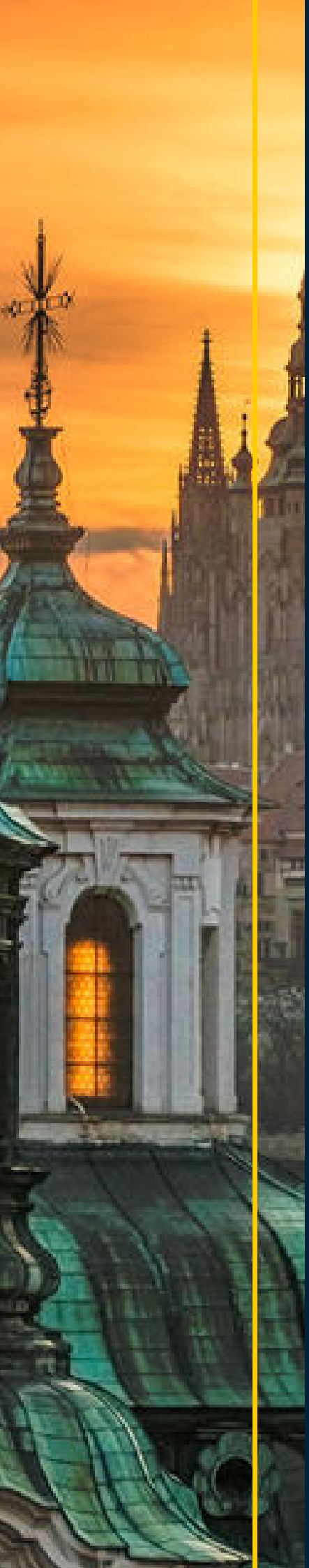

ICENS

5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCES

BOOK OF ABSTRACTS 2019

www.icens.eu

June 12-16 2019 Prague

Organized by

Partners

5th INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCES (ICENS)

ISBN 978-605-81426-0-2

BOOK OF ABSTRACTS OF THE
IV INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCES (ICENS)

12-16 JUNE 2019, PRAGUE, CZECH REPUBLİC

Edited by

Prof. Dr. Özer Çınar

Published, 2019

info@icens.eu
www.icens.eu

info@icens.org

SCIENTIFIC COMMITTEE

1. Prof. Dr. Adisa Parić - University of Sarajevo - Bosnia and Herzegovina
2. Prof. Dr. Ahmet Doğan – Yıldız Technical University - Turkey
3. Prof. Dr. Aleksandar Dimitrov - Ss. Cyril and Methodius University - Macedonia
4. Prof. Dr. Alexander Golub - National University of Kyiv-Mohyla Academy - Ukraine
5. Prof. Dr. Alexander Litvinenko - National University of Food Technologies (Kyiv) - Ukraine
6. Prof. Dr. Anita Grozdanov - Ss. Cyril and Methodius University - Macedonia
7. Prof. Dr. Arslan Saral – Yıldız Technical University - Turkey
8. Prof. Dr. Asif Šabanović – International University of Sarajevo - Bosnia and Herzegovina
9. Prof. Dr. Bekir Erol Ak - Harran University - Turkey
10. Prof. Dr. Cem Şensöğüt - Dumlupınar University - Turkey
11. Prof. Dr. Christos Douligeris - University of Erlangen-Nurnberg - Germany
12. Prof. Dr. Dragutin T. Mihailović - University of Novi Sad - Serbia
13. Prof. Dr. Evgeniy Shtefan - National University of Food Technologies (Kyiv) - Ukraine
14. Prof. Dr. Falko Dressler - University of Paderborn - Germany
15. Prof. Dr. Harry Miller – International University of Sarajevo - Bosnia and Herzegovina
16. Prof. Dr. Houssam Toutanji – Western Michigan University - USA
17. Prof. Dr. Ian F. Akyıldız – Georgia Institute of Technology - USA
18. Prof. Dr. İsmail Usta - Marmara University - Turkey
19. Prof. Dr. Kateryna Derevska - National University of Kyiv-Mohyla Academy - Ukraine
20. Prof. Dr. Liljana Gavrilovska - Ss Cyril and Methodius University - Macedonia
21. Prof. Dr. Lukman Thalib - Qatar University - Qatar
22. Prof. Dr. M. Asghar Fazel – University of Environment - Iran
23. Prof. Dr. Mikhailov Volodymyr - Taras Shevchenko National University of Kyiv - Ukraine
24. Prof. Dr. Mykola Glybovets - National University of Kyiv-Mohyla Academy - Ukraine
25. Prof. Dr. Muammer Koç - Hamad bin Khalifa University - Qatar
26. Prof. Dr. Nadia Bilko - National University of Kyiv-Mohyla Academy - Ukraine
27. Prof. Dr. Özer Çınar – Yıldız Technical University - Turkey
28. Prof. Dr. Perica Paunovik - Ss. Cyril and Methodius University - Macedonia
29. Prof. Dr. Rifat Škrijelj – University of Sarajevo - Bosnia and Herzegovina
30. Prof. Dr. Samir Đug - University of Sarajevo - Bosnia and Herzegovina
31. Prof. Dr. Tanju Karanfil – Clemson University - USA
32. Prof. Dr. Ümit Alver – Karadeniz Technical University - Turkey
33. Prof. Dr. Wolfgang Gerstacker - University of Erlangen-Nurnberg - Germany
34. Prof. Dr. Vladyslav Sukhenko - National University of Life and Environmental Sciences of Ukraine (Kyiv) - Ukraine
35. Prof. Dr. Yılmaz Yıldırım - Bülent Ecevit University - Turkey
36. Prof. Dr. Yousef Haik - Hamad bin Khalifa University - Qatar
37. Assoc. Prof. Dr. Alaa Al Hawari - Qatar University - Qatar
38. Assoc. Prof. Dr. Fatih Ungan - Cumhuriyet University - Turkey
39. Assoc. Prof. Dr. Izudin Dzafic - International University of Sarajevo - Bosnia and Herzegovina
40. Assoc. Prof. Dr. Kateryna Syera - National University of Life and Environmental Sciences of Ukraine (Kyiv) - Ukraine
41. Assist. Prof. Dr. Muhamed Hadziabdic - International University of Sarajevo - Bosnia and Herzegovina
42. Assoc. Prof. Dr. Nusret Drešković - University of Sarajevo - Bosnia and Herzegovina
43. Assoc. Prof. Dr. Polina Vakuliuk - National University of Kyiv-Mohyla Academy - Ukraine
44. Assoc. Prof. Dr. Senija Tahirovic - International University of Sarajevo - Bosnia and Herzegovina
45. Assoc. Prof. Dr. Victor Karamushka - National University of Kyiv-Mohyla Academy - Ukraine
46. Assoc. Prof. Dr. Victoria Konovalova - National University of Kyiv-Mohyla Academy - Ukraine
47. Assoc. Prof. Dr. Yuriy Kravchenko - National University of Life and Environmental Sciences of Ukraine (Kyiv) - Ukraine
48. Assist. Prof. Dr. Fatih Taktak - Uşak University - Turkey
49. Assist. Prof. Dr. Fouzi Tabet - German Biomass Research Center - Germany
50. Assist. Prof. Dr. Haris Gavranovic - International University of Sarajevo - Bosnia and Herzegovina
51. Assist. Prof. Dr. Sasan Rabieh - Shahid Beheshti University - Iran
52. Assist. Prof. Dr. Ševkija Okerić - University of Sarajevo - Bosnia and Herzegovina
53. Dr. Zsolt Hetesi - National University of Public Service, Budapest - Hungary
54. Dr. Zsolt T. Németh - National University of Public Service, Budapest - Hungary

ORGANIZATION COMMITTEE

Chairman of the Conference

Prof. Dr. Özer Çınar – Yıldız Technical University

Members of the Committee

Prof. Dr. Ümit Alver (Co-Chairman) - Karadeniz Technical University - Turkey
Prof. Dr. Mikhailov Volodymyr - Taras Shevchenko National University of Kyiv - Ukraine
Assoc. Prof. Dr. Kateryna Syera - National University of Life and Environmental Sciences of Ukraine (Kiev) - Ukraine
Assoc. Prof. Dr. Lukman Thalib - Qatar University - Qatar
Assoc. Prof. Dr. Yuriy Kravchenko - National University of Life and Environmental Sciences of Ukraine (Kiev) - Ukraine
Assist. Prof. Dr. Sasan Rabieh - Shahid Beheshti University - Iran
Alma Ligata - Zenith Group - Bosnia and Herzegovina
Ismet Uzun - Zenith Group - Bosnia and Herzegovina
Musa Kose - Zenith Group - Bosnia and Herzegovina

WELCOME TO ICENS 2019

On behalf of the organizing committee, we are pleased to announce that the 5th International Conference on Engineering and Natural Sciences (ICENS 2019) will be held from June 12 to 16, 2019 in Prague, Czech Republic. ICENS 2019 provides an ideal academic platform for researchers to present the latest research findings and describe emerging technologies, and directions in Engineering and Natural Sciences issues. The conference seeks to contribute to presenting novel research results in all aspects of Engineering and Natural Sciences.

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 Engineering and Natural Sciences. 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.

The scientific program will focus 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 goal will 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

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

INVESTIGATION OF THE EFFECT OF DIAMETER SIZE DISTRIBUTION OF BOND MILL BALLS ON THE DETERMINATION OF THE BOND WORK INDEX

Vedat Taylan Engin[a*], Ceren Uygun[a], Mehmet Tanriverdi[a]

[a]Dokuz Eylul University

*taylan.engin@deu.edu.tr

Abstract:

Comminution is one of the irreplaceable operations in many industrial processes. It is used not only producing fine or finest material for the next industrial step, but also used for liberation of the minerals before subsequent mineral processing operations. On the other hand, grinding is the most expensive operation of the process. Therefore, scientific and technological studies on grinding technology are increasing. In grinding; the most important thing is the effective use of energy. To design crushing and grinding machinery, Bond Work Index Method is used.

Aydin region's feldspat ore were used in this study. It was crushed using a jaw crusher with a gap size of 4 mm. A roll crusher was used as a secondary crusher to crush the material below 3.35mm (100%). Following the Bond Standart Test Procedure, two different Bond Tests were applied to the sample. One of the test was used that exact diameter Bond balls and on the second test was used that worned balls (not on the exact diameter).

The purpose of this study is to outline an evaluation of determination of any differences between these two tests that conducted with different ball size distributions.

Keywords: Bond Work Index, Bond Mill, Bond Mill Balls, Bond Milll Ball Diameter Size Distributions

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

BENEFICIATION OF NIGDE ULUKISLA REGION OXIDIZED COARSE SIZE (9.51/4.75 MM) LIGNITES

Vedat Taylan Engin[a*], Emine Ilknur Cocen[a], Ebru Tufan[a]

[a]Dokuz Eylul University

*taylan.engin@deu.edu.tr

Abstract:

From within, at the animal and plant residues into the soil occur decomposition and microbial degregation on the organic matter due to biological and physicochemical phenomenas. Decomposition and microbial degregation of these tissues is defined as humification. Organic matter humification occurs with the help of microorganisms. The most important nutrition of organic matter is the groups of carbon. Humic, fulvic and hymatomelanic acids formed as the resulting product of decomposition and microbial degregation, is a long lasting organic substance. It absorb the nutrient on the maximum level and inject to plant and soil while they need by reason of the fact that higher cation exchange capacity than the other organic fertilizers. For plants, humic acid is the perfect way to providing macro and micro elements, vitamins, amino acids, because of these properties. Leanordite and byproducts of leonardite (humic acid, fulvic acid and hymatomelanic acid) were used not only for agricultural purposes but also many sectors such as drug, cosmetics and chemical industries.

In this study, it was aimed to define, upgrade and derive humic acid, fluvic acid and hymatomelanic acid from the headsample (9.51/4.75 mm) taken from Nigde/Ulukisla/Hacibekirli region. Using with the jigging concentrate and jigging headsample, it was developed a process was to get derivatives of leonardites with high extraction efficiency

The goals of the this study are, characterizing the material and getting preliminary concentrate and using for this concentrate for producing the derivatives of leonardite (humic acid, fulvic acid and hymatomelanic acid) from the oxidized lignites of Nigde region.

Keywords: Oxidized Lignites, Jigging, Total Humic Acid, Free Humic Acid, Fulvic Acid

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

DEVELOPING A SMART SOFTWARE TO CALCULATE SIMILARITY FACTORS FOR TIME SERIES: T-SIM

Ismail Kirbas[a*]

[a]Mehmet Akif Ersoy University

*ismailkirbas@mehmetakif.edu.tr

Abstract:

Today, because of the development and diffusion of sensor technology, measurements are made continuously and the large data obtained is stored in databases. Tracking the behaviour of a specific phenomenon/data in time can produce important information. A large variety of real world applications, such as meteorology, geophysics and astrophysics, collect observations that can be represented as time series. Similarity analysis in time series has become a necessity in many areas. The research on time series includes clustering, classification, similarity search, feature extraction, trend forecasting, and decision support. Similarity measures a fundamental research topic on time series theory. Currently, there is no definitive and uniform description for the similarity of time series, which results in difficulties for relevant research on this topic. In this study, a useful interface has been developed which allows visualization of the different time series on the same screen and calculation of similarity factors. Following the review of the literature, the most accepted similarity factors were determined and a useful and user-friendly software called “T-sim” was developed.

Keywords: Signal Similarity, Similarity Factor, Software Development, T-Sim, Time Series

[*]KOSGEB Research & Development Innovation and Industrial Application Support Program,grant 2018/620-5/01

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

BIODYNAMIC ORGANIC AGRICULTURE FARMLAND PRACTICES

Hakan Karadag[a*]

[a]Tokat Gaziosmanpasa Universitesi

*hakan.karadag@gop.edu.tr

Abstract:

Biodynamic Agriculture that has described at the first part of 20. Century by an Austrain philosopher Rudolph Stainer was an early response to the proliferation of chemical agriculture. Basic idea was that the farm should be viewed as an organism in its own right. Biodynamic organic agriculture is similar to organic agriculture basicly. The most important differences are, biodynamic organic agriculture uses special biodynamic preperations and the agriculture system take into account cosmic factors.

At the workplace, Istafil Biodynamic Organic Farm, horn manure preparation (BD 500) firstly prepared autumnal equinox and applied at homeopathic rates at spring time. Horn silica preparation (BD 501) is prepared from silicate and buried in cow horns under the soil for the summer. Biodynamic compost preparations (BD 502–507), made up of various flowers and animal parts treated in special ways has prepared at the farmland. All of these applications are making for four years at the farm and the effects on vegetables, fruits and animals are observed. Istafil Biodynamic Organic Fam is a good sample for biodynamic organic system. Vegetables, fruits, vineyard, berries, cattles, sheeps, bees and poultry farming are carried out in a closed system using minimum input from the outside.

Keywords: Biodynamic Organic Agriculture, Istafil Biodynamic Farmland, Organic Agriculture, Biodynamic Preperations

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

SELECTION OF ALMONDS (PRUNUS AMYGDALUS L.) GROWN IN CENTER TOWN ADIYAMAN PROVINCE IN TURKEY

Ali Goksu[a], Hakan Karadag[a*], Kenan Yildiz[a]

[a]Tokat Gaziosmanpasa Universitesi

*hakan.karadag@gop.edu.tr

Abstract:

This study was carried out to determine late flowering genotypes in almond seedling populations grown in center town of province of Adiyaman. In the first year, the population was surveyed in detail and 50 genotypes were lebeled and evaluated for breeding objectives. Five promising genotypes having superiorcharacters were selected by using weighted ranged method at the end of the study. The beginning of flowering of promising types were observed between the fourth week of February and the second week of March. The fruit weight with Shell, kernel weight, kernel ratio and Shell thickness of promising types were ranged from 1.10 to 2.09 g, 0.60 to 1.04 g, 46.67% to 52.32% and 1.62 to 2.10 mm, respectively. Double kernel ratios of S9 and S12 genotypes were 13.3% and 20.0% respectively. In the other three promising genotypes, double kernel was not observed. Twin kernel was not observed in any promising genotypes. The kernel hairiness was less level in 5 promising genotypes selected in this study. Kernel colure was medium light in all promising types.

Keywords: Almond Selection, Adiyaman, Turkey, Prunus Amygdalus L.

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

DETERMINATION OF PHENOLOGICAL AND POMOLOGICAL CHARACTERISTICS FOR SOME LOCAL PLUM (PRUNUS SP.) GENOTYPES GROWN IN TOKAT PROVINCE

Yemliha Edizer[a], Sukran Doghan[a], Onur Saracoglu[a*]

[a]Gaziosmanpasa University

*onur.saracoglu@gop.edu.tr

Abstract:

This study was carried out on the 9 local plum genotypes (Alyanak, Hurma Erigi, Kara Erik, Sari Erik, Tavsan Bobregi, Ak Erik, Sut Erigi, Hanim Gobegi, and Sari Papatya) in Tokat province, Turkey, 2016. The aim of this study was to determine the phenological and pomological characteristics (fruit length, fruit width, fruit weight, fruit volume, fruit firmness, colour characteristics (L, a, b), titratable acidity (TA), soluble solid content (SSC), pH) and to protect these genotypes as genetic sources. The full blooming was occurred between March 8th and March 29th and the fruit maturity were harvested between June 13th and August 1st in all genotypes. The average fruit weight was determined between 13.21 (Sari Erik) and 52.42 g (Kara Erik). Total soluble solid was found out between 11.30% (Hanim Gobegi) and 18.46% (Sari Erik). The highest titratable acidity was observed at Sut Erigi (7.80 g/l) and Sari Erik (17.13 g/l) genotypes.

Keywords: Local Genotypes, Plum, Phenology, Pomology

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

INVESTIGATION OF THE MICROWAVE DIELECTRIC PROPERTIES OF VARIOUS MONTMORILLONITE CATALYST

Dorin Boldor[a*]

[a]lsu Agcenter / University Politehinca Of Bucharest

*dboldor@agcenter.lsu.edu

Abstract:

Microwave heating of catalyst has various advantages over conventional heating methods such as high heating rates, uniform temperature distribution and anti heat-sink effects due to direct material-microwave interaction. Montmorillonite catalyst impregnated with metals can be effectively used to improve product quality for both pyrolysis and gasification products. In order to heat these catalysts in microwave it is crucial to understand its interaction with the microwaves. Microwave heating depends on parameters such as dielectric properties, power level, frequency and initial temperature, which can be selected for different processes. Knowledge of microwave dielectric properties of materials plays a major role in microwave reactor design. The dielectric properties (dielectric constant ε' and dielectric loss ε") of various montmorillonite catalyst impregnated with metals (Co, Ni, CuFe2, Mo) were measured using a vector network analyzer and a transmission line method with a coaxial cell method using EpsiMu dielectric kit; the data was collected in the frequency range of 154MHz to 4.5GHz. Results indicate that the microwave dielectric properties in almost all cases depend significantly on frequency. The major exception is pure oil, whose dielectric properties seemed to depend only on frequency. Both dielectric loss and dielectric constant decreased with frequency. All catalysts were good microwave absorbers making them suitable for microwave-based biofuel upgrading.

Keywords: Catalysts, Dielectric Properties, Pyrolysis, Bio-Oil, Upgrading

[*]*This study is supported by Romania's "Competitiveness Operational Programme 2014-2020" Priority Axis 1, Action 1.1.4*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

SIMULTANEOUSLY GROWN CARBON NANOTUBES AND METAL OXIDE NANOWIRES COVERED NANOSTRUCTURED CONDUCTING POLYMERS' MICROWAVE ENERGY-ASSISTED CARBONIZATION FOR ENERGY STORAGE APPLICATIONS

Selcuk Poyraz[a*]

[a]Department Of Textile Engineering, Faculty Of Engineering, Adiyaman University

*spoyraz@adiyaman.edu.tr

Abstract:

Carbonized conducting polymer, i.e. polypyrrole (PPy), nanostructures (nCCPs) with carbon nanotube (CNT) and metal oxide nanowire (MONW) growth on their surface are aimed to be manufactured with a great potential as a building material for advanced engineering applications such as energy storage. A well established, in-situ polymerization/coating method and a simple and straightforward microwave (MW) energy-based carbonization approach, i.e. PopTube, are systematically combined to prepare this novel material. Through this simple, facile, yet highly efficient, affordable and easily scalable combined synthesis method, it becomes possible to produce such nCCPs with unique morphological (SEM/TEM), spectroscopic (XRD), thermal (TGA) and elemental (EDX) features, all of which are strongly supported by both indicated various material characterization test results and the relevant literature data. Thus, it is believed that the as-obtained CNT and MONW decorated nCCPs (CNT-MONW/nCCP) via the above mentioned method would soon become a material of preference for a large span of advanced applications in different science and engineering fields.

Keywords: Carbonization, Carbon Nanotube, Conducting Polymer, Metal Oxide Nanowire, Microwave Energy

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

NANOSTRUCTURED FULLERENE-LIKE METAL CHALCOGENIDES' MICROWAVE ENERGY-ASSISTED PREPARATION

Selcuk Poyraz[a*]

[a]Department Of Textile Engineering, Faculty Of Engineering, Adiyaman University

*spoyraz@adiyaman.edu.tr

Abstract:

Metal chalcogenides (MCs) have emerged as an extremely important class of nanomaterials that can be utilized within a large span of applications from lubrication to energy storage devices. Here, a recent discovery of a universal, ultrafast (60 s), energy-efficient, and facile technique to prepare MC nanoparticles and nanostructures via microwave (MW) energy-assisted heating is introduced. A suitable combination of precursors is selected for the chemical intereactions on Polypyrrole nano-fibers (PPy NFs) in presence of MW irradiation. The PPy NF would serve as the conducting material to absorb MW energy to heat the precursors to reveal the separate metal and chalcogenide constituents. The MCs are formed as nanoparticles that eventually undergo a size-dependent, multi-stage aggregation process to yield various MC nanostructures. Most importantly, this is novel MC formation process is both proven to be much faster and energy-efficient than all the other existing methods and can be universally employed to produce different kinds of MCs (e.g., MoS2, and WS2), as well.

Keywords: Carbonization, Conducting Polymer, Metal Chalcogenide, Microwave Energy

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

THE RELATIONSHIP BETWEEN AGRICULTURAL ENERGY CONSUMPTION AND AGRICULTURAL ECONOMIC GROWTH FOR TURKEY

Hakan Polatci[a], Bekir Ayyildiz[b*], Hasan Gokhan Dogan[c]

[a]Tokat Gaziosmanpasa University
[b]Yozgat Bozok University
[c]Kirsehir Ahi Evran University

*bekir.ayyildiz@bozok.edu.tr

Abstract:

Energy consumption is increasing day by day. Intensive agriculture causes intensive energy use. The resources should be used economically for a sustainable agriculture. The use of intensive energy is contrary to the concept of sustainability. The share of the use of agricultural energy in the world decreases according to the share in all energy use. But this usage is increasing in quantity. This can be considered as an increase in energy use by more intense acceleration of other sectors.

This study examines the association between Agricultural Gross Domestic Product (AGDP) and agricultural energy consumption for Turkey using the sample period from 1970 to 2017. Granger causality analysis was applied to time series. According to the results of the analysis, a two-way relationship was found between agricultural income and agricultural energy use. According the this result each two variables have been reasoned to be one. In the results section, policies have been developed according to this situation.

Keywords: Energy Usage, Casuality, Agriculture

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

ENERGY AND SUSTAINABLE DEVELOPMENT

Bekir Ayyildiz[a*], Merve Ayyildiz[a], Gulistan Erdal[b], Hhakan Polatci[b]

[a]Yozgat Bozok University
[b]Tokat Gaziosmanpasa University

*bekir.ayyildiz@bozok.edu.tr

Abstract:

The development of energy and sustainable development is causes a great importance in recent years. Emissions from energy production negatively affect the world. It is adversely affected by the agriculture sector, like all sectors. The fact that production depends on natural conditions increases the severity of this situation.

This study includes evaluations based on current energy consumption, emission amounts and renewable energy sources. In this review, current studies on the world have been evaluated. The ''Kyoto Protocol and Paris Climate Agreement'' terms were reviewed and comments were made. Pollution from agriculture and agriculture is discussed. Governments' policies on sustainability were examined and measures taken were evaluated.

As a result, when the studies and published articles are examined, the pressure on the environment of the human being is increasing day by day. The findings of the articles reviewed were interpreted according to the principles of agricultural economy and agricultural machinery. Policies have been produced to make a sustainable agriculture on earth. Inferences were made on the use of agricultural energy and agricultural sustainability.

Keywords: Sustainable Devolopment, Enegy, Policies

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

INVESTIGATION OF SOME PHYSICAL PROPERTIES OF DUAL-CORE MULTI-TWIST SLUB YARNS

Nida Yildirim[a*], Munevver Ertek Avci[b], Huseyin Gazi Turksoy[c]

[a]Karadeniz Technical University
[b]Calik Denim R&D Center, Malatya, Turkey
[c]Erciyes University, Department Of Textile Engineering, Kayseri, Turkey

*nidayildirim@ktu.edu.tr

Abstract:

Denim fabrics are the most widely used type of fabrics for clothing and consumption of it is increasing all over the world. It is a well-known fact that companies operating in the denim sector are challenged every day. To be innovative in scopes such as to use new materials, to develop new technologies, to improve production processes and to develop environmentally friendly solutions during the dye-finishing phase has great importance in this highly competitive sector. There are many parameters that can affect the characteristics and performance of denim fabric within the scope of innovations.

In this study, dual-core multi-twist slub yarns have been developed to give both functional and visual effects to denim fabrics. Unevenness, hairiness, tenacity and breaking elongation properties of these yarns were analyzed. Experimental results have indicated that slub type is a statistically significant factor for unevenness and hairiness values and it is not a statistically significant factor for tenacity and breaking elongation values.

Keywords: Denim Fabric, Hybrid Yarns, Dual-Core Slub Yarn, Multi-Twist Slub.

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

TRIAXIALITY IN N=32 ISOTONES WITH COVARIANT DFT

Tuncay Bayram[a*], Serkan Akkoyun[b]

[a]Karadeniz Technical University & Infn-Lnl
[b]Cumhuriyet University

*t.bayram@ymail.com

Abstract:

Investigation for deformation and collective modes of nuclei is hot topic in nuclear physics both experimentally and theoretically. Recent two decades more information on shape of nuclei far from nuclear stability line has been obtained via heavy-ion evaporation-reactions by many lab. Accurate excitation energies, their ratios and transition strengths are used for investigation of geometrical shape of nuclei. On the other hand there can be found experimental difficulties for yielding neutron rich and proton rich nucleus and successful theoretical model studies can help for better understanding of shape of these nuclei. Nuclei along the N = Z region, between proton number Z = 28 to Z = 50 is known as to exhibit rapid shape changes and some nuclei have been determined as to be having triaxial symmetry. By regarding this point, covariant density functional theory with density dependent interactions (DD-ME2) have been employed for N=32 isotones starting from Ni to Se nucleus in the present study. For this purpose, potential energy surfaces of each nucleus have been carried out to discussing shape of nucleus in this isotonic chain. 64Ge has been found as to exhibit triaxiality in its ground state as in agreement with experimental indications. Also, detailed discussion on the shape of other nuclei in this isotonic chain is presented in this study. Furthermore some nuclear properties of considered nuclei such as binding energy, charge radii and quadrupole moments are given in detail.

Keywords: Triaxiality, Shape Evolution, Covariant DFT, N=32 Isotones

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

DETERMINATION OF SOME ENERGY TRANSITIONS OF GA PRODUCTS AFTER PHOTONUCLEAR REACTION

Serkan Akkoyun[a], Tuncay Bayram[b*]

[a]Cumhuriyet University
[b]Karadeniz Technical University & Infn-Lnl

*t.bayram@ymail.com

Abstract:

Nuclear spectroscopy is an important tool for deeper understanding of nuclear structure and dynamics of nuclear system. One of the easy way to investigating transition energies and half-lives of an atomic nuclei is employing photonuclear reaction. In this type of nuclear reaction, target nucleus is bombarded by bremsstrahlung photons which can be generated from a modified medical linear electron accelerator. For the photon energy in the order of 10-20 MeV, the number of reaction channel is limited. Therefore, the gamma spectrum is relatively clear and the use of particle or neutron detectors are not highly needed. In this study the bremsstrahlung photons with endpoint energy of 14 MeV obtained from modified clinical electron accelerator have been used for activating Ga target. Some energy transitions of product nuclei belonging to the low neutron/proton reaction exit channels have been measured by using HPGe detectors. The results are in good agreement with the literature values.

Keywords: Ga Nuclei, Photonuclear Reaction, Transition Energies

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

THE AERODYNAMIC EFFECTS OF PRESSURE MAGNITUDE AND BLOWING ANGLE ON LATERAL AUTONOMOUS PERFORMANCE OF UAVS

Tugrul Oktay[a], Ozturk Ozdemir Kanat[b*]

[a]Aeronautical Engineering, Faculty Of Aeronautics And Astronautics, Erciyes University
[b]Airframe And Powerplant Maintenance, School Of Civil Aviation, Kastamonu University

*ozturkkanat@gmail.com

Abstract:

In this study, the effects on the lateral flight control system of the UAVs are investigated by improving using active flow control technique the vortex occurring on the upper surface of the UAVs' wing during the straight flight. Blowing which is one of the flow control methods for an aircraft is preferred for this study. In order to obtain the best blowing data, carrying out numerical analysis of different angles of attack the effects of blowing angle and different pressure magnitude on the aerodynamic performance of the UAV are evaluated. In order to evaluate the aerodynamic performance, changes in the lift and drag coefficient values on the aircraft were considered. Lateral flight performance of UAVs is analyzed with MATLAB/Simulink program according to the pressure and blowing angle values at which aerodynamic performance is highest. As a result, it has been observed that there are significant improvements in UAV's lateral autonomous flight performance compared to the initial values.

Keywords: Blowing Angle, Flight Performance, Lateral Flight

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

THE IMPORTANCE OF BLOWING ANGLE WHILE DESIGNING AN ACTIVE BLOWING SYSTEM

Tugrul Oktay[a], Ozturk Ozdemir Kanat[b*]

[a]Aeronautical Engineering, Faculty Of Aeronautics And Astronautics, Erciyes University
[b]Airframe And Powerplant Maintenance, School Of Civil Aviation, Kastamonu University

*ozturkkanat@gmail.com

Abstract:

In this study, it is studied to improve the vortex due to flow separation over the wing upper surface caused by pressure difference between the wing surfaces based on wing profile structure in the straight flight of an UAVs by using active blowing method. It is investigated to obtain the best efficiency from the compressed air blown into the flow. For this reason, the output angle of the air blown according to the flow is changed and the optimum blowing angle is decided. The position, area and pressure outlet magnitude of the air used for active blowing over the wing upper surface are kept constant. On the contrary, only the outlet angle of the compressed air is changed according to the top surface of the wing. The analyzes are performed for the negative and positive different angles of attack of the UAVs. Thus, the effect of the blowing angle which is used as a variable on the performance has been tried to be evaluated. It is observed that the increase of the blowing angle causes a reverse flow on the wing after a certain size. In addition to this, this study shows that the change in the blowing angle alone does not cause much change in the performance of the UAVs, which has a low pressure outlet value.

Keywords: Blowing Angle, Reverse Flow

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

RESTORATION ECOLOGY OF THE LAST NATIVE POTAMOGETON PRAELONGUS´ POPULATION IN THE CZECH REPUBLIC USING KNOWLEDGE OF OTHER LOCALITIES IN ITS WORLD DISTRIBUTION

Zuzana Kozelková[a*], Romana Prausová[a], Ziana Tomášová[a]

[a]University Of Hradec Králové

*zuza.uja@seznam.cz

Abstract:

Macrophyte aquatic species Potamogeton praelongus grew in about 20 localities in the beginning of 1990th in the Czech Republic. Since 1997, the species has been growing only in its last native locality Oxbow of Orlice River at Stříbrný Pond near Hradec Králové. Optimal conditions for this species are in the north part of its distribution range. Our study of its ecological demands, seed germination and clonal growth together with long-term monitoring of the Czech population, and observations of some localities in Norway, Sweden and Poland are used for Rescue Programme for P. praelongus that was established in 2003. There are many activities in frame of the Rescue programme including research, management and restoration. Currently, complex of interventions for restoration of the last native locality, are conducted. To decrease the trophic status of the water and bottom substrate a muddy substrate and organic litterfall were excavated. Reduction of trees on river oxbow banks and riparian vegetation was done to decrease an amount of litterfall and mainly to decrease a shade level of water surface. Sedimentation reservoir on the Stříbrný Stream above the outfall into the river oxbow was built to reduce a rapid transport of sandy substrate from Stříbrný Stream. To preserve the new close-to-natural river bed, a free zone without any interventions was created, too. Now, the follow-up plan of management directed in sustainable state of this restored locality has been preparing that has to solve other problems like elimination of pollution sources from the upper part of the river oxbow (including a cottage complex and outlet from the Stříbrný Pond), and protection of aquatic macrophytes from herbivorous fish and aquatic birds.

Keywords: Potamogeton Praelongus, Restoration, Ecology, Rescue Programme

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

EFFECT OF MICRONISED CALCITE ADDITION ON THE WORKABILITY AND CAPILLARITY OF SCCS CONTAINING INDUSTRIAL WASTES

Ahmet Beycioglu[a*], Esra Deniz Guner[b], Yilmaz Aruntas[c], Magdalena Dobiszewska[d]

[a]Adana Science And Technology University
[b]Environmental Engineering, Cukurova University
[c]Civil Engineering, Gazi University
[d]Civil Engineering, Utp University Of Sciences And Technology

*abeycioglu@gmail.com

Abstract:

In this experimental study, the effect of micronised calcite on capillary water absorption and fluidity properties of self-compacting concrete (SCCs) containing industrial wastes was investigated. In the study, fly ash and blast furnace slag known as industrial wastes were substituted to cement by weight of 20%, 40%, and 60%. In addition, micronized calcite used was substituted to total aggregate by weight of 5% and 10% in each mixture containing industrial wastes. Orimet-tube test which is related about the passing time SCCs was performed on fresh state SCCs according to the guidelines given in EFNARC (2002) and the capillarity test was performed on hardened SCCs to the according to the guidelines given in ASTM C1585 – 11. According to the findings, the use of micronised calcite did not show meaningful effect on capillary water absorption of SCCs, but led to a significant improve on the filling ability of SCCs by decreasing the transition times of the orimet-tube.

Keywords: Self-Compacting Concrete, Micronised Calcite, Fly Ash, Blast Furnace Slag, Workability, Capillarity

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

FLOWABILITY, CAPILLARITY AND WATER ABSORPTION OF GRC MORTARS CONTAINING TIO2

Ahmet Beycioglu[a*], Serkan Subasi[b], Esra Deniz Guner[c], Volkan Ozdal[d], Muhammed Marasli[d]

[a]Adana Science And Technology University
[b]Civil Engineering, Duzce University
[c]Environmental Engineering, Cukurova University
[d]Fibrobeton Building Elements Industry And Construction Inc.

*abeycioglu@gmail.com

Abstract:

Glass Fiber Reinforced Concrete (GRC) is a type of composite material. GRC has becoming very popular in the civil engineering, architectural and many other applications due to its superior mechanical properties. Since GRC is widely used in architectural facade claddings, its visuality is very important. In this respect, a wide range of additives are used in GRC production in order to give different colors. Some of these additives are used to whiten. One of these whitening additives is titanium dioxide (TiO2). Generally, TiO2 are added to the GRC mixtures in the powder form.

In this experimental study, workability, capillarity and water absorption properties of GRC mortars containing 1%, 2%, 3% and 4% powder TiO2 as whitening agent by weight of cement were investigated. According to the experimental results found in this research, it was concluded that TiO2 reduces workability properties, increases capillarity and makes no significant change in water absorption properties.

Keywords: GRC, Tio2, Flowability, Capillarity, Water Absorption.

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

DETECTION OF PHISHING EMAILS WITH TEXT CLASSIFICATION

Zeynep Orman[a*], Rasim Savci[a], Sibel Senan[a]

[a]Department Of Computer Engineering, Istanbul University-Cerrahpasa

*ormanz@istanbul.edu.tr

Abstract:

Phishing attacks are widespread nowadays, and are used to obtain personal information by e-mails that are often sent from known websites, internet service providers or banks that cause many financial and moral damages for individuals and institutions. The prevention of these attacks is vital for information security. In this study, the content of phishing e-mails is examined by using Natural Language Processing (NLP) methods and phishing e-mails are determined with machine learning techniques. The data set used in this study is obtained by combining PhishingCorpus for phishing e-mails and CSDMC2010 raw sets for clean e-mails and 2500 samples are taken from both datasets. 20% of the dataset is reserved for testing. Word representations are taken from the content of the e-mails in the training dataset, and machine learning models are trained by forming feature vectors from the text content of the e-mails. The best result is obtained with the Multilayer Perception model, with a correct classification of 97.3% on the test data set.

Keywords: Natural Language Processing, Machine Learning, Phishing

[*]This study is supported by Scientific Research Projects Coordination Unit of Istanbul University-Cerrahpasa. BYP-2018-32976.

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

PARTICLE SWARM OPTIMIZATION BASED FUZZY HYPER RECTANGULAR COMPOSITE NEURAL NETWORKS : AN OVERVIEW

Sibel Senan[a], Zeynep Orman[a*], Nilay Salt Akkus[b]

[a]Department Of Computer Engineering, Istanbul University-Cerrahpasa
[b]Itelligence Turkey

*ormanz@istanbul.edu.tr

Abstract:

Particle Swarm Optimization Based Fuzzy Hyper Rectangular Composite Neural Network (PFHRCNN) combines three computational intelligence approaches including hyper-rectangular composite neural networks (HRCNN), fuzzy systems and Particle Swarm Optimization (PSO). This paper presents a detailed analysis of all PFHRCNNs related studies since the introduction of these studies in the literature up until today. In this context, feature extraction methods that are used in these studies are examined. Then, number of classes, features and samples used in these studies are determined. Finally, recognition success rates of PFHRCNN and other alternative methods are compared. Also, all studies in this area of interest are examined according to the computational results of PFHRCNN and HRCNN for computation time (complexity), recognition rate (success) and number of rule metrics. In the light of the proposed analysis, it can be concluded that the highest success rate is obtained by PFHRCNN approach compared to the other models. However, this approach might be considered as disadvantageous in terms of calculation time.

Keywords: Neural Networks, Fuzzy Hyper Rectangular Composite Neural Networks, Particle Swarm Optimization, Particle Swarm Optimization Bas

[*]This study is supported by Scientific Research Projects Coordination Unit of Istanbul University-Cerrahpasa. BYP-2018-32976.

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

EVALUATION OF NEW MICROGRAVITY DATA OF THE BETWEEN CESME AND URLA (IZMIR-TURKEY) REGION

Oya Pamukcu[a*], Baris Can Malalici[b]

[a]Dokuz Eylul University, Engineering Faculty, Department Of Geophysical Engineering
[b]Dokuz Eylul University, The Graduate School Of Natural And Applied Sciences

*oya.pamukcu@deu.edu.tr

Abstract:

The study area which in the southwest of Izmir, has a very complex tectonic structure. Western Anatolia and the Aegean Sea, where the study area is located, is a complex tectonic mechanism with north-south extension. Regionally,our study area is bounded by Western Anatolia graben system in the east, Aegean Sea in the west, North Anatolian Fault Zone in the north and Hellenic-Cyprus Arc in the south. The study area is limited to Cesme (in the west), Urla (in the east), Gulbahce Bay (in the north) and Sigacik Bay (in the south). Regional main tectonic structures are Karaburun Fault, Gulbahce Fault and Uzunkuyu Intrusive.

Past studies in the region have suggested that the area should be investigated in more detailed and emphasized that the tectonic structures in the region should be examined in detail. In the light of these suggestions, in the scope of Dokuz Eylul University Scientific Research Project (No. 2018.KB.FEN.010), the new microgravity studies were conducted to determine the tectonic elements in the study area in 2018. Different data processing techniques were applied to the measured microgravity data and the study area was examined in detail. As a result of this study, the results which were obtained from microgravite studies were investigated.

Keywords: Izmir,Western Anatolia,Microgravity,Urla,Sigacik

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

RESULTS OF THE NEW GPS STUDY IN THE SOUTH OF IZMIR AFTER THE 2017 AEGEAN SEA EARTHQUAKES

Ayca Cirmik[a*], Oya Pamukcu[a], Baris Can Malalici[b]

[a]Dokuz Eylul University Engineering Faculty, Department Of Geophysical Engineering
[b]Dokuz Eylul University The Graduate School Of Natural And Applied Sciences

*ayca.cirmik@deu.edu.tr

Abstract:

High seismic activity was observed in 2017 in the Aegean Sea which includes Izmir and its surroundings. The most important of these are the earthquakes of 12 June and 25 December 2017. On 12 June 2017, an earthquake of magnitude Ml = 6.3 (Mw = 6.2) was occurred in the Aegean Sea (offshore of Karaburun) and it was felt in a wide area. The other important earthquake was occurred on December 25, 2017 in Izmir Bay (Aegean Sea). The magnitude of this earthquake was recorded as Ml = 4.8 (Mw = 4.6) and the earthquake was felt in Izmir province and its districts. The province of Izmir is located at the western end of the Gediz graben system, which is under the influence of the Western Anatolian extension regime. While normal faulting is observed in east-west direction in Gediz Graben, especially NE-SW, NW-SE and N-S oriented faults are located in the south of Izmir. This region differs within the graben system. The region, which has been attracting attention since the Sigacik earthquake in 2005, has been examined in detail by the Department of Geophysical Engineering of Dokuz Eylul University since 2009 using gravity and GPS methods.

In this study, new GPS measurements were performed at 6 points in the south of Izmir following the earthquakes in 2017. The measurements were carried out between 03/07/2018 and 23/07/2018 within the scope of the Dokuz Eylul University Scientific Research Project No. KB.2018.FEN.010. The new data were evaluated together with the GPS data measured at the same points in 2009-2010 and 2011. As a result of this study, the results obtained from the GPS measurements performed in 2018 were examined together with the results of the measured data in previous years.

Keywords: Izmir, Gps, Earthquake, Aegean Sea

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

EXPERIMENTAL AND NUMERICAL STUDY OF NON-STRUCTURAL ELEMENTS IN A POWER PLANT UNDER SEISMIC LOADING

Lee Sang Moon[a*], Jung Woo Young[a]

[a]Dept. Of Civil-Engineering, Gangneung-Wonju National University, South Korea

*idealmoon@naver.com

Abstract:

In this study, the structural behavior of non-structure elements, such as electric cabinets installed in the power plant was presented, based on the results of experimental testing and numerical simulations under seismic loading. From the preliminary test, a rocking problem that leads to the deformation occurred at the cabinet bottom was observed due to impact inside the cabinet. Therefore, to prevent banging and rattling caused by that condition, the cabinet was reinforced and tested again. In the tests, it was used three seismic waves to perform time history tests and resonance search tests before and after time history tests. For the study on numerical simulations, the earthquake load was applied and its results were compared with the experiment data. The FE model was composed of three groups which were the cabinet body, floor jig and anchorage bolt. The interface between cabinet bottom and top of the jig was designed to have the sliding effect by using contact surfaces. The contact mechanism was also applied to the anchor used to connect between the cabinet and the jig. Finally, there was a good agreement in the comparison of numerical analysis and experiment results. However, it was found that there was a slight numerical difference because the bottom of the cabinet is subjected to an impact due to the uplifting, which causes cup-like deformation around the anchor bolt. In order to achieve more accurate seismic results in the numerical analysis, it is necessary to prevent the rocking mode caused by the vibration generated during the test.

Keywords: Electric Cabinet, Shaking Table Test, Rocking Motion, Earthquake Load, Anchorage Performance

[*]This study was carried out by the research grant support (19IFIP-B128598-03) of the R & D project of the Ministry of L.T.T.

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

AMPLITUDE THRESHOLDING METHODS IN NEURAL RECORDINGS

Eda Dagdevir[a*], Mahmut Tokmakci[a]

[a]Erciyes University

*edakaracaoglan@erciyes.edu.tr

Abstract:

In this study, methods related to amplitude thresholding that are one of the processing steps of Brain Machine Interface (BMI) applications are compiled. The BMI measures the change in the activity of brain cells to any stimuli. Then, it can also extract behavioral data corresponding to this measurement without behavioral data. The running of the BMI can be summarized as follows: Firstly, the neural activity record is filtered interval a band of included of action potential (AP). The AP candidates contained in the filtered record are determined by amplitude thresholding method. Suprathreshold waveforms are classified and the AP sequences that are generated by individual neurons are determined. AP sequences model as a function of behavioral variables, so it is found out what kind of information is encoded in the activity record. By using the activity models in the decoders, the behavioral data are extracted from the activity record. These processes are speed-limiting due to the pattern recognition and classifying that must be performed on hundreds of electrodes. Whether or not password solution can be performed without these processes is trend research topic at last few years. The optimization of the amplitude threshold is one of the most important subheadings of this topic. In literature, the amplitude threshold is calculated as three to five times the standard deviation of the signal. Another method commonly used to calculate amplitude thresholds is to set a threshold between three and five times the RMS voltage of the signal. So, the amplitude threshold should be calculated as user-independent, faster and data-driven. To overcome these disadvantages, an approach based on the modeling of the probability distribution of the signal, called the Truncation Thresholds, has been proposed and proved to be superior to other methods in the literature. Thus, contribution to literature has been provided for BMI.

Keywords: Brain Machine Interface, Neural Recording, Signal Processing

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

RELATIONSHIP BETWEEN SOCIO-ECONOMIC CHARACTERISTICS AND BARRIERS OF PEOPLE WITH DISABILITIES (MENTAL, ENVIRONMENTAL, ECONOMIC AND POLICIES-PROCEDURES) IN URBAN AREAS

Sertac Kaya[a*], Haldun Muderrisoglu[a]

[a]Duzce University

*sertackaya88@hotmail.com

Abstract:

There are certain differences of needs in the participation of urban life between disabled people and people with no disabilities. Due to natal or post-natal disabilities, physically disabled individuals encounter some problems in participation of the community life. Thus, urban spaces should be arranged to fit the needs of both user types to make sure that disabled people can feel more comfortable, integrate into the society and spend more time outdoors. The aim of this study is to reveal the relationship between socio-economic characteristics and disabled people's barriers (mental, environmental, economic and policies-procedures) in urban areas . Within the scope of this study the survey was preapered and it was conducted with 138 randomly chosen disabled people who visited Duzce province at least once. One-way variance analyses were carried out with the help of SPSS 20 statistical analysis program. The aim was to determine deficiencies of the criteria if there would be a significant relationship between them, so that they can be based on certain standards as a basis for future studies and it would also demonstrate the quality of accessibility. As a result, a significant relationship was found between these barriers and socio-economic factors.

Keywords: Accessibility, Barrier, Disabled People, Pedestrian Way

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

EVALUATION OF THE BUILDING ENVELOPE TO ACHIEVE COMFORT STANDARDS IN AN OFFICE BUILDING IN IZMIR

Ayse Sena Cildir[a*], Ayca Tokuc[a]

[a]Dokuz Eylul University, Faculty Of Architecture, Department Of Architecture

*a.senacildir@gmail.com

Abstract:

The rapid increase in world energy use causes the depletion of various resources and has severe environmental impacts such as global warming and climate change. Buildings consume about 40% of the world's energy, accounting for about 50% of carbon dioxide emissions. It is estimated that energy use in the built environment will increase by 34% over the next 20 years. In this context, at the European level within the recast of the Directive on Energy Performance of Buildings (EPBD – 2017), establishes 'nearly zero energy building', which would reduce CO2 emissions and/or energy use in the construction sector, as the target for all public buildings after 2018 and for all new buildings after 2020.

The purpose of this study is to examine the effect a passive design strategy, the design of building envelope in reaching the comfort standards of an office building in Izmir. The analysis method is to investigate selected variables on a hypothetical office building within the context of reaching a nearly zero energy building via building energy simulation. Four scenarios were modelled in the DesignBuilder program and the heating and cooling loads were calculated with the EnergyPlus simulation engine. The scenarios included changing the wall-window ratios of facades, changing the window glass type, adding insulation material to opaque building components, and adding shading elements to the south, east and west facades respectively. Finally, the scenarios are discussed through yearly analyses of heating and cooling loads.

The results show that the passive strategies that aim to decrease the cooling loads cause higher reductions in the energy demand of the building in Izmir. Consequently reaching a nearly zero energy office building is not feasible with the evaluated passive design strategies; however they can play a significant role in decreasing the energy consumption of the building.

Keywords: Building Energy Simulation, Office Buildings, Nearly Zero Energy Buildings

[*]This study was supported by Dokuz Eylul University Scientific Research Coordination Unit. Project Number: 2017/22

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

A REVIEW INVESTIGATION ON EXPERIMENTAL HEAT TRANSFER ENHANCEMENT METHOD BY USING TWISTED TAPE

Toygun Dagdevir[a*], Orhan Keklikcioglu[a], Veysel Ozceyhan[a]

[a]Erciyes University

*toygun@erciyes.edu.tr

Abstract:

Heat transfer enhancement is a critical and important phenomenon to save energy and cost, reduce size of the systems and protect the environment from the waste energy effects. Passive heat transfer enhancement method is the most used method since it does not require an energy input to the system. Twisted tape, coiled wire, dimpled surface are the most commonly used methods of the passive heat transfer enhancement method. In this paper, a detail review investigation is conducted on experimentally heat transfer enhancement method by many various configurations of the twisted tape. Addition to geometrical properties such as width, pitch, thickness, different processes implemented such as separated from the inner wall, perforated, center-cleared, jagged twisted tapes effects on thermal and hydraulic performance are examined and discussed. It is observed that the use of twisted tape is quite effectively method for heat transfer enhancement in a tube, since it generates swirl flow through the tube and destruct the thermal boundary layer. Moreover, another advantageous of the use of twisted tape is that to supple low pressure drop penalty compared with other inserts. It is concluded that the twisted tape will continue to use to improve heat transfer in energy conversion systems with more effective configurations.

Keywords: Twisted Tape, Heat Transfer Enhancement, Pressure Drop, Performance Evaluation Criteria

[*]This study is supported by Erciyes University, Scientific Research Projects Coordination Unit (Project kode: FDK-2018-7977)

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

THE POSSIBILITIES OF USING YUCCA SCHIDIGERA PLANT AS A NATURAL ANTICOCCID IN POULTRY

Betul Celik[a*], Mehmet Mustafa Erturk[a]

[a]Akdeniz Universitesi

*betulaksu@akdeniz.edu.tr

Abstract:

Coccidiosis is a parasitic disease caused primarily by protozoa of the genus Eimeria, and primarily in the intestinal tract. A lot of people with very high morbidity can cause serious problems, deaths and loss of efficiency. Young animals are more susceptible to infection. Chickens - Animals aged 4-6 weeks are affected. Different types of Eimeria can cause disease. Eimeria acervulina, E.maxima, E.tanella, E.mivati, E.necatrix and E.brunetti are the causative agents of broiler disease. By prohibiting the use of synthetic hormones and antibiotics in rations, increasing the utilization of feed, increasing the amount of animal obtained and increasing the amount, operating the health and controlling the prices of the resulting options and making it necessary to be cheap and effective in the control of coccidiosis, must be in the past and in the past. Yucca, one of the plants produced in this plant, is a plant belonging to the family Liliaceae. Yucca schidigera is a subspecies with the highest saponin content of the contents of the Yucca species. 9-10% active steroid saponin rooms per year. Yucca schidigera, which is a completely natural, non-toxic product, is a substance that is easy to use and easy to use. Yucca schidigera is an important ingredient in feeding the animal. Depending on the saponin content of Yucca schidigera, it reduces the urease activity. antibacterial and anti-fungal, anti-oxidant and hormonal stimulating system in the organism. The effect of the plant, the chemical structure of saponin, the amounts used, the ration content and depending on the characteristics of the animals will be handled as in this review, the content of its use is here.

Keywords: Anticoccidial, Feed Additive, Poultry Feed, Yucca Schidigera.

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

BENDING BEHAVIOR OF CARBON FIBER-EPOXY-CNT COMPOSITES: A THEORETICAL APPROACH

Umut Caliskan[a*], Constantinos Soutis[b]

[a]Erciyes University
[b]Northwest Composites Centre, School Of Materials, University Of Manchester, Oxford Road, Manchester, M13 9pl, Uk

*ucaliskan@erciyes.edu.tr

Abstract:

Recently intensive research has been carried out on carbon nanotube (CNT) based polymer composites. Carbon nanotubes (CNTs) are molecular structures of graphitic carbons with excellent and remarkable properties. The exceptional mechanical properties of the CNTs, combined with their low density, offer scope for the development of nanotube reinforced composite materials. In the present study, three point bending analysis of the carbon fiber-epoxy-Carbon nanotubes is investigated numerically. Halpin-Tsai mode is utilized to evaluate the material properties of two-phase composite consisted of uniformly distributed and randomly oriented Carbon nanotubes through the epoxy resin matrix. Afterwards, the structural properties of carbon nanotubes reinforced polymer matrix, which is assumed as a matrix, and then, reinforced with carbon fiber, they are calculated by fiber micromechanics approach. The influence of weight percentage of carbon nanotube on the bending characteristics of carbon fiber-epoxy-CNT composites is discussed in details. A parametric modelling plug-in for bending analysis of carbon fiber-epoxy-Carbon nanotubes composites is established using ABAQUS-Python scripting language.

Keywords: Nanocomposites, Carbon Nanotubes, Micromechanical Model, Three Point Bending.

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

THE METHOD FOR PREVENTION OF CORROSION: USE OF INHIBITORS

Semra Bilgic[a*]

[a]Ankara University

*bilgic@science.ankara.edu.tr

Abstract:

Corrosion is defined as the deteoration of metals and alloys by chemical and electrochemical reactions. Corrosion is unwanted phenomenon because of harmful effects for human health, environment and economic losses. Therefore, there are several methods to prevent or reduce the corrosion. Use of inhibitors is one of the most effective methods for the protection of many metals and alloys against corrosion.

Inhibitors are chemical compounds, ,added several systems, chemical processes, vapour generators, petroleum gas pipelines. Inhibitors prevent corrosion either by being adsorbed on the surface of metals and alloys,or by forming a protective layer or by causing the formation of unsoluble complex.These compounds can be organic or inorganic compounds Organic inhibitors contain oxygen,nitrogen,sulphur and heterocyclic compounds such as amines, aldehydes, heterocyclic nitrogen compounds ,sulphur-containing compounds. Inorganic inhibitors contain inorganic ions such as NO2-, CrO4-

Another classification of inhibitors is as follows:

1) Anodic inhibitors

2) Cathodic inhibitors

3) Mixed inhibitors

Anodic inhibitors prevent or reduce anodic corrosion. These inhibitors are generally anions. Cathodic inhibitors cause to prevent or decrease cathodic corrosion, they are cations. Mixed inhibitors reduce the corrosion rates of both anodic and cathodic reactions.They are organic compounds.

Keywords: Corrosion, Inhibitors

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

INFLUENCE OF CURRENT TYPE AND SHIELDING GAS ON WELD BEADS OF TIG-WELDED ANSI 304 STAINLESS STEEL

Simge Gencalp Irizalp[a*], Gaye Ceren Emre[a]

[a]Celal Bayar University

*simge.gencalp@cbu.edu.tr

Abstract:

In this study, the effects of shielding gas and current type effect on tungsten inert gas welded ANSI 304 stainless steel were investigated. Tungsten inert gas (TIG) welding is widely used in any structural applications of this steel. TIG welding is preferred in stainless steel because of its high quality weldments and its lower equipment investment. By using the TIG welding method, which is widely used in the stainless steel industry, it is critical to obtain a good appearance of weld joints as well as the weld beam which has full penetration and good mechanical properties. In this study, pulsed current and conventional continuous current were used as the current type and Ar and He gases were used as the shielding gas. Penetration, microstructure and hardness were examined. Weld bead width was increased when current values increased from 50A to 70A. The conventional continuous current results in better penetration than the pulsed current, as well as increasing the weld bead width. The effects of helium and argon gases on the weld bead varied with the current. The conventional continuous current and has a more uniform weld line than the pulsed current. As a result, both the current type and the shielding gas effects are thought to be responsible for increasing the efficiency of the weld and improving the appearance of the stainless steel weld joints.

Keywords: TIG Welding, Shielding Gas, ANSI 304 Stainless Steel, Weld Morphology

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

A REVIEW OF COMBINED HEAT TRANSFER ENHANCEMENT METHODS USING NANOFLUIDS AND INNER RIBS

Orhan Keklikcioglu[a*], Toygun Dagdevir[a], Veysel Ozceyhan[a]

[a]Erciyes Universitesi

*keklikcioglu@erciyes.edu.tr

Abstract:

Heat transfer enhancement is a process of increasing the heat transfer rate and thermohydraulic performance of a system using various methods. These different methods are grouped mainly under two techniques, passive and active. The technique of application of inner ribs, such as twisted tapes, coiled or tangled wires, and nozzle turbulators, and nanofluids are among the passive heat transfer enhancement method that have been commonly studied in recent years. The methods of heat transfer enhancement are employed for developing the heat transfer without affecting the overall realization of the systems significantly, and it covers a wide range of areas where heat exchangers are used. Using of inner ribs in flow region increase both convective heat transfer and fluid friction because of inducing the turbulance and promoting the swirl flow. Additionally, nanoparticles enhance the thermal properties of base fluids that causes the increment of heat transfer rate without causing major frictional forces in thermal systems. To obtain the thermo-hydraulic performance of a thermal system, both heat transfer and fluid friction characteristics should be investigated. For this reason, the present study represents a comprehensive review that focused on combined heat transfer enhancement methods with nanofluid and inner ribs used in flow region.

Keywords: Inner Rib, Nanofluid, Heat Transfer, Pressure Drop, Heat Transfer Enhancement

[*]This study is supported by Scientific Research Project Division of Erciyes University under the Contracts: FDK-2018-8045

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

RETROFITTING OF MODERN HERITAGE MASONRY INFILLED RC BUILDINGS

Tarik Serhat Bozkurt[a], Baris Sayin[a*], Ahmet Sertac Karakas[a], Cemil Akcay[a], Baris Yildizlar[a]

[a]Istanbul University

*barsayin@istanbul.edu.tr

Abstract:

In retrofitting applications of historical buildings, it is considered that preserving historical heritage is an important factor. However, to perform such applications within the scope of retrofitting of the buildings should be carried out in such a way that it should not lose integrity with the originality of the buildings by employing an interdisciplinary approach. This study focuses on rehabilitation studies of historical masonry infilled RC building; and thus, the study aims to be a reference for retrofitting of the structures. In the present study, a block building at the Faculty of Sciences located in Istanbul University registered as a cultural asset to be protected by the Regional Board of Protection of Cultural Heritage is investigated. In the scope of the study, it is presented that retrofitting techniques applied using carbon fiber, steel mesh, steel profile and shotcrete over structural members such as external walls, infilled walls, columns, beams and foundation in the block building.

Keywords: Historical Structure, RC Building, Retrofitting

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

PARAMETER DETERMINATION APPLICATIONS FOR MAGNETIC ANOMALIES BETWEEN BAYBURT – BITLIS (TURKEY)

Oya Pamukcu[a*]

[a]Dokuz Eylul University

*oya.pamukcu@deu.edu.tr

Abstract:

It is difficult to determine the location and depth of the structure which is investigated due to the solution in natural potential areas. In the investigation of geophysical anomalies, more accurate results are obtained by using more than one parameter determination methods.

In this study, the normalized full gradient and power spectrum methods were applied to the model and measured magnetic anomalies. By using the normalized full gradient method, vertical and horizontal structural transitions which cause magnetic anomalies were investigated. The basis of the normalized full gradient method is based on the downward continuation of the magnetic data. As the first application, these methods were applied to theoretical magnetic prism model anomalies, then to magnetic data of the region between Bayburt - Bitlis (Turkey).

As a result, the horizontal changes of possible structures in the study area were investigated with the normalized full gradient method and these results were compared with the power spectrum results.

Keywords: Bayburt, Bitlis, Magnetic Anomaly, Parameter Determination Methods

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

MINIMIZATION OF AN UNMANNED HELICOPTER TORQUE VALUE USING ABC ALGORITHM

Mehmet Konar[a*], Seda Arik[a], Tugrul Oktay[b]

[a]Department Of Aircraft Electrical And Electronics, Erciyes University
[b]Department Of Aeronautical Engineering, Erciyes University

*mkonar@erciyes.edu.tr

Abstract:

One of the important developments that technological innovations add to human life is unmanned aerial vehicles (UAVs). Today, UAVs are used different sizes for different purposes by many users. As UAVs offer a wide range of uses, UAV designs have become a popular application area. UAVs are designed in different sizes with fixed or rotary wing type. One of the issues to be considered in these designs is to determine the optimum torque value of the UAV. In this study, the minimization of the torque value of an unmanned helicopter is discussed. For this purpose, propeller blade parameters that affect the torque value of an unmanned helicopter, i.e, blade length, blade chord width, blade mass density and blade twist angle, are selected as the input parameters. The torque value obtained by using these input parameters is chosen as the output parameter. In the proposed approach, the output parameter values were calculated for certain value ranges of the input parameters, and the input parameter values corresponding to the minimum output parameter were determined. For this purpose, Artificial Bee Colony (ABC) algorithm which is frequently preferred in the literature and offers effective results was used. Thus, the blade parameters required for the minimum torque were determined. The simulation results showed that the ABC algorithm performs very well to calculate the blade parameter values in response to the minimum torque in a short time and with an acceptable error rate. This approach can provide effective performance with less time and less cost using in UAV designs.

Keywords: Helicopters, Uavs, Torque, ABC Algorithm, Optimization.

[*]*Research Fund of Erciyes University Scientific Research Projects*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

WHERE IS THE NORTHERN BOUNDARY OF WESTERN ANATOLIA?

Ayca Cirmik[a*]

[a]Dokuz Eylul University

*ayca.cirmik@deu.edu.tr

Abstract:

Western Anatolia is one of the most seismically active and normal-fault-dominated extending regions in the world and is currently experiencing an approximately N–S continental extension. The tectonic system which is dominated with normal fault system replaces to the strike-slip system in the north of Western Anatolia. There is a boundary which is called as North Aegean Region (NAR) between these two different systems. However, the location of this boundary has not been explained, exactly.

In this study for investigating the northern boundary of Western Anatolia, GPS data were analyzed with Gamit/Globk software relative to the Anatolian block system. According to the Anatolia block solutions, GPS vectors represented different directional movements. The GPS vectors locate in the north of this boundary which obtained by GPS solutions move to the north, on the other hand, the south vectors move to the west and southwest. Finally, this boundary which obtained by GPS solutions were correlated with the geological features of the study region. Therefore, it is found that this boundary pointed to the Northern boundary of Western Anatolia, namely NAR.

Keywords: Western Anatolia, North Aegean Region, Gps

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

PREPARATION OF POLY(ETHYLENE TEREPHTHALATE)/POLYPYRROLE/FE3O4 COMPOSITE AND INVESTIGATION OF ITS ELECTROMAGNETIC SHIELDING EFFECTIVENESS

Burhan Beycan[a], Meryem Kalkan Erdogan[a], Mehmet Sacak[a*]

[a]Department Of Chemistry, Faculty Of Science, Ankara University

*sacak@science.ankara.edu.tr

Abstract:

Electromagnetic interference (EMI) is consisted of unwanted signals from electrical sources and may degrade the performance of a system or equipment, and even pose a threat to human health. For this reason, many attempts have been made to take protective precautions against harmful EMI, and new conductive composite shield materials have been developed in this field. Various electrically conductive components such as metals, metal oxides, and conductive polymers can be used in the preparation of these composite shields.

In this work, to obtain an EMI shielding composite material, conductive polypyrrole (PPy) and magnetic iron (II, III) oxide (Fe3O4) containing poly(ethylene terephthalate) (PET) nonwoven textile composites were prepared. For this purpose, firstly, Fe3O4 particles were synthesized with the co-precipitation method and its crystal structure was evidenced with XRD. Then, the ternary PET/PPy/Fe3O4 composite was prepared by either first oxidative polymerization of pyrrole on PET surface then deposition of Fe3O4 dispersion, or first deposition of Fe3O4 particles then polymerization of pyrrole on this binary composite. Changes in the surface morphology of the composites prepared with two different methods were monitored with SEM.

The electromagnetic shielding effectiveness (EMSE) measurements of the composites were performed using a network analyzer in the 100 kHz-3 GHz radio and narrow microwave frequency range. The effective mechanism of the shielding effectiveness by absorption and/or reflection of the components of the EMSE was also revealed. It was observed that the composite prepared with latter deposition of Fe3O4 showed relatively higher EMSE values (6.4 dB) which correspond 75 % of shielding with absorption.

Keywords: Polypyrrole, Conductive Textile Composite, Ferrit Particle,Electromagnetic Shielding Effectiveness

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

THE CONCENTRATION DEPENDENCE OF THE INHIBITION EFFICIENCY OF SODIUM TETRABORATE FOR STEEL CORROSION IN ALKALINE MEDIA

Gul Seda Oz[a], Semra Bilgic[a*]

[a]Ankara University

*bilgic@science.ankara.edu.tr

Abstract:

Corrosion is the deteoration of metals and alloys as a result of chemical and electrochemical reactions between them and surrounding environment. Corrosion is unwanted phenomenon. Because it has harmful effects for human health and it causes several accidents and great losses in the economies. Harmful effects of corrosion can be prevented in several ways such as metallic coatings, non-metallic coatings, anodic and cathodic protection of metals and use of chemical compounds called inhibitors.

Inhibitors can be organic and inorganic compounds. Organic inhibitors contain oxygen, nitrogen, sulphur and heterocyclic compounds. Inorganic inhibitors contain inorganic ions such as NO2- , CrO4-. Studies with inorganic inhibitors are quite rare.

In this study the inhibition effect of sodium tetraborate (Na2B4O7.10H2O) on the corrosion of steel has been investigated in 3% and 5% KOH. Corrosion parameters have been determined using Tafel extrapolation and impedance spectroscopy methods by the adding of 1%-7% Na2B4O7 in two KOH concentrations. According to the experimental findings the inhibition efficiency of Na2B4O7 in both KOH media increases in 1%-4% concentration range whereas it decreases in 5%-7% concentration range. However,in this concentration range of sodium tetraborate , corrosion rates are less than those without inhibitor.

Keywords: Corrosion , Inorganic Inhibitor

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

OVERVIEW OF PROJECT MANAGEMENT IN CONSTRUCTION SECTOR

Feyza Gurbuz[a*], Gizem Erdinc[a]

[a]Erciyes University

*feyza@erciyes.edu.tr

Abstract:

In generally, Project Management is defined as the application of meeting the project requirements and available sources. On the other hand, each project has different needs and sources. So, this diversity needs dissimilar applications and technics and these applications create the project management literature in sector used. This study is prepared to understand the literature on project management in the construction industry. We discussed the studies about the construction industry and project management application written in the recent past. For easier examination and understanding of this work, studies are grouped under the headings of 'Key Success Factors In Project Management', 'The Shortcomings Of The Classical Methods', 'Different Applications on Critical Path Method', 'Project Management in Turkey', 'Optimization in Project Management', 'Fuzzy Logic in Project Management', 'Simulation in Project Management'. Shortcomings of the studies examined under these headings were identified and are noted in the results section. The papers mostly published between 2014-2018. So, the aim of this study is to guide to study is prepared in order to eliminate the deficiency in the literature.

Keywords: Construction Project Management, Project Management Skills, Project Management

[*]This work was supported by Research Fund of the Erciyes University. Project Number: 8682.

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

RISK ANALYSIS OF LUMPY SKIN DISEASE IN TURKEY

Omer Baris Ince[a*], Mehmet Ali Dereli[b]

[a]Ministry Of Agriculture And Forestry
[b]Department Of Map Engineering, Afyon Kocatepe University

*incebaris@gmail.com

Abstract:

Risk analyses is comparatively new and since agreement on sanitary and phytosanitary measures, discipline in the animal and veterinary public health fields has evolved significantly in recent years. The study was conducted in nine different provinces in Turkey (Adana, Osmaniye, Hatay, Kahramanmaras, Adiyaman, Malatya, Sivas, Batman, and Hakkari). The study design included active disease follow-up and semi-structured interviews (SSI) from August 2013 to August 2014 in selected provinces. Data for the risk assessment parameters were obtained from secondary data, interviews with 354 farms owners, and personal field observations. Lumpy Skin Disease (LSD) in Turkish cattle appeared suddenly two years ago. This study evaluates potential risks of LSD and recommends appropriate control measures. The World Animal Health Organization's protocol was used for the risk analysis. Likelihoods for disease release and exposure were estimated with a qualitative scale ranging from negligible to high. Outbreaks were recorded in nine provinces in Turkey. Total economic loss due to the disease was estimated to be $241.903.500 US dollars. The risk analysis suggests a greater than negligible risk. Therefore, disease prevention and control strategies should be considered by the Turkish Veterinary Authority.

Acknowledgement

The extended version of this study was published in the Indian J. Anim. Res.,(SCIE J)

Keywords: Cattle, Lumpy Skin Disease, Risk Analysis, Spread Of Bovine Disease.

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

STRUCTURAL PERFORMANCE EVALUATION OF ANCHOR BOLTS OF POWER GENERATING EQUIPMENT INSTALLED IN THE HYDRO-POWER PLANT IN KOREA

Dong-Ik Kim[a], Min-Ki Kim[a*], Jung-Ho Moon[b], Woo-Young Jung[a]

[a]Department Of Civil Engineering, Gangneung-Wonju National University
[b]Department Of Electrical Engineering, Gangneung-Wonju National University

*kmki6575@gmail.com

Abstract:

The damage caused by the earthquake is not only the structural damage, but also the damage caused by the functional damage of the non - structural element. However, the criteria for seismic design for non - structural elements such as cabinets are insufficient compared to those for seismic design for structural damage. In this study, the performance of an anchorage connecting between electric cabinet and concrete slab installed in the power plant that was investigated by both experiment and numerical analysis.

The experiment carried out artificial and shear experiments of anchor bolts installed in concrete slabs, and numerical analysis was carried out through Abaqus program based on experimental data. In case of shear analysis, the experimental data and the analytical data do not match and the numerical analysis model needs to be modified and supplemented. After that, the numerical analysis model of this study will be revised and supplemented and seismic analysis will be carried out as a follow - up study.

Keywords: Anchor Bolt, Cast-In-Place, Experiment, Numerical, Abaqus

[*]This research was supported by a grant (19IFIP-B128598-03) from Industrial Facilities & Infrastructure Research Program (IFIP) f

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

ANALYSIS OF QUALITY DEFECTS IN BED PRODUCTION

Feyza Gurbuz[a*], Hande Madenoglu[a]

[a]Industrial Engineering, Engineering Department, Erciyes University

*feyza@erciyes.edu.tr

Abstract:

Nowadays, in order to answer fast growing consumption and demand, in many factories quality defects occur due to wrong production and this fact does not receive the attention it requires. Providing products with good quality is equally important as to answering customers quickly. It is also very important to handle quality defects in order to raise customer satisfaction and increase business efficiency. This study is based on the bed production line of a factory located in the city of Kayseri. Application has been made on the quilted machine of the production line of the factory. A case seen frequently in the factory, the quilted dismantling defect is handled in this study. As a result of customer complaints or detection by the quality control personel, returned beds with such defects are sent to scrap or reprocessing. This process affects the production quantity and efficiency significantly. This problem detected by the quality department, with the support of the company has been handled and investigated. After determining the factors, data collecting process has been done. According to the data collected, analysis has been made on the machine, operator, model and work shift. With the results obtained, recommendations for improvement were given.

Keywords: Quality Defect, Bed Production, Improvement Quality

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

DETERMINING OF FUNDAMENTAL PHYSICAL PROPERTIES OF VARIOUS MODIFIED BITUMEN WITH WMA ADDITIVES

Bekir Aktas[a*], Suayip Aytekin[b], Sevket Aslan[a]

[a]Erciyes University
[b]Kayseri 6th Regional Directorate Of The General Directorate Of Highways

*baktas@erciyes.edu.tr

Abstract:

Recently, Warm Mix Asphalt (WMA) technologies have becoming important topic due to reduce mixing and compaction temperatures of the asphalt mixture in the world. Thanks to the rapidly developing WMA technologies, the economical use of limited resources is increased and environmental impacts caused by asphalt production can be reduced. In recent years, WMA has started to come to the forefront in terms of asphalt concrete manufacturing especially in countries with high energy requirements. There are studies on WMA in various countries and each country is developing WMA manufacturing procedures which vary according to their conditions. The viscosity of the bitumen used in the production of WMA is reduced and its chemical and physical properties change. In this study, the bitumen modified with 3 different WMA additives were investigated and compared with the pure bitumen in terms of the physical properties such as penetration, specific gravity, softening point, thin film oven test lost, ductility etc.

Keywords: Asphalt Concrete, Warm Mix Asphalt, Additives

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

A STUDY ON THE DYEING OF WOOL WITH LINDEN FLOWER

Huseyin Benli[a*], M. Ibrahim Bahtiyari[b], Fazlihan Yilmaz[b]

[a]Kayseri University
[b]Erciyes University, Textile Engineering Department

*hbenli@kayseri.edu.tr

Abstract:

The natural sources, such as clean water supply, clean environment and clean atmosphere, have terribly run out by people for last century. Some world's people, who draw the line at these bad issues, have started to do something for future. One of these efforts is to provide and use cleaner textile dyes in the dye industry too. The linden flowers are widely used in medical and cosmetic industries due to the active substances they comprise. In the last years, reuse of traditional herbal based dyes, such as madder, buckthorn, walnut shell, indigo, because of the environmentally effects, have shined out in the textile dyeing industry. In this study, linden flowers were tested whether or not can be used as a natural source for dyeing of woolen fabrics. The linden flowers that collected in season were dried, and then used directly (without a previous extraction) in dyeing of fabrics at boiling temperature for 60 minutes. In the research, addition to unmordanted dyeing, four separate metal salts (copper sulfate, iron sulfate, potassium dichromate, and alum) were used as mordanting agents in simultaneously dyeing. The color efficiencies (K/S) and CIE L*a*b* results of the naturally dyed samples were determined and in addition to this, dyed woolen fabrics were tested in terms of fastness properties too. Consequently, it has been seen that satisfactory colors and fastnesses can be obtained by dyeing the woolen fabrics by using linden flowers.

Keywords: Natural Dyes, Linden Flower, Mordanting Agent, Environmentally Friendly, Textile

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

THE DYEING OF COTTON YARNS BY USING SAFFLOWER (CARTHAMUS TINCTORIUS L.)

Huseyin Benli[a*], M. Ibrahim Bahtiyari[b], Fazlihan Yilmaz[b]

[a]Kayseri University
[b]Erciyes University, Textile Engineering Department

*hbenli@kayseri.edu.tr

Abstract:

Nowadays, many scientists have been making intense efforts to produce environmentally friendly products in almost every branch. It is possible to see such efforts in the textile industry too. Especially, in the literature, also it is possible to meet by chance intensive studies onto clean textile dyestuffs and green applications. As part of this purpose, a research study was carried out on the dyeing of cotton yarns by using the Safflower plant. One of the most important expectations of this study will be not only the identification of environmentally friendly natural dyes but also to become widespread of usability too. In research, four different metal salts were used to make the dyeing more efficient. Addition to this, dyeing was conducted without use of mordanting agents. All the dyeing applications were carried out for one hour at boiling temperature according to meta-mordanting method. The color efficiencies (K/S) and CIE L*a*b* results of the dyed samples were determined and yarns were tested in terms of fastness properties as well. As a result, it has been seen that satisfactory colors and fastnesses can be obtained by dyeing the cotton yarns with Safflower plant.

Keywords: Textile, Cotton, Yarn, Safflower, Natural Dyes, Green Application

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

IMPACT OF LIGNIN-BASED NANOPARTICLES ON SOYBEAN HEALTH

Cristina Sabliov[a*], Sara Navarro[a], John Wadvogel[a], Carlos Astete[a]

[a]louisiana State University

*csabliov@lsu.edu

Abstract:

Engineered nanoparticles (ENPs) exhibit great potential as effective, value-added delivery systems for medical, food, and agriculture applications. Although the literature addressing metallic ENPs in the environment is becoming more robust, key knowledge gaps remain almost completely unaddressed, particularly for organic "soft" ENPs. Biodegradable lignin-based nanoparticles (LNPs) were developed as an agrochemical delivery systems, and their effect on soybean health was evaluated. Soybeans were exposed hydroponically to three LNP concentrations 0.02, 0.2, and 2 mg/ml. After 1, 3, and 7 days of exposure, root and stem length, chlorophyll concentration, dry biomass of roots and stem, as well as carbon, nitrogen, and micronutrient absorption were measured. The impact of LNPs on plant nutrient uptake was concentration dependent. It was found that at the high concentration, plants treated with LNPs (82±3.1 nm in diameter with a narrow size distribution and a negative zeta potential -51±4.3 mV), had increased uptake of aluminum, copper, sodium, and zinc, and decreased uptake of boron and potassium in the roots. Treatments also had increased sodium and zinc in the stems. Root and stem length, chlorophyll, and biomass of treated plants did not differ significantly from controls. More research is needed to unveil the impact of modified nutrient uptake on the plant health, but the data otherwise supports the potential use of LNPs as agrochemical delivery systems without a negative impact on soybean health.

Keywords: Soybeans, Nanoparticles, Soybeans, Plant Health

*This work was funded by a National Science Foundation grant.

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

EVALUATION OF ADSORPTION KINETICS FOR THE REMOVAL OF MIXED HEAVY METALS BY ALGINATE – NANO COMPOSITE BEADS

Tugba Nur Cevik[a], Cigdem Moral[a*], Ayca Erdem[a]

[a]Akdeniz University

*cigdemmoral@akdeniz.edu.tr

Abstract:

Heavy metals are important pollutants threatening our environment. Wastewaters containing these metals should be considered with special attention owing to their toxicity and bioac-cumulation tendency. Various treatment methods are available for discharges having heavy metals. Adsorption is the one which is effective, economic and easy to apply. However, there have been still limitations on real scale applications and investigations on composite adsorbents constructed by different materials are in progress. Alginate is a polysaccharide known its ability to capture heavy metals. To improve its adsorption efficiency, alginate is investigated by combining other potential materials such as activated carbon, zeolites, etc for heavy metal removal. In this study, nanometal oxides (Al2O3, ZnO and ZrO2) are selected for this purpose due to their high surface area. Alginate – nano composite beads were formed by using Ca2+ as crosslinking ion and then subjected to mixed heavy metals (Pb2+, Cu2+, Cd2+) treatment in batch reactors. Kinetic of adsorption process was followed during 48 hours at pH 5 and 30 °C under constant stirring at 150 rpm and time dependent samples were analyzed by ICP – OES. Results showed that adsorption rates of the heavy metals were higher at the beginning of experiments probably due to lots of available sites on the adsor-bent for heavy metal uptake and then slowed down. Pb2+ was found to be the most preferred ion for adsorption compared to the others. The data were also tried to be modeled by using commonly used mathematical equations such as pseudo first order, pseudo second order and Elovich. According to the correlation coefficients obtained from these equations, pseudo second order was the most suitable tool for modeling adsorption of these heavy metals by alginate – nano composite beads.

Keywords: Biopolymer, Cadmium, Copper, Lead, Nano Oxides

[*]*This study is supported by Akdeniz University Scientific Research Project Commission (FBA-2018-4058).*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

SYNTHESIS AND CHARACTERIZATION OF BIOLOGICALLY ACTIVE BENZIMIDAZOLE BRIDGED TETRANUCLEAR ARENE RUTHENIUM ASSEMBLIES

Ersin Orhan[a*], Nilufer Oksuz[a]

[a]Duzce University

*ersinorhan@duzce.edu.tr

Abstract:

Organometallic compounds are used in cancer treatments, especially platinum-based drugs. Besides, organometallic compounds are also important for different catalytic reactions such as strong catalytic agents and polymerization. In recent years, ruthenium compounds have been potentially used as an alternative to platinum-based drugs. Ruthenium is less toxic than platinum; is part of the iron family;has several biologically compatible oxidation states, and prefer to adopt an octahedral geometry. This work, it was carried out on the synthesis of potentially tetranuclear arene ruthenium, compounds containing benzimidazole ring which may be effective on ovarian cancer.

In this study, tetranuclear arene ruthenium compounds containing a benzimidazole ring were synthesized. Spectroscopic methods such as1 H, 13C and MS were detected.

Keywords: Arene Ruthenium, Benzimidazole Bridged, Tetranuclear, Metalla Assemblies

[*]This project is supported by Duzce University Research Fund Project Number: 2017.05.03.600

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

THE R-NEAR TOPOLOGICAL STRUCTURES ON NEAR APPROXIMATION SPACES

Serkan Atmaca[a*]

[a]Sivas Cumhuriyet Universitesi

*seatmaca@cumhuriyet.edu.tr

Abstract:

Although the concept of nearness is mentioned earlier in the literature, the concept of near set was first given by J. Peters in 2007 under the title "Near sets of special theory about nearness of objects". In this article, Peters constructed the near approximation space with the indiscernibility relation that he created with the help of functions which give the common features of the objects. Following this article, many researchers have applied this new set theory to various areas of mathematics. One of these areas is the topology which is one of the important branches of mathematics. The r-near topology in a near approximation space is obtained by transforming the topology on an X-set into new set families by the indiscernibility relation. As a result of this process, different r-near open sets are obtained which are weaker than the existing open sets. In this study, the topological properties and concepts of r-near topologies which are converted from a topology on X which is in near approximation space by indiscernibility relation.

Keywords: Near Sets, R-Near Topologies, Topology

[*]This work is supported by the Scientific Research Project Fund of Sivas Cumhuriyet University under the project number F-600.

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

BIOLOGICALLY ACTIVE DIAZAPHENANTHRENE TETRANUCLEAR ARENE RUTHENIUM METALLA RECTANGLES: SYNTHESIS AND STRUCTURE

Ersin Orhan[a*], Busra Sari[a]

[a]Duzce University

*ersinorhan@duzce.edu.tr

Abstract:

Ovarian cancer is one of the leading causes of cancer-related deaths in women worldwide. Chemotherapy is the most widely used treatment for cancer treatment. However, this technique has certain limitations, such as the lack of selectivity that causes the drug to kill healthy cells and therefore cause undesirable side effects (fatigue, nausea, etc.). The insufficiency of platinum-resistant tumors led to the search for alternative agents to solve this disadvantage. Since then, other transition metals complexes have been designed as an alternative to cisplatin. Among these candidates aren ruthenium derivatives stand out. In recent years, a number of anticancer ruthenium compounds have been reported in some well known complex clinical trials. The mechanism of action of ruthenium complexes seems to be different from the platinum drugs used in the clinic, and many are not yet known. However, some mechanisms have been proposed for the anticancer activity of ruthenium complexes, such as interaction with DNA, interaction with proteins, production of reactive oxygen species, and inhibition of topoisomerase. In recent years, compounds have been pointed out to the pharmacophore diazaphenanthrene moieties due to the identification of metastatic cancer cell migration and the inhibition of several diazaphenanthrene precursor compounds which exhibit antiproliferative activity. Therefore, in this study, we combined a diazaphenanthrene ligand and a p-cymene ruthenium unit to produce a series of organometallic compounds with significant antitumor activity using the synthetic directionality advantage. Structure analyzes were performed by spectroscopic methods (1H, 13C and MS).

Keywords: Arene Ruthenium Complex, Organometallic Compounds, Biological Activity.

*This project is supported by Duzce University Research Fund Project Number: 2017.05.03.600

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

A DECISION FRAMEWORK FOR SUSTAINABILITY ASSESSMENT OF ENERGY GENERATION TECHNOLOGIES IN INDIA

Manju Pandey[a*], Akshay Hinduja[b]

[a]National Instiitute Of Technology Raipur
[b]Nit,Raipur

*manjutiwa@gmail.com

Abstract:

Sustainability of energy sources have a major concern among the researchers and environmentalist across the world. Due to rapid growth of population, increasing economic developments, and rising living standard, the demand of energy has been escalating in India. However, the energy sources in India energy sector are mainly based on fossil fuels, which emit harmful gases and byproducts in the environment. Its consequences can easily be observed on climate. Besides, these resources are limited, and may be completely depleted in few decades. A balanced approach is required to solve the issue of environmental degradation as well as to supply expanding demand of energy. Deployment of sustainable energy sources can be one solution to this adverse situation as it prevents the environment from pollution as well as preserves the natural resources. The objective of this paper is to introduce a decision framework that prioritizes the sustainability indicators as well as evaluates the energy generation technologies for sustainability. The framework comprises three phases, identification of sustainability criteria and indicators, prioritization of sustainability indicator, and sustainability assessment of energy generation technologies. The paper identified 20 indicators and classified them into five criteria. The prioritization and evaluation phases encompasses intuitionistic fuzzy analytic hierarchy approach that effectively handles the uncertainty and hesitancy in the experts' opinions. The paper also adapted a case study to illustrate the working of the assessment framework.

Keywords: Sustainable Energy, Sustainability Assessment, Multi Criteria Decision Making, Intuitionistic Fuzzy Analytic Hierarchy Process

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

CIRCULAR STATISTICS OF IN-EVENT DATES AND TIMES OF AMBULANCE SERVICE

Adnan Karaibrahimoglu[a*]

[a]Suleyman Demirel University, Faculty Of Medicine, Biostatistics & Medical Informatics Dept

*adnankaraibrahim@gmail.com

Abstract:

Circular data, which indicate direction or cyclical time, are characterized by an inherent periodicity absent from measurements made on a linear scale. It can be of great interest to biologists, geographers, and social scientists. It is fundamentally different from linear data due to its periodic nature (0◦ = 360◦). Circular data arises in a large variety of research fields. The most fundamental question that can be asked of a sample of circular data is whether it suggests that the underlying population is uniformly distributed around the circle, or whether it is concentrated around at least one preferred direction. The aim of this study was to analyze the departure and arrival times of ambulances in case of first aid events in Konya, Turkey during 2013. The dataset consisted of in-event information of ambulance service such as departure and arrival date and time, intervention time, ICD codes, intervention type, treatment, covered distance, event place. The analyses were performed by ORIANA 4.0 software for circular statistics. Descriptive circular statistics were calculated, the variables were checked by von Mises distribution and rose plots were sketched. There were totally 133,953 events in one year, and 0.54% (n=725) of them were occupational accidents. The most frequent month for events was August for both genders and the hour was between 16:42 and 17:18. The most frequent months for occupational accidents were January and September, and the hour was between 13:50 and 15:16. The circular statistics is important for directional data and should be used to analyze when the dependent variable is the date, time, angle or direction. Today, many basic statistical analyses such as descriptive, distribution, comparison, correlation etc. for circular data can be performed easily.

Keywords: Occupational Accident, Ambulance Service, Circular Statistics, Rose Plot

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

EFFECT OF CELGRAD 2400 AND 2500 SUPPORTED MEMBRANE LAYERS ON THE TRANSPORT EFFICIENCY

Hamza Korkmaz Alpoguz[a*], Canan Onac[a]

[a]Pamukkale University

*hkalpoguz@pau.edu.tr

Abstract:

In this study, the transport efficiency of Cr(VI) was investigated by using polymeric supported liquid membrane. Porosity, pore diameter and thickness are the important properties of the support material. For this purpose, we studied the effect of Celgrad 2400 and Celgrad 2500 membrane support layers on the transport process. The kinetic values of rate constant (k), flow (J), permeability coefficient (P), and recovery factor (%RF) were calculated. The kinetic results that obtained from the experiments performed under the optimum conditions for both support layers indicated that Celgrad 2500 support layer had better transport efficiency than Celgrad 2400. It was used the Danesi mass transfer model to calculate the permeability coefficients for each studied parameter. The removal of Cr(VI) was achieved by using a calixarene derivative as a carrier ligand in the membrane phase. The Celgrad 2500 provided a good separation for the removal of Cr(VI) through polymeric supported liquid membrane.

Keywords: Polymeric Supported Liquid Membrane, Transport, Kinetic

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

DETERMINATION OF NON-LINEAR LAYER COEFFICIENTS USED IN FLEXIBLE PAVEMENT DESIGN BASED ON THE RESILIENT MODULUS

Murat Bostancioglu[a*]

[a]Sivas Cumhuriyet University

*bostancioglu@cumhuriyet.edu.tr

Abstract:

The mechanistic-empirical flexible pavement design method is frequently studied by researchers in recent years. In this method, the responses (stress and strain) of pavement layers under a wheel loading are calculated by the principles of mechanics.

Obtained horizontal tensile strain under the asphalt concrete layer is used for fatigue criteria and the vertical compressive strain on the subgrade is for rutting. The number of load repetitions induces rutting and fatigue failure is associated with the strain values by empirical formulas.

In the solution of the mechanical problem, the modeling of the materials used in the layers is an important issue that affects the results. While the surface layers can be defined as linear elastic, the granular layers and the fine-grained subgrade are defined as non-linear by a varying resilient modulus due to the varying stress.

Turkey General Directorate of Highways considers a regression-based empirical method (AASHTO-93) for designing flexible pavement. Resilient modulus of layers can be calculated by the results of soil tests empirically in AASHTO-93 method.

In this study, the determination of nonlinear coefficients of granular layers and subgrade by using resilient modulus values was investigated. Effects of the layer coefficients on the pavement design are also evaluated.

Keywords: Mechanistic-Empirical Design, Flexible Pavement, Non-Linear Coefficients, Fatigue

[*]This work is supported by the Scientific Research Project Fund of Sivas Cumhuriyet University under the project number M-753

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

REGENERATED POLYMERIC MEMBRANE BY NANOMATERIALS AND TRANSPORT STUDIES OF CR(VI)

Canan Onac[a*], Hamza Korkmaz Alpoguz[a]

[a]Pamukkale University

*conac@pau.edu.tr

Abstract:

A new generation of carbon nanomaterials is the most important ingredients that affect the membrane performance in the production of nano-reinforced membranes. Nanomaterials improve the mechanical properties, flux, permeability and stability of the polymeric membranes so we used graphene oxide by synthesizing the membranes in this research. We obtained higher permeability, stability and kinetic values on the transport studies. In this study, we regenerated the polymeric membrane by graphene oxide and use for the transport of Chromium (VI). Chromium (VI) one of the most toxic metal in the environment according to the World Health Organization. For this purpose; we focused on the transport of Cr (VI) in this study. The membrane performance and structure of regenerated polymeric membrane optimized separately. The transport of Cr(VI) was achieved over 90% under optimized conditions from the donor to the acceptor phase through polymeric membrane by regenerating graphane oxide which incremented the features of polymeric membrane.

Keywords: Nanomaterial, Transport, Polymeric Membrane

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

INVESTIGATING THE CARBON FOOTPRINT DUE TO TRACTOR AND FERTILIZER USE DURING ORGANIC AND CONVENTIONAL VEGETABLE PRODUCTION IN PALAS, KAYSERI

Merve Temizyurek Arslan[a*], Evrim Karacetin[a]

[a]Erciyes University

*mtemizyurek@erciyes.edu.tr

Abstract:

Agriculture appears to be the second biggest economic sector releasing greenhouse gasses according to the 2014 IPCC report. Although there is a perception that organic farming is more environmentally friendly, many studies claim otherwise and individual farming techniques influence the emissions more.

In this study we concentrated on vegetable production in Palas Plain, Kayseri, Turkey. We made surveys with 14 organic and 18 conventional vegetable producers in 2016.

In this paper we evaluated the direct and indirect greenhouse emission differences on conventional and organic farming practices only due to tractor and fertilizer use.

The amount of energy per hectare of agricultural land was 468 GJ/ha (SE: 75.78) for organic farming and 365 GJ/ha (SE: 60.91) for conventional farming due to tractor using. There was no significant difference between the energy consumed by tractor use (p= 0.55, n= 32) and the amount of fertilizer used (p= 0.087, n= 32). CO2 equivalent values of emissions from organic and conventional areas were 97 tons CO2-eq/ha (SE:15.70) and 76 tons CO2-eq/ha (SE:12.66), respectively.

There was no difference between the organic and conventional farming on the carbon emissions levels (p=0.55, n=32) but the difference was on individual practices including fertilizer type and the amount of time tractor used.

Keywords: Carbon Footprint, Agriculture, Organic Farming, Vegetable Production

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

SUSTAINABLE AND CLEANER TEXTILE PRODUCTION: REDUCING CONSUMPTIONS AND EMISSIONS IN A TEXTILE MILL BY APPLICATION OF BEST AVAILABLE TECHNIQUES

Emrah Ozturk[a*], Mustafa Karaboyaci[b], Mehmet Kitis[c]

[a]Isparta University Of Applied Sciences, Department Of Env. Protection Technologies
[b]Suleyman Demirel University, Department Of Chemical Engineering
[c]Suleyman Demirel University, Department Of Environmental Engineering

*emrahozturk@sdu.edu.tr

Abstract:
A cleaner production study was carried out in a textile mill which mainly includes woven and knitted cotton fabric dyeing-finishing. According to cleaner production application methodology, basic production and auxiliary processes were defined in terms of inputs (raw material, water, energy, steam, chemicals etc.) and outputs (wastewater, emissions, wastes etc.) by detailed onsite investigations and data collection/analysis. Specific amounts of inputs and outputs were calculated according to mass and energy balances. In addition, a chemical inventory study for all chemicals (dyestuffs and auxiliary chemicals) used in the mill was carried out. In this context, material safety data sheets (MSDS) of a total of 198 chemicals were investigated for biodegradability and toxicity aspects. A total of 25 chemicals (10 auxiliary and 15 dyestuffs) was proposed to be replaced by the environmentally friendly substitutes. Raw groundwater and softened water (process water) samples were collected at different periods and analyzed in terms of pH, conductivity, total dissolved solids (TDS), hardness, iron, sulfate, total organic carbon (TOC), and total nitrogen (TN) parameters. Thus, the performance of water softening system was evaluated. In addition, wastewater samples were collected at different periods from various wastewater generation points and composite wastewater and these samples were analyzed in terms of pH, conductivity, chemical oxygen demand (COD), total suspended solids (TSS), color, and other parameters. Wastewater reuse possibilities with or without treatment were evaluated. Besides, potential savings and reductions were calculated by comparing the specific consumption values of the mill with those reported in the European Commission (EC) Integrated Pollution Prevention and Control (IPPC), Textile Sector Best Available Techniques (BAT) Reference document (BREF) and literature (data from similar textile mills). Consequently, a total of 13 BATs was determined working with mill management, technical staff and experts by employing a systematic and analytic decision making method. These BAT suggestions include establishment of sustainable and cleaner production policy in the mill, monitoring of all process inputs and outputs in terms of amounts and qualities, avoiding overflow and unnecessary rinsing, optimization of water softening unit, reuse of suitable process wastewaters, reduction of flotte ratios in jet dyeing machines, chemical substitutions, improving coordination among dyehouse and laboratory, optimization of dyeing recipes, use of more energy efficient lighting equipment, preheating of combustion air and feedwater in steam boilers, and installation of automatic chemical dosing system. After the implementation of these BATs in the mill, the following reductions can be potentially achieved; 40-45% in water consumption, 19-26% in energy consumption, 26-36% in chemical consumption, 44-51% in wastewater amounts, 52-72% in wastewater COD load, 24-27% in waste gas emissions, and 13-20% in solid wastes. It was found that potential payback periods of these BATs may range from 4 to 36 months.

Keywords: Best Available Techniques, Chemical, Cleaner Production, Energy, Reduction, Saving, Textile, Water

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

ON SOME MINKOWSKI TYPE INEQUALITIES

Merve Esra Yildirim[a*], Nuh Durna[a]

[a]Cumhuriyet University

*mesra@cumhuriyet.edu.tr

Abstract:

Recently, a number of scientist in the field of mathematics have introduced different results about the fractional derivatives and integrals such as Riemann-Liouville fractional derivative, Riemann-Liouville fractional integral operator, Hadamard integral operator, Saigo fractional integral operator and some other, and applied them to some well-known inequalities with applications. In this work, we will provide the some Minkowski's inequalities by means of the generalized fractional integral operators. Firstly, we mention about the generalized fractional integrals of a function with respect to the another function which generalizes different types of fractional integrals, including Riemann-Lioville fractional, Hadamard fractional integrals, Katugampola fractional integral and many others. The remaining part of the study we obtain the new Minkowski fractional integral inequalities. Within this context, we provide new upper bounds of inequalities utilizing generalized fractional integral operators and show and state other inequalities related to this fractional integral operator. Also in the end of the study, we will establish reverse Minkowski inequality by using the generalized fractional integral operator.

Keywords: Minkowsk's Ineqiuality, Fractional Integral Operator

[*]*This work is supported by the Scientific Research Project Fund of Sivas Cumhuriyet University under the project number F-590.*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

NECESSARY AND SUFFICIENT CONDITION FOR THE BOUNDEDNESS OF THE GENERALIZED FRACTIONAL INTEGRAL OPERATOR

Merve Esra Yildirim[a*]

[a]Cumhuriyet University

*mesra@cumhuriyet.edu.tr

Abstract:

Multilinear analysis is considered as a very useful research area in studying harmonic analysis, geometric functions theory and single valued functions theory. Recently, fractional calculus in complex domains has confirmed excellent enforcements in the geometric function theory. The idiomatic of fractional operators and their generalizations have been applied in recognizing, for example, distortion inequalities, coefficient estimates, the characterization properties and convolution structures for different subclasses of analytic functions and the doings in the research monographs.

In this note will be generalized the some fractional integral operators in the unit disk based on non-isotropic distance and multi linear distinct. It is well known that the families of integral operators with positive kernels have many applications in different problems, in the theory of differantial equation, harmonic analysis etc.

In this study will be studied the boundedness of this fractional integral operator on some spaces defined on the open unit disk such as Morrey space and its extension. Also in this study, sufficient and necessary conditions for the parameters of these gaps will be obtained.

Keywords: Fractional Integral,B-Distance, Non-Isotropic Distance.

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

FIRE AND EXPLOSION RISKS MITIGATION IN PETROCHEMICAL PLANTS, CASE OF THE GL1K PLANT

Mounira Rouainia[a*], Salwa Bekhouche[a], Mohamed Salah Medjram[a]

[a]University 20 Août 1955- Skikda Algeria

*rouainia_m@yahoo.fr

Abstract:

The oil and gas industry is a theater of major accidents such as fire, explosion, dispersion of toxic substances, etc. The physicochemical properties of exploited materials in this industry and its operating techniques can contribute to the escalation of these hazards. The aim of this study is to analyse and mitigate the fire and explosion hazards of liquefaction natural gas in Algeria as long as this later plays an important role in gas industry and global energy markets in the next several years. The first step used in this study is the hazard identification using HAZID tool. This step is completed by DOW's F&EI as a second step to predict and quantify mathematically the fire and explosion damages in the Scrub Column and the MCHE the most critical systems in the LNG unit. Results will reveal that the two principal equipments of liquefaction unit (Scrub Column- MCHE) present an important risk as per HAZID and they present a severe risk as per DOW's F&EI. The combination of HAZID, DOW's F&EI, and PHAST simulator leads to better risk assessment, and helps in creating preventive measures, and taking decisions to achieve the mitigation of fire and explosion risks in the considered petrochemical plant.

Keywords: Fire And Explosion Risks, Petrochemical Plants, Natural Gas Liquefaction Process, Hazard Identificatio, Fire And Explosion Inde

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

ENVIRONMENT-FRIENDLY HYDROGELS FOR UREA ABSORPTION AND DESORPTION

Duygu Alpaslan[a], Tuba Ersen Dudu[a], Selahattin Gultekin[a*], Nahit Aktas[a]

[a]Van Yuzuncu Yil Universitesi, Muhendislik Fakultesi, Kimya Muhendisligi Bolumu

*sgultekin@uskudar.edu.tr

Abstract:

Novel type hydrogel based on the N, N-Dimethylacrylamide (DMAAm) was synthesized via redox polymerization in aqueous solution. Hydrogel characterization was performed by Dynamic Swelling Degree (S), Thermal Gravimetric Analysis (TGA) and Fourier-Transform Infrared Spectroscopy (FTIR). In addition, this hydrogel was also used to remove urea from wastewaters and recover it again. Under optimum conditions, the maximum urea absorption amount by the hydrogel was 66 mg/g. Finally, urea release behaviors from hydrogel was also determined in different pHs from 2 to 12 at room temperature. p(DMAAm) exhibited the highest percent cumulative urea release of 62.2 % at pH 6 within 8 days and beyond, the release rate of urea hydrogel became very slow at the six different of pHs. The urea release kinetics were determined by widely used equations such as zero-order, first-order, Higuchi and Korsmeyer-Peppas. The results showed that urea release kinetics followed the Korsmeyer-Peppas model. Urea release occurs through the mechanism of anomalous transport which combines Fickian diffusion and polymer relaxation.

Keywords: N, N-Dimethylacrylamide, Hydrogel, Absorption, Release Kinetics, Desorption

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

ANALYSIS OF MAGNETIC PROPERTIES OF A GEOTHERMAL SITE AND A CASE STUDY

Cagatay Pamukcu[a*], Oya Pamukcu[b], Ayca Cirmik[b]

[a]Dokuz Eylul University, Mining Eng. Department
[b]Dokuz Eylul University, Dept. Of Geophysics

*cp35160@gmail.com

Abstract:

The application of geophysical methods is widely used in geothermal fields. Due to the fact that Turkey has a large geothermal field derived from geological and tectonic properties and needs of energy, geothermal field research is increasing in many regions. Geophysical searches are aimed at finding the physical parameters of geothermal systems by measurements from the surface. In recent days, many geophysical methods are applied for exploration in geothermal fields. Magnetic research, also known as the investigation of potential fields, examines the changes in the underground physical properties such as magnetization of rocks. Magnetic research helps to identify groundwater reservoirs, geothermal and petroleum sources, mines and faults. Magnetic measurements have an important role in finding areas where magnetization decreases due to thermal activity. In this study, the magnetic properties of a geothermal system and the magnetic data results of the field studies for investigating the geothermal potantial in northern Aegean region were evaluated. There are metamorphic rocks of Sakarya zone, Ezine zone metamorphic rocks, Cetmi ophiolitic melange, upper Oligosen-lower Miocene aged Granitoids, Kucukkuyu formation, Gulpinar formation in and around the study area. The potential geothermal properties of the study area were interpreted by applying data processing techniques to magnetic data of the area containing these rocks.

Keywords: Geothermal Field, Magnetic Measurement, Northern Aegean Region

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

INVESTIGATION OF MUTAGENIC AND ANTIMUTAGENIC EFFECTS OF BLACK MULBERRY'S (MORUS NIGRA L.) FRUIT EXTRACTS

Yusuf Durak[a*], Umran Gunter[a], Ahmet Uysal[a], Erdogan Gunes[a]

[a]Selcuk University

*ydurak53@gmail.com

Abstract:

In this study; mutagenic and antimutagenic effects of Morus nigra L. fruit extracts were investigated by Salmonella / microsome test system. Standard plate incorporation method was applied in the studies. Experiments were performed in the presence and absence of metabolic activation enzymes (S9) on Salmonella typhimurium TA 98 and TA 100 strains. 10000, 5000, 2500, 1000 and 500 µg / plaque doses were used. The possible mutagenic activity of all extracts could not be determined in the presence and absence of S9 enzymes. In this case, antimutagenic activities of extracts against known mutageneses such as sodium azide, 4-nitrophenylenediamine, 2- aminoanthracene and 2-aminofluoresin were investigated at the same doses. Morus nigra L. extract was found to have weak antimutagenic activity (6 %, 4 %, 3 %, 0 %, 0 %) in the presence of S9 on Salmonella typhimurium TA 100 strains at doses of 10000, 5000, 2500, 1000 and 500 µg / plaque. Morus nigra L. fruit extract showed 20 % weakly antimutagenic activity on TA 100 strain at 10000 µg / plaque dose against sodium azide (10 µg / plaque) in the absence of S9 while the other 5000, 2500, 1000 and 500 µg / plaque doses antimutagenic activity was detected at a low rate of 14 %, 5 %, 4 % and 3 % respectively. Morus nigra L. fruit extract showed moderate antimutagenic activity on TA 98 strain at a dose of 10000 µg / plaque versus 4-nitro-o-phenylenediamine (200 µg / plaque) in the absence of S9 but 5000, 2500, 1000 and 500 µg / plaque doses was determined that they had weakly antimutagenic activity at 20 %, 16 %, 8 % and 6 %, respectively. Extracts exhibited 10 % rate as a poor grade antimutagenic activity at a dose of 10000 µg / plaque versus 2-Aminofluorene (200 µg / plaque) in the presence of S9 while 6 %, 10 %, 7 % and 7 % rate as weak antimutagenic activities determined for 5000, 2500, 1000 and 500 µg / plaque. As a result, the black mulberry (Morus nigra L.) fruit extracts were not show any mutagenic activity but showed some different of antimutagenic activity.

Keywords: Morus Nigra L., Ames Test, , Mutagenic And Antimutagenic Activity

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

ACID MINE DRAINAGE TREATMENT USING SEQUENTIAL ANAEROBIC AND AEROBIC MEMBRANE BIOREACTORS

Erkan Sahinkaya[a*], Ece Isler[b], Zeynep Tayran[b], Ahmet Sahin[b], Adem Yurtsever[c], Ozgur Aktas[a]

[a]Department Of Bioengineering, Istanbul Medeniyet University, 34700, Istanbul, Turkey
[b]Environmental And Energy Systems Engineering Program, Istanbul Medeniyet University
[c]Department Of Civil Engineering, Hasan Kalyoncu University, 27410 Gaziantep, Turkey

*erkansahinkaya@gmail.com

Abstract:

Sequential anaerobic and aerobic membrane bioreactors were operated for the treatment of synthetic acid mine drainage (AMD) containing As, Fe, Cu, Zn, Ni, Co and Mn. The influent sulfate and COD concentrations were kept constant, except otherwise stated, at 2000 mg/L and 1500 mg/L, corresponding to COD/sulfate ratio of 0.75. Heavy metal concentrations in the synthetic AMD was increased steadily and finally reached 300 mg/L Fe, 100 mg/L Cu, 20 mg/L Co, 20 mg/L Mn, 20 mg/L Zn, 10 mg/L Ni and 20 mg/L As. Under steady state conditions COD oxidation and sulfate reduction performances in AnMBR reached >95%. Although feed pH was decreased steadily down to 2.5, alkalinity generation during sulfate reduction increased the permeate pH to neutral values. The sulfide concentration in the AnMBR effluent reached almost 700 mg/L. In the succeeding AeMBR complete sulfide oxidation was observed and the permeate COD concentration was always <20 mg/L. Although high sulfide concentrations hindered the As precipitation as orpiment (As2S3), decreasing its concentration by controlling the organic matter dosage increased As removal performance to around 99%. Other metals, except Mn, almost completely precipitated as their sulfide salts. Addition of metals increased the AnMBR filtration performance since metal precipitates behaved as coagulants. The AnMBR and AeMBR were successfully operated at fluxes of around 10 LMH and 30 LMH, respectively. Especially in the AnMBR, cake formation was the main cause of trans membrane pressure (TMP) increase. The sequential MBRs were operated over 650 days and results illustrated that the process can be effectively used for AMD treatment.

Keywords: Acid Mine Drainage, Anaerobic Membrane Bioreactor, Membrane Bioreactor, Sulfate Reduction, Sulfide Oxidation

[*]This study was funded by The Scientific and Technological Research Council of Turkey (TUBITAK) (Project No: 116Y124).

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

SULFATE REDUCTION PERFORMANCE OF AN ANAEROBIC FLUIDIZED BED MEMBRANE BIOREACTOR (FBMBR) AT AMBIENT TEMPERATURE

Guldenur Oztemur[a], Senem Teksoy Basaran[b*], Adem Yurtsever[c], Erkan Sahinkaya[d]

[a]Environmental And Energy Systems Engineering Program, Istanbul Medeniyet University
[b]Dept. Of Bioengineering, Faculty Of Engineering And Natural Sciences, Istanbul Medeniyet University
[c]Department Of Civil Engineering, Faculty Of Engineering, Hasan Kalyoncu University
[d]Faculty Of Engineering And Natural Sciences, Istanbul Medeniyet University

*senem.teksoy@medeniyet.edu.tr

Abstract:

Sulfate reduction is a promising process for treatment of sulfate rich wastewaters from several industries such as mining, food, pulping and metallurgical industries. Biological treatment using sulfate reducing bacteria (SRB) is a promising alternative as it removes sulfate and acidity simultaneously within a single bioreactor. Furthermore, over the past two decades, considerable progress has been made in membrane bioreactor (MBR) technology worldwide and has become an attractive option for the treatment and reuse of wastewater. Therefore, this study investigated the robustness of novel sulfate reducing-upflow Fluidized Bed Membrane Bioreactor (FBMBR) equipped with PES membrane with 0.02 µm pore size at moderate (room) temperature (~20 °C). The reactor was fed with ethanol (1500–2000 mg/L COD) and sulfate (2000 mg/L) at varying hydraulic retention times (HRTs) and fluxes. For these purposes, the bioreactor was operated at HRTs of 24 h, 12 h, 9 h, 6 h and fluxes between 2.31 – 9.26 L/m2/h (LMH). Throughout the reactor operation, COD removal efficiency was between 75% and 90% and sulfate removal efficiency was over %90. As a result of the sulfidogenic activity in the bioreactor, the effluent pH and alkalinity concentrations averaged 7.8 ± 0.2 and 1864 ± 239 mg CaCO3 /L, respectively. Although the bioreactor was operated at relatively high fluxes, compared to the literature, occasional chemical cleaning was required due to perfect scouring effect of bed material and keeping bacteria attached rather than suspended. In conclusion, studied upflow FBMBR yielded perfect performance for sulfate reduction and proved a promising process for full scale application.

Keywords: Sulfate Reduction, Anaerobic Fluidized Bed Bioreactor, Membrane Filtration

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

MULTI CRITERIA DECISION MAKING MODELS IN EVALUATING ANESTHESIA METHOD IN GASTROINTESTINAL ENDOSCOPY

Gokce Kilic Oger[a*]

[a]Gazi University

*gkilic@gazi.edu.tr

Abstract:

Gastrointestinal endoscopy is a diagnostic procedure in which a flexible fiber optic endoscope is passed into the esophagus, stomach, and upper small intestine–depending on the level at which lesions are anticipated Indications Dyspepsia, persistent N&V, dysphagia–odynophagia, persistent chest pain, caustic ingestion, small intestinal biopsy, follow-up of operations for obesity, surveys for malignancy, sclerotherapy for esophageal varices. Determining convenient Anesthesia technique used in Gastrointestinal endoscopy is a multi criteria decision problem because of the number and types of the criteria. This study is aimed to present Gastrointestinal surgeons's perspective on the relative importance of the criteria of selecting anestegia method for Gastrointestinal endoscopy by utilizing the multi criteria decision making. Evoluation of anestegia methods involves linguistic terms those can be transformed to numerical assesments by Fuzzy Set Theory. Fuzzy Analytic Hierarchy Process (F-AHP) and Fuzzy Technique for Ordering Preference by Similarity to Ideal Solution (F-TOPSIS). F-AHP and F-TOPSIS methods are originated from individual judgments for qualitative factors utilizing the pairwise comparison matrix. This is the first study in which multi criteria decision making tools, F-AHP and F-TOPSIS, are used to evaluate anesthesia methods for Gastrointestinal endoscopy.

Keywords: Gastrointestinal Endoscopy, Anesthesia Methods, Helath Care, Multi Criteria Decision Making, AHP, Topsis

[*]*This Study is supported by ASELSAN*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

GLOBAL FOREIGN TRADE PERFORMANCE OF TURKISH TEXTILE AND CLOTHING SECTOR

Seher Kanat[a*], Turan Atilgan[a]

[a]Ege University, Department Of Textile Engineering

*seher.kanat@ege.edu.tr

Abstract:

Turkish textile and clothing sector has both socially and economically maintained its significance since the foundation of Turkish Republic and even since the last years of Ottoman Empire. The sector directly provides employment to one million people whereas it indirectly creates employment to two million people. Besides, the sector approximately gains 15 billion dollar net currency every year. The average unit export price per kilogram is found to be 1,4 dollar for Turkey whereas it ranges between 13 and 14 dollars with regard to textile and clothing sector. The sector is one of the leading sectors, which create added-value, due to this property.

However, the sectors have also undergone serious alterations and transformation in recent years just as the many fields in the globalizing world. Textile and clothing sector is one of these sectors which have been significantly affected from these alterations and transformation. On the one hand, these alterations and transformation have occurred due to the global rivals and on the other hand, they have existed because of the structural alterations and changes in consumer preferences. Sector demonstrates a production structure which changes from conventional textile products manufacturing to technical textile production and intense innovation and differentiation. Besides, it concentrates on fast fashion products, intense design and branding activities and multi-channel activities with respect to consumer preferences. In addition to these, new rival countries have been appeared instead of classic global rivals. Therefore, these alterations and transformation, which the sector has experienced in global foreign trade during the recent years, would be evaluated in this study and suggestions would be made.

Keywords: Foreign Trade, Turkish Textile And Clothing Sector, Unit Export Price, Net Added-Value

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

A NEW PARADIGM IN CLOTHING SECTOR: MARKETING 3.0

Seher Kanat[a*], Turan Atilgan[a]

[a]Ege University, Department Of Textile Engineering

*seher.kanat@ege.edu.tr

Abstract:

Global and technological improvements have affected the enterprises in many fields as well as marketing field. If the improvements in marketing are analyzed, it can be seen that marketing 1.0 has been evolved to marketing 2.0 and shortly afterwards it is evolved to marketing 3.0. Product focused marketing approach, in which real sector becomes prominent, has been dominated until 1960s. During this period, one-way communication from producer to consumer has been occurred and this communication has aimed to persuade the consumers to believe that product is good. Neither the consumers' desires nor their expectation are taken into consideration. Besides, customer satisfaction, customer loyalty, after sales services and communication with consumers are not taken into account in this period, which is also defined as mass production period. Instead of these, expressing product properties has become prominent during this period. The rivalry between products has substantially given place to the competition between services in 1960s and 1970s. Service quality, quality standards and unconditional customer happiness have determined as the most significant subjects of this period. During this period, the consumers have gained more information about products and brands. Therefore, they have started to compare these products and brands. Consequently, the enterprises have tended towards customer services and customer relations. Products and services have become the same in the later 1990s due to the rapid improvements in technology, internet, digitalization and social media tools. Besides, the consumers have been informed about everything in a short time. Therefore, the enterprises have tended towards new searches. Thus, marketing 3.0 period has begun. In this period, the consumers have started to desire more than good products and services from enterprises. The satisfaction of their spiritual needs has gained more importance rather than the fulfillment of their physical needs. Therefore, the consumers have started to give importance to a product's intangible value, perception, difference, personality and to the gained sense and experience besides its quality, proper price and services. Thus, this new marketing era has also named as experience era. This new era also affects the clothing sector and the enterprises, which operate in this sector, as well as all other sectors and enterprises. On the other hand, Turkish clothing sector both economically and socio-culturally possesses a great significance for national economy. In this context, this study, analyzes the preparation of major Turkish clothing enterprises for this serious alteration and their progress and capabilities in terms of marketing 3.0.

Keywords: Marketing, Marketing 3.0, Clothing Sector, Experience Era

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

DETERMINATION OF TOTAL ATMOSPHERIC DEPOSITION IN AN INDUSTRIAL/ AGRICULTURAL AREA

Asude Hanedar[a], Elcin Gunes[a], Yalcin Gunes[a*], Gul Kaykioglu[a]

[a]Tekirdag Namik Kemal University

*ygunes@nku.edu.tr

Abstract:

Dry and wet deposition processes are among the most important removal mechanisms of gases or aerosols substances in the atmosphere. Wet deposition is defined as the deposition of pollutants from the atmosphere to the soil, plants and water bodies with rain, while dry deposition is defined as the transport of dust or gas particles to the land and water surfaces under suitable meteorological conditions without rain. Total deposition is the sum of wet and dry deposition. The use of fossil fuels for heating purposes, industrial processes, motor vehicles and agricultural activities cause many pollutants to be introduced into the atmosphere. The penetration of these anthropogenic and biogenic pollutants by atmospheric deposition into soil, vegetation or water bodies causes significant effects on ecosystems.

In this study, chemical composition and nutrient loads of total accumulation samples collected during one year at a location, where industry and agriculture are intensive, determined and data obtained were evaluated. The samples were collected weekly between February 2017 and March 2018. In 27 samples, pH, conductivity, hardness, acidity, sulfate, nitrate, ammonia and phosphate values were determined as in the range of; 4,5-6,9; 10,1-83,7 µS/cm; 3-46 mg/L; 4-32 mg/L; 5,5-39,5 mg SO42-/L; 0-3,9 mg NO3-/L; 0,1-2,1 mg NH4+-N /L; 0-0,2 mg PO43--P /L respectively. The results of the analysis were evaluated according to seasonal changes and it was determined that the highest ionic load was in spring months and the lowest values were found in winter months.

In order to determine the nutrient composition, which is carried by total atmospheric deposition to the water bodies in the study area, the accumulation values for inorganic nitrogen and phosphate were calculated. The deposition of nitrate, ammonia and phosphate in samples were 3,2±5,9 kg NO3-/ha-year; 3,5±3,3 kg NH4+-N /ha-year and 0,2±0,4 kg PO4-P/ha-year respectively. The obtained values were compared with the literature and found to be compatible with literature.

Keywords: Dry Deposition, Wet Deposition, Nutrient Loads, Rainwater

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

REMOVAL OF COLOR AND COD FROM BIOLOGICALLY TREATED TEXTILE EFFLUENTS BY COAGULATION-FLOCULATION, FENTON AND PHOTO-OXIDATION (H2O2/UV) METHODS

Elcin Gunes[a], Gul Kaykioglu[a], Yalcin Gunes[a*], Asude Hanedar[a]

[a]Tekirdag Namik Kemal University

*ygunes@nku.edu.tr

Abstract:

The textile industry, one of the fastest growing industries in Turkey, is one of the most polluting sectors of the environment. Although it is possible to treat the wastewater of the textile industry by conventional methods, the applied methods are not successful in color removal. In this study, three different treatment technologies (coagulation-flocculation, Fenton and H2O2/UV) were studied for color and COD removal in wastewater taken from a textile industrial wastewater treatment plant. Wastewater characteristics were as follows pH: 7.8, conductivity: 934 µS/cm, TSS: 50 mg/L, COD: 200 mg/L, color: 226.1 m -1. Optimum operating conditions for these processes have been determined and evaluated in terms color removal.

In the coagulation-flocculation process, FeCl3 was used as the coagulant and the optimum pH was found to be 5 and the optimum Fe3+ dose was found to be 85 mg/L. Color and COD removal rates were 95% and 92% under this conditions. The COD and color removal efficiencies obtained using the Fenton process are 92% and 70%, respectively. The color removal efficiencies in H2O2/UV process with 900 mg/L H2O2 doses resulted in 98% color and 69% COD removal after 135 minutes. The removal rates increased with time and H2O2 doses in H2O2/UVC process. Color and COD values were obtained as 11.3 m-1 and 16 mg/L, 18.1 m-1 and 60 mg/L, 4.5 m-1 and 62 mg/L by coagulation-floculation, Fenton and H2O2/UV methods respectively. Compared to the methods used, coagulation-flocculation can be said to be effective, operable and easy to apply for the removal of color and COD from this textile wastewater.

Keywords: Textile Effluents, Coagulation-Flocculation, Color Removal, Advanced Oxidation

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

DECOLORIZATION OF MALACHITE GREEN FROM AQUEOUS SOLUTION BY H2O2/UV AND PDS/UV PROCESS

Gul Kaykioglu[a*], Elcin Gunes[a], Asude Hanedar[a], Yalcin Gunes[a]

[a]Tekirdag Namik Kemal University

*gkaykioglu@nku.edu.tr

Abstract:

Advanced oxidation processes (AOPs) are efficient and low-cost alternative techniques for treatment of wastewater and effluents. In this study, the decolorization of Malachite Green (MG) dye in aqueous solution by H2O2/UV and persulfate (PDS)/UV processes were investigated. The effects of operating parameters, such as H2O2 (142,5 mg/L-570 mg/L) and PDS dosages (50 mg/L – 125 mg/L) and contact time (0-120 min) were examined. As the H2O2 and PDS doses increased in oxidation experiments, the removal efficiencies were also increased determined due to the increase in hydroxyl and sulfate radical formation. While the removal efficiency obtained with H2O2/UV (142.5 mg/L H2O2) for the initial dye concentration of 25 mg/L was determined as 99.6% (t = 60 min), the removal efficiency obtained by PDS/UV (125 mg/L PDS) for the same initial dye concentration was determined as 90.3% (t = 120 minutes). This difference in removal efficiencies may result from the difference between redox potentials of hydroxyl (HO•, redox potential 2,8 V) and sulfate (SO4•, redox potantial, 2.5V) radicals formed during oxidation.

According to the study, the unit costs of the chemicals used in H2O2/UV and PDS/UV were 0.2375 US $/ton water and 0.0925 US $/ton water, respectively. In order to achieve equilibrium concentration, contact time in PDS/UV was twice higher than H2O2/UV. Accordingly, the cost of UV based on electric energy was calculated as 30 kwh/m3 for H2O2/UV and 60 kwh/m3 for PDS/UV. Considering the unit cost of electricity which is about 0,09 US $/kWh in Turkey, the total cost for H2O2/UV and PDS/UV were determined as 2.9375 US $/ton water and 5.4925 US $/ton water, respectively. In conclusion, although both oxidation processes were very effective in removing MG from aqueous solutions, it was determined that H2O2/UV application could be more advantageous considering the costs and contact time.

Keywords: Advanced Oxidation Processes (Aops), Malachite Green (MG), Hydroxyl Radical, Sulfate Radical, Decolorization, Cost Analysis.

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

AERODYNAMIC OPTIMIZATION OF ROTATING DIFFUSER FOR HORIZONTAL AXIS WIND TURBINE

Safak Dogru[a*], Oktay Yilmaz[a], Ali Can Koyuncuoglu[a]

[a]Yildiz Technical University

*safakdogr@gmail.com

Abstract:

Energy costs are increasing, and environmental pollution is becoming more and more serious all over the world. In recent years, there has been a trend towards renewable energy sources. The use of wind energy, which is a renewable energy source, has gained more importance in recent years. As a result, wind turbine systems, one of the wind power electricity generation techniques, have developed rapidly in the last few decades. This research focused on improving the performance of an experimentally validated conventional horizontal axis wind turbine with an optimum rotating diffuser. In order to understand performance augmentation effects of a rotating diffuser on the wind turbine, the effects of the diffuser design on the increased wind speed and flow quality just around the turbine rotor were investigated by computational fluid dynamics (CFD) analyses. The rotating diffuser is shaped based on an asymmetrical NACA aerofoil. The numerical results have shown that flow quality and the wind speed through the rotating diffuser was greatly influenced by the chord length and angle of attack of the aerofoil used. The design of rotating diffuser is investigated with the response surface optimization method for maximum wind speed with good flow quality around the rotor. In this study, an optimum rotating diffuser with power coefficient well beyond the Betz limit has been developed for a conventional horizontal wind turbine with a rotor diameter of 0.90 m.

Keywords: Wind Turbine, Cfd, Response Surface Optimization, Rotating Diffuser, Betz Limit

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

USE OF ALGINATE-CLINOPTILOLITE BEADS FOR HEAVY METAL REMOVAL IN CONTINUOUS REACTORS: EFFECT OF INITIAL METAL CONCENTRATION

Esra Sultan Baran[a], Cigdem Moral[a*]

[a]Akdeniz University

*cigdemmoral@akdeniz.edu.tr

Abstract:

Heavy metals are crucial pollutants leading toxicity and bioaccumulation in the food chain. There are still unwanted metal discharges without proper treatment from industrial activities, acid mine drainages. Therefore, treatment of heavy metals is required to protect human health and the ecosystem. Adsorption is one of the removal methods with high efficiency and easy handling. Alginate is used as an adsorbent for years due to its ability to capture heavy metals. It is a biopolymer composed of mannuronic and guluronic acids. Since alginate can form 'egg box' structure by guluronic acid monomers with divalent cations, it is mostly utilized in the bead form for wastewater treatment. In this study, a novel adsorbent was formed by immobilizing clinoptilolite (C) in alginate (A) matrix. Clinoptilolite, a natural zeolite, can also be used for heavy metal removal by ion exchange and it has very abundant sources in Turkey. A – C beads (10 g) were tested for multiple heavy metal treatment (Cu2+, Cd2+, and Pb2+) from a synthetic wastewater using an adsorption column at 5 ml/min flowrate. Three different heavy metal concentrations (10, 25 and 50 mg/L) were applied to elucidate the effect of initial metal concentrations. Samples were collected at predetermined times and analyzed by ICP – OES. Results showed that the increase in heavy metal concentration particularly affected Cu2+ and Cd2+ uptake negatively. The highest reduction levels were calculated as 34 and 20 % at 10 mg/L initial concentrations of Cu2+ and Cd2+, respectively. Pb2+ removal, on the other hand, were a little improved and the maximum heavy metal uptake capacity was obtained at 50 mg/L Pb2+ as 238.5 mg Pb2+/g A – C beads. A – C beads seem to be efficient adsorbents especially for Pb2+, however, operating conditions must be considered carefully for mixed heavy metal removal.

Keywords: Adsorption, Biopolymer, Cadmium, Copper, Lead

*This study is supported by Akdeniz University Scientific Research Project Commission (FYL-2017-2948).

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

SCRUTINISING THE REHABILITATION OF FOREST LANDS WHICH ARE DESTROYED BY MINING ACTIVITY ON FOREST OF TURKEY

Kemalettin Ozcelik[a*], Ergun Cetia[b], Hakki Gedik[a]

[a]General Directorate Of Forestry

*kozcelik14@gmail.com

Abstract:

Forests are ecosystems which are symbolizing the interrelation between from the group of biological assets including trees, plants, animals and microorganisms to the physical environment factors including land, air, water, light and temperature. Forests are also indispensable position for living. Since the early ages, forests serve the purpose from food to sheltering for humanbeing. Forest serves to human with its underground and above ground. It is increased the pressure on forest lands with rapid and great industrialization in 19th century. To earn the national economy underground and above ground treasures on forests and put into humankind's service, the place and direct contribution to economy of mine which is the most important natural source is not ignored and become the government policy from 19th century.

There is a destruction on ecologic structure and ecosystem in order to benefit from forests and come out of its current place take the lid off in surface mining. Within this scope, it is possible to rehabilitate the forest land which is destroyed with method and technics compatible with nature. Therefore, if it is possible, it is necessary to determine and repair the problems in all phase from project planning to foundation, management and confinement if not it should be minimised.

In this context, it is studied on rehabilitation services for destruction on forest lands as a result of mining activities.

Keywords: Forests Of Turkey, Rehabilitation, Forest, Mining.

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

MULT-CRITERIA DECISION MAKING MODELS FOR SELECTING LESSONS IN POSTGRADUATE PROGRAMS

Gokce Kilic Oger[a*]

[a]Gazi University

*gkilic@gazi.edu.tr

Abstract:

In modern days education is the key to making a difference from the other employees. Especially postgraduate programs leading to an expert in special issues have a fundamental role. Furthermore, an appropriate postgraduate program which is comprised of a Master and doctorate degree can lend assistance to employees for solving established company problems. In Turkey, a defense industry company, ASELSAN, established a postgraduate program comprised of four Turkish Universities, Middle East Technical University, Gazi University, Istanbul Technical University, and Gebze Technical University. Four postgraduate programs, electrical electronics engineering, mechanical engineering, computer engineering and metallurgical and materials engineering are carried on. ASELSAN Academy aims to solve research, development and administration problems by not only with employees but also using these universities theoretical knowledge. For achieving these consequences lessons taken in the postgraduate programs become crucial. Employees have to solve a multi-criteria decision problem for choosing the postgraduate program lessons. In this study, two multi-criteria decision models are applied to the postgraduate program selecting lessons problem. In this study, AHP and TOPSIS methods are applied to an ASELSAN Academy Postgraduate Program which contains four different Universities and the lessons lecturers are the same organization's employees concurrently. When the project and department employees are working on, pursuit area, the context of the lesson, friends taking the same lesson, Lecturer are the criteria for selecting post graduate lessons are examined. Results Show that multi-criteria decision methods are useful tools for lesson selecting problems.

Keywords: Multi-Criteria Decision Making, Aselsan Academy, Postgraduate Programs, AHP, Lesson Selecting Problem In Postgraduate

[*]*This study is supported by ASELSAN*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

RISK MANAGEMENT IN COMPLEX POWER FACILITIES

Natalija Petrova[a*], Vangel Fustikj[a]

[a]Saints Cyril And Methodius University Of Skopje, Faculty Of Electrical Engineering And It

*npetrova@feit.ukim.edu.mk

Abstract:

The subject of research presented in this paper is development and application of methodologies for managing technical risks in the complex power facilities. The vulnerabilities (threats), the uncertainties and faults of the power facilities and its' equipment, as well as the interruptions in the power system are analyzed. The main objective is defining an convenient methodology for providing the opportunity for analysis and providing acceptable reliability of the technical system, i.e. reducing the number of interruptions to a minimum, optimizing the utilization of the available potential and ensuring safe working procedures. According to the methodology and necessary analyzes, risk management is realized by setting margins that determine the acceptability of risk exposure and reducing the likelihood of occurrence of events that have a potential threat to reduce the reliability of the systems. Furthermore, the methodology of a fault tree and a log events for quantitative risk assessment in the power plants will be applied, as well as the use of the Baes networks for decision making for the treatment of the technical risks. As a result, it is expected that risk management techniques will enable successful management of the risks, faults and activities associated with the identified risks in order to ensure safe and reliable functioning of the plants and facilities as a whole. An overview is given to the operation of the protection and management systems that often reach a high level of specificity as they are affected by the equipment or the characteristics of the plants (substations, power plants, lines) and it is necessary that experts who know the process study them well. In addition, companies that have specific expertise need to quantify and accurately represent them. These risks have economic impact on the performance of companies and therefore their assessment and risk management is of highest necessity.

Keywords: Risk Management, Power Facilities, Faults, Interruptions

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

AN OVERVIEW ABOUT SOFTWARE METRIC TOOLS

Zeynep Behrin Guven Aydin[a*], Ugur Osman Yucel[a], Ruya Samli[b]

[a]Maltepe University
[b]Istanbul University-Cerrahpasa

*zeynepguven@maltepe.edu.tr

Abstract:

Measurement in a software is a basic process applied from the first part to the last part of the Software Development Life Cycle. Since it's impossible to express the quality of the software in an abstract manner objectively, the quality of the software needs to be concretized. In software engineering, measurement is difficult and not precise. However, any measure is better than zero measure. Software Metric Tools are the most basic measurement tools for measuring the quality of software. In this paper software metric tools are explained:

- Understand: A commercial static analysis tool used to measure and analyze source codes written in various programming languages such as Java, C++.
- Sonargraph: A metric tool that identifies and visualizes the dependencies in the software. It's developed using Java and C#.
- FindBugs: By making various analyzes on the existing Java code of the software, it's possible to find common software errors and design flaws automatically in a short time.
- Metrics: An open source plugin on Eclipse and used for measuring software metrics.
- PMD: A program which makes automatic analysis of the existing code and the possible defects and unused repetitive, unccessary code fragments.
- Coverlipse: An open source Eclipse plugin that examines overlap relationships between software code and requirements and test scenarios.
- CheckStyle: A program that helps developers to work in accordance with code writing standarts by making format analysis on existing Java codes.
- SDMetrics: A program that can perform various analysis on UML design documents.
- Coverity: It's a very comprehensive analysis program and works on Java, C++ and C.

Keywords: Software Metric Tools

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

A SURVEY ABOUT OBJECT-ORIENTED SOFTWARE METRICS

Ugur Osman Yucel[a], Zeynep Behrin Guven Aydin[a*], Ruya Samli[b]

[a]Maltepe University
[b]Istanbul University-Cerrahpasa

*zeynepguven@maltepe.edu.tr

Abstract:

In the literature; there are of object-oriented metric sets such as Chidamper&Kemerer, Britoe Abreu and Bansiya & Davis. These metrics include the degree of complexity in a class, the distance of the class to the root of the inheritance, the number of sub-classes directly derived from a class, the number of methods that can be triggered by this object if the methods of an object are invoked, the ratio of visible methods to all methods, the ratio of accessible qualities in all classes defined in the system to all qualifications, the ratio of the number of methods with heritability in all classes defined in the system to the number of all methods, for the class C, the ratio of the different multiform situations to the maximum possible multi-state situations, depth of inheritance tree values of all classes, the measure of similiarity, the number of classes that accept a class as a parameter, the number of derived methods in all classes defined in the system, the ratio of all methods and number of methods of the class. The names of these metrics are as follows:

- Weighted Methods per Class
- Depth of Inheritance Tree
- Number of Children
- Coupling Between Object Classes
- Response for a Class
- Lack of Cohesion in Methods
- Method Hiding Factor
- Attribute Hiding Factor
- Method Inheritance Factor
- Attribute Inheritance Factor
- Polymorphism Factor
- Coupling Factor
- Average Number of Ancestors
- Cohesion Among Methods
- Class Interface Size
- Data Access Metric
- Direct Class Coupling
- Measure Of Aggregation
- Measure of Functional Abstraction
- Number of Methods

Keywords: Software Engineering, Software Metrics

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

INVESTIGATION OF COMPUTER AIDED PROGRAMS IN LANDSCAPE ARCHITECTURE IN A PLANTED DESIGN PROCESS: A CASE STUDY OF DUZCE UNIVERSITY BOTANIC GARDEN

Sertac Kaya[a*], Ezgi Bulbul Kurt[a], Engin Eroglu[a]

[a]Duzce University

*sertackaya88@hotmail.com

Abstract:

Computers are effective in all areas of our life as well as in landscape architecture profession group. With the convenience of computers to our lives, the benefit cannot be ignored. In landscape architecture, traditional presentation techniques are gradually replaced by computer-aided programs.

In this study; The aim of this course is to determine the effects of rapidly developing and developing computer and communication technologies on the landscape architecture design process, especially the importance and necessity of the current two dimensional (2D) and three dimensional (3D) programs in visual presentation techniques, while the advantages and disadvantages of computer technology it is examined. In addition, the difficulties and requirements of visualization technology, landscape and environmental planning has been examined the potential to apply. In the study, presentation techniques (traditional presentation technique or computer aided presentation techniques) and preferred programs used in the design process were evaluated with examples in the Duzce University Botanical Garden field study. Firstly, scientific researches and current applications in the literature have been evaluated and then, in order to get expert opinions, a questionnaire study was conducted for some firms and presentation techniques and the results were evaluated in terms of general and international validity. According to the obtained results, traditional application techniques are introduced in the design phase and presentation techniques and calculation section are used to save time and go to computer aided design phase. Due to the fact that computer programs are more preferred in terms of presentation and ease of use, the botanical garden activities in the campus have been supported by 2D and 3D studies through computer aided programs and re-survey work has been done. According to the results, presentation techniques, aesthetic perception, intelligibility, impressiveness, the visuality of vegetative design has been highlighted and accepted by people more realistic.

Keywords: Landscape Visulation, Landscape Design Planting Design

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

EFFICACY OF ROSEMARY ESSENTIAL OIL AS INSECTICIDES AND ACARICIDES AGAINST THE COWPEA WEEVIL AND TWO-SPOTTED SPIDER MITE

Fatma Nur Elma[a*], Huseyin Cetin[a]

[a]Selcuk University

*fdundar@selcuk.edu.tr

Abstract:

In the backdrop of recent revival of interest in developing plant-based insecticides, the present study was carried out to find an alternative to synthetic compounds currently used in the control of the pest in greenhouse and storehouse. Rosemary (Rosmarinus officinalis L.) is important a medical and aromatic plant, and has antimicrobial, antioxidant, antiviral and anti-cancer. Insecticidal and acaricidal effects of essential oil of rosemary were investigated against the cowpea weevil (Callosobruchus maculatus F.) and two-spotted spider mite (Tetranychus urticae Koch) under laboratory conditions. In the experiments, the adults of two-spotted spider mite and the cowpea weevil were used. Plant essential oil was used in four different concentrations (0.1, 0.05, 0.025, 0.0125% ,w/w) for the cowpea weevil and two different concentration for two-spotted spider mite (0.1, 0.05% ,w/w). Number of two-spotted spider mite mortality was recorded at 24, 48 and 72h; number of the cowpea weevil mortality was recorded at 24, 48 h. Laboratory bioassay results indicated that rosemary essential oil caused that the mortality were increased as concentration and exposure time increased. The corrected mortality rate for twospotted spider mite adults at 0.1% concentration were recorded 50 % at the 72 h. At the same concentration, the corrected mortality for the cowpea weevil was found 46.64% at the 48 h. These results gave new insights into the potential of Rosemary essential oil as a future ingredient of botanical insecticides. However, as we used crude essential oil as the tested material, further studies are needed to isolate and purify the most active compounds that may be effective against pests tested in study.

Keywords: Rosmarinus Officinalis, Tetranychus Urticae, Callosobruchus Maculatus, Essential Oil, Rosemary.

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

DETERMINATION OF SOME PHYSICAL AND CHEMICAL PROPERTIES OF KIWI FRUIT GROWN IN TRABZON REGION DURING DIFFERENT RIPENING PERIODS

Mustafa Otag[a*]

[a]Giresun University

*mustafa.otag@giresun.edu.tr

Abstract:

The aim of this study is to reveal some physical and chemical changes in the structure of a Hayward kiwi cultivar grown in Trabzon region during the ripening period. In order to determine physical properties, titratable acid, pH, total soluble solids (TSS) analyzes were performed, total phenolic content and antioxidant activity analysis were performed to determine changes in chemical properties of fruit during ripening period. The quantification of total phenolics was performed by using the Folin-Ciocalteu spectrophotometric method. Antioxidant activity was examined by 1-diphenyl-2-picrylhydrazyl (DPPH) radical scavenging assay.

As a physical properties, pH, titratable acidity and total soluble solid analysis results were found in range of 3.49-4.02, 3,12% -0.63%, 1.80 -12.00 °Bx, respectively. Total phenolics and DPPH radical scavenging results were found to vary in the range of 408.21 mg GAE /L-110.56 mg GAE/ L, 66.9% - 18.88%, respectively.

The concentration of total soluble solids increased as a result of the conversion of organic acids into sugar in kiwi fruit with the maturation of fruit. The titratable acidity decreased due to the breakdown of organic acids, but an increase in pH was observed due to the decrease in acidity. Reductions in the amount of phenolic compounds were determined by the breakdown of important compounds, for example organic acids. In general, ripe kiwifruits in this study showed lower antioxidant capacities than their unripe counterparts, which might be ascribed to decreases in the total phenolic content during ripening. Antioxidant capacity had a higher linear correlation coefficient with total phenolic contents . The results above suggest that kiwifruits at various maturity stages are a valuable source of phenolics and antioxidants for industrial application and consumer health benefit.

Keywords: Kiwi Fruit, Hayward, Ripening, Total Phenolic, Antioxidant Activity

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

EVALUATION OF PHYSICOCHEMICAL PROPERTIES AND BIOACTIVE COMPOUNDS DURING RIPENING OF GIRESUN SWEET CHERRY (PRUNUS AVIUM L.) VARIETY

Mustafa Otag[a*], Selin Kalkan[a]

[a]Giresun University

*mustafa.otag@giresun.edu.tr

Abstract:

This study was carried out to determine the changes in physicochemical and bioactive properties of Giresun sweet cherry (Prunus avium L.) fruit collected from Piraziz district of Giresun province during ripening. In this study, as a physical properties, the pH value, soluble solids (TSS), titration acidity and color values of the cherry fruit and bioactive properties of the total phenolic content and Antioxidant Activity values were determined by periodically analyzing of fruit during ripening. The quantification of total phenolics was performed by using the Folin-Ciocalteu spectrophotometric method. Antioxidant activity was examined by 1-diphenyl-2-picrylhydrazyl (DPPH) radical scavenging assay. During the ripening of the sweet cherry fruits collected in the harvest of 2017/2018, pH change was 3.56-4.78, total soluble solids 2.50- 15.64%, titratable acidity 0.855-0.3184 g/L, a/b color value 0.08-0.22, total phenolic contents 495.42-641.83 mg GAE/L, antioxidant activity was found in the range of 42.013-58.962 µM trolox /g dw.

The pH change of fresh cherry was determined to increase due to maturation. In parallel with the increase in pH, it was determined that there was a significant decrease in total acidity values. During the ripening of cherry fruit, it was determined that total soluble solids (Bx) values increased due to the enhancement in sugar concentration in the fruit structure. The distinct red color of the cherry is associated with the anthocyanin content. Anthocyanins are water-soluble natural colorants that give a wide range of colors ranging from pink, red, purple and blue to the fruit. Anthocyanins have a strong antioxidant effect as well as their coloring properties. It has been determined that there is a significant increase in antioxidant activity values due to the increase in such phenolic compounds within the cherry fruit.

Keywords: Sweet Cherry, Ripening, Color, Total Phenolics, Antioxidant Activity

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

HEAT TRANSFER AND PRESSURE DROP AUGMENTATION OF A HELICALLY COILED TUBE WITH USING GRAPHENE NANOPLATELET-WATER NANOFLUID

Orhan Keklikcioglu[a*], Toygun Dagdevir[b], Veysel Ozceyhan[b]

[a]Erciyes Universitesi Muhendislik Fak
[b]Erciyes University

*keklikcioglu@erciyes.edu.tr

Abstract:

In the present study, to investigate the effect of GnP-water nanofluid mass fraction on heat transfer and fluid friction characteristics in a helically coiled heat exchanger tube a numerical study is carried out. The impact of various mass fraction (0.5, 0.75, 1.00 %) of GnP-water nanofluid on Nusselt number and friction factor is studied for Reynolds number ranging from 7000 to 13000. The numerical solution procedure includes the investigation of heat transfer and pressure drop characteristics with using finite volume method with the Transition SST model is based on the coupling of the SST k-ω transport equations to solve the continuity, momentum, energy and turbulence equations in three dimensional domain. The use of GnP-water nanofluids with in the coiled heat exchanger tubes leads to increase in heat transfer and pressure drop over the smooth tube. The Nusselt number increases with the increment of the nanofluid concentrations and Reynolds number, and it shows descending trend with the increment of pitch ratio. In conclusion, to enhance heat transfer, Graphene nanoplatelet-water nanofluids can be widely applied wherever helically coiled heat exchangers are used.

Keywords: Graphene Nanoplatelet, Nanofluid, Heat Transfer, Pressure Drop, Helically Coiled Heat Exchanger

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

MULTI-SCALE MODELLING OF MECHANICAL BEHAVIOUR OF GRAPHENE-REINFORCED COMPOSITES

Umut Caliskan[a*], Constantinos Soutis[b]

[a]Erciyes University
[b]The University Of Manchester

*ucaliskan@erciyes.edu.tr

Abstract:

There is both scientific and technical interest in reinforced polymer nanocomposites due to their enhanced physical, thermo-mechanical and electrical properties as compared with neat polymers. Following the discovery of Graphene, much effort has been invested in this area of materials science, characterising their properties and mechanical response by experiments, theoretical modelling and numerical simulations. A multi-scale representative volume element (RVE) for simulating the mechanical behaviour of a graphene-enhanced polymer is proposed in this study. The RVE integrates nanomechanics and continuum mechanics, thus bridging the length scales from the nano- through to macro scale. The mechanical behaviour of both armchair and zigzag graphene is described by a finite element (FE) model based on molecular mechanics. At the graphene sheet and matrix interface a perfect bonding is assumed. The graphene sheet in the analysis is represented by a beam element accounting for its atomic structure. The effect of geometric parameters of graphene platelet on the mechanical response of the nanocomposite RVE is investigated.

Keywords: Graphene, Multi-Scale Analysis, Molecular Mechanics, Representative Volume Element.

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

COLOR REMOVAL IN BIOLOGICAL WASTEWATER TREATMENT SYSTEMS

Amar Cemanovic[a], Abdullah Kizilet[b], Osman Atilla Arikan[a], Ozer Cinar[c*]

[a]Istanbul Technical University
[b]Kahramanmaras Sutcu Imam University
[c]Yildiz Technical University

*ocinar@yildiz.edu.tr

Abstract:

The textile industry is a great producer of colored wastewater due to its high water consumption coupled with low dye retention. Such wastewater is not only esthetically unpleasant, but also prevents light transmission in water bodies, thereby directly affecting photosynthesis in aquatic organisms. Additionally, the dye itself and the chemicals used to improve its retention are highly hazardous for the environment. While conventional municipal wastewater treatment plants can remove only a minor amount of dye, current color removal methods rely mostly on physicochemical processes such as coagulation and ozonation. These processes often offer the required efficiency but are relatively costly and may have undesired side-products. On the other hand, biological treatment offers an alternative that is both economically sound and environmentally friendly, and has been applied successfully to date in small-scale systems. Due to the nature of dye bonds, the most complete treatment is achieved by a combination of anaerobic and aerobic processes. However, further research is needed into the large-scale application of such systems for a complete and sustainable treatment alternative.

Keywords: Color Removal, Textile Wastewater, Biological Treatment, Aerobic Bioreactors, Anaerobic Bioreactors.

Author Amar Ćemanović is supported by Tubitak through the 2215 Graduate Scholarship Programme.

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

UTILIZATION OF EXCESS ACTIVATED SLUDGE AND YEAST RESIDUES AS ALTERNATIVE SUBSTRATE FOR SULFATE REDUCTION

Amine Yucel[a], Tulay Yilmaz[a], Yakup Cakmak[a], Deniz Ucar[a*]

[a]Harran University

*deniz@denizucar.com

Abstract:

Acidic mine drainage are characterized by high sulfate, metal and low pH. Generally, AMD is formed by the reaction of sulfur and metal containing minerals with oxygen and water. In the treatment of AMD, sulfate can be reduced to sulfide in the presence of an electron donor and produced sulfide could be used to precipitate metals in the AMD. In this process, alkalinity is also produced. In the literature ethanol, glucose, lactate, acetate are widely reported. However, in field applications, low cost electron and carbon sources were also used such as sawdust or manure. In this study, anaerobic digested activated sludge and yeast were used as substrate in sulfate reduction process as alternative carbon and electron sources. Excess activated sludge and yeast residues were fed to batch reactors (600 – 1400 mg COD/L equivalent) containing 2000 mg SO42-/L and reduction performances were monitored by means of sulfate reduction, sulfide and alkalinity production. According to reduction performances, activated sludge and yeast residues were fed to continuous sulfidogenic reactors.

Keywords: Excess Activated Sludge, Yeast Residues, Sulfate Reduction

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

THE USE OF PROBIOTICS MICROORGANISMS IN CHEESE

Selin Kalkan[a*]

[a]Giresun University

*selin.kalkan@giresun.edu.tr

Abstract:

Probiotics are live microbial food additives that provide beneficial effects on host health by providing and improving intestinal microbial balance. Probiotic-containing products have become primary choice for the consumer because of their health attributes. Therefore, the market for such products has rapidly grown. Many different strains and species of lactobacilli and bifidobacteria have been used commercially as probiotics. It is well known that Lactobacillus acidophilus has health-promoting effects and antagonistic activity against food-borne disease agents. To date, the most popular food systems used as carriers of probiotic bacterial cultures are fresh fermented products such as yogurt and fermented milk. Cheese may offer certain advantages over yogurt-type products in terms of delivery of viable probiotics, such as the higher pH of the cheese, the higher fat content and more solid consistency of cheese may offer protection to the probiotics in the gastrointestinal tract. In the studies focusing on the expanding probiotic product class, very few researchers and dairy companies have worked on the production of cheese varieties that contain a high number of probiotic cultures. In this review, some examples of the studies on development strategies of probiotic cheese and the inclusion of probiotics in cheese are discussed.

Keywords: Probiotics, Cheese, Dairy Technology

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

SOME OF THE QUALITY PROPERTIES AND BIOACTIVITY OF ORANGE JUICE FERMENTED WITH WATER KEFIR MICROORGANISMS

Selin Kalkan[a*], Mustafa Remzi Otag[a]

[a]Giresun University

*selin.kalkan@giresun.edu.tr

Abstract:

Water kefir is a homemade fermented beverage based on a sucrose solution with fruit extracts. The aim of this work was to explore the use of orange fruit juice as fermentable substrates to develop new non-dairy fermented beverages. Microbiological (total mesophilic aerobic bacteria, total lactic acid bacteria, Lactococcus spp., total yeast and mold and coliform microorganism), chemical (pH, total soluble matter, titration acidity, density) and physical (color) properties of kefir-like beverages obtained after the fermentation of juice extracted from orange cultivated in Turkey with water kefir microorganisms were investigated. Additionally, total phenolic substance and antioxidant properties were determined of fermented beverages samples. The quantification of total phenolicwas performed by using the Folin-Ciocalteu spectrophotometric method. Antioxidant activity was examined by ABTS radical scavenging assay. As results, the pH of fermented sample was found as 4.40±0.21, total soluble matter was 7.50±0.01%, titratable acidity 0.093±0.00 g/L, density was 1.02±0.01, L/a/b color values were44.33±1.16 / 7.84±0.09/ 44.52±0.81, total phenolic contents 92.97±1.34 mg GAE/L and antioxidant activity was of 745.07 µM trolox /g dw. The microorganism concentration of fermented orange juice by using water kefir microorganisms had significantly changed compared to the control group orange juice. The number of total mesophilic aerobic microorganism was determined as 8.79±0.15 log cfu/mL, Lactoccoccus spp. was 8.56±0.37 log cfu/mL, total lactic acid bacteria was 7.67±0.43 log cfu/mL and total yeast and mold were 7.75±0.35 log cfu/mL. Coliform microorganisms have not detected all samples.

Keywords: Water Kefir, Orange Juice, Microbial, Total Phenolics, Antioxidant Activity

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

INVESTIGATION ON THE LOCAL FAILURE MECHANISMS OF AN EXISTING SEVEN-STORY MASONRY STRUCTURE

Baris Gunes[a], Betul Ertekin[a], Baris Sayin[a]

[a]Istanbul University-Cerrahpasa

*barsayin@istanbul.edu.tr

Abstract:

In common earthquake engineering practise, normal, shear and tensile stresses governed on the masonry walls are checked under the seismic loads calculated from the modal analysis of the structure where the maximum excited mass is achieved in the seismic performance assessment procedures. However, various local failure mechanisms may occur under the modes which have lower excited mass ratio until reaching the main collapse mechanism. These mechanisms are directly related to the factors such as the geometry of the structure's layout, rigidity of the masonry walls, connection type of the slabs and distribution of the loads. Notably, these mechanisms become more critical in the medium-rise masonry buildings (having equal and more than four floors) and should be taken into consideration. In this study, kinematic limit analyses were done to investigate the local failure mechanisms that may occur on a seven-storey masonry building. As a result of the analyses, it has been observed that local failure mechanisms were governed far below the predicted loading level. It is emphasised that local failure mechanisms must be considered in the determination of the most appropriate strengthening method for the retrofit of this kind of masonry structures.

Keywords: Masonry Buildings, Kinematic Limit Analyses, Local Failure Mechanisms

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

EVALUATION OF COOLING CHANNEL DESIGN AND COOLANTS OF AN ALUMINIUM ALLOY WHEEL MOLD USING CASTING SIMULATION

Onur Ozaydin[a*], Yigit Catal[a]

[a]Cevher Wheels

*oozaydin@cevherwheels.com

Abstract:

In aluminum alloy wheel low pressure casting molds, cooling conditions during solidification affect the mechanical properties of the wheel directly. One way to foresee the effectiveness of cooling is using a casting simulation. Simulation results e.g rate of solidification, porosity ratio and temperature of the mold and wheel in certain locations can be used to validate aluminium alloy wheel casting process conditions. Also, another very important requirement is to obtain “directional solidification”. Directional solidification is more effective on casting quality than the rate of cooling. During the solidification of aluminium alloy wheels, directional solidification starts on outer flange area, continues toward inner flange area and finishes on spoke and hub areas. Thus, the risk of porosity and shrinkage occurrence is kept at a minimum level. Therefore, cooling channels and coolant utilised should be designed in a way to obtain the directional solidification in a LPDC mold.

In this study, the effects of various cooling channel designs and different coolants i.e. air and water are investigated using a casting simulation. First, currently existing design and coolant are evaluated with a casting simulation. Secondly, various cooling channel designs with higher surface area than the present design are simulated to understand the effects of this higher surface area on solidification conditions, porosity ratio and temperature of mold and the wheel. Both cases are repeated for air and water coolant to see the effects of the coolant on the solidification conditions.

Material flow velocity during mold filling is also examined to check the onset of turbulence flow since turbulence may have a derogatory effect on casting quality. Fraction liquid and fraction solid parameters are evaluated to better understand solidification phases. Micro porosity and macro porosity results are examined to predict casting defects. Considering the steps above the best cooling channel design and coolant are obtained to get a directed solidification and lowest porosity ratio for aluminium alloy wheels.

Keywords: Aluminium Alloy Wheels, Casting Simulation, Coolant, Cooling Channel Design, LPDC.

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

THE INFLUENCE OF LEDS ON THE FATTENING RESULTS IN POULTRY

Sara Dzik[a*], Anna Wolska[a], Tomasz Mituniewicz[a]

[a]University Of Warmia And Mazury In Olsztyn, Department Of Animal Hygiene And Environment

*sara.dzik@uwm.edu.pl

Abstract:

Solar radiation and its artificial sources are necessary to maintain the physiological balance of rearing birds. Poultry producers more and more often use LEDs (light emitting diodes) as a lighting system in poultry houses. LEDs provide monochromatic light in different wavelengths and have many advantages (especially in contrast to standard light sources). It is said that LEDs have the most long-lasting durability among the types of lighting available on the poultry market. What is more, they are ecological and can emit light of different colors. In addition, they do not attract insects and do not heat up. Therefore, LEDs provide the possibility of reducing stress factors for birds.

The aim of the research was to evaluate the influence of LEDs on the fattening results of broiler chickens. The research was carried out in production conditions on a poultry farm located in Pomerania (Poland). Two research groups (control and experimental) were established. The birds were reared for 41 days. White and blue LEDs were installed in the experimental group, whereas in the control group incandescent lighting was used. In both groups it was possible to adjust light intensity. The day and night schedule was unchanged throughout the whole experiment and it consisted of 18 hours of light and 6 hours of night. The evaluation of fattening results was based on: body weight and body weight gain, as well as the European Broiler Index (EBI).

The obtained fattening results expressed in the EBI were characterized by higher values in the experimental group, with a lower mortality level and improved survivability of the chickens.

According to the results, it can be concluded that LEDs are a good alternative to incandescent lamps. They do not decrease production results but at the same time they reduce the costs of lighting and lamp maintenance.

Keywords: Artificial Light Sources, Broiler Chickens, Poultry Houses, Production Results

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

EXAMINATION OF THE EFFECTS OF HEAT TREATMENT SHAPE DISTORTION ON ALUMINIUM ALLOY WHEELS USING FEA

Onur Ozaydin[a*], Yigit Catal[a]

[a]Cevher Wheels

*oozaydin@cevherwheels.com

Abstract:

T6 heat treatment is a widely used process to improve mechanical properties of aluminium alloy wheels. The process consists of three main steps, solutionizing, water quenching and artificial ageing, generally heat treatment is applied to AlSi7Mg alloy wheels only. Wheels produced in this manner have higher yield and tensile strengths in comparison to non-heat-treated wheels. However, heat treatment can also cause shape distortions on the product due to high thermal stresses induced. Distortions not only cause visual and dimensional problems, they may also lead to strength loss due to residual tensile thermal stresses. All these factors may consequently result in failures in fatigue and impact tests, however in this study the effect of residual stresses are omitted.

In this study, before and after heat treatment the surface of a wheel is scanned with a laser scanning system and a point cloud is obtained. This point cloud is then transformed in to a solid body by utilizing reverse engineering methods of a CAD software. In this way the geometry of the same wheel can be examined before and after heat treatment and distortional effects can be visualized.

In the simulation phase wheel geometries obtained before and after heat treatment are subjected to cornering fatigue and impact test using FEA software and the results are compared to see the effect of geometrical distortions.

Keywords: Aluminium Alloy Wheels, Cornering Fatigue Test Simulation, Distortion, Impact Test Simulation

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

OPTIMAL DESIGN OF SHELL AND TUBE HEAT EXCHANGER BY USING NET SAVING AND SAVING COST RATIO OBJECTIVES IN WASTE HEAT RECOVERY SYSTEM

Ibrahim Kaya[a], Yasin Ust[a*]

[a]Yildiz Technical University

*ustyasin@gmail.com

Abstract:

This study presents an optimal design of the shell and tube heat exchanger used for an example case in waste heat recovery system (WHRS) according to multi objective functions using two different optimization methods. The optimization methods are genetic algorithm and univariate search method. By this way, accuracy of the methods will be compared each other. The decision variables in the optimization, namely design parameters, are number of shell, length of tube, number of tube, baffle spacing ratio, tube pitch ratio, tube inner diameter, tube angle, tube arrangement and hot fluid side. The constraints in the optimization are the pressure losses on both sides and the bounds on the design parameters. Objective functions in the optimization are money saved (saving) from waste energy and saving – cost ratio. Finally, the effects of lost exergy cost on the design parameters will be examined towards the end of this study.

Keywords: Energy, Waste Heat Recovery, Heat Exchanger Optimization, Shell And Tube Heat Exchanger, Thermo – Economy

[*]*"This study is supported by Turkish Academy of Sciences"*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

EXERGETIC PERFORMANCE ANALYSIS TO COMPARE OF TWO DIFFERENT OXY FUEL COMBUSTION POWER PLANT

Yasin Ust[a*], Ibrahim Ozsari[a*]

[a]Yildiz Technical University

*ustyasin@gmail.com

Abstract:

The carbon capture storage (CCS) and oxy fuel combustion systems become more important due to global warming with the trends of green energy solutions. Oxy-fuel combustion is the process of burning a fuel using pure oxygen instead of air as the primary oxidant. In this article, exergetic performances of two different oxy-fuel combustion power plants have been investigated. These are Clean Energy System (CES) Cycle and MATIANT Cycle. Different fuel kinds have been used in CES cycle and MATIANT Cycle to investigate the energetic and exergetic performances. Temperature, pressure, specific enthalpy, specific entropy and specific exergy of each state points have been determined for each cycles. Also, the net power, exergy destruction and exergy efficiency of the components such as Compressors, Combustion Chamber, Turbines, Recuperator, Condenser and Pumps have been presented. The results demonstrate that one cycle is advantageous in terms of energy but disadvantageous in terms of exergy destruction.

Keywords: Exergy, Oxy Fuel Combustion Cycle, Thermodynamic Analysis, Zero Emission

[*]*"This study is supported by Turkish Academy of Sciences"*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

OPTIMUM NUMBER OF TRANSFORMERS ON A HIGH VOLTAGE ELECTRICITY DISTRIBUTION SYSTEM FOR THE MINIMUM PAYBACK TIME OR THE MAXIMUM NET BENEFIT AT THE END OF SERVICE LIFE

Ersan Guray[a*], Pinar Atak Aktas[b], Sirri Sunay Gurleyuk[b]

[a]Civil Eng./Fac. Of Engineering/Mugla Sitki Kocman University
[b]Electrical Electronics Eng./Fac. Of Engineering/Mugla Sitki Kocman University

*ers.guray@gmail.com

Abstract:

Electricity is required to be distributed on networks. In this study, a high voltage line is considered to be studied for the cost analysis and the feasibility. Costs of the number of the identical transformers, the size of cables and the number of electric poles are processed with the net gain and the power loss of the system to construct a relationship of net benefit and time in terms of years. The optimum number of transformers is decided for a specific pair of grid length and power demand.

Keywords: Electricity Distribution System, Transformer, Optimization

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

ADAPTIVE SYNTHETIC SAMPLING APPROACH FOR ORTHOPEDIC DISEASES CLASSIFICATION

Abdulkadir Gumuscu[a*], Mehmet Seyhanli[a]

[a]Harran University

*agumuscu@harran.edu.tr

Abstract:

Data classification is now widely used in many areas. In the data classification, the equal distribution of sample numbers according to the classes is very important. However, in some cases the classes in the data set do not have equal distribution. In such cases, classification success parameters are negatively affected. As a solution to this problem, new synthetic data samples are generated. In this study, the unbalanced data set in the orthopedic patients classification was discussed. In this study, orthopedic patient data set was classified and adaptive synthetic sampling approach method has been applied to orthopedic disease classification problem. The data set has 310 samples, 210 of which are abnormal and 100 of them belong to the normal class. After applying the Adaptive Synthetic Sampling Approach method to this data set, Support Vector Machine and k-nearest neighborhood classification methods were applied. In this way, the effect of generating synthetic data was observed. When the results were examined, it was observed that the success parameters were affected positively by the generating of synthetic data.

Keywords: Adaptive Synthetic Sampling, Synthetic Data, Classification

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

EFFECT OF BORIDING COMPOSITION ON THE FORMATION OF BORIDE LAYER IN CARBON STEEL

Ilyas Turkmen[a*], Emre Yalamac[a], Gorkem Gurkan[a], Adem Korkmaz[a], Gozde Terzi[a]

[a]Manisa Celal Bayar University

*ilyas.turkmen@cbu.edu.tr

Abstract:

Boriding is one of the diffusion-based thermochemical surface treatments which is generally applied to improve the surface properties of metal alloys. Boriding composition which is used in powder-pack boriding process constitutes from various powders such as boron source, activator and diluent. In this study, SAE 1020 steel samples were borided at 850oC for 4 h by powder-pack boriding method with 4 different boriding compositions. These boriding compositions include boric acid (H3BO3) or disodium octaborate (Na2B8O13) as boron source, potassium tetrafluoroborate (KBF4) or sodium tetrafluoroborate (NaBF4) as activator, silicon carbide (SiC) as diluent were prepared and used for boriding processes. After boriding processes, thickness and morphology of the boride layers were examined by an optical microscope. Formation of a single-phase (Fe2B) boride layer with saw-tooth morphology was observed in all samples. XRD analysis was carried out to identify the present phases in the boride layers. As a consequence of XRD analysis, it was determined that boride layers had a single phase (Fe2B) structure. Microhardness measurements were performed from the cross section of the samples. Thus, the hardness values of the boride layer, transition zone and matrix were measured. It was determined that the surface hardness of the steel samples increased by boriding process. Wear tests were performed by ball on disc type wear tester at room temperature and under dry sliding conditions. Coefficient of friction graph was drawn for each sample and the wear rates were calculated. It was specified that wear rate values of borided samples was lower than that of unborided samples.

Keywords: Boriding, Boriding Composition, SAE 1020, Boride Layer, Characterization, Wear Test

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

NOVEL SOIL CONDITIONER AND NUTRIENT CARRIER FROM HYDROGELS FOR AGRICULTURAL PURPOSES

Duygu Alpaslan[a*], Tuba Ersen Dudu[a], Nahit Aktas[a]

[a]Van Yuzuncu Yil University

*alpaslanduygu@hotmail.com

Abstract:

In this study, the copolymer hydrogel was synthesized as a soil conditioner to diminish soil water loss and increase crop yield. poly(N,N-Dimethylacrylamide-co-Agar) (p(DMAAm-co-Agar) crosslinked copolymer was prepared by using redox polymerization technique. Then p(DMAAm-co-Agar) surface was modified by NaOH and was named p(DMAAm-co-Agar)/NaOH. In accordance with the intended use; Swelling behaviors at different water types (such as pure water, well water, tap water, dam water or different pH values) were investigated. Fourier Transform Infrared (FTIR) Spectroscopy and Thermogravimetric analyses (TGA) were performed to verify both the thermal properties and bond structures of the prepared copolymer hydrogel. Moreover, the effects of the concentration, temperature, and pH on the nitrogen adsorption were investigated. It was observed that the nitrogen was adsorbed significantly on the prepared hydrogel. Adsorption thermodynamics and adsorption isotherm were the methods investigated. In the experimental study, Langmuir isotherm was well fitted to experimental data and the adsorption of nitrogen was found to be dependent on the solution's pH, temperature and concentration. As a result, the amount of nitrogen adsorbed onto the copolymer hydrogel was 11.1-106.9 mg g-1.

Keywords: Copolymer Hydrogel, Modification, Adsorption, Urea.

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

AUTOMATIC CARDIOTOCOGRAPHY ANALYSIS WITH MACHINE LEARNING TECHNIQUES

Mehmet Emin Tenekeci[a*]

[a]Harran University

*etenekeci@harran.edu.tr

Abstract:

Cardiotocography is a signal obtained by recording uterine contractions and fetal heart rate and giving information about fetus health. These signals are examined manually by a specialist for determination of health status. It will be more objective to perform the software automatically with the software in order to minimize the errors that may occur in manual inspection. In this study, machine learning algorithms were used to determine whether the fetus was healthy or unhealthy from the parameters calculated with Sis Porto 2.0 software. There were 2126 sample records for train and testing models in the study. 1655 of these records were healthy, 295 were suspicious and 176 were abnormal. There are 21 attributes for each record. Decision trees, support vector machines and the nearest neighborhood algorithm are used for estimation. The accuracy of the study was tested with 5-fold cross verification. In the experiments, it was seen that the decision trees were more successful than the other methods with the accuracy value of 98.6% for 3 classes and all data. In addition, the decision tree has achieved 100% success in the new data set created by correction of unbalanced data and remove suspicious samples from the data set.

Keywords: Cardiotocography, Fetus Status Detection, Machine Learning Algorithms

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

ESTIMATION OF SEMEN QUALITY BY MACHINE LEARNING METHODS

Kerim Karadag[a*]

[a]Harran University

*k.karadag@harran.edu.tr

Abstract:

Infertility is a reproductive health problem for whatever reason the cause. Disruption of sperm function is one of the most important causes of male infertility. Another factor of infertility is semen quality and sperm immobility. Life habits and environmental factors affect the quality of semen in humans and reduce the fertility rate. Semen analysis is a good indicator of male fertility potential. In this study, semen samples were obtained from 100 subjects and normal and modified semen estimation was performed by using the data set formed according to the results of the survey. The estimation process was evaluated in two stages. First, the whole data set was used and the success rate was 90%. Then the success rate has been 75% by equalizing the data set. Forecasting process was made using machine learning methods.

Keywords: Semen Quality; Machine Learning Methods; Estimation

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

IMPORTANCE OF RISK MANAGEMENT IN UNDERGROUND CONSTRUCTION PROJECTS

Cagatay Pamukcu[a*]

[a]Dokuz Eylul University, Mining Eng. Department

*cp35160@gmail.com

Abstract:

Risk management is a vital part of project management, which is generally overlooked, right through from concept to completion. The success of a project depends to a great extent on identification of all possible risks, correct management, and regular review throughout the life of an underground construction project. The initial part of this study highlights the importance of a holistic or systems approach to project management, which encompasses the identification, analysis, and management of risks that are likely to affect a project through its life-cycle, and discusses causes of project failures arising from poor risk management. Then, systematic methods are given for identifying, analysing, ranking, and managing the risks, and the risk modelling, a useful tool in the analysis, is explained in a manner that is easy to understand, and to apply to underground projects. The paper also gives a few useful strategies to improve the risk management process, which are certain to produce results, and yet require minimal effort and cost for implementation and deals with risks common to underground construction projects, and gives examples of risk analysis.

The aim of this study is to create an awareness of significance of risk management for construction projects including underground construction, the need for adopting systems approach, and, most importantly, to remove the perception that risk management is a complicated process that always warrants the involvement of related specialists.

Keywords: Risk Management, Project, Underground Construction.

*-

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

INVESTIGATION OF PREDICTIVE PERFORMANCE OF LSTM ARTIFICIAL NEURAL NETWORKS ON BROWNIAN TIME SERIES

Ismail Kirbas[a*]

[a]Mehmet Akif Ersoy University

*ismailkirbas@mehmetakif.edu.tr

Abstract:

The data sets that the data changes over time are called time series. Time series analysis is used in a wide area ranging from biomedical, agricultural, energy systems to forecasting and predicting of financial markets. In time series analysis, data must be measured over time at consistent intervals to identify patterns that form trends, cycles, and seasonal variances.

In order to make successful predictions in time series analysis, it is important and difficult to determine the relationships between the data. If this association can be formulated correctly, it is possible to estimate future values by looking at historical data.

The Long Short Term Memory (LSTM) approach, which constitutes the subject of our study, can produce successful results in estimation of sequential data. In order to examine the performance of LSTM models in different data sets, three different Brownian time series were produced in our study and multi-step estimations were made for these time series. The python keras library and matlab software were used to create the LSTM model. MSE and R parameters were used to compare model performances and the obtained values were examined in detail.

Keywords: LSTM, Brownian Times Series, Prediction, Forecasting, Multi-Step Forcasting, Artificial Neural Networks

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

THE EFFECTS OF CARVACROL AND ORIGANUM SYRIACUM L. ESSENTIAL OIL ON IN VITRO RUMEN DIGESTIBILITY, RUMEN PROTOZOA NUMBER AND METHANE PRODUCTION

Ercument Onel[a*], Taylan Aksu[b], Kanber Kara[c], Devrim Saripinar Aksu[a]

[a]Hatay Mustafa Kemal University
[b]Yuzuncu Yil University
[c]Erciyes University

*ercumentonel@gmail.com

Abstract:

Besides its negative impact on the environment, production of methane gas from ruminal fermantation, causes loss of the feed energy taken by feeds and metabolized in the rumen about 2-12%. As rumen modulator, the use of essential oils and/or active component of plant extracts are becoming widespread in reducing rumen methane emissions. In the present study, the effect of pure carvacrol, and Abraham Zahter (Origanum syriacum L.)(OS) which is grown in the Mediterranean region on in vitro rumen digestibility and methane production were investigated.

At the beginning of flowering, Origanum syriacum L. samples were collected and extracted by water distillation. The main components of the essantial oil extracted from the plants were γ-terpinene (21.89%), thymol (19.38%), carvacrol (19.23%), p-cymene (17.90%). Pure carvacrol (60mg / L) and Origanum syriacum L. essential oil (40, 60, and 80mg/L, respectively) were added to rumen liquid gas production tests.

It was determined that both treatments reduced the production of rumen volatile fatty acids and ammonia nitrogen (NH3-N); did not affect the total gas and methane production in vitro.

In conclusion, there is a need for studies to determine dose and active substance interaction in the comparison of pure active ingredients and essential oil extracts of plant extracts as rumen modulators.

Keywords: Active Component, Essantial Oil, Methane Production, Protozoa

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

BIOREDUCTION OF NITRATE AND PERCHLORATE IN THIOSULFATE BASED BATCH BIOREACTORS

Tulay Yilmaz[a], Amine Yucel[a], Erkan Sahinkaya[b], Deniz Ucar[a*]

[a]Harran University
[b]Istanbul Medeniyet University

*deniz@denizucar.com

Abstract:

Perchlorate (ClO4-) is salts derived from perchloric acid. Although formed by natural processes, perchlorate on earth is mainly produced commercially. Due to its low adsorption properties, it can easily reach to groundwater. Nitrate, on the other hand, is one of the most common pollutants and the most important sources of nitrate are domestic and industrial wastewater discharged without the use of agricultural fertilizers and nutrient removal. Nitrate causes a disease known as methemoglobinemia, which is characterized by higher than normal level of methemoglobin in blood (hemoglobin [Fe2+] instead of nitrate oxidized methemoglobin [Fe3+]). For these reasons, studies are carried out on the simultaneous removal of both pollutants. In this context present study aimed at investigating simultaneous reduction of nitrate and perchlorate in thiosulfate based denitrifying batch reactors. In this context a laboratory-scale 50 ml reactors were used to investigate the performance of 50 mg NO3--N/L reduction at varying perchlorate concentrations (50-2000 µg/L). The reactors were operated for 72 hours and regularly analyzed for nitrite, nitrate, perchlorate and sulfate. For all reactors, at the end of the 12th hour, high nitrate removal rates independent from influent perchlorate (over 90%) were observed. At the end of 24th hour, nitrate was completely removed in all reactors. Perchlorate in the reactors containing up to 50-300 µg/L and 500-1000 µg/L were completely removed within 48 and 72 hours, respectively. Sulfate was produced as a result of thiosulfate based denitrification and its concentration was varied between 512-792 mg SO42-/L.

Keywords: Perchlorate Reduction, Nitrate Reduction, Thiosulfate, Autotrophic Denitrification

**This study was supported by TUBITAK (Project No: 117Y014)*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

IN VITRO STUDY OF THE EFFECTIVENESS OF NATURAL ESSENTIAL OILS AGAINST ORNITHOBACTERIUM RHINOTRACHEALE ISOLATED FROM FARM TURKEYS

Joanna Żebrowska[a*], Dorota Witkowska[a]

[a]University Of Warmia And Mazury In Olsztyn

*j.zebrowska90@gmail.com

Abstract:

Ornithobacterium rhinotracheale (ORT) is a widespread gram-negative rod which can cause poultry respiratory diseases. The use of etheral oils could be an alternative solution to minimize the problem of microbial contamination, including pathogenic bacteria in poultry farms. The aim of this study was to evaluate the effect of natural essential oils on the sensitivity of Ornithobacterium rhinotracheale isolated from farm turkeys.Antibacterial activity of 9 different concentrations (from 1.5% to 20%) of selected 14 essential oils was investigated. The oils were diluted in distilled water with the addition of emulsifier and their activities were evaluated by disk diffusion method, microdilution method and well method. 10 replicates were made for each dilution and each oil. The highest antibacterial activity (+++) was observed in case of thyme, clove, cinnamon and geranium oils. Ornithobacterium rhinotracheale bacteria was less sensitive (+ or ++) to peppermint, melissa, lavender, anise, basil and tea tree oils. In the case of rosemary, eucalyptus, orange and lemon oils any susceptibility of the ORT bacteria was observed. Aqueous solutions of selected essential oils in appropriate concentrations inhibit the growth of Ornithobacterium rhinotracheale. In view of the growing drug resistance of these bacteria and the difficulties in their elimination in poultry farms, the use of effective essential oils in antimicrobial therapy seems to be fully justified, prompting us to continue research on the sensitivity of pathogenic bacteria to essential oils.

Keywords: Essential Oils, Antimicrobial Properties, Poultry

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

"THE AFFECTION OF CONCRETE RECYCLING TECHNOLOGY AND ACHIEVING SUSTAINABILITY IN CONSTRUCTION."

Lameess Said Abdulqadir[a*]

[a]Yarmouk University

*lamisabdelkader@hotmail.com

Abstract:

Because of the global impacts of environmental issues, there is a general orientation for sustainable development to overcome these issues in all sectors around the world. It is common knowledge that construction is not environmentally friendly, so the recycling of building waste is very effective in improving this problem and it offers many advantages:

- Reduced demand for new resources.
- Reduction of associated transport and production expenses.
- Reducing the area of landfills.

The waste resulting from the construction and demolition processes represents 10 to 15 percent of the total waste in the developed countries. [1], Waste from construction and demolition includes concrete, bricks, wood, glass, insulating materials, ceilings, wires, pipes, gravel and dust. Concrete is the most common waste and constitutes about 50 percent of the total waste [2]. In this research the possibility of recycling the concrete will be explored.

Keywords: Concrete, Recycling Concrete, Recycling Technology, Construction Sustainability, Environmental Friendly.

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

SPECIES LIST OF ZERCONID MITES (ACARI: MESOSTIGMATA: ZERCONIDAE) OF CZECH REPUBLIC

Mehmet Karaca[a*], Rasit Urhan[a]

[a]Pamukkale University

*m.karaca_86@hotmail.com

Abstract:

Introduction: Mites of the family Zerconidae are important members of soil mesofauna in the Holarctic region. Species of this family are free-living predators and their diets include eggs, larvae and immature stages of other mites or springtails, and also nematodes. Systematic of zerconid mites are well-studied in Slovakia and former Czechoslovakia. However, today there is no updated species list for zerconid mites in Czech Republic. As a contribution to the knowledge of acarofauna of this country, current species list of the family Zerconidae is presented herein.

Material and Methods: In this paper, species list of zerconid mites of Czech Republic is presented based on two major literature, Halašková (1969) and Mašán & Fenďa (2004). In addition to species diversity, habitat informations were given for each species. Besides, a key and distribution maps to zerconid mites of country were presented.

Results: The family Zerconidae is currenly reperesented by 4 genera (Mixozercon, Parazercon, Prozercon and Zercon), and 22 species in Czech Republic. Most of species are similar to Zerconidae fauna of Slovakia. So far, zerconid mites have been reported from the following regions in the country: basins (Eger, Pilsen), Central-Bohemian Hill Country, forests (Bohemian, Bohemian Central, Foreland of Giant, Giant, Orlice, Rychleby, Oder, Moravian-Silesian Beskydy), plateaus (Křivoklát-Radeč, Prague, Jevany), Bohemian Karst, Sázava Valley, Elbe Lowland, Bohemian Paradise, highlands (Třebová, Bohemian-Moravian), Hlučin Hillocks, hills (Chřiby, Pavlov) and Lower Moravian Dale.

Keywords: Zerconid Mites, Habitat, Distribution Maps, Key, Czech Republic.

[*]This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

LOAD SHAPING BASED PRIVACY PROTECTION IN SMART GRIDS: AN OVERVIEW

Cihan Emre Kement[a*]

[a]Aselsan As

*cekement@aselsan.com.tr

Abstract:

Fine-grained energy usage data collected by Smart Meters (SM) is one of the key components of the smart grid (SG). While collection of this data enhances efficiency and flexibility of SG, it also poses a serious threat to the privacy of consumers. Through techniques such as non-intrusive load monitoring (NILM), this data can be used to identify the appliances being used, and hence disclose the private life of the consumer. Various methods have been proposed in the literature to preserve the consumer privacy. This paper focuses on load-shaping (LS) methods, which alters the consumption data by means of household amenities in order to ensure privacy. Mathematical models of the LS methods, as well as privacy measures, optimization techniques and household amenities are presented in order to thoroughly analyze the effectiveness and applicability of these methods. Finally, possible research directions related to privacy protection in smart grids are presented.

Keywords: Smart Grid, Privacy, Smart Meters, Advanced Metering Infrastructure, Load Shaping, Battery Load Hiding, Renewable Energy Sources

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

COMPARISON OF SUSTAINABILITY MEASUREMENT METHODS IN COASTAL AREAS

Tuncay Kuleli[a], Seyma Bayazit[b*]

[a]Mugla Sk University, Bodrum Maritime Vocational School
[b]Bandirma Onyedi Eylul University, Maritime Faculty

*sbayazit@bandirma.edu.tr

Abstract:

The coastal zones are the areas where three large ecosystems, land, sea and air ecosystems, are not alone in any of these ecosystems, a rich and easily vulnerable ecosystem specific to coastal areas, and there are many renewable, non-renewable and non-renewable resources available to human beings. Therefore, it has emerged that a new management paradigm / perspective should be created based on the planning / implementation decisions for the sustainable use of resources in the coastal regions, based on indicators / criteria that can be measured changes and the method of how to implement them. However, it is seen that common standards, indicators and criteria are still lacking to monitor the sustainability performance in coastal regions. The essential components of sustainable development are; environmental sustainability, economic sustainability, social sustainability and political sustainability, sustainable development, sustainable development, sustainable development and environmental sustainability. Therefore, indicators / criteria to be used to measure sustainability in coastal areas; Management will be determined under four key indicators: Economic, Environmental Quality and Social Welfare.

In this study; World Environment and Development Commission report titled our Common Future in 1987; European Tourism Indicator System (ETIS), Green Destinations criteria; QualityCoast criteria; Sustainability criteria (Sustain) and Global Sustainable Tourism Council (GSTC) criteria are compared. As a result, similarities and differences in the criteria developed for measuring sustainability in coastal areas have been identified.

Keywords: Coastal Zone Management, Sustainable Development

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

PHYSICAL PARAMETERS OF CRUISE PORT IDENTITY

Seyma Bayazit[a*], Tuncay Kuleli[b]

[a]Bandirma Onyedi Eylul Universitesi, Maritime Faculty
[b]Mugla Sk University, Bodrum Maritime Vocational School

*sbayazit@bandirma.edu.tr

Abstract:

In this study, port identity was examined for cruise ports. The port identity which was pointed out in the literature before due to its importance for cruise port-destination development. However; any common definition for the port identity in cruise related literature has not been found according to a deep-peer literature review. It is derived from desk-study based investigation, despite identity concept defined in different studies with different points of view it consist of two main components: physical (tangible) and intangible components. Within this respect, the aim of this research is to determine physical parameters which form the port identity for any cruise port. To do this, cruise tourism characteristics, identity literature and author's observations were utilized. As a result, destination points-of-interest (POIs) and tourism-based maritime transportation characteristics give 10 main parameters which form cruise port idenity such as natural places, endemic places, land network connections, touristic information desks. Using those defined parameters, the port identity was defined and determined for a real cruise port-destination named Bodrum Cruise Port where located in the Eagean-Med Coast of Turkey.

Keywords: Cruise, Port Identity, Cruise Port Destination Development

[*]This work is supported by Scientific Research Project Coordination Unit of Bandirma Onyedi Eylul University (BANU).

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

EFFECT OF HEAT TREATMENT ON MG-DOPED HYDROXYAPATITE POWDERS

Fatih Sargin[a*], Kursat Kanbur[a], Ahmet Turk[a]

[a]Metallurgical And Materials Engineering, Manisa Celal Bayar University

*fatih.sargin@cbu.edu.tr

Abstract:

Hydroxyapatite (HA) is a well-known Ca-P based biomaterial that used in orthopedic and traumatologic applications due to some of its excellent properties such as biocompatibility, similar chemical composition to natural bone and bioactivity. Ion substitution of HA is an emerging application which is used to improve HA's properties such as, dissolution rate, stability, antibacterial behavior and osteoconductivity. It is well known that Mg substitution to HA lattice improves mineralization of bone tissues, stimulation of osteoblast proliferation and dissolution rate. In this study, Mg-doped HA powders were produced and their heat treatment behaviors investigated at 700, 900 and 1100 °C temperatures. SEM images and EDX measurements were performed for morphological and chemical analysis. Also XRD and FTIR measurements were performed to understand phase structure and crystallinity of Mg-doped powders. Results showed that with the increasing heat treatment temperature crystallinity of powders increased and formation of tricalcium phosphate (TCP) phase observed.

Keywords: Biomaterials, Hydroxyapatite, Ion Substitution

his study supported by Manisa Celal Bayar University Scientific Committee Project 2016-037.

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

SYNTHESIS AND CHARACTERIZATIONOF THE AG AND CU DOPED HYDROXYAPATITE

Ahmet Turk[a*], Fatih Sargin[a], Kursat Kanbur[a], Solen Akdemir[a], Ilyas Turkmen[a]

[a]Metallurgical And Materials Engineering, Manisa Celal Bayar University

*ahmet.turk@cbu.edu.tr

Abstract:

Hydroxyapatite (HA) is a well-known biocompatible and bioactive ceramic material which is widely used as a bone implant material. Besides the advantages of hydroxyapatite implants, one of the main problems is infection formation in implants after the implantation surgery. An emerging solution for this problem is, producing ion doped hydroxyapatite powders by using metallic ions such as Ag and Cu which shows antimicrobial properties at the implantation site and noncytotoxic behavior at low concentrations. In this study, Ag and Cu doped hydroxyapatite powders were produced by chemical precipitation method and heat treated at 700°C in order to obtain a more crystalline phase. Doped powders were then characterized by XRD, FTIR and EDX analyzes. Obtained results showed that metal ions successfully doped into the hydroxyapatite structure without affecting phase structure of the powders

Keywords: Biomaterials, Hydroxyapatite, Ion Substitution

[*]This study supported by Manisa Celal Bayar University Scientific Committee Project 2016-037.

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

DETERMINATION OF THE SEASONAL CHANGES ON TOTAL FATTY ACID COMPOSITION OF CYPRINUS CARPIO (L., 1758) IN CAVUSCU LAKE

Leyla Kalyoncu[a*]

[a]Science Faculty, Selcuk University, Konya, Turkey

*lkalyoncu@selcuk.edu.tr

Abstract:

Aim of the study: In this study, the effect of seasonal changes of total fatty acid composition of Cyprinus carpio which lives in Cavuscu Lake, Konya, was investigated by gas chromatographic method. The main objective of this study was to measure the muscle fatty acid composition and SFA, MUFA, PUFA ratio of Cyprinus carpio.

Material and Methods: Cyprinus carpio used in this study were obtained from Cavuscu Lake. Three individuals were sampled. At the beginning of each analysis, the samples were allowed to equilibrate to room temperature, ground and homogenized in chloroform/methanol mixture (2/1, v/v). Ten gram of muscle sample were extracted. FAMEs were analyzed on a HP (Hewlett Packard) Agilent 6890N model gas chromatograph (GC), equipped with a flame ionization detector (FID) and fitted to a HP-88 capillary column (100 m, 0.25 mm i.d. and 0.2 µm). Injector and detector temperatures were 240 ºC and 250 ºC, respectively. The oven was programmed at 160 ºC initial temperature and 2 min. initial time. Carrier gas was helium (1 ml/min) used.

Results: Palmitic acid (C16:0), oleic acid (C18:1 ω9), docosahexaenoic acid (C22:6ω3) and stearic acid (C18:0) identified as the primary fatty acid constituents. PUFA (20.74%) in the spring was detected to be lower than SFA and MUFA. The contents of eicosapentaenoic acid (C20:5ω3) and C22:6ω3 in total fatty acid in the carp ranged from 6.46% (autumn) to 3.40% (spring) and from 7.02% (autumn) to 5.19% (spring), respectively. ω3/ω6 ratios are 1.20-1.40(%) in autumn and spring respectively. Cyprinus carpio may be a valuable nutrient in terms of PUFA especially in spring and ω3/ω6 ratios for human consumption.

Keywords: Cyprinus Carpio, Fatty Acid Composition.

[*]This study is supported by Scientific Activities Support Program of Selcuk University"

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

ESTIMATION OF TRAFFIC PARAMETERS IN TURKEY USING WITH GRAY PREDICTION METHOD

Mahmut Aytekin[a], Bekir Aktas[b*]

[a]Kilis 7 Aralik University
[b]Erciyes University

*baktas@erciyes.edu.tr

Abstract:

Traffic accidents on highways are one of the most common reason of the deaths and injuries in the world. The World Health Organization (WHO) announced that in 2018, 1,35 million people lost their lives in traffic accidents. In our country, the main transportation is provided by highways and as a result of this, the number of vehicles and traffic accidents are increasing rapidly due to population growth and economic developments. Due to the number of vehicles experienced and the increase in traffic accidents, it has become an inevitable necessity to make future estimations for reducing traffic accident increasing and planning safety in highways. There are many accident estimation methods developed differently in road safety planning and policies. Gray prediction models are simple, adaptable, better able to cope with sudden parameter changes and do not require much data points for forecast updates. In this study, the predictions for the future using the data of traffic accidents and some accident parameters between 2008 and 2017 were made by using Gray Prediction Model GM(1,1) and Rolling Gray Prediction Model RGM(1,1) and the results of the estimation methods were tested by using performance tests.

Keywords: GM(1,1), Gray Systems, Gray Prediction, Rolling Gray Prediction, Traffic Accident Data

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

IMPACT OF ANNEALING TREATMENT ON GLASS/GAN/INGAN FILMS PRODUCED BY TVA

Erman Erdogan[a*]

[a]Electrical & Electronics Engineering, Faculty Of Engineering And Architecture, Mus Alparslan University

*e.erdogan@alparslan.edu.tr

Abstract:

In this study, GaN/InGaN semiconductor films were deposited on glass substrate using thermionic vacuum arc (TVA) method. In order to improve some physical properties of the produced films, thermal annealing was performed at different temperatures and the effect of annealing temperature on the optical and surface properties of the films was investigated. Transmittance and absorption spectra were taken using a UV-VIS spectrophotometer and optical energy band gaps were determined. The surface images and surface roughness values of the films were examined using atomic force microscopy (AFM). As a result of the annealing process, it was determined that the transmittance of the films decreased with the effect of the annealing and the edge of the band deteriorated and the absorption band edge values of the film increase with annealing temperature until 400°C. It has been also observed that films with annealing temperature decrease in optical energy band gaps until the annealing temperature of 300°C, then increase again. It was found that the effect of the annealing process decreased the surface roughness of the GaN/InGaN films and the smoothness of the surfaces accordingly. As a result, it has been determined that the optical and surface properties of GaN/InGaN films change depending on the thermal annealing. Finally, some physical properties of GaN/InGaN films were improved by thermal annealing and these films were investigated for use in various technological fields.

Keywords: Gan/Ingan, Optical Characteristics, Thermionic Vacuum Arc (TVA), Annealing, Surface Morphology

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

ON THE USE OF HUMAN BODY MODELS IN WIRELESS CAPSULE ENDOSCOPY LOCALIZATION BASED ON ULTRA WIDE BAND SIGNALING

Memduh Suveren[a*], Muzaffer Kanaan[a]

[a]Erciyes University

*msuveren@erciyes.edu.tr

Abstract:

Wireless Capsule Endoscopy (WCE) is a relatively pain-free medical imaging technique, especially in the small-intestine region of the human body. Many diseases of the gastro-intestinal (GI) tract, such as Crohn's disease, can be easily diagnosed with WCE. The recent trend is towards evolving WCE devices as remotely controllable devices, particularly with a view to replacing traditional colonoscopy (which is a more painful form of imaging the GI tract). An important problem in this space is the localization of the capsule endoscope inside the body, as this enables the medical specialist to make a more accurate diagnosis in an easier manner. In this study, we have obtained the estimation positions of the WCE capsule in the small intestine using the RSS based algorithm, sensors placed on the human body model and software that makes electromagnetic simulations. We have reached a total of 25.5 mm RMS distance estimation error in 3 axes.

Keywords: Wireless Capsule Endoscopy, In-Body Localization, Rss

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

OPTIMIZATION OF COATING PROCESS PARAMETERS FOR COLOR DIFFERENCE OF DENIM FABRICS ABRADED BY FLEXING AND ABRASION METHOD

Sumeyye Ustuntag[a*], Munevver Ertek Avci[b], Huseyin Gazi Turksoy[a]

[a]Erciyes University, Engineering Faculty, Department Of Textile Engineering
[b]Calik Denim R&D Center

*sumeyyeustuntag@erciyes.edu.tr

Abstract:

The present study is aimed on optimizing the various coating process parameters for the color difference of denim fabrics after abraded with Flexing and Abrasion Method, using Taguchi method. In accordance with this aim, five coating parameters, namely, squeeze pressure, the viscosity of the coating fluid, the fabric passing speed and drying temperature and weft density were identified for the present investigation. Each parameter was investigated at three levels and L27 the orthogonal array table was chosen to determine experimental plan. After determining the control factors and their levels, three denim fabric samples were manufactured with 3/1 Z twill structure by Calik Denim A.S. Depending on the Taguchi experiment design, the coating of the denim fabrics was applied by the Rotary Screen Coating Method. Color difference was evaluated with Flexing and Abrasion instrument according to ASTM D 3885 standard. Samples prepared according to the relevant standard were abraded only in weft direction with 4 repetitions at 500 cycles. The color differences of the abraded fabrics were determined with the Minolta CM 3600D model spectrophotometer.

As a result of the study, an optimum parameter combination for the minimum color difference after abrasion was obtained by using the analysis of signal-to-noise (S/N) ratio. Based on the S/N ratio, the optimum levels of the coating parameters for color difference are 17 picks/cm weft density, 160 °C drying temperature, 50 dPa.s viscosity, 3 bar squeeze pressure, 30 m/min fabric passing speed. The level of importance of the coating parameters is determined by using ANOVA. According to ANOVA method, the highly effective parameters on color difference after abrasion were found as weft density. Moreover, the color difference after abrasion of coated denim fabrics under optimum conditions was found to be decreased 1.62 times.

Keywords: Denim Fabric, Coating, Taguchi Method, Color Difference, Flexing And Abrasion

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

A NEW RECORD OF THE FAMILY ZERCONIDAE (ACARI: MESOSTIGMATA) FROM TURKEY: PROZERCON REKAAE UJVÁRI, 2008

Rasit Urhan[a], Mehmet Karaca[a*], Elif Hilal Duran[a], Busra Aksu[a], Kamil Bilki[a]

[a]Pamukkale University

*m.karaca_86@hotmail.com

Abstract:

Introduction: In Turkey, the family Zerconidae represent by 2 genera (Prozercon and Zercon) and 119 species. Of these, genus Zercon is the most richness genus both in Turkey and the world. Species records of the genus were given from different habitats (mostly from moss and litters of pine, oak and juniper trees) from the country before. In order to reveal Zerconidae fauna of Coastal Aegean Region of Turkey, litter and moss samples which collected from Izmir province were investigated.

Material and Methods: Litters of Quercus (oak) and Pyrus (wild pear) trees, and also moss samples were collected from different habitats in Nebiler village (Dikili county, Izmir province). Samples with mites were put into plastic bags and carried to acarology laboratory of Pamukkale University (Turkey). Then, collected samples were placed into Berlese funnels. During 5-7 days, zerconid mites were separated under stereomicroscope (Nikon SZM 745T). 60 % lactic acid and glycerine were used for cleaning and easier visibility of zerconid mites. Their identifications were made with Olympus SZ51. Lastly, zerconids were labelled and put in stock bottles which contain 70 % alcohol and 1-3 drops glycine.

Results: Among identified zerconid species, 2 male specimens of Prozercon rekaae were found. It was determined that this species reported from Crete island (Greece) before and this is the first record from Turkey. After identification process, different body parts of P. rekaae were measured and drawn. Also, geographic distribution of this species was discussed based on current literatures.

Keywords: Acari, Prozercon Rekaae, Systematic, New Record, Izmir, Turkey.

[*]This study was financially supported by TUBITAK, project number: 118Z101.

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

ANFIS BASED LONGITUDINAL CONTROLLER DESIGN OF A FIXED WING UAV

Saban Ulus[a*], Ikbal Eski[a]

[a]Erciyes University, Engineering Faculty, Mechatronics Enginerring Department

*sabanulus@erciyes.edu.tr

Abstract:

In this study, adaptive neuro-fuzzy inference system called ANFIS structure was investigated for longitudinal control of a fixed wing unmanned aerial vehicle (UAV). ANFIS control is one of the modern control techniques which is based on artificial neural networks (ANN) and the structure of the system is based on Takagi-Sugeno fuzzy inference system. In this conference paper, ANFIS control method was studied in order to design a longitudinal controller architecture of a fixed wing UAV. Reference model and aerodynamic parameter values of the UAV were obtained from the literature for this specific UAV model. According to simulation data taken from PID controller structure in MATLAB, ANFIS training and testing data were obtained and trained data were used for longitudinal aircraft dynamics such as pitch attitude hold characteristics. Hybrid and back-propagation optimization algorithms were applied to have optimum training performance. ANFIS structure was also simulated together with PI and PID controllers in Simulink. In this analysis, results have been satisfying in terms studies of the fixed wing UAV control.

Keywords: ANFIS, Fixed Wing UAV, Longitudinal Control , PID, Pitch Attitude.

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

GEAR FAULT MODELLING BY USING ACOUSTIC MEASUREMENTS AND ARTIFICIAL NEURAL NETWORKS

Saban Ulus[a*], Memduh Suveren[b]

[a]Erciyes University
[b]Erciyes University, Engineering Faculty, Mechatronics Enginerring Department

*sabanulus@erciyes.edu.tr

Abstract:

Rotating machine elements in mechanical systems such as gears and bearings have a major impact to maintain machine power transmission and machine working life in a healthy situation. Some mechanical failures including cracked tooth and pitting faults especially in gears may have a crucial effect on system failure and safety. However, fault condition monitoring (FCM) at rotating machine parts was studied mostly by using classical vibration monitoring in the literature. In this study, acoustic measurement results were obtained experimentally from a single stage gearbox. Experiments were performed by measuring different running speeds, loading conditions and fault characteristics under dry friction conditions of gears. According to results, an artificial neural network (ANN) design for predicting and modelling different possible faults of the system was created. Acoustic results were evaluated by using training data, test data and validation data. This work shows that ANN design represents a good accordance with experimental results and specify predictable information about fault varieties occurred at gearbox.

Keywords: Acoustic, Artificial Neural Networks, Fault Condition Monitoring, Fault Modelling, Gears

[*]This study, (FBA-12-4111 project) is supported by the Scientific Research Projects Coordination Unit of Erciyes University

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

FREE VIBRATION ANALYSIS OF MULTI-CARRIAGES CRANE SYSTEMS WITH FINITE ELEMENT METHOD

Sahin Yildirim[a], Emir Esim[a*]

[a]Erciyes University

*emiresim@erciyes.edu.tr

Abstract:

External factors affecting the mechanical systems that form the basis of engineering systems can cause resonance. For this reason, it is important to know not only the static characteristics of the systems, but also the dynamic characteristics known as free vibration behavior in order to operate the systems under safe and secure conditions. Since natural frequencies are a parameter that is determined by the mass and flexibility of the objects, the evaluation of the crane system should be evaluated not only as a bridge beam, but also as a whole because the elements are in contact with each other. For this reason, according to the situation of different carriage numbers on the crane system, the movement of the structure in the system together with the load and the different positions of the carriages on the bridge, the modal analysis was performed with ANSYS Workbench 18.1 program which can work according to the finite element method. The results obtained were compared and it was observed that the crane system being a bridge carrier did not change the behavior of the system and the natural frequencies, and the car position had no effect in the crane system.

Keywords: Modal Analysis, Multi Carriage Crane, Dynamic Analysis, Free Vibration Analysis

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

HARMONIC RESPONCE ANALYSIS OF DOUBLE BRIDGE CRANE SYSTEM ON MULTI CARRIGES

Sahin Yildirim[a], Emir Esim[a*]

[a]Erciyes University

*emiresim@erciyes.edu.tr

Abstract:

In crane systems, force changes occur in ropes especially when the load is lifted. Considering these forces, one approach using harmonic response to analyze the characteristics of full model crane system which is modelled with bridge carrier, bridge group, car, load and rope is proposed in this paper. The forces to be lifted on the ropes were calculated and applied to the crane system. Also, dynamic theory and modeling method of multi-degree of freedom system are introduced. Based on these parameters, a virtual dynamic model is established to match the actual one. ANSYS Workbench 18.1 program was used to determine the correct dynamic characteristics of the crane system under these conditions. Moreover, studies of harmonic response are carried out to get the explicit characteristics of each part in the model. In addition, recommendations are made for future improvement studies.

Keywords: Multi Carriage Crane, Dynamic Analysis, Harmonic Responce Analysis

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

PRODUCTION OF LAFEO3 NANOPOWDERS AT LOW TEMPERATURE BY SOL-GEL METHOD

Deniz Coban Ozkan[a*], Salih Alper Akalin[b], Ahmet Turk[c], Erdal Celik[d]

[a]Manisa Celal Bayar University, The Institute Of Natural And Applied Sciences
[b]Dokuz Eylul University, Graduate School Of Natural And Applied Sciences, Izmir
[c]Manisa Celal Bayar University, Metallurgy And Materials Engineering
[d]Council Of Higher Education, Bilkent, Ankara

*deniz.coban@cbu.edu.tr

Abstract:

Ferroelectric materials are preferred in piezoelectric materials and sensors because of their ferromagnetic behavior. The inorganic materials in perovskite structure mostly exhibit ferroelectric behaviors. BaTiO3, SrTiO3, KNbO3 are the most widely known ferroelectric materials of inorganic structure. ABX3 is the general notation of these structures where A is a rare-earth element, B is 3d transition metal remain prominent and X is usually referring to oxygen. LaFeO3 is a promising member of ferroelectric materials, which is produced with different methods at high heat treatment temperatures approximately 800 - 1000oC. These high temperatures increase the production cost and limit the usage areas.

The aim of this study is to produce LaFeO3 nanopowders by sol-gel method with low temperature annealing. Lanthanum and iron nitrate are used for precursor material which is distilled in DI-water while ethylene glycol is added to contributes gelation of sol as chelating agent to role of decreasing annealing temperature. The gel was heated to 200, 300, 400oC to obtain crystalline structure according to the results of Differential Thermal / Thermogravimetric Analysis (DTA/TG). The structural, morphological, magnetic and chemical properties of powders were characterized by X-ray Diffraction (XRD), scanning electron microscopy (SEM), Vibrating Sample Magnetometer (VSM) and X-ray photoelectron spectroscopy (XPS), respectively.

Keywords: Ferroelectric, Sol-Gel, Lafeo3

[*]This study is supported by Scientific Research Projects Unit (BAP) of Manisa Celal Bayar University for the project no: 2018-049

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

SOL-GEL SYNTHESIS AND CHARACTERIZATION OF TITANIUM DIOXIDE POWDER

Deniz Coban Ozkan[a*], Salih Alper Akalin[b], Ahmet Turk[c], Erdal Celik[d]

[a]Manisa Celal Bayar University, The Institute Of Natural And Applied Sciences
[b]Dokuz Eylul University, Graduate School Of Natural And Applied Sciences, Izmir
[c]Manisa Celal Bayar University, Metallurgy And Materials Engineering
[d]Council Of Higher Education, Bilkent, Ankara

*deniz.coban@cbu.edu.tr

Abstract:

Titanium Dioxide (TiO2) is a semiconductor that widely used in many areas. Due to its chemical and photochemical stability, photoactive properties, good optical transparency, low cost, high refractive index and non-toxicity properties, it is preferred for water purification, self-cleaning, non-fogging surfaces and solar cells. TiO2 can be synthesized with many different methods such as Chemical Vapor Deposition (CVD), Sputtering, Pulsed Laser Deposition, Electron Beam Evaporation, Ion Beam Assisted Deposition and Sol-Gel. Sol-Gel, among these methods, is a technique used in the production of thin film and powder by the use of simple devices at low temperature. Although TiO2 has three different crystal structures: anatase, rutile and brukit, the photoactivity of the anatase phase is better than the others.

In this study, the anatase phase of titanium oxide was synthesized as nano powder by Sol-Gel method which consists of three steps, these are solution, gelation and annealing. titanium isopropoxide was used for precursor material which is added in ethanol while acetic acid was added to adjust ph value of solution then the solution was heated up for gelation on the heat plate. The gel was heated to 500oC to obtain crystalline structure according to the results of Differential Thermal / Thermogravimetric Analysis (DTA/TG). The structural and morphological properties of powder were characterized by X-ray Diffraction (XRD) and Scanning Electron Microscopy (SEM), respectively.

Keywords: Tio2, Sol-Gel, Powder

[*]This study is supported by Scientific Research Projects Unit (BAP) of Manisa Celal Bayar University for the project no: 2018-049

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

EXPONENTIAL B-SPLINE SOLUTION FOR THE TIME FRACTIONAL BURGERS' EQUATION

Ozlem Ersoy Hepson[a*], Idris Dag[b]

[a]Eskisehir Osmangazi University, Mathematics & Computer Department, Eskisehir, Turkey.
[b]Eskisehir Osmangazi University, Computer Engineering Department, Eskisehir, Turkey.

*ozersoy@ogu.edu.tr

Abstract:

A numerical approach is described to get the solution of the time fractional Burgers' equation. The Caputo formulation of the time fractional derivative is discretized using the implicit difference scheme, temporal discretization of the nonlinear and second order term is carried out using the Crank-Nicolson method. After linearization of nonlinear term using Taylor method, spatial discretization is managed by use of the exponential cubic B-spline based interpolation integrator. The presented collocation method gives a system of linear algebraic equation at time steps. A computational experiment is performed to show feasibility and accuracy of the suggested algorithm.

Keywords: Caputo Formulation, Collocation Method, Exponential Cubic B-Spline, Time Fractional Burgers' Equation.

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

NUMERICAL SOLUTION OF THE TIME FRACTIONAL KORTEWEG-DE VRIES EQUATION BY WAY OF QUINTIC TRIGONOMETRIC B-SPLINE INTEGRATOR

Ozlem Ersoy Hepson[a], Idris Dag[b*]

[a]Eskisehir Osmangazi University, Mathematics & Computer Department, Eskisehir, Turkey.
[b]Eskisehir Osmangazi University, Computer Engineering Department, Eskisehir, Turkey.

*idag@ogu.edu.tr

Abstract:

An approximate approach is established for getting solutions of the time fractional Korteweg-de Vries(KdV) equation using the quintic trigonometric B-spline collocation and a variant of implicit finite diffrence method. In the equation, the time fractional derivative is replaced by Caputa fractional derivative which is discretized by use of L_1 finite difference formula and the Crank-Nicolson approximation is engaged to achieve temporal discretization of both the nonlinear and third order terms. After linearization of the nonliner term, spatial discretization is done with quintic trigonometric B-spline collocation method. Time-space integration of the time fractional KdV equation leads to a system of linear algebraic equations whose unknown parameters help us get solutions of the equations at the discrete times. Robustness of the algorithm is shown by studying a test problem.

Keywords: Caputo Fractional Derivative, Collocation Method, Trigonometric B-Spline, Time Fractional Korteweg-De Vries Equation.

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

ANTIPROLIFERATIVE, CYTOTOXIC AND APOPTOTIC EFFECTS OF FLUORINATED HYDRAZINES ON CAPAN-1 PANCRETIC ADENOCARCINOMA CELLS

Faruk Suzergoz[a*], Veli T Kasumov[b]

[a]Department Of Biology, Art&Science Faculty, Harran University
[b]Department Of Chemistry, Art&Science Faculty, Harran University

*suzergoz@yahoo.com

Abstract:

Introduction/Aim: Although chemotherapy has an indispensable role in the treatment of cancer, an ideal chemotherapeutic agent with minimal side effects has not yet been found. The aim of this study was to determine the potential of fluorinated hydrazines as a new chemoterpotic agent candidate for pancreatic adenocarcinoma, the most common form of pancreatic cancer. Materials and Methods: The anticancer properties of the six fluorinated hydrazines (Compound 1-6) as Schiff base derivative synthesized on the basis of phenylhydrazines and salicylaldehydes on the Capan-1 pancreatic adenocarcinoma cell line were tested. The ATP assay (IC50) was used to determine the cytotoxic effects and the CFSE method (proliferative index, PI) was used to determine the antiproliferative effects of the compounds on the Capan-1 cell line. Apoptosis stimulation capacities of the compounds were determined by immunohistochemical assay (active caspase-3 expression).

Results: The most potent cytotoxic effect on Capan-1 cells was obtained with Compound 4 (2,4-F2 phHz 3-5 DTBS IC50: 5.1 µM), while the most prominent antiproliferative effect was obtained with the same compound (PI: 11.2). It is understood from the expression of active caspase-3 in these cells that the cytotoxic effects of the compounds on Capan-1 cells are caused by apoptotic stimulation.

Conclusion: It has been observed that fluorinated hydrazines have varying levels of cytotoxic and antiproliferative effects on Capan-1 cells. The death-inducing impact on the cells is due to the activation of apoptosis pathways increasing the quality of the compounds being a candidate for chemotherapeutic agents. The data of this in vitro study in order to search a new chemotherapeutic agent needs to be supported by in vivo tests.

Keywords: Fluorinated Schiff Bases, Capan-1, IC50, Antiproliferative, Cleaved Caspas-3

[*]This study was supported by TUBITAK (The Scientific and Technical Research Council of Turkey) with project number 113Z134.

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

OPTIMIZATION OF HYDROTHERMAL SYNTHESIS OF CE3+ CO-DOPED NAYF4, YB3+, ER3+ UPCONVERSION NANOPARTICLES AND INVESTIGATION OF THEIR SIZE, MORPHOLOGY, AND PHASE TRANSITIONS.

Seda Demirel Topel[a*]

[a]Antalya Bilim University

*seda.demireltopel@antalya.edu.tr

Abstract:

Upconversion nanoparticles (UCNPs) are a new class nanomaterial made of a NaYF4 host lattice including Yb3+ and Er3+ which act as an absorber and emitter ion, respectively. These UCNPs have the ability to convert near-infrared (NIR) light into the UV-Vis light via an anti-stoke process. Thanks to excitation of these nanomaterials with NIR, they offer a wide range of biological applications such as bio-imaging, drug delivery and, detection sensors. For a proper biological application, it is important to synthesize UCNPs not only having water-soluble property but also having small size and hexagonal phase for the high-intensity upconversion luminescence emission. With this goal, water-soluble polyethyleneimine (PEI) covered UCNPs have been prepared by a hydrothermal method which resulted in small size and hexagonal phase structure thanks to the Ce3+ co-doping effect. Without Ce3+ ion co-doping, NaYF4,Yb3+,Er3+ (80% Y,18% Yb, 2% Er) UCNPs were micro-rods shape with ≈5 µm length and pure hexagonal phase. After introducing 3% of Ce3+ to the NaYF4,Yb3+,Er3+ (72% Y,20% Yb, 5% Er) UCNPs, the sizes of the UCNPs have been decreased to 60 nm diameter with hexagonal phase and 30 nm diameter with cubic phase. Such a size reduction can be explained by the decreasing the energy barrier of NaYF4 via Ce3+ doping effect caused to small sized hexagonal phase UCNPs. The cubic-to-hexagonal phase transition process was approved by XRD and their sizes were also calculated from the Debye-Scherrer equation from the XRD data which are coherent with TEM. On the other hand, under 980 nm laser, the UCNPs display three emission bands at 420, 540 and 654 nm due to the 4f-4f transitions of Er3+ ions.

Keywords: Upconversion, Lanthanide, Doping, TEM, Xrd

[*]*This study is supported by Antalya Bilim University*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

BENDING RIGIDITY OF POLYESTER MICROFILAMENT WOVEN FABRICS

Gulbin Fidan[a*], Yasemin Korkmaz[b], H. Kubra Kaynak[c]

[a]Gaziantep University, Naci Topcuoglu Vocational School
[b]Kahramanmaras Sutcu Imam University, Textile Engineering Department
[c]Gaziantep University, Textile Engineering Department

*gfidan@gantep.edu.tr

Abstract:

Synthetic fiber industry has been enforced to make developments due to the increasing performance demand for textile products. One of the most important developments in synthetic fiber industry, is absolutely producing extremely fine fibers which are named as microfibers and nanofibers. Microfibers are defined as the fibers finer than 1 dtex or 1 denier. It is possible to obtain good level of water resistance by applying water repellency treatment to tightly woven microfilament fabrics. This type of fabrics are superior to coated or laminated fabrics in different end uses namely; tent, sleeping bag, raincoat and winter sport shell fabric, due to their light weight, durability, waterproofness, windproofness, breathability and drapeability. In this study, it is intended to investigate the effects of weft sett and filament fineness on bending rigidity of water repellent finished microfilament woven fabrics. For this purpose, 1/1 plain weave and 3/2 hopsack weave types were selected. Different weft sett values were selected for these weave types with the same warp sett. Different filament finenesses were applied as 1,14 dtex, 0,76 dtex, 0,57 dtex and 0,33 dtex in weft direction with 110 dtex yarn linear density. The woven samples were applied with water repellent finish at the same conditions and then, the effects of weft sett and filament fineness on the bending rigidity characteristic of these samples were determined.

Keywords: Microfilament, Woven Fabric, Bending Rigidity, Water Repellent, Polyester

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

DETECTION OF VEHICLE LICENSE PLATE LOCATION USING CONVOLUTIONAL NEURAL NETWORK

Muazzez Buket Darici[a*], Furkan Kiraci[a], Atilla Ozmen[a], Metin Sengul[a]

[a]Kadir Has University

*buket.darici@khas.edu.tr

Abstract:

In recent years, the necessity of personal working in traffic control is increasing because of the increasing number of vehicles in traffic. To deal with this problem, computer based automatic control systems are being developed. One of these systems is automatic vehicle license plate recognition system. In this work, vehicle license plate location is presented by Convolutional Neural Network (CNN). In this system 144 vehicle images captured under several weather conditions were utilized. Then each of the images is divided into the sub-images. The region of the vehicle license plate has been detected by using the sub-images using CNN after a basic enhancement process. In this work, it has been reached the accuracy rate of 95.14% in detection of license plates and the success rate of 95.83% in CNN.

Keywords: Personal Working In Traffic Control;Convolutional Neural Networks; Vehicle License Plate Location.

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

THERMOGRAVIMETRIC ANALYSIS STUDIES ON SLUDGE IN TURKEY AND WORLD

Hasan Merdun[a*], Ismail Veli Sezgin[a], Zakari Boubacar Laouge[a]

[a]Department Of Environmental Engineering, Faculty Of Engineering, Akdeniz University

*merdun@alumni.clemson.edu

Abstract:

The amount of sludge produced from water and wastewater treatment plants has recently increased significantly because of the population growth and then the increase in the consumption. Sludge is a problematic waste to the environment and it is costly to dispose it properly without damaging the environment. However, since sludge is an important source of biomass due to its high organic matter content, it has attracted the attention as an energy source or huge energy potential. The accurate determination of decomposition temperature for thermal processes (combustion or pyrolysis) is important to optimize the process parameters and reduce the conversion cost by decreasing the energy input. The optimum process temperature is commonly determined by thermogravimetric analysis (TGA). TGA is the measuring the weight loss of a sample as a function of the time and/or reaction temperature. TGA is one of the most common techniques used to investigate thermal events and kinetics during combustion or pyrolysis of biomass, coal, or the mixtures of biomass/biomass or biomass/coal. In this study, the studies conducted in Turkey and the world on the TGA of sludge were collected from Web of Science database and presented. These studies were investigated in terms of feedstock parameters (type, particle size, blend ratio, sample amount), TGA parameters (temperature, heating rate, carrier gas/process type, carrier gas amount), and kinetic models or thermodynamic parameters used. The models used in kinetic analyses were introduced and classified based on their important characteristics. The study results showed that sludge alone or mixed with biomass or coal was used in these studies. And also, feedstock and TGA parameters, and kinetic models were very variable in these studies. One of the important results of this study was that there was no study conducted on TGA of sludge in Turkey.

Keywords: Sludge, TGA, Kinetic Models, Turkey

[*]This study has been supported by Akdeniz University Scientific Research Project Commission (FBA-2019-4787).

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

STUDIES ON THERMOCHEMICAL CONVERSION OF SLUDGE FOR BIOENERGY PRODUCTION IN TURKEY AND WORLD

Hasan Merdun[a*], Zakari Boubacar Laouge[a], Ismail Veli Sezgin[a]

[a]Department Of Environmental Engineering, Faculty Of Engineering, Akdeniz University

*merdun@alumni.clemson.edu

Abstract:

The use of water or wastewater treatment sludge in energy recovery has attracted great attention in recent years by using thermochemical conversion methods such as combustion, pyrolysis, gasification, and liquefaction. The depletion of fossil fuels and their inverse effects on the environment caused sludge to be an alternative energy source to fossil fuels. Combustion is the rapid reaction of biomass or organic material and oxygen to obtain thermal energy and flue gas (CO2, H2O). Pyrolysis is thermal decomposition of biomass or organic material at temperatures between 400 and 650°C in the absence of oxygen under atmospheric pressure to produce solid (biochar), liquid (bio-oil), gas mixture. Gasification is thermal decomposition of biomass or organic material at temperature 700-1000°C with limited oxidizing agent (air, O2, CO2, steam or mixture of these) under atmospheric pressure to produce biochar and gas mixture (H2, CO, CO2, CH4, C2H4, C2H6, etc.). Liquefaction is a high pressure (150 bar) process with moderate temperatures (250-400°C) to obtain mainly liquid product (bio-oil). In this study, the studies conducted in Turkey and the world on the conversion of sludge into biofuels or bioenergy by using thermochemical conversion methods were collected from Web of Science database and presented. These studies were investigated in terms of feedstock (sludge, or sludge with biomass or coal), sludge type, sludge treatment, thermochemical conversion processes, catalyst type, and products. A total of 151 research articles collected from literature were used in the study. The study results showed that in 103 studies sludge were used alone, where as in the remaining 48 studies sludge was co-processed with either biomass or coal. Different catalysts were used in only 33 studies during the conversion processes. Sludge types, sludge treatments, conversion processes, and products showed variations in these studies. The studies conducted in Turkey on sludge conversion into biofuels or bioenergy were very limited compared to the studies in the world.

Keywords: Sludge, Thermochemical, Bioenergy, Turkey

[*]This study has been supported by Akdeniz University Scientific Research Project Commission (FBA-2019-4787).

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

INVESTIGATION OF THE COLORATION PROCESSES OF HAWTHORN (CRATAEGUS MONOGYNA) ON WOOLEN FABRICS

Fazlihan Yilmaz[a*], M.Ibrahim Bahtiyari[a], Huseyin Benli[a]

[a]Erciyes University

*fazlihanyilmaz@erciyes.edu.tr

Abstract:

The fruits of the hawthorn plant were selected as the source of natural dyestuff for wool fabrics in this study. The fruits of hawthorn have been firstly used in dyeings without use of any mordanting agents but in addition to the mordant-free dyeing processes, dyeings were also carried out by using different concentrations of FeSO4.7H2O or SnCl2.2H2O mordanting agents. After the dyeing processes; washing and light fastness of the dyed samples were tested and the obtained colors were measured by a spectrophotometer. Different color shades were found from the use of this natural dye source with the use of different mordanting agents and as a result, it was determined that hawthorn fruit can be a natural dye source.

Keywords: Wool, Hawthorn Fruit, Mordant, Dyeing, Color

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

EXPERIMENTAL STUDY ON THE MOTION CHARACTERISTICS OF A SHIP DEPENDING ON THE TYPE OF THE BOTTOM AIR LAYER

Donghyup Youn[a*], Chunghwan Park[a]

[a]Research Institute Medium&Amp;Small Shipbuilding

*dhyoun@rims.re.kr

Abstract:

Large ships used a lot of energy at the time of operation. In order to save the energy, the ship is redesigning with lines, cruising at the maximum efficiency speed range, and recently, there is a ship using an air lubrication system that reduces the frictional resistance of th hull by forming an air layer on the bottom. The purpose of this study is to investigate the relation between the air layer and the ship's motion in an air lubrication system that saves energy by making an air layer on the bottom of a ship. The incident wave is 10° to the head sea, and the wave height is 1 case and the wave periods are 5 case. The speed of the ship was in the range 0.3~0.5 Froude number. Through the image processing, the characteristics of the bottom air layer were analyzed. The air layer at the bottom of the ship is affecting the movement of the ship. Further studies will be conducted to do if the same phenomenon occur during the expansion of the real size ship.

Keywords: Air Lubrication System, Frictional Resistance, Air Layer, Energy Saves, Experimental Study

[*]This work was carried out in the research grant [10073164].

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

TENSILE STRENGTH OF ABSORBABLE AND NONABSORBABLE SUTURES

Hatice Kubra Kaynak[a*], Yunus Emre Acik[a], Gulsum Colak[a], Fatma Besler[a]

[a]Gaziantep University, Textile Engineering Department

*tuluce@gantep.edu.tr

Abstract:

A suture is a thread that both approximates and maintains tissues until the natural healing process has provided a sufficient level of wound strength or compresses blood vessels in order to stop bleeding. Sutures must provide many properties such as adequate tensile strength, elasticity, increased knot security, not cut through tissue, low tendency for infection, low memory and ease of handling. All these properties are affected by structural properties of sutures namely; raw material, being monofilament or produced by braiding, coated or uncoated, being absorbable or nonabsorbable. Due to the developments in polymer technology different raw materials are used for suture production to determine the ideal suture material. Tensile strength and knot strength properties are the foremost properties of a suture and these properties provide information in vitro performance of the material such as durability while stretching and knotting during surgery, security of the knot after surgery and durability against fatigue in tissue exudates. So that, in the literature there are many studies on different performance properties of sutures. Even though suture is a very old implantable medical material, due to providing different materials and different structural properties for sutures, even today there is still an ongoing research to develop and optimize this material. In this study, it is intended to investigate the tensile and knot performance of different absorbable and nonabsorbable suture types. For this aim, 11 different suture types; 6 of absorbable and 5 of nonabsorbable are tested to determine the tensile strength. All samples were conditioned according to ASTMD 1776 before the tests. Tensile strength tests were done according to ASTMD 2256.

Keywords: Absorbable Suture, Nonabsorbable Suture, Tensile Strength

[*]This study was funded by Scientific Research Projects Governing Unit of Gaziantep University by the Project Number RM.16.01.

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

ACCELERATED COMPOSTING OF CATTLE MANURE BY USING SPECIAL BACTERIA AND ENZYME MIXTURE

Cevat Yaman[a*]

[a]Imam Abdulrahman Bin Faisal University

*cevatyaman@yahoo.com

Abstract:

Composting is one of the best options to dispose cattle manure which contains organic matter, N, P, K elements. The objective of this study was to investigate the use of specifically manufactured bacteria and enzyme mixture for composting cattle manure at a full-scale plant. Two trapezoid manure piles of 50 tons were placed at 1.7 m in height, 2.1 m in bottom width, 0.6 m in top width, and 54 m in length. A specifically manufactured bacteria and enzyme mixture was solubilized in 400 liters of clean tap water and applied to one of the compost piles by spraying the solution over the pile and while mixing the pile with a compost turner tractor. The second pile was used as a control; thus, solution of bacteria and enzyme was not applied. After 17 days, C:N ratio was reduced from 25.62 to 10.92, organic matter was reduced from 84.51% to 63.29%, and total nitrogen (TN) was increased from 1.89% to 3.36%. The control pile was not able to reach the same C:N and TN levels during the monitoring period.

Keywords: Composting, Bacteria And Enzyme, Cattle Manure, C:N Ratio, Windrow Composting

[*]*This study is supported by Imam Abdulrahman Bin Faisal University*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

AN APPLICATION FOR PERFORMANCE MANAGEMENT IN CONSTRUCTION PROJECTS

Aynur Kazaz[a*], Ersan Erkovan[a], Serdar Ulubeyli[b]

[a]Civil Engineering Department, Akdeniz University
[b]Civil Engineering Department, Bulent Ecevit University

*akazaz@yahoo.com

Abstract:

In today's intense competition environment, businesses must always perform highly in order to achieve their goals. It is obvious that the monitoring, evaluation and measurement or management of the performances of both the enterprises and their employees will increase the performance of the enterprise in a positive way in the future. In particular, the construction projects in the construction sector, where competition is intense, and technology is advancing rapidly, need performance management due to their complex structure and intensive manpower. Monitoring, evaluating and measuring the performance of the construction projects is very important for the completion of the project in the desired success criteria.

In this study, first of all, a literature study on performance management will be made and brief information will be given. Then, a web-based computer program, which is also a subject of academic study, will be presented as an application proposal for performance management of construction projects.

Keywords: Performance Management, Performance Evalution, Performance Measurement.

[*]This study is based on a research project which was financially supported by the TUBITAK

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

AN EXAMPLE OF INTERNAL CONTROL APPLICATION FOR CONTRACTOR COMPANIES IN THE CONSTRUCTION SECTOR

Aynur Kazaz[a*], Ersan Erkovan[a], Serdar Ulubeyli[b]

[a]Civil Engineering Department, Akdeniz University
[b]Civil Engineering Department, Bulent Ecevit University

*akazaz@yahoo.com

Abstract:

As a result of the intense competition environment in the construction sector and the complexity of the construction business depending on the developing technology, inadequacies in the monitoring of the activities of the enterprises have emerged with the classical control methods. As a solution to this new situation, COSO internal control model consisting of five independent professional organizations in the United States has emerged, which is a pioneer in the transformation of internal control into an important element in enterprises today. The internal control model, known today as the COSO model in the world, is the most widely accepted and continuously developed, updated and most comprehensive model, due to its level and scope to meet the needs of enterprises. The purpose of these model is to ensure compliance of business and activities in enterprises with legislation, the reliability of financial and managerial reporting, the effectiveness and efficiency of activities and the protection of assets. Similarly, it has become necessary to use an effective internal control model in order to maintain their development and to build their corporate structures for enterprises in construction sector which is one of the most important economic sectors. For this purpose, joint project management portal software which is considered to be used as a tool in the implementation of COSO internal control model in construction companies has been developed. With this web-based software, it is aimed that construction companies carry out their internal control activities effectively. In this study, first of all, general information about COSO internal control model will be given and joint project management portal will be introduced as an example of internal control model implementation in terms of construction sector.

Keywords: Internal Control, Construction Management, Coso Internal Control Model, Joint Project Management Portal

*This study is based on a research project which was financially supported by the TUBITAK

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

NUMERICAL INVESTIGATION OF ZNO-WATER NANOFLUID FLOW IN A SPIRAL COIL

Kamil Arslan[a*], Tugba Akinci[a], Recep Ekiciler[b]

[a]Karabuk University
[b]Gazi University

*kamilarslan@karabuk.edu.tr

Abstract:

Convective heat transfer plays an important role for industrial heating or cooling operations. Especially, due to the issues of efficient using of energy an important topic nowadays, increased interest in studies on heat transfer. Studies have been carried out for a long time in order to improve convective heat transfer. It is realized from studies that it can be developed convective heat transfer with changing the flow geometry or boundary conditions or improving the fluid thermophysical properties. Improving the heat transfer performance of fluids used for convective heat transfer took place one of the most studied topics recently. One technique used to improve the performance of heat transfer fluids adding the solid particles which have higher thermal conductivity than the thermal conductivity of the fluids. Until now, this type of fluid and solid particles comprising the use of suspensions of solid particles millimeters in size is in question. As a result of the recent studies new discovery of nanofluids which have 10-50 nanometer-sized solid particles in suspension, led to increase the studies about this subject. The most important reason, even very small concentrations of nanoparticles, surprisingly nanofluids have high thermal conductivity values. Today, metals, oxides, carbides, or nano-carbon tubes are generally used as nanoparticle in nanofluids. In the main fluid, water, ethylene glycols, cooling fluids or engine oil used often in the heat exchangers as fluid are used. It is expected that using the nanofluids for increasing heat transfer due to the high thermal conductivity of nanofluids will increase in the future. In this study, ZnO-water nanofluid flow in a circular cross-section spiral ducts will be analyzed numerically. ZnO-water nanofluid will be taken different nanoparticle volume fractions (1.0%, 2.0%, 3.0%, 4.0%). The study will be carried out under turbulent flow regime. Constant temperature boundary condition will be applied on the duct surface and optimum nanoparticle volume fraction will be determined.

Keywords: Spiral Coil, Zno-Water Nanofluid, Cfd

[*]This study was supported by Scientific Research Projects Coordination Unit of Karabuk University (KBUBAP-17-YL-177)

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

TESTING OF ROSA CANINA L. IN COLORING OF COTTON FABRICS

Muhammed Ibrahim Bahtiyari[a*], Fazlihan Yilmaz[a], Huseyin Benli[b]

[a]Erciyes University, Department Of Textile Engineering
[b]Kayseri University, Mustafa Cikrikcioglu Vocational School

*bahtiyari@erciyes.edu.tr

Abstract:

In this study, the fruit of the rosehip (Rosa canina L.) plant was used in the dyeing of cotton fabrics and thus the coloration of cotton fabrics with a natural source has been tried to be investigated. For this aim; the dried fruits of rosehips were firstly milled and added to the dye bath containing only water and fabric and mordanting agents. The dyeing temperature was set as 120oC. By this, it was planned to make dyeing and extraction simultaneously. The liquor ratio was set as 1:65 and during dyeings 6 different mordant were used, also dyeings without use of any mordant has been tested too. After the dyeings, the washed/rinsed and dried samples were evaluated in terms of fastness to washing/light and the colors obtained. As a conclusion, it was observed the fruits of rosehip can be used in dyeing of cotton fabrics.

Keywords: Cotton, Rosehip Fruit, Rosa Canina L., Color

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

ANTIMICROBIAL ACTIVITIES OF SOME DISINFECTANTS USED IN THE FOOD INDUSTRY

Ozum Ozoglu[a*], Esra Kocak[a], Seda Dundar[a], Hande Colak[a], Mihriban Korukluoglu[a]

[a]Bursa Uludag University

*ozoglu@uludag.edu.tr

Abstract:

Microbiological contamination is one of the major problems in the food industry. Thus, eliminate or minimize the sources of microbial contamination is required for providing quality and safety products in the food industry. In the light of this, antimicrobial activities of some disinfectants used in the food industry on several microorganisms were searched in this study. Four different commercial disinfectants entitled as D1, D2, D3 and D4 which are used for CIP (Cleaning in Place), tools and equipment cleaning in the industry were investigated. They had various agent contents such NaOH, amines, caustic, alcohols etc.. Then, two yeasts (Saccharomyces cerevisiae and Schizosaccharomyces pombe), one mould (Aspergillus niger) and three bacteria (Lactococcus lactis, Bacillus subtilis and Escherichia coli) were chosen as test microorganisms. First of all, well diffusion method was followed to understand antimicrobial efficacy of the disinfectants. After that, showing antimicrobial activity ones were chosen testing to determine effect times of the disinfectants on the microorganisms for an hour (being the period selected as maximum time for disinfection in the food industry) with 30-minute intervals. In the meantime, the commercial disinfectants were supplied as the highest and the lowest concentrations that recommended on the manufacturer's label during the all experiments. While, both maximum and minimum concentration of D2 and D3 were shown antimicrobial activity on S.cerevisiae and L.lactis, only maximum concentration of D2, D3 and D4 were been effective on B.subtilis. Moreover, any disinfectants and any concentration were not prevailed on S.pombe and E.coli. However, minimum and maximum concentrations of D2 and D3 were affected on S.cerevisiae and L.lactis in first and last 30 minutes even following few days, maximum concentration of them affected B.subtilis just a little in first 30 minutes. Consequently, struggled microorganisms and the applying time should be considered when using disinfectants in the food industry.

Keywords: Disinfectant, Antimicrobial Activity, Food Industry

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

INVESTIGATION OF THE EFFECTS OF THE CORRELATION BETWEEN CLOSING FORCE AND REMAINING STRESS ON THE PERFORMANCE OF TWIN TUBE SHOCK ABSORBERS

Abdurrahim Arkan[a*]

[a]Maysan Mando

*aarkan@maysanmando.com

Abstract:

In this study, remaining stress on the inner tube of the shock absorber, which is a part of the vehicle suspension system, has been measured and the performance effects of the differences in remaining stress on shock absorber were investigated. During production, the damper outer tube is closed on the inner tube together with oil seal and this creates remaining stress on the inner tube. For this measurement, strain gauges were applied on the inner tube and the remaining stress value were collected via data acquisition device during the production and converted into force. The performance effects of difference remaining stresses on the damper were investigated by doing damping force and noise tests.

Keywords: Strain Gauges,Shock Absorber, Remaining Stress Measurement, Damping Force Measurement

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

LP MODEL APPLICATIONS IN OPEN PIT MINING

Necmettin Cetin[a*]

[a]Dumlupinar Universty

*necmettin.cetin@dpu.edu.tr

Abstract:

Linear Programming is a very useful Operations Research method that is commonly used in many disciplines including mining industry. Most open pit mines in Turkey applies Truck/Shovel systems for excavating and transporting various minerals including coal and industrial minerals. Optimal scheduling and operating these systems requires comprehensive data collection, analysis and modeling and selections using mathematical programming methods such as Linear Programming. Optimal Route Selection Problem in Open Pit Mining is modelled for a typical average-sized open pit coal mine in Kutahya, Turkey,

Currently, truck dispatching is applied in many real mines around the world and has many useful advantageous.

Keywords: Route Selection, Linear Programming Method, Truck/Shovel Systems, Open Pit Mining

[*]This study is supported by Mining Engineerin Departmen of DPU.

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

SHALLOW AND DEEP CONVOLUTIONAL NEURAL NETWORK MODELS FOR CLASSIFICATION OF VNIR WHEAT SAMPLES

Kemal Ozkan[a*], Sahin Isik, Busra Yavuz[a], Zeynep Duygu Demirez[a]

[a]Eskisehir Osmangazi University

*kozkan@ogu.edu.tr

Abstract:

Recently, the use of machine learning systems in the agricultural industry has increased tremendously for particular tasks. In this study, we have performed Shallow and VGG16 deep learning models on a new VNIR dataset in order to classify wheat samples. There are 40 classes and 200 instances per each class. While the performance shallow model has reached an accuracy of 80.13%, the VGG16 model is 91.13%. According to the results of obtained by simulations, deep learning methods were found to be more successful than parametric dependent based ones. This work was granted by the Turkey Scientific and Technological Research Projects Support Program of as project number 1160576 and Eskisehir Osmangazi University Scientific Research Project of as project number 2016-1020.

Keywords: Deep Learning Models, Wheat Classification, VNIR Imaging

[*]This work was granted by the Turkey Scientific and Technological Research Projects Support Program of as project number 1160576

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

VISUAL FEATURES WITH COMMON VECTOR APPROACH ON RECOMMENDATION SYSTEMS

Kemal Ozkan[a*], Caner Balim[b]

[a]Eskisehir Osmangazi University
[b]Afyon Kocatepe Universitesi

*kozkan@ogu.edu.tr

Abstract:

Recommendation systems help customers to discover item from predicting the their's opinions of each items. But if it is a new item or if there is no feedback about it, recommender systems have difficulties in these items. This problem is also called the cold start problem. To overcome cold start issue, some recommender systems use additional information's, such as review text, purchase history, visual information etc. In this short paper we propose a image-based model that creating more accurate predictions and help to cold start issue, for recommendation system. We use SURF, SIFT, SHAPE, COLOR, LBP and GIST features for image description in our system. Further we combine image features with common vector analysis to one descriptors. The model is validated with experiments on two real-world datasets (Amazon.com and Tradesy.com). Then we compare our method to other existing studies. According to the experiment results, our proposed method was achieved more than 79% accuracy rate.

Keywords: Recommendation Systems, Image-Based Recommender System, Implicit Feedback, Common Vector Approach

[*]This work was granted by the Turkey Scientific and Technological Research Projects Support 3001 Program of as project number 116

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

MICROBIOLOGICAL SURVEYING OF SOME PROBIOTIC PRODUCTS ON THE MARKETS IN TURKEY

Mihriban Korukluoglu[a*], Ozum Ozoglu[a], Rukiye Colak Sasmazer[a]

[a]Bursa Uludag University

*mihriban@uludag.edu.tr

Abstract:

Recently, most people tend to consume probiotic products cause of their health benefits. Therefore, many companies have produced various probiotic food products. Acceptance of a food product as probiotic, it has to contain at least 6 log viable probiotic microorganisms and protect the level during shelf-life. Besides, Bifidobacterium, Lactobacillus and non-pathogenic yeasts are most commonly used probiotic microorganisms. In line with these information, 11 different probiotic products that are found on the markets in Turkey and bought in same time were surveying with regard to microorganism levels on bought and expire dates of each products. 4 probiotic dairy drinks (plain, strawberry, pineapple and apricot), 2 plain kefirs from manufactured different companies and 1 strawberry kefir, 1 probiotic strawberry kefir yogurt and 3 probiotic yogurts (plain, strawberry and infant-specific) by several companies were chosen for the study. Level of bifidobacteria, Lactobacillus acidophilus, total viable counts, mould and yeast were controlled on the products at bought and expire dates according to reference enumeration methods. The samples were investigated on different time of the storage process because of their production dates. That is to say, last analysis time of 4 probiotic dairy drinks, 2 plain kefirs, 1 strawberry kefir, 1 probiotic strawberry kefir yogurt and 3 probiotic yogurts were 21st, 23th and 3rd, 20th , 7th, 16th, 8th and 14th days respectively following the first analysis time. When the results were evaluated, all products were generally saved their probiotics level. Just, roughly 1 log decreasing was observed on bifidobacteria and Lactobacillus acidophilus level in the infant-specific yogurt and the kefir 23-day stored respectively. Even, total viable counts reduced almost 1 log on the strawberry yogurt; not to change on the other samples. Yeasts were counted only the kefirs as expected, also a little bit on expiring dates of plain and strawberry yogurts. There were not found any mould on the all samples.

Keywords: Probiotic Products, Bifidobacteria, Lactobacillus Acidophilus, Expire Date

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

A SHORT-TERM PRODUCTION PLANNING FOR AN OPEN PIT MINE IN TURKEY USING NETWORK MODELS WITH LP

Necmettin Cetin[a*]

[a]Dumlupinar Universty

*necmettin.cetin@dpu.edu.tr

Abstract:

An open-pit mine consists of a set of pits in which horizontal layers of material (benches) are extracted from the top down.open -pit mining is suitable for ore bodies located close to the surface. In this paper, a short-term production planning model is developed using Network Diagrams and Linear Programming (LP) methods. An operating plan for the next two months duration which maximizes profits (or equivalently minimizes cost) for a mine-mill operation system. The mine produces the feed material to a mill that operates at two stages ,both of which produces different products. The objective is to find minimum cost flow to fulfill demands from the source nodes.

Keywords: Short-Term Planning, Network Models, Open Pit Mining, Optimization

[*]*This study is supported by the Mining engineering Departmenf at DPU*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

THE CUBIC TRIGONOMETRIC B-SPLINE GALERKIN METHOD FOR THE FISHER EQUATION

Ozlem Ersoy Hepson[a], Idris Dag[b*]

[a]Eskisehir Osmangazi University
[b]Eskisehir Osmangazi University, Computer Engineering Department, Eskisehir, Turkey.

*idag@ogu.edu.tr

Abstract:

A computational algorithm based on the cubic trigonometric B-spline Galerkin is set up to find numerical solutions of the Fisher equation. Fully-integration of the Fisher equation is managed by use of the Crank-Nicolson scheme for the temporal discretization and the Galerkin method for spatial discretization. The trial function in the Galerkin method is formed with combination of the the cubic trigonometric functions and test function is taken to be the trigonometric function well. Resulting 7-banded system of algebraic equations is solved to get numerical solutions of the Fisher equation at discrete points over problem domain. The robustness of the algorithm is exhibited on studying test problems.

Keywords: Galerkin Method, Cubic Trigonometric B-Spline, Fisher Equation.

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

AN INOVATIVETE SOLUTION FOR ABRAGE FAULT DETECTION ON YARN BOBBIN AND FABRIC SURFACE

Halil Ibrahim Celik[a*], Elif Gultekin[a], L.Canan Dulger[b], Halil Ibrahim Sumbul[c], Harun Kani[c]

[a]Gaziantep University
[b]Izmir University Of Economics
[c]Kipas Mensucat R&D Center

*hcelik@gantep.edu.tr

Abstract:

New developments in machine vision and automation technologies provide more accurate and sensitive process control and quality inspection in each stage of the production line. Development in industry 4.0 technology and image processing techniquies have been used in many textile industry areas in last decay. However, many processes that are achieved manually and subjectively exist in yarn production stages. The abrage fault inspection is one of them. During the yarn production, the fiber content of the yarn must be preserved from blending of other foreign materials and fibers. Abrage fault control is achieved by the human eye on both the yarn package and the fabrics under UV light. In a yarn production mill with an average daily production capacity of 15 tons, approximately 7500 bobbins/day are inspected and at least four workers are employed. This process is very time consuming and tiring. The avalaible method contains the high potential for the risk of missdetection and overlooking.

In this study, a machine vision system for automatic inspection of yarn bobbin and fabric abrage defect is presented. The prototype system is introduced and properties of its componenets are investigated. The optimum image acquisition parameters that are useful for abrage inspection were also determined.

Keywords: Yarn Abrage, Fabric Abrage, Image Processing, Machine Vision System

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

AN APPLICATION OF ENTERPRISE RISK MANAGEMENT AND INTERNAL CONTROL IN THE CONSTRUCTION SECTOR: JOINT PROJECT MANAGEMENT PORTAL

Aynur Kazaz[a*], Gokcen Arslan[a], Serdar Ulubeyli[b]

[a]Akdeniz University
[b]Bulent Ecevit University

*akazaz@akdeniz.edu.tr

Abstract:

The complex structure of the construction sector necessitates of expertise of the combination different areas and many uncertainties in its structure make construction projects vulnerable to risks. One-off and unique production of construction projects diversifies and increases the risks. These risks, in large numbers and varieties, constitute an obstacle for the project to reach its basic objectives such as quality, cost and time and to complete it successfully. When the attitude of the construction sector towards the risks is examined; it is seen that risks are ignored assuming that they are insignificant to affect project success adversely.However, it is known that the risks that seems small and unimportant at the beginning of the project will lead to unsuccessful results in the advanced stages for the institutions if the measures are not taken.The negative results encountered not only leave the project and the project owner firmly difficult, but also create a domino effect at the macro level and thus damage the country's and even the world's economy. This situation becomes more important especially for developing countries where the construction sector is one of the leading sectors of the economy and it makes the use of risk management in the sector inevitable. Risk management is a proactive management approach based on taking necessary measures against elements that may cause negative results by anticipating elements that may prevent the project from being successful. When the studies in the field of risk management are examined, the basic steps of risk management are risk identification, risk analysis, determination of responses to risks, control and recording of risks. It is emphasized that risk management must be repeated throughout the project period and has an active role in the project management process. Within the scope of the study, literature review on risk management in the construction sector has been conducted and the results of different studies have been examined. The results of the study were evaluated by comparing each other and the risk profile of the construction sector in Turkey was tried to be determined. The identified risk profile showed that risk management in the sector should be integrated with the concepts of internal control and corporate risk management. For this purpose, the Joint Project Management Portal, a web-based software, has been developed. Within the scope of the study, it is aimed to improve the software by researching the contributions of the software to the companies operating in the sector. It is considered that the data to be obtained as a result of the joint work with the firms will be the source of many studies in this area.

Keywords: Risk Management, Risk In The Construction Sector, Entertainment Risk Management

**This study is based on a research project which was financially supported by the Scientific and Technological Research Council o*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

A CASE STUDY OF PRODUCTIVITY IMPROVEMENT BY USING CLOUD-BASED PROCESS PLANNING TOOLS

Filip Mitrevski[a], Pece Mitrevski[b*]

[a]University "Ss. Cyril And Methodius", Faculty Of Computer Science And Engineering, Skopje, Republic Of North Macedonia
[b]University "St. Kliment Ohridski", Faculty Of Information And Communication Technologies, Bitola, Republic Of North Macedonia

*pece.mitrevski@fikt.edu.mk

Abstract:

The paper presents a case study in the development and application of a time study in the production of complex wiring systems for the automotive industry, and discusses the use of cloud-based process planning tools used for the purpose of productivity improvement. The motivation is the necessity to address the issue of productivity per shift between the employees and the management of a company, vis-à-vis questions of productivity. One of the most apparent conclusions is that the time of producing a unit of product is directly proportional to the number of stages in the production pipeline and the time spent at each of them. Nevertheless, to achieve productivity improvements in manufacturing companies, application of new technologies or adoption of mass production may not always be feasible. The most practical approach is to focus on the work process itself – that is to say, review and redesign the operations and apply automation and mechanization. In such cases, productivity assessment using industrial engineering techniques is employed for evaluating the present situation and identifying the potential for increased productivity, whereas additional industrial engineering methods are applied to develop improvement prospects. In view of the fact that the modern industry requires next generation of manufacturing systems to be intelligent, flexible, and interoperable, as well as to offer better performance with lower cost, the wide popularity of the cloud computing paradigm brings the opportunity to manufacturing systems with high scalability, productivity and agility, and provides practical implementations with elastic investment solutions. Since the manufacturing resources and capabilities are provided in a service-oriented architecture as cloud services, some practical models of cloud-based systems are investigated, and distributed process planning services are recommended in a so-called cloud manufacturing system.

Keywords: Process Planning, Efficiency Study, Time Study, Management Analysis, Cloud, Manufacturing System

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

RE-ENGINEERING INFORMATION MANAGEMENT PROCESSES AND IT INFRASTRUCTURE: A SURVEY ON ICT ADOPTION AND E-GOVERNMENT DEVELOPMENT IN WB6 COUNTRIES

Ana Sekulovska - Jovkovska[a], Pece Mitrevski[b*]

[a]University Of Tourism And Management, Faculty Of Informatics, Skopje, Republic Of North Macedonia

[b]University "St. Kliment Ohridski", Faculty Of Information And Communication Technologies, Bitola, Republic Of North Macedonia

*pece.mitrevski@fikt.edu.mk

Abstract:

The provision of public services and IT infrastructure is one of the main tasks of national administrations. The development of new communication technologies and the emerging importance of the Internet is obliging national authorities to provide a growing number of services online. This, in turn, means that citizens require IT infrastructure and skills to take advantage of electronic services on offer. This paper aims to demonstrate the willingness of ministries in WB6 countries to re-engineer information management processes and IT infrastructure for services to citizens, business stakeholders and to other MDAs (ministries, departments and agencies). To measure the development of national e-government capacities, the United Nations has generated the E-Government Development Index (EGDI) as a composite indicator that consists of three equally weighted indices – Online Service Index; Telecommunication Infrastructure Index; and Human Capital Index. Conversely, the World Economic Forum is introducing the new Global Competitiveness Index 4.0 (GCI), with a total of 98 indicators, organized into 12 pillars – Institutions; Infrastructure; ICT adoption; Macroeconomic stability; Health; Skills; Product market; Labour market; Financial system; Market size; Business dynamism; and Innovation capability. The focus of this comparative study is on one of the GCI components, i.e. “ICT adoption” (Pillar 3) and the rankings of WB6 countries in e-government development against the performance of others. Dropping a few positions does not imply that a country had underperformed, nor does higher ranking mean better or more desirable outcomes, especially when it refers to countries belonging to the same EGDI level. The main objective is to raise awareness of stakeholders on key issues in e-governance implementation to ensure rich content, sustainable service management and efficient use of ICT in support of current efforts in institutional, economic and administrative reform programs.

Keywords: IT Infrastructure, Information Management, Public Policy, ICT Adoption, E-Government Development, WB6 Countries

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

EFFECTS OF FIBER BLEND RATIO ON YARN PACKING DENSITY

Halil Ibrahim Celik[a*], Gulistan Canli[a]

[a]Gaziantep University

*hcelik@gantep.edu.tr

Abstract:

Today, it is mentioned that yarns are made in order to take advantage of the charging properties of different fibers in the same final product. Both synthetic and natural fibers cannot be produced by adapting themselves to the area in which they are used, but by combining these synthetic and natural fibers, desired characteristic features can be acquired within the same structure. The distribution and uniformity of the fibers in the cross-sections of blended yarns in textile materials are important in determining the structural, functional, mechanical and visual properties of the products.

In this study, the effects of fiber blend ratios and twist coefficient on yarn packing density were investigated. In this scope, cotton/acrylic yarn samples with 75-25%, %50-50%, 40-60% blending ratios were produced with three different twist coefficients; 3.5α, 4α, 4.5α. The yarn packing density values were determined by using an image processing algorithm. The results were discussed and statistically evaluated.

Keywords: Fiber Blending Ratio, Yarn Packing Density, Twist Coefficient, Image Processing

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

DEVELOPMENT OF HIGH-PRODUCTIVITY CULTIVATION SYSTEM AND ITS APPLICATION IN SOLAR SHARING OR AQUAPONICS

Hiroshi Kubo[a*], Kazuki Okoso[a], Shizuo Maeno[b], Yumi Tani[c], Masaru Oozeki[c]

[a]Chiba Institute Of Technology
[b]Mse Corporation
[c]Ntt Docomo, Inc.

*hiroshi.kubo@kubo-labo.com

Abstract:

In Japan, the declining and aging population of agricultural workers and the increase in the number of abandoned farmlands is an issue of serious concern. The low penetration rate of renewable energy and the decrease in fishery production are also problems, which are related to sustainable development goals. Therefore, to solve these problems, we herein develop a new hydroponic culture system that has high productivity, low environmental impact, and can be used by workers just starting out in agriculture. Furthermore, this study also aims to clarify the possibility of solar sharing and aquaponics using this hydroponic system. To achieve these objectives, we developed a new hydroponic culture system (hereinafter referred to as EZ hydroponic culture) that does not use a liquid fertilizer. In EZ hydroponic culture, seedlings are planted in a slit pot containing slow-release fertilizer and a medium. They are mounted on perforated polystyrene panels that float on the water surface. When a new farmer experiments with EZ hydroponic culture in a 400-m2 paddy field, high profit was obtained with low cost and low environmental impact. Moreover, automatic measurement experiment of environmental and breeding data of EZ hydroponic culture was conducted using a drone and an environmental sensor, and it was shown that the productivity could be further improved. Furthermore, an experiment to demonstrate the applicability of EZ hydroponic culture in solar sharing and aquaponics was conducted, and it was shown that agriculture and solar power generation or fish culture can be realized simultaneously. From the above experimental results, high productivity, low environmental impact, and applicability of EZ hydroponic culture in solar sharing and aquaponics are confirmed.

Keywords: Hydroponic Culture System, Solar Sharing, Aquaponics, Environmental Impact, Drone

This work was supported by JSPS KAKENHI Grant Number JP16K00657.

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

THE EFFECT OF CORE-SPUN YARN TYPE AND LAYOUT OF THESE YARNS IN THE FABRIC ON STIFFNESS PROPERTIES OF DENIMS

Esin Sarioglu[a*]

[a]Gaziantep University

*sarioglu@gantep.edu.tr

Abstract:

Denim fabrics are preferred that serve highly comfortable to wear for daily use. This comfort term can be emphasized as highly elastic and recovery, shape retention, better fitting to the body, etc. To enable these properties, elastic yarns are widely used as filling. Furthermore, giving elasticity to the fabric, yarns can be produced with different yarn construction design such as one component core-spun or dual core-spun yarns. In this study, three types of core-spun yarns were produced; elastic core-spun yarn, filament core-spun yarn and filament+elastane core-spun yarn (dual core-spun) on modified ring spinning frame. For this purpose, elastane, PET/PTT bicomponent filament were used as core material, cotton fiber was used as sheath fiber for yarn production. All yarn production parameters were kept constant. These yarns were utilized as filling in order to manufacture 3/1 twill construction denim fabrics at the different filling layout in the fabric. Stiffness properties were determined in accordance with the related standard. Results were evaluated statistically via analysis of variance. It was found that yarns type and yarn layout in the fabric had a statistically significant effect on the stiffness properties of denim fabrics at the 0.05 significance level. Moreover, it can be concluded that there was no statistically difference between the stiffness properties of denim fabrics made of elastic core-spun yarn and PET/PTT bicomponent dual core-spun yarns.

Keywords: Dual-Core Spun Yarn, Elastic Core-Spun Yarn, Denim Fabric, Stiffness

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

APPLICATION OF PRINCIPAL COMPONENT ANALYSIS TO DETERMINE THE EFFECT OF PROCESS PARAMETERS ON THE PYROLYSIS PRODUCT YIELDS

Aysun Ozkan[a*], Kemal Ozkan[b], Zerrin Gunkaya[a], Ece Yapici[a], Hasret Akgun[a], Mufide Banar[a]

[a]Eskisehir Technical University Dept. Of Environmental Eng
[b]Eskisehir Osmangazi University Dept. Of Computer Eng

*aysunozkan@eskisehir.edu.tr

Abstract:

Experimantal results are effected by the process conditions. There are mathematical models to determine the relationship between yields and process parameters. One of those models is principal component analysis (PCA). PCA is a dimension-reduction tool that can be used to reduce a large set of variables to a small set that still contains most of the information in the large set. The objective of this study was to determine the effect of process parameters (material, heating rate, temperature and catalyst) on the yields of pyrolysis products (solid, liquid and gas). Two different waste material were used: LDPE and C/LDPE. Other process parameters are 5-10-20 °C/min for heating rate, 600-800 °C for temperature, waste clay, sludge from ceramic wastewater treatment plant-zeolite for catalysts. Waste samples were individually pyrolyzed in a fixed bed reactor by using the forementioned process parameters. Finally, the pyrolysis product distributions were monitored using PCA technique.

Keywords: C/Ldpe, Ldpe, Pca, Pyrolysis

*This study was supported by the Scientific and Technological Research Council (TUBITAK) (Project No. 117Y041).

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

LIFE CYCLE ASSESSMENT OF COMPOSITE PACKAGING WASTE PYROLYSIS

Aysun Ozkan[a*], Kubra Cebeci Topbas[a], Ece Yapici[a], Zerrin Gunkaya[a], Mufide Banar[a]

[a]Eskisehir Technical University Dept. Of Environmental Eng

*aysunozkan@eskisehir.edu.tr

Abstract:

Composite/Low-density polyethylene (C/LDPE) packages are used for food packaging of varied products (soup, instant coffee, etc.). Although the consumption rate of these packaging type has been increasing, their recycling is so difficult due to their complex nature. With this motivation, the aim of this study is to investigate the environmental effects of C/LDPE waste recovery by pyrolysis through life cycle assessment (LCA). The system boundary includes laboratory scaled pyrolysis in a fix bed stainless steel reactor and material/energy/emission flows. The functional unit was defined as 1 g of waste C/LDPE entering the pyrolysis process. Inventory data has been collected through onsite measurements, materials usage and Ecoinvent software database. The LCA calculations were carried out using licensed SimaPro 8.5 software. At the impact assessment step, the CML-IA method was applied for the selected impact categories (abiotic depletion, global warming, toxicity, acidification and eutrophication).

Acknowledgment: This study was supported by the Turkish Scientific and Technological Research Council (TUBITAK) (Project No. 117Y041).

Keywords: C/LDPE, Environmental Impacts, Life Cycle Assessment (LCA), Pyrolysis, Waste Composite Packaging.

[*]This study was supported by the Turkish Scientific and Technological Research Council (TUBITAK) (Project No. 117Y041).

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

ENERGY EFFICIENCY IN SOFTWARE DEFINED NETWORKING

Recep Ibiloglu[a*], Mehmet Erkan Yuksel[b]

[a]Alanya Alaaddin Keykubat University
[b]Burdur Mehmet Akif University

*recep.ibiloglu@alanya.edu.tr

Abstract:

Providing energy efficiency has been always a major topic of networking research because of incrementing power consumption and environmental impact. Every year, new solutions and techniques are introduced for this issues. Software defined networking paradigm can be seen a wizard solution. Due to the capability of software defined networks, researchers has spent time on this paradigm. Thus, it is crucial to survey and categorize current techniques for future energy efficient software defined networking architecture. This paper aims to present recent advances on energy efficiency in software defined networking. We also dwell on implementation of SDN architecture and examine various protocols, such as OpenFlow, MPLS and NETCONF, for the benefits and drawbacks on energy efficiency. It is also provided possible guidelines for future research challenges and discussed energy saving issues which improve energy efficiency in SDN.

Keywords: Software Defined Networking, SDN, Openflow, NETCONF, MPLS, Energy Efficiency

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

ANOMALY DETECTION IN CROWDED SCENES USING UNSUPERVISED SPATIOTEMPORAL AUTOENCODER

Elvan Duman[a*], Osman Ayhan Erdem[a]

[a]Gazi University

*elvanduman@gazi.edu.tr

Abstract:

The use of surveillance cameras needs image processing and computer vision techniques, which can handle to analyze very large volumes of video data. Detection of anomalies in videos refers to the identification of events that are rare and do not meet the expected behavior. Anomaly detection in videos aims at automatically identifying anomalies from surveillance videos. In recent years, the detection of anomalous in crowded scenes has presented big challenges and attracted significant interest. However, it is still quite difficult to find a uniform solution. We presents an efficient deep learning framework for modeling the spatio-temporal motion pattern of crowded scenes. In contrast to supervised learning with convolutional neural networks based methods, we offers unsupervised convolutional spatio-temporal autoencoder, which is a three-layer convolutional long short term memory model, to model crowded scenes pattern. Experiments were performed on a public dataset from the University of Minnesota and experiment results show that the proposed method modeled crowded scenes pattern and detect anomalous in the videos successfully. Furthermore, high performance in terms of speed was achieved by using the model.

Keywords: Video Analysis, Anomaly Detection, Crowded Scenes, Unsupervised Learning

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

THE AIR POLLUTANT EMISSION FACTOR DEVELOPMENT FOR AUTOMOBILE FUELS

Ali Can[a*], Aysegul Filiz[a]

[a]Karabuk University

*drac0312@hotmail.com

Abstract:

The rapid growth of the population and development of industries are causing an excessive consumption of earth resources. Therefore, the natural resources have already reached an irreversible point which causes an adverse effect on the earth future. However, human's sensitivity is not the same as solving these environmental problems as it is created by them. Therefore, the environmental disasters dimensions have caused people to adapt to these problems.

One of the most important problems is the air pollution due to the high rate consumption of fuels by households, transport and industrial sectors.

In this study, the emission factor of C02, CH4, N2O pollutants from road vehicles will be investigated by using instantaneous fuel consumption on the roads in different velocities and gears. Direct GHGs pollutant emissions are calculated and it is used for the emission calculations for 24 hours of a case study done for the highway roads connecting center of Karabuk province and Safranbolu district.

Keywords: C02, CH4, N2O Pollutants, Road Transport, Emission Factor

[*]This study was supported by Scientific Research Projects Coordination Unit of Karabuk University

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

THE AIR POLLUTANT CONCENTRATIONS DISPERSION MEASURES BY STATISTICAL EVALUATIONS

Ali Can[a*]

[aK]arabuk University

*drac0312@hotmail.com

Abstract:

The air pollutant measurements are important and they are usually evaluated by indexing. However, the statistical evaluation on data spread from the center gives many tendency and more meaningful on the dispersion. Measures of dispersion or variability in data sets include the sample range, variance, standard deviation, coefficient of variation and interquartile range.

In this study, the Karabuk province air pollutant station data for the year 2017 and 2019 are studied and it is evaluated by using statistical approaches. The main aim is to determine the air pollutant conditions within the province. Because of high emissions within this industrialized city, the pollutant concentrations spreaded among in a sample range in other words differences between smallest and largest values of the sample. This study is considered monthly, seasonal and annual basis.

The main finding of the study is the emission is spreading entire year. However, during the winter season, it was increasing with the household consumption of fuels. But the seasonal emissions variations are also gives us a signal of the main affection of industries on the Karabuk air.

Keywords: Air Pollutant, Statistical Dispersion, Variability In Data, Sample Range

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

WATERSHED BASED BEEKEEPING ACTIVITIES FOR RURAL DEVELOPMENT; A CASE STUDY IN BINGOL COTLA HONEY WATERSHED

Alaaddin Yuksel[a*], Alperen Meral[a], Mehmet Nuri Kolak[a], Ahmet Uslu[a], Ali Riza Demirkiran[a]

[a]Bingol University

*ayuksel12@gmail.com

Abstract:

In this study, the natural resources of the Cotla Honey watershed located in the Genc town of Bingol Province were evaluated for beekeeping potential within the scope of "Agriculture and Watershed Based Development" under Bingol University Regional Development Oriented Mission Differentiation and Specialization Program. Beekeeping activities have been carried out intensively in Bingol province which is one of the most famous honey producer cities of the country. Beekeeping activities at "watershed level" offers a new approach beekeeping. An example of good beekeeping activities takes place in the "Cotla Honey Watershed" which is rich in flora and important for the beekeeping. Natural resources of the watershed have been investigated in detail and the flora which is important for beekeeping were determined. Investigating the floristic diversity, formed depending on the local factors such as geographical location, topographical structures, climate, soil types will contribute not only to flora inventory of Turkey but also to beekeeping in terms of honey quality. Geographical registration, branding, and marketing of the honey produced in the honey watershed will be completed. In order to achieve the aforementioned goals, 50 modern hive were distributed to 15 beekeepers choosen from local people holding beekeeping certificate under the contracted beekeeping concept. The beekeepers started producing regional natural honey and will soon start to produce organic honey. Consequently, important contributions will be provided to regional development in accordance with the goal of "Agriculture and Watershed Based Development" program. Honey produced in the first year was awarded in the Bingol Honey competition. High quality of honey points out the importance of the region for beekeeping. Bingol University along with Bingol Beekeepers Association, Ministry of Agriculture and Forestry, Euphrates Development Agency and other stakeholders in the Cotla Honey Basin initiated an example modern beekeeping and a cooperation model for beekeeping.

Keywords: Bingol, Cotla Honey Basin, Rural Development

[*]*This study is supported by BUBAP and Pikom-Bitki-2018-006 of Bingol University*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

STUDY OF A PROPOSAL FOR THE DEVELOPMENT OF A WATER SUPPLY NETWORK FOR IRBID CITY, JORDAN

Lameess Said Abdulqadir[a*], Tema Otoum[a], Rawan Alali[a]

[a]Yarmouk University

*lamisabdelkader@hotmail.com

Abstract:

A water distribution network is the means of getting water from the source to the consumer. It serves to convey the water from the water source and treatment works where necessary to the point where it is delivered to the consumer. The distribution system of a water works consists of the pipes, valves, hydrants and appurtenances used for distributing the water, the elevated tank and reservoir used for fire protection and for equalizing pressures and pump discharges and meters. Water distribution networks is an important component of any water supply system accounting for up to 80% of the total cost of the system and as a result operation and maintenance cost may soar higher if they are poorly designed, hence the need to have a well planned, designed and constructed water distribution network cannot be over emphasized especially because of its importance to industrial growth and water's crucial role in society for health, fire fighting and quality of life.

Keywords: Water Distribution Network,Water Supply Network, Irbid City, Water Management, Water Network.

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

THE IMPORTANCE OF BEEKEEPING IN BINGOL PROVINCE FOR SUSTAINABLE RURAL AND REGIONAL DEVELOPMENT

Alaaddin Yuksel[a*], Ahmet Uslu[a], Semra Camuka[a], Alperen Meral[a], Isa Telimen[b],Ali Riza Demirkiran[a]

[a]Bingol University
[b]Firat Development Agency

*ayuksel12@gmail.com

Abstract:

Rural development is generally defined as improving the life quality and the economic level of people living in rural settlements. Sustainable rural development aims to enhance the accessibility of the people to better life standards. It traditionally centers on the exploitation of land-intensive natural resources such as agriculture and forestry. Regional development can be specified as the effort to reduce regional disparities by developing economic and social policies compatible with regions. Thus regional development policy tends to decrease regional disparities in order to enhance mass infrastructure development and attract inward agricultural investment. Beekeeping in agricultural field is one of the leading sectors in terms of rural and regional development. Beekeeping, which is efficient and has an agricultural industry extension, represents a sector with added value. Besides, beekeeping activities increase food security, improve nutrition and fights hunger as well as in provides key ecosystem services for agriculture and human life. Bingol province is very suitable for beekeeping and Bingol natural honey has a high quality. It has been awarded as the second best natural floral honey in Apimondia 2017 Congress. According to 2017 Turkish Statistical Institute data, there were 132,476 bee colonies in Bingol province and 1,029 tons of honey were produced. Bingol honey is obtained from thousand varieties of flowers at the high altitude rangeland and mountains of Bingol province. In the province, investment in processing and packaging for honey and other beekeeping products and organic beekeeping investments in untouched mountains and highlands offer significant potential. In this study, it is aimed to analyze the potential effect of beekeeping activities upon rural and regional development in terms of socio-economic scale in Bingol province. Also, beekeeping in Bingol is vital and has great importance for sustainable rural and regional development. The study primarily involves drawing a picture of the economic size of beekeeping and honey production of Bingol. Consequently, an analysis of the potential socio- economic values and economic impacts of honey and beekeeping on the sustainable rural and regional development is presented.

Keywords: Beekeeping, Bingol Province, Sustainable, Rural And Regional Development

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

HEAT TRANSFER ON AN INSULATED PLANE WALL AND ITS EFFECT ON CLIMATE CHANGE

Ali Can[a*], Kamil Arslan[a]

[a]Karabuk University

*alican@karabuk.edu.tr

Abstract:

The climate change studies are getting important due to future considerations of earth and in every section of life, the road maps due to the mitigation action for decreasing the adverse effect of direct greenhouse gases on the atmosphere is being important for future generations of earth. This type of study is usually considered as energy efficiency. However, the climate change effect is not considered until now and it will be one for calculating the CO2 equivalent decreasing with an different type of insulator on a plane wall by calculating the carbon foot print. How the theoretical energy saving is calculated according to the energy balance by heat transfer conduction rules.

The heat transfer is only energy interaction involved in this case and there is no heat generation. The steady energy balance for the wall with no change in the temperature of wall due to time at any point will be considered. Therefore, the rate of heat transfer into the wall must be equal to the rate of the heat transfer out of it. The wall thickness L, the average thermal conductivity k for concrete, the two surfaces of the wall are maintained at constant temperatures of T1 and T2 and one-dimensional steady heat conduction through the wall is maintained. It is simply described by Fourier's law of heat conduction and the effect of insulator on the wall is determined as energy saving and its positive effect on consuming less energy. This causes decreasing GHGs emitted to the atmosphere.

Keywords: Heat Transfer, Plane Wall, Energy Efficiency And CO2 Equivalent Ghgs Emission

[*]This study was supported by Karabuk University Scientific Research Projects Coordination Unit

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

EFECT OF MOLARITY TO COMPRESSIVE STRENGTH OF GEOPOLYMER CONCRETE

Namik Yaltay[a*]

[a]Van Yuzuncuyil Universitesi

*namikyaltay@yyu.edu.tr

Abstract:

Concrete is The most widely used contruction material in The World. The production of The cement causes CO2 release and high energy consuption. To avoid these disadvantages of concrete, either cement is partly replaced some materials or some alternative materials like geopolymer concrete (concrete without cement) is used instead of cement or ordinary concrete. Geopolymer concretes produced with waste or natural materials contains SiO2 and Al2O3. These materials are activated with an alkali solution. In this study The efect of The molarity of alkali solution to The compressive strength was investigated

Keywords: Geopolymer Concrete, Molarity, Alkali Activated, Compressive Strength

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

A ROAD CONTAMINANTS MONITORING SYSTEM BASED ON IOT TECHNONOGIES

Jungho Moon[a*], Sangmin Lee[a], Myung-Suk Jo[a]

[a]Gangneung-Wonju National University

*itsmoon@gwnu.ac.kr

Abstract:

A great amount of contaminants caused by wear of vehicle components such as tyres, brakes, and chassis, and lubrication system leakages, etc. are accumulated on roads in urban areas. The road contaminants are washed down to sewer by rain. To minimize sewerage contamination, the road contaminants are processed by filter systems before being drained into sewer. As a result, the contaminants are accumulated in the filter systems, the amount of which needs to be monitored on a regular basis for normal operation of the filter system. This paper proposes a road contaminants monitoring system based on Internet of Things (IoT), which allows the amount of road contaminants washed down by rain to be monitored without the need of human intervention. The concentration of the road contaminants reaches the highest point in the early stage of rain. The monitoring system, therefore, wakes up from a power save mode when it detects raindrops and measures the amount of road contaminants and reports it to a remote server via IoT. When it does not rain, the monitoring system operates in a power save mode to maximize the battery lifetime. The raindrops are detected by a piezo sensor and the amount of the contaminants are measured by an electromagnetic sensor installed in the monitoring system. The electric current which flows during the power save mode is approximately 15 μA and the expected battery life time of the monitoring system is approximately 3 years.

Keywords: Road Contaminants, Monitoring System, Internet Of Things (Iot)

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

LOW TEMPERATURE THERMOLUMINESCENCE BEHAVIOUR OF Y2O3 NANOPARTICLES

Nizami Hasanli[a*]

[a]Middle East Technical University

*nizami@metu.edu.tr

Abstract:

Rare earth oxides may be applicable for optoelectronics, luminescent and biomedical devices. Y2O3 is a rare earth oxide material becoming focus of interest in many research fields especially in LEDs and MOS transistor applications.

In this study, thermoluminescence (TL) experiments for Y2O3 nanoparticles at cryogenic temperatures (10−250 K) were performed with heating rates ascended from 0.4 to 0.8 K/s. TL spectrum detected for 0.4 K/s exhibited overlapping seven peaks centered at peak maximum temperatures of 19, 62, 91, 115, 162, 196 and 125 K. Experimental Tmax−Texc method was applied to the TL spectra observed for different excitation temperatures (Texc) to determine the number of peaks consisting in whole TL curve and to investigate the characteristics of related trapping levels. The analyses resulted in existence of one quasi-continuously distributed trap and six discrete, single trapping centers within the forbidden gap. Initial rise method was utilized to calculate activation energies of revealed trap levels responsible for observed TL peaks. Activation energy of the distributed trap centers was found to increase from 18 to 24 meV as a function of Texc in the range of 10 16 K. Activatio
and 740 meV. Heating rate dependencies of each TL peaks in the spectrum were also studied. The increase of heating rate leads to decrease of TL intensities and increase of peaks maximum temperatures. The decrease of TL intensity with heating rate is the evidence of thermal quenching effect.

Acknowledgment. This research was financially supported by Middle East Technical University (Ankara, Turkey) under the grant No. GAP-105-2018-2752.

Keywords: Semiconductors; Thermoluminescence

*

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12 - 16 June 2019 Prague

THE PREPARATION AND SWELLING PROPERTIES OF HYDROGEL BASED P(DMAAM-CO-STARCH) AND ITS APPLICATION FOR NITROGEN ADSORPTION

Tuba Ersen Dudu[a*], Duygu Alpaslan[a], Nahit Aktas[b]

[a]Van Yuzuncu Yil University
[b]Kyrgyz-Turkish Manas University, Faculty of Engineering, Department of Chemical Engineering, Bishkek, Kyrgyz Republic

*alpaslanduygu@hotmail.com

Abstract:

The use of nitrogenous nutrient resources in plant development is of great importance. However, it is a known fact that utilization of excessive nitrogen in irrigation does not let to plant to absorber the required amount. In this study, the synthesis, characterization of p(DMAAm-co-Starch) hydrogel and the adsorption properties of nitrogen, which is a plant nutrient source, were investigated. The swelling behavior of poly(N,N-Dimethylacrylamide-co-Starch) (p(DMAAm-co-Starch)) hydrogel was investigated at various pHs (2-12) and in various aquatic environments. Fourier Transform Infrared (FTIR) Spectroscopy and Thermogravimetric analyses (TGA) were used to illuminate the hydrogel structure. In addition, the adsorption behavior of the nitrogen ion by the synthesized hydrogel was investigated as a function of concentration, temperature and pHs. The equilibrium adsorption data were studied by Langmuir, Freundlich, Temkin and Dubinin–Radushkevich (D-R) isotherms. Of the four-adsorption isotherms, the R2 value of the Langmuir isotherm model was the highest. The maximum nitrogen adsorption capacity for p(DMAAm-co-Starch) was 107.7 mg g-1. Thermodynamic parameters such as ΔG°, ΔH° and ΔS° were evaluated, indicating that the overall adsorption process was endothermic and spontaneous.

Keywords: Hydrogel, nitrogen, agriculture, thermodynamic, isotherms.

Keywords: Hydrogel, Nitrogen, Agriculture, Thermodynamic, Isotherms

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

A TOOL FOR ASSESSMENT OF RISK ACTIVITIES IN CONTRACTOR CONSTRUCTION COMPANIES: JOINT PROJECT MANAGEMENT PORTAL

Aynur Kazaz[a*], Serdar Ulubeyli[b], Ali Evren Imre[a], Gokcen Arslan[a]

[a]Akdeniz University
[b]Zonguldak University

*akazaz@akdeniz.edu.tr

Abstract:

An increasingly competitive environment in the construction industry does not just require a quality management system of companies; it also requires proactive management through strategic management, risk management, internal audit and system improvement strategies. Therefore, the construction companies must be in a constant manner of change and development. In order to ensure the continuity of this development and to establish a sustainable corporate structure, it has become a necessity for construction enterprises to establish an effective control process. In order to ensure the continuity of this development and to establish a sustainable corporate structure, it has become mandatory to establish an effective control process with internal control system and enterprise risk management system in construction companies. The former is designed to ensure effectiveness and efficiency, the reliability of the financial reporting system, compliance with legal regulations by providing reasonable assurance on this issue that takes part in business processes. On the other hand, the latter provides reasonable assurance by managing the risks in order to identify the events that have the potential to affect the corporation/organization and manage the company's organizational goals within the framework of risk appetite. In the construction sector, which has a high-risk level, there is no legal obligation for the contractor construction companies to implement a risk-based management model. As a result of this situation; in this study, it is aimed to provide a high organizational model of risk intelligence for the integration of COSO internal control and corporate risk management system in contractor construction companies in order to ensure corporate sustainability in the construction sector.

Keywords: Construction; Internal Control; Enterprise Risk Management, Construction Management, Proactive Management

*This study is based on a research project which was financially supported by the Scientific and Technological Research Council o

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

NUMERICAL INVESTIGATION ON HEAT TRANSFER ENHANCEMENT AND FLOW CHARACTERISTICS IN A TUBE EQUIPPED WITH PERFORATED TWISTED TAPE WITH ALTERNATE AXIS

Toygun Dagdevir[a*], Orhan Keklikcioglu[a], Veysel Ozceyhan[a], Ferdi Yologlu[a]

[a]Erciyes University, Department of Mechanical Engineering, 38039, Melikgazi/Kayseri, Turkey.

*toygun@erciyes.edu.tr

Abstract

In this study, effects of inserting twisted tape to a horizontal tube on heat transfer enhancement performance and flow characteristics is investigated with using a CFD program. The CFD program is based on finite volume technique to solve differential equations. The continuity, momentum and energy equations are discretized and Simple algorithm scheme is applied to link the pressure and velocity fields inside the solution domain. Analyses are carried out with Reynolds number of in range from 10,000 to 30,000, and constant heat flux is applied to wall of the tube. In order to simulate turbulent nanofluid flow k-ω standard turbulent model is applied for all cases. The numerical methodology is validated with literature in order to prove the accuracy of the study. The twisted tape configurations consist with various alternate axis. The results show that increase in turn amount of alternate axis provides higher heat transfer enhancement compared to typical twisted tape. However, used of the twisted tape with alternate axis more increase pressure drop penalty compared to typical twisted tape.

Keywords: Twisted tape, Heat transfer enhancement, Pressure drop, Performance evaluation criteria

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

INVESTIGATION OF SOLAR ENERGY POTENTIAL IN THE SOUTHEASTERN ANATOLIA

Fevzi Onen[a*]

[a]Dicle University, Department of Civil Engineering, 21280, Sur/Diyarbakir, Turkey.

*fonen@dicle.edu.tr

Abstract

In parallel with the increase of Turkey's population and growing economy, consumption of energy resources has also increased in recent years. Turkey is dependent on foreign supplies by 73% in the current situation. In order to reduce this rate, it is carrying out studies on the determination of the potential of renewable energy sources while carrying out exploration works of fossil energy sources. Southeastern Anatolia Region of Turkey with economic and cultural wealth, which is a geographical and historical significance, has hosted many civilizations. In the Southeastern Anatolia Region, electricity generation from solar energy systems is expected to be one of the important investment opportunities of the future. Compared to other regions of Turkey, most of the solar fields are located in the Southeastern Anatolia Region. Considering the average sunshine duration and Global Radiation Values in the Solar Energy Potential Map (GEPA), it is observed that the Southeastern Anatolia Region is rich in Solar Energy. In Şanlıurfa, Gaziantep, Diyarbakır and other provinces, where the number of annual sunbathing days is high, investors started to operate many large and small solar power plants with the support of the state. A 250 kilowatt solar power plant was established in 3 thousand decares of land within the GAP International Agricultural Research and Training Center in Diyarbakır. In addition, the largest investment in the Southeastern Anatolia Region is the power plant with an annual capacity of 24 million kilowatt-hours, which consists of 40 thousand solar panels in Şanlıurfa.

Keywords: Renewable Energy Sources, Solar Energy, Southeastern Anatolia Region, Diyarbakir

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

PREDICTION OF SCOUR AROUND A SIDE WEIR IN LINEAR CHANNEL WITH GEP MODEL

Fevzi Onen[a*], Hayrettin Kaya[b]

[a]Dicle University, Department of Civil Engineering, 21280, Sur/Diyarbakır, Turkey
[b]DSİ, 21280, Sur/Diyarbakır, Turkey., h-kaya@dsi.gov.tr

*fonen@dicle.edu.tr

Abstract

Side-weirs have been widely used in hydraulic and environmental engineering applications. Side-weir is known as a lateral intake structure, which are significant parts of the distribution channel in irrigation, land drainage, and urban sewerage system, by flow diversion device. Local scour involves the removal of material around piers, abutments, side-weir, spurs, and embankments. Scour depth (Hd/p) based on four dimensionless parameters: approach flow velocity (V 1/ V c), water head ratio (h 1 − p)/h 1, side-weir length (L/b) and sediment size (d 50/p). The aim of this study is to develop a new formulation for prediction scour of side-weir intersection along the linear channel using Genetic Expression Programming (GEP) which is an algorithm based on genetic algorithms (GA) and genetic programming (GP). In addition, by looking at the Determination Coefficient (R2) and the Mean Squared Error (RMSE), the predicted values obtained from the model were compared with the measured values. Sensitivity analysis is performed for GEP, and it is found that approach flow velocity (V 1/ V c) and water head ratio (h 1 − p)/h 1 are the most effective parameters on the scour depth.

Keywords: Side-weir, Scour depth, Genetic expression programming, Determination coefficient

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

ELECTRO-OXIDATION PROCESS FOR THE TREATMENT OF REACTIVE BLUE 221

Gulin Bice Yildirim[a], Fatih Ilhan[a], Kubra Ulucan-Altuntas[a], Amar Ćemanović[b], Sevval Eyri[a], Ozer Cinar[a*]

[a]Yildiz Technical University, Department of Environmental Engineering, 34220, Esenler/İstanbul, Turkey
[b]Istanbul Technical University, Department of Environmental Engineering, Maslak/Istanbul, Turkey.

*ocinar@yildiz.edu.tr

Abstract

High concentration of color, make textile wastewaters as a major source of contamination. While physicochemical processes (adsorption and chemical coagulation) and biological processes (biological treatment/membrane bioreactor) were the most applied treatment method for textile wastewater, compared to these conventional treatment methods, advanced oxidation process produces less sludge with high removal efficiencies. The electrooxidation process is a treatment method which has increased in popularity in recent years because it does not imply sludge formation nor electrode consumption. In short, it is a process in which purification is carried out by providing electric current to an electrode without any chemical addition. In this study, general information about the electrooxidation process is given, as well as its use in water/wastewater treatment. As a sample study, the removal of Reactive blue 221 dye was determined with the use of a Ti/RuO2 anode and a Titanium cathode. The most successful results were achieved with 30 mA/cm2 current density, 13 minutes reaction time, pH 3.8 and dye concentration of 60 mg/L, amounting to a reactive blue 221 treatment efficiency of 97.5%.

Keywords: electrochemical, oxidation, electro-oxidation, dye removal

Acknowledgments
Author Amar Ćemanović is supported by the Scientific and Technological Research Council of Turkey (Tübitak) through the 2215 Graduate Scholarship Programme.

ICENS 5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE
12-16 June 2019 Prague

THERMAL, ELECTRICAL AND OPTICAL PROPERTIES OF SYNTHESIZED AND CHARACTERIZED CU(II), NI(II) AND CO(II) COMPLEXES OF HYDRAZONE-OXIME LIGAND FROM 4'-METHYLACETOPHENONE

Tufan Topal[a*]

[a]Pamukkale University

*tufantopal@hotmail.com

Abstract

Oximes represent a very important group of ligands in coordination chemistry. Inorganic semiconducting complexes constitute one of the most fascinating recent research topics, deeply involving both chemists and solid state physicists. An organic semiconductor can be synthesized with properties comparable to those exhibited by inorganic semiconductor materials such as development for transistors and the wide array of now-existing derivative devices and components of the electronics industry (Karapınar.E. 2013). In this work p-methyl-isonitrosoacetophenone have been isolated through the nitrosation reaction between starting material and butlynitrite by sodium ethoxide medium. p-methyl-isonitrosoacetophenone was reacted with 2-Aminopyridin, has been synthesized and its Co(II), Cu(II), and Ni(II), were synthesized and characterized by elemental analysis, magnetic susceptibility, FT-IR spectra, and thermal analysis techniques. The optical band gap of this ligand and its complexes were determined by UV-vis spectrophotometer in the wavelength range 190–1100 nm. A decrease in the energy band gap of the [CoL2], [NiL2], and [CuL2] complexes has been observed compared with HL ligand. Temperature-dependent conductivity measurements showed that all samples behave like semiconductor.

Keywords: Oxime, Electrical And Optical, Complexes

ICENS

5TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCES

www.icens.eu

Western Michigan University

National University of Public Service

University of Cincinnati

International University of Sarajevo IUS

Turkish Airlines

Europe Congress www.europecongress.org