişine; yenilebilir enerji kaynaklarının kullanılması, denetimsiz sanayileşmenin önüne geçilmesi ve orman alanlarının yok olmasının engellenerek yeşil alanların artırılması gibi çözümler bulamazsak, uzun vadede gelecekte yaşanabilir bir çevre bulmak mümkün olmayacaktır.

Anahtar Kelimeler: İklim değişikliği, kuraklık, Konya Kapalı Havzası.

P 13. COMPARISON OF ENVIRONMENTAL IMPACTS OF MEERSCHAUM INDUSTRY WITH OTHER INDUSTRIAL WORKS IN ESKISEHIR

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ABSTRACT: The 'meerschaum', which began to operate in the mid 18th century and was integrated with the city of Eskişehir, is one of the first underground resources exported by the Ottoman Empire. This stone, which has been exported for many years, lost its significance after world war I. Today, a limited area in Eskişehir and a limited quantity are produced and processed, then being commercialized. In this study it was aimed to explain the socio-economic importance of the the 'meerschaum' mining, to calculate its carbon footprint and to take attention for the effects of other big industrial works on this sector. For this purpose, the chemical and physical properties of meerschaum were investigated, and the information for the mining and industrialization of meerschaum were collected. As a result the carbon footprint of meerschaum industry was calculated as 2808 tonnes per year CO_2. However, the carbon footprint of the thermal power plant to be built on the Alpu region was calculated as 222Million tonnes per year. There is a risk of adverse effects of possible air polluton from the power plant on meerschaum, which is a white material. In addition, in this study, the possibility of using the wind power as an example alternative energy source was evaluated.

Keywords: Meerschaum, Eskişehir, Thermal power plant, Carbon footprint

ESKİŞEHİR LÜLETAŞI SEKTÖRÜNÜN ÇEVRESEL ETKİLERİNİN BÖLGEDEKİ DİĞER ENDÜSTRİYEL FAALİYETLER İLE KARŞILAŞTIRILMASI

ÖZET: 18. yüzyılın ortalarında işletilmeye başlanan ve Eskişehir ili ile bütünleşmiş olan 'Lületaşı' Osmanlı İmparatorluğu'nun ihraç etmiş olduğu ilk yeraltı kaynaklarından birisidir. Uzun yıllar boyunca ihraç edilen bu taş I. Dünya Savaşı'ndan sonra önemini kaybetmiştir. Günümüzde Eskişehir'de sınırlı bir alanda ve sınırlı bir miktarda üretilip işlendikten sonra ticareti yapılmaktadır. Bu çalışmada lületaşı madeni sektörünün sosyo ekonomik öneminin açıklanması, karbon ayak izi hesaplanması, bölgedeki diğer büyük faaliyetlerin bu sektöre etkisine dikkat çekilmesi amaçlanmıştır. Bu amaçla lületaşının kimyasal ve fiziksel özellikleri incelenrek, maden durumu ve diğer bilgileri toplanmıştır. Bu bilgiler sonucunda karbon ayak izi hesabı yapılmıştır. Lületaşı çıkarma ve işleme sektörünün yıllık 2808 ton CO_2 karbon ayak izi sözkonusudur. Ayrıca lületaşı çıkarılmakta olan Alpu bölgesine yapılacak termik santralin yıllık yaklaşık 222Milyon ton CO_2 salınımı hesaplanmıştır. Oluşacak hava kirliliğinin beyaz bir malzeme olan lületaşı kalitesini olumsuz etkilemesi riski mevcuttur. Ayrıca bu çalışmada bölgede diğer alternatif enerji kaynaklarından rüzgar enerjisinin kullanılabilirliği de örnek olarak değerlendirilmiştir.

Anahtar Kelime: Lületaşı, Eskişehir, termik santral, karbon ayak izi

P 14. A NEW APPROACH FOR ASSESSMENT OF CONSTRUCTION AND DEMOLITION WASTES IN KONYA

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ABSTRACT: Recently, many structural projects have started to be implemented in our country with the aim of urban transformation. As a result, the construction wastes are a serious environmental problem. To ensure that the environmental impacts of these wastes are at a minimum, all stages of the production process must be taken into consideration for environmental and structural sustainability. In this study, the construction and demolition wastes as a consequence of urban transformation and settlement are examined in some world countries and in our country. A new construction and demolition waste management system has been established for the Konya province by examining the recovery and other disposal methods in detail.

Keywords: Urban transformation, Waste, Disposal, Recovery, Management system

KONYA İLİ İÇİN İNŞAAT VE YIKINTI ATIKLARI YÖNETİMİ ÜZERİNE YENİ BİR YAKLAŞIM

ÖZET: Ülkemizde son zamanlarda kentsel dönüşüm maksadıyla birçok yapısal proje uygulanmaya başlamıştır. Bunun sonucunda meydana gelen inşaat atıkları ciddi bir çevresel problem meydana getirmektedir. Bu atıkların çevresel etkilerinin en düşük düzeyde olmasını sağlamak, çevresel ve yapısal sürdürülebilirlik için yapım üretim sürecinin bütün aşamalarının dikkate alınması gerekmektedir.
Bu çalışmada, kentsel dönüşümün ve yapılaşmanın bir sonucu olarak meydana gelen inşaat ve yıkıntı atıklarının, bazı dünya ülkelerinde ve ülkemizdeki yönetimsel durumları incelenmiştir. Geri kazanım ve diğer bertaraf yöntemleri detaylı bir şekilde incelenerek, Konya ili için yeni bir inşaat ve hafriyat atığı yönetim sistemi oluşturulmuştur.

Anahtar kelimeler: Kentsel dönüşüm, inşaat atıkları, geri kazanım

P 15. AERATING AND ELECTRICITY PRODUCING SYSTEM IN WATER TREAMENT

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ABSTRACT: A number of treatment works have been either operating under capacity due to high electricity costs, or paying high energy fees. On the other hand, some unit operations have potential to produce energy during their operation. Aeration units are one of the units having high pump energy consumptions. Therefore, in this study, an alternative aeration system was designed for both aeration and energy production. The system is composed of a wheel working as a water mill and an upper feed pipe. It increases the dissolved oxygen while producing electricity during the revolving motion. The tanks in which the system is placed were also designed in the study.

Keywords: Aeration, water-wheel, electricity production

SU ARITIMINDA HAVALANDIRMA VE ELEKTRİK ÜRETEN SU ÇARKI SİSTEMİ

ÖZET: Günümüzde arıtma tesislerinin elektrik maliyetlerinin fazla olması nedeni ile birçok tesis doğru ve tam kapasiteyle işletilmemekte ya da ciddi elektrik maliyetleri ödemek zorunda kalmaktadır. Diğer taraftan, bazı tesislerde kullanılan bazı ünitelerde sistemin işletilmesi sırasındaki yüksek potansiyel enerjisinden yararlanılarak elektrik üretimi mümkündür. Havalandırma üniteleri en yüksek pompa enerji tüketimi olan üniteler arasındadır. Bu sebeple bu çalışmada alternatif bir havalandırma sistemi tasarlanmıştır. Bu sistem su değirmeni mantığıyla dönen bir çark ve bu çark içerisine yukarıdan su besleyen borudan oluşmaktadır. Sistem çalışırken hem suya çözünmüş oksijen kazandırmakta, hem de çarkın dönüşünden yararlanılarak elektrik üretilmektedir. Çalışmada çarkın yerleştirildiği ünite tasarımı da yapılmuştur.

Anahtar Kelimeler: Havalandırma, su çarkı, elektrik üretimi

P 16. EFFECTS, LEVELS AND REMOVAL METHODS OF PHARMACEUTICALS IN WASTEWATER

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ABSTRACT: Pharmaceuticals are compounds consisting of a mixture of one or more active ingredients produced for the treatment of diseases in humans and animals. The use of pharmaceuticals for human use and veterinary use is now widespread. It is the group that needs to be prevented due to the spread. Not all of the pharmaceuticals taken into the body for treatment are left in the body, but are often expelled directly from the body in the form of the main active ingredient. Though these substances are at low concentrations in the waters of the wastewater treatment plants, they are very effective and adversely affect living and environmental health. Conventional treatment methods are not sufficient for the remediation of pharmaceuticals causing adverse environmental and living health problems, so advanced treatment methods are needed. In this study, the effects of pharmaceuticals, levels of pharmaceuticals and how to remove pharmaceuticals from wastewater treatment plants are discussed.

Keywords: Pharmaceutical, Wastewater, Advanced Treatment, Micropollutants

ATIKSULARDA İLAÇ ETKEN MADDELERİN ETKİLERİ, SEVİYELERİ VE GİDERİM YÖNTEMLERİ

ÖZET: Farmasötikler insan ve hayvanlarda görülen hastalıkların tedavisi için üretilen bir veya birden fazla etkin madde karışımından oluşan bileşiklerdir. Farmasötiklerin günümüzde insan kullanımı ve veteriner amaçlı kullanımı oldukça yaygınlaşmıştır. Yaygınlaşma sebebi ile önlem alınması gereken gruptadır. Tedavi amaçlı vücuda alınan farmasötiklerin hepsi vücutta kalmaz, sıklıkla direk ana etken madde olarak vücuttan dışarı atılır. Atılan bu maddeler atıksu arıtma tesislerinin çıkış sularında düşük konsantrasyonlarda olsa da çok etkili olup canlı ve çevre sağlığını olumsuz etkilemektedir. Çevre ve canlı sağlığında olumsuzluklara yol açan farmasötiklerin giderimi için klasik arıtma yöntemleri yeterli değildir bu yüzden ileri arıtma yöntemlerine ihtiyaç duyulmaktadır. Bu bildiride farmasötiklerin etkileri, seviyeleri ve farmasötiklerin arıtma tesislerinde giderim yöntemleri ele alınmıştır.

Anahtar Kelimeler: Farmasötik, Atıksu, İleri Arıtım, Mikrokirletici

P 17. RAINWATER HARVESTING FROM STADIUMS

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ABSTRACT: Stadiums, as a product of intense interest of football, which have large areas are recently become a sustainable structure with the development of technology. Stadiums have larger areas than many building types. The number of users is high, so, the environmental impact is high. An important effect is the amount of water used in stadiums. A large part of the water usage in the stadium is for watering the grass and flushing in toilets. As a solution of this issue for the increasing environmental challenges in the world, the rainwater that falls on stadiums is recovered and stored. The siphonic rain water drainage system is used in some stadiums in the world and in Turkey as well. Detailed information about this system is presented and the potential of rainwater harvesting from stadiums in Turkey is investigated.

Keywords: Rainwater, Stadium, Water recovery, Siphonic drainage system

STADYUMLARDAN YAĞMUR SUYU HASADI

ÖZET: Günümüzde futbolun yoğun ilgi görmesi ve teknolojinin gelişmesi ile birlikte büyük alanlara sahip olan stadyumlar sürdürülebilir bir yapı haline gelmeye başlamıştır. Birçok yapı türüne göre daha büyük alanlara sahip olan stadyumlar, kullanıcı sayısı yüksek olması sebebiyle çevresel etkisi fazladır. Bu etkilerin önemli bir konusu stadyumlardaki harcanan su miktarının fazla olmasıdır. Stadyum alanı içerisinde kullanılan su miktarının büyük bir kısmı çimlerin sulanması ve tuvaletler için harcanmaktadır. Bu konu üzerinde dünyadaki artan çevre problemlerine çözüm olarak; stadyumların çatılarına ve çimlere düşen yağmur sularını depolayıp tekrar kullanımı geliştirilmektedir. Dünyada ve ülkemizdeki bazı stadyumlarda kullanılan sifonik yağmur suyu drenaj sistemi bu yoğun su tüketiminin alternatif çözümü olarak kullanılmaktadır. Bu çalışmada bu sistemle ilgili detaylı bilgi verilerek Türkiye'deki stadyumlardaki yağmur suyu hasat potansiyeli araştırılmıştır.

Anahtar Kelimeler: Yağmur suyu, Stadyum, Suyun geri kazanımı, Sifonik drenaj sistemi

P 18. SABOTAGE RISK AND PROTECTION MEASURES FOR DRINKING WATERS

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ABSTRACT: Water has gained much more importance than ever before and continues to hold its value. Whether the subject of water involves the quality standards or the quantity, it's prevalence is undeniably a part of our lives. Civilizations have established facilities where these natural reserves lie. There are many advancements about the methodologies and processes of water in terms of transportation, quality control and usages. Recent technological advancements and innovations have dramatically eased and protected the potential faults and dangers that would be likely to occur under normal circumstances, in addition to quality in terms of sanitation. The limitations of these natural resources in our world are constantly strived for, hence causing social and international conflicts. The root cause of war by political and military conflict can then be identified by analyzing the importance of natural resources, furthermore, the uses and the fairness of use. In this study, security and protection measures are discussed in order to combat potential assaults or sabotages to water resources or treatment facilities. The types of these potential threats to drinking water are examined in this study. The standards and the importance of drinking water are explored in detail alongside the potential difficulties when facing constraints or threats in form of sabotage.

Keywords: Drinking water standards, Drinking water sabotage, Toxicity, Drinking water sabotage measures

İÇME SULARINA YAPILABİLECEK SABOTAJLAR VE İÇME SULARINI KORUMA ÖNERİLERİ

ÖZET: Suyun varlığı, miktarı ve kalitesinin önemi giderek önem kazanmaktadır. Tarih boyunca birçok medeniyet su potansiyeli yüksek bölgelerde kurulmuştur. Bunun yanında suyun taşınması, kullanılması ve su kalitesine yönelik gelebilecek bir tehlikeye karşı korunması için birçok teknolojik yöntem geliştirilmiştir. Farklı toplumsal ve milletlerarası çatışmaların kaynağını yetersiz doğal kaynaklar oluşturmaktadır. Kaynakların dengesiz ve adil olmayan kullanımı birçok savaş ve silahlı çatışmada önemli rol oynamıştır. Bu çalışmada, içme sularına yapılabilecek sabotajların neler olabileceği değerlendirilerek, içme suyu kaynaklarını ve arıtma tesislerini koruma önerileri verilmiştir. İçme suyu özellikleri, standartları ve önemi hakkındaki bilginin yanında içme suyuna yapılabilecek sabotaj ihtimallerine ilişkin incelemeler ve ek bilgiler de ele alınmıştır.

Anahtar Kelimeler: İçme suyu standartları, İçme suyuna sabotaj, Toksisite, İçme suyu sabotaj önlemleri

P 19. SUSTAINABLE WATER AND WASTE MANAGEMENT STRATEGY FOR CAMPUS

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ABSTRACT: Many of the environmental challenges faced by university campuses are similar to cities because campuses are urban-like areas. Water and waste management have an important role in these challenges. Water and waste management with minimum damage to the environment can be achieved in terms of sustainability. Water and waste management are the main topics for city sustainability measures as well as for campuses. Reduction, reuse and use of alternative sources such as rainwater harvesting are recommended for sustainable water management concept. Classification of wastes to minimize environmental damage, disposal and recycling and zero waste concept are investigated for waste management. In addition, hazardous and harmful wastes and excavation wastes are also included in the assessment of waste management. In this study; the status of water and waste management of the Selcuk University main campus was explored and feasible strategies with sustainability focus were discussed.

Keywords: Sustainable campus, Sustainable water management, Sustainable waste management

YERLEŞKE İÇİN SÜRDÜRÜLEBİLİR SU VE ATIK YÖNETİM STRATEJİSİ

ÖZET: Üniversite yerleşkeleri genel olarak kent yapısında olduğu için karşılaştığı birçok çevresel problem kentlerle benzerlikler göstermektedir. Su ve atık yönetimi de bu problemlerin içinde önemli bir yere sahiptir. Çevreye en az zarar verecek şekilde su ve atık yönetimi ile sürdürülebilirlik sağlanabilir. Kentlerde olduğu gibi üniversitelerde de sürdürülebilirliğin değerlendirilmesinde su ve atık yönetimi ana başlıklardandır. Sürdürülebilir su yönetimi anlayışı içerisinde; azaltım, tekrar kullanım ve yağmur suyu gibi alternatif kaynakların kullanımı önerilmektedir. Atık yönetiminde ise oluşan atıkların çevreye verdiği zararı minimuma indirmek için sınıflandırılması, ayrıştırılması ve geri dönüştürülmesi üzerine yapılan sıfır atık yönetimi ele alınmaktadır. Ayrıca tehlikeli ve zararlı atıklar, hafriyat atıkları gibi konular da atık yönetimi konusu içinde değerlendirmeye dahil edilmiştir. Bu çalışmada; Selçuk Üniversitesi merkez yerleşkesinde su ve atık yönetimi için mevcut durum değerlendirmesi ve bu alanda sürdürülebilirlik odaklı uygulanabilir stratejiler oluşturulup sunulmuştur.

Anahtar Kelimeler: Sürdürülebilir yerleşke, Sürdürülebilir su yönetimi, Sürdürülebilir atık yönetimi

P 20. INVESTIGATION OF SUDDEN INCREASE OF WARMTH IN CANAKKALE

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ABSTRACT: Many special meteorological events have been labeled upon the observations by people. One of them is called "cemre" that basically means sudden increase of warmth at specific days of every year. The aim of this study is to explain what "cemre" event means. The literature was reviewed and similar events in other cultures were investigated. Daily data from three meteorology stations in Canakkale province was used. The air, water and soil temperatures were averaged for each day of year within the dataset and then analyzed through graphics.

Keywords: Cemre event, Sudden increase of warmth, Temperature, Canakkale,

ÇANAKKALE'DE CEMRE DÜŞMESİ OLAYI

ÖZET: Halk arasında deneyimlere dayanan birçok özel gün bilinmektedir. Bunlardan biri de baharın gelişini haber veren cemre düşmesi olayıdır. Yapılan bu çalışmada cemre olayının ne olduğu ve nasıl gerçekleştiği ele alınmıştır. Farklı kültürlerde yer alan benzer olaylar değerlendirilmiştir. Cemre olayının bilimsel gerçekliği ile ilgili araştırma ve bulgular incelenmiştir. Yapılan bu araştırmada Çanakkale ilindeki üç meteoroloji istasyonunun günlük verileri kullanılmıştır. İstasyonlardan elde edilen hava, su ve toprak sıcaklığı verileri yılın her bir günü için ortalamaları alınarak analizler yapılmıştır. Grafikler yardımı ile değerlendirmeler yapılmıştır.

Anahtar Kelimeler: Cemre Düşmesi Olayı, Sıcaklık, Çanakkale

P 21. RECOVERY OF WASTEWATER IN MARBLE PROCESSING INDUSTRY

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ABSTRACT: Turkey is marble-rich country in terms of the selection of color and variety. There are 2468 licensed marble processing plants in the country. In these marble processing plants, wastewater from processes such as marble cutting, marble washing and marble polishing should be recovered in order to not affect the environment and human health. In this study, treatment and reuse methods have been explored for the wastewater of marble processing plants. In order to treat wastewaters from marble processing plants, it is aimed to increase the speed and efficiency of sedimentation by adding flocculant to the sedimentation zone. The wastewater under high pressure are dispersed in the hydrocyclone by centrifugal force and small grains are held there, so the water which can be regarded as clean water in the upper stream of the hydrocyclone is obtained.

Keywords: Marble industry, Wastewater, Recover, Flocculant, Hydrocyclone

MERMER İŞLEME TESİSLERİNDE OLUŞAN ATIK SULARIN GERİ KAZANIMI

ÖZET: Türkiye mermer açısından renk ve çeşitlilik bakımından oldukça zengin durumdadır. Ülkemizde 2468 adet ruhsatlı mermer işleme tesisi bulunmaktadır. Bu mermer işleme tesislerinde; mermer kesme, mermer yıkama, mermer cilalama gibi işlemlerden oluşan atıksuların çevre ve insan sağlığına zarar vermemesi için geri kazanımı gerekmektedir. Bu çalışmada mermer işleme tesislerinde oluşan atıksuların arıtılabilmesi ve geri kazanımı için metotlar araştırılmıştır. Mermer işleme tesislerinde oluşan atıksuların arıtılması için genelde çökelme bölmesine flokülant madde ilavesi yapılarak çökelmenin hız ve veriminin arttırılması hedeflenmiştir. Atıksuyun arıtılabilmesi için hidrosiklon cihazları da kullanılabilmektedir. Yüksek basınç altında atıksuyun içinde bulunan maddeler merkezkaç kuvvetiyle hidrosiklon cihazının içinde savrulur ve küçük taneler burada tutulur. Böylece hidrosiklonun üst akımında temiz su sayılabilecek bir su elde edilir.

Anahtar Kelimeler: Mermer endüstrisi, Atıksu, Geri kazanım, Flokülant, Hidrosiklon

P 22. WASTE VEGETABLE OIL POTENTIAL IN SHOPPING MALLS OF KONYA

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ABSTRACT: The use of vegetable oil is increased by the increase of the fast-food consumption in Turkey. About 350,000 tons of waste vegetable oil emerges every year in Turkey. Only 35,000 tons of vegetable waste oil per year is collected. If vegetable waste oil is not collected, it pollutes soil, groundwater and surface water and sewage systems. In order to prevent pollution, it is necessary to collect and recover the vegetable waste oils without harming the environment. In this study, the potential of waste vegetable oil in shopping malls of Konya and its disposal method is investigated. Collected waste vegetable oils are recovered and disposed by licensed companies.

Keywords: Konya, Waste vegetable oils, Shopping mall, Recover

KONYADAKİ ALIŞVERİŞ MERKEZLERİNDE OLUŞAN BİTKİSEL ATIK YAĞLAR

ÖZET: Türkiye'de fastfood tüketiminin günden güne artması sebebiyle bitkisel yağ kullanımı da artmaktadır. Türkiye'de yaklaşık her yıl 350.000 ton bitkisel atık yağ oluşmaktadır. Bu bitkisel atık yağlardan ise yıllık sadece 35.000 ton bitkisel atık yağ toplanmaktadır. Bitkisel atık yağlar toplanmaması halinde yeraltı ve yerüstü sularına, toprağa ve kanalizasyon sistemlerine zarar vermektedir. Kirliliğin önlenmesi için bitkisel atık yağların çevreye zarar vermeden toplanması ve geri kazanımının sağlanması gereklidir. Bu çalışmada, Konya'da alışveriş merkezlerindeki bitkisel atık yağların potansiyeli ve bertaraf biçimi araştırılmıştır. Oluşan bitkisel atık yağlar lisanslı firmalarca toplanıp geri kazanılmakta ve bertaraf edilmektedir.

Anahtar Kelimeler: Konya, Bitkisel atık yağlar, Alışveriş merkezi, Geri kazanım

P 23. METHODS AND DESIGNS THAT CAN BE USED TO KEEP RAINWATER FROM FLOWING INTO THE URBAN AREA

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ABSTRACT: Non-infrastructure or inadequate,increase of technically unplanned constructions and the acceleration of population growth lead to distorted urbanization. One of the most important problems of this formation is the rainwaters. Rainwaters also affect buildings, roads, parking lots and landscapes that are thought to be well planned except for distorted urbanization. These structures, which are not considered rainwater or poorly designed, with a certain amount of rainfall, the water flows without leaking into the lower layers, and it is inevitable to turn into a flood in urban areas by increasing the flow. This flow also causes erosion by eroding the upper part of the soil layer in the landscapes of the urban area.
Rainwaters are required to be kept and collected in urban areas without causing effects such as flooding, floods and erosion. It is also important for these rainwater to be presented to beneficial uses and is an advantage.
This study aims at explaining the ways in which rainwater can be kept in the urban areas such as roads and parking lots without passing to the stream, reducing the harmful effects and provide benefits to the environment, and examining the existing designs.

Keywords: Rainwater collection, urban area, applicable methods

YAĞMURSULARININ KENTSEL ALANDA AKIŞA GEÇMEDEN TUTULMASI İÇİN KULLANILABİLECEK YÖNTEM VE TASARIMLAR

ÖZET: Altyapısı olmayan veya yetersiz, teknik olarak planlanmamış yapıların çoğalmasıyla ve nüfus artışının hızlanması nedeniyle çarpık kentleşme oluşmaktadır. Bu oluşumun en önemli sorunlarından bir tanesi de yağmur sularıdır. Yağmur suları çarpık kentleşme dışında iyi planlandığı düşünülen yapılar, yollar, otoparklar ve yeşil alanları da etkilemektedir. Yağmur suları düşünülmeden veya yetersiz tasarlanan bu yapılar bir miktar yağış almasıyla suların alt tabakalara sızamadan akışa geçmesi, bu akışın artmasıyla kentsel bölgelerde sele dönüşmesi kaçınılmazdır. Bu akış aynı zamanda kentsel alanlarda bulunan yeşil alanlardaki toprak katmanının üst kısmını aşındırarak erozyona sebep olmaktadır.
Yağmur sularının kentsel alanlarda akışa geçip sel, taşkın ve erozyon gibi etkilere neden olmadan tutulması ve toplanması gereklidir. Aynı zamanda bu yağmur sularının yararlı kullanımlara sunulması açısından da önemlidir ve avantajdır.
Bu çalışma ile yağmur suyunun özellikle yollar ve otopark gibi kentsel alanlarda akışa geçmeden tutulması, zararlı etkilerinin azaltılması ve çevreye yarar sağlaması için kullanılabilecek yöntemlerin anlatılması ve mevcut tasarımların incelenmesi amaçlanmıştır.

Anahtar Kelimeler: Yağmur suyu toplama, Kentsel alan, Uygulanabilir yöntemler

P 24. GASTRONOMY 4.0

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ABSTRACT: With the evolving and changing technology, significant progress has been achieved in many areas of the world, these advances are a revolution known as industry-to-industry 4.0, in which the Internet and communication are also involved. Besides the benefits of technology, sustainability also affects many reasons, such as the limitations of natural resources, population growth, ecologically generated waste, cost and the inability of people to keep up with technology. The awareness of local products has led to the promotion of gastronomic sustainability. In our work, this rapid change from the gastronomic point of view is the creation of a sustainable lifestyle and the process of going from 4 to 5.

Keywords: Gastronomy, Sustainable Food Systems, Technology

GASTRONOMİ 4.0

ÖZET: Dünya'da gelişen ve değişen teknoloji ile bir çok alanda önemli ilerlemeler sağlanmış, bu ilerlemeler internetin ve iletişimin de içine alındığı sanayi yada endüstri 4.0 olarak bilinen bir devrimdir. Teknolojinin getirdiği yararlar yanında doğal kaynakların sınırlılığı, nüfus artışı, ekolojik olarak üretilen atık, maliyet ve insanların teknolojiye doğru ayak uyduramaması gibi bir çok neden sürdürülebilirliğini etkilemektedir. Yerel ürünlerin koruna bilirliği gastronomide sürdürülebilirliğin teşvik edilme gereğini doğurmuştur. Çalışmamızda Gastronomik açıdan bu hızlı değişime ayak uydurarak sürdürülebilir bir yaşam tarzı oluşturulması ve 4'den 5'e yol alma süreci yer almaktadır.

Anahtar Kelimeler: Gastronomi, Sürdürülebilir Gıda Sistemi, Teknoloji

P 25. AGRICULTURAL SEED CONTAINING HYDROGEL

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ABSTRACT: Different solutions are searched to increase agricultural production in order to meet the increasing food needs with population growth and urbanization. There are the excessive using of water, seed, fertilizer and labor in the existing methods. For this reason both economic and highly efficient methods are being developed. In this study, a seed capsule with bioplastic outer garbage was considered to increase the production efficiency and to avoid the waste. It is envisaged that the soil and fertilizer present in the process until the germination of the seeds in the capsule will meet the required nutrient requirement, seed irrigation will not be needed until germination, and irrigation frequency will decrease after germination with the hydrogel covered.

Keywords: Seed, Water Saving, Bioplastic, Hydrogel

TARIMSAL AMAÇLI HİDROJEL İÇERİKLİ TOHUM

ÖZET: Nüfus artışı ve kentleşme ile artan besin ihtiyacının karşılanması için tarımda üretimin arttırılmasına yönelik farklı çözüm yolları aranmaktadır. Mevcut yöntemlerin kullanımında su, tohum, gübre ve işçilik israfları yapılmaktadır. Bu nedenle hem ekonomik hem de yüksek verimli yöntemler geliştirilmektedir. Bu çalışmada üretim veriminin artırılması ve yapılan israfların önüne geçilmesi amacıyla, biyoplastik dış çepere sahip bir tohum kapsülü düşünülmüştür. Kapsül içindeki tohumun ekiminden çimlenmesine kadar olan süreçte mevcut bulunan toprak ve gübrenin gerekli besin ihtiyacını karşılayacağı, kapsülde bulunan hidrojel sayesinde tohum çimlenene kadar sulama ihtiyacının olmayacağı, çimlendikten sonra ise sulama sıklığının azalacağı öngörülmektedir.

Anahtar Kelimeler: Tohum, Su Tasarrufu, Biyoplastik, Hidrojel

P 26. INVESTIGATION OF OCCUPATIONAL HEALTH AND SAFETY PRACTICES

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ABSTRACT: The occupational accidents and similar hazards which are subject to occupational health and safety are increasing with the development of the industrialization. As a consequence of the precautions taken in developed countries, such accidents can be reduced or prevented. However, it is observed that deficiencies in the solution of problems such as occupational accidents and occupational diseases are experienced in developing countries. The aim of this study is to examine the applicability of the work done in our country in terms of current occupational health and safety and to identify the deficiencies in applying the practices and laws of the developed countries in comparison with the laws of our country and to find solutions to them.

Keywords: Occupational health and safety, occupational accidents.

İŞ SAĞLIĞI VE GÜVENLİĞİ UYGULAMALARININ İNCELENMESİ

ÖZET: Sanayileşmenin gelişimiyle beraber iş sağlığı ve güvenliğine konu olan iş kazaları ve buna benzer tehlikeler artmaktadır. Gelişmiş ülkelerde bu konuda alınan tedbirlerin bir sonucu olarak bu tür kazalar azalmakta veya önlenebilmektedir. Ancak gelişmekte olan ülkelerde iş kazası ve meslek hastalıkları gibi problemlerin çözümü noktasında eksikliklerin yaşandığını görülmektedir. Bu çalışmanın amacı iş sağlığı ve güvenliği kapsamında ülkemizde yapılan çalışmaların mevcut yasalarla uygulanabilirliğini incelemek; gelişmiş ülkelerin bu konudaki uygulamalarını ve kanunlarını ülkemizin yasalarıyla kıyaslayarak uygulamadaki eksiklikleri tespit etmek ve bunlara çözüm yolu üretmektir.

Anahtar Kelimeler: İş sağlığı ve güvenliği, iş kazaları.

P 27. EVALUATION OF ENVIRONMENTAL NOISE OF INDUSTRIAL AREA IN VAN CITY CENTER

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ABSTRACT: Recently, industrialization and technology have become an indispensable necessity with the influence of the industry in rapidly developing cities. In order to increase the economy and job employment, new factories are opened to increase the demand for increasing industrialization in the developing cities. However, this situation has become the main topic of environmental problems. One of environmental problems is noise causing psychological and physiological problems. For this reason, laws have been enacted to limit environmental noise values. In this study's aims, rapidly increasing industrial activity caused environmental noise is observed in Van city. Therefore, environmental noise was measured (day, evening and night period measurements) by sound meter according to TS ISO 8297 stand in production factory where is Van Organize Industrial Zone. These measurement results were evaluated according to the Environmental Hazard Assessment and Management Regulation.

Keywords: Environmental Noise, Industrial Noise, Noise Map, Noise Pollution, Noise Measurement, Van Noise

VAN İLİNİN ENDÜSTRİYEL ALANLARIN ÇEVRESEL GÜRÜLTÜSÜNÜN DEĞERLENDİRİLMESİ

ÖZET: Günümüzde hızla gelişen kentlerde sanayinin de etkisiyle endüstrileşme ve teknoloji vazgeçilmez bir ihtiyaç haline gelmiştir. Gelişmekte olan kentlerde ekonomiyi ve iş istihdamını artırmak amacıyla gün geçtikçe artış gösteren endüstrileşme talebini artırmak için yeni fabrikalar açılmaya başlanmıştır. Ancak bu durum çevresel sorunları da beraberinde gündeme getirmiştir. Bu çevresel sorunlardan biri de gürültüdür. Gürültü özellikle psikolojik ve fizyolojik sorunlara sebep olmaktadır. Bu sebeple kanunlarla Çevresel Gürültü değerlerine sınırlandırmalar getirilmiştir. Bu kapsamda çalışmanın amacı, Ülkemizde hızla artış gösteren endüstriyel faaliyetlerin neden olduğu çevresel gürültüsünün Van kenti örneğinde ele alınmasıdır. Bu nedenle; Van Organize Sanayi Bölgesinde bulunan bir üretim fabrikasından kalibrasyonlu tip 1 ses ölçüm cihazı ile TS ISO 8297 standardına göre gündüz, akşam ve gece ölçümleri yapılarak Çevresel Gürültünün Değerlendirilmesi ve Yönetimi Yönetmeliği'ne göre değerlendirilmesi yapılmıştır.

Anahtar Kelimeler: Çevresel Gürültü, Endüstriyel Gürültü, Gürültü Haritası, Gürültü Kirliliği, Gürültü Ölçümü, Van İli Gürültü

P 28. MEASUREMENT OF NOISE POLLUTION SHOPPING CENTRE AND AROUND SELÇUKLU REGION IN KONYA

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ABSTRACT: Noise pollution is one of the most important problems of our age. Noise comes from various sources. There are two kinds of noise sources. The first is noise sources according to the way the sounds are born, the noise inside the structure, the noise outside the structure. The second is acoustic sources of noise; acoustic noise sources, spot noise sources, linear noise sources, and planar noise sources. There are negative effects on physical environment, social environment and psychology when noise limit values are exceeded. The passage of rail transport systems through and near residential areas affects the noise generated by the explosives used in mining activities and has a negative effect on the physical environment. It has been observed that noise have caused people psychological as depression, and patients in noisy hospitals have been treated for a long time according to the patients being treated in quiet hospitals. The measurements were made at Kent Plaza Shopping Centre in Bedir Region, Selçuklu, Konya Konya. According to our measurement results, noisy threshold values have been detected. and. Extreme noisy points beyond the limit values have been identified and it needs precautions taken as Turkish regulation.

Keywords: Noise pollution, Konya, Selçuklu, Shopping centre., measurement

KONYA SELÇUKLU İLÇESİNDE ALIŞVERİŞ MERKEZİ VE CİVARINDA GÜRÜLTÜ KİRLİLİĞİ ÖLÇÜMÜ

ÖZET: Gürültü kirliliği çağımızın en önemli problemlerinden biridir. Gürültü çeşitli kaynaklardan ortaya çıkmaktadır. İki çeşit gürültü kaynağı vardır. Birincisi seslerin doğuş biçimine göre gürültü kaynakları; Yapı içi gürültüler, Yapı dışı gürültüdür. İkincisi ise akustik gürültü kaynaklarıdır; akustik gürültü kaynaklarıdır; Noktasal gürültü kaynakları, çizgisel gürültü kaynakları ve düzlemsel gürültü kaynaklarıdır. Gürültü sınır değerleri aştığında fiziksel çevreye, sosyal çevreye ve psikolojiye olumsuz etkileri vardır. Raylı ulaşım sistemlerinin yerleşim alanlarının içerisinden ve yakınından geçmesi, Madencilik faaliyetlerinde kullanılan patlayıcıların oluşturduğu gürültü yapıları etkilemekte ve fiziksel çevreye olumsuz etki oluşturmaktadır. Gürültünün insanlar üzerinde ruhi bunalımlara yol açtığı gözlemlenmiş olup gürültülü hasta hanelerde kalan hastaların gürültüsüz hanelerde tedavi gören hastalara göre uzun süre tedavi gördüğü gözlenmiştir. Bedir Mahallesi, Selçuklu, Konya'da bulunan Kent Plaza Alışveriş Merkezinde gürültü ölçümleri yapılmıştır. Ölçüm sonuçlarına göre çıkan bazı değerlerin gürültü sınır değerleri aştığı tespit edilmiştir. Gürültünün sınır değerleri aştığı noktalar saptanmış ve bunun için belirlenen bölgelerde önlemler alınması gerekmektedir.

Anahtar kelimler: Gürültü kirliliği, Konya, Selçuklu, Alışveriş merkezi. Ölçüm

P 29. THE INVESTIGATION OF FIRST HYPERPOLARIZABILITIES OF BENZALDEHYDE-4-NITRO PHENYL HYDRAZONE DERIVATIVE

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ABSTRACT: To investigate microscopic second-order nonlinear optical (NLO) behaviour of benzaldehyde-4-nitro phenyl hydrazone derivative with donor substituent chlorine, we have computed electric dipole moment and static first hyperpolarizability values using ab-initio quantum mechanical procedure (finite field). Theoretical calculations offer a quick and inexpensive way of predicting the NLO responses of the materials especially during the design of new materials. According to the results of finite field computations, the investigated compound exhibits non-zero quadratic hyperpolarizability tensor components, implying microscopic NLO phenomena.

Keywords: Nonlinear Optics, Electric Dipole Moment, First Hyperpolarizability, Ab-Initio, Finite Field.

P 30. STATIC LINEAR POLARIZABILITY AND FIRST HYPERPOLARIZABILITY VALUES OF ACETYLENIC LINKAGE HAVING DONOR-ACCEPTOR GROUPS

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ABSTRACT: A potential nonlinear optical (NLO) compound acetylenic linkage having donor-acceptor groups has been designed. The NLO properties are expected and can be more or less accurately predicted due to the assembly of the title molecule and theoretical computations of dispersion-free dipole polarizability and first hyperpolarizability. These parameters determined by means of density functional theory (DFT) have been used to reveal the relationship of linear and NLO properties with the molecular structure. The computation results with non-zero values on static first hyperpolarizability indicate that the investigated molecule might possess microscopic second-order NLO behaviour.

Keywords: Density Functional Theory, Linear Polarizability, Second-order Hyperpolarizability, Acetylenic Linkage, Optical Nonlinearity.

P 31. COMPUTATIONAL STUDY ON DIPOLE POLARIZABILITIES AND ONE-PHOTON ABSORPTION WAVELENGTHS OF ETHYLENIC LINKAGE WITH DONOR-ACCEPTOR SUBSTITUENTS

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ABSTRACT: To understand linear optical characterization of an ethylenic linkage with donor-acceptor substituents, we have computed the one-photon absorption (OPA) wavelengths and static linear polarizability utilizing density functional theory (DFT). The OPA and dispersion-free dipole polarizability results have been found to be rather adequate for assessing connectivities between the electronegativities of donor-acceptor groups and linear optical properties. Using DFT at B3LYP level, one can obtain a reasonably accurate description of the optical spectrum and static linear polarizability of the studied structure.

Keywords: Linear Optics, One-Photon Absorption, Static Dipole Polarizability, Ethylenic Linkage, Donor-Acceptor Substituents.

P 32. QUANTUM CHEMICAL CALCULATION OF SECOND-ORDER NONLINEAR OPTICAL PROPERTIES OF 2-FURYL METHACRYLIC ANHYDRIDE

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ABSTRACT: The search of new materials with second-order optical nonlinearity is an important research field. So, the second-order nonlinear optical (NLO) materials have been extensively studied for many years. The basic structure of organic second-order NLO materials is based on the pi-bond system and due to the overlap of pi-orbital delocalization the electronic charge distribution leads to a high mobility of the electron density. To estimate the potential for second-order NLO behaviour of 2-furyl methacrylic anhydride; the dispersion-free quadratic hyperpolarizability has been determined by quantum mechanical calculations (finite field). In addition to second-order NLO properties, to elucidate the linear optical phenomena in the context of molecular orbital structure; the highest occupied molecular orbitals (HOMO), the lowest unoccupied molecular orbitals (LUMO) and the HOMO-LUMO band gaps have been also evaluated by means of density functional theory.

Keywords: Quantum Chemistry, Nonlinear Optical Phenomena, First Hyperpolarizability, HOMO-LUMO Band Gaps, Finite Field.

P 33. DFT METHODOLOGIES FOR COMPUTING DIPOLE POLARIZABILITIES, FIRST AND SECOND FRONTIER MOLECULAR ORBITAL ENERGIES OF METHYL-3-(P-NITROPHENYL) CARBAZATE

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ABSTRACT: To reveal the linear optical properties of methyl-3-(p-nitrophenyl) carbazate, density functional theory (DFT) calculations have been carried out to compute the static dipole polarizability tensor components. As the static dipole polarizability values depend on the DFT functional used, we carried out the computation of dispersion-free linear polarizability at the DFT level using B3LYP method. The highest occupied molecular orbitals (HOMO), the lowest unoccupied molecular orbitals (LUMO) and the HOMO-LUMO band gaps for the title compound have been also examined by DFT/ B3LYP procedure.

Keywords: Linear Optics, Static Linear Polarizability, First Frontier Molecular Orbitals, Second Frontier Molecular Orbitals, Density Functional Theory

P 34. ONE-PHOTON ABSORPTION WAVELENGTHS, ELECTRIC DIPOLE MOMENT AND FIRST HYPERPOLARIZABILITY OF BENZALBARBITURIC ACID DERIVATIVE WITH DONOR SUBSTITUENT

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ABSTRACT: Benzalbarbituric acid derivative with donor substituent hydroxy has been designed. Due to the shape of the molecule, the second-order nonlinear optical (NLO) properties are expectable and can be more or less accurately predicted. To reveal the potential for second-order NLO phenomena; the electric dipole moment and static first hyperpolarizability have been determined by density functional theory (DFT) quantum chemical computations at B3LYP level. According to the calculation results, the title compound exhibits non-zero dispersion-free first hyperpolarizability, and it might have relatively good second-order NLO behaviour. The one-photon absorption (OPA) characterizations of the examined molecule have been theoretically obtained by DFT method.

Keywords: Electric Dipole Moment, Density Functional Theory, One-photon Absorption, Nonlinear Optics, Benzalbarbituric Acid.

P 35. DFT STUDIES ON VERTICAL TRANSITION WAVELENGTHS, ELECTRIC DIPOLE MOMENTS, FIRST AND SECOND FRONTIER MOLECULAR ORBITALS OF 4-AMINO-4-NITRO DIPHENYL SULFIDE

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ABSTRACT: 4-Amino-4-nitro diphenyl sulfide has been designed for the study of its linear optical properties. To reveal the linear optical characterization for the title compound; the electric dipole moment and one-photon absorption (OPA) wavelength values have been calculated using quantum mechanical procedure (density functional theory (DFT)). Besides, to obtain the structural characterization of the studied molecule; the highest occupied molecular orbitals (HOMO), the lowest unoccupied molecular orbitals (LUMO) and the HOMO-LUMO band gaps for first and second frontier orbitals have been theoretically determined by DFT/ B3LYP method.

Keywords: Linear Optical Properties, Quantum Mechanical Calculations, Density Functional Theory, B3LYP Functional, HOMO-LUMO Band Gaps.

P 36. LINEAR AND SECOND-ORDER NONLINEAR OPTICAL BEHAVIOUR OF FLUORINE SUBSTITUTED THIENYL CHALCONE

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ABSTRACT: Among the materials producing linear and nonlinear optical (NLO) effects, organic materials are of considerable importance owing to their synthetic flexibility and large hyperpolarizabilities compared to inorganic materials. In view of the usefulness as potential linear and NLO materials, the chalcone having a substituted thienyl has been designed. The one-photon absorption (OPA) characterizations of the studied chalcone have been interpreted using computational chemistry. To provide an insight into the microscopic second-order NLO properties of the investigated molecule, the ab-initio calculations of the dispersion-free first hyperpolarizability have been performed by finite field (FF) method.

Keywords: Linear Optics, Vertical Transition Wavelength, First Hyperpolarizability, Second-order Nonlinear Optics, Chalcones.

P 37. THEORETICAL INVESTIGATIONS ON FIRST AND SECOND FRONTIER MOLECULAR ORBITALS AND VERTICAL TRANSITION ENERGIES OF TRIFLUOROMETHYL CONTAINING STILBENE DERIVATIVE

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ABSTRACT: The theoretical calculations on the molecular orbital structure and linear optical properties of trifluoromethyl containing stilbene derivative can provide useful information for the design of new efficient materials. The one-photon absorption (OPA) characterizations of the title molecule have been thoretically obtained by density functional theory (DFT) at B3LYP level. To understand the phenomena in the context of molecular orbital picture; on the basis of optimized geometries, the highest occupied molecular orbitals (HOMO), the lowest unoccupied molecular orbitals (LUMO) and the HOMO-LUMO band gaps for the examined compound have been evaluated by DFT.

Keywords: One-Photon Absorption, Vertical Transition Wavelength, Computational Studies, HOMO-LUMO Energies, Density Functional Theory

P 38. NITRITATION STUDY OF THE ANAEROBIC REJECT WATER

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ABSTRACT: A considerable progress has been achieved in nitrogen removal from high nitrogen containing wastewaters such as anaerobic sludge digester and reactor effluents, livestock breeding wastewaters, fertilizer industry wastwaters, and landfill leachates as short-cut biological nitrogen removal over nitrite (nitritation-denitritation) and partial nitritation coupled to anaerobic ammonium oxidation (Anammox) which have been implemented at real-scale wastewater treatment plants (WWTPs) in western countries. Low organic carbon level limits total nitrogen removal from these wastewaters and requires spesific operational conditions. Many works in literature have been investigating partial ammonium oxidaton to nitrite/nitritation to produce a suitable influent for Anammox process and simultaneous nitritation and denitritation. Nitritation reaction has been carried out by ammonium oxidizing bacteria (AOB)(*Nitrosomonas spp*.) and nitrite oxidation to nitrate by nitrite oxidizing bacteria (NOB) have to be imparted in order to achieve an economic degree. High-nitrogen containing anaerobic reject water produced in municipal WWTPs is recycled via internal flow to the main line where it causes several operational problems such as reduced performance in the biological treatment unit and worsened final effluent.
This study investigated a comparative evaluation of nitritation form anaerobic reject water and synthetic wastewater in paralel sequential batch reactors.

Keywords: Short-cut biological nitrogen removal, anaerobic reject water, operation.

ANAEROBİK ÇAMUR ÇÜRÜTÜCÜ SÜZÜNTÜ SUYUNDA NİTRİTASYON ÇALIŞMASI

ÖZET: Anaerobik çamur çürütücü ve arıtım çıkış suları, hayvan çiftliği atıksuları, gübre ve et entegre sanayi atıksuları ve çöp sızıntı suları gibi yüksek azot içeren atıksulardan azot gideriminin ekonomik olarak biyolojik proseslerle gerçekleştirilmesi konusunda oldukça yol kat edilmiş ve kısa-yol biyolojik azot giderimi nitritasyon-denitritasyon ile kısmi nitritasyon-anaerobik amonyum oksidasyonu (ANAMMOX) prosesleri olarak gerçek ölçekli bir çok tesiste uygulanmaya başlanmıştır. Bu tip atıksuların tam azot giderimini sağlamayan düşük organik madde içeriği prosesleri kısıtlamakta ve spesifik işletim şartları gerektirmektedir. Literatürdeki pek çok çalışma özellikle amonyumun nitrite oksitlenmesi/nitritasyon reaksiyonunu araştırmakta, eşzamanlı nitritasyon-denitritasyon ve Anammox prosesine uygun içerikte giriş suyu üretme üzerine yoğunlaşmaktadır. Nitritasyon reaksiyonu amonyum oksitleyen bakterilerce (AOB)(*Nitrosomonas spp*.) gerçekleştirilir ve prosesin ekonomik ölçüde gerçekleşmesi için nitrata oksitlenmenin, nitrit oksitleyen bakterilerin (NOB) engellenmesi gerekmektedir. Kentsel atıksu arıtma tesislerinde (AAT) ana hatta geri devirle beslenen amonyum içeriği yüksek anaerobik çamur çürütücü süzüntü suyu (AÇSS) tesis biyolojik arıtım verimini düşürmekte, çıkış suyu kalitesini bozmaktadır. Bu çalışma kapsamında AÇSS ve sentetik atıksudan nitritasyon işletim ve verim özellikleri paralel olarak ardışık kesikli reaktörlerde incelenmiştir.

Anahtar Kelimeler: Kısa-yol biyolojik azot giderimi, süzüntü suyu, işletim

P 39. MEDICAL WASTE MANAGEMENT IN TURKEY AND COMPARATIVE ANALYSIS WITH EUROPEAN UNION COUNTRIES

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ABSTRACT: In many countries, there is a serious problem of capacity and implementation regarding the disposal of medical waste. European Union accession process with the candidate country status of medical waste applications in Turkey, compared with the current existing situation in other EU countries, difficulties in significant improvements, although recorded in practice and institutional capacity building on the harmonization of legislation related to EU waste directive is observed that. Besides, Turkey is noteworthy, according to some new countries that joined the Union in the enlargement process is more advanced in various ways.
In this study, the medical waste disposal methods in Turkey has been revealed and discussed in detail the advantages and disadvantages of these methods. Based on this information, some European Union countries and their applications in our country have been analyzed and compared.

Keywords: Medical Waste Management, European Union Directives

TÜRKİYE'DE TIBBİ ATIK YÖNETİMİ VE BAZI AVRUPA BİRLİĞİ ÜLKELERİ İLE KARŞILAŞTIRMALI ANALİZİ

ÖZET: Pekçok ülkede ciddi olarak tıbbi atıkların bertarafı konusunda kapasite ve uygulama sorunu yaşanmaktadır. Avrupa Birliği üyelik sürecinde aday ülke statüsüne sahip olan Türkiye'deki tıbbi atık uygulamaları, diğer AB ülkelerinde geçerli olan mevcut durum ile karşılaştırıldığında, AB atık direktiflerine ilişkin mevzuat uyumu konusunda önemli gelişmeler kaydedilmesine rağmen uygulamada ve kurumsal kapasite geliştirme konusunda sıkıntılar yaşandığı görülmektedir. Bunun yanında Türkiye'nin, genişleme sürecinde Birliğe yeni katılan bazı ülkelere göre çeşitli yönlerden daha ileri durumda olduğu dikkat çekmektedir.
Bu çalışmada Türkiye'deki tıbbi atık bertaraf yöntemleri detaylı olarak ele alınmış ve bu yöntemlerin avantajları ve dezavantajları ortaya koyulmuştur. Bu bilgilerden yola çıkarak bazı Avrupa Birliği ülkeleri ile ülkemizdeki bu uygulamalar karşılaştırılarak analiz edilmiştir.

Anahtar Kelimeler: Tıbbi Atık Yönetimi, Avrupa Birliği Direktifleri

P 40. BIOREACTOR APPLICATIONS IN MUNICIPAL SOLID WASTE LANDFILLS

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ABSTRACT: Depending on the amount of urban solid waste, population growth and industrialization, there is a continuous increase in our country. Due to the increase in the amount of waste, investments for urban solid waste management are also increasing continuously. In this study, urban solid waste disposal facilities and bioreactor applications in our country were investigated and information about the present situation was given.

Keywords: Solid waste landfill, leachate, bioreactors

KATI ATIK DÜZENLİ DEPOLAMA SAHALARINDA BİYOREAKTÖR UYGULAMALARI

ÖZET: Kentsel katı atık miktarı, nüfus artışı ve sanayileşme bağlı olarak, ülkemizde sürekli artışı gözlenen bir durumdur. Atık miktarının artışına bağlı olarak, kentsel katı atık yönetimi için yapılan yatırımlar da sürekli artmaktadır. Bu çalışmada, ülkemizdeki kentsel katı atık bertaraf tesisleri ve biyoreaktör uygulamaları araştırılmış olup mevcut durum hakkında değerlendirmelerde bulunulmuştur.

Anahtar Kelimeler: Katı atık deponi tesisi, sızıntı suyu, biyoreaktörler

P 41. ENERGY RECOVERY FROM ANIMAL WASTES AND USING OF ENERGY

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ABSTRACT: Animal solid wastes have been used throughout the history as fertilizer or as a fuel source after being dried. Significant environmental problems have come to light recently due to large increases in farm capacities and the amount of these wastes. Environmental health problems arising from animal wastes can be as harmful as problems caused by some industrial wastes. The potential energy crisis caused by the reduction of fossil fuels and the environmental problems resulting from animal wastes are considered together and it is seen that both concepts should be considered together in the future. When environmentally acceptable disposal methods for animal wastes are considered as a large-scale biomass-energy conversion system, it is also possible to obtain energy from these wastes and to obtain fertilizer which is a nutritional value in the form of a by-product. In this study, energy availability from animal wastes and usage areas of this energy were evaluated.

Keywords: Animal wastes, recycling, bio-energy

HAYVANSAL ATIKLARDAN ENERJİ ELDE EDİLMESİ VE ENERJİNİN KULLANIM ALANLARI

ÖZET: Hayvansal katı atıklar gübre olarak veya kurutulduktan sonra yakıt kaynağı şeklinde tarih boyunca kullanılmıştır. Son zamanlarda çiftlik kapasitelerinde ve bu atık miktarlarındaki büyük artışlar sebebiyle ciddi çevre sorunları gündeme gelmiştir. Hayvan atıklarından kaynaklanan çevre sağlığı problemleri bazı endüstriyel atıklar sebebiyle oluşan problemler kadar zararlı olabilmektedir. Fosil yakıtların azalması sebebiyle karşılaşılması muhtemel enerji krizi ve hayvan atıklarından kaynaklanan çevre problemleri birlikte düşünüldüğünde her iki kavramın ileriye dönük olarak birlikte ele alınmasının avantajlı olduğu görülmüştür. Hayvan atıkları için çevresel açıdan kabul edilebilir bertaraf yöntemleri büyük ölçekte biokütle-enerji dönüşüm sistemi olarak dikkate alındığında bu atıklardan enerji elde edilmesi ve bununla birlikte yan ürün şeklinde besin değeri olan gübre elde edilmesi de mümkün olmaktadır. Buradan hareketle bu çalışmada hayvansal atıklardan enerji elde edilebilirliği ve bu enerjinin kullanım alanları üzerine değerlendirmede bulunulmuştur.

Anahtar Kelimeler: Hayvansal atıklar, geri dönüşüm, biyo-enerji

P 42. SOLAR DRYING OF DOMESTIC WASTE WATER TREATMENT PLANT SLUDGE FOR RECYCLING

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ABSTRACT: Today, the number of wastewater treatment plants is rapidly increasing. In parallel, there is also a large increase in the amount of sewage sludge. The sludge obtained should be disposed of in such a way as not to damage the environment. In order to be able to use the mud efficiently in areas such as agricultural fertilizers, land improvement, cement factories and additional fuel, a good drying bed is required to increase the dry matter rate by 80%. In this study solar in Turkey, thermal and wastewater that drying in the field starting from the effects provided by the environment of the sludge from wastewater treatment plants, the applicability of solar drying system and suggestions were made for the regions can be applied to this system.

Keywords: Solar drying, thermal drying, drying bed

EVSEL ATIK SU ARITMA TESİSİ ÇAMURLARININ GERİ DÖNÜŞÜM ODAKLI OLARAK SOLAR KURUTULMASI

ÖZET: Günümüzde atık su arıtma tesis sayısı hızla artmaktadır. Buna paralel olarak arıtma çamuru miktarlarında da büyük artış gözlenmektedir. Elde edilen arıtma çamurlarının çevreye zarar vermeyecek şekilde bertaraf edilmesi gerekmektedir. Çamurun tarımsal gübre, arazi iyileştirme, çimento fabrikalarına ek yakıt gibi alanlarda verimli kullanılabilmesi için öncesinde kuru madde oranını %80'lere çıkaracak iyi bir kurutma yatağına ihtiyaç duyulmaktadır. Bu çalışmada Türkiye'de solar, termal ve arazide kurutma yapan atıksu arıtma tesislerinden çıkan çamurun çevreye sağladığı etkilerinden yola çıkılarak, solar kurutma sistemlerinin uygulanabilirliği ve bu sistemin uygulanabileceği bölgeler için önerilerde bulunulmuştur.

Anahtar Kelimeler: Solar kurutma, termal kurutma, kurutma yatağı

P 43. GENERAL EVALUATION ON RECYCLING PROCESSES OF WASTE BATTERIES AND ACCUMULATORS

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ABSTRACT: Recent developments in technology have led to the introduction of a wide range of portable devices for home, office and personal use. Batteries and accumulators that have completed their useful life must be collected and recycled under appropriate conditions to avoid damage to human and environmental health. In this study, the recycling processes of these wastes were evaluated.

Keywords: Waste batteries and waste accumulators, recycling.

ATIK PİL VE AKÜMÜLATÖRLERİN GERİ DÖNÜŞÜMÜ PROSESLERİ HAKKINDA GENEL DEĞERLENDİRME

ÖZET: Son yıllarda teknolojide yaşanan gelişmeler ev, büro ve kişisel kullanımlara mahsus çok çeşitli taşınabilir cihazların günlük yaşantımıza girmesine yol açmıştır. Kullanım ömrünü tamamlayan pil ve akümülatörler insan ve çevre sağlığına zarar vermemek için uygun şartlarda toplanarak geri dönüşümü sağlanmalıdır. Bu çalışma kapsamında bu atıkların geri dönüşüm prosesleri hakkında değerlendirmelerde bulunulmuştur.

Anahtar Kelimeler: Atık pil ve atık akümülatörler, geri dönüşüm.

P 44. ENERGY PRODUCTION FROM GASE OF SOLID WASTE LANFILLS

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ABSTRACT: The amount of solid waste generated in parallel with increasing population, urbanization and industrialization is rapidly increasing and becoming a big problem. The adverse effect of the storage gas on the environmental and human health is also an important question. Gases occurring in such storage areas can create environmental risks and have significant energy potentials when collected by appropriate methods. The storage gas has 45-50% methane content. The recovery of methane is due to its high calorific value. One of the methods of utilizing the storage gas is electricity generation.

Keywords: Electricity, Energy, Solid Waste, Methane

KATI ATIK DEPONİ SAHASI GAZINDAN ENERJİ ÜRETİMİ

ÖZET: Artan nüfus, kentleşme ve sanayileşmeye paralel olarak oluşan katı atık miktarı da hızla artmakta ve büyük bir sorun haline gelmektedir. Depo alanlarında oluşan depo gazının çevresel ve insan sağlığı üzerine olumsuz etkisi de önemli bir sorundur. Bu tür depolama sahalarında oluşan gazlar çevresel risk oluşturabildikleri gibi uygun yöntemlerle toplandıklarında önemli ölçüde enerji potansiyeline sahiptirler. Depo gazı %45-50 metan içeriğine sahiptir. Metanın yüksek kalorifik değere sahip olmasından dolayı geri kazanılması söz konusudur. Depo gazından faydalanma metotlarından biri de elektrik üretimidir.

Anahtar Kelimeler: Elektrik, Enerji, Katı Atık, Metan

P 45. LAND USE OF WASTE WATER TREATMENT SLUDGE

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ABSTRACT: In the developing countries, the number of treatment plants increases and therefore there is a great increase in the amount of waste water treatment sludge. It is the most appropriate and efficient method to use for sludge disposal methods. But due to contains of the heavy metal elements, pathogens and the harmful effects which occur in the amount of the soil, usage, usage phase should be considered and precautions should be taken. In this study, the effect of soil sludge structure, stabilization, composting, usage areas, advantages and disadvantages of sewage sludge, soil treatment of sewage sludge and vegetation sludge was investigated. On the other hand, some of the previous studies on this subject have been investigated and dissuaded with relating our study.

Keywords: sewage sludge, land use, soil structure, agriculture, heavy metal.

ARITMA ÇAMURLARININ ARAZİDE KULLANIMI

ÖZET: Gelişmekte olan ülkemizde arıtma tesislerinin sayısı artmakta bu sebeple arıtma çamuru miktarlarında da büyük bir artış olmaktadır. Arıtma çamurlarının bertarafına yönelik yöntemler içerisinde arazide kullanım en uygun ve verimli yöntemdir. Fakat içerdiği ağır elementler, patojenler sebebiyle topraktaki miktarına, kullanımına, kullanım aşamasında oluşacak zararlı etkilere dikkat edilmeli ve önlem alınmalıdır. Bu çalışmada bölgesel toprak yapısı, arıtma çamuru içerikleri, stabilizasyonu, kompostlanması, kullanım alanları, avantaj ve dezavantajları, arıtma çamurlarının toprağa uygulanması sonucu elde edilen veriler işlenmiş, arıtma çamuru ile tere bitkisinin büyüme süreci gözlemlenmiş, tarımda kullanılan arıtma çamurlarının toprak yapısına ve tarıma olan etkileri incelenmiştir. Bu konu üzerinde yapılmış olan bazı çalışmalar araştırılarak derlenmiştir.

Anahtar kelimeler: arıtma çamuru, arazide kullanım, toprak yapısı, tarım, ağır metal.

P 46. FORMATION of PCDD/PCDF, ITS EFFECTS AND REMOVAL

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ABSTRACT: The elimination of polychlorinated dioxin / furan (PCDD / F) emissions from solid waste incineration plants (incinerators) has an increasing prevalence due to the toxic properties of these compounds and the requirement to meet emission standards. These pollutants are generally toxic pollutants, even at low concentrations, which may be in the form of gases or particulates, which are formed as a result of combustion processes. Polychlorinated dibenzodioxin (PCDD) and polychlorinated dibenzofuran (PCDF) are colorless, odorless, water insoluble, noncommercial aromatic compounds containing C, H, O and Cl. Of the 210 different PCDD / F (75 PCDD, 135 PCDF) compounds in the forest, 17 are the most toxic. The most important properties of these compounds are photochemical and biodegradation resistance, they reach high concentration in the food chain, they accumulate in the fatty tissues of humans and animals and continue their toxic effects for many years. For these reasons, the prevention of these compounds should be avoided, if appropriate, in accordance with the receiving environment and emission standards, using appropriate technologies, before they can be released to the atmosphere, if their formation can not be prevented. This work is a review study taking into consideration the studies on the formation, effects and removal of dioxin / furan from combustion plants.

Keywords: incinerator, PCDD/PCDF, adsorption

P 47. PETROLEUM POLLUTION AND ITS REMEDIATION METHODS

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ABSTRACT: The development of many new industrial branches, the increase in the efficiency of existing ones and the ever-increasing urban population have caused the pollution of natural resources since the beginning of this century and inevitably caused environmental problems. One of the most important environmental pollution factors today is pollution caused by petroleum and petroleum products. Petroleum and its products are constantly interacting with the environment as they pass through the process of getting them out of the source, refining them, and marketing them. For example, the transportation of oil tankers in the course of marketing can create many effects on the terrestrial area and on the sea.

Petroleum and petroleum products are stored in underground and overground tanks for use in various activities and sectors in many establishments including petrol stations, storage facilities and raffiners for many years in our country and in the world. When considered at the environmental level, these storage tanks are a potential source of potential pollutants for soil and groundwater.

In this study, it is aimed to reveal the the current situation of petroleum pollution in our country and in the world. A review has been made about the methods of remediation that can be applied in the remediation of oil pollution.

Keywords: petroleum pollution, soil pollution and remediation

P 48. PERSISTENT ORGANIC POLLUTANTS IN LANDFILL LEACHATE

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ABSTRACT: Persistent organic pollutants (POPs) are chemical substances that are persistent in the environment. The most important characteristics of POPs are bioaccumulation, toxicity and very resistance to chemical and biological degradation. A significant proportion of the POPs are industrial chemicals and pesticides. POPs other than industrial chemicals and pesticides are compounds formed as by-products during the burning process of some pesticides or wastes. Solid waste landfill leachates are important contaminants that need to be treated in terms of biological and chemical pollution parameters at high concentrations and alternative treatment technologies are available. Leachate contains various derivatives of POPs components. In this study, it was aimed to investigate the persistent organic pollutants in leachate and the effectiveness of removal methods. Landfill leachates that will directly interfere with surface waters and underground waters will bring our surface water in the short run and our ground waters in the long run to the point of no return.

Keywords: Persistent Organic Pollutant, Leachate, Treatment Methods.

SIZINTI SULARINDA BULUNAN KALICI ORGANİK KİRLETİCİLER

ÖZET: Kalıcı organik kirleticiler (KOK) çevrede kalıcı özelliği olan kimyasal maddelerdir. KOK'in en önemli özellikleri biyoakümülasyon, toksisite ve kimyasal ve biyolojik bozulmaya karşı oldukça dayanıklı olmalarıdır. KOK'in önemli bir kısmını endüstriyel kimyasallar ve pestisitler oluşturmaktadır. Endüstriyel kimyasallar ve pestisitler dışında kalan KOK ise bazı pestisitlerin ya da atıkların yakılması işlemi sırasında yan ürün olarak oluşan bileşiklerdir. Katı atık deponi sahası sızıntı suları içerdiği yüksek konsantrasyonlarda biyolojik ve kimyasal kirlilik parametreleri açısından arıtılması gereken önemli kirletici kaynaklardır ve alternatif arıtım teknolojileri mevcuttur. Sızıntı sularında KOK bileşenlerinin çeşitli türevleri bulunmaktadır. Bu çalışmada sızıntı sularında bulunan kalıcı organik kirleticiler ve giderim metotlarının etkinliği konusunun araştırılması hedeflenmiştir. Doğrudan yüzeysel sulara ve yeraltı sularına karışacak olan deponi sızıntı suları kısa vadede yüzeysel sularımızı ve uzun vadede yeraltı sularımızı geri dönüşü mümkün olmayan noktaya getirecektir.

Anahtar Kelimeler: Kalıcı Organik Kirleticiler, Sızıntı Suları. Arıtım Metotları.

P 49. THE EVALUATION OF DAIRY INDUSTRY WASTES

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ABSTRACT: The discharge of dairy products industry wastewaters without treatment due to the high concentrations of BOD, COD and organic matter contents, causes significant pollution in the environment. In terms of both prevention of environmental pollution and recycling of wastes, it is possible to evaluate these wastes in many areas such as food and agriculture, bioplastic production, soil fertility and use as an additive in drug production, and even biogas crops. However, in our country, approximately 3.8 million whey and buttermilk wastes are not adequately assessed and can be discharged without treatment. In this study, it is aimed to investigate the dairy products industry wastes, their characteristics and alternative reuse areas.

Keywords: Dairy Industry Wastes, Whey, Evaluation, Reuse

SÜT ENDÜSTRİSİ ATIKLARININ DEĞERLENDİRİLMESİ

ÖZET: Süt ürünleri endüstrilerinden çıkan atıkların özellikle içerdiği yüksek BOİ, KOİ ve organik madde konsantrasyonlarından dolayı, çevreye arıtılmadan deşarjı önemli kirliliklere neden olmaktadır. Hem çevre kirliliğini önleme hem de atıkları yeniden değerlendirme açısından, bu atıkların gıda ve tarım sektörü, biyoplastik üretimi, toprak verimliliğini artırma ve ilaç yapımında katkı maddesi olarak kullanımı ve hatta biyogaz eldesi gibi bir çok alanda değerlendirilmesi mümkündür. Ancak ülkemizde yaklaşık 3.8 milyon peynir altı suyu ve bir o kadar da yayık altı atıkları yeterince değerlendirilmemekte ve arıtılmadan deşarj edilebilmektedir. Bu çalışmada süt ürünleri endüstrilerinde oluşan atıklar, özellikleri ve alternatif yeniden kullanım alanlarının incelenmesi amaçlanmıştır.

Anahtar Kelimeler: Süt Endüstrisi Atıkları, Peynir Altı Suyu, Değerlendirme, Yeniden kullanım

P 50. COD REMOVAL FROM CHEESE PRODUCTION WASTEWATER WITH ULTRASOUND ASSISTED FENTON OXIDATION

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ABSTRACT: The ultrasound process has been used for the degradation of organic substances in water and wastewater treatment in recent years. The chemical reactions occurring in the wastewater with strong sound waves can be accelerated in appropriate pressure and temperature conditions and the efficiency of the treatment can be increased by converting them into more harmless products. In this study, it was aimed to investigate the efficiency of COD removal from cheese production wastewater by ultrasound assisted fenton oxidation. The effects of different pH values and doses on COD removal efficiency have examined in experimental studies.

Keywords: Ultrasound, Cheese Production Wastewater, Fenton Oxidation.

PEYNİR ÜRETİM ATIKSUYUNDAN ULTRASES DESTEKLİ FENTON OKSİDASYONU YÖNTEMİYLE KOİ GİDERİMİ

ÖZET: Ultrases prosesi su ve atıksu arıtımında organik maddelerin parçalanmasında son yıllarda kullanılmaktadır. Güçlü ses dalgaları ile atıksuda oluşan kimyasal reaksiyonlar uygun basınç ve sıcaklık koşullarında hızlandırılarak, daha zararsız ürünlere dönüştürülmesiyle arıtım verimi artırılabilmektedir. Bu çalışmada peynir üretim atıksuyundan ultrases destekli fenton oksidasyonu yöntemiyle KOİ giderim veriminin araştırılması hedeflenmiştir. Deneysel çalışmalarda farklı pH değerleri ve dozların KOİ giderim verimine etkisi incelenmiştir.

Anahtar Kelimeler: Ultrases, Peynir Üretim Atıksuyu, Fenton Oksidasyonu.

P 51. COD REMOVAL FROM CHEESE PRODUCTION WASTEWATER WITH FENTON PROCESS

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ABSTRACT: The treatment of cheese production wastewater is difficult and costly due to organic matter, oil and protein contents at high concentrations. In this study, the cheese production wastewater will be treated by the advanced oxidation method, the fenton process. The Fenton process is a method that provides a reaction with the Fe^{+2} ion and H_2O_2. In experimental studies, it was aimed to investigate the effect of pH, Fe^{+2} dose and H_2O_2 dose on the treatment efficiency of COD removal with Fenton oxidation.

Keywords: Cheese Production Wastewater, Fenton Process, COD

FENTON PROSESİ İLE PEYNİR ÜRETİM ATIKSUYUNDAN KOİ GİDERİMİ

ÖZET: Peynir üretim atıksularının arıtımı yüksek organik madde, yağ ve protein içermesi nedeniyle zor ve maliyetlidir. Bu çalışmada peynir üretim atıksularının ileri oksidasyon yöntemi olan fenton prosesi ile arıtımı sağlanacaktır. Fenton prosesi Fe^{+2} iyonu ve H_2O_2 ile tepkime vermesi sonucu arıtım sağlayan bir yöntemdir. Deneysel çalışmalarda fenton oksidasyonu ile KOİ gideriminde, pH, Fe^{+2} dozu ve H_2O_2 dozunun arıtım verimine etkilerinin incelenmesi hedeflenmiştir.

Anahtar Kelimeler: Peynir Üretim Atıksuyu, Fenton Prosesi, KOİ

P 52. COD REMOVAL FROM YOGHURT PRODUCTION WASTEWATER WITH ULTRASOUND ASSISTED FENTON OXIDATION METHOD

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ABSTRACT: There are many pollution parameters such as BOD, COD, phosphorus and nitrogen at high concentrations in the wastewater of dairy industry. These pollutants pose harmful wastewaters to the water sources if necessary prevention are not taken. During the production of different products such as cheese, yoghurt and butter, wastewaters can form in different compositions in the dairy industry. In this study, it was aimed to investigate the removal of COD from yoghurt production wastewater by ultrasound assisted fenton process which is one of the advanced treatment methods. Ultrasound waves far beyond the limits of 20-120 decibels that the human senses can perceive and can influence reactions in the water by cavitation. In this study, the effect of ultrasound on fenton oxidation for different pH and doses were investigated.

Keywords: Ultrasound, Fenton Oxidation, Yoghurt Production Wastewater.

YOĞURT ÜRETİM ATIKSUYUNDAN ULTRASES DESTEKLİ FENTON OKSİDASYONU YÖNTEMİYLE KOİ GİDERİMİ

ÖZET: Süt endüstrisi atıksularında yüksek konsantrasyonlarda BOİ, KOİ, fosfor, azot gibi bir çok kirlilik parametresi bulunmaktadır. Bu kirleticiler zararlı atıksuları meydana getirip gerekli müdahaleler yapılmazsa su kaynaklarına karışmaktadır. Süt endüstrisi atıksuları içerisinde peynir, yoğurt, tereyağı gibi farklı ürünlerin üretimi esnasında birbirinden farklı kompozisyonlarda atıksular oluşabilmektedir. Bu çalışmada ileri arıtım yöntemlerinden biri olan ultrases destekli fenton prosesi yöntemiyle yoğurt üretim atıksuyundan KOİ gideriminin incelenmesi hedeflenmiştir. Ultrases insan duyusunun algılayabileceği 20-120 desibel sınırlarının çok daha ötesinde ses dalgalarıdır ve oluşturduğu kavitasyon etkisiyle sudaki reaksiyonları etkileyebilmektedir. Bu çalışmada ultrasesin fenton oksidasyonunda farklı pH ve dozlardaki etkisi incelenmiştir.

Anahtar Kelimeler: Ultrases, Fenton Oksidasyonu, Yoğurt Üretim Atıksuyu..

P 53. COD REMOVAL WITH FENTON PROCESS FROM YOGHURT PRODUCTION WASTEWATER

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ABSTRACT: Depending on the products produced in the dairy industry, wastewater is produced in different properties in each process. Since the wastewater that is formed contains high organic pollutants, it is necessary to reduce pollution load before discharge. The Fenton process, one of the advanced oxidation processes, has many advantages compared to other advanced oxidation processes, such as being easier and more cost effective, shorter reaction time and higher oxidation capability. In this study, the COD removal from the yoghurt production wastewater was investigated by the Fenton oxidation method. The effects of different pH, Fe^{+2} doses and H_2O_2 doses on COD removal efficiency were studied.

Keywords: Yoghurt Production Wastewater, Fenton process, COD.

YOĞURT ÜRETİM ATIKSUYUNDAN FENTON PROSESİYLE KOİ GİDERİMİ

ÖZET: Süt ürünleri endüstrisinde üretilen ürünlere bağlı olarak herbir proseste farklı özelliklerde atıksu oluşmaktadır. Oluşan atıksular yüksek organik kirletici içerdiği için deşarj edilmeden kirlilik yükünün azaltılması gerekmektedir. İleri oksidasyon proseslerinden biri olan Fenton prosesi, diğer ileri oksidasyon prosesleriyle kıyaslandığında daha kolay ve maliyet açısından ekonomik oluşu, reaksiyon zamanın kısa oluşu, yüksek oksidasyon özelliğine sahip oluşu gibi birçok avantaja sahiptir. Bu çalışmada, yoğurt üretim atıksuyundan Fenton oksidasyonu yöntemiyle KOİ giderimi incelenmiştir. Farklı pH, Fe^{+2} dozu ve H_2O_2 dozlarının KOİ giderim verimi üzerindeki etkileri çalışılmıştır.

Anahtar Kelimeler: Yoğurt Üretim Atıksuyu, Fenton prosesi, KOİ.

P 54. REVERSE OSMOSE+SOLAR ENERGY PLANT DESIGN FOR DESALINATION FOR KARAOGLANOGLU AND KARAKUM TOWN HOTELS IN CYPRUS

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ABSTRACT: The water scarcity is a common problem in Cyprus as an island with a high population especially in summer where water costs up to 5₺/m^3 in some regions. The Project consists of a treatment plant of reverse osmosis for desalination from sea water from 1 mile distance, 30 m depth and a pipe of 650 mm diameter. The units are thin grill, pressurized filter, membrane and disinfection units. The solar time is 12 hr in summer time and average daily solar energy amount is 417.3 cal/cm^2 on a year scale. The region is suitable for solar energy as the relative humidity is 70% lower than the level (%85) required for optimum solar panels. The plant design was made for water supply to Karaoglanoglu ve Karakum, Cyrus, hotels (22) with energy recovery from a 10560 m^2 solar panel area and 7.2 hr daily solar time. The plant's investment cost was determined as 1,500,000 € with a 25 yr plant service life which produced a cost of 2.25 ₺/m^3 of water which reahes a cost of KDV'siz 5₺/ m^3 (out of tax) including the total energy requirement of the plant.

Keywords: Reverse Osmosis, Desalination, Pressurized Filter, Solar energy, Relative Humidity

KIBRIS KARAOGLANOĞLU VE KARAKUM İLÇELERİ OTELLERİNİN DENİZ SUYUNDAN İÇME/KULLANMA SUYU TEMİNİ İÇİN GÜNEŞ ENERJİLİ TERS OSMOZ TESİSİN TASARIMI

ÖZET: Kıbrıs bir ada bölgesi olduğu için temiz su kaynagı sıkıntısı çekmektedir. Temiz su deposuna su 2.3₺'den gelirken, satışı ton başına bazı bölgelerde 5₺'ye kadar çıkabilmektedir. Deniz suyunda su temini için bir deniz mili mesafeden, 30 m derinlikten 650 mm'lik borular ile su çekişi sağlanmıştır. Tesis sırasıyla kaba-ince ızgara, basınçlı filtre, ters osmoz ve dezenfeksiyon ünitelerinden oluşturulmuştur. Bölgenin güneş alma süresi yaz aylarında ortalama günün 12 saattir. Yıl genelinde günlük ortalama güneş enerjisi miktarı 417.3 cal/cm^2' dir. Güneş panellerinin %85 ve üzeri bağıl nem oranlarında enerji verimi düşmektedir. Bölgenin bağıl nem oranı %70'tir. Proje, Karaoglanoglu ve Karakum bölgelerindeki toplam 22 otele içme/kullanma suyu teminini amaçlamaktadır. Enerji ihtiyacı günlük 7.2 saat ortalama güneşlenme süresi ile 10560 m^2'lik alana kurulacak güneş panellerinden karşılanacaktır. Kurulumu ile birlikte ortalama 1,500,000 €'ya mal edilecek güneş pilleri ile 25 yıllık kullanım ömrü süresince sistemin genel enerji tüketimi dahil olarak su için ortalama 2.25 ₺/m^3'lik maliyet gerçekleşecektir. Kıbrıs şebeke suyu bölgeden bölgeye değişmekle birlikte bazı bölgelerde KDV'siz 5₺/m^3'e ulaşmaktadır.

Anahtar Kelimeler: Ters Osmoz, Deniz Suyu, Basınçlı filtre, Güneş Enerjisi, Bağıl nem

P 55. THE INFLUENCE OF ABIOTIC FACTORS ON THE RECONSTRUCTION OF THE BIOCOENOSIS AREAS POLLUTED WITH ORGANIC AND INORGANIC COMPOUNDS FROM THE LOWER SECTOR OF THE JIU

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ABSTRACT: Uncontrolled discharges into inland rivers hydrographic network including the waste water containing metallic ions, determine significant changes in water quality, which consist in the imbalance of the lacustrine ecosystems in South Romania due to the disturbance processes within food chains, inhibition of mineralization, accumulation of metals in high concentrations in the aquatic organisms.
Knowing the environmental conditions allows us to understand the distribution of microorganisms in nature and establish methods to fight against and eliminate undesirable microorganisms. Our studies illustrate the toxic effects of metals on living organisms and above all effective technologies for reducing concentrations of metals in the waste water by classical and modern systems to treat them.
The concentrations of Pb^{2+}, Cd^{2+}, Cu^{2+}, Zn^{2+}, Mn^{2+} and Fe^{2+} from the water of the lakes in the lower sector of the Jiu were found below the limit of detection admissible by international standards. Pb^{2+} and Cd^{2+} are not considerable to be essential for life, but these metals are concentrated in the populations of *Viviparus acerosus* and *Radix balthica* from the aquatic environment. The process of the metallic ions accumulation in populations of microorganisms and gastropods strongly depends on its concentration in water and sediments as a living environment. Patterns of accumulation and HM transfer in biocoenosis are used for the characterization of risks of environmental pollution in the aquatic ecosystems from Romania. The presented data are the result of the convention between the Institute of Biology Bucharest and the Oltenia Museum of Craiova.

Keywords: biocoenosis, metallic ions, bioaccumulation, Romania.

P 56. STUDIES OF *CHILODONELLA CYPRINI* SIN. (*PISCICOLA*) INFECTION (CHILODONELLIDAE, CHILODONELLA) IN THE PREAJBA VALLEY RIVER BASIN (ROMANIA)

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ABSTRACT: Ichthyological researches were carried out during the period 2008-2014 in Preajba Valley Basin, situated in Dolj County, 6 km south of Craiova, consisting of the main water course represented by Preajba Valley having a length of 9,6 km and its tributary on the right, Bătrâna Valley with a length of 6,8 km. The main water course joins Jiu through the collector channel Craioviţa. During the period 1976-1979, touristic facilities were made, barring this small tributary of the Jiu, and by this intervention on the minor riverbed of the watercourse, the lakes were created which were provided with dams and surface spillways. The total area of the ten water accumulations on the Preajba Valley is 28 ha. In May 2011, ten lakes were seized using a monofilament mesh suspecting a possible parasite due to the abnormal displacement of fish at the surface of the water, but also their agglomeration in the spill area that regulates the surplus water in the lakes. From the samples obtained, the *Chilodonella cyprini* parasite was identified in Lake IX in 7 large carp scale specimens (*Cyprinus carpio*). This ectoparasite is the most common and most dangerous of the protozoa, infecting the skin and the gills, causing the disease called chilodonellosis. Following the microscopic examination, at least three parasites from the tegumentary rash could be seen in the visual field.

Keywords: Chilodonella cyprini, Preajba Valley Basin, ectoparasite, chilodonellosis.

P 57. WATER RESOURCES AND CHARACTERISTICS FROM KAYAÖNÜ (KARAMAN-ERMENEK)

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ABSTRACT: The settlement area is 15 km south east of Ermenek District which is named as Kayaönü because it was built on the edge of large rocky cliffs, The Kayaönü resources in the study area provide drinking and use usage water of the Kızıbağ spring and the Ulubağ fountain area and attract the interest of local and foreign tourists with its natural wonders.
In the field of study Pemian basement forms the Belpınarıtepe formation. The Eocene aged Yenimahalle formation, which consists of claystone, marl, and shale, is unconformably overlain by this unit. Yenimahalle Formation is composed of Miocene aged Mut Formation which is composed of reefal limestone and dolomitic limestone with angular unconformity. These units are covered by angle unconformity by alluvium. Yenimahalle Formation is semi-permeable unit, Belpınarı and Mut formations are permeable unit. The Kayaönü sources are discharged from many points in the cave formed at karstic limestones belonging to Mut formation from 1430 m. Source outputs show a linearity in the NW-SE direction. Water outlets were trapped inside the cave and a canal was collected and moved outside the cave. Kızılbağ Spring is discharged from the Yenimahalle formation with 1190 m elevation found in east part of Kayaönü village. Ulubağ Pınarı is discharged from the limestones belonging to Mut formation found in the east part of Kayaönü village. The temperatures of the sources are 13-14 ° C, pH 7,7 - 8,2, Electrical conductivity 240 - 330 mμS, total mineralization is between 240-280 mg / l. According to the Schoeller diagram, the waters in the study area belong to the same origin and they are in the $MgHCO_3$ facies. According to the Piper diagram, waters are grouped in zone 5 and carbonate hardness> non-carbonate hardness. Such waters are $CaCO_3$ and $MgCO_3$. Waters are more than 50%. carbonate hardness According to the Wilcox diagram, waters are in very good use. According to US salinity diagram, waters are in C2-S1 class.

Keywords: Cave, Kayaönü, Source, Karstic limestone. formation

KAYAÖNÜ (KARAMAN-ERMENEK) ÇEVRESİNDEKİ SU KAYNAKLARI VE ÖZELLİKLERİ

ÖZET: Geniş kayalıkların eteğinde kurulduğu için Kayaönü ismini alan yerleşim alanı Ermenek İlçesinin 15 km güneydoğusundadır. İnceleme alanındaki Kayaönü kaynakları, Kızıbağ kaynağı ve Ulubağ Pınarı bölgenin içme ve kullanma suyunu sağlamakta ve doğa harikası görünümleri ile yerli ve yabancı turistlerin ilgisini çekmektedir. İnceleme alanında temeli Pemiyen yaşlı Belpınarıtepe formasyonu oluşturmaktadır. Bu birim üzerine kiltaşı, marn, şeylden oluşan Eosen yaşlı Yenimahalle formasyonu açılı uyumsuzlukla gelmektedir. Yenimahalle Formasyonu üzerine resifal kireçtaşı, dolomitik kireçtaşı oluşan Miyosen yaşlı Mut Formasyonu açılı uyumsuzlukla gelmektedir. Bu birimler alüvyon tarafından açılı uyumsuzlukla örtülmektedir. Yenimahalle Formasyonu yarı geçirimli birim, Belpınarı, Mut formasyonları ise geçirimli birimdir.
Kayaönü kaynakları, Mut formasyonuna ait karstik kireçtaşlarında oluşan mağara içinden 1430 m kotundan birçok noktadan boşalmaktadır. Kaynak çıkışları KB-GD yönünde bir çizgisellik göstermektedir. Su çıkışları mağara içinde kaptaj yapılarak bir kanala toplanıp mağara dışına taşınmıştır. Kızılbağ Kaynağı Kayaönü köyü doğusunda Yenimahalle formasyonu içerisinden 1190 m kotundan boşalmaktadır. Ulubağ Pınarı ise Kayaönü köyü doğusunda Mut formasyonuna ait kireçtaşlarından boşalmaktadır. Kaynakların sıcaklıkları 13-14 0C, pH'ı 7,7 – 8,2, Elektrik iletkenliği 240- 330 mμS, toplam mineralizasyonu 240-280 mg/l arasındadır. Schoeller diyagramına göre inceleme alanındaki sular aynı kökenli olup $MgHCO_3$ fasiyesindedir. Piper diyagramına göre sular 5. Bölgede gruplanmış olup ve karbonat sertliği > karbonat olmayan sertlik. Böyle sular CaCO3'lü ve MgCO3'lü sular. Karbonat sertliği %50'den fazla olan sulardır. Wilcox diyagramına göre sular çok iyi kullanılabilir olarak sınıfındadır. ABD tuzluluk diyagramına göre sular C2-S1 sınıfındadır.

Anahtar Kelimeler: Mağara, Kayaönü, Kaynak, Karstik kireçtaşı, .Formasyon.

P 58. EVALUATION OF REINFORCED ALTERNATIVES OF IZNIK AAT TREATED WASTE

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ABSTRACT: Our country's population is rapidly increasing. Migration from urban areas to urban areas brings with it urbanization new lifestyles and consumption habits. Water pollution and the effects of climate change, increased water demand in parallel with the population, increased pressure on both limited water resources and receiving water environments, and as a result, treatment of waste waters with appropriate technologies has become increasingly important. In recent years, it has come into question that waste water is regarded as a source of water and nutrient recovery, and even a potential source of energy, and wastewater is no longer regarded as a "waste" to be disposed of. The main uses of treated wastewaters are known as agricultural irrigation, urban and domestic use, groundwater supply, industrial use and direct drinking water use. In this study, drinking water sources will be saved, wastewater discharging places such as lakes and rivers will be protected, When the treated wastewater is used in agricultural irrigation, the fertilizer requirement will be reduced and the economy will contribute. In this thesis, the reuse of treated wastewater in Bursa Iznik MBR Technology Wastewater Treatment Plant was discussed. Other alternative topics were evaluated except when the process was applied to MBR process, process deciding stages, facility project information and reuse.

Keywords: Waste Water,Wastewater Reuse, Treatment Plants and Systems, MBR System

İZNİK AAT ARITILMIŞ ATIKSULARIN YENİDEN KULLANIM ALTERNATİFLERİNİN DEĞERLENDİRİLMESİ

ÖZET: Ülke nüfusumuz hızla artmaktadır. Kırsal bölgelerden şehirlere olan göç, kentleşmeyle beraber yeni yaşam tarzları ve tüketim alışkanlıklarını getirmektedir. Su kaynaklarının kirlenmesi ve iklim değişikliğinin etkileri, nüfusla paralel olarak artan su talebi, gerek kısıtlı su kaynakları, gerekse de alıcı su ortamları üzerindeki baskıları giderek arttırmış, bunun sonucunda da atık suların uygun teknolojilerle arıtımı ve geri kazanım çalışmaları giderek önemli hale gelmiştir. Son yıllarda, atık suların su ve besin içeriği dolayısıyla geri kazanımı ve hatta potansiyel bir enerji kaynağı olarak değerlendirilmesi gündeme gelmiş, atık su artık sadece bertaraf edilmesi gereken bir "atık" olarak görülmemeye başlanmıştır. Arıtılmış atık suların başlıca kullanım alanları; tarımsal sulama, kentsel ve evsel kullanım, yer altı suyu beslemesi, endüstriyel kullanım ve doğrudan içme suyu kullanımı olarak bilinir. Bu çalışmada içme suyu kaynaklarında tasarruf sağlanacak, göl, akarsu gibi atık su deşarj yerleri korunacak, yüzey ve yeraltı sularının kirlenmesi önlenecektir. Aynı zamanda arıtılmış atık su tarımsal sulamada kullanıldığında gübre gereksinimi azalacak ve ekonomiye katkı sağlayacaktır. Bu tez kapsamında Bursa İznik MBR Teknolojili Atık su Arıtma Tesisinde arıtılmış atıksuların yeniden kullanımı konusu ele alınmıştır. İznik'in MBR proses uygulamasına ne zaman geçtiği, prosese karar verme aşamaları, tesis proje bilgileri ve yeniden kullanım için tarımsal sulama haricinde ki diğer alternatif konuları değerlendirilmiştir.

Anahtar Kelimeler: MBR sistem, Atıksu, Atıksuyun Yeniden Kullanımı, Arıtma Tesisleri ve Sistemleri

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