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HIGH NITRITE CONCENTRATION INHIBITS NITRITE-ADAPTED GRANULAR ANAMMOX BIOMASS LESS COMPARED TO BIOFILM

IVAR ZEKKER

UNI TARTU

Ivar.Zekker@gmail.com

Abstract:

In development of efficient anaerobic ammonium oxidation (anammox) process for N-rich wastewater treatment, anammox process nitrite inhibition was studied. Balancing between optimal substrate concentrations and nitrite toxicity range is a challenge for anammox technology. Anaerobic ammonium oxidation is an autotrophic biological wastewater treatment process where dissolved NH_4^+ is oxidized into dinitrogen gas in anoxic conditions by using NO_2^- as an electron acceptor. It is a cost-effective method that serves as an alternative to traditional nitrification-denitrification process due to significant saving on aeration energy, no need for organic carbon and lower biomass generation (Lotti et al. 2012). The anammox process is carried out by chemoautotrophic bacteria from the phylum Planctomycetales (Lotti et al. 2012).

The most critical point for sustaining a stable anammox process with a high total nitrogen removal rate (TNRR) is maintaining the proper concentration of NO_2^- . Nitrite is used as a substrate in the anammox process while it has also been recognized as a inhibiting compound (Lotti et al. 2012). Nitrite inhibition on anammox bacteria has been studied extensively and the results vary considerably.

Firstly, moving bed biofilm reactor, sequencing batch reactor and upflow anaerobic sludge blanket were operated

achieving high total nitrogen removal rates (TNRRs) of $1000 \text{ g N m}^{-3} \text{ d}^{-1}$, $100 \text{ g N m}^{-3} \text{ d}^{-1}$ and $800 \text{ g N m}^{-3} \text{ d}^{-1}$, respectively. Then, inhibiting nitrite concentrations causing 50% of biomass activity decrease were determined at >80 , >100 and $>225 \text{ mg NO}_2\text{-N L}^{-1}$ in batch tests performed with respective reactors biomass.

In terms of nitrogen converting organisms composition, Planctomycetales clone P4 strains, which were the closest (98 and 99% similarity, respectively) relative to a *Candidatus Brocadia fulgida* sequences quantities up to 2.5×10^5 anammox gene copies g^{-1} TSS were determined by qPCR.

Keywords: Anammox, Autotrophic Nitrogen Removal, Nitrite Inhibition, Suspended Sludge

RENEWABLE ENERGY RESOURCES DEVELOPMENT IN HEALTH CARE FACILITIES (HOSPITALS)

MUSTAFA YERLIKAYA¹, EYUP AL²

¹AKSARAY UNIVERSITY

²KONYA NUMUNE HOSPITAL

mustafayerlikaya@gmail.com

Abstract:

First and Second World Wars, what is the cost to the markets gun battle showed the whole world. The supply of post-war labor was faced with major problems. People's purchasing power has fallen. the year 1950-1980 was slightly different to the past years. The first world peace were being largely secure. The latter, has world become the bipolar. In this case the power of the countries, the armed forces and the kinds of goods they produce markets it has become with measured. Technological strength, economic strength, technological strength was also feeding the power of the armed forces. Today, our world has the relatively richer allows the old. Far too greatly from the cold war threat. Genetic advances in food technology, before the medical discoveries of epidemics, developments in communications technology, The advent of humanity's hunger and becomes susceptible to poverty, Many reasons as to expand the limits of democracy, It has a positive effect on the happiness of mankind. However, we are working on issue, despite these positive developments that the problems threatening the happiness of man is still there it expects them to be resolved. because it should be covered by the new energy supply-demand balance in our changing world.

Demanding of energy that is one of the our worlds most important problem nowadays derives from the rising demands. Offer-demand balance is getting destroy and as a natural consequence of this, energy sources cause a rising at the cost of the production and property of both the private and corporate sector by increasing the national and international service substantially. Especially the energy need of developed and developing countries management has increased more and more because of their working on technology intensively. Reducing of energy resources with all these needs, the increasing of protection costs of after using sources which is harm to environment brings some risks and extra costs. Therefore, in our developing and globalized world, renewable energy factor shows up as one of the most important element of sustainable development.

In our this work we aim to research of applying renewable energy in our country's public corporations where service and energy need is maintain uninterrupted. In Konya Numune Hospital Yazır premises is searched of some factors like applying renewable energy and its costs and investment's return and the contribution of hospital's total energy need.

Keywords: Renewable Energy, Energy Needs, Solar Energy, Hospital Cost, Sustainable Development

THE EXAMINATION OF KONYA'S TRADITIONAL MAN CURLING SHIRTS IN TURKISH CULTURE

TURKAN KAYSER,MIYASE CAGDAS

SELCUK UNIVERSITESI

turkankayser@selcuk.edu.tr

Abstract:

Clothing is a part of social life and a main tool expressing identity in public sphere.

The woven fabrics and the clothes made by the fabrics in the Anatolian lands, which serve as a cradle for civilizations throughout history, have an important place in Turkish culture. Local garments produced with woven fabrics are used in the upper clothing sometimes and the under clothing sometimes.

In addition, they are useful, flexible, and ergonomic clothes in terms of its feature absorbing sweat.

The traditional fabrics woven from yarns mix of cotton, silk, and cotton-silk by the hand looms in the past cannot be produced today. The closure of looms with the effect of industrialization and the decreasing of number of artisans and craftsmen producing constitute the root causes of extinction. Today, shirts crafted from traditional fabrics can be seen only in museums, antique chests found in houses, and antique stores.

In the study, "Man's Curling Shirts" are examined by monitoring sheets generated, and it was included detailed photos taken from different angles with its front and back views. Under the scope of research, the blocks prepared with dimensions that are exactly taken out of garments are involved in the section of findings of the research, scaling down.

In the light of the findings obtained, it is tried to reach a conclusion and made some suggestions on behalf of bringing and maintaining the traditional man's curling shirts in today that are recorded by monitoring sheets.

Keywords: Man'S Curling Shirts, Woven Fabrics, Garments, Monitoring Sheets

TRADITIONAL WOMEN SCARVES WORN IN KONYA REGION

MIYASE CAGDAS, TURKAN KAYSER

SELCUK UNIVERSITESI

turkankayser@selcuk.edu.tr

Abstract:

Scarves are the cloth accessories complementing the traditional Turkish clothing. The sides of these clothing elements, which are prepared with madders, different motives and variety of printing techniques on the cotton fabric, are decorated with point lace and tatting.

Such traditional clothing accessories which have to be included in the dowries of the girls at marriageable age are named as “çember” [scarf] in the region while it is called as “yazma” [scarf] in Turkey generally.

Silk yarn is used in the laces of the scarves the sides of which are decorated with point lace. Laces are named with their local names as “filize”, zilli maşa, kılı kurt etc.” according to the characteristic of the motive.

The purpose of the research is to determine and document the characteristics of the point laced scarves (yazma) which complement the clothing of the traditional Konya women.

Population of research consists of the point laced scarves in Konya center, and the research sample consists of 5 scarves collected from the houses in the center of Konya.

Keywords: Culture, Traditional Turkish Clothing, Scarf, Motives, Sustainable

FUNCTIONAL DIMENSION OF REUSE: USE OF ANTALYA KALEİÇİ TRADITIONAL DWELLINGS AS HOTEL

PROF.DR. DICLE AYDIN¹,SUHEYLA BUYUKSAHIN SIRAMKAYA²

¹NECMETTİN ERBAKAN UNIVERSITY, DEPARTMENT OF ARCHITECTURE

²SELCUK UNIVERSITY, FACULTY OF ARCHITECTURE, DEPARTMENT OF ARCHITECTURE

dicleaydin@konya.edu.tr

Abstract:

Conservation concept gained importance especially in 19th century, it found value with the change and developments lived globally. Basic values in the essence of the concept are important in the continuity of historical and cultural fabrics which have character special to them. Reuse of settlements and spaces carrying historical and cultural values in the frame of socio-cultural and socio-economic al conditions is related with functional value. Functional dimension of reuse signifies interrogation of the usage potential of the building with a different aim other than its determined aim. By giving a new function both a requirement of the society is fulfilled and a culture entity is conserved because of its functional value. In this study functional dimension of reuse is exemplified in Antalya Kaleiçi where has a special location and importance with its natural, cultural and historical heritage characteristics. Antayla Kaleiçi settlement preserves its liveliness as a touristic urban fabric with its almost fifty thousand years of past, traditional urban form, civil architectural examples of 18th – 19th century reflecting the life style of the region and monumental buildings. The civil architectural examples in the fabric have a special character formed according to Mediterranean climate with their outer sofa (open or closed), one, two or three storey, courtyards and oriels. In the study reuse of five civil architectural examples as boutique hotel by forming a whole with their environmental arrangements is investigated, it is analyzed how the spatial requirements of a boutique hotel are fulfilled in traditional dwellings. Usage of a cultural entity as a boutique hotel is evaluated under the headlines of i.functional requirement, ii. satisfactoriness of spatial dimensions, and iii. functional organization.

Keywords: Reuse, Adaptive Reuse, Functional Dimension Of Reuse, Traditional Dwellings

AN ARCHITECTURAL IDENTITY READING IN CITY CENTER: KONYA CITY PUBLIC LIBRARY

DR. SUHEYLA B. SIRAMKAYA¹, DICLE AYDIN²

¹SELÇUK UNIVERSITY, FACULTY OF ARCHITECTURE, DEPT. OF ARCHITECTURE

²NECMETTİN ERBAKAN UNIVERSITY DEPARTMENT OF ARCHITECTURE

sbsiramkaya@gmail.com

Abstract:

Urban identity is the socio-cultural elements and architectural components making the city different from the others and integrating meaning and value to the city, it is the meaning of the city. For this reason the identity of a city is formed by geographical content, cultural level, architectural works, tradition and life styles depending on time. Architectural works in human-made environment are one of the elements, spaces and spatial elements having the potential to form identity and they are qualified as identity builder elements in the development of local identity. Architectural identity – as a sub-expansion of cultural and urban identity systems - can be seen as a concept related with development and conservation plans, architectural styles, forming building and politics, behaviors against the environment and attitudes.

An architectural physical characteristic can form an identity, if it is remarkable, in harmony with its surrounding and accepted by the society, leaves massive impact, carries a focal point quality and leaves traces for citizens who experience it. In this meaning Konya City Public Library, which is handled in the scope of this study and destroyed as a result of the local governments' planning decisions, is a public building reflecting the characteristics of its period with its architectural identity. The function of being public shows the society-building interaction, this interaction which affects the formation of identity turns into a subject which leaves trace and takes place in the memory of citizens. The change, renovation and transformation of cities are surely inevitable. However here it is aimed to contribute to architectural memory by exposing the architectural identity of Konya City Public Library, which does not exist now, and to show that the planning decisions can harm the city memory and the determinants of the city identity if they cause the elimination of the buildings leave traces.

Keywords: Architectural Identity, Culture Building, Libraries, Modern Architecture

TOWARDS A BETTER DEMAND FORECAST FOR SUSTAINABLE MANAGEMENT OF RENEWABLE NATURAL RESOURCES: A DERIVED DEMAND APPROACH TO MODELING DEMAND FOR TIMBER IN TURKEY

BEKIR KAYACAN¹, MELTEM SENGUN UCAL²

¹DEPARTMENT OF ECONOMICS, FACULTY OF ECONOMICS, ISTANBUL UNIVERSITY,
TURKEY

²DEPARTMENT OF ECONOMICS, FACULTY OF ECONOMIC AND ADMINISTRATIVE
SCIENCES, KADIR HAS UNIVERSITY, TURKEY

bekirkayacan@gmail.com

Abstract:

While the researches on timber markets have been steadily increasing in number and econometric complexity in the rest of the world, relevant works at country level in Turkey have been essentially limited to trend observations and speculations with an exception of a very few works. In some studies on Turkish timber markets, direct national demand for timber, or more technically roundwood, was modeled for each of presumably separate segments of roundwood markets, namely, of sawlog, other industrial roundwood and fuelwood. However, assumed segments of roundwood markets in Turkey are far from being strict since there exists a discrepancy between the sales statistics and actual uses of different categories roundwood produced in Turkey. For instance, roundwood sold as “fuelwood” is known to be widely used as a raw material by forest industry besides being a source of energy. Another drawback in direct modeling of timber demand arises due to somewhat “informal” economy of poplar cultivation in Turkey.

Mainly because of the aforementioned drawbacks, we hereby propound a derived (indirect) demand modeling approach as an alternative to modeling the direct demand for timber. We firstly set up econometric models of demand for products of the separate forest industry subsectors as classified in ISIC. Then we show how the national input-output tables can be used to approximate the “timber coefficients” in the linear production functions of forest industry subsectors that use timber (roundwood) as their major raw material input. For this purpose, the structure of the Turkish benchmark national input-output tables is explained in detail.

Ultimately, we combine the proposed econometric modeling of forest industry subsectors with the approximation of forest industry production functions that are based upon the national input-output tables. It thus becomes possible to reach the econometric model for the timber demand derived from demand for the forest industry products.

Keywords: Econometric Model, Derived Demand, Input-Output Tables, Forest Industry, Sustainable Forest Management

AN INTEGRATED APPROACH FOR SUSTAINABLE SUPPLIER SELECTION AND ORDER ALLOCATION

HACER GUNER GOREN

PAMUKKALE UNIVERSITY

hgoren@pau.edu.tr

Abstract:

In recent years, companies have started to focus on their supply chains to enhance their sustainability performance in order to meet the customer demands and comply with environmental legislations. Therefore, the sustainability awareness has become an important issue in supply chain management and companies prefer to work with other companies focusing on this subject. This study deals with determining appropriate suppliers based on sustainability criteria, which is the first step in supply chain management. We propose an integrated approach for sustainable supplier selection and present a real world application. The proposed approach consists of two stages. In the first stage, appropriate sustainable suppliers are determined using an hybrid approach consisting of Fuzzy Decision Making Trial and Evaluation Laboratory (DEMATEL) and Axiomatic Design approach. Different from the existing studies in this field, risk factors are taken into consideration in the decision process. In the second stage, a multi-objective mathematical model is constructed to determine the order allocation of the appropriate suppliers determined in the first stage.

Keywords: Sustainable Supplier Selection, Dematel, Axiomatic Design, Risk Factors, Multi Criteria Decision Making

EVALUATION OF IZMIR CLOCK TOWER & KONAK SQUARE AND THEIR ENVIRONS WITH REGARD TO USER – SPACE INTERACTION

CIGDEM KILICASLAN¹, EMINE MALKOC TRUE²

¹DEPARTMENT OF LANDSCAPE ARCHITECTURE , FACULTY OF AGRICULTURE, ADNAN
MENDERES UNIVERSITY

²DEPARTMENT OF LANDSCAPE ARCHITECTURE , FACULTY OF AGRICULTURE, EGE
UNIVERSITY

c.kilicaslan@hotmail.com

Abstract:

Izmir Clock Tower is an example of a "singular tower clock" which dates from the Ottoman Sultan Abdülhamid II period and still survives at the same place where it was built. The Clock Tower is a landmark for both its environs and Izmir city. The structure was opened in Konak Square on September 1, 1901 to celebrate the 25th anniversary of the accession of Abdülhamid II to the throne, and has gained a central importance for the city.

In this study, Izmir Clock Tower, its symbolical role, historical importance and aesthetic value was dealt with, along with Konak Square where it is located, and evaluated in terms of user – space interaction. The study was carried out in four different parts; conceptual analysis, data collection, evaluation, discussion and results.

In the first part of the study, the historical and architectural properties of Izmir Clock Tower and Konak Square, and their importance for the city, are explained. Data collection for the study consisted of three main parts. In the first part, Izmir Clock Tower was evaluated as an architectural structure and discussed according to its general features, attribute information?, design properties and its relations with its surroundings.

In the second part, Konak Square was evaluated in terms of its general features, uses and activities and positive – negative physical features. In the final stage, both the Clock Tower and Konak Square, and their immediate surroundings, were handled in an integrated manner. After the discussion on general features, the usages are evaluated on the basis of access and linkage.

In the assessment, the Clock Tower and Konak Square are evaluated holistically and discussed in terms of user - space interaction.

Keywords: Izmir Clock Tower, Izmir Konak Square

FLUX LOSS AND MECHANISMS IN ULTRAFILTRATION MEMBRANE TREATMENT OF BILGE WATER

ELIF SEKMAN¹, M. SINAN BILGILI², MEHMET KARPUZCU¹,

¹HASAN KALYONCU UNIVERSITY

²YILDIZ TECHNICAL UNIVERSITY

elif.sekman@hku.edu.tr

Abstract:

The composition and characterization of oily wastewater (bilge water) generated from normal ship operations varies widely and generally including hyper saline seawater, oils, fuels, surfactants, cleaners, trace metals, and other dissolved and suspended contaminants. High oil content and the presence of surfactants is the biggest challenge in treating bilge water by membranes due to irreversible pore blocking caused by oil emulsification in a wide range. In the current study, raw shipboard oily wastewater was provided Istanbul's Haydarpasa Port Waste Reception Plant and treated by ultrafiltration (UF) (UP150P and UP020P) PES flat sheet membranes with different pore sizes. The bilge water was primarily passed through a cartridge filter (average pore size 10 μm) since the particle size distribution studies showed that 90% of particle size was greater than 17 μm . Right after treating wastewater in a coarse filtration unit, bilge water was treated by UF membranes. For this purpose, a laboratory scale stainless steel membrane reactor was designed particularly for this study. Wastewater flowrate, temperature, crossflow velocity, and feeding volume were constant during studies as 4.17 L/min, 20°C, 2.19 m/s, and 10 L, respectively. The only variable in this study was transmembrane pressure (TMP) as 1, 2, 3 and 4 bars for UP150P membrane and 4, 6, 8 and 10 bars for UP020P membrane. Flux loss was calculated as total, irreversible, and concentration polarization, as well as contact angle measurements performed on clean and polluted membranes. Additionally, Hermia's fouling prediction model was used to better understand fouling mechanisms on the surface of membrane and inside the membrane pores. The results showed that mixed fouling mechanisms occurred in all membrane treatment sets and a better pre-treatment is unavoidable before ultrafiltration membrane treatments to improve flux and decrease flux loss.

Keywords: Bilge Water, Ultrafiltration, Flux Loss, Membrane Treatment

THE ANALYSIS OF BASIC CONCEPTS RELATED TO CORPORATE SUSTAINABILITY APPROACH BY USING N-GRAM ANALYSIS TECHNIQUE

MUSTAFA NURI URAL¹, OZLEM TUNA²

¹GUMUSHANE UNIVERSITY

²AFYON KOCATEPE UNIVERSITY

ozltuna@hotmail.com

Abstract:

Many studies on sustainability have been conducted since the first use of the term by Carl Von Carlowitz (1713). These studies have contributed to the historical development of the basic concepts related to sustainability. It is important to set forth the development process of the term and to reveal the topics which are stressed by the specialists in order to understand the concept correctly.

With this study, all the books written in English and saved in 'Google Books' database starting from the 1900s to the recent years have been scanned with N-gram analysis and the evolution of corporate sustainability concept has been investigated.

Firstly, the concepts related to "corporate sustainability" and which will be used in the scan process were determined. In this process, opinions of experts have been taken in order to ensure objectivity. Opinions of experts, 5 academicians made up of professors and associate professors who have worked on corporate sustainability and 5 managers coming from senior and mid-levels of business enterprises who are responsible for the sustainability policies of their companies have been taken and they were asked to write down 15 concepts about corporate sustainability, in English or Turkish, which they thought were important. The data gathered was coded and categorized. 5 concepts which have the highest frequency among the 150 concepts collected from the 10 participants were identified and decided on to be used in N-gram analysis.

N-gram Viewer application has been used in its most basic form for the study. Mean while, the frequency of the concepts in the literature was determined. The analysis made it possible to reach to the information about these concepts how the frequency of their use have increased or decreased over the years and the changes in the usage frequency rates of related terms to one another.

Keywords: Corporate Sustainability, N-Gram, Retrospective Analysis

A RESEARCH ON QFD – “HOUSE OF BRAND” IN FASHION INDUSTRY

EVRIK KABUKCU

MANISA CELAL BAYAR UNIVERSITY

evrimkabukcu@gmail.com

Abstract:

Fashion continues to be an area that reflects the increasing popularity of different theoretical and practical approaches of researchers from different disciplines. Due to the rapid cycles of fashion, sustainable products and processes in terms of technical creativity and innovative approach is needed. In this context, fashion marketing emerges as an integrative marketing application with its both technical and social aspects by taking potential customers center that symbolize rapid change and creativity of fashion products.

In this study, QFD - House of Brand was designed with Quality Function Deployment (QFD) approach. In this context, the experts (Focus Group) in Fashion Industry evaluated the selected fashion brand and its selected product by prioritizing the criterias. These evaluations were used in QFD - House of Brand. Thus technical and social aspects of fashion industry were analysed together. By this technique, QFD - House of Brand established in relation to products and brand, was interpreted and optimization suggestions were presented in accordance with the findings of the research. In addition, suggestions on sustainability and optimization of brand equity in fashion industry were provided.

Keywords: Quality Function Deployment (Qfd), House Of Brand, Brand Equity , Fashion Industry, Design, Product , Sustainability

DEPARTURES FROM ANATOLIAN SELJUK BUILDING COMPLEX WITH IWAN/EYVAN: THE TRADITION OF IWAN TOMBS

MEHMET UYSAL¹, YAVUZ ARAT¹, UGUR TUZTASI²,

¹NECMETTIN ERBAKAN UNIVERSITY

²CUMHURİYET UNIVERSITY

mimuysal@gmail.com

Abstract:

As man constructed the spaces that he lived in he also designed spaces where their dead will stay according to their belief systems. These spaces are sometimes monumentalized by the means of a stone on the top of a mountain, sometimes signed by totems and sometimes became structures to protect graves and symbolize the person or make him unforgettable. Various grave monuments have been constructed from the earliest primitive societies to developed societies. Every belief system built structures for itself; Pyramids for pharaohs, grave monuments for kings and emperors, temples and tombs for important men of religion. These spaces are also architectural works like a school or a dwelling and have importance in history of architecture.

After Anatolia Seljuks made Konya the capital city and Konya became administrative, cultural and scientific center, very important tombs were built in Konya. Different from the local tomb architecture, the architecture of tombs with half-open “eyvan/Iwan” is significant. Although iwan buildings is vastly used in Anatolian civil architecture and monumental buildings its best examples are observed in 13th century medrese buildings. The iwan tomb tradition which was observed during the time period when this building typology was shaped and departed from the resident tradition in the form of iwan tombs are rarely represented. However, similar tombs were built in resemblance to this tradition. This study provides information on samples of iwan tombs (Gömeç Hatun Tomb, Emir Yavaştagel Tomb and Beşparmak Tomb) and evaluates the departures from iwan building complexes in view of architectural language. This paper also gives information about iwan tombs among tombs having importance in Islamic Architectural Heritage.

Keywords: Seljuk Building Complex, Eyvan/Iwan, Anatolia, Islamic Architectural Heritage, Tomb.

MORPHOLOGICAL TRANSFORMATIONS AND VARIATIONS IN ARCHITECTURAL LANGUAGE FROM TOMBS TO MAUSOLEUMS: FROM OTTOMAN EMPIRE TO THE TURKISH REPUBLIC

UGUR TUZTASI¹, MEHMET UYSAL², YAVUZ ARAT²,

¹CUMHURİYET UNIVERSITY

²NECMETTİN ERBAKAN UNIVERSITY

ugurtuztasi@gmail.com

Abstract:

The tomb (grave) structures that have influenced the architectural culture from the Seljuk times to the Ottoman throughout Anatolia are members of a continuing building tradition in terms of monumental expression and styles. This building typology which has religious and cultural permeability in view of spatial traces and structural formations follows the entire trajectory of the respect to death and the deceased from the Seljuks to the Ottomans and also the changing burial traditions epitomised in the form of mausoleums in the Turkish Republic. Although the cultural layers have the same contents with regards to the cult of monument this architectural tradition which evolved from tombs to mausoleums changed in both typological formation and structural size. In short, the tomb tradition with unique examples of architectural functions and typological formations has been encountered from 13th century onwards and continued during the Ottoman period with changes in form and has transformed to mausoleums during the 20th century. This study analyses the process of transformation from complex structures to simple structures and then to monumental graves in terms of architectural expression. Moreover, the study interrogates the architectural language of Anatolian Seljuk tombs to Ottoman tombs and monumental graves built during the republican period in terms of spatial and structural contexts.

Keywords: Death And Space In Turks, Monumental Graves, Language Of Architectural Style

A TOMB STRUCTURE IN PURSUIT OF TRADITION IN 20TH CENTURY TURKEY AND ITS STORY; THE TOMB OF HACI HÂKIM KEMAL ONSUN AND HIS WIFE

YAVUZ ARAT¹,UGUR TUZTASI²,MEHMET UYSAL¹,

¹NECMETTIN ERBAKAN UNIVERSITY

²CUMHURIYET UNIVERSITY

yavuzarat@gmail.com

Abstract:

Anatolia has been the host of many civilizations and a site where architectural structures of many cultural layers were interpreted. Most significantly the Turks who settled in Central Asia brought their architectural dynamics and cultural accumulation to Anatolia after the 12th century. The tomb structures first observed in Central Asia under the influence of Islamic faith and Turkish cultural heritage has blossomed under Great Seljuk Empire and with the Anatolian Seljuk Empire these tombs changed both in size and form with rich and beautiful samples from Ahlat to Sivas to Kayseri and Konya. This tomb tradition which started during 13th century has continued during the Ottoman Empire period with some alterations of form and evolved into the rarely observed mausoleum type tombs. The Ottoman tradition of building tombs inside mosque gardens and their forms present the clues of an important burial tradition. However this understanding was abandoned in 20th century Turkey. This tradition was abandoned with regard to legal regulations and health conditions. This study investigates the vestiges of this tradition and its spatial reflections over a sample. The present sample is representative of a tradition that started in 1970s and the case of building tombs inside mosque gardens will be illustrated over the tomb of Hacı Kemal Onsun and His Wife which is located in Konya, the capital of the Anatolian Seljuks. The building process of this tomb will be evaluated with regard to burial traditions and architectural stylization.

Keywords: Tomb, Language Of Architectural Form, Anatolian Seljuk Tombs, Ottoman Tombs

WRITING EDUCATION BASED ON MUNIS KHAREZMI'S SAVAD-I TALIM

HAYRULLAH KAHYA

YILDIZ TECHNICAL UNIVERSITY

hayrullahkahya@hotmail.com

Abstract:

Munis Kharazmi (1778-1829) was a famous poet and history of the latest period of Central Asia Turkish Literature called Chagatai Literature. He had a work interested in writing education titled Savad-i Talim, which means writing training. In his work, he mentioned writing education with Arabic letters known as husn-i hat, which means nice calligraphy. Munis taught about the preparing the letters for writing to students. Besides, he mentioned about the writing rules, and the preparing the texts. In current study, I will deal with his rules, topics, and advises about the writing education in his work. My aim is to contribute to contemporary writing education to compare with historical writing education comprehension.

Keywords: Writing Education, Turkish Language, Munis Kharazmi, Chagatai Language, Education

VARIABLE COMPRESSION RATIO EFFECT ON NOISE AND VIBRATION CHARACTERISTICS OF A DIESEL ENGINE FUELLED WITH CASTOR OIL BIODIESEL

MUSTAFA OZCANLI¹, HASAN SERIN¹, SAFAK YILDIZHAN¹, ERINC ULUDAMAR²

¹DEPARTMENT OF AUTOMOTIVE ENGINEERING, CUKUROVA UNIVERSITY

²DEPARTMENT OF MECHANICAL ENGINEERING, CUKUROVA UNIVERSITY

ozcanli@cu.edu.tr

Abstract:

An experimental study was conducted in a variable compression ratio (VCR) engine in order to investigate the effect of different compression ratios on noise and vibration characteristics of castor oil biodiesel. Castor oil biodiesel was produced via transesterification method. Fuel specifications of both fuels such as density, cetane number, flash point, viscosity, pour point and copper strip corrosion were measured. The result of vibrational and noise characteristics of low sulphur diesel and diesel-biodiesel blend (B20) were compared at 12:1, 14:1, and 16:1 compression ratios in the test engine. The study showed that compression ratio significantly affects the vibrational and noise characteristics of the engine. As a result usage of castor oil biodiesel also caused increment in the means of noise and vibration of the engine.

Keywords: Variable Compression Ratio, Vibration, Noise, Castor Biodiesel

BANK CREDIT APPLICATIONS AND ADVANCEMENT RECOMMENDATIONS AS REGARDS SUSTAINABLE BUILDINGS IN TURKEY

AKIN BILDIK¹, TULIN ALTUN², GOKHAN GOKCEOGLU³,

¹MARMARA UNIVERSITY

²CUMHURIYET UNIVERSITY

³BOGAZICI UNIVERSITY

bildikakin@gmail.com

Abstract:

The kind of buildings that are termed on a wide array of names ranging from passive, green, environmental friendly, ecological to sustainable have been distinguished from traditional buildings with respect to their design, construction and utilization processes as an intended repercussion of their economic, social and environmental advantages. Consequently, development of well-defined financial mechanisms aimed at bringing business circles with individuals as well as designation of incentives by the governments carry utmost importance. In this study, public mechanisms that could be used to spread private credits for sustainable buildings has been discussed. Although it is thought that the legal framework drawn by the government (through instruments such as sanctions or financial assistance) has evident priority, this study emphasizes major problems concerning sustainable building private credits and recommendations to these particular problems. This study encompasses the mentioned concrete recommendations as regards the following aspects of the sustainable building issue; inauguration of legal and regulatory structures concerning finance of energy investments for sustainable buildings, increasing the aggregate magnitude of the private credit packages prepared with the cooperation of energy productivity focused firms and banks, diversification of the financeable products and services as regards sustainable buildings, enhancement of maturity extensions and tax exemptions pertaining to sustainable building private credits.

Keywords: Sustainable Buildings, Bank Credits, Public Incentives

PERFORMANCE AND EMISSION CHARACTERISTICS OF A DIESEL ENGINE FUELLED WITH TEA SEED OIL BIODIESEL WITH VARIABLE COMPRESSION RATIO

HASAN SERIN¹, MUSTAFA OZCANLI¹, MUSTAFA ATAKAN AKAR¹, COSKUN OZALP²

¹DEPARTMENT OF AUTOMOTIVE ENGINEERING, CUKUROVA UNIVERSITY

²OSMANIYE KORKUT ATA UNIVERSITY, DEPARTMENT OF ENERGY SYSTEMS

ENGINEERING,

hserin@cu.edu.tr

Abstract:

The study presents the results of investigations carried out on a one-cylinder, four-stroke, variable compression ratio (VCR) engine operated with tea seed (*Camellia sinensis*) oil biodiesel. The aim was to investigate the effect of different compression ratios on performance and emission characteristics. Tea seed oil biodiesel was produced via transesterification method with methanol in the presence of a catalyst (NaOH). Fuel specifications of both fuels such as cetane number, density, viscosity, flash point and pour point were measured. After being blended with regular diesel fuel (D), the fuel properties of tea seed biodiesel was determined according to ASTM and EN standards. The result of performance and emission characteristics of low sulphur diesel and diesel-biodiesel blend (B20) were compared at 12:1, 14:1, and 16:1 compression ratios in the test engine. The study showed that compression ratio significantly affects the performance and emission characteristics of the engine. It was also shown that, up to 20% volumetric content of tea seed biodiesel could be effectively used in fuel mixture serving the purpose of reduction in diesel fuel usage.

Keywords: Variable Compression Ratio, Performance, Emission, Tea Seed Biodiesel

PERFORMANCE AND EMISSION CHARACTERISTICS OF VARIABLE COMPRESSION RATIO ENGINE FUELLED WITH DIESEL-BUTANOL AND CORN BIODIESEL-BUTANOL BLENDS

MUSTAFA ATAKAN AKAR,SAFAK YILDIZHAN,HASAN SERIN,MUSTAFA OZCANLI

DEPARTMENT OF AUTOMOTIVE ENGINEERING, CUKUROVA UNIVERSITY
atakanakar@gmail.com

Abstract:

In this study, an experimental study of diesel-butanol and corn biodiesel-butanol blends in a variable compression ratio (VCR) engine has been studied. The result of performance and emission characteristics of low sulphur diesel, diesel-butanol blend and biodiesel-butanol blend were compared at 12:1, 14:1, and 16:1 compression ratios of the test engine. The study showed that compression ratio significantly affects the performance and emission characteristics of the engine. Results showed that increasing compression ratio improves brake thermal efficiency and specific fuel combustion for all test fuels. Biodiesel-butanol usage improved CO and CO₂ emissions compared to diesel fuel, but increased NO_x emissions. Butanol addition to diesel fuel improved CO emissions but caused a slight increment when adding to corn biodiesel. Biodiesel-butanol blend showed better brake thermal efficiency at low compression ratios compared to diesel-butanol blend.

Keywords: Compression Ratio, Performance, Emission, Corn Biodiesel, Butanol

AN INFORMATION SYSTEM DEVELOPMENT IN AN AUTOMOBILE SUB INDUSTRY ESTABLISHMENT: A CONTRIBUTION TO ECONOMIC SUSTAINABILITY

ECENAZ DEMIRCI

OKAN UNIVERSITY

ecenaz.demirci@okan.edu.tr

Abstract:

In this study, prevalent information system that is relevant to quality control is improved. As a technique to enhance product quality, Statistical Process Control is chosen by the company because it guarantees that the process operates at its full potential to manufacture non-defect parts. Control chart tool of SPC is used to monitor the process. Machine operators enter the measurement data for a part into the system to check process stability and monitor the control charts in the existing information system. However, the system is insufficient to diagnose the root causes of the process instability, in this case operators waste considerable time to find the problem. In addition, in case of wrong assumption for root cause of instability when the corrective action for the root cause is considered, costs increase. Cost raise threatens the economic aspect of sustainability. To reduce the costs, this information system is developed. A survey is conducted by the firm to find out the possible reasons for process to be out of control. Machine operators state seven different causes; which are operator error, machine error, measurement error, tool wear, poor adjustment of equipment, defective batch of material, environmental effect. Corrective actions for each cause are suggested. The possible causes and related corrective actions are built into the system by the company's software developers. As a result cost of quality is reduced considerably with respect to previous system and this contributes to economic sustainability allowing profitability over time.

Keywords: Statistical Process Control, Control Charts, Sustainability

ECONOMIC POTENTIAL OF ENERGY-EFFICIENT RETROFITTING IN THE RESIDENTIAL BUILDINGS: THE CASE OF ISTANBUL

M. MUSTAFA ERDOGDU¹, COSKUN KARACA², ALI KURULTAY³,

¹FINANCIAL ECONOMICS, DEPARTMENT OF PUBLIC FINANCE, FACULTY OF
ECONOMICS, MARMARA UNIVERSITY

²DEPARTMENT OF PUBLIC FINANCE, FACULTY OF ECONOMIC AND ADMINISTRATIVE
SCIENCES, CUMHURİYET UNIVERSITY

³BIRER KURULTAY ARCHITECTS

mustafaerdogdu@marmara.edu.tr

Abstract:

The amount of energy consumption in the residences and commercial buildings has a very significant share with nearly 40 % in the total primary energy supply. The gradual increase in the energy need in parallel with development level, correspondingly, environmental pressure emerged from energy consumption and the tendency of energy cost to increase have paved the way of the gradually developing understanding that designs which will decrease the need of energy use in the buildings are of due significance and necessity. Concerning the importance and immediate need in Turkey for changing dwelling construction and design methods from widely used inefficient methods to energy efficient designs and methods this paper aims to analyze the economic benefits of this proposed change and provide new solutions. The paper consists of four sections. After the introduction, which will explain the reasons for the need for energy efficiency at residential buildings. The second section will draw energy consumption levels and energy saving potentials for residences and provide examples of thermal isolation applications which are even more efficient compared to other solutions in terms of energy efficiency. The third section will analyze financial effectiveness of renewal efforts aiming to save energy at residential buildings. The last section is reserved for the possible new governmental politics concerning energy efficiency of dwellings. This paper will seek political decisions, varying from promotions for rising social awareness and sustaining healthy urban development to deterring measures against energy inefficiency and will investigate how these decisions can be applied effectively.

Keywords: Energy-Efficient Retrofitting, Green Buildings, Residential Buildings, Istanbul

TECHNOLOGICAL PROPERTIES OF OBLACHINSKA, CIGANCHICA AND MARELA SOUR CHERRY VARIETIES

BOZHIDAR RISTOVSKI, ENISE SIPAHI, MIRJANA BOCEVSKA,

FACULTY OF TECHNOLOGY AND METALLURGY, SS. CYRIL AND METHODIUS
UNIVERSITY

bozidarr@tmf.ukim.edu.mk

Abstract:

Sour cherries (*Prunus cerasus* L.) have become one of the most popular fruit, among the stone fruit species, due to their quality attributes and the content of health promoting compounds. They are good sources of antioxidant phytochemicals, mostly phenolics, but also sugars, acids, vitamins and minerals. Grown in many different varieties, sour cherries have different characteristics that influence the overall acceptability by the consumers and usage in the food industry. Sour cherry fruits are mainly processed into juices, purees, concentrates, jams, or as frozen products, and they are used as valued ingredients in confectionary, dairy and beverage industry. The Balkan countries, including R. Macedonia, traditionally has been among the greatest world producers of sour cherries, which is main reason for increased interest in their characterization.

The objective of this study was to evaluate some of the physical and chemical properties of the sour cherry varieties grown in Republic of Macedonia, that have major influence on the overall processing parameters. In that way some morphological characteristics (shape, immensity, length, width, height and ratio of flesh to stones), Lab color parameters, and the contents of dry matter, ash, acids and sugars of three sour cherry varieties (Oblachinska of two regions, Ciganchica and Marela, harvested in season 2015) were assessed. Among the investigated varieties the sour cherries of Marela had the greatest dimensions and proportion of the edible part of the fruit, and the most favorable sugar to acid ratio, compared to other analyzed varieties. The a^* color parameter varied between 5.03 and 22.38 for the different fruit parts, and the b^* parameter ranging from -4.16 to 5.36, was the lowest for those from Marela variety. Although, one of the Oblachinska sour cherries had the highest sugar and acid content, they together with those from Ciganchica variety had low maturity index (5.9 - 6.3).

Keywords: Sour Cherry, Morphological Properties, Color Characteristics, Chemical Composition

ANTIMICROBIAL AND ANTIOXIDATIVE ACTIVITY OF COMMERCIAL VERSUS TRADITIONAL APPLE VINEGAR

ELIZABETA JANCOVSKA¹, MAJA JANCOVSKA², BOZHIDAR RISTOVSKI¹, MIRJANA
BOCEVSKA¹

¹FACULTY OF TECHNOLOGY AND METALURGY, SS. CYRIL AND METHODIUS
UNIVERSITY

²FACULTY OF MEDICAL SCIENCE, UNIVERSITY "GOCE DELCEV", KRSTE MISIRKOV BB,
2000 SHTIP, REPUBLIC OF MACEDONIA

bozidarr@tmf.ukim.edu.mk

Abstract:

Vinegar is a liquid condiment obtained from alcoholic and subsequent acetous fermentation of mash prepared from cereals or a wide varieties of fruits where alcohol or carbohydrates may be added. It is a clear aqueous liquid, which may be colorless, with the color of its raw material, or additionally colored. Its pH value is 2.0-3.5, and acetic acid in the range of 40-150 g/L.

Vinegar has long been used worldwide as an additive in a wide variety of foods which it preserves due to the properties of acetic acid. However, recent research has shown that, in addition to its well known anti-bacterial activity, vinegar when consumed as a drink, confers considerable health benefits, including lowering blood pressure, acting as an antioxidant, alleviating the effects of diabetes, preventing cardiovascular diseases, providing refreshment after exercise.

From recently traditionally prepared food became as much as popular among the consumer, because of their green technology.

In this study four samples of commercially produced apple vinegar, by different producers, and one sample obtained traditionally or homemade were analyzed. Their dry mass, total acids, pH value as well as antioxidant DPPH activity and antimicrobial capacity against *Salmonella typhimurium*, *Echerichia coli*, *Staphylococcus aureus* and *Candida albicans* were determined and compared.

In commercially obtained vinegars dry mass varied from 2 to 3.2%, but in traditional about 11%. Content of total acids in commercially products was in the range of 1.5% to 4.6% and about 2% in traditionally obtained vinegar, pH varying in the range of 2.7 – 3.5 in commercially and 2.9 in homemade vinegar. One of the commercial sample was with higher DPPH antioxidant activity than homemade vinegar, while two samples were with very weak activity. Traditionally obtained vinegar was the most effective against *Salmonella typhimurium*, but the commercially vinegars against the other microorganisms.

Keywords: Fruit Vinegar, Antimicrobial Activity, Antioxidant Activity

A SURROGATE MODEL FOR THE OPERATION ECONOMICS AND FEASIBILITY ANALYSIS OF CITY TO CITY COMMUTER AIRLINE SERVICE NETWORKS FOR SUSTAINABLE REGIONAL AVIATION

ALPEREN YILLIKCI

AEROMAK, ITU TECHNOLOGY CENTER AND INNOVANTURE LLC

alperenyillikci@hotmail.com

Abstract:

In this study an iterative surrogate model based Operation Cost and Feasibility (OCF) analysis approach is developed and implemented to the regional commuter airline operation network economics proposed for Balkan countries. For an integrated economical, social and cultural sustainable development, direct city to city air travel has been studied by experts as an important fast and flexible mode of transportation. On the other hand, route networks of existing airlines are mostly constructed between major hubs and hub to spoke cities and airlines pick profitable routes and cancel money-losing ones. In present study operational economics of city to city air travel (where no direct airline connections currently exist) with commuter aircraft is studied with an reversed approach; considering the least number of passengers rather than considering a Load Factor for pre-selected aircraft for a route and an estimated ticket price to calculate the Break-Even-Point. In other words, the cost of travel for per passenger on each selected route is calculated instead of break-even number of passengers. An Overall Evaluation Criteria of Economics (OECE) is defined for a collective-cumulative cost per passenger for a given network as function of the output-dependent variables of the airline operational cost analysis. As the next step Design of Experiments (DoE) is constructed for the input cost variables with their maximum and minimum values. One output of this DoE analysis is the Pareto Chart which ranks the input variables in terms of their effect on the defined OECE which represents an overall balanced cost expectations from a specific air transport network. The second output of the DoE analysis is the Response Surface for the OECE which is basically a Surrogate Model (SM) of the operational cost analysis. Several examples for different OECE definitions and their corresponding SMs, represent different the cost-profit dynamics, are presented in the study.

Keywords: Integrated Sustainable Development, Point To Point Air Travel, Design Of Experiments, Response Surface, Surrogate Models

RENEWABLE ENERGY SYSTEMS OF HOSPITALS

EYUP AL

KONYA NUMUNE HOSPITAL

eypal@hotmail.com

Abstract:

Demanding of energy that is one of the our worlds most important problem nowadays derives from the rising demands. Offer-demand balance is getting destroy and as a natural consequence of this, energy sources cause a rising at the cost of the production and property of both the private and corporate sector by increasing the national and international service substantially. Especially the energy need of developed and developing countries management has increased more and more because of their working on technology intensively. Reducing of energy resources with all these needs, the increasing of protection costs of after using sources which is harm to environment brings some risks and extra costs. Therefore, in our developing and globalized world, renewable energy factor shows up as one of the most important element of sustainable development.

In our this work we aim to research of applying renewable energy in our country's public corporations where service and energy need is maintain uninterruptible. In Konya Numune Hospital Yazır premises is searched of some factors like applying renewable energy and its costs and investment's return and the contribution of hospital's total energy need.

This project was conducted in three different ways. The first way is the most efficient working system to provide maximum power and is intended to shorten the period of profitability. The second way is based on a balance of cost and profitability. The optimum conditions are given priority to ensure cost-profit balance inside. The third and final version for much less than the cost of completely focused on the cost of profitability are preferred.

Keywords: Energy Needs, Solar Energy, Sustainable Development, Sustainable Energy Use, Green Hospital.

A WIND POWER PLANT FEASIBILITY STUDY FOR BURSA, GEMLIK REGION, TURKEY

SEMIH AKIN,YUSUF ALI KARA

BURSA TECHNICAL UNIVERSITY

semih.akin@btu.edu.tr

Abstract:

Increasing energy demand on a global scale and with the emerging constraint of conventional energy resources has forced the developing countries to improve alternative energy resources. Especially in last decades, many studies and researches have been done in order to benefit more efficiently from renewable energy resources. Wind energy as a renewable energy resource has showed greater improvement since it is sustainable, efficient and clean energy. As a result, the number of wind power plants investments has been increasing expeditiously all around the world. Correspondingly, Turkey promotes the incentives and investments to the wind power conversion systems. Along with being increased the incentives and investments to wind power conversion systems, the external dependence on energy of Turkey will decrease. In addition to that, at the same time competitive power of Turkey in the energy sector will increase dramatically.

In this work, wind power plant feasibility study is realized for Gemlik Bay connected with Bursa Province which has remarkable wind potential but has not any wind power plant. Wind data of Gemlik applied to Windsim software; annual energy production, capacity factor are calculated and also power and energy curves of selected wind turbines are obtained as output. The study shows that through 5 Vestas V90 turbines with 2-MW capacity in Gemlik Ata region, establishment of economic wind power plant which has over 40 GWh/y annual energy production capacity is feasible.

Keywords: Gemlik Region, Wind Energy, Wind Power Plant, Windsim, Renewable Energy Sources

DETERMINATION OF THE GLYCEMIC INDEX OF GILABURU (VIBURNUM OPULUS) JUICE

MELTEM SOYLU

NUH NACI YAZGAN UNIVERSITY

meltemboh@gmail.com

Abstract:

The aim of this study is to determine the blood glucose response among volunteers and to calculate the glycemic index, classify of gilaburu (*Viburnum opulus*) juice that is specific to Kayseri and produced from the fruit traditionally (home-made) and consumed frequently to prevent and treat several diseases as renal diseases, gall bladder diseases, liver diseases and diabetes, to relieve pain and cramps and to protect health.several diseases. Gilaburu (*Viburnum opulus*), is a fruit cultivated especially around Kayseri, Tokat and Sivas. After being harvested at September-October, they are left in water for one-to-three months and its juice is produced traditionally or technological processes at fruit juice companies. In our study, we determined the glycemic index of gilaburu (*Viburnum opulus*) juice in 21 healthy volunteer students with a mean age of men 20.57 ± 1.39 and 19.37 ± 1.02 years. We also compaired biochemical parameters before and after gilaburu juice intake. All volunteers participating in the study underwent anthropometric measurements and their diet details were obtained. Gilaburu juice home made form were used in the study after their, sugar were analyzed. Capillary finger-prick blood samples were collected after an overnight(12 h) fast and 15, 30, 45, 60, 90, 120 minutes after intake of each meal and the GI was calculated by expressing each subject's incremental area under the blood glucose curve after gilaburu juice as a percentage of his or her mean blood glucose curve after glucose. Fasting and postprandial blood glucose, HbA1c, insulin, total cholesterol, LDL cholesterol, HDL cholesterol, triglyceride, AST and ALT levels were detected.

The glycemic index value of gilaburu juice was found to be 40.95 and have low GI. The fasting and posprandial the glucose levels values decrease and cholesterol levels increase after ($p < 0.05$). Besides postprandial HDL cholesterol, AST and ALT levels levels increase after gilaburu juice was determined significant ($p < 0.05$).

Keywords: Glycemic Index, *Viburnum Opulus*

PSYCHOLOGICAL EFFECTS OF THE WATER AND WATER STRUCTURES ON URBAN AND URBANITES

OMER ATABEYOGLU

LANDSCAPE ARCHITECTURE DEPARTMENT, AGRICULTURAL FACULTY, ORDU
UNIVERSITY

atabey6@hotmail.com

Abstract:

Water is one of the most important element and source of life. It is impossible to think that is no water and subtract from our life. Water is extremely important life conditions and living areas. Therefore, it is usually enough to feels good to hear and see water. Besides the physical benefits of water, there are most psychological benefits of water, too. Psychological characteristics of the water effect urban life and urbanites. If the water use rightly, urban have right image and meaning for urbanites and tourists. Urban with its construct are like books to read for tourists and urbanites. They have most story and meaning. Water and water structures bring meaning, aesthetic, function and attractive characteristic to urban. Structural elements strengthen its meaning, aesthetic and functional sense. Responsibility of designer is big to create correct senses. Abilities and imagination of the designer are determinant to correctly motivated human psychology. Design techniques of water structure, details and characteristics of structural elements and locations of water structures are important for urbanites to feel better and peaceful about themselves. Aim of the landscape architectures is to serve the people. For this purpose psychological factors are a method to evaluate. This study includes use of water and water elements in urban, image of urban, psychological effects on urbanites and use of water elements by psychological approaches.

Keywords: Water Structures, Urbanite Psychology, Urban Sustainability, Landscape Architecture, Urban Design

LITERATURE REVIEW OF LIFECYLE TIME OF PRODUCTS AND SERVICES: A CASE STUDY IN TEXTILE SECTOR

AYSENUR¹, ERTUGRUL TACGIN²

¹YALOVA UNIVERSITY-MARMARA UNIVERSITY

²MARMARA UNIVERSITY

erdil.aysenur@gmail.com

Abstract:

Hyperconsumerism caused by planned obsolescence results in increasing volumes and varieties of both solid and hazardous wastes requiring an effective waste management. There's a whole industry known as "waste management" that relies on a rigid understanding of waste.

The Carbon Footprint indicates all greenhouse gas emissions along the whole life-cycle. Consumers can contribute significantly to reduce the Product Carbon Footprint. we try to find Sustainable Actions Ways to Reduce Carbon Footprint to have healthier, safer and, sustainable world.

The purpose of this study is to define the policy of planning, designing and manufacturing products with limited serviceable life and try to give a view of understanding of the theory behind obsolescence, decreasing life-cycle of a product or service and to create a vision for consumer durable goods per household and an application in textile sector.

Keywords: Sustainability, Obsolesence, Life Cyle Time

SUSTAINABILITY OF JOINT PROJECTS BETWEEN UNIVERSITY AND INDUSTRY IN TURKEY

AYSENUR ERDIL¹, HIKMET ERBIYIK²

¹YALOVA UNIVERSITY-MARMARA UNIVERSITY

²YALOVA UNIVERSITY

erdil.aysenur@gmail.com

Abstract:

Industries in Turkey, since 1980's, perform important improvements as a result of the policies that pursue the goal of exports orientation and globalization. Although there are structural economic problems such as inflation, privatization, taxes and efficient institutional structure of government has not been formed yet, the performance of Turkish industry seems to give hope. However, this improvement and performance is the result of the industry's own efforts. This situation makes it difficult to determine medium and long term targets. In these circumstances, it makes a contribution to Turkish industry, consequently the development of Turkey, that foundations which form the institutional frame including universities, related bureaucracy with main chambers, unions and priority industry are able to produce common studies, projects. International competition represents a rich competition concept containing divided markets, different products and technological changes. So the international trade one of the most important supports of the competition advantage is the technological changes. In the technological race, technology, R&D are vital determining factors.

This study aims to use the results of previous projects, is to prepare a new environment that will provide the production of cooperation which is necessary for the common idea.

Keywords: Industry, Research & Development, Technology, University Projects

EFFECTS ON GLOBAL WARMING OF INSULATION IN PIPE ACCORDING TO LIFE CYCLE ASSESSMENT

YUSUF BASOGUL¹, ALI KECEBAS², YAVUZ DEMIRCI¹,

¹ADIYAMAN UNIVERSITY

²MUGLA SITKI KOCMAN UNIVERSITY

ybasogul@adiyaman.edu.tr

Abstract:

Energy consumption in space heating will be significantly reduced through the use of appropriate insulation materials, thereby reducing fossil fuel consumption and its polluting effects on the environment. Even in well-insulated buildings, energy consumption and emissions can be reduced further by insulating heating pipes. In particular, water supply, fire protection and district heating/cooling systems and industrial and chemical processing plants contain intricate and costly piping configurations. Un-insulated distribution and return pipelines are a prominent source of wasted energy. Adding insulation for energy conservation in pipe systems not only reduces heat transmission losses but also reduces its polluting products. The use of thermal insulation is one of the most effective methods of energy conservation and environmental protection in buildings and pipes. Therefore, the selection of a proper insulation material and determination of optimum insulation thickness are particularly vital. In this study, a novel method related with life cycle assessment analysis is used for determining the optimum insulation thickness of pipe. The life cycle processes affected by the pipe insulation application have been characterized in terms of their environmental impacts. The life cycle assessment method is performed by using energetic and environmental criteria, which determined the optimum insulation thicknesses in pipe insulation applications.

Keywords: Pipe Insulation; Global Warming; Lca Analysis; Optimum Insulation Thickness.

TREATMENT OF TEXTILE WASTEWATER WITH PID TEMPERATURE CONTROL USING MATLAB/SIMULINK PROGRAMME

YAVUZ DEMIRCI¹, YUSUF BASOGUL¹, CANAN PEKEL², KAMRAN POLAT²

¹ADIYAMAN UNIVERSITY

²ANKARA UNIVERSITY

yavuzdemirci@gmail.com

Abstract:

This paper presents an electrocoagulation technique for the design of wastewater purification by controlling the system temperature. In our study, we employed a PID temperature control system successfully to treat and purify textile wastewater. During the electrochemical purification of textile wastewater, conductivity of the system depends on the electrochemical characteristics and the temperature of the system changes non-linearly. Temperature of the electrocoagulation reactor must be kept at a specific value to achieve an efficient electrochemical purification. Temperature control of such a system by keeping the temperature constant is essential. A cooling jacketed reactor has been used as the electrocoagulation system. The temperature control of the mixture in the reactor during the electrocoagulation is realized by using the cooling water flow as the manipulated variable. This study included a series of tests in which a PID controller was used for temperature control. This system performance of the electrocoagulation process was presented by determining chemical oxygen demand (COD), colour and turbidity removal efficiencies.

Keywords: Electrochemical Treatment, Textile Wastewater, Pid, Temperature Control

EDUCATION OF LOCAL GOVERNMENTS AS A WAY TOWARDS SUSTAINABLE DEVELOPMENT OF THE COUNTRIES OF THE WESTERN BALKANS - CASE STUDY OF MONTENEGRO

RADOJE VUJADINOVIC, UROS KARADZIC

UNIVERSITY OF MONTENEGRO/FACULTY FOR MECHANICAL ENGINEERING

radojev@ac.me

Abstract:

There is an urgent need of capacity building in sustainable development in the Western Balkans Countries. Thus, education and training are necessary elements to make municipality administration capable to recognize, define, prepare, and finalize any kind of the energy efficiency projects, from the simple ones up to technically and particularly financially complex projects, particularly taking into consideration today very attractive concepts of the projects financing, as ESCO's, PPP, etc.

This paper presents the activities on the TEMPUS project Training courses for public services in sustainable infrastructure development in Western Balkans (Project Number: 530530-TEMPUS-1-2012-1-SE-TEMPUS-JPHES), in the Montenegro, as case study.

The project is designed to establish system for training of public authorities aimed at improving level of environmental expertise, facilitating good governance and sustainable development in Western Balkan countries. In that sense, for capacity building of staff at public authorities in sustainable development, particularly energy efficiency in the public buildings, management in the renewable energy sources at University of Montenegro - Faculty for Mechanical Engineering in cooperation with Union of Municipalities of Montenegro two training programmes are designed, developed and implemented.

Key teachers were being retrained at EU universities and they disseminated their new knowledge to colleagues, so the capacities of University of Montenegro in providing training in sustainable development have been significantly improved.

Strong connection between University of Montenegro and Union of Municipalities of Montenegro has been established. All these things contributed to creation of the system for continuous development of the knowledge, skills and competencies of the staff of public authorities.

A web-based toolkits as an interactive learning environment for training of public authorities was developed during the project implementation.

Keywords: Education, Energy Efficiency, Sustainable Development, Tempus, Training

TRENDS IN SUSTAINABILITY REPORTING BETWEEN 2004-2014 BY THE FORTUNE 250: TURKEY CASE

M. SEBNEM ENSARI, MELEK ERDIL, HAZAL GENC,

NISANTASI UNIVERSITY

sebnemensari@gmail.com

Abstract:

In the millennium age, companies are getting more concerned about sustainability reporting in order to overcome social and environmental drawbacks caused by globalization. Sustainability reports are used as a way of communication tool of companies between them and their stakeholders. With the rise in influence of the global reporting initiative and its series of sustainability reporting guidelines, corporate sustainability reports have begun to appear regularly on the websites of many of the world's largest firms, when a printed copy exists it is also available electronically (Morhardt, 2010, p.436). Lately, many academic studies have focused on evaluating the interest of the companies by analysing these electronic sustainability reports of the companies ranked in global fortune 250 and fortune 500 (Rikhardsson et. al., 2002; Kolk, 2003; Jose and Lee, 2007; Kolk, 2008; Brown et. al., 2010, Kolk and Perego, 2010, Junior et. al., 2014).

The purpose of this paper is to identify trend in sustainability reporting between 2004 and 2014 of Fortune 250 in Turkey, by analysing their sustainability reports on their web sites. This analysis is important to understand the practices of sustainability reporting in Turkey as no other study is conducted to discover changing trends within the country. To accomplish this objective, a literature review was performed along with descriptive analyses of these practices for Fortune 250 in Turkey.

Keywords: Sustainability, Trend, Turkey, Fortune 250

NON-ISOTHERMAL MODEL-FREE DIFFERENTIAL KINETIC STUDY OF PYROLYSIS OF WASTE POLYOLEFINE MIXTURE

KARMINA MITEVA,ALEKSOVSKI SLAVCHO,GORDANA BOGOEVA-GACEVA,
FACULTY OF TECHNOLOGY AND METALLURGY, SS. CYRIL AND METHODIUS
UNIVERSITY

karminamiteva@gmail.com

Abstract:

The pyrolysis/thermolysis is very important alternative method for chemical recycling of waste polyolefines. The kinetics of thermal degradation of plastic waste must be analyzed to provide the apparent kinetic parameters that are useful for optimisation of pyrolysis process. Thermogravimetric analysis (TGA) provides valuable information for kinetic parameters, such as pre-exponential factor and activation energy.

In the present work, the kinetics of thermal and catalytic degradation of mixture of waste HDPE and PP over ZSM-5 catalyst was studied using the thermo-gravimetric analysis (TGA). The degradation was preformed at five different heating rates (3-20 K/min) under nitrogen atmosphere. The pyrolysis process occurred in an one-step decomposition between 380 and 520 oC. The values of kinetic parameters have been obtained in non isothermal conditions, assuming first order reaction kinetic. Model-free differential Friedman method [1, 2] is used to analyze non-isothermal solid-state kinetic data from TGA. The average activation energy for thermal and catalytic decomposition of waste polyolefine mixture was calculated as 180 KJ/mol and 270 KJ/mol respectively.

Keywords: Pyrolysis Polyolefines, Tga, Kinetics, Non-Isothermal Models, Parameters

KINETIC STUDY OF PYROLYSIS OF WASTE POLYOLEFINE MIXTURE USING INTEGRAL FITTING KINETIC MODEL

KARMINA MITEVA, ALEKSOVSKI SLAVCHO, GORDANA BOGOEVA-GACEVA,

FACULTY OF TECHNOLOGY AND METALLURGY, SS. CYRIL AND METHODIUS
UNIVERSITY

karminamiteva@gmail.com

Abstract:

Pyrolysis converts polymers into liquid, solid and gaseous products as synthetic fuels via thermochemical degradation in the absence of oxygen. Thermogravimetric analysis (TGA) provides precise measurement and it represents a very useful technique in evaluation of kinetic parameters of pyrolysis processes.

In this work, the thermal and catalytic degradation of waste polyolefine mixture and ZSM-5 catalyst were studied by using thermogravimetric analyzer. TGA analysis of waste high density polyethylene and polypropylene waste mixture was carried out at five different heating rates: 3, 5, 7, 10 and 20 K/min, from 30°C to 700°C, under nitrogen atmosphere. The kinetic parameters, such as activation energy, pre-exponential factor and reaction order were determined using Coast-Redfern integral fitting kinetic model [1,2]. The results indicated that thermal degradation of polyolefine mixture proceeded in the temperature range of 420-500 °C, while the temperature interval for catalytic degradation was decreased to 380-470 °C. Using the fitting kinetic method, the reaction order of overall reaction of pyrolysis was found ($n=1$); the average activation energy for thermal degradation was 322 KJ/mol and for catalytic degradation was 260 KJ/mol.

Keywords: Polyolefines, Pyrolysis, Thermogravimetric Analysis, Kinetic Parameters, Coast-Redfern Method

ACADEMIC CLIMATE AND LECTURERS' PROFESSIONAL DEVELOPMENT

EDIT LEZHA,FATMIR VADOHEJ,MEHDI KRONI,ERANDA BILALI (HALLUNI)

FACULTY OF EDUCATIONAL SCIENCE,UNIVERSITY OF SHKODRA "LUIGJ GURAKUQI"
editlezha@gmail.com

Abstract:

Education and training play a vital role in supporting the individual and society to improve their social, economic and cultural aspects, as well as in promoting the development of human capital. Modern education, schools in particular, aims to communicate knowledge, skills and behavior required by young people in order to become functional in society. When designing a course, it is very important to consider what and how the lecturers interact with students, because the interaction between the participants has a relevant cost. This study aims to explore lectures' perception about the support that the academic climate offers in training for increasing the quality in their professional development. The research included lecturers at University of Shkodra who teach at the Department of Education at the bachelor and at the Master's Degree level professional and Sciences. Data analysis from the sessions of focus groups evidenced the necessity for more frequent training for modern teaching methods which evidenced an increasing number of beneficiaries lecturers ,the need for exchange of lecturers not only between institutions of higher education within the country, but also with neighboring countries with western universities, or the periodic organization of workshops as an imperative to improve the quality of education of prospective teachers.Presentation of interactive teaching, interaction act, dynamic, flexible and open not only between lecturers and student, but also between the students themselves, where everyone has the right to make decisions and choose roles that suit is one of the focuses of this study.

Keywords: Academic Climate, Focus Group, Interactive, Lecturer, Professional Development.

DIFFERENT ASPECTS OF ENTREPRENEURSHIP CULTURE, CHALLENGING ATTITUDES, AND THE REPUTATION OF OWNING A BUSINESS DEPENDING ON THE REASONS OF INVOLVING INTO A BUSINESS

KWANGSEON HWANG

KOREA INSTITUTE OF S&T EVALUATION AND PLANNING

yellowbeam@hanmail.net

Abstract:

This paper examines the different aspects of entrepreneurship culture, challenging attitudes, and the reputation of owning a business depending on two reasons of involving into a business: take advantage of business opportunity or no better choices for work. The Adult Population Survey (APS) data, which is popular statistics of science and innovation, were used. The survey measures the level and nature of “entrepreneurial activity” around the world and is provided by Global Entrepreneurship monitor (GEM). The study will show how two groups (one is a group who are involved in a business to take advantage of a business opportunity; the others are the one who have no better choices for work) have different recognitions on the entrepreneurship culture, challenging attitudes, and the reputation of owning a business from a comparative perspective of USA, UK, Germany, Singapore, Japan, and South Korea. These countries are ranked highly in a Global Innovation Index in 2015. Discussions and implications are followed.

Keywords: Entrepreneurship, Business, Gem

INVESTIGATION OF THE CURTAIN WALL ANGLE AND THERMAL PERFORMANCE RELATION

KUBRA HAYDARASLAN, NESE DIKMEN

SULEYMAN DEMIREL UNIVERSITY

kubrahaydaraslan@gmail.com

Abstract:

Abstract: - A large portion of heat loss in structures is caused by transparent surfaces. In hot climates, such surfaces also cause excessive heat accumulation. Therefore, completely transparent curtain walls play a significant role in calculation of the heating and cooling loads of structures. This study was conducted to research the relation between the angles formed by the curtain wall and the structure's floor and the structure's energy performance. For this purpose, a building model was made using the Design Builder simulation software. Heating and cooling loads were calculated for angles 90°, 100°, 110°, 120° and 130° between the curtain wall and the building floor. According to the data obtained, the structure's annual heating load increases and its cooling load decreases as the angle between the wall and the ground decreases. Controlled use of solar light and monitoring of such during the design stage are important factors in provision of optimal energy consumption.

Keywords: Curtain Wall, Thermal Performance, Facade Angle

MANAGEMENT STATUS: WATER QUALITY AND ECOLOGICAL DYNAMICS OF A DAM LAKE

DIDEM GOKCE

LIMNOLOGY RESEARCH LABORATORY, DEPARTMENT OF BIOLOGY, FACULTY OF ARTS
AND SCIENCE, INONU UNIVERSITY

didemgkc@gmail.com

Abstract:

In Karakaya Dam Lake, on the upper Euphrates River, freshwater flux through the dam lakes takes place through a main channel. Aim of water quality monitoring and management is to define the physical, chemical, and biological characteristics of natural waters. Water quality monitoring is used to determine important features. These features are physical and chemical characteristics of water for a period of time, and changes in the properties of water over the course of time for multiple monitoring cases. Properties of water such as temperature, pH, dissolved oxygen, and the concentration of nitrates and phosphates are important indicators of the water quality.

The results of the comparison made between water quality and phytoplankton community structure in this study may be used for long-term sustainable water resource monitoring and management. Biological assessment data are important for measuring the attainment of water quality standards to management the basin of Karakaya Dam Lake in the future. Data of this study is important to provide a conceptual framework for monitoring the progress in accordance with water policy objectives at an international scale in the basin of transboundary upper Euphrates River. Phosphorus, nitrogen and chlorophyll levels determined water quality and trophic status. Especially Cyanobacteria abundance in the phytoplankton composition is an important for trophic level. By comparing these phytoplankton trends with other measurements, such as temperature, further studies can be conducted about how phytoplankton may be contributing to, and affected by climatic and environmental changes.

In conclusion, phytoplankton is increasingly used to monitor the ecological quality and health of the water environment, and also to measure the effectiveness of management or restoration programmes, or regulatory actions.

Keywords: Water Quality, Indicator, Phytoplankton, Trophy, Karakaya, Turkey

SUSTAINABILITY AWARENESS ON CAMPUS: THE CASE OF MARMARA UNIVERSITY

EBRU CAGLAYAN AKAY, REFIKA BAKOGLU, IREM SACAKLI SACILDI, BERRIN KURSUN

MARMARA UNIVERSITY

refika@marmara.edu.tr

Abstract:

Sustainability approaches and practices which are commonly used by textiles, apparel, agriculture, electronics industries are started to be used in high education sector too. In the world and our country, some practices are rapidly spreading, aiming to establish sustainable campuses to contribute sustainable development. The universities aim to increase usage of environmentally friendly, energy-saving methods, to give better service to all academics, university students, graduates and create environmental and social awareness in society. It is very important that universities contribute to sustainability because they have a pioneering role in raising awareness about sustainability in society, causing perceptual and behavioral change, formation of a more sustainable society and creation of new sustainability applications and methods. Universities have the mission to be an example for other institutions. Also, it is expected that universities' sustainability practices to lead the graduates, students and staff to be more responsible to social and environmental issues and contribute to sustainable development of their own countries and increase society awareness in the long term.

Universities pay attention to sustainability, aim to improve their sustainability practices year by year, and to measure sustainability and sustainability awareness of their students and staff. In order to measure the level of their sustainability practices, some of universities create their own sustainability measurement tools while some of them use the other tools. The measurement tools play an important role in spreading sustainability awareness firstly at university level and then, at the society level.

Research about measuring the sustainability at/on university/campus, are at its early stages in our country. This paper being part of the scientific research project supported by Marmara University scientific research committee (Project number: SOS-A-100615-0292) with the main purpose of developing the first measurement tool for sustainability awareness at higher education institutions in Turkey, aims to analyze and compare the sustainability and sustainability awareness literature and application at universities in general and in Turkey. Through the paper, all sustainability awareness measurement tools, which are used by universities and other associations in literature, will be examined, and the similarities and differences between measurement tools will be pointed out. This work can be seen as a leverage for future sustainability studies at Turkish universities and can contribute to develop new measurement tools that are compatible with Turkish universities.

Keywords: Sustainability, Sustainability Awareness, Universities

MPOWER R (Raisa) MEASUREMENT OF THE EFFECTS OF POLICY SHIFTS ON TOBACCO USE OF THE SMOKER

MUMIN POLAT, SERKAN KOKSOY

MEHMET AKIF ERSOY UNIVERSITY HEALTH OF SCHOOL

polatmumin@yahoo.com

Abstract:

Introduction and Background Chemical found in tobacco and tobacco smoke, and carcinogenic substances adversely affects on human health in the world and our country's most important and preventable public health problem is one of. In 2008, the World Health Organization by M P. O. W. E. R the tobacco epidemic can be controlled with 6 in the package policies will become and can reduce the deaths caused by has been claimed. In this study, the increase in cigarette prices causes of tobacco use and whether or not it is open to putting in order, in the province of Burdur University students smoking and open relationship with the economic status of tobacco use.

All questions have been created by the authors. Ethics committee approval was obtained for the study. Statistical evaluations are made using Minitab 17.0. The Pearson Chi-square test was carried out.

The number of people participating in a voluntary survey, 1.736. Respondents, male gender 41.15% (n = 877) 58.85% (n = 1254) was the woman. Tobacco and tobacco products, individuals use case (n = 695) 32.61% respectively. Banners of non-use of 24.40% (n = 520), outdoor tobacco use 8.21% (n = 175), monthly income, 44.92% of people who use tobacco open (n = 82) showed no marked rate.

Outdoor tobacco's price are being extremely economical with respect to banners cigarette. As a result of the increase in the price of cigarettes to outdoor tobacco use may have to slip. Therefore, the increase in the price of cigarettes smoking is useful to fight with, but in our country, the number of tobacco-selling establishments open to uncontrolled increase in the likelihood that the people who use outdoor tobacco with non slip will increase."

Keywords: M Power, Cigarette, Outdoor Tobacco, University Students, Public Health.

SYNTHETIC CANNABINOIDS

MUMIN POLAT, SERKAN KOKSOY

MEHMET AKIF ERSOY UNIVERSITY HEALTH OF SCHOOL

polatmumin@yahoo.com

Abstract:

Introduction Synthetic cannabinoids, cannabis sativa and cannabis indica plants such as a dense amount of 9-tetrahydrocannabinol that is created as a result of an addictive substance sprayed on some plants. Known worldwide with names like "spice", "K2," "fake weed," "bliss," "black Mamba," "Bombay Blue," "Genie," "Zohai," "Yucatan Fire," "Skunk," and "moon rocks". In our country most well-known bonzai if it is a synthetic cannabinoid. The aim of research in our country in terms of brand awareness in terms of bonzai of synthetic cannabinoids and college students to evaluate.

The central campus of the University in the selection universe of our study (n=2591) has been recognized as. The study of the universe as a result of the designated work 82.25% was reached. All the questions were created by the authors. Research ethics committee approval were obtained.

2.131 the number of people who join the survey on a voluntary basis. The gender distribution of the participants 41.15% male (n=877), 58.85% (n=1.254) were female. Do you have information about synthetic cannabinoid? Question 3.33 (n = 71) Yes the person, 96.67% (n:2.060) gave no response (Chi square:1,856) and $p < 0.05$. Do you have information about bonzai? Question 90,61 (n:1.931) % yes 9.39 (n = 200) are marked at a rate of no response (Chi square:1,406) and $p < 0.05$ was found.

The definition of synthetic cannabinoid scientifically less known among students, while the high awareness of the brand name that is bonzai has emerged in our research. More commonly known as the cause of bonzai in social media, your brand name is often pronounced in newspapers and on the television screens can be shown to be. The brand will also increase due to increase in the recognition of this brand and the prohibition of the use of the word bonzai interest in social media, in newspapers and on the television screens the restriction is recommended.

Keywords: Bonzai, Synthetic Cannabinoid, University Students, Awareness

AN ARTIFICIAL NEURAL NETWORK APPROACH TO PREDICT HIGHER HEATING VALUE OF WASTE FRYING OILS

UGUR OZVEREN

MARMARA UNIVERSITY / ENGINEERING FACULTY

ugur.ozveren@marmara.edu.tr

Abstract:

The usage of waste frying oils in biodiesel production has recently been of great concern because of the environmental and economical benefits. In this study, the relationship between the physicochemical properties of waste frying oil samples (WFOS) and their HHVs have been investigated using an artificial neural network (ANN). The ANN approach was also compared using the published correlations for the HHV estimation. A wide range of oil samples were included to observe the trustworthiness of the estimated HHVs. The approach offers a high degree of correlation and thereby establishes its versatility. The major advantage of using an ANN approach is its capability to compute the HHV of any WFOS from the physicochemical properties of the WFOS, and as a result, the ANN provides an useful tool to design and operate any fuel processing for biodiesel.

Keywords: Higher Heating Value, Waste Frying Oil, Artificial Neural Network, Physicochemical Properties

ESTIMATION OF GROSS CALORIFIC VALUE OF COAL FROM ITS PROXIMATE ANALYSIS USING NON-LINEAR REGRESSION ANALYSIS

UGUR OZVEREN

MARMARA UNIVERSITY / ENGINEERING FACULTY

ugur.ozveren@marmara.edu.tr

Abstract:

The gross calorific value (GCV) is an important property defining the energy content of coal. There exists a variety of correlations for the estimation of coal calorific value based on ultimate analysis. However, the ultimate analysis is expensive and needs special instrument. Therefore, in this study, the relationship between the proximate analysis of coal samples and their GCVs have been investigated using a multivariate non-linear regression analysis. A high degree of correlation between actual and predicted GCVs was observed. The non-linear regression model was also compared with the published correlations. The proposed in this study is highly promising for use in designing and operating of thermolysis process and offers capability to compute GCV of any coal samples from its proximate analysis.

Keywords: Gross Calorific Value, Coal, Non-Linear Regression, Proximate Analysis

RECOGNITION THE SPEAKER IDENTITY BY MEANS OF ARTIFICIAL NEURAL NETWORK

YASIN AKMAN

SELCUK UNIVERSITY

yasinakman@gmail.com

Abstract:

The aim of this paper, work is to investigate the algorithms of speech recognition. The authors, programmed and simulated the designed systems for algorithms of speech recognition in MATLAB. Ten speaker audio recording is made within the scope of the paper. The voice signal generated from 10 different people (6 males and 4 females). Wavepad program was made pre-treatment and cleaning of noise. Audio processing was carried out with MATLAB program. We generated the useable data from this voice signals with the help of a Matlab Simulink model. We use this data as an input signal for Matlab program based neural network. Voice signals are processed with artificial neural networks (ANN) classification process and 10 different speaker voice recognition process was carried out.

Keywords: ANN, Speaker Identity, Neural Network

EMBEDDEDNESS OF SUSTAINABILITY IN SUSTAINABILITY FOCUSED BRITISH UNIVERSITIES

SOLOMON CHUKWUEMEKA UGBAJA¹, REFIKA BAKOGLU²

¹DEPARTMENT OF BUSINESS ADMINISTRATION, OKAN UNIVERSITY

²FACULTY OF BUSINESS ADMINISTRATION, MARMARA UNIVERSITY

schukwumeka@stu.okan.edu.tr

Abstract:

Sustainable development (SD) has become increasingly evident during the last decades. Universities being the integral part of the global economy and since they prepare most of the professionals, who develop, manage and teach in society's public, private and non-governmental institutions, they are uniquely positioned to influence the direction of a sustainable society. Consequently, as major contributors to the values, health and wellbeing of society, universities has a fundamental responsibility to teach, train and research for sustainability. This development is essential, as future professionals will be working globally with companies that increasingly have sustainability on their agenda. This development puts high demands on universities to embed sustainability into the management practices of their institutions so that this intelligence permeates all activities as a university identity.

The aim of this study is to observe and evaluate management practices towards the embeddedness of sustainability in European universities. It is intended by this research using content analysis of universities' websites and sustainability annual reports to observe universities embeddedness and management practices related to sustainability. The main question of the study is: How are management systems/practices embedding sustainability in sustainability focused British universities as far as CORE system (curriculum, operations, research, and engagement) is considered? The employed research methodology mainly relies on content analysis of selected universities in the UK from the UI GreenMetric Sustainable University assessment and ranking index. The UI GreenMetric Sustainable University assessment and ranking is selected since it considers the Operations, Curriculum, Research and Engagements (CORE system) of universities with indicators such as Setting and Infrastructure, Energy and Climate Change, Waste, Water, Transportation and Education. This covers the triple bottom line of sustainability (Environment, Economy and Society) which other indexes like GASU, AISHE: STAR, ESM and others, focused mostly on operational eco-efficiency. The secondary data gathered in this research has been used for developing research variables and conceptual framework of the research. The sample of the study is selected from seventeen (17) sustainable universities in the UK ranked by UI GreenMetric. The total population of the study observed and evaluated in this study are Five (5) top Sustainable Universities in UK according to UI GreenMetric sustainable ranking. Descriptive data analysis involves the calculation of percentage distribution. The data analysis used in this research study involves using percentage table and diagram to describe the common Management Practices towards the embeddedness of sustainability in the selected universities.

Keywords: British Universities, Embeddedness, Management Practices, Sustainability

SIMULATION OF BIOGAS COUNTER FLOW DIFFUSION FLAME UNDER SEVERAL OPERATION CONDITIONS

MAMERI ABDELBAKI¹, TABET FOUZI², HADEF AMMAR¹

¹DEP MECANIQUE FSSA UNIVERSITÉ LARBI BEN MHIDI OUM EL BOUAGHI ALGERIE

²DBFZ (DEUTSCHES BIOMASSEFORSCHUNGSZENTRUM GEMEINNUTZIGE GMBH),
TORGAUER STRASSE 116 D-04347 LEIPZIG, GERMANY

mameriabdelbaki@yahoo.fr

Abstract:

This study addresses the influence of several operating conditions (composition and ambient pressure) on biogas diffusion flame structure and NO emissions with particular attention on chemical and thermal effect of CO₂. The biogas flame is modeled by a counter flow diffusion flame and analyzed in mixture fraction space using flamelet approach. The GRI Mech-3.0 mechanism that involves 53 species and 325 reactions is adopted for the oxidation chemistry.

It has been observed that flame properties are very sensitive to biogas composition and pressure. CO₂ addition decreases flame temperature, mass fraction of chain carrier radicals (O, H and OH) and index NO emission. Added CO₂ may participate in chemical reaction due to thermal dissociation; excessively supplied CO₂ plays the role of pure diluent. Pressure rise reduces flame thickness, radiation losses and dissociation amount. At high pressure, recombination reactions coupled with chain carrier radicals reduction, diminishes NO mass fraction.

Keywords: Biogas, Non Premixed Laminar Flame, Flamelet Model, Pressure Effects

SOCIAL DIMENSION OF REVITALIZATION AND ITS ROLE IN THE LOCAL SUSTAINABLE DEVELOPMENT: CASE OF POLAND

LESZEK CICHOBŁAZIŃSKI, ANNA SŁOCIŃSKA

CZĘSTOCHOWA UNIVERSITY OF TECHNOLOGY

lech@zim.pcz.pl

Abstract:

The aim of the study is to identify the role of revitalization and its social dimensions in the sustainable local development. In the theoretical part the author will make an attempt to describe characteristic of the issues of sustainable development, local governance and revitalization of urban and postindustrial regions. It should be emphasized that the issue of sustainable development and revitalization come together in the area of local management practices. Local development-oriented management concerns not only the material and economic realm but also the social one. Local development is in fact connected with a growth of living standards, the level of satisfaction of their needs and the generally perceived quality of life. It is a long-term process and in order to make it sustainable, it must fulfill the strategic plans adopted for the area. The empirical part will be based on the analysis of two separate research: carried out as a part of a revitalization program in the city of Czestochowa and revitalization activities' case studies in chosen Polish cities..

Keywords: Revitalization, Local Sustainable Development, Local Management

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