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WELCOME TO ICSD 2017

On behalf of the organizing committee, we are pleased to announce that the 3th International Conference on Sustainable Development (ICSD-2017) is held from April 19 to 23, 2016 in Sarajevo - BOSNIA-HERZEGOVINA. ICSD 2017 provides an ideal academic platform for researchers to present the latest research findings and describe emerging technologies, and directions in Sustainable Development issues. The conference seeks to contribute to presenting novel research results in all aspects of Sustainable Development. The conference aims to bring together leading academic scientists, researchers and research scholars to exchange and share their experiences and research results about all aspects of Sustainable Development. It also provides the premier interdisciplinary forum for scientists, engineers, and practitioners to present their latest research results, ideas, developments, and applications in all areas of Engineering and Natural Sciences. The conference will bring together leading academic scientists, researchers and scholars in the domain of interest from around the world. ICSD 2017 is the oncoming event of the successful conference series focusing on Sustainable Development. The scientific program focuses on current advances in the research, production and use of Engineering and Natural Sciences with particular focus on their role in maintaining academic level in Engineering and Applied Sciences and elevating the science level. The conference's goals are to provide a scientific forum for all international prestige scholars around the world and enable the interactive exchange of state-of-the-art knowledge. The conference will focus on evidence-based benefits proven in clinical trials and scientific experiments.

Best regards,

Prof. Dr.Özer ÇINAR

CONTENT	PAGE

CHINESE RURAL DEVELOPMENT AND AGRICULTURAL TECHNOLOGY EXTENSION IN HUNAN PROVINCE: ANALYSIS BASED ON VALUE CHAIN AND FARMER PARTICIPATION PERSPECTIVE

Bin Jiang[a]*

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Abstract:
As the Chinese rural development has made remarkable achievements in the past forty years, which is shown in agricultural productivity increase and poverty reduction, the administrative agricultural technology extension system is an important factor for those outcomes. However, in recent years, the Chinese administrative agricultural extension system is playing a weak role in the agricultural development while the initiative of agricultural demonstration centers or farms are in a rising trend. This study is focused on the current status and operation of the Chinese experiences of agricultural extension with value chain and farmer participation theories, which is based on a field investigation in the Hunan province. This study shows three influencing factors of Hunan's administrative agricultural extension system: that the current Chinese administrative agricultural extension system is not suitable for the current Chinese agricultural development, and the initiative of agricultural demonstration center will be more applicable for the Chinese agricultural development.

Keywords: rural development, agricultural extension, agricultural value chain, farmer participation, poverty reduction, agricultural demon

COOLING RATE EFFECT ON MARTENSITIC TRANSFORMATION OF BIOMEDICAL NI-TI SHAPE MEMORY WIRE

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Abstract:

We examined the effect of cooling rate on the transformation behavior of heat treated shape memory Ni-Ti biomedical wire. Thermal analysis results revealed that the transformation behavior of the un-treated Ni-Ti wire changed with the effect of long-term aging at room temperature. The un-treated sample was exhibited two-stage transformation behaviors in both the cooling (forward) and heating (reverse) directions: B19'-R-B2 transformations during heating and B2-R-B19' transformations during cooling. However, it was found that the heat treatment changed the transformation behavior of Ni-Ti wire. It was observed that all heat treated samples with different cooling rates exhibited one-stage transformation properties: B19'-B2 during heating and B2-B19' during cooling. As a result of heat treatment, the R-phase peaks have disappeared during heating/cooling curves. Different cooling rates have caused shifts in the martensitic transformation temperatures of the alloy from 16 oC to 25.3 oC. It was also seen that the phase transformation hysteresis of the alloy (Af-Mf) decreased at high cooling rates (70.4 oC for the cooled in water sample), while the phase transformation hysteresis increased at low cooling rates (93.5 oC for the cooled in air sample). Consequently, the calorimetric results showed that the transformation properties of Ni-Ti wire are sensitive to the cooling rate.

Keywords: Ni-Ti wire; Cooling rate; Martensitic transformation

PRIVATE AND BEAUTIFUL FRUIT OF OUR COUNTRY: CRAMP BARK (VIBURNUM OPULUS L.)

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Abstract:
Cramp bark in our country in the Western, Central, is a shrubby plant that grows in Northern and Eastern Anatolia. Central Anatolia, especially Cramp bark water, a traditional drink in the Kayseri region is derived from the fruit of this plant extract. Vitamins contained in fruit, minerals, antioxidants and other bioactive because it is a valuable fruit ingredients. Snowball also works as taking into cultivated plants known abroad Cramp bark to continue. Fruits are participating for many years in many western countries bakery products are used in sweets like gel. Cramp bark of nervous diseases of plants known as Wind qelder rose, fatigue, cramp, epilepsy, tetanus, has been successfully used in medicine for the treatment of many diseases such as rheumatic diseases. Gardening and landscaping work in the countryside to give good results in SO2 sensitivity test is said to be based on a kind the most.

Keywords: Viburnum opulus, snowball, Cramp bark, antioxidant, landscape

SMART LEGAL MECHANISMS FOR SUSTAINABLE CITIES

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Abstract:
The reality of "smart cities" is being spread for all over the world as an obvious acquis, once populations are more and more gathering in urban areas. According to the most recent reports from the United Nations, the largest part of the population in the world lives within the territories of cities and it is expected that, by 2050, these numbers reach more that 70% of the inhabitants on the surface of Earth. The aggregation of people in relatively small territories, such as not only but also the example of megacities, is representing a greater problem for present and future generations, once there are questions of health, pollution, safety or welfare that must be dealt with more effectiveness. Therefore, environmental and spatial planning laws policies are a persistent concern for executive, legislative and judiciary powers, both at national, regional and local levels. Political and administrative officers are, obviously, concerned with the quality of life of the people (the welfare, or even the happiness), the balance between various factors and resources in the nature, the efficient use of those resources, cohesion and territorial sustainability, the future of the world we live in and the guarantee of meeting the needs of future generations. Consequently, the mechanisms used for fostering the development "smart cities" (which also are to be sustainable, inclusive and resilient territories), such as the use of new technologies, open data, monitoring and public participation, must be adopted by legal systems within the territories of cities. Adaptive legal mechanisms, from soft to hard law, will play the catalysing role of articulating the wide range of the traditionally idiosyncratic elements of cities. Adaptive, flexible, participated, perceptive legal instruments are the most innovative secret for enhancing the future of people's lives in smarter and more sustainable cities.

Keywords: Smart Cities, Adaptive Law, Sustainable Urbanism, Well-being

SOLAR ENERGY USE IN REMOTE RURAL AREAS OF VOJVODINA PROVINCE (REPUBLIC OF SERBIA)

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Abstract:

Solar energy presents renewable and inexhaustible energy resource that is freely available and easily transformed into electricity. At the end of 2015, global installed capacity for solar powered electricity reached around 227GWe. The main advantages of solar energy are absence of any huge set up and effortless maintenance. Domain of this study is Autonomous Province of Vojvodina (APV), located in the northern part of Serbia. According to the latest census data, the population of APV is 1 931 809, of which 43% lives in rural areas. One of the main characteristics of rural areas is the existence of granges, remote rural households, spread over the Central, Northeastern and Northern parts of APV. Number of population living in granges is constantly declining because of its distance from roads and lack of electricity. Therefore, chance for their preservation can be the use of renewable energy. APV has available resources of solar energy on a level quite above the European average, with favorable season schedule. The number of sunny hours goes from a bit less than 2.000 hours (Western part) up to 2.100 hours (Eastern part). According to "Valentin Energie Software -TSol Pro 4.5" the average yearly value of sun radiation over a horizontal area is around 1.300 kWh/m². In geographical conditions of APV, the energy that reaches a horizontal surface of 1 m² creates values of minimum 1.350 to maximum 1.500 kWh/yearly. Analyzing the needs of rural household, use of solar panels with daily production of approximately 9kWh is recommended. It is important to emphasize that this system can be used for preparing sanitary hot water and heating the space. Solar collectors should be installed on south oriented surface at the angle of around 40 to 45˚ for the maximum effect of solar radiation during the whole year

Keywords: solar energy, renewable energy, rural areas, Vojvodina, Serbia.

CONVERSION OF RGB COLOUR UNITS TO L*a*b* COLOUR SPACE

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Abstract:
Colour analysis is an important issue for the food industry during harvesting, processing and preservation of foods. In the food industry, the colour of foods has generally been measured using commercial colorimeters in L*a*b* or CIELab colour space, which is an international standard accepted by the Commission Internationale d'Eclairage (CIE) in 1976. However, the colour results obtained from the colorimeter that measures small and non-representative areas of the food usually vary depending on the point where the measurement is taken. The variation in colorimetric measurements is more dramatic when the surface to be measured is quite non-uniform. Therefore, it is hard to obtain reproducible results from the colorimetric measurements even if they are taken from the same point. This leads to the development of alternative colour analysis techniques. In this work, a simple and alternative method to measure the colour of foods known as "computer vision system" is presented. Linear and quadratic models are built to improve currently used methodology for the conversion of RGB colour units to L*a*b* colour space. For this purpose, the colour space is calibrated separately, as opposed to the previous studies in literature where the colour space is calibrated simultaneously. The approach used in the transformation of RGB colour units to L*a*b* colour values is found to be more logical and more accurate, and the prediction performance of the quadratic model is superior over the linear model. With the aid of the computer vision system, foods that are homogenous and uniform in colour and shape could be classified with regard to their colours in a fast, inexpensive and simple way. This system could be used to distinguish the defectives from the non-defectives. Quality parameters of meat and dairy products could be monitored without any physical contact which causes contamination during sampling.

Keywords: Computer vision system, colour, food, conversion, RGB, L*a*b*

EFFECT OF WASHING WITH SODIUM CHLORITE ON THE SHELF-LIFE OF SLICED MUSHROOM (AGARICUS BISPORUS)

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Abstract:
Mushrooms have been consumed all over the world as a source of food and medicine for centuries due to their high nutritional values. Although hundreds of mushroom species exist in nature, the cultivated button mushroom (Agaricus bisporus) is the most common edible mushroom in the world. Because the button mushrooms have a very high water content and no cuticle to protect them from physical deterioration or microbial attack, they can be easily perishable. Therefore, mushrooms lose their commercial value within a few days, and their shelf-lives are very limited as compared to most vegetables especially at room temperature. Pseudomonas spp. is the most abundant spoilage microorganism in mushrooms, and the initial count of Pseudomonas spp. on cultivated mushrooms is quite high. Button mushrooms can be washed with some solutions containing anti-microbial agents that do not adversely affect their appearance and organoleptic quality to reduce initial microbial counts. Sodium chlorite (SC) is an effective anti-microbial and anti-browning agent. The main objective of this work was to determine the effects of the washing with SC solution on the quality parameters of fresh sliced button mushroom. For this purpose, the button mushrooms were washed with SC solution (1 g/L) at different washing times (0.5, 1 and 2 minutes) and sliced. The sliced button mushrooms were stored at 4°C for 9 days, and the change in colour, sensory quality and microbial counts were determined throughout their shelf-life. The highest degree of inactivation in Pseudomonas spp. was achieved when the mushrooms were washed with 1 g/L of SC solution for 2 minutes. The colour and sensory quality were very close to the fresh ones even after 9 days of the storage. Results reveal that SC could be used in the mushroom industry to extend the shelf-life of fresh mushrooms.

Keywords: Button mushroom, shelf-life, colour, sensory, microbial spoilage, Pseudomonas spp.

WALNUT'S FOOD VALUE AND ITS IMPORTANCE IN HUMAN NUTRITION

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Abstract:
Walnut is a fruit that keeps the essential foods largely that people need to have healthy nourishment. Because, like other hard shell fruits, walnut, in fact is a seed and all seeds are highly rich with regard to nutrient they contain. Thus, consuming a handful of raw walnut a day largely provides the proteins, fat, antioxidant, some vitamins and minerals that a person needs a day. That's why we have to take into consideration walnut as an enriched food in terms of useful substances for health. Especially, walnut is a rich source in terms of Omega 3 which is useful for a regular health. Walnut contains many healthy food substances, minerals, antioxidants and vitamins. These are essential for our health system.

Keywords: walnut, heart health, vitamin, antioxidant, Omega 3

USE OF STRUCTURAL EQUATION MODELING IN ECOTOURISM: A MODEL PROPOSAL

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Abstract:
Structural Equation Modeling (SEM) is an effective model improves and test technique which is explain the relationships between variables in mixed hypotheses related to statistical models and provide to test theoretical models as whole. SEM is an analyze technique that combined the multivariate statistical methods which has been used especially to analyze models in social sciences studies, psychology, sociology, education, economics and marketing. The aim of this study, to provide for researchers introducing the use of structural equation modeling in ecotourism and to explain model specifications in stakeholder analysis. There are given some definitions, evaluations of model fits, model structures, examples from the ecotourism and landscape planning using SEM and ecotourism model proposals from literature related to SEM methodology. In the conclusion section it will be given a model proposal and recommendations using SEM in ecotourism and stakeholder analysis.

Keywords: Structural equation modeling, analyze methodology, ecotourism, stakeholder analysis, landscape planning

STAKEHOLDER ANALYSIS AND STAKEHOLDER MANAGEMENT: A CONCEPTUAL FRAMEWORK FOR TURKISH FORESTRY

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Abstract:
In this study, concepts of stakeholder analysis and stakeholder management have been introduced and evaluated the management of stakeholders' relationships in stakeholder theory framework in Turkish forestry practices. In accordance with this purpose especially General Directory of Forestry (GDF) and their applications were investigated in respect of stakeholder management strategies in Turkey. Some literature examples have given related to forest stakeholder analysis within the scope of stakeholder theory. Finally, stakeholder analysis and management studies have considered in Turkish forestry. There are offered a set of suggestions in the context of stakeholder theory for the future research.

Keywords: Stakeholder analysis, Stakeholder management, Turkish forestry, Turkey

SPATIAL TRACES OF CULTURAL IDENTITY IN DIFFERENT REGIONS OF ANATOLIA-TURKEY

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Abstract:
Throughout the history, there are a lot of factors giving form to settlements and buildings. While geography and geology have an impact on the form of settlements, climate and natural conditions determine building materials and building technics. But culture is the major factor not only shaping urban form but also designing architecture. On one hand, social and traditional life take shape from culture, on the other hand, life styles shape architectural styles of buildings. Therefore, architecture is one of the important indicators of cultural footprints and cultural identity in the settlements. Turkey is a country which is full of architectural traces of different socio-cultural structures in Anatolia. As tangible evidences regarding life style of community and social life in the past, architectural styles of the buildings in both urban and rural areas vary from region to region. The aim of this paper to demonstrate these architectural samples as spatial traces based on cultural life in different regions of Anatolia and to emphasize their spatial characteristics from socio-cultural sustainability point of view.

Keywords: Anatolia, architecture, culture, heritage, space

NEW PRODUCTS OUT OF REUSED PARTS – DREAM OR REALITY?

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Abstract:
Apart from benefits for environmental protection, reuse of components and products offers attractive economic advantages, provided that components are "Qualified As Good As new" (QUAGAN), which is a new concept, first introduced in the international standard IEC 62 309. This standard has been initiated by the author of this paper who have worked out the QAGAN concept to overcome prejudices against reuse of components and products. Nowadays electronic components in most products have a considerably longer life expectation than required. Thus, a QUAGAN component, deployed in a second life in a new component, can have a higher reliability degree than the new ones because of a simple fact: Early failures ("childhood diseases") are already eliminated by its "previous life". QUAGAN concept supports the interest of manufacturers, customers and the society at the same time. Manufacturers can make profit by taking back used products and "QUAGANizing" them, using the same test procedures as they have for the new ones. Consumers get hew products for a lower price with the warranty granted for new products. Government achieves higher recycling rates. To convince QUAGAN consumers they get a technically up-to-date product, the quality procedures, including the ones to fulfill the safety requirements, and their documentation must be transparent. This paper is supposed to help here. As a first step, quality requirements for "qualification as new" will be discussed. It is likely that this will also lead to changes in the state-of-the-art of legal understanding of the notion "new", because it usually implies using only new components in new products. However, the fact might help here that some products contain for long, e.g., in electrical and electronic industry, not-new components which are artificially already pre-aged, caused by accelerated testing to avoid early failures.

Keywords: reuse, hardware, software, electronics and electrical components

SUSTAINABILITY OF TRADITIONAL BUILDINGS LOCATED IN RURAL AREA

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Abstract:
In this days, sensitivity to environmental issues of people increased together with the awareness of the concept of sustainability. The structures, which are built in a rural residential area, are integrated with the natural environment. In Turkey, local traditional structures are structures that can be produced easily in place and materials are being used wisely. These houses which are used renewable natural materials, carries a lot of features of the sustainable approach. Traditional structures have been shaped by the region where they are, because of the necessity. In this study, materials and construction systems of the traditional buildings which are located in rural areas are discussed and the buildings have been evaluated the context of ecology and sustainability.

Keywords: Traditional buildings, rural area, sustainability

IMPLICATIONS OF CLIMATE CHANGE IN THE ARCTIC: HUMAN SECURITY AND SOCIETAL SUSTAINABILITY

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Abstract:
Climate change is argued to be the most serious global problem of our time. Its implications are widespread touching every corner of the globe at various level as well as at varied context. The implications are in most cases environmentally devastating resulting in huge concerns posing threats to survival of humans, animals and plants on earth. In the Arctic increase rise in temperature – double than that of the global average; melting of Arctic sea ice as a result; effecting sea level rise elsewhere; offering uncertain weather and climatic conditions both within and beyond; and related other problems resulted from the above, cause serious threats to human communities. The Arctic communities are composed of both indigenous and non-indigenous population, who bear specific Arctic values, which are connected to, and dependent on, Arctic's unique pristine environment. The changes being taken place affect these communities drastically, hence they are exposed to numerous threats – translated into human security threats. The paper thus shed lights on those of the challenges facing the Arctic communities resulted from the implications of climate change, highlighting the socio-cultural, environmental and political dimensions having cumulative effect on human lives in the Arctic. The paper also show how the promotion of societal stability is dependent on the proper mitigation of those of the human security challenges.

Keywords: Climate change, human security, indigenous communities, Arctic

COMPARATIVE LIFE CYCLE COSTING ANALYSIS OF GREEN ROOFS: THE REGIONAL ASPECT

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Abstract:
The increasing environmental concerns and poor practices force construction industry to take some remedial measures for green and sustainable built environment. Especially in urban areas, one of these measures is to build green roofs for minimizing the environmental pollution. In fact, green roofs present a number of economic, environmental, and social benefits. However, compared with traditional roofs, green roof investments have high capital and maintenance costs and this makes potential investors hesitant about their applications. Therefore, in the present study, benefits and life cycle costing parameters of green roofs were evaluated through a literature review. In this context, numerical inputs and findings of past studies were utilized. In doing this, a special emphasis was placed on the regional characteristic of such investments as it is a natural feature of any life cycle costing analysis. In conclusion, the majority of benefits and life cycle costing parameters was found to be highly variable, and thus, any life cycle costing assessment that will be performed in the future should be case-sensitive instead of using some generalized or raw data. Therefore, based on findings and results of this study, industrial practitioners and potential customers may have a useful source of economic, environmental, and social information about green roofs while researchers may be encouraged for more region-specific studies.

Keywords: benefits of green roofs, extensive roofs, intensive roofs, life cycle assessment, life cycle costing, sustainability

RECOMMENDATIONS TO ENHANCE LIFE QUALITY WITH SUSTAINABLE PLANNING IN RURAL AREAS

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Abstract:
Rural areas are geographically and humanly classified sites or regions where settlements with low population density are seen in demographic terms and production is based on agriculture and animal husbandry rather than industrial quality. Dependence on the center is related to the utilization of the settlement units which are located in the geographical area of the city centers or outside the city, from the services such as administrative organization, education and health in the center or city dependent manner. The low standard of living in rural areas creates a vicious circle in this area due to economic troubles. In addition because of Inadequate need for arbitrary settlement in rural areas, the primitive conditions of farming and animal husbandry activities makes the conditions of life become even more difficult. People living in rural areas tend to leave their land and migrate to city centers. As a result of this migration, leaving their tradition, culture and farming and animal husbandry activities which they have full of knowledge in the rural area and try to do jobs they do not know bring about different problems, too. People in rural areas are faced with cultural differences in city centers, and at the same time, the bottlenecks of cities increase the size of the disturbances by adding psychological and sociological problems for rural people. We will analyze the reflections of the interactions by analyzing the natural life sciences, observations, current conditions and situations that we want to achieve.

Keywords: Rural, Culture, Immigration

INVESTIGATION OF THE RELATIONSHIP BETWEEN SOIL PROPERTIES AND WATER POLLUTION FROM PERMEABILITY, DUZCE SAMPLE

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Abstract:

There is a risk of increasing environmental pollution in Duzce Plain and the surrounding area, where most of the population lives in Duzce province. High mountains surrounding the plain, lack of good air circulation, existence of pollution-producing industry, heavy traffic, population and industrial growth increase the risk of pollution of surface waters and ground waters. In water pollution surveys; there is pollution in the surface waters and in the lower parts, with the rivers turning into bodies with much polluted water. There is usually an increase in pollution as there is no reduction in known pollutants such as domestic and industrial waste water, irregular garbage reservoirs, fertilizers and medicines used in agriculture. It is these factors that can cause pollution in groundwater other than surface waters. Particularly in the permeable zone, super-city waters in urban centres and surrounding areas can be poured down with rain and melting snow waters to pollute underground waters. Duzce has become a water basin to meet Istanbul's water needs due to its rich water resources and the construction of the Melen Dam for this purpose. Due to these characteristics, Duzce Plain was declared as a protected area on January 21, 2017 (accordance to the Official Gazette numbered 29955). In this study, the data obtained from soil investigation reports in Duzce were examined in terms of soil properties and water pollution-related permeability. For this purpose, soil investigation reports of 61 drilling wells were examined, and engineering properties of investigated soils and permeability were evaluated in terms of water pollution. According to the results obtained, the soil at the points examined were ranked from the highest permeability to the lowest in terms of permeability properties, and the sections where the risk of contamination of ground water was high were determined, and a risk map was established.

Keywords: Soil Conversation, Soil Properties, Permeability, Under Water,

INVESTIGATION OF HEAT INSULATION COST IN TERMS OF ENERGY EFFICIENCY IN HOUSING

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Abstract:

Energy demand is at the top of all major problems in all countries. More efficient use of energy is at the forefront of all countries' energy policies. In the countries of the International Energy Agency (IEA), about 1/3 of the final energy is consumed in residential and commercial buildings. When the Sectoral Distribution of World Energy Consumption and Primary Energy Sources are examined; 37% of the primary energy sources are Petrol, 27% Coal, 24% Natural Gas, 6% Nuclear energy and 6% Hydroelectric energy whereas the world energy consumption is 40% in industrial, 31% in residence, 19% in transportation, 5% in agriculture and it is known to be used in other areas at 5%. The primary energy sources in Turkey are; 32% (imported 97%) of natural gas, 31% (imported 93%) of petroleum, 20% (imported 20%) of coal, 9% of hydraulic resources and 8% of other sources. In Turkey, which is an externally dependent country in about 65% of energy use, 40% of energy is used by industry, 32% by housing and services, 20% by transportation, 5% by agriculture and 3% by other sectors. About 80% of the energy consumed in houses in Turkey is used for heating purposes. However, the prejudice that the cost of heat insulation is excessive and unnecessary in the buildings is still going on and no importance is attached to heat insulation. This is the case in Düzce, which was destroyed by earthquakes of August 17 and November 12, 1999 and experienced intensive construction. In this study, the projects of 22 apartment type residential buildings completed in 2015 were examined and the thermal insulation costs and total construction costs were calculated, and the total financial effects of the thermal insulation costs were calculated for the years 2013 -2016, and the findings were analyzed multivariate.

Keywords: Energy Efficiency, Heat Insulation, Housing, Insulation Costs.

USER SATISFACTION AND QUALITY COMPARISON EXAMPLE OF SAKARYA CITY PARK

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Abstract:

The public spaces, which can be defined as the places between buildings, are the main elements of cities that make them live. The places that people gather in cities, public spaces and their features play an important role in meeting user needs and evaluating environmental quality. In this context, the environment being surrounded by all opportunities in order tomeet user needs is an important fact for the physiological and phychological life to continue.

In this study, City Park which is located in Sakarya was examined. The subject of this study are similar to those previously working as of, it is the original value in terms of the work area. The purpose of this study is to evaluate, preserve and maintain the existing natural and cultural structure of our study area which should serve in city scale, determine how well it satisfies the needs of the users and at what degree it serves the citizens open public space needs, as well as to give suggestions on handling the continuos usage according to the wills and needs of the users.

To achieve the purpose of this study was based on information received from park 'Quality criteria for ideal city park' and 'User satisfaction' survey in the city park, two survey was made to work. City park offering quality criteria choice in order to determine the scope of the survey prepared by the user criteria determining the quality of the park questions was asked. The data obtained was statistically analyzed and the expectations in the ideal urban parks and the situation in the City Park example were compared, the differences were observed.

The study and collected information will be supported by questionnaires, to get the facts and information about the user's view.

Keywords: User Satisfaction, City Park, Adapazari

URBAN CONSERVATION AND DEVELOPMENT STRATEGIES FOR SUSTAINABILITY OF HISTORICAL TEXTURE IN TARAKLI, TURKEY

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Abstract:
Historical settlements and historical urban fabrics are special areas that reflect urban memory. Historic towns and historic buildings are important witnesses of the past cultures and civilizations. Therefore, in historical environments that have changed and transformed, urban conservation is of great importance from the sustainability of physical and social structure aspects. Urban design studies in the context of conservation are major tools for sustainability these historical heritages. With this approach, traditional timber framed houses of Tarakli in Sakarya were chosen as the case study, on account of being one of the significant historical towns in our country where the texture together with historical buildings is still conserved. Tarakli is an important city center being cultural center of Byzantine and Ottoman civilizations and transmitting historical traces with traditional architecture samples from the past to these days. In this paper, by means of data related to research area, existing urban fabric and problems have been determined and suggestions to realize harmony of traditional fabric and to improve socio-cultural life in the region have been presented.

Keywords: Historical environment, urban conservation, sustainability, Tarakli

GOVERNING CULTURAL IMAGINATION: TOWARDS SUSTAINABLE HERITAGE-LED URBAN REGENERATION IN DADAOCHENG OF TAIPEI CITY, TAIWAN

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Abstract:
This paper aims to explore the impact and potential of heritage-led urban regeneration and related urban cultural policy on the cultivation of "cultural imagination". In terms of a case study of Taipei City, Taiwan and its historic district, Dadaocheng, this research will investigate the relationship between heritage making and imagination formation, especially in policy practice since the 1980s, to highlight the significance of cultural imagination for sustainable development. Based on the idea that heritage represents the sense of time, and urban heritage embodies senses of place in the course of time, this research will stress the transtemporal and transgenerational dimension of sustainability, heritage and cultural imagination. Consequently, the main objective of this research is to explore how cultural imagination has been, is being constructed in historic cities. Then, the sub-questions this study formulates are: 1) What is the interrelationship between heritage, cultural policy and cultural imagination? 2) How can heritage be an active agent in urban cultural policy for cultivating cultural imagination?
To collect data, a mixed methods approach will be adopted, combining semi-structured interviews with policy stakeholders, and archival research with policy documents. Based on the theoretical orientation of social constructionism, discourse analysis will be employed to demonstrate discourse in, of, or for heritage/ policy/ imagination in the social and political process. Therefore, the original contribution of this study will not only re-define the idea and significance of cultural imagination in relation to sustainable development, but also demonstrate the complicated interface of multiple discourses for the production of cultural imagination, which converges with and influenced by heritage making and policy practice. Moreover, the possibility of urban cultural policy as a strategic apparatus for cultivating cultural imagination may form one of the important approaches to reflect the nature of sustainable development in terms of heritage making.

Keywords: cultural imagination, urban cultural policy, heritage-led urban regeneration, sustainable development

SUSTAINABILITY OF INTERNATIONAL CONSTRUCTION PROJECTS THROUGH EXIM BANK LOANS: COMPARATIVE PRACTICES OF TURKEY AND CHINA

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Abstract:

In today's highly competitive business environment, governments in general and companies in particular are in search for an easy access to international markets. In this regard, loans that have low interest rates are of extreme importance for private firms. In fact, Exim Bank, as an export credit agency, officially provides this opportunity in many countries, based on public resources totally. International construction projects are well-suited mediums for exporting the goods and services. Thus, main contractors and subcontractors who undertake projects in the international arena may use Exim Bank credits. However, this practical application is almost far from the attention of academic researchers. Therefore, the aim of the present study is to fill this gap in the related literature by taking into account current Exim Bank practices in Turkey and China whose contractors are very active in the international construction market. Through such a research effort, the role of Turk and China Exim Banks in the superior performance of their international contractors was revealed. As a result, it seems that both Turkish and Chinese contractors benefit from Exim Bank loans. However, Turkish contractors use these export opportunities in a limited manner while Chinese contractors utilize them to a much greater extent. Consequently, in case of the intensive use of export credits in the future through more attractive opportunities to be provided by Turk Exim Bank, Turkish contractors will likely show better performance in terms of the number and turnover of international projects. In addition, this can also lead to market sustainability.

Keywords: China, Exim Bank, Foreign Construction Projects, Market Sustainability, Turkey

CERAMIC WASTES USAGE AS ALTERNATIVE AGGREGATE IN MORTAR AND CONCRETE

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Abstract:

In the ceramic industry, huge amounts of wastes are generated during manufacturing and transportation processes. In order to decrease the need for landfill areas and increase environmentally harmful effects of such wastes, this industry is under pressure to finding effective ways for recycling its wastes and by-products. In addition, the construction industry requires new sources of aggregates due to running out of conventional virgin aggregates, saving energy, and protecting the environment. Therefore, recently, ceramic wastes are often used as coarse and/or fine aggregate both in mortar and concrete.

Based on the above-mentioned arguments and the findings of previous studies, in the present study, effects of using ceramic wastes as coarse and/or fine aggregate on the engineering properties of mortar and concrete are evaluated. These properties can be listed as mechanical and durability properties. Determining the optimum ceramic waste percentage and establishing the most suitable water/binder ratio in mortar and concrete are discussed. Reviewing and comparison of previous studies related to this subject in literature and discussion all results of the studies are conducted as the methodology of this study. Consequently, the contribution of ceramic wastes to the engineering properties of mortar and concrete are presented in a detailed manner.

Keywords: Aggregate, Ceramic Wastes, Concrete, Engineering Properties, Mortar.

MEASURING SATISFACTION OF THE SYRIAN REFUGEES PRIMARY HEALTH CARE SERVICES WHO LIVE IN BUCAK

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Abstract:

This study was carried out with 43 women to collect information about the satisfaction of Syrian women with basic health services, who took refuge in Burdur district of Bucak province. Questionnaire forms were used to assess participants' socioeconomic status, number of children and type of deliver, and the level of knowledge about the evaluations of the hospitals. In the statistical analysis of the data, number-percentage and chi-square test were used. The mean age of the 43 women who participated in the survey is 30,19. 34 (74.4%) of the women identified hospital conditions as good and over. 22 women said that there is no difference between our country and Syria (52,2%) in terms of health services delivery. In terms of drug substance, 30 mothers were able to provide comfortably (69.8%). 97.7% wanted to return to their countries. It is the general outcome of our work that refugees are lacking in receiving basic health care.

Keywords: Syrian Refugees, Primary Health Care, War

INTEGRATION OF SOLAR TECHNOLOGY TO MODERN GREENHOUSE: PROSPECT AND CURRENT STATUS

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Abstract:

The demand for food products is increasing with the growing world population day by day. Given the threat of environmental degradation and land deterioration, agricultural requirement can not be supply with conventional agriculture. Modern greenhouse cultivation has attracted increasing attention as an effective alternative. It is unequivocal that life is directly affected by energy and its consumption. Energy saving has become more than significant nowadays due to shortage of energy reserves, considerably soaring energy prices and growing significance of environmental problems such as global warming, ozone layer depletion and climate change. Renewable energy technologies are widely considered to reduce total world energy consumption which is still dominated by fossil fuels and to mitigate greenhouse gas emissions in the atmosphere through clean energy generation. The high energy consumption of greenhouse systems is a major obstacle to sustainable production. Beside the negative environmental impacts, fossil fuels is limited and partially expensive energy sources. With integration of solar technology to modern greenhouse is aimed to reduce dependence on fossil fuels and expanding the greenhouse in places where greenhouse activities are not carried out because of environmental issues. In this study, the current state of solar technology applied in the modern greenhouse has been examined. This study reviews the modern solar greenhouse application technologies which are mainly renewable and sustainable based solutions such as photovoltaic (PV) modules, solar thermal collectors, hybrid PV/T collectors. Also, it is summarized what purpose these technologies are used for in the greenhouse. The current status and advantages of solar technology applied to modern greenhouses have been determined. The effects of the solar energy aided greenhouses on the product yield, employment and sustainable production have been determined. Solar technology is a one of the green and sustainable choice for greenhouse.

Keywords: Solar Technology, Modern Greenhouse, Sustainable Agriculture

APPLICATION OF MOLECULAR MARKER ASSISTED BREEDING IN WHEAT FOR FOOD SUSTAINABILITY

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Abstract:

Food security and sustainability are the most critical issues of the future of humanity since the world population is estimated to reach about 10 billion by the year 2050. This projection cause a challenging problem for the plant breeders to obtain continuing genetic improvements of crops to assure food sustainability. Yield increase, resistance to biotic and abiotic stress factors and improved quality are the main objectives of breeding efforts. The main objective of this study was pyramiding some genes to increase end-use quality of three Turkish durum wheat cultivars. Marker assisted backcross breeding method (MAB) was employed to transfer four different genes into three different durum wheat cultivars, Kızıltan-91, Sarıçanak-92 and Salihli. Firstly, ɣ-gliadin 45 and LMW-2 glutenin were transferred from a high-quality Canadian durum wheat cultivar, Kyle, and three advanced breeding lines (ABLs) were produced. Then, Gpc-B1 gene from a Triticum turgidum accession UC1113 and a gene obtaining low LOX enzyme activity from a Turkish durum wheat cultivar, Gediz-75, were transferred by MAB into the same ABLs. A-PAGE and molecular DNA markers linked to the gene regions were used in selecting breeding lines containing targeted gene regions. Background screening with several microsatellite markers was also done to make sure that recovering of recurrent parents were succeeded at genetically desired level. The advanced breeding lines had increased gluten quality as judged by the sedimentation, gluten index and pasta cooking tests. Initial results of quality analysis of the second MAB study also indicate positive effects of transferred additional gene regions. The results of this study confirmed that marker-assisted selection and backcross breeding could be successfully employed in wheat breeding programs for better quality and that molecular markers could be used alone or in combination with different marker systems in each backcross generation.

This study was supported by TUBITAK Project Number: 112T910

Keywords: Durum Wheat, Gene Pyramiding, End-Use Quality, Marker Assisted Breeding

OPTIMIZATION OF FERTILIZER PRODUCTION BY USING TAGUCHI METHOD FROM CHROMIUM LEATHER SHAVING WASTES

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Abstract:

Chromium salts have been used frequently as a tanning agent owing to its perfect tanning property, low cost, easy application and extensive supply. Approximately 25% of chrome tanned leathers are discarded based on their weight in the processes like trimming, shaving and buffing. As a consequence of total leather production of the world, 500.000 tonnes of chrome tanned solid waste is produced per year. Chrome tanned solid wastes lead to both environmental and economic problems, due to their high recycling and exhausting cost. Therefore, these problems cause to serious problems for Turkish Leather Industry. On this paper aimed to maximizing quantity of amino acid obtained from chrome tanned waste and has benefited from Taguchi Method for statistical determination. Calculation charts was prepared according to S/N ratio and results were analyzed by using Taguchi .

Keywords: Chromium Leather Shavings, Liquid Fertilizer,Taguchi Method, Amino Acid, Hydrolization, Waste Utilisation.

ECOLOGICAL AND CULTURAL NETWORKS: EXAMPLE OF ANKARA PROVINCE AND ITS PERIPHERY

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Abstract:

Besides threatening natural areas in the periphery of the city, increasing population and urbanization also put pressure on historical structures as well as cultural and recreational resources. This issue has direct impact on the continuity of natural resources, characteristics of the structures that are historical heritages, and the resource value of cultural and recreational areas. Ecological and cultural networks are one of the efficient tools used in preventing mentioned negative aspects. This study assesses the natural and cultural areas (historical sites/structures, cultural and recreational areas) within the scope of ecological and cultural networks in Ankara province and its periphery. Applied model tackles natural areas with their asset value and identifies the potential ecological network setup via Geographical Information Systems. In addition to that, the potential cultural network is detected by considering the historical, cultural and recreational areas in the city and its periphery as well as the road network and road concentration. Consequently, the aim is on one hand to ensure the ecological sustainability of the city by assessing the natural and cultural network structure and centres together, and to demonstrate the potential recreation routes on the other. The ecological and cultural networks to be established will protect the natural cultural and historical values and they are linear spatial elements that also enable the demonstration of idiosyncratic identity of the cities, in other words the urban landscape character.

Keywords: Ecological Network, Cultural Network, Historical Structure, Natural Landscape, Recreational Resource, Ankara.

SUSTANABLE URBAN DEVELOPMENT: A CASE STUDY OF IZMIR

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Abstract:

City population of Turkey is rapidly increased since 1950 due to immigration from the country to town. This rapid urbanization is also continuing today. So, today urban population rate is reach 90% of total population of Turkey. Because of rapid urbanization, cities have many problems such as squatter dwellings, noise, pollution, traffic and parking problems, insufficient greenery and play areas. All these problems are cause to be discussed sustainability of cities. In this paper, Izmir which is the third biggest city of Turkey is evaluated by sustainable urban development and some proposal for Konak which is the center town of Izmir.

Keywords: Urbanization, Sustainable Development, Izmir, Planning.

SUSTAINABLE WATER RESOURCES MANAGEMENT STRATEGIES IN TURKEY

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Abstract:

Water resources are essential for satisfying basic human needs, alleviating health problems, promoting social and economic development in general and conserving ecosystems. The recent assessment reports have found that the world is on track to surpass the Millennium Development Goal for access to drinking water, but will fall short by one billion people for sanitation if current trends continue, according to figures of international organizations. The importance of sustainable water resources management in the context of socio-economic development should be recognized at the same time as the multiplicity of interests in utilizing water resources for water supply and sanitation, hydropower generation, agriculture, industry, urban development, fisheries, transportation and recreation. Within the framework of water resources management model in Turkey, activities of the institutions which are responsible for the development of water and land resources should be reviewed, and in addition to harmonization of their activities, all the water and land resources in the basin, their utilization and pollution states must be reviewed taking into consideration the borders of the basin, problems and long-term demands should be determined in priority.

Keywords: Water Resources, Management, Sustainability.

A HYDROLOGICAL DROUGHT ANALYSIS ON A RIVER BASIN IN TURKEY

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Abstract:

The monitoring of drought, the examination of different drought varieties and the use of appropriate indicators at this stage are the most important steps for sustainable measures in drought management. Meteorological, agricultural and hydrological drought indices are widely used to characterize different types of droughts. The most commonly utilized method in this context is the Standardized Precipitation Index (SPI). SPI can be easily calculated for different time scales by collecting the precipitation series in the relevant time period. Besides, SPI can also be associated with agricultural and hydrological drought since it uses precipitation that is the main element of the hydrological cycle. However, there are some limitations as it depends only on observed precipitation data. From a hydrological point of view, drought is not only due to lack of precipitation, but also to surface and base flows. When the related literature is examined, the drought indices are often employed to describe historical droughts or to follow current drought events. However, with the usage of scenario-based climate change projections, drought indices should also be obtained for future projections and then, these results should be integrated into planning studies of water resources. The presented study will focus on an application for the Gediz River in Turkey. First of all, RCP8.5, a pessimistic climate scenario of AR5, was taken as a basis. In order to prepare hydro-meteorological projections over river basin, downscaling strategy was performed by using different global climate model outputs. Then a streamflow simulation work and a hydrological drought analysis for 2016-2050 future period were carried out by means of a calibrated hydrological model running with these forecasted variables. Prior to conducting sustainability analyzes on water resources, it is very important to conduct such scenario-based climate change impact assessment studies.

Keywords: Drought, Climate Change

A DISCUSSION ON THE QUANTIFICATION METHODOLOGIES AND THEIR APPLICABILITY IN TURKEY FOR CONSTRUCTION AND DEMOLITION WASTE (C&D)

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Abstract:

There is an increasing awareness about waste issues all over the world in parallel with the raising environmental consciousness. Different management strategies have been generated according to the different waste types by the researchers. Various studies reveal that construction industry constitutes an important part of environmental impacts and waste generation which increase day by day due to production of a large number of building construction. Construction and demolition (C&D) waste, as a component of Industrial Waste, is one of the most currently studied waste types in literature, and their quantification is a prerequisite for the implementation of successful waste management strategies.

In accordance with the global conjuncture and also economical and social changes in Turkey, construction activities have accelerated especially in the last ten years. Thus, generating some waste management strategies for C&D waste has become necessary. There are, however, some difficulties to designate these strategies because of the lack of data related to the quantity of C&D waste. In literature, there are various methodologies at regional and project levels conducted by different researchers on quantifying C&D waste. This paper firstly presents an overview on the description of waste and waste types, waste quantification methodologies in literature and the current development about C&D waste in Turkey. And then it discusses the quantification methodologies and their applicability in Turkey.

Keywords: C&D Waste, Waste Quantification, Waste Management

INNOVATIVE PRACTICES OF TURKISH BANKING SECTOR IN TERMS OF SUSTAINABILITY

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Abstract:

In the age of competitiveness and sustainability, the organizations are forced into innovation not only for their products and services, but also in their processes and management policies. In Turkey, retail banking sector is well known to compete aggressively in the product and service development driven by technology. Furthermore, corporate and development banks offer various services which in long-term intend to create environmental and social impact. By this means, successive "innovation awards" brought reputation and credibility to the Turkish banks especially within the last decade.

Several conceptual frameworks suggest that sustainability can be classified as social, economic, environmental (Epstein&Buhovac,2014), human (Goodland, 2002) and strategic (Rezaee, 2017) aspects. Traditional banking sector might have been associated with and limited by financial sustainability before. However, today banks seem relevant to environmental, social and human sustainability as well.

This qualitative study investigates the innovative practices in the Turkish banking industry to understand the choice of innovation type, the expected outputs and/or risks in terms of sustainability, stakeholders and shared values. The study contributes to the existing literature by developing an innovative conceptual framework within the context of sustainability, supporting by the best practices of Turkish banking sector. The key findings of this study will provide implications for the banking industry and future research.

Keywords: Sustainability, Innovation, Turkish Banks

A REVIEW ON SUSTAINABILITY AND RISK MANAGEMENT

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Abstract:

Sustainability and risk are two significant concerns in today's business world. These two concepts are intertwined and there is a multidimensional relationship between them. Basically four different approaches have been observed in the literature: The first approach treats sustainability as a new factor that broadens the scope of risk management. Besides traditional risks, enterprises started to give an increasing importance and attention to both environmental and social issues with the emergence of sustainability concept. The risks that arise from the considerations of the sustainability of the organizations, society and the earth are called sustainability risks. Some examples to these risks include scarcity of raw materials, climate change, hazardous waste, energy consumption, volatile energy prices and social responsibility risks etc. The second approach focuses on the role and importance of sustainability practices to decrease risks. The third approach addresses risk management as a tool for sustainable development. Identification, assessment and mitigation of risks are vital for the sustainability of organizations. The fourth approach deals with the risks resulting from the implementation of sustainability efforts including cannibalization of the own business of a company, wrong perceptions and unrealistic expectations for sustainability etc.

The aim of the study is to investigate the relationship between sustainability and risk management with a multidimensional point of view via reviewing the literature. First, sustainability and risk concepts and their comparison are presented. Then the four different approaches about the relationship between sustainability and risk management in the literature are explained. Finally the advantages that are gained by integrating these two areas are highlighted. This study brings together the two concepts and gives insights about their integration to the researchers that work on these two fields.

Keywords: Sustainability, Risk Management

ECONOMIC SUSTAINABILITY OF CONSTRUCTION PROJECTS: A COMPARISON OF FIDIC RED BOOK AND TURKISH PUBLIC PROCUREMENT LEGISLATION

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Abstract:

Public construction projects financed by World Bank or other international institutions and executed according to FIDIC-type contracts provide a considerable value-added input to developing and developed economies through their parties in these projects. Based on this widely recognised characteristic of FIDIC around the world, it can be accepted as fundamental terms and conditions of construction contracts. In this context, domestic legislation is expected to be in harmony with FIDIC to facilitate the adaptation of domestic parties and to establish the identity of national and international applications. In fact, this may decrease the number of disputes between contracting entities and prevent related negative consequences such as time and cost overruns. Therefore, Turkish Public Procurement Legislation was compared with FIDIC Red Book to determine the Legislation's possible shortcomings. As a result, a total of eight problematic areas in theory and practice were identified. These can be listed as commencement, e-communication, value engineering, interim or advance payments, force majeure, suspension of works, delay fine, and dispute resolution. Finally, some recommendations concerning these issues were made to remove or minimise potential conflicts that can likely be encountered in Turkish public construction investments in the future. Consequently, all these results may enable owners and contractors to keep the sustainability of construction projects in economic terms.

Keywords: Construction Projects, Economic Sustainability, FIDIC, Public Procurement Legislation, Red Book, Turkey.

RELATIONSHIP BETWEEN CHLOROPHYLL CONTENT AND SPECTRAL INDEX VALUES OF CITRUS TREES AT THE DIFFERENT GROWING PERIODS

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Abstract:

Ground based passive remote sensing technologies have been widely used in many plant species. However, use of these techniques in orange trees is limited. In this study, the relationships between chlorophyll content (Chl) and calculated red edge (RE) and vegetation index (VI) values of the citrus leaves at different growth stages were formed the basis for the analysis. Canopy reflectance by hand-held spectroradiometer and total Chl analysis at the lab were measured simultaneously, from the random samples taken from four different parts of an orange orchard. Plant materials consisted of four different age groups of 15, 20, 25 and 30 years old orange trees. Reflectance measurements were conducted between 450 and 900 nanometer (nm) wavelength at four different bands (3 visible bands and 1 near-infrared band) at the four basic physiological periods (flowering, fruit setting, fruit maturity and dormancy) of orange trees. According to the statistical analysis conducted, there was a strong relationship between the chlorophyll content and calculated indexes ($p \leq 0.01$; $R^2 = 0.925$ at red edge and $R^2 = 0.986$ at vegetation index) at the fruit setting stage of 20 years old trees. Again at this stage, fruit setting, total Chl content values among all orange trees were significantly correlated at the RE and VI with the R^2 values of 0.672 and 0.635 at the 0.001 level, respectively. This indicated that the relationships between Chl content and index values were very strong at this stage, in comparison to the other stages.

Keywords: Spectroradiometer, Citrus, Chlorophyll, Reflectance, Index

THE EFFECTS OF GIBBERELLIC ACID (GA) APPLICATION ON NUTRIENTS CONTENTS IN MEMECIK OLIVE TREES

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Abstract:

This study aimed to investigate the effects of gibberellic acid (GA) application on nutrients contents in leaf and node in “on (bearing)” and “off (non-bearing)” years in Memecik olive trees. For this purpose; 100 mg L-1 gibberellic acid was externally applied to Memecik olive trees, The leaf and node samples from olive trees were taken during the induction, initiation and differentiation periods in “on” and “off” years. Nutrients contents (N, P, K, Ca, Mg, Fe, Mn, Zn and Cu) in leaf and node samples were analyzed. The K, Ca, Mg, Fe, Mn, Zn and Cu contents were determined by atomic absorption spectrophotometry, Nitrogen by Kjeldahl procedure, and P by a spectrophotometric method. In terms of year, the results stated that the N, Ca, Mg, Fe, Mn, Zn and Cu contents were highest in the on year and only the K content was higher in the off year. In terms of leaf and node samples; the N, Ca, Mg, Fe and Mn contents were highest in leaf samples; the K content was higher in the node samples. The P, Zn and Cu contents were not different. Macro and micro nutrients were generally lower in the node samples. In terms of periods; the N, Ca, Fe, Mn, Zn and Cu contents were lowest during the initiation period while the P and K contents were lowest in differentiation period. The Mg content was not different in all period. As a result, it concluded that the application of GA did generally not change the contents of nutrients ‘Memecik’ olive cultivars during the differentiation, induction and initiation periods in leaves and nodes samples in the on and off years when compared without GA application.

Keywords: Olive, Nutrients, Gibberellic Acid.

SOME NATURAL, FORCED AND MIXED CONVECTION BENCHMARK STUDIES FOR INDOOR THERMAL ENVIRONMENTS

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Abstract:

In this study, some well-known experimental studies related to natural, forced and mixed convections were used for validation of k-ε and k-ω turbulence models. For this purpose ANSYS-Fluent 16.0 is used. A tall diferentially heated rectangular cavity, International Energy Agency IEA Annex20 room, and a mixed convective air flow within a square chamber with a heated bottom wall were considered for natural, forced and mixed convection respectively. Standard, RNG and Realizable models of k-ε group, and Standard, SST and BSL models of k-ω group with enhanced wall treatment for near wall modelling were tested by comparing the velocity and temperature distributions with available measurement values of employed geometries. In total, the results of Standard and RNG k-ε models are in good agreement with experimental measurements. Although the performance of k-ω group models is well in natural convection, some results of these models do not agree well with test data in forced and mixed convection cases.

Keywords: CFD, Validation, Turbulence Models, Velocity And Temperature Distributions

SOVEREIGN WEALTH FUNDS: A COMPARISON OF TURKISH SOVEREIGN WEALTH FUND WITH THE WORLD SAMPLES

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Abstract:

Sovereign wealth funds represent unity of assets that are directly or indirectly under public control and whose investments are largely concentrated across borders. Strategic objectives in the establishment of the sovereign wealth funds are accumulating income surpluses for future generations or restoring the economic order and stabilizing it over the years when volatility is intense. Over the past half-century, sovereign wealth funds have increased in both size and volume. The reason for this situation is not only economic liberalization, but also accessing and diversifying the natural resources resulting from the development of new technologies. Eventually, sovereign wealth funds are based on foreign trade surplus or natural resource income. Turkey decided the establishment of sovereign wealth fund in 2016. As of February 2017, the fund's asset size has exceeded $ 190 billion. In this study, firstly, information on the practices of sovereign wealth funds is given. Then, the differences between the Turkey Wealth Fund and existing samples are revealed. Unlike the general practice, the resources of the Turkey Wealth Fund are not based on the surplus of income or natural resources. Publicly owned companies, real estate and privatization revenues are identified as the source. However, with qualitative and managerial differences, the Turkey Wealth Fund is distinguished from its analogues in the world. The Turkey Wealth Fund has been established as a means of borrowing, not a saving tool, differently from the practices in the world. As a result, in this study, criticisms have been brought about the establishment and the operation process of the Turkey Wealth Fund. Recommendations regarding the structure of the audit system and the management organization have been presented.

Keywords: Sovereign Wealth Funds, Turkey Wealth Fund, Strategic Planning, Portfolio Management

THE USE OF COST-BENEFIT ANALYSIS AND BENCHMARKING ANALYSIS IN THE PLANNING PERIOD OF BIOENERGY PROJECTS

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Abstract:

Various experiences show how development and investment decisions must be made in a complex analytic framework, to avoid incorrectly planned bio-energetic investments. This means a safe and moderately riskless investment environment for either municipalities, or other investors. Various estimation and planning methods play a significant positive role in meeting these criteria, f.e. in our case, using the Cost-Benefit Analysis, and the benchmarking methods together. These two methodologies showed their positive effects through various other areas of research, and planning processes, through being applicable to processing external effects which come up during environmental investments into data which can be evaluated and translated to monetary values.Cost- Benefit Analysis doesn't apply to any given investment, where accepting, or rejecting the plan is the focus, but to the complex analysis of the development concept itself. It's exceptionally important if there are various ways to determine development concepts, or if it's not even determined in the first place. I concluded a benchmarking analysis of comparing multiple project variations based on sustainability indicators. I was able to do a satisfactory evaluation of these indicators for all three options. The evaluation of my analysis pointed out the optimal variation, which should be implemented to make sure that the investment remains economically, socially and environmentally sustainable even in the future.

Keywords: Cost-Benefit Analysis, Benchmarking Analysis, Sustainable Environmental Investments, Bio-Energetics.

THE EFFECTS OF COMPOSTS OBTAINED FROM GREENHOUSE PLANT WASTES, BANANA WASTES AND SPENT MUSHROOM COMPOST ON SOIL PROPERTIES

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Abstract:

The re-used of agricultural wastes are of great importance due to the sustainability, environment protection and economic benefits. In this study; five mixtures of greenhouse plant wastes (GPW), banana wastes (BW) and spent mushroom compost (SMC) were composted in composting reactors and the effects of composts on soil properties were determined during the two growing season (spring and autumn). This study was conducted in the Akdeniz University, Turkey, Antalya. The composts obtained were used in pot experiments to study the effects of their application on soil growth lettuce. A treatment with traditional inorganic fertilizer (control) and were used for comparison purposes. Composts were applied to soil as 1 ton ha-1. The effects of compost applications on soils were found to be statistically significant except for Ca and Mg contents. The best results on soil properties were generally obtained from R1 (%20GPW+%70BW+%10SMC) and R2 (%30GPW+%60BW+%10SMC) applications and generally control application had the lowest values. Composts which were obtained different agricultural wastes improve the soil properties and must be reused by composting for prevention of pollution. Therefore organic manure can be produced by using agricultural wastes and obtained economic advantages.

Keywords: Greenhouse Plant Wastes, Banana Wastes, Spent Mushroom Compost, Composting, Soil

A PRELIMINARY INVESTIGATION: STUDENTIFICATION IS A THREAT OR A POTENTIAL FOR THE SUSTAINABLE COMMUNITY?

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Abstract:

In this paper, the relationship between sustainable community and studentification was discussed at micro scale. Sustainable community is a holistic concept that is addressed through various factors (spatial, social, economic, etc.). Firstly, sustainable community criteria were explained in subheadings (sense of belonging, strong social network, public spaces, etc.).

Studentification refers to the concentration of higher education students in certain areas, both seasonally (during the academic term) and temporarily (throughout their education life), and to influence the area in a social, cultural, economic and physical way. There are two main groups in the process: Students and neighborhood residents. Secondly, the effects of the students on the neighborhood were also explained in subheadings.

Finally, in this context; the effects of the studentification process on the neighborhood and the criteria for the sustainable communities were compared. Studentification can be a threat or a potential for the creation of sustainable communities. In this paper also were discussed that studentification is a threat or a potential in which situation.

If the university is located in a region far from the city center, the higher education students are concentrated in the only neighborhood near the university. Long-term residents in these neighborhoods could be displaced or marginalized in various forms. Thus, while these neighborhoods become dominated by only one social class (by higher education students), the studentification creates a threat to the idea of a balanced community.

However, if the university is located in a region in or near the city center, students are not concentrated in only one neighborhood. In this instance, the students could live in various areas, add vitality to city life, and contribute to diverse of population. Therefore, in this situation, studentification can be a potential for sustainable community.

Keywords: Studentification, Sustainable Community, Higher Education Students, Balanced Community

EFFECTS OF WASTE COTTON ON YIELD AND QUALITY FEATURES OF PLEUROTUSS OSTREATUS

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Abstract:

This research was conducted in mushroom production room which had 100 square meters floor area in Korkuteli where it is known as the capital of mushroom production in Turkey. In experiment performed during two consecutive period, cotton discarded from spinning factory was used after it was pasteurized with methods wetting in water mixed with Hydrogen Peroxide and hold at different time intervals in constant temperature water as mushroom growing medium. There were waste cotton wetted in water mixed with 0.25% Hydrogen Peroxide+4% bran, waste cotton wetted in water mixed with 0.5% Hydrogen Peroxide+4% bran, 30 minutes pasteurized (65 °C) waste cotton+4% bran, 60 minutes pasteurized (65 °C) waste cotton+4% bran, 120 minutes pasteurized (65 °C) waste cotton+4% bran, 120 minutes pasteurized (65 °C) waste cotton (Control), 120 minutes pasteurized (65 °C) straw+4% bran (Control), only waste cotton wetted in water mixed with 0.25% Hydrogen Peroxide and only waste cotton wetted in water mixed with 0.5% Hydrogen Peroxide applications in the research. Pleurotus ostreatus HK 35 mycelium was sowed in the prepared mushroom growing media. Oyster mushrooms were examined in terms of stem length (cm), stem diameter (mm), average mushroom weight (g/mushroom) and productivity (%) after harvest. According to results of the experiment with regard to productivity while the best mushroom growing media were 60 minutes pasteurized (65 °C) waste cotton+4% bran, 120 minutes pasteurized (65 °C) waste cotton+4% bran and only waste cotton wetted in water mixed with 0.5% Hydrogen Peroxide in first period, they were 120 minutes pasteurized (65 °C) waste cotton+4% bran and only waste cotton wetted in water mixed with 0.25% Hydrogen Peroxide in second period.

Keywords: Oyster Mushroom, Pleurotus Ostreatus, Hydrogen Peroxide, Waste Cotton

VALORIZATION OF FIBROUS LEATHER WASTES LEATHERBOARD PRODUCTION TECHNOLOGY

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Abstract:

Tanning industry is considered to be a value addition for a by-product having a considerably pollution potential and blighting the life quality due to the wastes generated. The wastes from leather industry are involving both the inorganic and organic pollutants spoils the aquatic life, soil quality and atmospheric conditions. Fibrous wastes are of main importance in terms of their disposal and especially wastes produced in a shaving process have a great value for utilizing in composite material production. Namely bounded leather is the component of value added materials by regenerating the fibrous matrix into an upper sheets.

In this research, considering the environmental sustainability, chromium shavings as fibrous leather wastes were used as reinforcement fragments in polymeric matrices for composite applications. To reveal the production parameters of composites using leather wastes, tanning agent, binder and fiber types were investigated. In the evaluation of performance and structural properties of bounded leather, some physicomechanical tests, and scanning electron microscopy (SEM) analysis were carried out.

Considering the effect of tanning agent, it was comprehended that ligno sulphonates give better strength properties to the product. Natural latex among the binder types examined gave the best outcomes as polymer matrix. On the other hand, the combination of leather fiber with other fibers in the matrix, especially with paper fibers, seems to be increased the product properties.

According to the results, it was found that such products having similar properties to the leather, are suitable for various applications such as shoe parts and some customer goods, and can be developed in liaison with the demands as a composite basis for some fields.

Keywords: Composite Materials, Leather Fibers, Leather-Like Materials, Tanned Leather Wastes

DEVELOPING AN ORGANIZATIONAL CULTURE OF EQUALITY AND FOSTERING A DISCRIMINATION FREE ENVIRONMENT IN WORK PLACES

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Abstract:

In the post-world war period, focus in contemporary organization has shifted from hiring just workers to hiring competent employees and retaining the talented ones (Iles, 2007. pp.97-98). The role of the human resource management (HRM) in organizations has also evolved. HRM departments devise new methods to screen the applicants. In most contemporary organizations specialized consultants are hired to develop customized systems and filter the applicants to find the most suitable candidates (Townley, 1989. pp.92-94). But it's not just the employers who have options. Recent decades have witnessed growing trends of employees leaving their organization to join another that offers better job prospects, more money and/or better working conditions. Therefore surmounting pressure has been on employers to retain the talent. For all these reasons, contemporary HRM policies are not only about hiring the best fits but also creating employee friendly environment at the work place that fosters equality and progresses towards discrimination free workplace (Townley,1989. pp.92-94; Iles, Paul. 2007. pp.97-99).

Research into HRM has yielded that a greater gender and cultural mix at work place is directly proportional to the productivity. Therefore focus has also been on hiring employees from different cultural backgrounds. But not all employers have been able to adopt and execute it fairly for all cultural backgrounds. In early 1980s, Britain witnessed protests by blue collared employees, primarily black people and women who felt disadvantaged in terms of benefits and working conditions. This led to formulation of Equal Opportunity Policies (EOPs) to enforce industry wide common policies for employees irrespective their gender, race or cultural background (Gibbon, 1992. pp.235).

This research paper gives an insight into recruitment and selection system, HRM policies and work place conditions for employees. Equality and discrimination issues as well as government policies and approaches of modern organizations will be analyzed.

Keywords: Organizational Culture, Equality, Discrimination, Employees, Employers

SUSTAINABLE URBAN DEVELOPMENT: A CASE STUDY OF IZMIR

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Abstract:

City population of Turkey is rapidly increased since 1950 due to immigration from the country to town. This rapid urbanization is also continuing today. So, today urban population rate is reach 90% of total population of Turkey. Because of rapid urbanization, cities have many problems such as squatter dwellings, noise, pollution, traffic and parking problems, insufficient greenery and play areas. All these problems are cause to be discussed sustainability of cities. In this paper, Izmir which is the third biggest city of Turkey is evaluated by sustainable urban development and some proposal for Konak which is the center town of Izmir.

Keywords: Urbanization, Sustainable Development, Izmir, Planning.

GREEN BONDS AS A FINANCE INSTRUMENT FOR ENVIRONMENTAL PROJECTS: THE WORLD AND TURKEY APPLICATIONS

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Abstract:

Nowadays, the various effects of climate change are seen on the human life and if no precautions are taken, it is mentioned by the experts that it will be encountered with worse scenarios in the future. So there are variety ways to meet the financing needs that will come from dealing with the problem of climate change on a very global scale, which is closely related to all the countries of the world. The newest of these ways are green or sustainable bonds, which have begun to be issued in recent years and are used only to finance green projects. In this study; The advantages, disadvantages and principles of green bonds, which are more understood day by day, are explained and the applications of the world and Turkey are examined. Finally, the situation of the green bond market is assessed and information about the future potential in Turkey is given.

Keywords: Climate Change, Climate Financing, Green Projects, Green Bonds

POMOLOGICAL AND PHENOLOGICAL CHARACTERISTICS LOCAL SWEET CHERRY VARIETIES (PRUNUS AVIUM L.) GROWN IN CANAKCI (GIRESUN)

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Abstract:
This study was carried out to determine the phenological and pomological properties of local sweet cherry (Prunus avium L.) species and types which grown in Canakçi District of Giresun. In this study, 8 local types as White Cherry, Crisp Cherry, Niksar Cherry, Buttermilk Cherry, Alahnaz Cherry, Cal Cherry, Tönlük Cherry, Orak Cherry and 28 CN 01 type which is engrafted with Orak Cherry is determined. When selecting the types, the opinions of leader farmers and old people, whose expertise on fruit growing was approved by everyone in the villages, was taken into consideration. During the study, phenological examinations were carried out by taking into consideration the beginning of proliferate, beginning of blooming, full flowering, end of flowering and harvest. And pomological examinations were carried out by taking into consideration fruit weight, fruit length, fruit width, fruit thickness, fruit shape index, stalk length, stalk thickness, fruit volume, seed weight, seed length, seed width, seed thickness, fruit flesh/seed ratio, fruit flavor, juiciness, fruit taste, cracking, rind of fruit color, flesh color, SCKM, pH, the quantity of consumed NaOH and titrable acidity measures. According to the average results of examined types that obtained in 2012 and 2013, it is found that fruit weight value 2,56 g-4,83 g; fruit flesh ratio %88,34-91,32; SCKM/TEA %20,17-62,22 varies between these values. As a result of this examination, 28 CN 01 type, Niksar cherry and Orak cherry are more preferable than the other types.

Keywords: Local sweet cherry, Prunus avium L., Phenology, Pomology, Canakçi

THE EFFECTS OF VARIOUS APPLICATIONS ON ADVENTITIOUS ROOT FORMATION AND ROOTING IN SOME FRUIT SPECIES

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Abstract:
In the treatment; Cresthaven peach, Iğdir apricot,Margaret pear and Black Bursa fig varieties grafted on seedling rootstock were used. In this study;the following applications were made 0.5 cm above the node in one year old 15 shoots which were taken from a tree(each tree is one replication);A)parallel scrapes 2 for each side of the bark to the wood,B)5 mm. Bark compression and 2 parallel scrapes,C)2 notches to the xylem,D) darkening by wrapping with 1 cm black band one cutting base,E)shaking one the shaker 5 hours long.When the results of the treatment were examined,phenologically;it was seen that the least bud swell and bud burst was in Cresthaven and Iğdir varieties;while the most bud swell and bud burst were respectively in B,E,C,A and D applications in Margaret variety and respectively in E,C,D,B and A applications in Black Bursa variety.Considering the viability rate of cuttings ,it was identified that in each different applications on Cresthaven,Iğdir,Margaret and Black Bursa varieties,the viability rate of the cuttings was different due to different applications.

Keywords: Shoot,Application,Cutting,Callus,Rooting

DETERMINATION THE GROWTH PERFORMANCE AND ROOTABILITY OF SOME CLONALLY ROOTSTOCKS IN DIFFERENT MEDIA

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Abstract:
This study was carried out at Adnan Menderes University Faculty of Agricultural Department of Horticulure Nursery soilless culture media and rooting greenhouses during two different period that early and late spring in 2006 and 2007.In the study, determinig of the growth performance and rootability of 9 different clonally rootstocks' unrooted cutting in zeolite and pumice and investigation of root primordium formation in rooted one was aimed.Maximum rooting percentage(87.7%) was seen in Pixy which used in late spring in zeolite and minimum rooting percentage (1.1%) was seen in M9 which used in early spring.In MaxMa and GF677 was not seen any rooting in each period and neither was M9 which used in early spring in zeolite.Maximum diameter increment and shoot growth was seen in SL64 which used in late spring in pumice,maximum root growth was seen in MM111 which ues in late spring in zeolite.In anatomy investigation,the earliest root primordium formation was seen in M9,MM106 and QuinceA in 3rd week.

Keywords: Clonally rootstock, rooting, zeolite, pumice

THE WALNUT PRODUCTION STATUS OF TURKEY

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Abstract:
Turkey is among the gene centers of Walnut, also Turkey has an important place among the walnut-cultured countries. Turkey ranks 4th among countries that have grown walnuts.The presence of Turkey among the walnut gene centers has provided an important advantage and it has a rich and wide population in this kind of fruit. Turkey has around 13.2 million walnut trees and it is estimated that about 4 million of these trees are grafted, while the remaining 9.2 million are not-garfted of walnut trees. The walnut production in Turkey is 194.298 thousand tons and the yield per tree is about 33-37 kg.

Keywords: Walnut, production, gene center, Turkey

THE IMPORTANCE OF SUSTAINABILITY FACTOR AT ARCHITECTURAL COMPETITION PROJECTS: "TAICHUNG CITY CULTURAL CENTER"

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Abstract:
The aim of this paper is to examine the sustainability concept which is so popular since 1980's; by the context of architectural competition projects considering the fact that the environmental factors are concerning architecture. The necessity to solve the ecological problems in public building design creates an important context for the architectural competition projects which is a competitive area for designers. Sustainability is an obligatory approach in architectural design and almost have the same importance as the functionality requirement in the 21th-century architecture. Cultural buildings have lately started to be a landmark for the cities but they also have the mission to move the cultural heritage and educational level of the area forward. Taichung; which is the third bigger city of Taiwan is selected as a "low carbon pilot city" in 2011. The aim/vision of the government is to create a "carbon free-trouble free" city by this concept and their role models are European countries such as Sweden, Germany, Denmark who begin to succeed. The green living environment is the keyword to achieve the goal of Low-Carbon City Promotion Team of Taichung City Government. "Taichung City Cultural Center" architectural competition project which included a public library and fine arts museum at its program was announced in 2013. There had been over 230 entries from all over the world including famous architects. The winner project was designed by SANAA and Kazuyo Sejima but the construction had not started yet. The common point of all the entries was creating sustainable structures that can harmonize with the environment and save more energy. The aim of this paper is to analyze the selected projects on due to this context and to see the architectural approaches/design criteria's for a social&cultural public building that is supposed to be constructed in a low carbon pilot city.

Keywords: sustainability, architectural competitions, cultural center, public library, Taichung

STATE AND PERSPECTIVES APPLICATION OF BIOETHANOL IN MONTENEGRO AS FUELS FOR SUSTAINABLE TRANSPORT

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Abstract:

Biofuels are fuels produced by processing biomass, and can be produced directly from plants and marine algae or indirectly from various types of waste. Biofuels have become popular due to rising oil prices, the need for a secure supply of energy, concern about emissions of the greenhouse gases.

Bioethanol is most often used as a substituent motor gasoline in various concentrations. The advantages of using bioethanol as a fuel are: more complete combustion compared to petrol due to the large share of oxygen and, consequently, reduced emissions of CO and CO2, lower content of unburned hydrocarbons HC and slightly higher content of nitrogen oxides NOx.

Montenegro as one of the signatories to the Agreement on Establishment Energy Community has the obligation of harmonization of legislation with EU directives in the field of energy. For the field of renewable energy is the most important Directives 2009/28/EC on the promotion of energy from renewable sources. This directive defines the share of renewable energy in transport to 10%. Montenegro, as a signatory to the agreement establishing the Energy Community has an obligation to implement Directive 2009/28/EC.

This paper describes the current status of application and perspectives application of bioethanol in Montenegro.

Keywords: Biofuel, Bioethanol, Exhaust Emission, GHG, Directive 2009/28/Ec

THE SITUATION OF SYNTHETIC CANNABINOIDS IN TURKEY

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Abstract:

Synthetic cannabinoid; Tetrahydracannabinol obtained from Cannabis sativa is obtained by spraying onto plants (Salvia spp, Veronica spp, Turnera diffusa, etc.) with solvents such as ether, acetone and chloroform. Tetrahydracannabinol has chemical psychoactive properties (Perception disorders, hallucinations, pleasure, psychosis, etc.). Synthetic cannabinoids started to be seen in Turkey for the first time in 2010. In the beginning of 2011 were covered in illegal substances. Until 2014, approximately 130 different synthetic cannabinoid were recorded. Although named differently in Europe and the United States, it is known that Spice, K2, Genie while in Turkey, Bonzai, Jamaica Gold Jamaican and are the most widely known.

Synthetic cannabinoids take an important place in the rapidly growing drug market. Current abuse of synthetic cannabinoids continues to grow rapidly in Turkey and in the world. In Turkey, sales of synthetic cannabinoids in 26 cities were detected in 2011, which is 43 cities in 2012 and 70 cities in 2013. Today, however, it is unfortunately seen in 81 provinces of Turkey. Drug use among our children and young people is becoming increasingly widespread. In Turkey and around the world, awareness needs to be raised to prevent drug use for community health.

Keywords: Synthetic Cannabinoid, Community Health, Turkey

OXIDATIVE STRESS AND ANTIOXIDANTS

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Abstract:

In recent years important studies have been carried out on the consumption of antioxidants in order to increase the quality and duration of life. It is now known that free radicals cause great damage to nucleic acids, lipids, carbohydrates, enzymes, proteins and other cellular elements. Cell injury, cell death, cancer, heart, etc. it has quite a complex structure which can cause chronic diseases of the metabolism and free radicals cause damaging oxidative stress to the organism properties. This body, which is formed by free radicals, constitutes some defense mechanisms with food supplements or with metabolic events. Thanks to this defensive mechanism, the harmful effects of radicals are minimized. Antioxidants is vital in combating oxidative stress. Antioxidants inhibit the formation of free radicals or neutralize free radicals formed. While free radicals put our lives at risk, antioxidants emerge as life sources. The disruption of the balance between the production of free radicals and the defense mechanism of antioxidants causes the deterioration of the structural integrity of cells and tissues and the functional dysfunction. Balanced nutrition and adequate intake of antioxidants are sufficient to get rid of the adverse effects of free radicals. Therefore, oxidant-induced diseases to minimize the risk as a defense mechanism important for long life and better quality antioxidants is recommended.

Keywords: Antioxidant, Free Radicals, Oxidative Stress

ADAPTIVE REUSE OF MONUMENTS AS A SOCIO-CULTURAL SUSTAINABILITY COMPONENT

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Abstract:

Socio-Cultural sustainability can be stated as the adaptation of the society according to the conditions of the era without loosing identity and essence of the society. At the beginning of the most tangible references that convey information about past life, there are buildings bearing cultural-historical values,Historical buildings are the most important of the physical references conveying history-related information. If a building with a potential for reuse has bear witness to a period and/or has a historical and cultural value, 'reuse' as a means of protection brings with it different benefits. Adaptive Reuse of these buildings with the aim of contemporary usage is quite nessesary from the point of forming a culture connection between the past and the future by the means of keeping the architectural heritage, aesthetical, cultural and historical values alive, because the historical buildings ensure the genesis of a continuity of the public site harmony between the past and today even future. The transfer of an accumulation of cultural meaning to future generations is accepted as a conscious necessity for social responsibility and progress. It means that historic environments / buildings are becoming depressed due to lack of care, failure to meet today's needs, unconsciousness and lack of protection plan, and continuing depressions and cultural sustainability are also threatened. The revival of the old values of the cultural heritage is at the same time the 'history' being revealed, readable, visible and perceptible. This paper reviews the inherent qualities that adaptive reuse of historical buildings, drawing on the component of interaction between culture and the urban environment. Therefore, presents a survey of scholarly literature on the subject of adaptivereuse within the discipline of heritage conservation and architecture.

Keywords: Adaptive Reuse, Monuments, Socio Cultural Sustainability, Historical Buildings, Heritage, Sustainability

UTILIZATION OF NANOMATERIALS FOR REDUCTION OF MICROBIOLOGICALLY INDUCED DETERIORATION (MID) OF CEMENT-BASED COMPOSITES

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Abstract:

The life-cycle of concrete structures should consider all factors that might cause a structural system to perform unacceptably at any point during its lifetime. It has many dimensions and depends on the type of structure, the constitutive material, the environmental conditions and the operation characteristics, as well as other factors. Progressive deterioration has perhaps the broadest impact on the long-term performance of infrastructure systems and the largest potential economic consequences. It has been estimated that biodeterioration-related structural problems cost billions of dollars a year in infrastructure maintenance and repair.

Therefore, various methods are implemented in order to suppress the microbiologically induced deterioration (MID) of concrete structures. This particular type of biodeterioration may occur internally (by microorganisms added with aggregate) and externally (by biofilms on the surface of materials). Recent developments of nanotechnology enabled to produce nanosized additives and admixtures which can be used to produce concrete structures. As it is known cement production is responsible for around 5% of global carbon dioxide (CO2) emissions. Due to positive effect of nanomaterials on the mechanical and microstructural properties of cement-based composites it is possible to produce sustainable concrete structures (with reduced amount of cement) exhibiting similar or even improved structural properties. Moreover, incorporation of certain type of nanomaterials (such as: TiO2, ZnO, CuO) enables to improve the bactericidal properties of concrete structures. These substances can react with cytoplasmic membrane of microbial cell causing its disintegration and as a result cell's death. Therefore, utilization of nanomaterials in cementitious composites leads to extend the life-cycle of concrete structures and produce novel sustainable cementitious composites. This study presents recent developments in utilization of nanomaterials for producing sustainable cement-based papers enabling to decrease microbiologically induced deterioration process.Acknowledgment: This research was supported by the National Science Centre within the project No. 2016/21/N/ST8/00095 (PRELUDIUM 11).

Keywords: Degradation, Microbiologically Induced Deterioration, Sustainability, Concrete, Nanomaterials

LIFE CYCLE COST ASSESSMENT OF PRECAST CONCRETE WITH WASTE GLASS AGGREGATE

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Abstract:

The recycling of municipal solid waste is a major problem for municipalities worldwide. Due to the demand for green construction materials as well as shortage of natural aggregates alternative methods for production of building materials have been sought. In the last few decades, the utilization of waste materials as recycled additives in building materials has gathered spectacular attention. Currently glass is one of the least recycled materials in the majority of countries and requires the consumption of relatively large amounts of energy for the processing of the raw constituents. Available studies shows that partial replacement of natural sand with WG aggregate can be beneficial for improving some of the building materials properties, however, from the perspective of sustainability and technological processing, substitution of 100% of natural aggregate with WG aggregate, would be much more desirable.

Apart from technical aspects, nowadays the key selection criteria for the specification of building products are environmental performance and profitability. The method that enables to assess the profitability of using a given material is Life Cycle Cost (LCC) of a product. It enables to include in the reckoning the costs of a product connected with manufacturing, construction, exploitation and demolition ascribed to ecological external effects, as long as their monetary value can be specified and verified. The article presents the results of initial LCC of an exemplary precast concrete with the WG aggregate. These results have been compared to the information available in literature concerning the application of traditional concrete mix. On the basis of performed studies, it has been stated that in particular conditions the application of WG aggregate can result in both technical and economic effects that are positive from the perspective of life cycle of products and building objects.

Keywords: Waste Glass Aggregate, Precast Concrete, Sustainability, Lcc

USE OF CHLOROPHYLL CONTENT AS PHYSIOLOGICAL SELECTION CRITERIA FOR RESISTANCE TO DROUGHT IN WILD CICER SPECIES

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Abstract:

About 90% of the cultivated chickpea in the world is grown in arid areas where it is subjected to drought and heat stress. Wild Cicer species are more tolerated to drought than the cultivated chickpea. The main objective of this study is to investigate whether chlorophyll contents will use as a physiological selection marker for resistance to drought stress in drought-resistant and -susceptible wild Cicer species. For this purpose, total of 16 accessions including eight annual wild Cicer species and eight perennial wild Cicer species were evaluated for drought resistance by using a visual scale of 1-5. Generally, perennials were more drought resistant compared to annuals; almost all recovered after successive wiltings. Three accessions were selected which differed in response to drought. While Cicer anatolicum Alef. from perennial wild Cicer species was selected as drought resistant, Cicer cuneatum and Cicer judaicum from perennial wild Cicer species were determined as drought susceptible. Accessions for chlorophyll content were evaluated as percentage with Konica Minolta chlorophyll meter Spad-502. The total chlorophyll contents decreased in drought stress conditions at almost all the cultivars, while the total chlorophyll contents negligible increased in Cicer bijugum.

Keywords: Chickpea, Drought Resistance, Wild Cicer Species, Chlorophyll Content

COMPARISON OF SOLAR TRACKING SYSTEMS MADE FOR INCREASING EFFICIENCY OF PHOTOVOLTAIC SYSTEMS

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Abstract:

Photovoltaic panels are among the increasingly renewable resources of energy currently used. With the technological developments are being investigated the researches for increasing the photovoltaic cells' efficiency are increasing. Most of these researches are about the chemical structure. Another effect of how much sun light converted to electrical energy on photovoltaic cells is the angle of these arrival of sun rays. The more vertical the sun's rays coming on the panel surface, the higher the electric energy produced by the photovoltaic panel. To ensure the continuity of sun rays that comes vertically to the cells sun tracking systems are used. Solar Tracking Systems (STS) are designed so that photovoltaic panels to absorb maximum energy from sunlight.

In this study the classification of STS is made with the follow-up axis, single axis and dual axis control. According to control structure, gravity based, sensor based and astronomical data based systems are explained. The advantages and disadvantages of these systems are mentioned by comparing the STS made with control structure. A comparison of single axis STS, double axis STS and fixed angle solar systems is made. 5.5 kWh/m2 Annual Average Radiation Energy (AARE) obtained in photovoltaic panels without STSs. 7.2 kWh/m2 AARE obtained in photovoltaic panels with single axis STSs. 7.4 kWh/m2 AARE obtained in photovoltaic panels with double axis STSs. By these data single axis STS energy gain is %30.9 compared to fixed angle systems. Double axis STS energy gain is %34.5 compared to fixed systems. Effect on Photovoltaic panels' energy gains are examined by comparing the STS with each other and with other systems and in the direction of this data some suggestions are presented.

Keywords: Solar Energy, Photovoltaic Panel, Solar Tracking Systems

THE PERFORMANCE ANALYSIS OF A SOLAR POWER PLANT

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Abstract:

In these days developed and developing countries' one of the most important agenda items is energy. Energy production is increasing in parallel with population growth, industrialization, social development level and technological developments. In this direction electric energy request is increasing very fast day to day. Most of the Electric energy production is providing from limited fossil resources, oil, coal and gas reserves. Because of limited fossil resources, our country is largely dependent on foreign production. Therefore, the efficient use of existing energy resources is very important. In this way effectively use of renewable energy resources is of paramount importance. Solar power is in the first place of renewable energy resources. Turkey has a significant potential in terms of solar energy compared to other countries. Unfortunately, the use of solar energy is very low compared to other EU countries. The most commonly used method of obtaining electricity from solar energy is photovoltaic panels. In this study the solar energy potential of Muş city was investigated trough data of an active solar power plant. This solar power plant application made as roof based plant with placing 240 PV panels on two different building roofs and has 60kW installed power. In this facility, three 20kW inverters used and the system is independent of mains electricity. These data are analyzed by comparing the data between 2015-2016 of this solar power plant. Using the results obtained with this data, the annual Solar Energy potential of Mus is shown. As a result, Solar energy potential of Muş is evaluated in Turkey for investment purposes.

Keywords: Muş, Solar Energy, Photovoltaic Panel

CULTURAL HERITAGE MANAGEMENT: A MODEL PROPOSAL FOR YESEMEK ARCHEOLOGICAL SITE

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Abstract:

The purpose of this study is to build a model for the management and institutional organization to conservation and improve of the Yesemek archaeological site in Gaziantep-Turkey.

Within the scope of the study; a model that is based on extensive participation–collaboration, that runs governance, socio-economic, cultural and financial programs in coordination, is being defined. This model is addressed in detail in the context of a five-stage methodology. The first stage is the Cultural Heritage Governance Program that defines the participation groups intended for the common will in the process of planning, implementation, controlling and monitoring of the preservation and improvement programs. The secondly is the Spatial Conservation-Development Program, which defines the spatial planning program for the conservation and development of the Yesemek archaeological site's unique cultural heritage values. The third stage is the Socio-Economic Restoration Program, which presents the current life and socio-economic implications of cultural heritage values. The fourth stage is the Informatics Program, which constitutes the cultural memory of Yesemek and will provide the introduction and promotion of cultural memory values existing or lost in the historical development process to future generations. The fifth is an Economic Sourcing and Investment Incentive-Support Program that will provide alternatives for providing financial resources and support to policies and strategies for the sustainable protection and development of cultural heritage values. As a result of the research, a model of cultural heritage management consisting of governance, spatial, socio-economic, cultural and financial programs for sustainable protection and improvement in the case of Yesemek archaeological site is defined. It is believed that the research will contribute to the search for methodology and organization model for the definition of scope, content and institutional infrastructure on the basis of cultural sustainability, especially on the level of field management debates, focusing on the cultural heritage of Turkey.

Keywords: Archaeological Heritage, Cultural Sustainability, Management, Preservation-Improvement.

TRANSMISSION LINE FAULT LOCATION: ACCURACY ANALYSIS OF DISTANCE RELAY AND TRAVELLING WAVE METHOD

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Abstract:

Locating fault in Transmission Lines is vital for reliable, sustainable and efficient delivery of electrical energy. Faults occurred in Transmission lines may cause long power outages. Fault location accuracy in transmission lines affect the consumed time for clearing the fault by maintenance crew. Proactive Relays are used to locate line faults in transmission system. The methods used to locate fault in these relays can be either impedance based (Distance Relay) or Traveling Wave (TW) based. The accuracy in impedance based methods is limited by factors like fault resistance, load flow and compensated lines etc. TW based algorithms use high-frequency (10 kHz - 600 kHz) transients (TWs) occurred during fault. TW propagate along the transmission line with a velocity near the speed of light. The propagation initiate at the same time with the fault and it is reflected by every discontinuity. In the case of transmission line fault, substations in each side of the line and fault location are discontinuities. The arrival time of first TW to the relay at each side of the line is extracted from overall fault (current or voltage) signal by means of signal processing methods like wavelet decomposition or deviation method. Difference of these extracted times is used in calculation of fault location. Since Double-Ended method require data from both side of the line, time synchronization of the relays at each side of line is necessary. Time synchronization established by means of GPS modules. The method is most accurate among all fault location methods.

This work aims to proof Double-Ended TW Method has batter accuracy then the Distance Relay. Real fault data taken from Line Distance Protection Relays at the both side of 154 kV Tatvan-Muş Line (in Turkey) is considered. The fault is modelled in MATLAB-SIMILINK to apply the TW algorithm.

Keywords: Fault Location, Transmission Line, Travelling Wave, Wavelet Transform

WAVE ENERGY AS A RENEWABLE ENERGY FOR TURKEY

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Abstract:

Recently new and renewable energy sources began to become prominent as alternatives to fossil fuels. Among these are wind, solar, hydraulic, biomass, geothermal and wave energies. As for Turkey, the least accounted and less applied of these sources is wave energy. The government has established a short-term outlook on utilization of renewable energy sources, named "National Renewable Energy Action Plan" which is a part of Vision 2023 targets. Nonetheless, there is no planned utilization of and/or investment into wave energy in Turkey's agenda up to the year 2023. This might be mainly because of the complex structure of wave energy conversion systems, marine conditions, mechanical difficulties and high initial investment costs. However, this type of energy is environmentally friendly, cheap and clean, and a great potential is available especially in Turkey which is surrounded on three sides by sea. Although Turkey has neither coasts to oceans nor a long stretch of west coastline, which have the highest energetic waves thanks to the prevailing west-to-east winds; the Black Sea basin, as well as the south-western Mediterranean region, may offer a good potential for development as an energetic regime, often comparable to oceanic sites in terms of wave heights, induced by strong wind patterns. In this study, wave energy potential in Turkey and recent studies made on determination of suitable sites for evaluation of wave energy in Turkey are discussed.

Keywords: Wave Energy, Electricity Generation From Wave Energy, Wave Energy Potential In Turkey

THE NEW BUILDING ON HISTORICAL FABRIC AND CULTURAL SUSTAINABILITY: ISTANBUL COURTHOUSE EXPERIENCE

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Abstract:

The aim of this research is to analyze the construction process of Istanbul Courthouse on the frame of cultural sustainability and design a new building on a historical environment also the obtained experience and results with this process are discussed in the context of historical environmental preservation. The scope of the research is the Istanbul Courthouse Building. The design and construction of Istanbul Courthouse were spread to an extensive and extremely contradictive process from 1930's to 1970's. The area where the Courthouse is built has a rather complicated problem. The Courthouse is in a position overlooking Sultanahmet Square where the historic Ibrahim Pasha's Palace is and the Byzantine St. Euphemia Church remains. The locational features of the building have brought many controversies. Especially many archeologists and architects of the time worried that this structure would harm the remains of Byzantine churches and Ibrahim Pasha's Palace and voiced criticism in various platforms. The main materials of this research consist of articles and remarks that were published in the newspapers and magazines of the period, and also maps, projects and other visual materials. In this research, a method based on examining the historical sources in detail and chronologically scrutinized and analyzing comparatively was followed. In this context, old-new relationship and historical preservation understanding over the design and construction process were evaluated.

The research is quite interesting in terms of the design and construction process of the building which reflects the transformation and understanding of Turkey from 1930's to 1970's historical preservation, monumentality, power and modernity representation, old-new relationship. The experience and results obtained from these discussions are thought to contribute the principles and argues which are about specifying the form and types of the buildings to be construct in the historical area.

Keywords: Cultural Sustainability, Conservation, Renewal, Istanbul

A COMPARISON OF IMPEDANCE BASED AND SINGLE-ENDED TRAVELING WAVE FAULT LOCATION BY USING REAL FAULT DATA TAKEN FROM DISTANCE RELAY

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Abstract:

Positioning fault location in Transmission Lines is important for reliable, sustainable and efficient delivery of electrical energy. Faults occurred in Transmission lines may cause long power outages. Fault location accuracy in transmission lines affect the consumed time for clearing the fault by maintenance crew. Proactive Relays are used to locate line faults in transmission system. The algorithms used to locate fault in these relays can be either impedance based or Traveling Wave (TW) based. The accuracy in impedance based algorithms is limited by factors like fault resistance, load flow and compensated lines etc. TW based algorithms use high-frequency (10 kHz - 600 kHz) transients (TWs) occurred during fault. TW propagate along the transmission line with a velocity near the speed of light. The propagation initiate at the same time with the fault and it is reflected by every discontinuity. In the case of transmission line fault, substations in each side of the line and fault location are discontinuities. The difference of first and second arrival time of waves to the relay at the substation is extracted from overall fault (current or voltage) signal by means of signal processing methods like wavelet decomposition or deviation method. This time difference is used in calculation of fault location. Since Single-Ended Algorithm require data only from one side of the line, time synchronization of the relays at each side of line is not required. This leads cost-reduction in positioning fault location for transmission lines.

This work aims to proof Single-Ended Algorithm has batter accuracy then the impedance based ones. Real fault data taken from Patnos Substation in Agrı (Turkey) for 154 kV Patnos-Ercis line is considered. The fault is modelled in MATLAB-SIMILINK to apply Single-Ended Algorithm.

Keywords: Fault Location, Transmission Line, Travelling Wave, Wavelet Decomposition

SUSTAINABILITY OF PRODUCTION GAINS DUE TO TECHNOLOGICAL ADVANCEMENTS AND JOB ELIMINATION

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Abstract:

Technological developments have enabled replacement of or all-together elimination of less-skilled labor. A recent popular study estimates as much as 50% of the occupational categories being at high risk of elimination. Several other studies also show some jobs will inevitably cease to exist due to advancements in technology. Many studies suggest different paths through which this technology-enabled transition proceed. In this study we give a brief literature review on how technological progress can eliminate many types of jobs. We propose a preliminary model to better understand its dynamics under certain effects. We then purport to analyze potential effects of such elimination on an emerging market economy from sustainability point of view. We conclude with our findings and propose some possible guidelines for policy makers.

Keywords: job creation, job elimination, technology, sustainability

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