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(ABSTRACTS)

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CONTENTS OF ABSTRACTS

O 1. BIOCHAR PRODUCED FROM PYROLYSIS OF OLIVE POMACE AS AN ADSORBENT FOR CR (VI) REMOVAL FROM AQUEOUS SOLUTIONS 1

O 2. NATURA 2000 POTENTIAL SITES IN ALBANIA – A CONTRIBUTION OF FISH SPECIES OF COMMUNITY INTEREST 2

O 3. SURVEY ON STONE DEGRADATION AND USE OF DIAGNOSIS FOR ITS CONSERVATION 3

O 4. CLIMATE CHANGE EFFECT ON MICROBIOME OF TERRESTRIAL ECOSYSTEMS 4

O 5. THE LIVESTOCK HYGIENE AND THE ENVIRONMENTAL IMPLICATIONS 5

O 6. ENVIRONMENTAL IMPACTS OF GLASS BEVERAGE PACKAGING 6

O 7. ROBOTIC SYSTEMS USED IN DAIRY CATTLE FARMS 7

O 8. APPLICATION OF MAGNETIC BIOCHAR PRODUCED FROM ORANGE TREE SAWDUST AS AN ADSORBENT FOR THE REMOVAL OF CR (VI) IN WATERY ENVIRONMENT 8

O 9. COMPARISON OF ENERGY EFFICIENCY OF DAIRY FARMS WITH LOOSE HOUSING SYSTEM HAVING DIFFERENT DAIRY COW CAPACITIES AND DETERMINATION OF OPTIMUM DAIRY FARM CAPACITY[#] 9

O 10. COMPARISON OF THE STRUCTURAL PROPERTIES OF THE DAIRY CATTLE FARMS USING ROBOTIC MILKING SYSTEMS AND USING MILKING PARLOUR[#] 10

O 11. TREATMENT OF TEXTILE WASTEWATERS WITH ELECTROCOAGULATION ADVANCED TREATMENT DROGEN PEROXIDE SENSOR APPLICATION OF TI AND TINI CATALYSTS 11

O 12. EVALUATING GROUNDWATER QUALITY FOR IRRIGATION SUITABILITY IN KONYA CITY 12

O 13. ESTIMATION OF NITROGEN OXIDES POLLUTION USING GEOGRAPHICAL INFORMATION SYSTEM IN TURKEY 13

O 14. ENVIRONMENTAL EFFECTS OF COAL COMBUSTION WASTES AND USAGE AREAS 14

O 15. THE TESTING OF COW MANURE FERTILIZER DOSES TO PLANT GROWTH COMPONENTS AND BIOACTIVE COMPOUND OF DEWA LEAF (*GYNURA PSEUDOCHINA* (L.) DC) 15

O 16. LANDSCAPE CONNECTIVITY IN PLANNING AND IMPLEMENTING CONSERVATION AND RESTORATION APPROACHES IN CENTRAL ALBANIA CARSTIC LAKES SYSTEM 16

O 17. TEXTILE DYE REMOVAL FROM AQUEOUS SOLUTION BY USING PEANUT AND PISTACHIO SHELLS 17

O 18. HOW DOES ECONOMIC GROWTH AFFECTS DEFORESTATION: EVIDENCE FROM ALBANIA 18

O 19. RAINWATER HARVESTING AS A SUSTAINABLE SOLUTION FOR DOMESTIC USE 19

O 20. THE SYNTHESIS OF Ag/TiO_2 BY PHOTOCHEMICAL DEPOSITION METHOD AND ITS PHOTOCATALYTIC ACTIVITY 20

O 21. DYNAMIC PERFORMANCE OF A HYDRAULIC SYSTEM DRIVEN BY A VARIABLE SPEED AC ELECTRIC MOTOR WITH ELECTRO-HYDRAULIC LOAD SENSINGSTIC SPACER USED IN FIELD CONCRETE AND ITS GAINS 21

O 22. ENVIRONMENTAL SOUND RECOGNITION WITH VARIOUS FEATURE EXTRACTION AND CLASSIFICATION TECHNIQUES 22

O 23. THE IDEA OF CULTIVATION IN DESERT 23

O 24. WHERE TO START THE PREVENTION OF FOOD WASTE 24

O 25. HOMEMADE DIP COATING MACHINE FOR THIN FILMS 25

O 26. OVERVIEW OF ENERGY EFFICIENCY FOR PUBLIC BUILDING IN ALBANIA 26

O 27. ASSESSMENT OF THE WATER BUDGET BY USING A CONCEPTUAL MODEL: THE CASE OF ÇARŞAMBA BASIN 27

O 28. DROUGHT ANALYSIS WITH STANDARDIZED SOIL MOISTURE INDEX USING HYDRO-METEOROLOGICAL DATA 28

O 29. EVALUATION OF THE AKSARAY PROVINCE AIR QUALITY: CONDITIONAL BIVARIATE PROBABILITY FUNCTION AND K-MEANS CLUSTERING 29

O 30. KONYA SYNERGY IN THE FIELD OF COMPOST AND BIOGAS PLANTS 30

O 31. EVALUATION OF CAPACITY AND SEISMIC PERFORMANCE OF BRICK MASONRY BUILDINGS WITH AND WITHOUT STRUCTURAL INTERVENTIONS 31

O 32. AN EVOLUTIONARY FRAMEWORK ON MALADAPTIVE CONSUMPTION BEHAVIOURS 32

O 33. DETERMINATION OF POPULATION DEVELOPMENT AND INFESTATION RATE OF THE BEET ARMYWORM [*Spodoptera exigua* (LEPIDOPTERA: NOCTUIDAE)] IN SUGAR BEET FIELDS IN ILGIN (KONYA) DISTRICT 33

O 34. IMPACT OF TWO IRRIGATION SYSTEMS; SPRINKLING AND DRIP ON CULTIVATED SOIL MOISTURE AND IN OUARGLA REGION- ALGERIA 34

O 35. ASSESSMENT OF LEAD CONCENTRATION IN THE AEROSOL SAMPLING USING DIFFERENT ANALYTICAL TECHNIQUES 35

O 36. GEOLOCICAL AND PETROGRAPHICAL INVESTIGATIONS OF THE GÜMELİ VILLAGE (ALAPLI-ZONGULDAK-TURKEY) 36

O 37. THE USE OF CROSS LAMINATED TIMBER IN STRUCTURES 37

O 38. MEASUREMENT AND MODELLING OF INDOOR PARTICLES IN A CASTING INDUSTRY IN KONYA PROVINCE 38

O 39. EVALUATION OF ANTIBACTERIAL ACTIVITIES OF NYLON 6,6 NANOFIBERS COATED WITH MINT OIL AND MINT EXTRACT 39

O 40. ANTIBACTERIAL PROPERTIES OF NYLON 6,6 NANOFIBERS CONTAINING SILVER NANOPARTICLES 40

O 41. DECORATION OF SILVER NANOPARTICLES SYNTHESIZED BY GREEN APPROACH ONTO NATURALLY COLORED NYLON 6,6 NANOFIBERS: INVESTIGATION OF ANTIBACTERIAL ACTIVITY 41

O 42. RELATIONSHIP BETWEEN THE GEOLOGICAL UNITS AND SOIL GROUPS: A CASE STUDY AROUND THE HATIP-KAŞINHANI (KONYA-TURKEY) 42

O 43. PRELIMINARY DATA ON SCORPIONS (SCORPIONES) OF ALBANIA WITH NOTES ON THEIR TOXICITY 43

O 44. THE CLASSIFICATION LOCAL AREA BASED CLIMATIC DATA USED 44

O 45. FIRE SCENARIOS-BASED ANALYSIS IN WATER SUPPLY NETWORK: CASE STUDY AKYURT, ANKARA 45
O 46. TREATMENT OF BIOGAS SLURRY BY MICROALGAE 46
O 47. ENVIRONMENTAL MODELLING OF SOIL WATER CHARACTERISTIC CURVE FOR TWO CONTRASTING SOIL TEXTURE 47
O 48. IMPACT OF COMPOST AND BIOCHAR ON THE MANAGEMENT OF SOIL SUSTAINABILITY 48
O 49. PRODUCING ENERGY FROM MAGNETIC FIELD WITH WAVE ENERGY....49
O 50. INDOOR ENVIRONMENT PARTICLE MEASUREMENT AND MODELLING IN CAFES AROUND THE UNIVERSITY 50
O 51. OCCUPATIONAL WORK AND WORKPLACE SAFETY PARAMETERS AT QUARRIES 51
O 52. NATURAL STONE CUTTING PLANTS AND AMOUNT OF WASTE PRODUCED 52
O 53. URBAN DRAINAGE DESIGN ACCORDING TO TURKISH RAINWATER HARVESTING AND DISPOSAL GUIDELINE....53
O 54. APPLICATION OF HOLMIUM (Ho+3) DOPED TiO2 PHOTOANODES TO IMPROVE PHOTOVOLTAIC PERFORMANCE OF DYE SENSITIZED SOLAR CELLS....54
O 55. GEOCHEMICAL PROPERTIES AND GEOLOGICAL SIGNIFICANCE OF KARASU SPRING WATER AND YERKÖPRÜ TUFAS (HADIM-YERKÖPRÜ KONYA)....55
O 57. GEOLOGICAL APPROACH TO ÇITDERE NATURAL PROTECTION AREA 57
O 58. TREATMENT OF METAL PLATING WASTEWATER BY ELECTROCOAGULATION PROCESS....58
O 59. PLANING THE BICYCLE ROADS IN THE CITIES; EXAMPLES IN THE WORLD AND IN TURKEY 59
O 60. EVALUATION OF THE POTENTIAL OF DISABLE EXAMPLES IN THE WORLD AND IN OUR COUNTRY....60
O 61. EXAMINATION OF THE ACCESSIBILITY PROBLEM FOR THE DISABLED IN URBAN LANDSCAPE: A STUDY ON İZMİR-KONAK İNÖNÜ STREET 61
O 62. THE EVALUATION OF THE DISABLED STANDARDS IN BUYUK PARK IZMIR / BORNOVA IN TERMS OF URBAN LANDSCAPE 62
O 63. THE IMPORTANCE OF OPEN AIR HOMES IN LANDSCAPE ARCHITECTURE 63
O 64. DEVELOPMENT OF A WATER MANAGEMENT FOR AN AUTOMOTIVE PEM FUEL CELL SYSTEM....64
O 65. HYDROGEN PEROXIDE FUEL CELL USING CORE-SHELL CATALYSTS....65
O 66. SYTHESIS AND CHRACTERISATION OF Pd BASED CATALYSTS FOR SENSOR APPLICATION....66
O 67. ELECTROCHEMICAL DETERMINATION OF CADMIUM AND LEAD ON ZnF_2O_4/rGO/GCE....67
O 68. SYNTHESIS OF IN-SITU S DOPED FEW LAYER GRAPHENE BY CHEMICAL VAPOR DEPOSITION TECHNIQUE AND THEIR SUPERIOR GLUCOSE ELECTROOXIDATION ACTIVITY 68
O 70. FEW-LAYER GRAPHENE COATED ON INDIUM TIN OXIDE ELECTRODE PREPARED BY CHEMICAL VAPOR DEPOSITION AND THEIR ENHANCED GLUCOSE ELECTROOXIDATION ACTIVITY....70

O 71. DETERMINATION OF ZINC AND COBALT BY VOLTAMMETRIC METHOD 71
O 72. SYNTHESIS OF B DOPED AND IN-SITU B DOPED FEW LAYER GRAPHENE BY CHEMICAL VAPOR DEPOSITION TECHNIQUE FOR HYDROGEN PEROXIDE DETECTION.....72
O 73. OPTIMAL TUNING OF PID CONTROLLER FOR QUADROTOR SYSTEM USING A NEW ADAPTIVE PARTICLE SWARM OPTIMIZATION 73
O 74. TRACE ELEMENT DETERMINATION BY ELECTROCHEMICAL METHODS.....74
O 75. SENSITIVE HYDROGEN PEROXIDE SENSOR BASED ON BIMETALLIC CATALYSTS.....75
O 76. A PRACTICAL CLASSIFICATION TO SUSTAINABLE ROAD SLOPE STABILITY ASSESSMENT, ALANYA-KONYA ROADWAY, TURKEY: CASE STUDY.....76
O 77. ROOFTOP RAINWATER HARVESTING OPTIMIZATION IN ANTALYA, TURKEY .77
O 78. "GREEN SYNTHESIS" OF SILVER NANOPARTICLES AND EVALUATION OF THEIR CATALYTIC ACTIVITY ON REDUCTION OF METHYLENE BLUE 78
O 79. EVALUATION OF THE ASH BEHAVIOR SIMULATING COFIRING OF COAL AND BIOMASS 79
O 80. USABILITY OF ARTIFICIAL NEURAL NETWORKS FOR SEDIMENT ESTIMATION.....80
O 81. THE FUTURE ROLE OF CARBON NANOTUBES IN ENERGY SECTOR.....81
O 82. A NOVEL COMPOSITE BY COATING ACORN SHELL (QUERCUS VULCANICA) WITH CHITOSAN FOR REMOVAL OF CR (VI) FROM AQUEOUS SOLUTION.....82
O 83. PHOTOCATALYTIC Cr (VI) REMOVAL WITH NANOMATERIAL COATED ON NATURAL STONE 83
O 84. INDOOR FORMALDEHYDE EMISSION IN AIR AND HEALTH IMPACTS.....84
O 85. KARAPINAR (KONYA) THE LAST THREE YEARS OF SİNKHOLES AND CHARACTERISTICS.....85
O 86. HYDROGEOCHEMICAL INVESTIGATION OF THE SPRİNGS IN SILLE (KONYA) REGION 86
O 87. THE EVALUATION OF URBAN ENVIRONMENTAL PERCEPTION OF UNIVERSITY STUDENTS IN KONYA CBD BY COGNITIVE MAPPING METHOD.....87
O 88. AN ENVIRONMENTALLY-FRIENDLY BLEACHING FOR HEMP AND LINEN FABRICS.....88
O 89. EVALUATION OF REINFORCED CONCRETE HIGH BUILDINGS WITHIN THE CONTEXT OF TBDY-2018 89
O 91. UTILIZATION OF UNSATURATED POLYESTER IN IMPROVING THE GEOTECHNICAL PROPERTIES OF THE CLAYS 91
O 92. INVESTIGATION OF OPERATOR EFFECT ON DETERMINATION OF PLASTIC LIMIT 92
O 93. UTILIZATION OF UNSATURATED POLYESTER IN IMPROVING THE GEOTECHNICAL PROPERTIES OF THE SANDS 93
O 94. INDUSTRIAL BY-PRODUCTS AND REEVALUATION.....94
O 95. EVALUATION OF URBAN SPACE PERCEPTION IN SUSTAINABLE HISTORICAL ENVIRONMENT ON THE CHILDREN OF PRIMARY SCHOOL AGE, THE CASE OF ILGIN/KONYA.....95

O 96. SUSTAINABILITY AND ENERGY MANAGEMENT....96
O 97. DETECTION OF VOLATILE ORGANIC COMPOUNDS IN INDOOR INDUSTRIAL AIR....97
O 98. ENVIRONMENTAL PSYCHOLOGY FOR ARCHITECTURAL DESIGN: COGNITIVE-BEHAVIORAL APPROACHES TO SPATIAL COGNITION....98
O 99. ENVIRONMENTALLY FRIENDLY ALTERNATIVE FUEL TO REDUCE TURKEY'S PETROLEUM IMPORTS: E85 (FLEX FUEL)....99
O 100. INVESTIGATION OF THE SAMPLE CONCEPTS OF THE SMART CITY CONCEPT ON THE LITERATURE IN OUR WORLD AND COUNTRY....100
O 101. EFFECTS ON SOIL QUALITY OF COMPOSTING TOGETHER OF SEWAGE SLUDGES WITH AGRICULTURAL WASTES....101
O 102. THE EFFECT OF THE SOUTHERN OSCILLATION ON YEŞILIRMAK BASIN....102
O 103. THE EFFECT OF SOUTHERN OSCILLATION ON ANNUAL PRECIPITATION TRENDS IN CENTRAL ANATOLIA....103
O 104. THE EFFECT OF DIFFERENT SEISMIC ISOLATOR TYPES AND FLOOR NUMBER TO EARTHQUAKE BEHAVIOR ON MULTI-STOREY REINFORCED CONCRETE STRUCTURES....104
O 105. ASSESSMENT OF PESTICIDES TOXICITY IN TERMS OF ENVIRONMENT AND HUMAN HEALTH....105
O 106. WEIGHT ANALYSIS OF PLANE STEEL ROOFS....106
O 107. RECOVERY OF SOME METAL FROM THE PHOSPHATE SLUDGE; ZINC AND NICKEL....107
O 108. IMPLEMENTATION OF 480W LLC RESONANT CONVERTER....108
O 109. CORPORATE STRUCTURE OF THE SOUTHERN ANATOLIA CLEAN AIR CENTER AND AIR QUALITY WORKS....109
O 110. STOCK PRICE FORECASTING WITH A FINANCIAL RATIO BASED NEURAL NETWORK ALGORITHM....110
O 111. THE EFFECT OF CONCENTRATED SOLAR ENERGY ON DRYING OF TREATMENT SLUDGE....111
O 112. EVALUATION OF ECO-CITY PLANNING PRINCIPLES IN THE EXISTING LIVING ENVIRONMENTS....112
O 113. AN ECO-FRIENDLY MANAGEMENT STRATEGY FOR PLANT PATHOGENIC BACTERIA: BACTERIOPHAGES....113
O 114. CRISPRCAS/9 SYSTEM IN COMBATING PLANT PATHOGENIC BACTERIA....114
O 115. THE EFFECT OF VEGETABLE AND FRUIT WASTE ON ANAEROBIC SLUDGE DIGESTION PERFORMANCE....115
O 116. RECOVERY OF IRON FROM METALLURGIC WASTES....116
O 117. INVESTIGATION OF FUEL PRODUCTION FROM PLASTIC WASTES IN PULPER 117
O 118. DIMENSIONING AND ECONOMIC ANALYSIS OF A GRID-INDEPENDENT PV SYSTEM FOR A STANDARD HOUSING....118
O 119. A SNEAKY GAS ALL OVER OUR LIVES; RADON....119

O 120. THE EFFECTS OF OVERSIZED/ OVERLOADED VEHICLES ON HIGHWAY FLEXIBLE PAVEMENTS AND SELF-PROPELLED MODULAR TRANSPORTER (SPMT) EXAMPLE 120
O 121. AN OVERVIEW OF STEROIDS; NATURAL AND SYNTHETIC STEROIDS 121
O 122. EVALUATION OF THE USE OF BIOMIMESIS IN BUILDING SHELL DESIGN THROUGH EXAMPLES....122
O 123. DETERMINATION OF ENVIRONMENTAL MICROORGANISMS BY IMAGE PROCESSING....123
O 124. WHICH IS GREENER: PLASTIC BOTTLES OR ALUMINUM CANS?....124
O 125. GREENHOUSE GAS EMISSIONS FROM CEMENT INDUSTRIES IN TURKEY 125
O 126. ENGINEERING PROPERTIES OF HYBRID FIBER REINFORCED CEMENTITIOUS COMPOSITES FOR SUSTAINABLE STRUCTURES....126
O 127. COMPARISON OF FIBER REINFORCED AND CARBON NANOTUBE MODIFIED CEMENT MORTARS 127
O 128. SOME DURUM WHEAT (Triticum durum L.) GENOTYPES DETERMINATION OF COMBINATION OF SKILLS IN THE DIFFERENT NITROGEN ENVIRONMENT 128
O 129. THE WIND EROSION SEEN IN KARAPINAR....129
O 130. CFD SOLUTION OF DAM SPILLWAYS....130
O 131. COMPARATIVE INVESTIGATION OF TRAFFIC EMISSION RATES IN KONYA 131
O 132. PUMPED-HYDRO ENERGY STORAGE: A CASE STUDY IN TURKEY 132
O 133. INVESTIGATION OF URBAN FLOOD PROTECTION STRUCTURES AND THEIR PROBLEMS: A CASE STUDY OF KONYA FLOOD PROTECTİON STRUCTURES....133
O 134. CFD ANALYSIS OF FLOODING AND ASSESMENT OF FLOOD DAMAGES 134
O 135. COST ANALYSIS OF WASTE COLLECTION AND TRANSPORT 135
O 136. FORAGE CROPS IN ACID SOILS OF INDONESIA....136
O 137. RESPONSE OF BORON GENOTYPES TO BORON DEFICIENCY AND TOXICITY .137
O 138. SOIL EROSION IN INDONESIA AND ITS CONTROL....138
O 139. PHYSICAL MODELING FOR DEVELOPMENT OF ENERGY DISSIPATING STRUCTURES....139
O 140. CHLORIDE ADSORPTION BY THE ADSORBENT SYNTHESIZED FROM WASTE PAPER....140
O 141. CHALLENGES OF COMBATING WITH AIR POLLUTION IN NORTH MACEDONIA141
O 142. NEW CONSIDERATION FOR BIODIESEL SMALL SCALE PRODUCTION USING MODELING AND SIMULATION TECHNICS....142
O 143. THE IMPORTANCE OF RENEWABLE ENERGY SOURCES FOR THE ENVIRONMENT....143
O 144. AN ANALYSIS OF LOGISTICS VILLAGES IN TURKEY BY USING GEOGRAPHIC INFORMATION SYSTEMS (GIS): KONYA SAMPLE....144
O 145. UNDERPASS DESIGN WITH TOP-DOWN CONSTRUCTION TECHNIQUE ON RAILWAY AND HIGHWAY INTERSECTION LINES 145
O 146. CONTROL OF PERMANENT MAGNET SYNCHRONOUS MOTOR 146

O 147. THE CHARACTERISTICS OF THE DAIRY FARMS WITH FREESTALL HOUSES SUPPORTED BY IPARD IN KONYA REGION AND THE THEIR EFFECTS ON ENVIRONMENTAL POLLUTION[#] 147

O 148. EVALUATION OF LOCAL BIODIVERSITY: CASE STUDY, ALBANIA 148

O 149. ZERO WASTE AND SUSTAINABLE DEVELOPMENT....149

O 150. A RESEARCH OF PARTICLE MATTER LEVEL FROM QUARRIES INDUSTRY IN KONYA "ANKARA ROAD" DISTRICT 150

P 1. DETERMINATION OF FATTY ACID PROFILE OF SOME EXTRA VIRGIN OLIVE OIL BY GC-FID 151

P 2. APPLICATION OF GEOGRAPHICAL INFORMATION SYSTEM FOR LANDSLIDE SUSCEPTIBILITY MODELING IN THE TORTUM LAKE AND ITS NEAR VICINITY (NE TURKEY) USING INFORMATION VALUE METHOD 152

P 3. ENERGY EFFICIENCY AND CARBON EMISSION POTENTIAL COMPARISON OF HEATING SYSTEMS 153

P 4. IMPROVEMENT OF DRUG PRODUCTION PROCESSES: EFFECT OF ACTIVE SUBSTANCE PARTICLE SIZE DISTRIBUTION ON THE PRODUCT DISSOLUTION RATE....154

P 5. DETERMINATION OF LINEAR AND NONLINEAR OPTICAL BEHAVIOUR OF NOVEL TETRAAZAMACROCYCLE DERIVATIVES....155

P 6. STRENGTHENING OF RC BEAMS SUBJECTED TO CORROSION UNDER THE EFFECT OF FLEXURAL....156

P 7. DIATOM COMMUNITY FROM EPIPHYTIC ALGAE IN DIFFERENT DEPTH SAMPLES FROM "GUR I KUQ" STATION IN OHRID LAKE....157

P 8. AN OVERVIEW OF SOIL REMEDIATION TECHNOLOGIES 158

P 9. ASSESSMENT OF WATER QUALITY IN THE DIFFERENT DEPTH OF OHRID LAKE (ALBANIAN PART) BASED ON DIATOM INDICES 159

P 10. THE IMPORTANCE OF FORAGE KOCHIA (Kochia prostrata (L) Schrad) IN RANGELAND IMPROVEMENT AND THE RESEARCHES CARRIED OUT IN KONYA CONDITIONS RELATED TO FORAGE KOCHIA 160

P 11. THE INVESTIGATION OF DEGRADATION OF RHADOMINE B DYE BY USING SILVER DOPED FE-MMT NANOCOMPOSITE 161

P 12. PHYSIOLOGICAL INVESTIGATION OF DEVELOPED HYBRID BREAD WHEAT LINES UNDER HIGH BORON AND SALT APPLICATION 162

P 13. DETERMINATION OF TOTAL AND ACTIVE IRON CONTENT OF STRAWBERRY GENOTYPES GROWN IN TURKEY 163

P 14. PHYSIOLOGICAL CONFIRMATION OF ROLE OF SALT TOLERANT GENES IN DEVELOPED TURKISH DURUM WHEAT GENOTYPE 164

P 15. ESTIMATION OF MANCOZEB-BASED FUNGICIDES AS POTENTIAL POLLUTANTS BY INDUCEMENT OF PHYTO- AND GENOTOXICITY ON ALLIUM CEPA L. ALBANIAN ECOTYPE DRISHTI 165

P 16. THE PROTECTION OF BEE PRESENCE IN PASTURELAND 166

P 17. EFFECTS OF ELEMENTAL SULFUR AND K-HUMAT ALONGSIDE FESO4 AND FEEDDHA APPLICATIONS ON IRON NUTRITION OF CORN 167

P 18. THE EFFECT OF PHYSICAL HETEROGENEITY ON THE USABILITY OF BASALTS AS RAILWAY BALLAST: A CASE STUDY FROM THE EVCİLER BASALTS, ANKARA-CENTRAL TURKEY....168
P 19. INVESTIGATION OF THE CHANGES THAT OCCUR IN CARROT PLANT IN BORON DEFICIENCY AND TOXICITY CONDITIONS....169
P 20. INVESTIGATION OF DROUGHT TOLERANCE MECHANISM IN THE ROOTS OF PUMPKIN GENOTYPES....170
P 21. PURE TORSIONAL MOMENT CAPACITIES OF FULL-SCALE REINFORCED CONCRETE BEAMS SUBJECTED TO CORROSION....171
P 22. REMOVAL OF METHYLENE BLUE FROM WATER BY USING CHITOSAN-CARBON BASED COMPOSITE MEMBRANES....172
P 23. SYNTHESIS OF SOME HYDRAZIDE-OXIME AND INVESTIGATION OF THEIR ANTIBACTERIAL PROPERTIES....173
P 24. CHARACTERIZING OF THE RAW MATERIALS AND UTILITIES FOR THE LABORATORY-SCALE BIODIESEL PRODUCTION....174
P 25. ASSESSMENT OF PARTICULATE MATTER AND CRUSHED POWDER IN INDUSTRIAL AREA OF VAN PROVINCE....175
P 26. ATMOSPHERIC DEPOSITION OF AIR POLLUTANTS....176
P 27. EMISSION INVENTORIES OF GREENHOUSE GASES AND OTHER AIR POLLUTANTS....177
P 28. ENVIRONMENTAL IMPACTS OF THE INTEGRATED DRY GRANULATION METHOD APPLICATION OF FERRONICKEL SLAG....178
P 29. STUDY OF EMBRYOGENIC AND HISTOGENESIS TECHNIQUES OF SP. CASTANEA SATIVA OF THE BURREL AREA....179
P 30. OPEN MINES AND ENVIRONMENTAL PROBLEMS....180
P 31. PARTICULATE MATTERS AND ITS EFFECTS ON HUMAN HEALTH....181
P 32. THE EFFECT OF WHOLEMEAL SOURDOUGH ON THE QUALITY OF SHORT DOUGH BISCUITS....182
P 33. IN LAMPS POWER LOSSES' AVAILABILITY IN BUILDING HEATING....183
P 34. HYDRAULIC MODELING OF POTABLE WATER INFRASTRUCTURE SYSTEMS....184
P 35. ANALYSIS OF ICHTHYIC TYPES PARASITES IN THE ALBANIAN PART OF OHRID LAKE....185
P 36. IMPACT OF POLLUTION CAUSING WATER TURBIDITY ON OHRID LAKE OVER TRANSPARENCY VALUES SECCHI (ZSD, m) AND EUPHOTIC DEEPTH (Zeu, m)....186
P 37. DEVELOPING A MOBILE APPLICATION WITH CULTUREL HERITAGE CONTENT....187

O 1. BIOCHAR PRODUCED FROM PYROLYSIS OF OLIVE POMACE AS AN ADSORBENT FOR CR (VI) REMOVAL FROM AQUEOUS SOLUTIONS

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ABSTRACT: The presence of toxic heavy metals in wastewater is one of the Worldwide enviromental problems (Basha et al. 2008). Chromium which exists in two form of III and VI is one of these toxic metals. Cr (VI) is more hazardous because of toxic and carcinogenic properties (Hu et al. 2011). So, the removal of Cr (VI) from wastewater originated in leather tanning, cooling tower, plating, electroplating etc. is very important (Owlad et al. 2009). There are lots of methods such as chemical precipitation, ion-exchange, adsorption, membrane filtration, coagulation-flocculation, flotation and electrochemical methods used to remove and treat the pollutants from wastewater (Fu ve Wang, 2011). Adsorption is technically easy as well as considered one of the most economically methods (Hu et al. 2011). In this study, utilization of biochar obtained from pyrolysis of olive pomace as an adsorbent for removal of Cr (VI) from aqueous solution under different conditions. The adsorption experiments were implemented in batch process. The effects of various process parameters were investigated on the adsorption efficiency. The optimum removal conditions were determined as pH 3, time 30 min, concentration 10 mg L-1, dose 0.4 g and temperature 30 °C. The properties of biochar before and after adsorption were examined with scanning electron microscopy (SEM), Fourier transform infrared spectroscopy (FTIR), Brunauer, Emett, and Teller (BET) and energy dispersive X-ray (EDX) analyses. The kinetic data well fitted with pseudo second order kinetic model. The adsorption performance of biochar was evaluated by Langmuir and Freundlich isotherm models by using different concentrations of Cr (VI) in the range of 10-80 mg L-1. Langmuir isotherm fitted to experimental data with higher accuracy and a maximum adsorption capacity of 4.89 mg g-1. In the light of the results, it can be said that the biochar was successfully used as a low-cost and environmentally friendly adsorbent for Cr (VI) removal from contaminated water.

Keywords: Olive pomace, pyrolysis, biochar, adsorption, Cr (VI)

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O 2. NATURA 2000 POTENTIAL SITES IN ALBANIA – A CONTRIBUTION OF FISH SPECIES OF COMMUNITY INTEREST

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ABSTRACT: The aim of this presentation is to address the Fish Species of Community Interest (FSCI) revealed through a three years identification process in selected sites all over Albania. At the European scale fishing was pointed out as one of the major threats to the both marine and freshwater environment. Based on FSCI populations presence in different sites of Albania (including freshwater, coastal marine and lagoon), their variation under qualitative and quantitative aspects, relations with their ecological needs and the presence of different human impact through the NATURA 2000 Al project were highlighted the main management directions which should create the framework for the actual and future management plan for the selected areas with protected status. The fish species present in the Annex II of the Habitats Directive (92/43/EEC) of the potential Natura 2000 sites in Albania management elements include: Acipenser naccarii, Acipenser sturio, Alosa falax, Alosa sp. nov. 'Scadar', Cottus gobio, Misgurnus fosilis, Alburnoides prespensis, Alburnus belvica, Pelasgus prespensis, Rutilus prespensis, Rhodeus amarus, Telestes montenegrinus, Telestes pleurobipunctatus, Aphanius fasciatus, Knipowitschia montenegrina, Eudontomyzon stankokaramani, Petromyzon marinus, Lampetra planeri, Lampetra fluviatilis, Salmo marmoratus, Salmo peristericus, Valencia letourneuxi. The identified and delivered conservation goal for fish species of community interest is focused on: Maintain and restore viable populations of existing fish species as an integral part of the NATURA 2000 site ecosystems. In order to reach this goal, it is necessary to identify and mitigate or remove threats to the fish populations and their habitat.

Keywords: Fish species, freshwater, lagoon system, marine environment, conservation goal

O 3. SURVEY ON STONE DEGRADATION AND USE OF DIAGNOSIS FOR ITS CONSERVATION

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ABSTRACT: In this contribution are presented the approaches for the conservation of stone as it is fundamental for the preservation of our architectural components and cultural monuments. Stone degradation in the Post-Byzantine monuments of culture has been counted as one of the most serious threats to the integrity and values. From the immoral time due to its unique features, the stone is considered as one of the most resistant materials, while there are many factors that contribute towards its deterioration. The aim of this paper is to present the current state of the stone materials used in construction of Post-Byzantine monuments, reflecting in particular the rate of deterioration in the St. Mary's Monastery in Narta at the southern part of Albania, the main deterioration factors, such as air pollution, the presence of soluble salts due to proximity with marine area, and biodegradation. Following the field measurements, the external construction elements as colonnades, walls, supporting basins, etc, are affected loosing respectively > 50%, 30% and 20 % of the original dimensions. It is trusted that the description of the state and degradation factors serves as the basis to present the importance of a right diagnosis regarding the origin of the current deterioration and further on propose the appropriate solution for address the problem and conservation approaches.

Keywords: Degradation, stone, monastery, conservation, heritage

O 4. CLIMATE CHANGE EFFECT ON MICROBIOME OF TERRESTRIAL ECOSYSTEMS

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ABSTRACT: Climate change has a deep impact on terrestrial ecosystems. Important parameters of the soil microbiome are the number and functional diversity of microorganisms, soil respiration (CO2 emission) and enzymatic activity. Well known that more than 1 billion tones of carbon are added to the atmosphere each year trough change of land use. The purpose of our studies was to investigate the dynamics of CO2 emission from soils of agrogenic, postagrogenic and natural ecosystems and they soil microbiome for 10 years. Monitoring studies of the emission of carbon dioxide from soddy-podzolic soils and analysis of soil microbiome were conducted from 2008 to 2018 in dynamics. It has been established that over the past 10 years, the number of antibiotic-resistant bacteria has increased by 32,7% in natural ecosystems and by 78,2% in the transformed terrestrial ecosystems. Were isolated 624 dominant bacteria, among them 268 antibiotic-resistant bacteria. All isolates were multi-drug resistant, of which greater than 81,4% were resistant to 9 antibiotics. The maximum level of intensity of carbon dioxide emissions from soils of the studied ecosystems was fixed from the beginning of May to the end of June, due to a favorable combination of abiotic factors for the activity of the soil microbiota. The amount of carbon dioxide produced by virgin soddy-podzolic soils averaged - 83.51 (mg CO2 / kg soil / day); postagrogenic - 68.35 (mg CO2 / kg soil / day); agrogenic - 50.33 (mg CO2 / kg soil / day). In general, carbon dioxide emissions from soil for 10 years have increased by 27.8%. Global warming causes significant changes in the structure and functions of soil microbiome.

Keywords: Soil, ecosystem, climate change, microbiome

O 5. THE LIVESTOCK HYGIENE AND THE ENVIRONMENTAL IMPLICATIONS

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ABSTRACT: The heightening of livestock Animals creation results in expanded utilization of veterinary items, for example, pesticides, and the generation of various sorts of waste, similar to compost from feedlots. The contamination or sullying of the earth, particularly water supplies, because of creature squanders (excrement and fluid fertilizer) is an expanding issue and should be anticipated when arranging new creature lodging, particularly in the mechanical generation frameworks. The legitimate move must be made for the cautious use or safe transfer of the slaughterhouse squander. These can be profitable results if properly handled. This ought to include cleansing or rendering of all denounced or tainted material before further handling and discharge for use. Ill-advised transfer of this sort of waste can prompt an expansion of ruthless creature species (for example hyenas, country hounds, and so on., ashore and sharks with transfer to the ocean). Also, squander nourishment from the universal ocean and air traffic must be sanitized to keep away from the dispersal of creature malady through debased creature items. Ecologically amicable strategies for applying bug sprays (targets and devices for tsetse control) and acaricides (pour on) are getting to be accessible. These have the potential for decreasing conceivable outcomes of pollution of nature and ought to be used where down to earth. The utilization of pesticides might be limited by utilizing breeds or their crosses that are impervious to parasitic species, for example, trypanotolerant steers or tick-safe breeds.

Key words: Animals waste, livestock, drinking water, animal hygiene

O 6. ENVIRONMENTAL IMPACTS OF GLASS BEVERAGE PACKAGING

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ABSTRACT: Rapidly developing packaging sector is an important factor to enhance of the sustainability of the industry. Glass is one of the most extensively used materials for packaging, thanks to its skills and proprieties. This study aims to assess the potential environmental impacts of glass packaging. Life cycle environmental impacts of glass beverage packaging in the volume of 200 ml was evaluated. Life cycle assessment (LCA) study has been carried out in compliance with the ISO 14040 and 14044 standards. The scope of the study is from cradle to grave starting with the extraction of natural resources to final disposal of the product. LCA software tool CCaLC2 has been used for calculating six environmental impacts. In this study, the life cycle carbon footprint quantities of 200 ml glass bottles required to store 1000 L beverages were 370 kg CO2-eq/1000 L drinks. Approximately 63% of the life cycle carbon footprints of glass bottles are from energy usage, 20% are from raw material, 14% from transport, and 3% from use stages. Glass beverage packaging has the acidification potential, eutrophication potential and human toxicity potential 1,4 kg SO2-eq/1000 L, 506 g phosphate-q./1000 L and 86,2 kg DCB-eq./1000 L, respectively.

Keywords: Life cycle analysis, sustainability, glass packaging, carbon footprint and environmental impact

O 7. ROBOTIC SYSTEMS USED IN DAIRY CATTLE FARMS

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ABSTRACT: Robotic systems are one of the applications that facilitate our life in animal husbandry. In recent years, especially in cattle breeding, to avoid integration led to the increasing number of large-scale livestock farms in both the world and Türkiye. This situation caused to increase the mechanization and use of robotic systems in animal breeding. Innovation studies in livestock breeding developed as in many industries. The aim of this study was to examine the robotic systems used in dairy cattle breeding and to determine their effects on animal breeding. The robotic systems used in animal husbandry allow the animals to carry out the practice they need in their own right at any time, without human control, with the freedom of movement within the shelter. In this study, robotic systems used in dairy cattle breeding investigated under three different headings as robotic systems used in milking, robotic systems used in feeding and robotic systems used in fertilizer cleaning. The use of robotic systems in dairy cattle farms provides benefits such as ease of farm management, more efficient control of animals, gain of human labor, improvement of cow welfare, increase in milk yield and quality.

Keywords: Dairy cow, dairy farm, milking, robotic milking, robotic systems

O 8. APPLICATION OF MAGNETIC BIOCHAR PRODUCED FROM ORANGE TREE SAWDUST AS AN ADSORBENT FOR THE REMOVAL OF CR (VI) IN WATERY ENVIRONMENT

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ABSTRACT: In the present work, biochar was obtained from orange tree sawdust (OTS) and then it converted to magnetic form by a series treatment. This substance was applied as an ideal adsorbent for removal Cr (VI) from aqueous solution. The novel magnetic biochar (MBωOTS) originated from OTS is likely to enhance the adsorption potential of Cr (VI). The adsorption of Cr (VI) by MBωOTS and OTS was compared with each other for a series of adsorption parameters. A magnetic form of OTS was constituted with $FeCl_3.6H_2O$ and $FeSO_4.7H_2O$ in a basic medium. The Magnetic OTS was heated in an oven at 500 ºC for 60 min. The produced magnetic char was applied for the removal of Cr (VI). The optimum conditions for the maximum Cr (VI) adsorption by MBωOTS was determined as; 0.05g adsorbent dosage, 40 mg/L Cr (VI) initial concentration, pH 2.01 and contact time, 180 min. The adsorption data were described well by the Langmuir isotherm model (R^2=0.985) compared to the Freundlich isotherm model (R^2=0.969). The maximum Cr (VI) adsorption capacity was calculated from the Langmuir equation was 30.36 mg/g for MBωOTS and 11.75 mg/g for OTS. The adsorption capacity of MBωOTS was higher than the capacity of raw OTS. The results showed that MBωOTS can be an alternative adsorbent for the removal of Cr (VI) in an aquatic environment.

Keywords: Adsorption; magnetic biochar; orange tree; Cr (VI)

O 9. COMPARISON OF ENERGY EFFICIENCY OF DAIRY FARMS WITH LOOSE HOUSING SYSTEM HAVING DIFFERENT DAIRY COW CAPACITIES AND DETERMINATION OF OPTIMUM DAIRY FARM CAPACITY[#]

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ABSTRACT: Energy is an important resource with an indispensable place in human life. Energy efficiency is very important for the sustainability of human life and agricultural production. The main aim of this study was to determine optimum animal capacity for dairy farms with loose housing in terms of energy efficiency. The second aim was to evaluate the energy efficiency of dairy cow farms having different animal capacity with loose housing system, widely used in dairy cattle breeding. The data of this research was collected by survey method which was carried out face to face with owners of 16 dairy farms with loose housing in Konya region, Türkiye. All data obtained from this study were applied one-way ANOVA. Examined dairy cow farms were evaluated under four different animal capacity (farm animal capacity; 1-49, 50-99, 100-149, 150 and above animals). In this research, energy use efficiency, energy productivity, and specific energy were calculated as 0.130±0.005, 4.33±0.17 L/100MJ and 23.23±0.95 MJ/L for I.group; 0.157±0.013, 5.24±0.45 L/100MJ and 19.58±1.91 MJ/L for II.group; 0.096±0.003, 3.21±0.107 L/100MJ and 31.30±1.05 MJ/L for III.group; 0.125±0.008, 4.18±0.26 L/100MJ and 24.27±1.65 MJ/L for IV.group, respectively. According to the results of this study, dairy farms with loose housing system having 50-99 dairy cows have more advantageous in terms of energy efficiency in dairy cattle breeding.

Keywords: Dairy cow farm, energy use efficiency, energy productivity, loose housing system, specific energy

[#]*This study is presented a part of MSc Thesis of Mevlüt Şimşek.*

O 10. COMPARISON OF THE STRUCTURAL PROPERTIES OF THE DAIRY CATTLE FARMS USING ROBOTIC MILKING SYSTEMS AND USING MILKING PARLOUR[#]

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ABSTRACT: Robotic systems is successfully used instead of human labor in many areas with the development of modern technology. One of the major problems encountered in the livestock sector in recent years is the demand for qualified human labor. In dairy cattle breeding, this need is further increased, especially in regular and hygienic practices of milking. For this reason, Robotic milking systems have been used in the livestock sector in recent years. However, the advantages and disadvantages of the system have not been evaluated. In this study, dairy cattle enterprises with robotic milking system and parallel milking system were compared in terms of animal welfare and breeding characteristics. For this purpose, the farm, which has 20 robotic milking systems with a 1000 dairy cow capacity in Konya Region and the other farm with 12x2 parallel system milking units having 1000 dairy cow were examined as material. In the study, the general characteristics, technical characteristics, farming system, productivity of animal were examined and compared in terms of animal welfare. As a result of the study, it was determined that the use of robotic systems largely eliminated the dependence on the labor force. It was observed that animal welfare is increased since it provides animals with the time and number of milking, they want during the day. In addition, increased milk quality and yield was observed in robotic milking system compared to other systems. In addition, not planning the open courtyard in the shelters where robotic milking system is used in the Turkey and in world is undesirable and needs to be solved in terms of animal welfare.

Keywords: Robotic milking, milking parlour, dairy farm, animal welfare

[#]*This study is presented a part of MSc Thesis of Esra Bağcalı.*

O 11. TREATMENT OF TEXTILE WASTEWATERS WITH ELECTROCOAGULATION ADVANCED TREATMENT DROGEN PEROXIDE SENSOR APPLICATION OF TI AND TINI CATALYSTS

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ABSTRACT: Textile industry wastewater is one of the most important hazardous wastewater species threatening the environment and public health. Textile wastewater with a high proportion of dyestuffs accumulates in the receiving environment, disrupts the aesthetic appearance of the waters and reduces the light penetration. Reduction of light penetration and dissolved oxygen leads to a decrease in the living organism population and restricts the use of water resources. It is also known that certain types of dyestuffs have toxic properties. Textile wastewaters containing even very small amounts of dyestuffs have high dispersion rates and can spread to largely water bodies and threaten the environment and human health, when discharged without treatment. While adsorption, filtration and chemical processes are preferred for color removal, biological activated sludge systems are used for COD removal from colored wastewaters, generally. Today, nanotextile membrane processes are used for more efficient treatment. However, compared to other treatment methods, it can be concluded that electrocoagulation (EC) processes are more suitable for color and COD removal from textile industry wastewater. Electrocoagulation, which has a wide application area in wastewater treatment, makes a major contribution to the economy of concentrated waste discharging industries. Moreover, these processes can greatly reduce the pollutant load. In the studies carried out by the electrocoagulation process of textile industry wastewater, up to 100% color removal was determined. In addition, high levels of chromium, COD and turbidity removal efficiencies were observed from tannery industry wastewater with high Cr content by EC process.

Keywords: Electrocoagulation, dyestuff, wastewater treatment, textile industry

O 12. EVALUATING GROUNDWATER QUALITY FOR IRRIGATION SUITABILITY IN KONYA CITY

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ABSTRACT: Groundwater quality for irrigation suitability estimation in Konya city investigated based on different indices such as Sodium Adsorption Ratio (SAR), Soluble Sodium Percent (SSP), Residual Sodium Carbonate (RSC), Magnesium Hazard (MH), Kelly's Ratio (KR) and EC concentration. The Wilcox's, US salinity (USSL) and Piper diagrams had been created in order to the water classification in the study area. The results of Water Quality Index (WQI) show Excellent and Good water quality in the most samples of the central parts of the city to the unsuitable water quality in most eastern parts in summer 2012. About 7.32% of the samples found within unsuitable water quality for drinking and Irrigation purposes. Whereas in winter 2012 the Water Quality Index (WQI) values found lower than in the summer season. Such regions necessitate special be interested to provide sufficient drainage and introduce alternative salt tolerance cropping. The US salinity diagram shows that most of the samples of Konya groundwater fall in the field of C2-S1 and C3-S1 in both seasons, signifying medium and high salinity with low sodium water. Moreover, in accordance with Wilcox's Diagram, the values of the most our samples are classified as excellent to good and good to permissible classes about 94.85% in the winter and 94.35% in summer. Other best-fitted models, such as SAR, Kelly's Index (KI), MH and RSC values indicate that groundwater is between moderate to good for irrigation purposes. The dominant groundwater classified into two water types were (Mg-Ca-HCO3) and (Ca-Mg-SO4-HCO3-Cl) types based on Piper diagram. Generally, estimation of water samples indicated that the most of the water samples are suitable for irrigation purpose, except some samples.

Keywords: Irrigation water quality, water classification, groundwater pollution

O 13. ESTIMATION OF NITROGEN OXIDES POLLUTION USING GEOGRAPHICAL INFORMATION SYSTEM IN TURKEY

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ABSTRACT: Air pollution is become one of the most important problems we are facing and has a negative impact on the health of living things, it is the presence of solid, liquid and gaseous pollutants that change the composition of the air in the atmosphere, which may harm human life and ecological balance. In this study, nitrogen oxides pollution was investigated by using GIS technique, the air pollution data had been collected from 137 air monitoring stations during 2016- 2018 in turkey. The spatial distribution maps of the annual average concentrations of nitrogen oxides were created with the help of spatial analyst tools, interpolation (inverse Distance Weighted method) within ArcGIS environment. The critical level of NOx for the protection of vegetation is 30 µg/m3 measured as an annual mean. The results indicated that most NOx concentrations, about 77.4%, 79% and 65.5% during 2016, 2017 and 2018 respectively, exceeding (30 ug/m^3) the allowable limit value, where high levels of nitrogen oxides can make happen harm to the human respiratory tract and rise a person's susceptibility to, and the seriousness of, respiratory diseases and asthma.

Keywords: Air pollution, nitrogen oxides, geographical information system

O 14. ENVIRONMENTAL EFFECTS OF COAL COMBUSTION WASTES AND USAGE AREAS

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ABSTRACT: Energy demand has been increasing all over the world with the various social and economic developments. Energy sources such as coal, oil and natural gas are widely used around the world in order to fulfil this demand. In our country, the amount of coal use is relatively higher than those of other sources. Therefore, the wastes of coal use cause significant economic and environmental problems. The wastes of coal are usually conveyed to storage sites by water way. After ashes was contacted with water, toxic metals contained in coal ash in the storage sites can be spread in the environment. Many studies have shown that living next to the coal ash storage areas increases the risk of cancer and other diseases. However, such wastes are suitable for recovery and can be used in different sectors. In this study, the general characteristics of these wastes, which are defined as coal combustion products, are evaluated in the studies on disposal methods and recovery. In addition, the possibilities of using these wastes in different industrial activities were investigated. The official regulations in our country and the world was evaluated. As a result, it has been pointed out that waste ash disposed by the existing water transport and storage method carries a risk for the environment and human health, and this method should be abandoned as soon as possible and the implementation of alternative waste ash treatment alternatives and the application of dry storage methods should be encouraged.

Keywords: Coal combustion products, ash, environmental problem

O 15. THE TESTING OF COW MANURE FERTILIZER DOSES TO PLANT GROWTH COMPONENTS AND BIOACTIVE COMPOUND OF DEWA LEAF (*GYNURA PSEUDOCHINA* (L.) DC)

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ABSTRACT: Dewa leaf (Gyanura psudeochina L) as a potentially medicinal plant have been widely studied for the contents of their metabolites. The content of secondary metabolites in dewa leaf has benefits such as anti-inflammatory, anti-allergic, bronchitis, kidney stones, uterine bleeding, diabetes and anti-HSV (Herpes Simplex Viral) which are effective against the infection of the herpes virus. The cultivation process of dewa leaf requires specific treatments to grow and produce the optimum bioactive materials. One factor that must be considered in the cultivation of medicinal plants is fertilization. The aims of this research was to study the growth and bioactive compounds of plant leaves of Dewa leaf as potential medicinal plants that cultivated with various doses of cow manure. The research was conducted at the Biofarmaka experimental station, Bogor Agricultural University. Chlorophyll analysis at Plant Molecular Biology Laboratory and post-harvest handling performed at the Post Harvest Laboratory, Department of Agronomy and Horticulture, Faculty of Agriculture, Bogor Agricultural University. The experiments were analyzed using a randomized block design, the first factor was the dose of cow manure with three levels i.e. 0 g polybag-1 (control), 500 g polybag-1 and 1000 g of polybag-1. The experiments used 4 replications. The data were analyzed by analysis of variance with SAS 9.1.3, if significantly different continued with Duncan's Multiple Range Test at 5% level. Results showed that fertilizer treatment of cow manure doses did not provide a significant difference in the growth and production of dewa leaf except for plant height at 3 weeks after planting and width of the widest leaf at 4 weeks after planting. Fertilizing with cow manure in this experiment is still not able to increase the growth of canopies, tubers and the content of the bioactive compounds of dewa leaf. The high rate of caterpillar attacks since the second week has disrupted growth and the production of bioactive compounds from the dewa leaf.

Keywords: Cow manure fertilizer, bioactive compound, dose, Gynura pseudochina (L.) DC, physiology components

O 16. LANDSCAPE CONNECTIVITY IN PLANNING AND IMPLEMENTING CONSERVATION AND RESTORATION APPROACHES IN CENTRAL ALBANIA CARSTIC LAKES SYSTEM

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ABSTRACT*:* In this contribution we intent to present the case of experiences with Lake Dumrea (Central Albania) when human intervention through land use change, deforestation, intensive agriculture development and habitat fragmentation led to a dramatic loss of water bodies and landscape degradation. As human interventions of before '90 converted land for resource extraction and for settlement and agricultural uses, and as our impacts on local scale continue to grow, there is a rapid change of the physical, chemical, and biological character of these landscapes. Land use changes were significantly reduced the number of water bodies i.e. Dumrea lakes from historical 80 to current 50, while the amount of a aquatic habitat or fragment it, breaking it up into smaller or differently arranged units, including riparian habitats. From analyses process changed not only the size of habitat patches (Lakes surface and water volume) but also other landscape features, such as patch geometry or the amount of edge habitat, that are be of fundamental importance to species, communities, and ecological functions.
Dumrea Lakes – Current designation: Nature monument: Seferani, Dega Lake Location: Latitude 40°58'58" N; Longitude 19°54'22" E. The Dumrea Lakes are a complex of about 85 lakes of various sizes (ECBY, 2009), which have in general a circular or oval shape. The biggest lake of the group is Çestija with 94.5 ha surface, followed by Seferani, Merhoja, Dega and Belshi with 87.5, 65.5, 37.4 and 18.1 ha surface respectively. The lake with biggest water volume is Merhoja (11.3x106m3), followed by Çestija, Seferani, Dega and Belshi. The Lakes of Dumrea in general have an average depth of 7 m. Merhoja is exception as its average depth is 17.9 m, while its maximum is 61 m. Some of the lakes have been named after the villages, like the lakes of Seferani, Katundi, Cerraga etj, and some others after persons, like Millosh, Abaz, Todri, Bici. Finally, the names of some lakes are defined by their transparency or the colors of the waters, like Black Lake, the Red Lake, etc. The average monthly temperature of the surface waters of the lakes of Dumrea in winter is bellow 7.5°C and goes up to 26°C in summer. The amount of oxygen in the surface is 6.5-7.5 mg/l and decreases to 1.5 mg/l at 15 m depth. At bigger depths start to appear the presence of hydrosulfides (H_2S).

Keywords: *Landscape, planning, connectivity of habitats, aquatic ecosystems, environment*

O 17. TEXTILE DYE REMOVAL FROM AQUEOUS SOLUTION BY USING PEANUT AND PISTACHIO SHELLS

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ABSTRACT: The use of peanut and pistachio shells as an adsorbent for the removal of Brillant Blue and K-RED 198, Metil Oranj, and Metilen Blue was investigated. The commonly used isotherm models were applied for data obtained from further batch studies. Dye removal capacity is as follows 65% for Brillant Blue, 73 % for KRED 198. Freundlich isotherm model were found to be the best fitted one and based on Friuendlch isotherm model adsorption capacities were 4,58 mg/g for Brillant Blue, and 4,33 mg/g for K-RED 198 at peanut shells, and 4,04 mg/g for Brillant Blue, and 4,64 mg/g for K-RED 198 at pistachio shells. Kinetic examinations were also carried out for two dyes tested and it was found that adsorption kinetic was best described by pseudo first-order kinetic model.

Keywords: Textile dye, removal, peanut and pistachio shells, kinetic, isotherm

O 18. HOW DOES ECONOMIC GROWTH AFFECTS DEFORESTATION: EVIDENCE FROM ALBANIA

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ABSTRACT: This paper examines the relationship between environment and economic development in Albania. We use macroeconomic data for the period 2000-2018 in order to give answer to the research question on the relationship between deforestation trends and economic growth. According to the literature, there is a "U" shaped relationship between GDP and environment. This is called the environmental Kuznets curve (EKC) and shows a hypothesized relationship between environmental quality and economic development. So, various indicators of environmental degradation tend to get worse as modern economic growth occurs until average income reaches a certain point over the course of development. The dependent variable is used deforestation as a proxy for environment degradation. Moreover, deforestation is analysed in relation with the following set of control variables; GDP growth rate, energy consumption, trade openness, and population during the period of study. Time series data obtained from the Albanian Institute of Statistics, Albanian Ministry of Environment and Tourism, and World Bank Development Indicators were fitted using econometric techniques such as Autoregressive Distributed Lag (ARDL), Granger causality test, Johansen co-integration test and Vector Error Correction Method (VECM). The empirical results of our analysis are in part consistent with similar studies focused on developing countries. The results confirmed the existence of co-integration among the variables both in long- and short-run paths.

Keywords: Deforestation, economic growth, granger causality, developing countries

O 19. RAINWATER HARVESTING AS A SUSTAINABLE SOLUTION FOR DOMESTIC USE

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ABSTRACT: Albania can be considered blessed for its water resources, well known for their clean and healthy water. On the other hand, water resources cannot be infinite. The main challenge of developing countries, such as Albania, is finding and managing water supplies. Our study is focused on the city of Durres, which is located on the Adriatic coast, and is the most visited by local and foreign tourists. Today, Durres city suffers a difficult time of an urban chaos in centre, as in suburb. Water supply has become very problematic. Considering the lack of water during summer days (in the city rains 116 days a year), it becomes important to well manage it. This study is based on the management of rainwater through the construction of rainwater harvesting system and its implementation for domestic use.

Keywords: Rainwater management, sustainable development, rainwater harvesting systems

O 20. THE SYNTHESIS OF Ag/TiO_2 BY PHOTOCHEMICAL DEPOSITION METHOD AND ITS PHOTOCATALYTIC ACTIVITY

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ABSTRACT: Photocatalysis is one of the different types of AOPs, ecologically friendly processes have major advantage over certain current techniques; it terminates contaminations instead of exchanging them to another phase without the utilization potentially harmful oxidants. So as to increase their activity, photocatalysts have been doped with many metals, non-metals, and noble metals. Through a different metal was used for this aim, silver (Ag) suggested to be the most attractive in relations of photocatalytic production. Textile wastewater is classified as a complex treatment waste due to high organic pollution and metals, high toxicity and low biodegradation. In addition, dyes are discussed in the literature because of the large quantities of dyes and water used in the dyeing stages during the textile sector. In this study, we used the photochemical deposition method to synthesize Ag/TiO_2 catalyst. The physical and chemical properties of the Ag/TiO_2 catalyst characterized by X-ray diffraction (XRD), scanning electron microscopy (SEM) and EDX. The Ag/TiO_2 catalyst was used to remove the most commonly used reactive red 195 dye in the textile industry. The removal was investigated using photocatalytic oxidation method with different light types such as UV-A, UV-C and visible light.

Keywords: Photocatalysis, Ag/TiO_2 catalyst, dye removal

O 21. DYNAMIC PERFORMANCE OF A HYDRAULIC SYSTEM DRIVEN BY A VARIABLE SPEED AC ELECTRIC MOTOR WITH ELECTRO-HYDRAULIC LOAD SENSINGSTIC SPACER USED IN FIELD CONCRETE AND ITS GAINS

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ABSTRACT: Hydraulic systems, transformed the mechanic energy into hydraulic energy to transfer it to a different mechanic system, are one of the most important R&D fields regarding the energy saving. Many studies are carried out regarding energy saving in hydraulic systems, thus relatively more efficient system designs are improved step by step. In this study, a hydraulic test rig is used to simulate a 500 kN press brake metal forming machine driven by a variable speed with the aim of energy saving. In the drive system of the press brake machine, variable speed-controlled AC electric motor is used to drive a constant displacement a gear pump. By means of an electro-hydraulic load sensing method, the load pressure and flow rate under the specific operation condition are measured and send to this information to the control system for varying speed of the electric motor. Thus, the gear pump can provide the system requirements not more. This method can reduce to energy consumption. However, the dynamic performance of this drive system has to be analyzed and compared to that of a proportional valve controlled conventional constant speed drive system in order to recognize the dynamic capability of the proposed variable speed drive method in the press brake machine. For this aim, the cycle phases of the press brake machine are simulated in experimental test rig to compare the dynamic performances of both drive options under different part load conditions. According to obtained results, prospective suggestions are presented.

Keywords: Hydraulic systems, press brake machine, energy saving, variable speed drive, dynamic performance

O 22. ENVIRONMENTAL SOUND RECOGNITION WITH VARIOUS FEATURE EXTRACTION AND CLASSIFICATION TECHNIQUES

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ABSTRACT: This paper proposes "An Environmental Sound Recognition with various feature extraction and classification techniques" for environmental sound recognition. Study in Environmental Sound Recognition has become popular topic in recent years. In the past decade, research on the Environmental Sound Recognition area has accelerated. ESR has important role on intelligent computer systems and robots for the purpose of identification, recognition and discrimination. In this survey, I will put forward a survey on which various feature extraction and classification techniques is better to recognize environmental sounds. It includes these parts: (i) basic environmental sound-processing, (ii) feature extraction techniques, (iii) classification techniques, and (iv) performance comparison of selected techniques. Finally, concluding remarks and future research and development trends in the ESR field will be given.

Keywords: Environmental sound recognition, feature extraction techniques, classification techniques

O 23. THE IDEA OF CULTIVATION IN DESERT

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ABSTRACT: Soil erosion is one of the most important environmental disasters that come from the past and make us feel more effect today. In our region, the bitter experiences experienced in the past must be conveyed in a way to the new generation and the truths must come to life. The aim of this project is to provide the students with the information about the damage and the ways of fighting in the Karapınar region. In addition to demonstrating the damage caused by erosion, the success achieved by applying alternative combat and sustainable land methods has been seen and examined at the place of success. The project was supported by the Tübitak 4004 Nature Education and Science Schools support program. As a target audience, Necmettin Erbakan University, Ereğli Faculty of Education in three departments (Elementary Mathematics, Turkish and PDR departments) are continuing their second year of undergraduate students. With this project, the awareness levels of the students about the environment and raising awareness about the environment have been tried to increase. In addition to the education received by the Faculty of Education students, they tried to prepare new ideas for the sustainable environment. At the same time, the students of the Faculty of Education will be the future prospective teachers, and the raising of awareness about the environmental issues concerning our present and future will make it possible to raise awareness of the new generations they will grow in the future. Within the scope of the project, students were informed theoretically in groups. It was taken to Karapınar Desertification and Erosion Research Center, which is a natural museum and laboratory, and the theoretical information, was given to the students in a comprehensive manner. In addition, information about sustainable land management projects, proper irrigation techniques and soil structure can be realized in the region. Brainstorming and workshops during the activities and alternative solutions for the problems in the agenda were tried to be produced by the students. The questionnaire applied to the participants before and after the project was evaluated and the changes in the levels of consciousness were evaluated.

Keywords: Sustainable land management, desertification, wind erosion, soil conservation

O 24. WHERE TO START THE PREVENTION OF FOOD WASTE

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ABSTRACT: Food waste have been stated food spoilage or turning to waste, food used for consumption. Food wastes are usually directly proportional with nutrition and purchasing habits. This work has been conducted primary school children studying that foundation and public school the purpose of creating awareness against food waste. Investigative have been made 5-8 age group students who foundation school (FS) and public school (PS) studying situated in Konya that random sampling method selected and with total 46 student to survey development (11 question). Applied survey have been found as 0,718 validity and credibility. 36 % of the FS students participating in the survey stated that the most money was wasted, PS have been stated 71.4 % in proportion as of factors money, food, time and energy. While at FS have been found that plate waste was not PS have been detected the same. Food waste have been found students who studying FS 40 % wasting cereals while PS 33.3 % has been identified all nutritients. However, general knowledge is inadequate about food waste though has been detected waste can be prevented known by the majority. Accordingly, there are requirements intended for applications food waste to reduce, awareness have been determined should be started at early age.

Keywords: Food waste, education, waste

O 25. HOMEMADE DIP COATING MACHINE FOR THIN FILMS

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ABSTRACT: In recent years, the use of thin films for several purposes has been increased rapidly. The performance of thin film coated on the material is related to the sensitivity of electronic dip coating devices. Especially, the differences in production techniques and production conditions reveal many features in thin films. With the development of technology, new production technologies and techniques that may be alternative to each other in the production of thin films have been emerged and developed. Although the sol-gel dipping method does not have a very old history, it has been an important technique for gaining new properties to glass and ceramics. In this study, the production, software, design and sensitivities of the device used in dip coating technique, which is one of the sol - gel coating techniques, were taken as the main issues. A new device has been developed to coat glass sheets of 50 cm long and produce substantially transparent conductive layers. In this new device, glass carrier arm is used to dipping them into a solution at a certain speed, waiting certain time period and removing them at the same speed in order to coat the surface with the colloidal suspensions formed by the solid particles in the prepared liquid named as sol. The device has been designed in laboratory environment, the software has been developed for arranging speed and waiting time period with manual and Bluetooth control. The performance of homemade dip coating device was evaluated according to optic and atomic power microscopy images and thin film thickness determined with special equation. According to the results, the film thickness of coated samples was almost 7 micrometres and the surface of the films was observed smooth with cracks.

Keywords: Dip coating, dip coater, thin film, sol-gel

O 26. OVERVIEW OF ENERGY EFFICIENCY FOR PUBLIC BUILDING IN ALBANIA

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ABSTRACT: This paper tends to give a general overview regarding the situation of energy efficiency for public building in Albania. As first attempt, will be their classification based on energetic viewpoint. Classification is based in many factors like: destination, users, time of operations, thermal comfort, etc. Based on this analysis 6 type of public buildings are distinguished: hospitals, kindergarten, schools, universities, dormitories, institutions of central and local government. Also, an analysis of their energy behaviors is made in order to highlight their weaknesses. Analysis put in evidence that due to the design and construction the existing building stock is not in compliance with the laws and their regulatory, regarding energy performance. Electricity represent the main primary energy source since this sector has a highest electricity dependence and consumption. Other identified primary energy sources are diesel oil, pellet and natural gas, used mostly for heating during winter season or domestic hot water production. Most of buildings do not meet minimal thermal comfort standards and suffer from a poor thermal insulation, so most of energy is consumed for heating or cooling. Other problematics was building operation and management, which is poor or inexistent. Due to this heat loses from air infiltration represent 20÷40% of total heat loses in the building. At the end some conclusions and recommendation are given in order to improve energy efficiency and thermal comfort in public building.

Keywords: Public buildings, energy efficiency, building typology, thermal comfort, thermal insulation.

O 27. ASSESSMENT OF THE WATER BUDGET BY USING A CONCEPTUAL MODEL: THE CASE OF ÇARŞAMBA BASIN

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ABSTRACT: Hydrologic models are crucial to detect, understand and improve water resources and their behaviour. The Hydrologiska Byråns Vattenbalansavdelning (HBV) model, which is deterministic, lumped, daily rainfall-runoff model, was implemented to the headwater of Çarşamba Basin, located on Konya Closed Basin in Turkey. The basin is in a region data-scarcity hence we used the data of Seydisehir and Hadim meteorological stations nearby. We aimed to understand the hydrological processes and obtain information that will facilitate the identification of water management strategies. Initially, the model was calibrated using the Generalized Reduced Gradient (GRG) nonlinear solving method for optimization, and at this stage, the HBV model showed an adequate performance. For daily runoff, the HBV model has performed at Kling-Gupta efficiency coefficient (KGE)=0.676 and Nash-Sutcliffe efficiency coefficient (NSE)=0.501. In this study, we also calculated the water budget as annual and seasonal to appraisal temporal performance of the model. Consequently, the best results have been achieved for spring months while achieving worst for summer months.

Keywords: Generalized reduced gradient, the hbv model, hydrological modelling, water budget

O 28. DROUGHT ANALYSIS WITH STANDARDIZED SOIL MOISTURE INDEX USING HYDRO-METEOROLOGICAL DATA

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ABSTRACT: The drought, which directly affects the agriculture of a region and the living standards of the indigenous people, is an important climate event. In this study, it was aimed to interpret the drought periods in the headwater of the Çarşamba Subbasin of Konya Closed Basin by using the Hydrologiska Byråns Vattenbalansavdelning (HBV) model, which is a conceptual rainfall-runoff model. For this purpose, the standardized soil moisture index (SSI), which is a simple drought index, was used depending on daily soil moisture. Firstly, the HBV model to solve optimization problems was calibrated using the Generalized Reduced Gradient (GRG) code. The success of the HBV model for a region with data scarcity is sufficiently accurate with the percentage bias (Pbias) = 11.454% and the coefficient of determination (R^2) = 0.518. In this study, based on daily soil moisture data, years were divided into drought periods to better understand and interpret region drought. As a result, almost the same number of dry days was obtained in all years.

Keywords: Generalized reduced gradient, the hbv model, hydrological modelling, standardized soil moisture index.

O 29. EVALUATION OF THE AKSARAY PROVINCE AIR QUALITY: CONDITIONAL BIVARIATE PROBABILITY FUNCTION AND K-MEANS CLUSTERING

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ABSTRACT: This study addresses the three major questions: (1) what are the emission sources of PM_{10} and SO_2 which are affecting the study area; (2) where do these emission sources come from; and (3) is there any temporal variation in the emission sources. In the current work K-means clustering techniques were applied directly to bivariate polar plots to identify and group similar features. The technique is analogous to clustering applied to back trajectories at the regional scale. When applied to data from a monitoring site with high source complexity it is shown that the technique is able to identify important clusters in ambient monitoring data. In Aksaray PM_{10} values follow a seasonal trend. The average PM_{10} concentration was recorded higher in the summer season and lower in the winter. It is observed that 50 μgm^{-3}, which is the 24-hour limit value of PM_{10}, was exceeded in both summer and winter months. The average SO_2 concentrations also was detected higher during the winter months due to domestic heating and there was a decrease in concentration in summer. The winter and summer SO_2 average concentrations were calculated as 7 and 2 μgm^{-3}, respectively. Looking at the SO_2 distribution over the months, it was seen that the normalized values are below 0.5 and the higher values were recorded in the period between November and February. Cluster analysis has been carried out for the PM_{10} and SO_2 surface for clusters between 2 and 10. The choice of the number of appropriate clusters is heuristic and is best determined by post-processing the data according to cluster. 5 and 4 clusters were considered for PM_{10} and SO_2, respectively. PM_{10} clusters were determined as 1 and 2- suburban emission, 3-traffic emission, 4-urban emission and 5-industrial emission. SO_2 clusters were identified as 1- suburban emission, 2- industrial emission, 3- urban emission and 4- mix of urban and suburban emission.

Keywords: PM_{10}, SO_2, temporal variation, CBPF, k-means clustering

O 30. KONYA SYNERGY IN THE FIELD OF COMPOST AND BIOGAS PLANTS

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ABSTRACT: Storage of livestock waste on inappropriate conditions; creating visual pollution and various gases resulting from waste stack affect the air quality of the region negatively. Uncontrolled landfilling of waste threatens human and environmental health, as it destroys both the soil and groundwater since it destroys the biological structure of the soil. It is necessary to get rid of the contradiction of evaluating organic waste, important source of energy and fertilizer, when environmental problems caused by organic waste and external dependence on energy and chemical fertilizer are taken into consideration. Energy can be obtained from organic waste which is renewable energy source for protection of environmental pollution and at the same time the fertilizer, product of compost or biogas plants, can be recycled to soil as nutrient element source which is very necessary for plants by evaluating organic wastes in compost or biogas plants. The assessment of organic waste is an environmentalist, social and economic project that brings together strategic approach. Global warming requires that the energy used today must be "Renewable and Sustainable". Turning towards renewable energy sources is of great importance in terms of national, political and economic interests. Nowadays energy is the one of the most expensive inputs in production. Energy generation from waste emerges as an economical and environmental-friendly method when depleted conventional energy resource, rising energy prices and recycling and recovery of waste are taken into consideration. This study will contribute to the establishment of plants which will produce 430,800 tons of pellet organic fertilizer per annum, 234 GWh electrical energy in low efficiency scenario and 514 GWh electrical energy in high efficiency scenario in biogas plants in Konya which have significant organic waste potential.

Keywords: Sustainability, biogas, renewable energy, organic waste, organic fertilizer

O 31. EVALUATION OF CAPACITY AND SEISMIC PERFORMANCE OF BRICK MASONRY BUILDINGS WITH AND WITHOUT STRUCTURAL INTERVENTIONS

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ABSTRACT: Unreinforced masonry [URM] is the dominant structural type for low to moderate-rise buildings in the Albania. Its dynamic response is highly inelastic, and generally shows high vulnerability to earthquake loading. Also, many buildings of these type in Albania have structural interventions like added floors, or wall openings, especially in the first floors of the buildings, which are near main roads, because of great demand for shops and stores. In literature, there are a number of methods available to evaluate the seismic performance of these buildings. The choice of the proper model to use is a matter of paramount importance, as many aspects must be taken into account in order to reach a good approximation of the structural behavior. Within this context, this paper aims to make seismic performance assessment by following the equivalent frame approach based on macro-element modeling. Due to the resource and time efficient computations, this approach is becoming more popular among the practitioners and field experts in this area and allows simulating the non-linear behavior of masonry buildings. This method will be applied to three old masonry buildings from the Albanian construction practice that are representatives of low- and mid-size residential buildings. Also, these buildings will be compared with buildings that have structural interventions. It must be said that in Albania, masonry buildings have been built using templates all over the country, so both models with and without intervention are common. Capacity curves of the investigated building will be determined to assess the most probable seismic response of the investigated housing construction in the region. Also, the Finally, estimated results will be used to evaluate the seismic performance of the tested structures.

Keywords: Unreinforced masonry buildings, Macro-element approach, seismic vulnerability, TREMURI software, unreinforced masonry buildings.

O 32. AN EVOLUTIONARY FRAMEWORK ON MALADAPTIVE CONSUMPTION BEHAVIOURS

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ABSTRACT: There is no disputing the fact on the Historic of the Immunology originated from the study of Immunity. The study of Immunity itself had little scientific basis until the investigations of Louis Pasteur in the second half of the 19th century. It was at approximately this time that techniques were being developed to recognize, cultivate, and attenuate the microbes that caused certain infectious diseases. Pasteur genius allowed him to capitalize on these developments. To add to them his own knowledge from his background in chemistry and biology, and to emerge as the father of Immunology. The groundwork of immunology as a science probably originated in ancient China, where the inhalation of dried smallpox crust was practiced as a prevention of this disease. Presumably the viral agent of this disfiguring and lethal disease lost some of its infectivity in drying, so that is was a mixture of inactivated and active viral particles that was actual inhaled. In Turkey a different form of variolation (smallpox was then known as variola) was Observed by Lady Montagu, wife of the British Ambassador. There pustular material was taken from the lesions of a person with a mild case of smallpox and transferred by a common needle into a vein or tissue of the person desiring the Immunization. Hopefully a mild form of smallpox would be developed and apparently did enough regularity for Lady Montagu to have her own children vaccinated in this manner. In 1718 she introduces this procedure in England, and she is credited with introducing the Method to the Western World. Obviously, these earlier methods of Immunization had inescapable risk there was no assurance that variolation would result in only a mild case of smallpox and there also a possibility of transferring Syphilis, Leprosy, Hepatitis or most any other diseases of the donor. Jenner system of a smallpox vaccination, advanced by him in the 1789 as a result of his study of Cowpox and smallpox in English milkmaids avoided this problem and began to place immunity on a firm scientific footing.

Keywords: Immunity, Louis Pasteur, infectious, diseases, lesions, Jenner system

O 33. DETERMINATION OF POPULATION DEVELOPMENT AND INFESTATION RATE OF THE BEET ARMYWORM [*Spodoptera exigua* (LEPIDOPTERA: NOCTUIDAE)] IN SUGAR BEET FIELDS IN ILGIN (KONYA) DISTRICT

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ABSTRACT: This study was carried out in sugar beet fields (Centrum, Düger and Karaköy villages) in the center of Ilgın, the district of Konya between the years 2017-2018. With this study, it is aimed to determine infestation rate, the first adult emergence time, adult population abundance, adult population peaks and adult activity duration in nature, which are essential criteria required for the management of striped leafworm [Spodoptera exigua (Lep.: Noctuidae)] in Ilgın. The population development of Spodoptera exigua was monitored by sexual attractive pheromone traps. As a result of the study, it was determined that the adults of Spodoptera exigua were first caught in sexual attractive traps in the first half of May. In order to determine the infestation rate caused by the pest, weekly beans were sampled drom the period of sugarbeet with 8-10 leaves. The adult population peaked twice during the year, including June and July. The date when adults were caught in traps was in the first half of September every two years. With these results, it was determined that Spodoptera exigua adults were active in nature for at least 4 months (May-September). The average contaminant rate of the fields in 2017-2018 was 0.0- 0.1%, 0.1- 0.1% in Düger and 0.2- 0.2% in Karaköy, respectively. Although the population of the pest does not increase every year, it might create an outbreak in some years. It is recommended that our producers continuously monitor the population of the pest

Keywords: Infestation rate, Ilgın, pheromone trap, population, spodoptera exigua, sugar beet

O 34. IMPACT OF TWO IRRIGATION SYSTEMS; SPRINKLING AND DRIP ON CULTIVATED SOIL MOISTURE AND IN OUARGLA REGION- ALGERIA

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ABSTRACT: The study highlights the evolution of cultivated soil moisture under two different irrigation systems: sprinkling and drip in Ouargla region. The approach adopted consists of the area prospection and then choose of the study site. This study focused mainly on an assessment of irrigation water quality, characterization of irrigation parameters and soil characterization in situ and in laboratory, and survey of some stages and the yield of Quinoa, for each irrigation system. Soil samples were collected before and after each irrigation for each system and at different depth levels (10, 15, 20, 25, 30 and 35 cm), with a control sample of bare soil (non-irrigated and uncultivated). The water and soil study showed that irrigation water is highly saline with basic pH, and had a sulphate sodium and chloride chemical facies. The soil is slightly calcareous, slightly gypsum, with a low organic matter content, slightly alkaline, not very salty, and has a silty sandy texture. Soil moisture increases with depth under spray system and decreases depth under drip. The complete random block tracking of some stage of Quinoa showed that there is no significant difference between the two systems. The statistical test indicates that drip system presents the best system compared to the spray.

Keywords: Sprinkling, drip, soil moisture, quinoa, Ouargla

O 35. ASSESSMENT OF LEAD CONCENTRATION IN THE AEROSOL SAMPLING USING DIFFERENT ANALYTICAL TECHNIQUES

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ABSTRACT: Instrumental methods of analysis with destructive and non- destructive used to determine metals concentration in aerosol samples. The purpose of this study is to determine the lead concentration in aerosol samples using different analytical techniques. We have selected 8 aerosols samples, which are divided in two parts and only one in four parts. We have analyzed a total 18 filter aerosol samples. Aerosol samples are collected in Tirana and Elbasan cities and were analyzed for lead content by using Graphite Furnace Atomic Absorption Spectrometry, Flame Atomic Absorption Spectrometry and X-ray Fluorescence in the Institute of Applied Nuclear Physics, University of Tirana, Albania. From the results obtained show that the level of lead in the aerosol samples that are collected in Elbasan is higher than in samples are collected in Tirana. Using various techniques in the measurement of lead in aerosols it is noticed that the more information is obtained from the technique of X-ray while for the presence of lead in low concentrations, GFAAS technique has the highest accuracy and sensitivity.

Keywords: Lead, aerosols, analytical techniques.

O 36. GEOLOCICAL AND PETROGRAPHICAL INVESTIGATIONS OF THE GÜMELİ VILLAGE (ALAPLI-ZONGULDAK-TURKEY)

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ABSTRACT: The study area covers around the Gümeli Village, located in the Zonguldak Basin which is the Turkey's most important coal basin, approximately 70 km west of the Zonguldak city center and 20 km southeast of Alaplı District. In this study, it is aimed to investigate of the geological features of the region, stratigraphic sequence of rock units outcropping in the region, the lithological, mineralogical and petrographical properties of different units. Sedimentary, metamorphic and magmatic units formed from Precambrian to today are exposed in the study area. The Precambrian Yedigöller (Bolu) formation, forms the basement of the study area, mainly consists of amphibolite, gneiss and metabasic rocks. The Late Silurian, Hamzafakılı Formation consists of clayey-quartzite, microconglomerates, metasandstone, arkose and conglomerates unconformably overlay the Yedigöller Formation. Devonian aged Göktepe Formation, overlay on the Hamzafakılı Formation with low angular unconformity, is represented by sandstone, siltstone, chalcschist, phyllite and claystone. The Medium-Late Devonian aged Belen Granite is mainly composed of granite and granodiorites cut the Hamzafakılı and Göktepe formations. The Late Cretaceous Alaplı formation overlying the Belen granite with an angular unconformity is represented by two different lithological units, including the limestones and clayey limestones of Örencik Limestone in the lower parts and the Cangaza basalt members in the upper parts. The Early-Middle Eocene aged Çaycuma formation overlying by the angular uncomformity the on the Alaplı formation is composed of sandstone, siltstone, claystone, mudstone and volcanic sandstone alternation. All these units covered by the old and new alluviums.

Keywords: Geology, Petrography, Alaplı, Zonguldak, Granite

O 37. THE USE OF CROSS LAMINATED TIMBER IN STRUCTURES

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ABSTRACT: Wood has been one of the most preferred building materials because of its durability, accessibility and workability since the first periods that people started to build a shelter. However, wooden structures were substantially left in the early 20th century, and concrete and steel construction systems were begun to be used. Today, the effects of environmental concepts such as sustainability, renewable energy sources, global warming and greenhouse gases on construction production have led to a reconsidering of building materials. Cross-laminated wood (CLT) panels, which have emerged for the last 20 years, enabled the use of the wooden base in multi-storey wood structures. The use of cross-laminated wood as an element of the load-bearing system removes the blind side of wood originating from its orthotropic structure. Poor quality trees are also brought to the sector thanks to these panels created. Sustainable environment could be created by performing tree farming with the purpose of using cross-laminated wood instead of existing tree sources in the construction sector, thus this will be more beneficial economically by minimising the importation of this material. This study provided information about the production stages, areas of usage and environmental features of cross-laminated wood as construction material, and design implementation of this new product as the element of the load-bearing system was carried out. Also, in this study, a multi-layered CLT beam was analysed theoretically in RFEM program as an application of CLT structural member.

Keywords: Cross-laminated timber, multi-storey structures, panel

O 38. MEASUREMENT AND MODELLING OF INDOOR PARTICLES IN A CASTING INDUSTRY IN KONYA PROVINCE

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ABSTRACT: Very polluting air pollutants. Air pollutants affect human and environmental health. Rapidly increasing world population causes air pollution in urbanization and safety of raw materials. With the development of our country, the industrial sector has progressed. Foundries have an important share in the development of the industrial sector. The increase in industrialization in the world has brought along the need for raw materials and casting. A large number of workers work in foundries, and foundries have very high amounts of dust and particulate matter. This situation affects workers' health negatively. In this study, particle measurements were made in the working hours and at different points of the foundry. It is aimed to evaluate the indoor air quality and to try to determine the effects on this situation.

Keywords: Foundry, indoor air quality, particle measurement, air pollution

O 39. EVALUATION OF ANTIBACTERIAL ACTIVITIES OF NYLON 6,6 NANOFIBERS COATED WITH MINT OIL AND MINT EXTRACT

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ABSTRACT: Tremendous research interest has been directed toward nanofibrous designs generated by electrospinning technique, in the last 10 years. Electrospinning is a versatile method to fabricate nanoscale polymer fibers with diameter in the range of 3–5000 nm. Nanofibrous structures obtained via electrospinning method have antimicrobial, anti-inflammatory, and antioxidant activity, which are attractive for biomedical applications and food packaging industries. In order to gain these properties to the materials, different types of agents (i.e. antimicrobials, antibiotics, plant extracts and essential oils) can be used. Since ancient times, essential oils are well-known for their antimicrobial properties. The use of essential oils as an antibacterial agent leads to produce novel and eco-friendly nanomaterials. This type of oils can be incorporated into electrospun nanofibers and polymer films to be in a wide range of applications. Nanofibers are generally preferable due to having high area and controllable compositions. The aim of the study was to fabricate Nylon 6,6 nanofibers coated with essential oil and plant extract to create an antibacterial activity which can be used as a potential food packaging material or biomedical textile. Herein, the target antibacterial material was engineered by coating mint oil and mint extract on Nylon 6,6 nanofibers. Firstly, production of Nylon based nanofibers was performed by electrospinning technique. Then, mint oil and mint extract were decorated onto nanofibers via ultrasonication technique. The nanofibers were characterized using Scanning Electron Microscope (SEM) and Fourier-transform infrared (FT-IR) spectrophometer. Antibacterial activities of surface coated nanofibers were evaluated using Gram-positive bacteria (Staphylococcus aureus) and Gram-negative bacteria (Escherichia coli). The inhibition zones were measured and recorded. Nanofibers coated mint oil showed better antibacterial properties as compared to mint extract.

Keywords: Antibacterial, nanofiber, mint oil

O 40. ANTIBACTERIAL PROPERTIES OF NYLON 6,6 NANOFIBERS CONTAINING SILVER NANOPARTICLES

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ABSTRACT: In recent years, there has been an increasing interest on antibacterial products in a wide range of application areas such as water purification, protection, wound dressing, and textile industry etc. The products having antibacterial activity can be prepared in the form of beads, gels, films and fibers. Nanofibers are defined as fibers with diameters less than 1 micrometer. Nanofiber technology (fiber diameter less than 1 micrometer) is under development for the preparation of novel materials in nano-scale with multifunctional properties. Electrospinning is an elegant method for producing nanofibers with high porosity and high spesicific surface area. Electrospun polymer nanofibers containing silver nanoparticles has received much attention due to their antimicrobial properties. According to our knowledge, silver and silver compounds show excellent antimicrobial efficiency against organisms such as bacteria, fungi and viruse. In this regard, the aim of this study was to develop antimicrobial nanofibers to be a candidate for potential applications. Nylon 6,6 nanofibers were fabricated via electrospinning technique, then the silver nanoparticles (AgNPs) immobilization was performed in order to gain an antimicrobial activity. In this method, generated electrospun Nylon 6,6 nanofibers were immersed into $AgNO_3$ solution for 2 hours and removed from the solution, treated with water, and then reduced using $NaBH_4$ for 2 hours. The formation of AgNPs was occurred through the $NaBH_4$ reducing agent. The obtained Nylon 6,6 nanofibers containing AgNPs were washed with water and dried. Fabricated nanofibers were characterized using Scanning Electron Microscope (SEM) and Fourier-transform infrared (FT-IR) spectrophometer. Antibacterial activities of AgNPs immobilized nanofibers were evaluated using Gram-positive bacteria (*Staphylococcus aureus*) and Gram-negative bacteria (*Escherichia coli)*. The inhibition zones were measured and recorded. According to the analysis, nanofibers showed better antibacterial activity against to Gram-positive bacteria (*Staphylococcus aureus*) as compared to Gram-negative bacteria (*Escherichia coli).*

Keywords: Antibacterial, nanofiber, silver nanoparticle, nylon 6,6

O 41. DECORATION OF SILVER NANOPARTICLES SYNTHESIZED BY GREEN APPROACH ONTO NATURALLY COLORED NYLON 6,6 NANOFIBERS: INVESTIGATION OF ANTIBACTERIAL ACTIVITY

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ABSTRACT: Since, organic dyes are non-eco friendly and expensive, recent researches have been focused on natural dyes. Natural dyes can be derived from natural sources. Most are of plant origin and extracted from roots, wood, berries, lichens, leaves, flowers, nuts, and seeds. Generally, they show various colors and contain several pigments which can be easily extracted and used as a coloring agent. However, studies regarding the dyeing process with natural dyes are very limited due to easy availability of cheap synthetic dyes. Hence, this research aimed to produce colored nanofibers using plant extracts. Metallic nanoparticles with physicochemical properties different from bulk materials are widely applied in various fields such as environmental remediation, photocatalysis, imaging, catalysis, biosensors and biomedical applications. Nanoparticles have emerged due to unique physical and chemical properties, high surface to volume ratio as novel antimicrobial agents. Among them, silver nanoparticles (AgNPs) show excellent antimicrobial efficiency against organisms such as bacteria, fungi and viruse. As a result of increasing interest in green chemistry, an eco-friendly nanoparticle synthesis that is simple, affordable, compatible with biomedical and pharmacological applications have been widely preferred. In this regard, the aim of the present work was to decorate the AgNPs synthesized by green method onto colored Nylon 6,6 nanofibers. Firstly, Nylon 6,6 nanofibers were fabricated by electrospinning method followed by dyeing process using reddish orange and onion peel extracts. During dyeing process of the nanofibers, vinegar was used as a dye fixative agent. Secondly, synthesis of AgNPs using water extract of *Alchemilla vulgaris* plant under ambient conditions was performed. The formation of AgNPs was analyzed by UV–visible spectrophotometer. Synthesized AgNPs were decorated onto nanofibers by ultrasonication technique followed by mechanical mixing. The nanofibers were characterized using Scanning Electron Microscope (SEM) and Fourier-transform infrared (FT-IR) spectrophometer. The antibacterial acitivities of obtained novel nanofibers were investigated using Gram-positive bacteria (*Staphylococcus aureus*) and Gram-negative bacteria (*Escherichia coli)*. The activity test shows that nanofibers showed better antibacterial activities against to Gram-positive bacteria (*Staphylococcus aureus*) as compared to Gram-negative bacteria (*Escherichia coli).*

Keywords: Antibacterial, nanofiber, silver nanoparticle, nylon 6,6, green synthesis

O 42. RELATIONSHIP BETWEEN THE GEOLOGICAL UNITS AND SOIL GROUPS: A CASE STUDY AROUND THE HATIP-KAŞINHANI (KONYA-TURKEY)

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ABSTRACT: In this study, it is investigated whether the soil classes in the region between Hatıp and Kaşınhanı (Konya -Turkey) are related to geological units. The Upper Triassic-Lower Cretaceous Lorasdağı formation which is composed of limestone, dolomitic limestone and dolomites and the Upper Cretaceous aged Midostepe formation consisting of clayey limestone, radiolarite, shale and marl are the basement of the study area. These units contain tectonic contact with the Upper Cretaceous Hatip Ophiolitic Melange and Çayırbağı Ophiolite. The Upper Miocene-Lower Pliocene aged Sille and Ulumuhsine formations and Erenlardağı volcanics and the Lower Pliocene aged Topraklı formation are unconformably overlying these units. The Quaternary - Holocene young sediments consisting of alluvial fan and the terrestrial clastics cover all the units underneath. According to the classic soil classification, zonal and azonal soils are located in the study area. These soils formed generally depending on the geological characteristics of the host rocks based on the preliminary observations. While the area where Lorasdağı limestone seen is called as "Bare Rock", the soils located on the ophiolitic rocks are generally zonal soils such as "Red Brown Soils" and "Brown Forest Soils". The soils located on the Ulumuhsine formation with clayey limestone, sandstone and marl alternation correspond to "Red Brown soils'" and "Brown Soils" classes from zonal soils. The soils located on the Erenlerdağ Volcanics in the southwest of the study area are classified as "Limeless Brown Forest Soils" from zonal soils. Alluvium, which is composed of current terrestrial sediments, is classified as "Alluvial Soils" from azonal soils.

Keywords: Hatıp, Kaşınhanı, soil, geology, soil classification

O 43. PRELIMINARY DATA ON SCORPIONS (SCORPIONES) OF ALBANIA WITH NOTES ON THEIR TOXICITY

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ABSTRACT: Scorpions (Arachnida Cuvier, 1812: Scorpiones C.L. Koch, 1837) are widely distributed all over the world, with an exception of Antarctica. The high diversity of the biotopes extends from the tropical rain forest, steppe, Mediterranean scrub, the deserts and the littoral zone, inhabiting all the habitats from the ground up to the tree layer. In the Balkan Peninsula, there are known 16 species of genus *Euscorpius* Thorell, 1876 and one species of genus *Mesobuthus* Vachon, 1950. Albania, as a Balkan country, has the proper climatic conditions and is very karstic, which make it preferable for the arachnid species, such as scorpions. In Albania the taxonomic situation of this group of animals is not clear yet and it is under study. At the moment only four safe species are recognized (*E. italicus*, *E. hadzii*, *E. beroni*, and *M. gibbosus*), plus at least two other populations awaiting clarification. The research field work, using the pitfall traps and the hand collection, confirmed the presence of three species, *E. hadzii* Di Caporiacco, 1950, *E. italicus* (Herbst, 1800) and *M. gibbosus* (Brullé, 1832). Large numbers of *E. hadzii* were identified (35 specimens) in comparison with the others two species. *M. gibbosus* is the only species found in Albania with a venom which is considered medically important for human. The latter scorpion has a body coloration orange-yellow and may be aggressive if disturbed. On the other hand, the brownish to blackish scorpions *E. hadzii* and *E. italicus* have a very lower toxicity. Sixteen cases of hospitalization after the sting of a scorpion, have been recorded in the last decade in the south-western Albania (Fier, Lushnje), all of them have resulted harmless to the health. As a preliminary research work, data on the field work and the hospitalized case studies will be described.

Keywords: Arachnids, scorpions, habitats, dangerous animal, toxin, Balkans

O 44. THE CLASSIFICATION LOCAL AREA BASED CLIMATIC DATA USED

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ABSTRACT: Bio climate concept is a wide concept and from ecologic angle it shows content elements combination that predominate or determinate the planted and animal life. The bio climate of one zone is considered as a combination between vegetation zone and climatic elements. The bio clime study on Korça - eco zone and the bioclimatic indexes give a view about the conception and using values of bio climate classification indexes. This study based on Emberger and FAO Model of learned Frenchman, which is the most quoted on studies with bioclimatic character on Mediterranean eco-zone for period 30 years. The Emberger Classification is known and applied, because it gives a detailed using about studied zone. The Emberger Classification is based on pluviometric index Q and vegetation index and gives a more detailed classification than others. After mathematic data processing and comparison of bioclimatic indexes according to respective classes is concluded that according to Emberger Korça – eco zone is classificated on three respective bio climates: Micro zone with semiarid bio climate with coefficient Q<60 and annual precipitations 400-600 mm per year, in which take parts: Sheqeras and Gurshqipe; Micro zone with sub humid bio climate with coefficient 60<Q<90 and annual precipitations 600-700 mm per year, in which take parts: Dvorani, Zvirina, Bilishti, Liqenas (Korça); Micro zone with humid bio climate with coefficient 90<Q<150 and annual precipitations over than 700 mm per year, in which take parts: Shtylla, Korita, Gjonbabasi, Vithkuqi, Voskopoja. We have arrived in the following conclusions from this study: Bioclimatic classification in general of Southwestern eco zone Albania and in particular of eco zones must taken in consideration for cultivated plants regionalization; Using of bioclimatic maps for agro-ecosystems construction on Korça zone; The change of precipitations amounts per every 100 m is oscillated from 40 to 60 mm; The insolation report for Korça micro zones is oscillated from 0.50-0.

Keywords: local area, classification, climatic data

O 45. FIRE SCENARIOS-BASED ANALYSIS IN WATER SUPPLY NETWORK: CASE STUDY AKYURT, ANKARA

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ABSTRACT: Water is an important need to realize fundamental activities of people. With the growth of the settlements, the combined pipeline systems that distribute water brought from natural sources to settlements have become complicated. Damage to water networks due to natural disasters creates many problems. Computer programs are frequently used to examine the impact of disasters on water networks. The EPANET developed by the United States Environmental Protection Agency is highly preferred for optimizing water networks, revealing behaviors under different scenarios and solving design problems. With the EPANET program, it is possible to observe hydraulic characteristics (flow rate, pressure, velocity etc.) easily under changing conditions. Akyurt district in Ankara, one of Turkey's crowded cities, has been chosen as the study area. In this study, 5 different fire scenarios were determined for the Akyurt district water network and the behavior of the system was investigated under these scenarios. The pressure and flow behaviors were evaluated under changing conditions in the water distribution network. The behaviors of common areas, public buildings and residential in terms of water transmission under fire scenarios were investigated.

Keywords: Akyurt, EPANET, Fire Scenarios, Water Network

O 46. TREATMENT OF BIOGAS SLURRY BY MICROALGAE

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ABSTRACT: : Global warming has become a current issue of concern in the world today. The main sources of global climate change are the increasing concentrations of greenhouse gases that come primarily from human activities and power plant operations. Scientists are seeking to find solutions to global warming through the mitigation of the greenhouse gases. Biofuels such as biodiesel, bioethanol and biogas have been considered as an alternative environment friendly fuel source and currently widely used. Biogas slurry, also known as digestate during anaerobic processes, contains a significant proportion of nutrients. In recent years, numerous studies have been performed to treat biogas slurry, and to produce algal biomass, by removing nutrient from anaerobic effluents by microalgae-based technology. When micro algae are cultured in nutrient-rich effluents, this provides a source of food for the growth of microalgae. As a result, the produced biomass can be used for biofuel production. Furthermore, the biogas slurry with contaminants especially with nitrogen and phosphorus, which has the potential to contaminate underground and surface water resources can be treated by this way. In this study, the literature on biogas slurry and treatment of its by microalgae cultures have been reviewed considering the management of biogas slurry for water pollution and biomass production for biofuel.

Keywords: Biogas slurry, Biomass production, Microalgae, Treatment, Water pollution

O 47. ENVIRONMENTAL MODELLING OF SOIL WATER CHARACTERISTIC CURVE FOR TWO CONTRASTING SOIL TEXTURE

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ABSTRACT: Recently, due to the growing concern about the quality of the environment for unsaturated subsoil, which is negatively affected by agricultural and industrial activities, it becomes necessary to increase knowledge about the mechanism of transmission and distribution of solute and pollutants in the soil environment by modelling their movement in the soil under different conditions. Predicting soil water characteristic curve from van Genuchten model was renowned for reducing the costs and time of measurement methods. The aim of this study was to determine the effect of two level of compaction on the behaviour of soil water characteristic curve of a sandy loam and clay soils, and then compare the measured results with the predicted results obtained from van Genuchten equation with using four different model classes of (m) parameters, then investigating the relationship between them. At the end of incubation period, soil samples were sampled and thereafter compacted through soil core with known volume at soil bulk density (Pd) of 1.50 and 1.70 g cm^{-3} for a sandy loam soil and 1.20 and 1.35 g cm^{-3} for a clay soil. The obtained results indicated that using van Genuchten equation to fit water characteristic curve with variable (m) parameter had a highest correlation (R^2), and lowest normalized root mean square error (NRMSE), as well as soil compaction significantly affected volumetric water content at the same observed section in both soil textures.

Keywords: Environmental modelling, Soil compaction, Water characteristic curve

O 48. IMPACT OF COMPOST AND BIOCHAR ON THE MANAGEMENT OF SOIL SUSTAINABILITY

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ABSTRACT: Driven by climate change and population growth, increasing human pressure on land induces conversion of natural landscapes to agricultural fields and pastures while simultaneously depleting land currently under agricultural use. Consequently, a vicious circle develops; further aggravating climate change, soil degradation, erosion, loss of soil organic matter (SOM) and leaching of nutrients, all of which substantially decrease growth and yield of crops, and thereby declining agriculture production and inducing environmental degradation. Thus, in order to increase food production and reduce or prevent the negative environmental impacts of intensive agriculture, soil sustainability is urgently required. The maintenance or increase of organic matter in the soil has been reported to be a promising avenue for causing positive ecosystem services such as increased soil fertility and agriculture production, nutrient and water storage, habitat for soil organisms and carbon sequestration, as well as decreased soil pollution. In this study, compost and biochar both produced from Elaeagnus tree as the soil amendments were individually applied at a rate of 0, 1, 2 and 4 % (wt/wt) to a sandy clay loam soil for determining their effects on soil fertility and growth of maize plant. Experimental results showed that the improvements were proportional to the applied rates of biochar and compost, and both compost and biochar applications significantly improved soil fertility and development of maize plant. Thus, we recommend farmers to tremendously employ biochar and compost for improving sustainability of soil and environment, and hereby enhancing food production and ecosystem services at large.

Keywords: Biochar, compost, maize crop, soil fertility, soil sustainability

O 49. PRODUCING ENERGY FROM MAGNETIC FIELD WITH WAVE ENERGY

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ABSTRACT: As a result of the increase in the world population and the continuous growth of the industry, it has been seen that the energy demand will increase in the coming years. Due to the cost of standard energy production methods and environmental pollution, many countries tend clean and renewable energy sources. Therefore, the energy sector is looking for alternative energy production methods for clean and renewable energy. In the historical development process related to renewable energy, different renewable resources in energy production, and energy production technologies derived from these sources have been developed. In this study, the properties of the wave energy which is a renewable source, the principles of transformation were investigated, and a system has designed to generate electricity energy by using the potential energy of the wave power. In this design, buoys on the water surface oscillates up and down due to the potential energy of the wave energy. The potential energy of the wave power has converted into kinetic energy by means of buoys. The kinetic energy gained by the buoys influenced the coil system and the magnetic field has formed and the energy produced in the magnetic field converted into electrical energy.

Keywords: Renewable Energy, Wave Energy, Electricity Production, Magnetic Field

O 50. INDOOR ENVIRONMENT PARTICLE MEASUREMENT AND MODELLING IN CAFES AROUND THE UNIVERSITY

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ABSTRACT: Recent years increase social welfare levels and spending a large part of their days outside the home of places such as cafes, restaurants and tea gardens. Nowadays, places like this have increased. People who go to such places are increasing every day. This brought some problems with them. The weather is also a very pollutant. These pollutants affect human health negatively. In this study, internal ambient particulate matter was measured at different points and at different times in some café's around the University Campus. Internal air quality is evaluated and its effects on human health are examined. Available in this study Particles agent measurements made with respect to Turkey cafes t surrounding air pollution regulations, it was found on the European Union and EPA air pollution measurement value over the limit value in the direction of limits. By using the values obtained by the measurement, the pollution in the cafes was made by modelling and their maps were formed.

Keywords: Cafe, indoor air quality, particle measurement, air pollution

O 51. OCCUPATIONAL WORK AND WORKPLACE SAFETY PARAMETERS AT QUARRIES

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ABSTRACT: Workplaces have been locations where people work for their earnings as employees. Occupational safety rules applied for work and workplaces have gradually regulated the jobs to supply healthy working conditions. Mining law and related legislations applied for occupational safety of mines have also synchronized working conditions. Rules functional for safety precautions at mining workplaces have also arranged official relationships between employers and employees. Precautions listed for occupational work & workplace safety have activated engineers to focus on the risks of accidents. In this study occupational safety conditions for quarries have been studied to understand possible risks to decide about their preventions. In order to comprehend risks appeared at quarries, whole quarry operations had been analyzed for a selected quarry near Kayseri-Turkey. Results of these analyses are supplied here to present the importance of safety understandings and cultures of workers in mine related societies.

Keywords: Mine safety, Safety in quarries, Workplace safety parameters, Safety precautions for quarries

O 52. NATURAL STONE CUTTING PLANTS AND AMOUNT OF WASTE PRODUCED

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ABSTRACT: Marbles, travertines and andesite rocks have been common natural stones types economically mined in Turkey. When the waste, (unusable stone fragments, micronized rock dust etc.) in consideration, wastes can be created in natural stone mines and they can be occurred in Natural Stone Dimensioning (NSD) plant. Wastes generated at a NSD plant near Elazıg city (Turkey) have been perceived to evaluate waste occurrence cases. When two typical equal sized natural stone blokes from the same stone mines are started to be dimensioned in a NSD plant (by using the same cutting and dimensioning machines), total saleable natural stone plate surface areas (for the similar plates) obtained at the end of the operation can be different. It was aimed in this study to observe and understand governing (influencing) parameters of these differences. Actually, parameters influencing the waste amounts in NSD plants can be related with followings; cutting machine and its disk's performances, different marble plate dimensions required to cut, marble plate thickness differences, micro discontinuities in marble blokes, irregularities in the marble blokes, problems related with workers, mechanical property differences of natural stones, marble dimensioning machine types and their properties. Detail evaluations of these parameters have searched and amount of wastes calculated according to cutting machines and polishing machines.

Keywords: Natural stone, Marble, Natural stone cutting, Waste in Natural stone cutting.

O 53. URBAN DRAINAGE DESIGN ACCORDING TO TURKISH RAINWATER HARVESTING AND DISPOSAL GUIDELINE

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ABSTRACT: The natural cover of land has been changed to impermeable layers in most of the cities with rapid urbanization. The impermeable layers are the drivers of urban floods. Urban areas are becoming prone to flood disasters. The rate of infiltration is higher in natural land cover and lower in impervious surfaces. In impervious surfaces, the high rates of runoff are responsible for urban flood disaster. Runoff in urban areas might be one of the restrictions for drainage during the intense rainfall events. Hence, for accurate drainage design, factors which affect the drainage should be taken into consideration. In urban areas integrated green infrastructure design is one of the most effective tools for stormwater management and runoff reduction. There is a need for water sensitive urban designs for flood risks mitigation. Identification of flood-prone regions is crucial for flood mitigation. Improving permeable paving and sustainable drainage system can reduce floods in urban areas. In this study, Barış Street in Selçuklu district of Konya province is selected for rainwater drainage design using rational method according to the rainwater collection, storage and discharge systems regulation which published in 2017. The study area covers 11.04 ha. The study area has many grey infrastructures and there is no green infrastructure existed. Hence, it is prone to urban flood. Intensity-Duration-Frequency (IDF) rainfall curves were used for the intensity and frequency determination. Seven different periods, namely 2, 5, 10, 25, 50,100 and 200 years were selected for rainfall drainage design. Rainfall intensity determination was based on 15 minutes of rainfall. Rain yield was calculated for each period. The required diameters of pipes for drainage are calculated for the selected periods according to 60% full rates. As a result, 400 mm diameter for 2 years, 500 mm diameter for 5, 10, 25 years and 600 mm diameter for 50, 100, 200 years periods have been found as appropriate.

Keywords: Rainfall intensity, Rainwater, Runoff, Urban flood, Urban flood control

O 54. APPLICATION OF HOLMIUM (Ho+3) DOPED TiO2 PHOTOANODES TO IMPROVE PHOTOVOLTAIC PERFORMANCE OF DYE SENSITIZED SOLAR CELLS

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ABSTRACT: In this work, pure and Holmium (Ho^{+3}) doped TiO_2 pastes were employed to produce dye sensitized solar cells (DSSCs). The influence of using Ho^{+3} doped TiO_2 photoanodes on the photovoltaic performance of DSSCs was investigated. For this purpose, firstly, pure and doped TiO_2 solutions were prepared by sol-gel method and mixed with TiO_2 nanopowder to produce TiO_2 pastes. Then these pastes were applied on FTO substrates by doctor blade technique. The prepared films were used as photoanodes in DSSCs. Some morphological, structural and optical characterization parameters of the photoanodes were determined by SEM (Scanning Electron Microscope), XRD (X-Ray Diffraction) and UV-Vis spectroscopy analyses. The performance of the fabricated cells were determined by Current (I)-Voltage (V) analysis. The impact of doping on the physical properties (characterization) of the photoanodes and thereby the efficiency of the DSSCs was analyzed. It was concluded that the modifications of TiO_2 photoanodes with Holmium (Ho^{+3}) doping enhanced the performance of the cells.

Keywords: Dye sensitized solar cell, Holmium, photoanode

O 55. GEOCHEMICAL PROPERTIES AND GEOLOGICAL SIGNIFICANCE OF KARASU SPRING WATER AND YERKÖPRÜ TUFAS (HADIM-YERKÖPRÜ KONYA)

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ABSTRACT: Karasu spring water is located in Yerköprü region, which is 100 km away from Konya. The Karasu spring coming out from a fault and water output from karstic network into the valley.
The Karasu spring which is enriched in carbonate discharges into valley as surface water, while the other spring discharges into the Göksu valley from a karstic void close to the Yerköprü waterfall. Water from both springs mixes at the waterfall and flow throgh Göksü valley. Bicarbonate ions in Karasu spring water are deposited as tufa (terrestrial carbonate) in Yerköprü waterfall region. In the past, Karasu spring water with bicarbonate has been used in water mills. Therefore, tufa deposition occurred in different areas. Changing the bed of the Karasu Spring causes the current precipitation to stop. This situation caused the pollution of the white tufas. Deposited tufas due to the change of the bed of the Karasu source on different parts of the waterfall cause slope collapse. The region, which is an important geosite area for Geotruzm, so, the Karasu source and the fascinating tufa structures should be protected. Thus, both the geological structures will be protected, and the environmental pollution will be prevented.

Keywords: Karasu, Yerköprü, Tufa, Karstic spring water

O 56. GEOLOGICAL APPROACH TO KAVAKLI NATURAL PROTECTION AREA

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ABSTRACT: The Kavaklı Natural Protection Area (KNPA) is located just south of the Yenice-Karabük region. This region has one of Turkey's richest forest texture areas and oxygen content. The kavaklı area is also located in the wildlife protection areas. KNPA consists of one polygon and two different types of rock community. Nature Protection area includes Early-Late Cretaceous Ulus formation. Ulus formation consists of Early-Late Cretaceous clastic sedimentary rocks. As a member of the Ulus formation, Sunduk member covers carbonate rocks. KNPA a consists mostly of carbonated rocks. Detrital sedimentary rocks are only exposed in a small area to the east of the polygon. The region is very close to the North Anatolian Fault Zone (NAFZ). Therefore, the region is frequently influenced by active seismic movements. KNPA consists mostly of carbonaceous rocks, thus creating more stable areas against earthquakes and less danger for natural life and besides, there are many small and large caves in carbonate rocks. These karstic structures constitute important shelters and feeding areas for natural wildlife. In addition, the infrequent forest texture in carbonated rocks create the breathing areas in the forests. Limestone and clastic rocks between contacts are exposed to spring water. Spring water are important for natural life.

Keywords: Kavaklı, Karabük, Natural Protection area, Geological approach

O 57. GEOLOGICAL APPROACH TO ÇITDERE NATURAL PROTECTION AREA

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ABSTRACT: Karabük region has a dense forest area. The forest area is one of most important location for Oxygen content in Turkey. There are many nature and wildlife protection areas in the Karabük region. Çitdere region is a Nature Protection Area (NPA) in Karabük province. The Çitdere Nature Protection Area (ÇNPA) consists of two polygon and different types of rock community. ÇNAP covers of Early-Late Cretaceous Ulus formation. Ulus formation consists of Early-Late Cretaceous clastic sedimentary rocks (conglomerate-sandstone-mudstone and marl alternation). The Sunduk member (as a member of the Ulus formation) include carbonate rocks. The southern polygon of the ÇNAP consists of clastic rocks and the northern polygon consists of carbonate rocks. The ÇNAP is very close to the North Anatolian Fault Zone (NAFZ). Therefore, the region is frequently influenced by active seismic movement. Seismic movements affect very loosely packed sedimentary rocks more than carbonated rocks. So, the karstic limestones (Late Cretaceous Ulus formation-Sunduk member) in the northern polygonal contain safer areas for natural wildlife. This situation shows that the areas of the Çitdere Nature Conservation consisting of carbonates rocks resistance to landslides and earthquakes. Furthermore, the area including of karstic carbonate rocks covers natural shelters and feeding areas to natural wildlife.

Keywords: Çitdere, Karabük, Natural Protection area, Geological approach

O 58. TREATMENT OF METAL PLATING WASTEWATER BY ELECTROCOAGULATION PROCESS

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ABSTRACT: Metal plating industry has an important place among the rapidly developing industries. In these facilities, heavy metal rich wastewaters are generated from the facilities which have galvanized process. Heavy metals have a significant impact on environmental pollution. In this study, it was investigated that the heavy metals in wastewaters due to metal coating industry rinsing bath waters can be treated by electrocoagulation method. In this study, it was investigated that heavy metals (Cr^{+3} ve Zn^{+2}) in metal plating industry wastewater can be treated by electrocoagulation method. The experiments were carried out at room temperature in 1 L glass reactors. Two different electrodes, iron-iron and iron-copper, were used and experiments were performed at different pH values (pH 5-pH 12). Heavy metal analyzes were performed with ICP-MS. 99.9% Cr^{+3} removal was obtained in iron-copper electrode at the original ph value in 10 minutes and 99.9 % Zn^{+2} removal was obtained in iron-copper electrode at the pH value 9 in 30 minutes.

Key words: Chromium, Electrocoagulation, Treatment, Wastewater, Zinc.

O 59. PLANING THE BICYCLE ROADS IN THE CITIES; EXAMPLES IN THE WORLD AND IN TURKEY

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ABSTRACT: Increasing population, increasing usage of motor vehicle due to the unplanned city construction brought problems related transportation, this situation has affected human health and also the quality of city life. Bicycle is not also healthy, eco friendly, trustworthy and enjoyable also it is accepted as a way of transportation especially in these years, usage of bicycle has increased. The most important factor to support usage of bicycle is to obtain the road security. In this study, the historical development of bicycle roads ,samples of bicycle roads and the importance of the criteria's of planning have been mentioned and talked about the samples around the world and in Turkey. As a result, opinions about this issue.

Keywords: Bicycle road, Planning, Criteria

O 60. EVALUATION OF THE POTENTIAL OF DISABLE EXAMPLES IN THE WORLD AND IN OUR COUNTRY

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ABSTRACT: Tourism is a cultural and economic activities, that people conduct to rest, to joy, to explore, to have more information during their temporary stay. According to World Health Organization's data more than one billion people on Earth have disability among seven million people in our country, ten million people out of 80 million have disabilities. In modern communities all individuals have the canal rights to join this kind of activities. Disable tourism, which is a global sector within tourism, needs to be developed in order to have economic growth. In this study, classification of disabilities, measurements of disability tourism, the situation in the word and in our country is analyzed and brought same solutions.

Keywords: Disabled tourism, Disability, Tourism contributions

O 61. EXAMINATION OF THE ACCESSIBILITY PROBLEM FOR THE DISABLED IN URBAN LANDSCAPE: A STUDY ON İZMİR-KONAK İNÖNÜ STREET

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ABSTRACT: According to the principle of equality between individuals on the basis of modernity, public administrations must offer citizens the opportunity to live in without any discrimination. For this reason, the problems of the disabled people, who are an integral part of social life, need to be solved and integrated into the society. There are many problems in the integration of disabilities into the social life. Foremost among these are, lack of disability-oriented solutions in the design of the physical environment or the implementation mistakes. In this study; Inonu Street, one of the busiest streets in the city, located in İzmir-Konak province was examined. Data were obtained by taking into consideration the access problems of the disabled, weekday photo shoots and observations were performed, in which the traffic of people and vehicles is intense. The obtained data were evaluated in terms of appropriate and faulty applications for disabled people and solutions were proposed according the subject.

Keywords: Urban landscape, Universal design, Disability, Accessibility, İzmir

O 62. THE EVALUATION OF THE DISABLED STANDARDS IN BUYUK PARK IZMIR / BORNOVA IN TERMS OF URBAN LANDSCAPE

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ABSTRACT: According to the Law Number 5378 of 2005 on Disability people in Turkey; they are defined as disabled who are affected by the attitudes and environmental conditions and physical and mental, mental and sensory abilities of individuals due to various levels of loss the full and effective participation of the society with other individuals. According to research, 15% of the world's population or 1 billion people have any obstacles. In this study, it was determined that the reinforcement elements of the park located were compatible with the disability standards in Bornova /İzmir. In the observations obtained, Büyük Park had not disability standards because of garbage can incompatibility, lack of railings on ramps, the fountain on the sidewalk, the pedestrian road does not comply with the disability standard, tree in the middle of the pedestrian path, the slope of the ramp does not comply with the disability standard, end of the road with pavement, the lighting element is in the wrong place, and wrong application of the stairs.

Keywords: Reinforcement elements, Park, Accessibility, Izmir

O 63. THE IMPORTANCE OF OPEN AIR HOMES IN LANDSCAPE ARCHITECTURE

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ABSTRACT: Today's people are becoming increasingly inefficient and unhealthy due to their dense, monotonous, boring life and full of problems in urban areas. For this reason, people need green tissue to relax and relax themselves in their work and living spaces. Therefore, building gardens or open-air homes show its importance for urban life. Open air homes allow people to reach recreation in a short time. The use of the spaces in the buildings while maintaining the functionality of the buildings constitutes the phenomenon of open-air rooms. The aim of this study was to associate; open-air homes; to design open air rooms, to examine sub-places and materials and to be used in open-air rooms with the landscape architecture profession discipline.

Keywords: Urban landscape, Open air home, Urban life

O 64. DEVELOPMENT OF A WATER MANAGEMENT FOR AN AUTOMOTIVE PEM FUEL CELL SYSTEM

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ABSTRACT: There are several factors, such as lack of fossil fuel reservoir and global warming phenomena which lead to the search alternative ways to replacement the internal combustion engine (ICE) for vehicles. PEM Fuel cells are one of the most promising technologies for automotive applications because they operate at low temperature, environmentally friendly, have a high-power density, and can be fueled by the hydrogen fuel which produces from different renewable sources. Consequently, investigation on a proper an automotive PEM fuel cell system design is necessary in order to perfect vehicle performance, increase efficiency, and reduce costs. Water management is one of the most important problems in PEM fuel cell, and this study makes a contribution to the improvement of the performance of an automotive fuel cell system. The effect of some operation parameters such as vehicle speed, air stoichiometry, and operation pressure on the water management issue, and the performance of an automotive fuel cell system was studied. The results showed that the operating pressure and the air stoichiometry ratio are two significant criteria in the water management of PEM fuel cell. System pressure has an important effect on water management and the performance of the PEM fuel cell. The decrease of air stoichiometry at high operation pressure enhances the water management of the system.

Keywords: PEM fuel cell, operating pressure, air stoichiometry

O 65. HYDROGEN PEROXIDE FUEL CELL USING CORE-SHELL CATALYSTS

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ABSTRACT: As a result of the on-going global energy crisis and climate change concerns, significant research efforts have been devoted to the development of sustainable and clean energy devices. Nowadays, fuel cells have been approved as a novel energy production technology, which is efficient, economic and environmentally compatible. The fuel cell is a power device which converts the chemical energy into usable electrical and heat energy without burning and using any intermediate unit (Li, et al., 2015). H_2O_2 is one of the liquid base fuels which is used in fuel cells due to the advantages of having high power density and theoretical potential, low activation energy (Song, et al., 2017). Many studies have reported the catalysts for H_2O_2 reduction. At present, noble metal catalysts, such as Pt, Pd, Au, Ag or a combination of these metals, exhibit the highest catalytic performance towards H_2O_2 reduction. In this study, highly active carbon nanotube supported bimetallic catalysts have been synthesized for H_2O_2 fuel cells. Pd-M (M: Ni, Ag, Co, Mn, V, Zn) bimetallic alloy and core shell catalysts have been prepared via $NaBH_4$ reduction and dendrimer template methods. After the preparation of electrodes; amperometric, voltametric and impedance measurements will be performed by potentiostat device.

Keywords: Energy, hydrogen, fuel cell, hydrogen peroxide, bimetallic catalyst, palladium

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O 66. SYTHESIS AND CHRACTERISATION OF Pd BASED CATALYSTS FOR SENSOR APPLICATION

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ABSTRACT: Hydrogen peroxide(H_2O_2) is one of the most appreciated analytes that is used in various areas such as food processes, bleaching of textiles and paper, pharmaceutical research, clinical laboratory, medical diagnostics, removal of inorganic and organic pollutants from wastewater, antiseptic and cleaning product, minerals processes and biochemistry (Ramazeni et. all, 2017). On account of their tremendous catalytic activity to H_2O_2 and high electrical conductivity in comparison with many other bulk metals, bimetallic catalysts were commonly used for constructing nonenzymatic H_2O_2 sensors. Different techniques have been employed for the determination of H_2O_2. Among them, electrochemical methods have attracted considerable interest due to their high sensitivity, fast response, low-cost and convenient operation (Davila et. all, 2016). In this study, highly active carbon nanotube supported bimetallic Pd based bimetallic catalysts have been synthesized for H_2O_2 sensors. After the preparation of electrodes; amperometric, voltametric and impedance measurements were performed by potentiostat device.

Keywords: Energy, hydrogen, sensor, hydrogen peroxide, bimetallic, catalyst

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O 67. ELECTROCHEMICAL DETERMINATION OF CADMIUM AND LEAD ON ZnF_2O_4/rGO/GCE

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ABSTRACT: Contamination of heavy metals (lead, cadmium, mercury, chromium, copper, nickel and zinc etc. possess serious problems to the environment and public health. Heavy metal ions are the main pollutant one of aqueous systems due to their solubility in water and non-biodegradable properties. Heavy metals taken in low concentrations can cause health problems. Serious and chronic illnesses are the worse effects associated with heavy metal ions poisoning even at low level exposure. (Kitt, et al., 2019). Stripping voltammetric methods are the most efficient electrochemical techniques for trace analysis due to their short response time, low cost, high sensitivity and selectivity for the detection of heavy metal ions in environmental samples .The performance of voltammetry is strongly influenced by the working electrode material. (Serran, et al., 2015). In this study, $ZnFe_2O_4$-rGO modified glassy carbon electrode has been used to detect lead (Pb (II)) and cadmium (Cd (II) in industrial wastewaters. In addition operational parameters including pH, deposition potential and time has been optimized.

Keywords: Electrochemical detection, Heavy metal ions, Modified electrode, Stripping voltammetry.

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O 68. SYNTHESIS OF IN-SITU S DOPED FEW LAYER GRAPHENE BY CHEMICAL VAPOR DEPOSITION TECHNIQUE AND THEIR SUPERIOR GLUCOSE ELECTROOXIDATION ACTIVITY

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ABSTRACT: Electrochemical oxidation of glucose has generated much interest over the years. It has been extensively studied for applications in glucose sensors (Pasta et. all, 2010) and glucose–oxygen fuel cells. S-doped graphene (SG) has been reported to potentially present a superior electrocatalytic activity. Nevertheless, SG has rarely been investigated as a catalyst support material (Tian et. all, 2015). In this study, sulphur (S)-doped graphene and insitu S-doped few-layer graphene are deposited on copper (Cu) foil by chemical vapor deposition (CVD) method. Then, S-doped graphene and insitu S-doped few-layer graphene on the Cu foils were coated onto few-layer the indium tin oxide (ITO) electrode for glucose ($C_6H_{12}O_6$) electrooxidation. These electrodes are characterized by Scanning Electron Microscopy-Energy Dispersive X-Ray Analysis (SEM-EDX) and Raman Spectroscopy. In addition, $C_6H_{12}O_6$ electrooxidation is investigated with cyclic voltammetry (CV) and chronoamperometry (CA).

Keywords: Chemical vapor deposition, few-layer graphene, glucose electrooxidation, CV, CA

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O 69. DEVELOPMENT OF THE DIRECT BOROHYDRIDE FUEL CELL CATALYSTS

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ABSTRACT: The decreasing natural gas, coal and petroleum reserves, and increasing consumption rate of these resources shows the importance of renewable energy. Although the consumption of fossil fuels is restricted because of their high carbon/sulfur contents, these restrictions are not always effective. Thus, environmental problems, such as acid rain, ozone depletion and climate change, arise from the presence of CO_2, SO_x and NO_x in the emission gases. Most of these problems can be improved by using clean and renewable energy sources. For this purpose, hydrogen seems to be the most appropriate energy source. Fuel cells using borohydride as the fuel have received much attention because of the high potential and power density. A direct borohydride fuel cell (DBFC) is a device that converts chemical energy stored in borohydride ion (BH_4^-) and an oxidant directly into electricity by redox processes. Usually, a DBFC employs an alkaline solution of sodium borohydride ($NaBH_4$) as fuel and oxygen or hydrogen peroxide as oxidant (Muir and Yao, 2011). $NaBH_4$, a safe and high energy density source of H_2 for fuel cells, requires a catalyst for reliable hydrogen production (Genga et. all, 2010). In this study, it is aimed to synthesize highly active carbon nanotube supported bimetallic catalysts (Pt-M (M: Au, Ir, Cu) for $NaBH_4$ fuel cells. The catalytic activity of these catalysts was investigated by cyclic voltammetry, chronoamperometry, and impedance measurements.

Keywords: Fuel cells, Sodium borohydride, Bimetallic nanocatalyst, Catalytic activity.

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O 70. FEW-LAYER GRAPHENE COATED ON INDIUM TIN OXIDE ELECTRODE PREPARED BY CHEMICAL VAPOR DEPOSITION AND THEIR ENHANCED GLUCOSE ELECTROOXIDATION ACTIVITY

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ABSTRACT: Glucose is a fuel produced by photosynthesis in plants and biomass conversion. Glucose electro-oxidation has attracted many interests because of its application in various regions, such as sensors and fuel cells (Yadav et. all, 2018). The demand for green energy, electro-oxidation of glucose is being investigated for application in fuel cells due to its accessibility (Zhao et. All, 2015). At present, few-layer graphene is deposited on copper (Cu) foil by chemical vapor deposition (CVD) method. The methane flow rate, hydrogen flow rate, and deposition time parameters with CVD method are transferred on Cu foil. Then, the graphene on the Cu foil is coated onto few-layer the indium tin oxide (ITO) electrode for glucose electrooxidation. These electrodes are characterized by Scanning Electron Microscopy-Energy Dispersive X-Ray Analysis (SEM-EDX) and Raman Spectroscopy. Furthermore, glucose electrooxidation is examined with cyclic voltammetry (CV) and chronoamperometry (CA).

Keywords: CV, CA, Chemical vapor deposition, Cu foil, Glucose electrooxidation

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O 71. DETERMINATION OF ZINC AND COBALT BY VOLTAMMETRIC METHOD

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ABSTRACT: Metal ions are biological toxicity to living organisms and accumulate in the food chain, which causes several health problems such as kidney deficiency, lung problems, hypertension and nervous system failure (Azmi et. all, 2017). Zinc (Zn) and cobalt (Co) are the metals that appear together in many real samples. These metals are among toxic metals of importance for environmental observation, food control and toxicology. Rapid, accurate and reliable techniques are required for the detection of these metals. Various methods can be used to detect heavy metals, including inductively coupled plasma-mass spectrometry (ICP-MS), inductively bound plasma atomic emission spectrometry (ICP AES) and atomic absorption spectrometry (AAS), and electrochemical methods. Among all commonly used techniques for the detection of heavy metals, electrochemical methods have advantages over spectrometric techniques. Electrochemical methods are cheap, highly accurate, easy to use, fast, portable and can be applied for field monitoring of environmental samples. Especially, the differential pulse anodic stripping voltammetry (DPASV) is a powerful and precise technique for the detection of heavy metals (Susom Dutta et. all, 2018). In this study, the $CuFe_2O_4$-rGO composite was synthesized and the glassy carbon electrode surface has been modified. The detection of Zn and Co were conducted by stripping voltammetry.

Keywords: Electrochemical detection, cobalt, zinc, voltammetry.

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O 72. SYNTHESIS OF B DOPED AND IN-SITU B DOPED FEW LAYER GRAPHENE BY CHEMICAL VAPOR DEPOSITION TECHNIQUE FOR HYDROGEN PEROXIDE DETECTION

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ABSTRACT: Electrochemical sensors are of great interest in mechanism investigations of chemical reactions and the development of novel electrocatalytic devices in many fields (Huanga et al., 2016). The analytical determination of hydrogen peroxide (H_2O_2) is of great significance in environmental, pharmaceutical and industrial fields (Kim et al., 2013). In this study, boron (B)-doped graphene and insitu B-doped few-layer graphene has been deposited on copper (Cu) foil by chemical vapor deposition (CVD) method. Then, B-doped graphene and insitu B-doped few-layer graphene on the Cu foils were coated onto few-layer the indium tin oxide (ITO) electrode to prepare hydrogen peroxide (H_2O_2) sensor. These electrodes have been characterized by Scanning Electron Microscopy-Energy Dispersive X-Ray Analysis (SEM-EDX) and Raman Spectroscopy. In addition, H_2O_2 sensor has been investigated with cyclic voltammetry (CV) and chronoamperometry (CA).

Keywords: Chemical vapor deposition, Indium tin oxide, hydrogen peroxide, CV, CA.

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O 73. OPTIMAL TUNING OF PID CONTROLLER FOR QUADROTOR SYSTEM USING A NEW ADAPTIVE PARTICLE SWARM OPTIMIZATION

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ABSTRACT: In this study, a detailed mathematical nonlinear dynamic model of the quadcopter system which is derived using the Newton-Euler method. PID controllers are used for controlling the roll, pitch, yaw, and altitude movements of the quadcopter. Manual tuning of PID controllers does not always give acceptable results, consume a long time, and difficult. Therefore, the tuning process of PID controllers is done by particle swarm optimization algorithm (PSO). A new adaptive particle swarm optimization (APSO) algorithm that gives better search efficiency and convergence speed than standard particle swarm optimization is suggested. It enables the automatic control of inertia weight which controls the global and local search abilities of the PSO algorithm. Comparing with the trial and error method and standard PSO algorithm, the adaptive PSO algorithm gives better performance in terms of convergence speed and permanent movement toward the optimal solution region.

Keywords: Adaptive Particle Swarm Optimization, Self-Tuning PID Controller, Quadcopter System.

O 74. TRACE ELEMENT DETERMINATION BY ELECTROCHEMICAL METHODS

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ABSTRACT: Today, heavy metals emitted to the environment have been the subject of research to cause both environmental problems and health problems. Therefore, a simple, fast and effective method for the determination of trace amounts of heavy metals has been developed. Among the techniques developed, electrochemical methods (cyclic voltammetry, differential pulse voltammetry, chronoamperometry, electrochemical impedance spectroscopy, etc.) are the most powerful and sensitive method for heavy metal detection (Khadro et.al.2011; Wassana et.al.2007). Moreover, these methods are cheap, sensitive, rapid and portable (Pujol et.al.2014). The advantage of anodic stripping technique is the pre-concentration step, which enables such low concentration analysis. Therefore, different nanomaterials with high adsorption capability and catalytic activity are usually used for electrochemical detection of heavy metals. Ferrite nanoparticles has attracted great attention for high adsorption capacity and magnetism. In this study, $NiFe_2O_4$ based modified glassy carbon electrode was developed to detect copper (Cu^{2+}) and mercury (Hg^{2+}) by differential pulse voltammetry.

Keywords: Differential pulse voltammetry, Trace metal detection, Cu^{2+}, Hg^{+2}.

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O 75. SENSITIVE HYDROGEN PEROXIDE SENSOR BASED ON BIMETALLIC CATALYSTS

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ABSTRACT Hydrogen peroxide (H_2O_2) has importance in many areas such as clinical, food, pharmaceutical, and environmental because of its strong oxidizing and reducing ability (Yang, et al., 2015). Therefore, fast and accurate determination of H_2O_2 is very important. Various methods have been developed for the determination of H_2O_2 such as titrimetry, fluorescence, spectroscopy, chemiluminescence, and electrochemical methods. Comparing with these methods, electrochemical method is preferred due to its high sensitivity, selectivity, and simplicity. Various chemically modified electrodes, especially enzyme modified electrodes have been widely developed for the detection of hydrogen peroxide (Wang et. all, 2015). However, the main problem is that the activity of enzyme can be easily affected by temperature, pH, humidity, and toxic chemicals. Moreover, the complicated immobilization procedures may also decrease the activity of the enzyme and have influence on the stability and reproducibility of the enzyme-based electrodes. In this study, Pd and PdAu catalysts were synthesized by $NaBH_4$ reduction method and the activity of these catalysts for H_2O_2 reduction has been measured by cyclic voltammetry (CV) and chronoamperometry (CA) techniques. Electrochemical sensitivities of these CNT supported different atomic ratio PdAu bimetallic nanocatalysts were determined in 0.1 M pH 7.4 phosphate buffer solution towards H_2O_2.

Keywords: Hydrogen peroxide, Non-enzymatic, bimetallic nanocatalysts, platinum.

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O 76. A PRACTICAL CLASSIFICATION TO SUSTAINABLE ROAD SLOPE STABILITY ASSESSMENT, ALANYA-KONYA ROADWAY, TURKEY: CASE STUDY

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ABSTRACT: Today, a vast range of slope stability analysis tools exist for both rock and mixed rock-soil slopes. As is well known, Rock mass classification systems (RMR, SMR,GSI, Q, CSMR..etc) that describes quality of a rock mass, can be used to assess rock slope stability, hence, this paper intended to employing SMR classification, to prove that a rigorous rock mass classification will give more reliable if uncertain parameters are dropped and considered indirectly. The present study was carried out of 19 rock cuts in which 3 different causes of instability (Planer, Wedge, Toppling) along Hadim – Gevne dam segment of the Konya –Alanya roadway, located in southwest of Turkey. This segment was a problematic due to the existence of lithological units with variable characters (recrystallized limestone, dolomite – limestone, reefal limestone, conglomerate and Quaternary deposits). However, the cut slopes are located within recrystallized limestone, reefal limestone and dolomite– limestone hard to extremely hard and highly jointed. During field studies, most of the observed failure modes planer, wedge, toppling was controlled by discontinuities. In order to determine engineering geological properties of the rocks exposed along the roadway, then assess stability of the cut slopes, nineteen cut slopes were detailed identified. A detail field investigation has been carried out according to suggested methods by ISRM and all field observations/measurements parameters were recorded, which involved a detailed discontinuity surveys discontinuity conditions (dips/strikes, persistence, spacing, aperture, infilling) with scan-line method, geometrical relationship between slope and rock discontinuities (dips angles and slope), slope excavation methods and; underground water condition. Based on the field observations, stability analyses of the cut slopes and SMR study concluded that the slopes can be categorized into partially stable (50%), unstable (30%) and completely unstable (20%) with probable planar failure mode (20%), toppling failure mode (27%) and wedge failure mode (53%). Slope flattening with various angles, wire mesh and drainage ditches are suggested as a remedial solution to ensure slope stability of the studied road.

Keywords: Road Slope Stability, Rock mass classification, SMR, field observations, Alanya-Konya roadway

O 77. ROOFTOP RAINWATER HARVESTING OPTIMIZATION IN ANTALYA, TURKEY

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ABSTRACT: The water resources of the world are consuming rapidly due to the population increases and growing industrializing world. Sustainable water resources management seems a solution for managing the scarce water resources. Rainwater harvesting can reduce water shortage problems, especially in countries which suffer from water scarcity. Saving of freshwater resources is essential for water conservations. In domestic uses, the non-potable water demand especially in toilets flushing can be changed with rainwater harvesting. In this study, Water Balance Model (WBM) and Rippl Method (RM) are used to assess the optimization of rooftop rainwater harvesting in Antalya province of Turkey. The reliability analysis of the rooftop rainwater harvesting, and optimal storage estimation analysis have done for system optimization. Comparisons among annual, eight, seven- and six-months regularizations are made in order to make the rainwater harvesting system feasible and cost-effective. For Antalya rooftop rainwater harvesting system, individual houses (a 6-household family water demand for toilets flushing 24 L/ca/day) are assessed by using the WBM and RM. For optimal rainwater storage tanks estimation 60, 40 and 35 m^2 rooftop areas are selected for annual, eight, and seven/six months regularizations respectively for supplying the water demand of toilets flushing with 90-100% reliability. Comparisons between two methods for optimal rainwater harvesting storage tanks are made in order to recommend a suitable method for storage tanks estimation. For annual regularizations, 21 m^3 and 17 m^3 storage tanks are estimated with RM and WBM respectively. Thus, WBM is recommended for Antalya province. For eight, seven- and six-months regularizations with RM; 9, 7, and 4 m^3 storage tanks are estimated respectively. The storage cost and payback period for annual regularization is 3600 TL and 24 years respectively. Storage costs about 50% of the rooftop rainwater harvesting. Hence, twofold of storage cost might give the cost of the rooftop rainwater harvesting system.

Keywords: Alternative water resources, Rainwater harvesting, Rainwater harvesting optimizations, Sustainable water resources management, Water saving.

O 78. ''GREEN SYNTHESIS'' OF SILVER NANOPARTICLES AND EVALUATION OF THEIR CATALYTIC ACTIVITY ON REDUCTION OF METHYLENE BLUE

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ABSTRACT: Synthesis of metallic nanoparticles can be realized by various methods such as chemical vapour deposition, physical vapor deposition, microwave-assisted synthesis, sol-gel method, ultrasonication method, electrochemical synthesis and chemical reduction of metallic ions. However, these techniques are expensive, non-ecofriendly and often contain harmful chemicals. As a result of increasing interest in green chemistry and other biological processes, scientists have turned to an eco-friendly nanoparticle synthesis that is simple, affordable, compatible with biomedical and pharmacological applications. Different contents existing in plant extracts such as polysaccharides, polyphenols, aldehydes, ketones, proteins/enzymes, amino aids and caffeine can reduce metal ions and stabilize the nanoparticles to preferred sizes and shapes.

A green approach for the synthesis of silver nanoparticles (AgNPs) using water extract of *Tussilago farfara* plant under ambient conditions is reported in this study. The formation of AgNPs was analyzed by UV–visible spectrophotometer. Further, the effects of pH, temperature, and time on the formation of AgNPs were studied. From the results, it can be claimed that the formation of AgNPs mainly depends on the pH of the reaction medium. The formation of AgNPs occurs in neutral and basic pH which is evident from visual observation. Moreover, the catalytic effectiveness of the synthesized green catalyst, AgNPs, was also investigated in catalytic reduction of Methylene Blue (MB) dye. The reduction of dyestuff is confirmed by the decrease in absorbance maximum values of MB with respect to time using UV–visible spectrophotometer. The reaction was completed within 10 min, inferring excellent catalytic properties of silver nanoparticles in the reduction of MB.

Keywords: Silver, nanoparticle, methylene blue, reduction, green synthesis

O 79. EVALUATION OF THE ASH BEHAVIOR SIMULATING COFIRING OF COAL AND BIOMASS

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ABSTRACT: Cofiring is the combustion of more than one fuel and it is specifically a process of combustion of biomass together with coal for the industrial applications such as power plants. Cofiring has many advantages: these are environmental, economical or technical. The environmental advantages of cofiring include the mitigation of types pollution such as air, soil and water. Cofiring reduce water pollution depending on the chemical composition of biomass. Cofiring process can cause some problems such as sintering, fouling, slagging or ash deposition because of the high content of alkali metals in biomass and some coal. Sintering cause the ash deposition because of that initial ash sintering temperatures should be understood in order to prevent the problem and that is detected by cold compression strength tests. All in all, mineral phases of biomass and coal ash after cofiring influence the power plants and types of biomass ash that are prefered significantly depends on its heating value. Biomass that has high heating value, provides more energy recovery and better system performance that gives more efficiency and economical saving to power plants.

Keywords: Cofiring, Biomass, Coal, Slagging, Fouling

O 80. USABILITY OF ARTIFICIAL NEURAL NETWORKS FOR SEDIMENT ESTIMATION

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ABSTRACT: Sediment estimation is very important as water resources projects with high costs cause the economic life of projects to decrease more quickly. In order to prevent the decrease in the economic life of the dam reservoirs and to reduce the sedimentation in the dam reservoirs, it is also necessary to determine the sediment carried by the river. Recently Artificial Neural Network (ANN) is widely used to solve the complex problems such as sediment. In this study, the flow (m^3/sec) and sediment (ton/day) data of the Söğütlühan Observation Station during the 1994-2011 periods in the Kızılırmak Basin are used for the sediment estimation. The results of ANN models and sediment rating curve method were compared. As a result of the comparison, it was seen that ANN models were more successful than sediment rating curve for sediment estimation.

Keywords: Artificial Neural Network, Kızılırmak Basin, Sediment, Sediment Rating Curve

O 81. THE FUTURE ROLE OF CARBON NANOTUBES IN ENERGY SECTOR

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ABSTRACT Energy poverty has become one of the most important problem to be concerned recently due to depletion of energy resources and unconscious consumption. Therefore, governments and other stakeholders have taken action to find out new energy sources. Thanks to their energy storage capability, carbon nanotubes promise considerable contribution to energy sector. In this study, a qualitative research has been conducted by holding interviews with a variety of experts working on carbon nanotubes and energy in addition to literature review. The qualitative study aims to highlight current energy usage of carbon nanotubes and the future role these materials. In conclusion, it has been observed that nanotubes are perfect for energy storage thanks to their suitable geometry and surface properties. Its potential to absorb hydrogen would be one of the most striking point for energy sector. Another promising ability is to convert electric current to chemical energy. This ability could enable nanotubes to be used in artificial muscles. It can be easily seen that further developments in carbon nanotubes will be of benefical for energy sector and other many fields.

Keywords: Carbon Nanotubes, Energy, Energy Storage, Energy Conversion

O 82. A NOVEL COMPOSITE BY COATING ACORN SHELL (QUERCUS VULCANICA) WITH CHITOSAN FOR REMOVAL OF CR (VI) FROM AQUEOUS SOLUTION

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ABSTRACT: Water contamination raised with rapid and irregular industrialization growing, so elimination of Cr (VI) ions from contaminated water before discharge is vitally important. The purpose of this study; using acorn shell (AS) and Chitosan-coated acorn shell (Cts⦿AS) as a biomaterial in the removal of Cr (VI) from the aqueous solutions. Cts⦿AS composite was prepared by adding glutaraldehyde as a cross-linking agent and operational feasibility of Cts⦿AS for Cr (VI) biosorption from aqueous environment was investigated by using different kinds of factors. The effects of contact time, initial solution pH, initial Cr (VI) concentration, and biosorbent amount on the elimination of Cr (VI) for AS and Cts⦿AS composite were investigated by batch experiments. The biosorption system was tested using various isotherm models. The optimum conditions for the removal of Cr (VI) were found to be the amount of biosorbent 0.1 g, pH 2.0 and equilibrium time of 120 min for AS. On the other hand, the optimal conditions for the biosorption of Cr (VI) by Cts⦿AS were found to be: 2.0-2.1 initial pH, 90 min of exposure duration, 0.05 g biosorbent amount, 150 mg/L of initial Cr (VI) concentration at 25 ºC. The maximum biosorption capacity calculated from the Langmiur was found to be 89.29 mg/g and 44.25 mg/g for Cts⦿AS and AS, respectively. The characterization of Cts⦿AS and AS were performed using two techniques; Scanning Electron Microscope (SEM) and Fourier Transform Infrared Spectroscopy (FT-IR). The produced a novel Cts⦿AS composite is offering an alternative biosorbent for Cr(VI) removal from aqueous mediums.

Keywords: Biosorption; Composite; Chitosan; Acorn shell; Cr (VI)

O 83. PHOTOCATALYTIC Cr (VI) REMOVAL WITH NANOMATERIAL COATED ON NATURAL STONE

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ABSTRACT: Chromium is one of the most common elements in the earth found in in the inner layers of the ground and in the body of living beings. Certain industrial processes cause serious environmental problems and produce waste streams containing contaminants such as heavy metals. The removal of heavy metal ions, which exhibit a significant toxic effect from wastewater, is particularly important in the field of water pollution. Chromium plating, leather tanning, wood shielding, stainless steel manufacturing industries wastewaters mainly contain chromium with valance of +6 and +3. Especially given of Cr (VI) to the environment is very dangerous and causes health problems. Therefore, different methods are applied for the treatment of wastewater containing Cr (VI). The mostly applied methods base on reduction of Cr (VI) to Cr (III). Although there are several widely used methods such as chemical precipitation, reduction, dialysis, ion exchange, evaporation, solvent extraction, reverse osmosis, ultrafiltration for Cr (VI) removal in wastewaters, photocatalytic oxidation method has gained great importance in recent periods. In photocatalytic removal, Cr (VI) reduced to Cr (III) with the help of photocatalyst and UV light. In this study, photocatalytic Cr (VI) removal was aimed and Ag and Ni doped TiO_2 nanoparticles were coated on natural volcanic stone for use as a photocatalyst. Volcanic stones containing Ag and Ni doped TiO_2 (0.5%, 1%, 2.5%, 5%) in four different compound percentages were prepared by sol-gel method. In order to form a solid layer on the natural stone, the coated stones were kept in an oven of 600 ^oC for 1 hour to produce photocatalyst material and the nanomaterial percentages on the stones were determined by EDX analysis. Synthetic Cr (VI) containing water was used for removal experiments by using batch reactor. Cr (VI) removal was much higher in the experiment using nanomaterial produced with 0.5% doping. As a result of this work, it was determined that the increase in the percentage of Ag and Ni doping have showed a negative effect on the removal of Cr (VI) in water.

Keywords: Chromium, Wastewater, Photocatalyst, Photocatalytic Removal, TiO_2, Ag, Ni

O 84. INDOOR FORMALDEHYDE EMISSION IN AIR AND HEALTH IMPACTS

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ABSTRACT: In this review, formaldehyde emission sources in indoor air and its effects on human health are examined. The most important sources of formaldehyde compound, which has several different varieties, have many different usage areas such as kitchen materials, binders in wooden materials and chemical materials. Nowadays, people spend most of their time in a closed environment. There are 3 kinds of formaldehyde according to usage area. Formaldehyde is polymerized to produce urea formaldehyde, melamine formaldehyde and phenol formaldehyde. These substances are volatile and have harmful effects on indoor air.

Keywords: Formaldehyde, indoor air quality, health, emissions

O 85. KARAPINAR (KONYA) THE LAST THREE YEARS OF SİNKHOLES AND CHARACTERISTICS

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ABSTRACT: Karapinar is located in the southeast of Konya and is 110 km away. The number of sinkholes with different diameters and depths, which we can call the world wonder, increased by 300 every day. These natural structures, which are formed as a result of internal karstification near settlements or in the middle of the fields, continue to be a threat for the people of the region. In the last three years, Karapinar has started to occur at more frequent intervals in the KB and there has been a significant increase in the number. In 2017, there were 17, 7 of which were 8, 2019 and 7 of which were in 2019. Miocene-Pliocene, Pleistocene and Holocene aged rocks are in the study area. The lithological characteristics of the land, the drop-in groundwater level, the current direction of the groundwater, the chemical composition of the rock and the volcanic rocks of the Pliocene Uzecek Mountain and the other volcanoes around Karapınar are solved by the groundwater enriched by the carbonic acid. In the last three years, the ponds were formed in Karapinar's KB, in the vicinity of Üzecek Mountain, in Eşeli Karakul, Güllükkuyu, Çakırca, Üçler kamışağıl, Sırnık, Kızılcakuyu and Küçükkuyu. The distance between the settlements is 7-37 m. The circle is shaped 3-60 m. in diameter and 3-50 m in depth between. The depth of the sinkholes can not reach the level of groundwater in the region is waterless only one water is water. In February, March, April and May, in the period when precipitation was high, the soil forming the agricultural lands became saturated with water. In July August and September, the increase in the weight on the soil cover was caused by the decrease of ground water level. Excessive attraction of groundwater in the region and the existence of a plant pattern that requires water accelerate the formation of sinkhole.

Keywords: Karapınar, Sinkhole, Groundwater, Volcanısm depth

O 86. HYDROGEOCHEMICAL INVESTIGATION OF THE SPRİNGS IN SILLE (KONYA) REGION

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ABSTRACT Sille (Konya) is an important settlement where different cultures with traces of Roman, Byzantine, Seljuk and Ottoman periods live together. With the restoration work carried out in recent years, Sille Culture Valley has been opened to tourism. There are many water springs in and around Sille. These springs are widely used as drinking water by the people of the region and Konya. In addition, the Sille dam pond located in the region is used for both irrigation water and tourism purposes. In the study area are the units belonging to the Sızma, Ardicli and Dilekci groups. Bozdag and Bagrikurt formations belonging to the penetration group are Paleozoic and consist of limestone and metacarbonates. The metacarbonates belonging to the Ardicli group and the dolomites and limestones are of Mesozoic age. The Dilekci group consists of Cenozoic aged dacite, tuff, tuffite, sandstone, mudstone and limestones. All these units are unconformably overlain by the Quaternary alluvium. The temperature of the springs in the study area is between 14-18 ºC, the flow rates are 0.1-3 lt / s, the pH is 7,19-8,04, the EC values are 210-882 µs / cm, the hardness is 9-14 FS and the total mineralization is 150-520 mg / l. The mineral rich spring in the study area has a pH of 7.19, EC value 1932, hardness 87 FS and total mineralization 1127 mg / l. The aquifers of the springs are composed of volcanics and limestones. According to the Schoeller diagram, waters are of the same origin and the springs 4 and 6 are ionic rich. Weld water according to the Wilcox diagram Good and good water class springs 4 and 6 are in good water class.

Keywords: Sille, hydrogeochemical, total mineralization, flow rate, spring

O 87. THE EVALUATION OF URBAN ENVIRONMENTAL PERCEPTION OF UNIVERSITY STUDENTS IN KONYA CBD BY COGNITIVE MAPPING METHOD

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ABSTRACT: The uncontrolled urbanization caused significant changes in urban environmental conditions due to increased build-up areas of cities, reduction the urban landscape, disruption of human-environment relations. The urban environments consist of two superimposed systems as being natural and human-made. Urban plans consist of both design and these urban environmental components. Especially planner's environmental perception is too important for setting of environmental quality. Therefore, urban environmental quality and human value became the two key concepts of visual environment assessment. Each of these components have differences to its own geological, morphological, climatic structure etc physical characteristics and that coming from social, cultural and systematic properties. So urban and environmental planners are responsible for shaping the urban environment as well as human, urban and environmental health professionals. This paper will be determined the visual perceptions of university students of urban planning about urban environment and nature related to human and nature relationships. It chose Konya CBD as a sample area for being a central living space of many all of university students. For this reason, a cognitive mapping method with sample 12 % applied to the student of University of Necmettin Erbakan's City and Regional Planning. In Konya CBD, undergraduate students illustrated the cognitive mappings in A4 size white paper with their perceptions and images related to daily experiences. Then evaluated as to easy readably of urban environmental image of Konya CBD and the relation with human behaviors and environmental harmony.

Keywords: Konya CBD, Urban environment identity, cognitive mapping, nature centered perception, human centered environmental perception

O 88. AN ENVIRONMENTALLY-FRIENDLY BLEACHING FOR HEMP AND LINEN FABRICS

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ABSTRACT: The hemp and linen fibers and the fabrics produced with these materials have great importance in the textile industry due to their lots of beneficial properties. The raw hemp and linen fabrics are bleached in the harsh conditions and conventional scouring and bleaching are costly, non-environmentally friendly and lengthy operation, since it is multistage in nature. For this reason, in the present study, the ecological bleaching facilities for the hemp and linen fabrics, with reinvigorated oxygen molecules were researched. For this purpose, tetraoxygen molecule (O_4), meant reinvigorated oxygen molecules were used. The fabric samples were bleached via O_4 generator having 50 g/h capacity during an hour in the water. After the process, the bleaching performances of the both samples were compared to conventional bleaching through Berger whiteness value.

Keywords: Hemp, Linen, bleaching, whiteness index, tetraoxygen molecules

O 89. EVALUATION OF REINFORCED CONCRETE HIGH BUILDINGS WITHIN THE CONTEXT OF TBDY-2018

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ABSTRACT: In this study, it is aimed to examine the reinforced concrete high buildings (RCHB) which are widespread in the world and in our country. To begin with, reviewing the literature is completed to see important points in the analysis of high structures. In this context, the historical development of high building class structures and the structural system design and classification of the high buildings are discussed. In addition, loads affecting high building class structures were examined. As the earthquake loads applied to high building class structures are calculated in the best way and the accurate action is made according to the current regulations, the current regulations are examined, and their deficiencies are emphasized. The historical development of the regulations used in the analysis of high structures and the steps taken in line with the requirements in this direction were examined. The limits and differences of the regulations in our country for high buildings are highlighted. Lastly, the requirements of performance analysis are explained in order to achieve more accurate analysis results.

Keywords: Turkey earthquake building regulations, high rise buildings, earthquake, performance-based design

O 90. THE FEASIBILITY OF "ZERO WASTE PROJECT" IN THE FIVE-STAR HOTELS OPERATING IN ANTALYA

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ABSTRACT: According to the Zero Waste Regulation Exposure Draft prepared by the Republic of Turkey Environment and Urban Ministry in 2018, 4 & 5 star hotel establishments have to pass to Zero Waste Management System by providing the prerequisites in Annex 7/A of the regulation in 2019. Based on this statutory obligation, feasibility of zero waste project in the five-star hotels operating in the province of Antalya, seen as the tourism centre of Turkey, is investigated. In this study, 23 five-star hotels in Antalya were subjected to a survey study so as to evaluate their proximity to Zero Waste Management System. In the first part of the survey, questions were asked about the general information of hotel managements. In the second part of the survey, questions were asked about whether they meet eight criteria given as the preconditions in Annex 7/A of the Zero Waste Regulation Draft for the establishment of Zero Waste Management System in hotels. In the third part of the survey, questions were asked to determine whether the hotels applied six options in the US EPA Food Recovery Hierarchy so as to evaluate the activities of hotel businesses within the scope of zero food waste. According to the results of the study, the five-star hotels operating in Antalya are determined to be able to meet the conditions for establishing a Zero Waste Management System due to their existing waste management systems and to provide food recovery by establishing a procedure within their own facilities.

Keywords: Antalya, Five Star Hotel Businesses, Zero Waste Project, Zero Waste Management System

O 91. UTILIZATION OF UNSATURATED POLYESTER IN IMPROVING THE GEOTECHNICAL PROPERTIES OF THE CLAYS

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ABSTRACT: Soil properties under civil engineering structures; in case of insufficiency in bearing capacity, settlement, liquefaction and stability criteria, ground improvement or deep foundation construction is carried out. Many different soil improvement techniques are applied and the method to be applied is decided according to criteria such as cohesionless or cohesion of the ground, local conditions, layer thickness to be improved and cost. Generally, cohesive soils are drained of the water in the cavities, cohesionless soils are reduced by compression or gaps are filled with a different material. The polymer is defined as the natural or artificial substance found in the structure of large molecules composed of small molecules called monomers. Polyesters, which are a kind of polymer based material, are widely used especially in maritime and construction fields and can gain permanent properties with hardening process. In recent years, research on the use of polyesters in different geotechnical engineering applications has increased. Within the scope of the project, the effect of unsaturated liquid polyester, which is relatively new in geotechnical applications, on stabilization of cohesive soils was investigated by experimental studies. In this context, observed how unsaturated liquid polyester, which will participate in different proportions of cohesive soils with different water content, affects the unconfined compression strength of the cohesive soil.

Keywords: Cohesive Soil, Unsaturated Polyester, Soil Stabilisation, Unconfined Compression Strength

O 92. INVESTIGATION OF OPERATOR EFFECT ON DETERMINATION OF PLASTIC LIMIT

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ABSTRACT: Water has a significant impact on the soil. Changes in the water content of soils are mostly seasonal changes. During the rainy seasons, the water content of the soils increases as water infiltrate underground. Water content decreases due to evaporation in hot season. As a result of this change in water content, especially in fine-grained soils, swelling - shrinkage, sitting and strain increase occur. Therefore, it is important to accurately determine consistency limits. The main method used to measure Plastic limit across the globe is developed by Casagrande. The standard manual rounding method can often give inconsistent or unreliable results, as the tester is dependent on the experience of the operator, the rate of rounding, being dry and wet of surface. In this study, using different clays with three different plasticity and different water contents to determine plastic and liquid limits were made standard manual rounding method and cone penetration test. The using cone tool have standart measure 80 g weight and angle of 30 °. To determine that the plastic limit depends on the operator, 12 geotechnical experts and 8 beginner students has been made with same soil. The results were compared. Thus, the consistency limits of the operator were determined.

Keywords: Cone penetrometer, Liquid limit, Plastic limit.

O 93. UTILIZATION OF UNSATURATED POLYESTER IN IMPROVING THE GEOTECHNICAL PROPERTIES OF THE SANDS

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ABSTRACT: It is stabilized by adding chemical additives (cement, lime, bitumen etc.) to the soil to increase the strength and physical properties of soils. But these traditional soil stabilizers usually require long curing time and excess of material for large scale improvement. Therefore, researchers have turned to alternative stabilizers to be used in soil stabilization. The most important of these materials are liquid unsaturated polyesters which have curing effect in a short time and are used in little amounts. In this study, in order to determine the optimum ratio of sandy soils stabilization with unsaturated polyester, samples were prepared in the laboratory by using parameters and levels prepared according to the Taguchi method. The purpose of using the Taguchi method is to save time and cost by reducing the number of experiments. According to Taguchi method, water, polyester, accelerator and accelerator/ hardener ratios are selected as 4 parameters. Depending on these parameters, 4 levels were determined. A table with orthogonal array L16 was made. Water and polyester content were taken as percentage of dry sand weight; accelerator and hardener ratios were taken as percentage of the amount of polyester used. Then unconfined compressive test was performed on these samples. According to the results of the experiments, the strength of the ratios determined was compared. According to the results, the use of unsaturated polyester for improving the engineering properties of sandy soils and optimum mixing ratios were investigated.

Keywords: Soil stabilization, Unsaturated polyester, Taguchi method

O 94. INDUSTRIAL BY-PRODUCTS AND REEVALUATION

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ABSTRACT: Demand of the energy and raw material is being increased with development of industrial, nowadays. The wastes generated as a result of these requirements increase the environmental problem. In order to reduce costs and increase high performance (concrete, cement, etc.) evaluation of the by-products in many sectors has become attractive and many organizations have started to do research about this topic. Iron-steel and energy sectors are those which the by-products are most produced. More than half of the material is used as input in production is transformed into gas and solid waste/by-product, so by-products such as fly ash, slag, oxide layer and EAF dust are evaluated in order to reduce the use of natural materials and to minimize the problems that may occur in the environment if the materials are storage for disposal. In this thesis, the process of re-evaluation of the mainly by-products and the process of re-conversion to raw materials were investigated. The effects of the used by-products on the products have been searched and especially in the construction sector, the resistance of materials is examined.

Keywords: fly ash, oxide layer, slag, EAF dust, Waelz Process, By-Products

O 95. EVALUATION OF URBAN SPACE PERCEPTION IN SUSTAINABLE HISTORICAL ENVIRONMENT ON THE CHILDREN OF PRIMARY SCHOOL AGE, THE CASE OF ILGIN/KONYA

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ABSTRACT: The sustainability of the historical and cultural values of a city helps us to connect the past and the future. Changing living conditions, technological developments, globalization and rapid population growth affect the urban and urban systems continuously and puts the historic city center under pressure and change. Urban Conservation and Renewal Science, a major discipline of urban planning discipline, aims to ensure the transfer of cultural heritage to future generations and aims to control this change and transformation through planning. Thus, conservation the historical value of the city and sustainable of the identity value of the city is strengthened. However, the perceptibility of urban identity cannot be achieved only by conservation the physical dimension of the space. At the same time, the cultural structure of the user, expectations and experiences are shaped by the sense that the user loads. The basis of raising sensitive, responsible and responsible individuals in the historical environment is possible by giving trainings on conservation to children from primary school age. For this reason, the primary objective of this study was to examine the attitudes of primary school children towards sustainable environment. In the scope of the study, three primary schools in Ilgın / Konya were selected as the sample area. In the selected sample area, survey questions were asked to evaluate the perceptions of environmental sustainability of 140 students in the 10-11 age group. As a result of the research, a high level of relationship was found between the level of family living and primary school courses and sustainable historical environmental consciousness, and it was found out that this age population should be educated about sustainable historical environment.

Keywords: Sustainable History Environment, Space Perception, Urban Identity, Cultural Values, Child-Space Relationship

O 96. SUSTAINABILITY AND ENERGY MANAGEMENT

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ABSTRACT: We use more energy to produce new energy. A statistics whose biophysical status can be measured is the Incoming Energy / Outgoing Energy value, ie the ratio of the energy gain to the energy investment. While media and many government statistics refer to gross energy, the important thing is net energy. Low-cost fossil energy is the basis for profits, high salaries and cheap goods and services. According to current trends, the share allocated to the energy sector in total gross national product is increasing continuously. The trick is that if the energy price is doubled or tripled, the economic benefit of trade is rapidly declining. Renewable energy and efficiency gains are important, but they do not meet the expectations of benefits and, ultimately, the financial demands created within the current system. Therefore, with a low carbon future plan, we have to make a low consumption future together. The pursuit of endless economic growth based on fossil fuels is a threat to sustainability. Rapid population growth, climate change and technological developments are not only critical to our global society, but also to complex, interdependent relationships. One of the biggest challenges to the widespread adoption of renewable energy sources is to include these resources in an energy system designed for fossil fuels (concentrated fuels). Energy efficiency measures the ability of an economy to generate useful services from the energy it uses. Energy Management, a discipline, began to develop after the first oil crisis in 1973, and it really came into effect after a dramatic rise in real energy prices after the second oil crisis in 1979. Main objectives of Energy Management; resource saving, climate protection and cost savings.

Keywords: Aksaray, Environmental Engineering, Symposium, energy management, energy

O 97. DETECTION OF VOLATILE ORGANIC COMPOUNDS IN INDOOR INDUSTRIAL AIR

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ABSTRACT: With the rapid population growth, the industrial revolution and the developments in the industrial sector, the quantity and diversity of human demands have increased. In order to maintain healthy life which is the most basic requirement of human being, it has needed fresh air, it has left natural materials in order to meet increasing demands and it has accelerated production of synthetic and artificial products. The use of chemical materials in these products is very important for both cheap and easy production of the product. However, these chemicals, which are used to avoid cost and workload and can easily become volatile at ambient temperature, have started to be used in the indoor environment and have a negative impact on human health. In the past, the idea that "indoor air quality is cleaner than the outdoor air quality" was demolished by the current research. "What's the volatile organic compounds, what are the sources of spread and what are the effects on human health" began to be the subject of research. In this study, to determination of volatile organic compounds that continue to spread at room temperature from the materials and processes used in industrial environment such as paint, wood, insulation materials and cleaning products production processes, evaluate the environmental standards, determine the impacts on environmental health and it is aimed to determine the activities that what can be done to reduce pollution.

Keywords: Industrial environment, Closed environment, Volatile organic compounds, VOC detection

O 98. ENVIRONMENTAL PSYCHOLOGY FOR ARCHITECTURAL DESIGN: COGNITIVE-BEHAVIORAL APPROACHES TO SPATIAL COGNITION

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ABSTRACT: Environmental psychology, human-space relations between physical environment and human behavior. How do spatial variables direct human behavior? Environmental psychology; it has been defined by names such as architectural psychology, psychological ecology, ecological psychology. The aim of this article is to try to capture two main objectives of environmental psychology: to try to understand human-environment mutual actions and to use this information as an aid in solving space design problems. It first looks at Environmental psychology has focused its interdisciplinary discourse with those who design and plan the physical environment toward architects. Also, environmental psychology is interested in environmental perception and cognition, in feelings all focus on the spaces relevant to architecture and designer. Next it discusses the Spatial behaviors are influenced by human images of space. Cognitive mapping studies aim to clarify these phenomena and understand our perceptions as a result of environment-human interaction. The discussion in relation to If the principles of how people perceive and shape the physical environment can be known, the environmental behavior of individuals can be better understood; more perceptible, representative, and finally livable spaces for people. The article concludes with the discussion of human–environment interaction, the perception of the environment and understanding of the space in the human mind will contribute to understanding the subject of cognitive processes while giving information about the "spatial legibility/intelligibility" hence the development of design principles suitable for the design process.

Keywords: Environmental Psychology, Architectural Design, Architectural Psychology, Spatial Perception, Spatial Cognition

O 99. ENVIRONMENTALLY FRIENDLY ALTERNATIVE FUEL TO REDUCE TURKEY'S PETROLEUM IMPORTS: E85 (FLEX FUEL)

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ABSTRACT: Due to the rapid depletion of petroleum-derived fuels, the reduction of consumption of these fuels and increasing the use of fuels produced from renewable sources are one of the important objectives in all countries. One of the alternative fuels that are less harmful to the environment, renewable and sustainable is bioethanol. Bioethanol is a clean fuel that can be obtained from agricultural products, agricultural production residues or other products containing cellulose. When bioethanol is mixed with gasoline at low proportions as %5-10, it can be used without any changes in spark-ignition engines. The E85 fuel consists of a mixture of 85% bioethanol and 15% gasoline. The use of this fuel in vehicles requires a small and low-cost change in the engine. Once the vehicle has been modified, the vehicle is defined as a flexible fuel vehicle and the desired fuel can be used (gasoline, E10, E15 or E85). The price of E85 fuel is approximately 25% cheaper than gasoline in international markets, while E85 fuel consumption is approximately 30% more. However, because the octane number of E85 fuel is too high, it can produce more power than gasoline. In addition, the exhaust emissions of this fuel are very low. Large agricultural areas and wide agricultural product range in Turkey is a very big advantage to produce E85. In this way, fuel need can be supply from domestic sources in Turkey.

Keywords: Flex fuel, Alternative fuel, Bioethanol, Agricultural waste

O 100. INVESTIGATION OF THE SAMPLE CONCEPTS OF THE SMART CITY CONCEPT ON THE LITERATURE IN OUR WORLD AND COUNTRY

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ABSTRACT: Together with the changing living conditions and emerging new technology branches, there is an increase in the environmental problems in the face of the increasing population, the needs of the urban residents, the urbanization rates and the consumption elements. From this point of view, it is necessary to make use of the innovations brought by technology to produce solutions to human needs and urban problems and to maximize the quality of life of the city. The u smart city an has emerged in order to ensure that all negative effects reflected in the city can be solved. With this concept, it is aimed that the concepts of transportation, environment, infrastructure and energy which are owned by the city are consumed at minimum level and provide the highest level of benefit. The increase in the population living in cities, the big developments in the field of technology, the change in the expectations and needs in the human race cause the change in the urban management and planning. A sustainable environmental planning can be made by benefiting from the advantages offered by smart technology to planning. The performance of a city does not depend on the physical potentials it has. It is concerned with the ability to serve the growing needs with information, communication, social and technological infrastructure. Therefore, cities and administrations with different geographic conditions are turning to smart urban practices. Taking advantage of the advantages offered by smart technologies to planning, it is thought that cities will be managed more effectively in ecological and social terms. a number of measures can not be taken together with the growing urban population in Turkey has emerged in issue and hence there was a need to use the best technology. With the advantages of smart city, smart city project across applications in the world, began to pay attention to smart city in Turkey and academic studies and work practices for this Uygul has soared. In this context, the basis of the study, the concept of Smart City in the world and the examples of our country are examined. What are the smart city applications? Where are the Smart City Samples in the world? What are the Smart City Applications in Turkey? investigation in this questions.

Keywords: Sustainable Planning, Smart City, Smart City Ecological Growth, Intelligent City Growth, Technology and City

O 101. EFFECTS ON SOIL QUALITY OF COMPOSTING TOGETHER OF SEWAGE SLUDGES WITH AGRICULTURAL WASTES

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ABSTRACT: In parallel with the increase in population, the increasing need for food with urbanization and industrialization requires to new and renewable production techniques as well. In environmental problems, as well as the disposal of solid wastes is significant, it is important that their use in food production too. In this respect, it has been allowed to use in the agricultural land of the sludges by Ministry of Environment for soil improvement if it is provided necessary conditions for sewage sludges. The aim of this study investigates the effects on the agricultural land by mixing with bulking materials of sewage sludge. It has been investigated how affected the soil structure and plant growth by composting in different ratios with cornstalk which is used as a bulking agent of sewage sludge which provided from the sugar industry. The investigation; it was carried out in 5 different parcels (2m * 2m) and as 3 replications by mixing different amounts of agricultural waste and sewage sludge. It was studied parameter values such as pH, EC, COD, dry matter amount (KM), organic matter amount (OM), penetration resistance, infiltration rate at the investigation undergoing approximately one year. Further, spinach plant has been used in order to examine to plant development, in this study. Generally, it has been observed that there is an effective growth in parcels used sewage sludge and cornstalk when evaluated in terms of plant development. It was observed that sludge disposal or recycling is appropriate the composting together of the sewage sludge and bulking materials for this research.

Keywords: sewage sludge, cornstalk, disposal, recycling, soil quality and plant growth.

O 102. THE EFFECT OF THE SOUTHERN OSCILLATION ON YEŞILIRMAK BASIN

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ABSTRACT: Recent studies have shown that climate changes have important effects on the components of the hydrological cycle. Large-scale oscillations as a result of the atmosphere movement are climate anomalies with periodic characteristics. In this sense, understanding the mechanisms controlling the variability of the Southern Oscillation will help us to understand the systems that control climate change. For this reason, in this study, the effect of Southern Oscillation was investigated on the region by comparing the homogeneity and trend analysis of the rainfall data of the meteorological stations 17085, 17086, 17084, 17030 of the Yeşilırmak basin in the Black Sea region with the extreme phases of the Oceanic Nino Index table. In the statistical analysis of rainfall data were used for homogeneity analysis; Buishand, Pettitt and Run tests and for nonparametric trend analysis; Mann-Kendall test, Modified Mann-Kendall test, Spearman Rho test and Sen-T test. The slope direction of the data was determined by using a trend slope method suggested by Sen, and the beginning years of the statistically meaningful changes were determined by using the Mann-Kendall rank correlation test. As a result of the study, while the fracture years obtained from the Pettiitt Test and the years that high index values were parallel, the method addressed as iterated Mann-Kendall cannot detect a clear intersection across the basin.

Keywords: Black Sea, Southern Oscillation, Trend Analysis, Precipitation

O 103. THE EFFECT OF SOUTHERN OSCILLATION ON ANNUAL PRECIPITATION TRENDS IN CENTRAL ANATOLIA

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ABSTRACT: The changes occurring in the world's climate year by year are seen randomly; however, it has been proved that one of the many reasons of these changes was ocean-atmosphere interaction repeating in every few years in the Tropical Pacific during the studies carried on the historical data. Even though these severe ocean-atmosphere events take place in the Tropical Pacific, their influences can be seen many kilometers away from the Pacific. In this study, the influences of Southern Oscillation which is an ocean-atmosphere event have been searched on the annual total precipitation trends of Central Anatolia Region. The stations in the Central Anatolia Region used in this study have at least 30 years data length; the stations are Eskişehir (17126), Ankara (17130), Aksaray (17193), Çankırı (17080), Kayseri (17196), Kırıkkale (17135), Kırşehir (17160), Konya (17244), Karaman (17246), Niğde (17250), Akşehir (17239), Nevşehir (17193), Sivas (17090) and Yozgat (17140). Out of homogeneity methods, Pettitt, Buishand and Run have been used in the analyses. Mann-Kendall and Spearman Rho trend methods were used to determine the trends of the precipitation data of the aforementioned stations. Moreover, the years of the beginning of the trends have been found by using Mann–Kendall Rank Statistic tests for the stations. To detect the relation between the trend values and the extreme phases of Southern Oscillation, Mann Kendall trend analysis method was applied again by reducing one year. When the outcomes of the study obtained for %95 confidence interval are examined, the data were observed as homogeneous. Furthermore, the precipitation tendencies in the northern and eastern parts of the region increased and the precipitation tendencies in the western and southern parts decreased. As a result of the study, the effects of the Southern Oscillation on the precipitation data of the Central Anatolia were obtained.

Keywords: El Nino Southern Oscillation, Homogeneity, Central Anatolia Region, Trend, Precipitation

O 104. THE EFFECT OF DIFFERENT SEISMIC ISOLATOR TYPES AND FLOOR NUMBER TO EARTHQUAKE BEHAVIOR ON MULTI-STOREY REINFORCED CONCRETE STRUCTURES

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ABSTRACT: Earthquakes are uncontrollable and natural disasters that cannot be predicted in time. Turkey located in a region of high seismicity. Seismic isolation is an earthquake resistant structure design approach based on the principle of increasing the resistance of the structure against earthquakes or reducing the seismic forces transferred from the ground to the structure. In this study, an exemplary health center RC building system, carriage elements are dimensioned according to TS-500 (Turkey Concrete Structures Design and Construction Rules) and TBDY-2018 (Turkey Building Earthquake Regulation). According to three different types of support (with friction pendulum isolation system, lead core rubber bearing isolation system, fixed base dual system), and three different storey number (6,12 and 18 storey) total of 9 models were created. The most important aim of this study is to find out which of the seismic isolator type is more effective according to different storey number. These models were analyzed nonlinear (FNA) in time domain in SAP2000 program. When compared with seismic insulated bearing systems and fixed base dual systems; the internal forces, the relative displacement of the floor and the acceleration of the floor were decreased, but the natural vibration period was increased. The system with friction pendulum isolator has better earthquake behavior than the system with lead core rubber isolator.

Keywords: *Core, Isolator, Seismic, Pendulum, Rubber*

O 105. ASSESSMENT OF PESTICIDES TOXICITY IN TERMS OF ENVIRONMENT AND HUMAN HEALTH

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ABSTRACT: Pesticides are one of the indispensable elements of modern agriculture. Pesticides are mixtures of substances or substances used to prevent, control or reduce harmful organisms. Pesticides may be a chemical agent, a biological agent such as a virus or a bacterium, an antimicrobial, a disinfectant or any other vehicle. However, uncontrolled and excessively used pesticides cause many environmental pollutions. Environmental contamination is also caused by the inaccuracies of the pesticides and the disposal of the increased drugs. Because of these conditions, pesticides have a toxic effect on many living things. Pesticide is harmful to environment and human health has caused to be the subject of research in environmental engineering. In this study, toxic analysis of pesticides was performed and evaluated. The aim of our study is to investigate pesticide toxicity, to examine the environment and human health and to evaluate the results and to present solution suggestions. In the study, the degree of toxicity of pesticides to living things was determined by laboratory studies. Lepidium sativum toxicity test was used to determine toxicity. According to the researches, it has been determined that pesticide toxicity has reached values in a way to harm human and environmental health. According to the studies, pesticides such as aldrin have high levels of harm and some pesticides that have been forbidden to use have been restricted. Lepidium sativum toxicity tests have shown that toxicity of both insecticides and herbicides is very toxic. In the study, the results of Lepidium sativum toxicity test were more toxic than pesticide called pesticide insecticide when it was examined in terms of pesticide types. Pesticides are very toxic hazardous substances. Therefore, pesticide use should be made by people who are conscious and knowledgeable about this pesticides should be preferred less pests to the environment.

Keywords: Environment, Human, Lepidium sativum, Pesticides, toxicity

O 106. WEIGHT ANALYSIS OF PLANE STEEL ROOFS

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ABSTARCT: In this study, the parameters affecting the weight of the plane steel roofs, which will be designed with steel, which is widely used in the world and in our country, are examined. In the light of current knowledge and experience, 6 parameters were determined and 192 different account models were created in order to see the effect of each of these parameters separately. These account models were analyzed by SAP2000 program and the weight values obtained were noted. According to the results, the effect of each parameter on the weight of the steel roofs was determined. In addition, the results obtained by the calculations were tried to be estimated with the help of intelligent systems and the results of these systems were investigated.

Keywords: Regulation on the Design and Construction Principles of Steel Structures, plane steel roofs, intellgigent systems, design loads for buildings, snow loads, wind loads

O 107. RECOVERY OF SOME METAL FROM THE PHOSPHATE SLUDGE; ZINC AND NICKEL

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ABSTRACT: Many products, have an important place in our lives, such as white goods, small household appliances and also cars are made of metals. Oxygen in the air and water causes oxidation of the metal and metals begin to corrosion. The surface treatment chemicals are applied to prevent corrosion of the metals and improve their durability. It is possible to increase the surface holding capacity of dye and the corrosion resistance of the product and the surface by the correct application of the surface process. Therefore, especially in the automotive industry and in many areas of our life, the surface treatment procedure can be said to be as important as the metal finishing process. Therefore, the surface treatment procedure can be said to be as important as the last metal coating process, especially in the automotive industry and equipment used in many areas of our lives. In the surface treatment, the surface to be coated is firstly degreased, activated and phosphated. Phosphating is the oldest and the best surface treatment method to provide protection against corrosion. Phosphating is the process of forming a film layer of zinc phosphate crystals on the surface to be painted as a result of the chemical reaction of metal phosphating. Phosphating is the process of forming a film layer consisting with zinc phosphate crystals on the surface to be painted as a result of the metal phosphating chemical reaction. In the baths where phosphating is performed, according to the General Principles of Waste Management, sludge classified as hazardous waste is produced. This waste is called a phosphate sludge in industry and includes zinc and nickel elements. As it is known these two metals are valuable elements. But the high amounts of them cause toxic effects. The aim of this study is providing the recovery of two valuable elements such as zinc and nickel from the phosphate sludge waste in the industry.

Keywords: surface treatment technology, zinc, nickel, phosphate sludge, waste management

O 108. IMPLEMENTATION OF 480W LLC RESONANT CONVERTER

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ABSTRACT: This study presents the design of an LLC resonant converter as using the leakage inductance of the transformer instead of the inductance in the resonance tank. With serial resonant characteristics, the power MOSFETs are conducted at zero voltage switching and secondary diodes are commutating under soft switching, so the switching power losses on the semiconductor components are decreased. Using the proposed power stage and feedback control loop design considerations, the LLC resonant converter can achieve high power conversion efficiency and stability enhancement. This study provides the working principle of the resonant LLC converter topology by designing the simulation model.

Keywords: LLC Resonant Converter, Resonant Tank, Soft Switching, Switching Losses, Zero Voltage Switching

O 109. CORPORATE STRUCTURE OF THE SOUTHERN ANATOLIA CLEAN AIR CENTER AND AIR QUALITY WORKS

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ABSTRACT: Ministry of Environment and Urbanization The Southern Anatolia Clean Air Center Directorate which includes the provinces of Afyonkarahisar, Aksaray, Antalya, Burdur, Isparta, Karaman, Kayseri, Konya, Nevşehir and Niğde was established in Konya with the decision of the Council of Ministers numbered 2015/7754 and published in official gazette dated 10 July 2015 and numbered 29412. In the directorate, produces solutions for the protection of the health of people, the detection of air pollution, and the factors that constitute a risk factor for the ecosystem. Air Quality Index (AQI) is an index used to report air quality on a daily basis. It gives us information on how clean and dirty the air of the region we live is, and what kind of health effects can occur. The air quality index determines the effect on general public health with different air quality, the level of air pollution, and the steps that should be taken when it goes up to the unhealthy level. 37 Air Quality Monitoring stations which can also be seen on the National Air Quality Stations website affiliated to the Ministry of Environment and Urbanization are under the responsibility of The Southern Anatolia Clean Air Center Directorate.

Keywords: Air Quality, City, Health, Monitoring, Konya

O 110. STOCK PRICE FORECASTING WITH A FINANCIAL RATIO BASED NEURAL NETWORK ALGORITHM

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ABSTRACT: Forecasting stock prices is quite difficult due to uncertainty, chaotic nature and noise in financial markets. The aggregated impact of factors such as political instabilities, financial fragility, international financial integrity, technological developments and change in investor risk preferences make the estimation of stock prices harder. However, the challenge of developing a good estimation model in such an environment, the positive contribution of a successful model to the return of investment make the problem attractive for researchers. It is known that machine learning algorithms are useful in generating predictions in such chaotic environments as stock market, which have multiple sources of data flow. In this study, three stocks traded in Borsa İstanbul are selected according to different criteria and price estimation performances of proposed artificial neural network model together with known support vector machines, logistic regression and naive bayes classifier machine learning algorithms are compared. 18 financial ratios frequently used in evaluation of company performances with 102 other independent variables are used as inputs and monthly rate of return of stocks in 2009-2018 period are classified and estimated. Analyses on given period have shown that the proposed artificial neural network algorithm is a classifier that can be used as an alternative to other algorithms for stock market forecasting.

Keywords: Artificial neural networks, Logistics regression, Naive bayes classifier, Random forest, Stock price forecasting, Support vector machines

O 111. THE EFFECT OF CONCENTRATED SOLAR ENERGY ON DRYING OF TREATMENT SLUDGE

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ABSTRACT: Treatment sludge are concentrated wastes including organic or inorganic impurities and resulted from separation process of wastewater treatment plants. Although the sludge is separated by dewatering processes, it contains a large amount of water in its contents. The water content of the non-fluidized sludge cake from the centrifugal dewatering unit varies between 82% and 78% in the Konya wastewater treatment plant. This high-water content in the sludge is a problem that needs to be overcome in the implementation of final disposal or reuse alternatives. It is necessary to increase the solid matter content of the sludge in order to burn, landfilling or to use as fertiliser. Therefore, drying is a mandatory process for these reuse or disposal options. Thermal dryers operated by fossil fuel could be achieve high drying rates, but its cost is disadvantage. Greenhouse type indoor or outdoor drying plants, where the sludge is laid on the floor in a thin layer to benefit from solar energy, have relatively low cost but requires large areas. It is necessary to increase the number of drying options that use the highest level of solar energy. Concentrated solar energy systems are promising alternative to overcome these problems. Parabolic trough types solar collectors where the heat generated at high temperatures is used for industrial application such as production of electricity by steam power. In this study, a mechanism of direct sludge passing through the tube located at the focal point of the parabolic collector was installed to concentrate solar energy on the lower area. The moisture was removed by means of ventilation while the sludge was heated in the metal tube. Drying experiments were conducted in October and November 2018 in Konya waste water treatment plant. The solid matter content increased from 18% to 47% on a day where the average solar radiation is 882 W/m^2 and the sludge flow rate of 33 g/min. On another day when the radiation and the flow rate were 1047 W/m^2 and 28.6 g/min, the solids content increased from 21% to 64%.

Keywords: Treatment sludge, parabolic trough type solar collector, drying, solar energy

O 112. EVALUATION OF ECO-CITY PLANNING PRINCIPLES IN THE EXISTING LIVING ENVIRONMENTS

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ABSTRACT: One of the sustainable urbanization approaches, eco-urbanization and/or ecological planning which is developed in order to prevent the uncontrolled and rapid development of cities set out several principles to provide a better quality of life for all city inhabitants and make cities coherent and sustainable with green infrastructure. The planned ecosystems with these principles and making the existing cities more ecologic are shaped by four basic elements as structure and relations in urban development (physical and environmental structure relationship), transportation (mobility), energy/material flow and socio-economic dimension, and the goals and principles determined in this direction. This paper aims to investigate how the change of existing urban areas which have been built with the urbanization process in Turkey can be performed in accordance with the eco-urbanization goals and principles. For this purpose, this paper determines strengths and weaknesses for the adoption of the eco-urbanization principles by comparing areas with different typology of housing and city blocks and makes recommendations. Comparisons are mainly covered within the scope of city blocks and adaptation capacities in terms of green infrastructure such as physical and environmental structure relations, green areas, transportation diversity, energy, recycling, location of buildings and sunshine are discussed. As a result, considering the differences in the typologies of housing and buildings in the existing built living environments in the cities, strategies are developed for the applicability of ecological planning approaches.

Key Words: Natural Resources, Ecology, Eco-City, Konya, Sustainability, Renewable Energy

O 113. AN ECO-FRIENDLY MANAGEMENT STRATEGY FOR PLANT PATHOGENIC BACTERIA: BACTERIOPHAGES

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ABSTRACT: Plant pathogenic bacteria affect a wide range of crops worldwide and have negativeimpacts in agriculture due to their associated economic losses and environmental damages. Control measures including the use of conventional chemicals or antibiotics have lossed their efficacy because of the natural development of bacterial resistance against these compounds. The bacteriophages, eco-friendly means of controlling plant bacterial diseases, are a fast expanding subject of plant pathology with considerable potential to replace the chemical control measures now prevalent. Obtained the results, different bacteriophages have given promising results on several serious diseases about 30-95% ratios for *Pectobacterium carotovorum* subsp. *carotovorum*, *P. wasabiae*, *Dickeya solani* and *Streptomyces scabies* on potato, *Ralstonia solanacearum*, *Xanthomonas campestris*pv. *vesicatoria* and *Pseudomonas syringae*pv. *tomato* on tomato, *Xylella fastidiosa* on grapevine, *Xanthomonasaxonopodis* pv. *allii* on onion, *P. c.* subsp. *carotovorum* on lettuce, *S. scabies* on radish, *X. a.*pv. citri on grapefruit, *X. a.* pv. *citrumelo* on orange, *P. s.* pv. *porri* on leek, *Pseudomonas tolaasii* on mushroom, *Erwinia amylovora* on apple and pear. In addition, it has been determined that the efficacy of phages depends greatly on environmental factors as well as on susceptibility of the target organism and the emergence of resistant bacterial strains. In conclusion, bacteriophages can be used effectively as part of integrated disease management strategies as biopesticides.

Keywords: bacteria, phages, plant disease, biocontrol, eco-friendly plant protection

O 114. CRISPRCAS/9 SYSTEM IN COMBATING PLANT PATHOGENIC BACTERIA

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ABSTRACT: Editing genes to generate mutations is widely used tool in creating plant varieties resistant to pathogens that otherwise take a lot of time to be developed using conventional breeding methods. Recently developed methods for gene modification includes transcription activator-like effector nucleases (TALENs), zinc finger nucleases (ZFNs), and clustered regularly interspaced short palindrome repeats (CRISPR)/Cas9 (nuclease). Trending amongst scientists today is the Crispr/Cas9 technique due to its simple engineering, cost effectiveness, multiplexing, wide range target sites and ability of cas9 nuclease to induce double stranded breaks. It is basically a defense mechanism found in bacteria and most archea against bacteriophages. Using this method, scientists have successfully targeted the host genome at specific sites obtaining enhanced resistance against pathogenic bacteria such as *Pseudomonas syringae* pv. *tomato* by editing *SlDMR6-1* gene in tomato, *Xanthomonas oryzae* pv. *oryzae* by targeting *OsSWEET13* gene in rice, *Xanthomonas citri* subsp. *citri* by targeting the promoter region of *CsLOB1* (s) genes in Duncan grapefruit and in Wanjincheng orange (*Citrus sinensis* Osbeck) without noticeable difference in growth and development of the plants. Furthermore, to enhance resistance in apple against *Erwinia amylovora*, researchers have done successful molecular analysis of targeting *DIPM-1*, *DIPM-2*, and *DIPM-4* genes in apple protoplasts using Crispr/Cas9 ribonucleoproteins approach instead of plasmid-mediated delivery to overcome off-target mutations. More work is required in this field by focusing different gene editing strategies using Crispr/Cas9 technology such as identify and editing other promoter regions or resistant and susceptible genes keeping in mind of its possible field applications without negative effects on the plant development.

Keywords: crispr/cas9, resistance, gene editing, plant pathogenic bacteria

O 115. THE EFFECT OF VEGETABLE AND FRUIT WASTE ON ANAEROBIC SLUDGE DIGESTION PERFORMANCE

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ABSTRACT: Anaerobic sludge digestion process provides energy through stabilization of sewage sludge in municipal wastewater treatment plants. Co-digestion of the sewage sludge fractions with the marketplace wastes (fruit and vegetable) was carried out in semi-continuous laboratory scale bioreactors with three sludge fractions (primary, secondary and mixed) respectively at organic loading rates of 1.65, 0.40 and 1.00 kg VS/m^3.day, 20 d of hydraulic retention time (HRT) and 35°C. The market wastes were grinded and fed as second substrate to the primary, secondary and mixed sludge receiving anaerobic reactors as vegetable + fruit (50:50%, v: v) and vegetable (100%). When compared to single raw sludge digestion, co-digestion with vegetable + fruit and vegetable, resulted in increased methane production at 60-70% and 35-45%, 55-60% and 40-50% and %for primary, mixed and secondary sludge, respectively. Higher methane increase at vegetable + fruit digestion than the vegetable alone indicated that the fruit waste made a higher contribution as conversion to methane. Co-digestion increased volatile solid removal at 10-11%, 27% and 15% for primary, secondary and mixed sludge, respectively, at vegetable + fruit addition whereas vegetable addition's contribution stayed at 5, 23-24 and 8% of volatile solid removal. Consequently, the addition of feedstock was obtained in descending order for secondary, primary and mixed sludge in terms of its effect on the performance of digestion.

Keywords: Anaerobic digestion, sewage sludge, energy, organic waste, feedstock, methane production

O 116. RECOVERY OF IRON FROM METALLURGIC WASTES

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ABSTRACT: The iron and steel industry, an indicator of development and improvement, has become an integral part of modern society. In this context, the iron-steel sector is of strategic importance for many countries. Its product varieties increase even more in the iron-steel industry with changing consumer needs, developments in technology and competition. The iron, taken from the iron-steel industry, is an indispensable material that is quite hardness and durable. This product is used widely in many industrial areas such as civil, machine and automotive engineering. The amounts of iron ores decrease in the world by the day. Therefore, in the production of iron, scrap materials are used. A slag, a by-product formed during pyrometallurgical processes and deposited on the surface due to the difference in density, is a mixture of metal oxide and silicates. The scrap metal or metal-containing ores, lighter than metal, contain these metal oxides and silicates. Slag, which is very exposed in industry, is a waste. And, it pollutes the environment if not recovered. The amount of metallurgical waste reduces with the recovery of iron slag. By this way, it contributes to the economy. For this reason, this work aim is to recover iron from iron slag in its metallic form.

Keywords: iron, steel, recovering process, pyrometallurgic waste

O 117. INVESTIGATION OF FUEL PRODUCTION FROM PLASTIC WASTES IN PULPER

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ABSTRACT: Industrialization is growing rapidly in both the world and our country. This situation brings accompanying an environmental problem created by industrial wastes. Pollutants formed by industrial wastes constitute non-recyclable permanent environmental damages, if not interfered. Therefore, the recovery planning of these wastes is an important detail for the protection of the environment. In this case, it is significant that the industrial wastes are evaluated by turning into new and different products. Hence, it is possible to get useful products from paper industry. Any paper factory applies the recycling process for the collected wastepaper. The separation of these waste papers is made by using Pulper machine. The waste mixture obtained from the Pulper machine includes plastics contaminants also. Pulper waste is a kind of plastic waste that takes its name from this machine. In this study, pyrolysis of pulper waste and research on the production of liquid fuel with this pyrolysis method were carried out. Pulper's pyrolysis allows the production of gasoline, diesel and heating fuel. With this study, it is aimed to contribute to the national economy by recycling plastic which is one of the most harmful wastes for the environment and gaining new products in this way.

Keywords: Pyrolysis, pulper, plastic wastes, fuel-oil, environment

O 118. DIMENSIONING AND ECONOMIC ANALYSIS OF A GRID-INDEPENDENT PV SYSTEM FOR A STANDARD HOUSING

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ABSTRACT: With the increasing population and industrialization, the need for electrical energy is increasing day by day. In order to meet the need, the use of renewable energy sources has come to the forefront especially in recent years. Among the renewable energy sources, solar energy technologies are the most appropriate solution to meet the individual energy needs. Photovoltaic (PV) systems that convert solar energy into electrical energy are separated as grid-dependent and grid-independent according to their connection type. Grid-independent PV systems are preferred when there is no network, frequent and long-term disconnection of the network, the transmission lines are not economical. In this study, economic analysis and dimensioning of the grid-independent photovoltaic system were conducted for a standard housing in the Turgutlu district of Manisa province. The analyzes were performed in the Renewable Energy Laboratory supported by the MCBU BAP Unit. Fuzzy logic algorithm from artificial intelligence methods is used in dimensioning of PV system. During the training of the algorithm, the power of different types of panels that can be used in the system, the types of materials, the power of the inverter, the types and dimensions of the batteries are defined. Fuzzy logic algorithm with the appropriate training process has presented us the optimum panel, inverter and battery selection. Life cycle cost (LCC), annual life cycle cost (ALCC), electricity cost (UCel) of the components used in this system were calculated. The calculated values have been shown to be more economical compared to the grid electricity unit costs, which is the traditional method of supply for the given housing.

Keywords: Photovoltaic (PV) systems, grid-independent systems, economic analysis, artificial intelligence, fuzzy logic

O 119. A SNEAKY GAS ALL OVER OUR LIVES; RADON

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ABSTRACT: Radon gas, found almost everywhere in nature more or less, is a radioactive element. This radioactive element, which is an odorless, colorless, tasteless, weighty, inert gas and accumulating in a closed environment, occurs as a result of the radioactive decay from uranium to radium and then from radium to Radon. This gas coming from the soil naturally does not originate from human activities. Radon, interfering to air and water from soil and easily leaking into our houses, ranks second among the causes of lung cancer after smoke. For this reason, it is very significant to measure the radon gas level on the building grounds and the construction materials to be used for the buildings. The separation of the foundations of the new buildings from the soil by isolation materials and the selection of the constructions materials which do not contain radioactive materials are among the measures to be taken. In old houses, adequate ventilation of all flats, especially ground floors, repairing of connection points and cracks on the building grounds, reduces the exposure to radon gas. People live unaware of the presence and harm of this gas and are exposed to lung problems. For this reason, the most valuable precaution to be taken by the countries are educating their nations about radon gas and raising awareness.

Keywords: radon, radium, uranium, radioactive elements, inert gases

O 120. THE EFFECTS OF OVERSIZED/ OVERLOADED VEHICLES ON HIGHWAY FLEXIBLE PAVEMENTS AND SELF-PROPELLED MODULAR TRANSPORTER (SPMT) EXAMPLE

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ABSTRACT: Highway flexible pavement design; is based on the determination of the thickness of the layers according to the characteristics of the material to be used in the current traffic loads and environmental conditions in a way to resist the stresses that will occur during the design life. An exemplary study on the transfer of an important building with SPMT (Self-Propelled Modular Transporter) carried out. Converting the axle load of the SPMT to the Equivalent Standard Single Axle Load Repetition Number; AASHTO 1993 design method, which is still the most used pavement design method in our country and in the world, has been calculated by using the damage formulas and the layer thickness calculation has been made. As the Mechanistic-Empirical Design Method has become an increasingly powerful method in the design of pavement according to empirical methods (AASHTO 1993), the mechanistic-empirical design method was used to compare the damage. For this, using the Kenpave software which is accepted as a reference in the mechanistic-empirical pavement analysis, the maximum stresses that will occur under the asphalt layer were calculated while passing SPMT's. The maximum horizontal tensile stress under the surface layer due to axle loads and the vertical pressure force are used to determine the number of load repetitions that will cause cracking and rutting damage, which is defined as the fatigue life of the pavement.

Keywords: Equivalent Standard Single Axle Load Repetition Number, Kenpave, Overweight/Oversized Vehicle, Project Logistics, Self-Propelled Modular Transporter

O 121. AN OVERVIEW OF STEROIDS; NATURAL AND SYNTHETIC STEROIDS

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ABSTRACT: Steroids are natural hormones that are produced from cholesterol in the adrenocorticotropic hormone (ACTH) control in adrenal glands and released into the blood. But these hormones can also be obtained by synthetic ways. Synthetic steroids are substances of great interest due to their interesting medicinal properties because they are chemical molecules that can work just as like natural hormones. The characteristics of steroids classified as corticosteroid and anabolic steroid can be modified according to their intended use. For example; it is known in medicine that an immunosuppressive steroid is used in the immune system suppression and an anti-inflammatory steroid is used in the inflammation treatments. Previously, the purpose of steroid synthesis was to provide treatment for hormonal disorders in the human body. However, nowadays, many people, especially athletes, use steroids in their body to accelerate fat burning, increase muscle development and body resistance. The use of steroids may cause deterioration of the natural hormone balance and some side effects in the human body. It is possible to minimize by PTC (Post Cycle Therapy) these harmful effects, occurred due to using steroids. However, there is no clear conclusion that the use of steroids disrupts human health. But some side effects may be observed due to the use of overdose of steroid. These side effects can be ordered as acne, blurred vision, cataract or glaucoma, insomnia, high blood pressure, appetite and weight gain, hirsutism, nervousness, restlessness, sudden mood swings, swollen face, oedema and diabetes and liver damage.

Keywords: synthetic steroids, corticosteroid, anabolic steroid, PCT therapy

O 122. EVALUATION OF THE USE OF BIOMIMESIS IN BUILDING SHELL DESIGN THROUGH EXAMPLES

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ABSTRACT: Mankind has tended to constantly regulate its environment in order to meet its needs and desires since its existence. For this, he benefited from the order of nature. The operation and sustainability of the cycle in nature has been an inspiration in the design, and sustainable/ ecological designs have begun to be made. In parallel with the development observed in ecological architecture, especially thanks to the recently developed technology, studies have started in terms of materials, processes and formations by going beyond formal and structural concerns. At this point, the science of biomimesis has come to the fore. Biomimesis is a new science that brings sustainable solutions in design by observing the formations, textures and strategies found in nature to the problems of humanity.
Within the scope of the study, it was aimed to determine the use of biomimesis in shell design by associating it with nature in terms of sustainability. In this context, it has been evaluated through sample designs in accordance with determined biomimesis principles. As a result, example structures with biomimetic solutions show that a biomimetic approach based on nature is a very important source in designing structural shells for architects, producing versatile innovative ideas, and providing sustainable solutions to problems that may arise today and in the future.

Keywords: biomimesis, sustainability, ecological design, building shell design

O 123. DETERMINATION OF ENVIRONMENTAL MICROORGANISMS BY IMAGE PROCESSING

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ABSTRACT: Environmental microorganisms are microscopic organisms found in natural (lake, river, sea, air, soil, etc) and artificial (suspended and attached biological reactor, oxidation ponds, constructed wetlands etc) environments that cannot be seen with the naked eye. The classification of environmental microorganisms is very important in monitoring environmental quality and operating biological reactors. However, microbiological analyzes are quite time consuming, laborious and expensive by conventional methods. In recent years, rapid advances in optical and software technology have allowed conceptualization and rapid recognition of small organisms such as bacteria and protozoa (0.1-100 µm) by means of microscopes. In this new classification technology, which is known as digital image processing, the microorganisms are preferably stained with a suitable dyestuff with taking the images by microscobe, after this image is processed morphologically and then taken into the computer's memory. Identification of the microorganism is performed by comparing with the processed images. In this study, the method of image processing which is very advantageous compared to the laborious classical methods and the expensive molecular microorganism determination methods, are explained conceptually and information about the limited studies are given.

Keywords: Environmental microorganisms, Identification, Image, Microscopy, Processing

O 124. WHICH IS GREENER: PLASTIC BOTTLES OR ALUMINUM CANS?

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ABSTRACT: Bottled and canned drinks are big business in the world. For soft drinks, the same product comes packaged in a variety of different containers. So, what is the best environmental option – plastic bottle or aluminium can? This study aims to compare the life cycle environmental sustainability of plastic and aluminium packaging. Life cycle assessment (LCA) study has been carried out in compliance with the ISO 14040 and 14044 standards. The scope of the study is from cradle to grave starting with the extraction of natural resources to final disposal of the product. LCA study is conducted on the packaging of 1000 litres soft drink in 330 ml Al-cans and 200 ml PET bottles produced. LCA software tool CCaLC2 has been used for calculating carbon footprint. The comparative LCA study reveals that the Aluminium cans are found to have the higher environmental impact than PET bottles. In addition, the resulted environmental impacts could be significantly reduced via increasing the respective recycling rates of the two investigated packaging materials.

Keywords: Life cycle analysis, sustainability, packaging, carbon footprint and environmental impact

O 125. GREENHOUSE GAS EMISSIONS FROM CEMENT INDUSTRIES IN TURKEY

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ABSTRACT: Cement production is the most important source of process-related CO_2 emissions, which taking up nearly half of all process-related CO_2 emissions. There are fossil fuel combustion and process related emissions in the cement industry. It is responsible for the most important part of human source CO_2 emissions in the cement sector. In this study, CO_2 emissions from the cement industries in the different regions of the turkey were detected as fossil fuel combustion and process related emissions.

Keywords: Air pollution, cement industry, greenhouse gas emissions, Turkey.

O 126. ENGINEERING PROPERTIES OF HYBRID FIBER REINFORCED CEMENTITIOUS COMPOSITES FOR SUSTAINABLE STRUCTURES

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ABSTRACT: An experimental investigation was carried out on hybrid fiber reinforced cement mortars through the use of polymeric (1% by volume) and steel fibers (1% by volume). In order to compare results specimens were also produced with single fiber incorporation together with plain specimens as reference. The incorporation of single fibers was totally kept at 2% by volume of each mixture. A total of 4 mixtures were produced and specimens were tested to assess their compressive strength and flexural strength. Improvement of basic engineering properties was further elaborated via microstructural characterization including scanning electron microscopy and video microscope recorder. Results suggest steel fiber incorporated cement mortars by volume of 2% were promising to exhibit increased bending resistance while hybrid and single polymeric fiber reinforced specimens were comparable.

Keywords: Sustainability, polymeric fibers, steel fibers, mechanical properties

O 127. COMPARISON OF FIBER REINFORCED AND CARBON NANOTUBE MODIFIED CEMENT MORTARS

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ABSTRACT: Brittleness of concrete has been tailored to higher bending attribute thanks to reinforcement elements which mostly include steel bars and several types of fibers. Inclusion of fibers into cementitious matrix has become a well-known practice in terms of improving engineering properties. Recent developments in nanotechnology products have led to the utilization of nano-scale materials in cementitious composites for different purposes. Among nanomaterials, carbon nanotubes (CNT) possess superior properties for the benefit of the mechanical properties compared to conventional additives. Taking into consideration the fact that there is an alikeness between the micro-scale and bulk structure of the material, uniting both scales in an engineering manner is significant especially in the use of nanomaterials. In this paper, researchers performed an experimental study on the reinforcing of cement-based materials. To do this, CNTs were incorporated homogeneously in cement mortars. Also, conventional fiber reinforced cement mortars were produced by using polymeric fibers together with specimens that do not contain any reinforcing elements as reference. Produced specimens were tested under compression and flexural loadings. Results of each mixture were discussed in terms of basic engineering properties taking into account of microstructural investigations.

Keywords: Nanomaterials, sustainability, fibers, cement mortars, mechanical properties

O 128. SOME DURUM WHEAT (Triticum durum L.) GENOTYPES DETERMINATION OF COMBINATION OF SKILLS IN THE DIFFERENT NITROGEN ENVIRONMENT

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ABSTRACT: Nitrogen has an important place in the plant nutrients, which is essential for plants, because of its location in plant metabolism and its specific situation in the soil. Nitrogen is used as a basic building block in plant nutrients, so it is important to have enough nitrogen in the soil to get optimum yield. However, in order to achieve this situation, it is obvious that the use of excess nitrogen fertilizers has negative effects on both plants and the environment and human health. In order to minimize the negative effects of nitrogen in recent years, scientists have needed to research the nitrogen sources that can provide the necessary nitrogen at the time they need plants and eliminate or minimize the losses. One of the most important factors to be taken into consideration in these studies is the method of investigating the varieties with high nitrogen utilization efficiency, low growth rates and high yield and quality. In this research; 30 durum wheat hybrid combinations, which were formed by crossing 10 main lines and 3-line lines as line-testers, were planted with 3 replications separately in nitrogen sufficient and insufficient environments in central location of Konya. Combination capabilities have been determined from the materials identified to give high efficiency in inadequate environments.

Keywords: Durum wheat, Nitrogen utilization efficiency, Yield

O 129. THE WIND EROSION SEEN IN KARAPINAR

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ABSTRACT: Karapınar which is located in Konya Closed Basin is area to prone to erosion with a cause such as being salty, calcareous and dune of soil structure, lack of rainfall, having sparse vegetation due to failure to comply the rules of pasture management in their rangelands which previously had good a pasture. 23% of farmland in town is a matter of wind erosion with different reasons. In Karapınar, fighting wind erosion was started hat 1962 for the first time. In the first step, the prevent erosion studies got off the ground by hedging round 160,000 hectares of in this area. The reed curtain was established on dune hill in this land on the purpose of firstly decreasing wind speed and then preventing sand movement. Then, the between reed curtains was made a place green with plants like crested wheatgrass, tall wheatgrass, etc. Planting works to decrease soil movement was used plants which belong to the region and being drought-tolerant species such as silverberry, false acacia, Fraxinus, black pine, etc. In this review information about the wind erosion occurring in Karapınar.

Keywords: Karapınar, Rangeland, Wind Erosion

O 130. CFD SOLUTION OF DAM SPILLWAYS

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ABSTRACT: Since the design of each dam in hydraulic engineering is special by its shape, purpose, basin characteristics and topography of the dam and so it cannot be made any unque standard project. It is very important for security to test the spillways of the dams which are safety structures of the dams by physical and / or mathematical modeling methods before the construction. In physical modeling, although the effect of scale, time and laboratory conditions, assumptions made in mathematical modeling and initial investment cost are restrictive, it is very useful in prediction of the problems encountered during modeling and construction phase. During physical model studies, a series of experimental studies were conducted; speed profiles, key curve, water surface profiles and pressures at various conditions, working conditions of the energy breaking pool are measured. The development of computer technologies and recent advances in numerical solutions lead engineers to do numerical modeling. In the scope of this study, the hydraulic properties of Alpaslan 2 Hydroelectric Power Plant (HEPP) Project were investigated experimentally with 1/70 scale physical model in the laboratory. Flow depth, flow discharge and pressure readings were measured under the different current conditions. Computational Fluid Dynamics (CFD) simulation was also tested to see if there is a suitable solution for the modeling of numerical modeling in spillway flow. In mathematical modeling, FLOW-3D program was used to solve the Reynolds-averaged Navier-Stokes (RANS) equations. The FLOW-3D program defines the cells in the calculation area by defining partially or completely filled cells. At the end of the study, the results of the project and the results of both models were compared. For the comparison of physical modeling and numerical modeling, the rating curve, flow profiles in the discharge channel, cavitation number, velocity and pressure measurements and energy dissipation structure flow conditions were used. The results obtained from physical and numerical modeling were found to be overlapping each other.

Key words: Spillway design, physical modelling, CFD solutions, spillway modelling, Flow 3D

O 131. COMPARATIVE INVESTIGATION OF TRAFFIC EMISSION RATES IN KONYA

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ABSTRACT: The increase in the population of the world brings the significant challenges of protection our environment and atmosphere from being polluted. As the economic growth and urban development of any city depends on transportation it's necessary to understand their negative impacts and their changing rates as well in order to optimize our traffic network planning. This study aims to investigate the air pollutants including NO_X, PM and CO caused by motor vehicles in Konya province. The annual average daily traffic of the motor vehicles on Turkish state highways inside Konya borders considering their types and fuel were used for calculation the annual emission rates of the pollutants between 2010 and 2017. The emission values of each year comparatively evaluated and the effects of personal cars in total were identified. As a result, we found that the total taken pathways length increased by 67.8 % in 2017 according to 2010. Therefore, the increase in the amount of NO_X, CO and PM found as 18.2 %, 66.7% and 32.1% respectively in 2017 according to 2010. Lastly the length of the pathways traveled by personal cars was made %64.18 of the total in 2010 and increases to 68.14% in 2017. We understood from study that most significant vehicles with respect to the contribution in air pollutions are ranked as personal cars and then motor vehicles using diesel fuels. While the vehicles using LPG has a lower effect.

Keywords: Air Pollution, Traffic Emissions, Pollutant Emissions, Konya

O 132. PUMPED-HYDRO ENERGY STORAGE: A CASE STUDY IN TURKEY

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ABSTRACT: Due to the limitations in the sources of fossil fuels as well as their environmental adverse effects, the implementation of renewable energy sources and the more efficient use of existing systems became critical to fulfill the increasing demands of our global for energy consumption. Most renewable energy systems like wind and solar cannot adjust their output to match cities fluctuating power demands. Therefore, various energy storage systems have been developed and many of them are under the investigation. Among various energy storage methods pumped-hydro storage systems has been developed rapidly over the last decades because of their capability of the large-scale energy time shift and the ability of being integrated with renewable energy. The component of system is an upper and lower reservoir connected with a pump/turbine. The technique works as pumping water from down to up during low demands on electricity and releasing back through the turbine to produce electricity during the pick hours. The aim of this study is to investigate the principles and factors affecting the alternatives for site selection. The locations and topography of dams and lakes of Turkey have been explored using Google Earth to search for suitable locations, and the locations listed and ranked by factors that affect the applicability, efficiency, sustainability, and environmental friendliness of the projects.

Keywords: Pumped Hydro Storage, Dam, lake, Energy Storage, energy, electricity

O 133. INVESTIGATION OF URBAN FLOOD PROTECTION STRUCTURES AND THEIR PROBLEMS: A CASE STUDY OF KONYA FLOOD PROTECTİON STRUCTURES

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ABSTRACT: Floods events occur frequently in Turkey. Therefore, like earthquake and other natural disasters, floods also should be taken in to measure in advance as well. Therefore, with all other operations, constructing flood protection structures with a good planning and project, their proper using and their protection is important for ensuring that floods do not become a disaster. With lack of precaution listed above sometimes flood put huge effects on areas where are not identified as risky areas on flood risk assessment maps. In this study, primarily, the concept of flood, the effects, causes, types and the principles of protection from flood are discussed. Secondly, the problems in the flood protection structures located in Konya province, Turkey, were exemplified by photographs and evaluated. Lastly the sources of the problems, their effects on infrastructures, farmlands and domestics identified and some suggestion are made.

Keywords: Floods, flood protections, flood risks, open channels, culverts

O 134. CFD ANALYSIS OF FLOODING AND ASSESMENT OF FLOOD DAMAGES

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ABSTRACT: Floods are the main cause of natural disaster damage in the world after earthquakes. It is a fact that the topographic structure and precipitation regime in different geographic regions have caused flood disaster in many streams during different precipitation periods. Increasing in population growth and as a result of this increasing in the number of residential areas, improper city planning and urbanization, uncontrolled construction of water structures and increasing the number of settlements in the riverbed increase the loss of life and property of the flood event. In order to reduce the damages caused by floods, riverbed improvement and structures need to be regulated. For these reclamation studies, it is necessary to know the natural topography, the cross-sectional changes formed by the hydraulic structures on the stream (bridge, regulator, etc.) and the flood water level. Numerical computation methods can be used to make such calculations. In this study, the HEC-RAS numerical model was used in order to analyze of the flood occurred on 11.06.2018 in KONYA Köyceğiz Region. As a result of flood, residential areas on the stream bed, schools, the Köyceğiz Campus area was under the water flow. At the beginning of the study, the topographic map of the region was obtained, and a digital elevation model was created with ARC-GIS program and terrain cross sections were obtained by HEC-GEORAS. The obtained sections were transferred to the HEC-RAS program and the hydraulic characteristics of the floodplain were determined. The results obtained were compared with the images of flooding, which were obtained by taking photos during the flood time.

Keywords: Flooding, Flood analysis, HEC-RAS, Flood risk maps

O 135. COST ANALYSIS OF WASTE COLLECTION AND TRANSPORT

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ABSTRACT: Garbage is an end of product that is inevitable to emerge as a result of our vital activities. The ways of collecting, transporting and disposing of thes products also affect the environmental health and the country's economy, significantly. In the solid waste management system, the collection and transport of waste is the part that has the highest financial value, so the garbage collection and transportation systems must be designed in the best and economical way. It is of great importance to collect and transport the garbage by the authorities, which is formed as a result of human and human activities in the use areas such as home, school, workplace, park, industry. In this study, the methods and cost of waste collection and transportation of the waste to the disposal which were investigated. At the same time, garbage collection and transportation costs were analyzed in Selcuklu district of Konya province.

Keywords: Waste, solid waste, cost, economy, garbage

O 136. FORAGE CROPS IN ACID SOILS OF INDONESIA

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ABSTRACT: Indonesia is a country located on the equator, between two continents and two oceans. For this reason, Indonesia has a tropical sea climate. The amount of precipitation and humidity in Indonesia is very high. Due to the high amount of precipitation, water availability and groundwater with a shallow water table of the land are also very high in Indonesia. However, wet climatic conditions and high precipitation amount intensively cause alkaline washing in the soil. Consequently, it causes most of the lands in Indonesia to become acidic. Approximately 70% of the total land in Indonesia is acid soils with a pH less than 5. As a tropical country, Indonesia has a very high biodiversity of plants. There are many plant species that can be used as fodder. These plants originate from various families. This paper tries to give general information about some plants grown in acid soils (low pH levels) used as the most common animal feed in Indonesia.

Keywords: Animal Feed, Fodder Plants, Pasture and Rangeland, Tropical Forage Crops, Water Tabel Depth

O 137. RESPONSE OF BORON GENOTYPES TO BORON DEFICIENCY AND TOXICITY

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ABSTRACT: Boron element can cause toxicity in plants while It's deficient in some region for the benefit of plants in our contry. Boron uptake capacity of plants shows differ for each plant variety, and also differs between the same plant species. Boron is one of the important elements that plants need as a micro-nutrient element. Significant deformities occur in cell walls of plants that do not contain enough boron. Deficiency of boron can cause growth irregularities in STEM and body meristem cells. In our study, it is aimed to investigate the changes that occur in the development of radish plant by boron application at inadequate or toxic levels in the growing environments of radish plant which has an important place in agriculture of our country. Four different radish genotypes that White, Hazelnut, Black ve Çukurova (Rolex F1) were used in the study in water culture environment. 0mM B,0,5mM B,1mM B, 2mM B,4mM B ve 8mM B doses were applied to radish seedlings when plants come to the first three-leaf phase. They have been identified as Sensitive and durable genotypes, hazelnut, Rolex F1genotypes. There has been a decrease in plant growth in hazelnut radish genotypes against increasing boron applications, Which according to ıts own group. The resulting differences have been seen becosue of the character of varieties against applications. And It has been determined that the Rolex F1 Genetype has shown a more healthy development than the other genotypes against high boron doses.

Keywords: Boron, Radish, Genotypes, Deficiency, Toxicity

O 138. SOIL EROSION IN INDONESIA AND ITS CONTROL

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ABSTRACT: Erosion is a major cause of soil damage, soil loss, and soil degradation. Soil erosion can threaten agricultural productivity, food security, environmental sustainability, lead to the damage or even destruction of infrastructures and also lead to other disasters such as flood, landslide and lost of people's life. Indonesia is a tropical country with high intensity of rainfall and mountainous, hilly and wavey topography. The climate and topography conditions of Indonesia alongside with the inappropriate soil exploitation activities cause a high risk of soil erosion. Agricultural land is a major area with the highest soil erosion rate in Indonesia. Some soil erosion controls must be done to reduce soil erosion rate, especially on agricultural sloping lands. This paper tries to give brief information about soil erosion in Indonesia and some management and control efforts against soil erosion.

Keywords: *Agricultural Lands, Deforestation, Environmental Sustainability, Erosion Control*

O 139. PHYSICAL MODELING FOR DEVELOPMENT OF ENERGY DISSIPATING STRUCTURES

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ABSTRACT: Energy dissipating structures are constructions that transfer the water from upstream to downstream safely by reducing the energy of the flow. They are generaly used in irrigation channels, discharging from a dam bottom outlet, at the foot of the spillway structures and in dissipating the energy of water in a similar situations. The main principle of energy dissipating pools is to keep the hydraulic jump in the channel while flow regime is changing from super critical to sub critical. In this study, the channel was set up to investigate the energy dissipating blocks which were placed at the downstream of the ogee spillway in the energy diispating pool. In this study, trapeze section energy dissipator blocks test setup was used to increase the energy dissipating rate. During the experimental studies, Froude similarities were used for modelling flow rate, flow depth and rating curve. Finally, the effect of the shape of the blocks on energy dissipating along the channel was figured out.

Keywords: Energy dissipating pool, energy dissipating blocks, spillway design, ogee design, open channels

O 140. CHLORIDE ADSORPTION BY THE ADSORBENT SYNTHESIZED FROM WASTE PAPER

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ABSTRACT: In the production of recycled paper, two main problems of recycled product are whiteness and strength. For this reason, the most common approach is producing cartoon and cardboard. However, some waste papers are no longer convenient for recycled paper or cardboard production. Available environmentally friendly second- or third- generation solutions are needed for those types of waste papers. In this case the most common approach is incineration for energy production, which is the unfeasible one-time benefit, that does not allow keeping the material remain in the system. Chloride (Cl^-) is an anion that result in salty taste, salinity and abrasion in water and when excessive in soil, that cause reduced productivity of culture plants. In order to protect drinking water resources, the system should be prevented from excess Cl^- entry. One of the Cl^- removal methods from aqueous media is adsorption/ion exchange. Therefore, in this study an adsorbent was synthesized from wastepaper, and effectiveness of this adsorbent in Cl^- adsorption was investigated. Firstly, slurry was obtained from shredded wastepaper, then citric acid activation was applied, rinsed, dried and ground to obtain fibrous adsorbent. NaCl solution was used in Cl^- adsorption. In batch adsorption studies, first, optimum pH was determined as 7.8 at which the highest Cl^- adsorption was achieved. Then, varying dosages of adsorbent were added to the reactors containing Cl^- solution of the same initial Cl^- concentration. The reactors were operated in a shaker at 220 rpm and at room temperature. Samples were withdrawn from the batch reactors at different time intervals and Cl^- concentration of the samples was analyzed via Mohr titrimetric method. The sampling was performed until remaining Cl^- concentration become constant, which was recorded as equilibrium time. The results indicated that at 2 g/L adsorbent dosage, in 120 minutes about 70% Cl^- removal can be achieved. Isotherm analysis indicated that, the system fits Freundlich isotherm with the model of $q=0.016*Ce^{1.74}$ this indicates that the adsorbent surface is heterogeneous, and adsorption is multilayer through physical forces. The maximum Cl^- adsorption capacity was found as 500±16 mg/g. This study resulted in two benefits: one is the recovery of a new generation material from a waste, and the second one is the suggested new alternative solution for Cl^- removal from aqueous solution. As the paper adsorbent is in fibrous form, it is recommended that the effectiveness of this material, when mixed with soil, in reducing its salinity should be studied.

Keywords: Adsorption, chloride (Cl^-) removal, wastepaper

O 141. CHALLENGES OF COMBATING WITH AIR POLLUTION IN NORTH MACEDONIA

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ABSTRACT: Ambient air quality has an important impact on the environment. It is a global, regional and local environmental problem. Air pollution affects human health and quality of life of the citizens. Threats from aire pollution threats have been growing permanently. In North Macedonia in the last ten years the problems with air quality has beckome the biggest environmental problem. This has particularly dramatic range in the urban areas in the capital city Skopje, Tetovo, Bitola and other bigger cities. According to the data from World Health Organization more than three thousand people per year have premature death caused from air pollution. The most critical situation is with pollution from suspended particles PM_{10} and $PM_{2.5}$ but also the degradation of air quality is caused by others harmful substances such as, CO_2, SO_2, NO and other harmful substances. The air pollution in the country is measured by 17 fixed measuring stations and 40 mobile stations. This provides the information to the citizens and rising of its public awareness, and also contributes for intensification of activities in combating with air pollution. Undertaking measures and activities for combating the air pollution is a --big challenge for mitigation the damages from air pollution for central and local government, but also for the business sector, experts, nongovernmental sector and all involved stake holders. There are many factors which cause air pollution such as: traffic and transport, industry, energy, heating and particularly low quality of heating wood, unsustainable construction, destruction of greenery and other factors. North Macedonia as a candidate state, expects beginning of negotiations with the European Union. In 2005 the country started with transposing the EU air quality regulation into the national regulation, especially the Directive 2080/50 EC. In 2005 was adopted Law on ambient air quality which is detailed in several sub law acts. The national regulation transposes the main principles and standards from EU regulation, but the problems appear with its practical implementation. There is a need of undertaking urgent measures for mitigation the negative effects of air pollution, not only for the fulfillment the obligations toward to the EU accession, it is a necessity for the improvement of human health and quality of life. The main aim of this paper is to analyze the conditions in the area of air pollution and to compare with the situations in the EU and to give some recommendations for the urgent improvement of the ambient air quality in North Macedonia.

Keywords: air, combating, quality, regulation, European Union

O 142. NEW CONSIDERATION FOR BIODIESEL SMALL SCALE PRODUCTION USING MODELING AND SIMULATION TECHNICS

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ABSTRACT: Biodiesel is a material serving as a promising energy alternative to cover the demand of clean sustainable energy sources. Conventional biodiesel production is done by transesterification method using stirred tank reactor and homogeneous base or acid catalyst then followed by purification process. However, there are some drawbacks associated with this method. They include soap formation, sensitivity to free fatty acid (FFA) content and purification difficulties. Transesterification process depends upon a number of process parameters which are required to be optimized in order to maximize the biodiesel yield. In this paper we have worked for flowsheet constructions of Biodiesel small plant using computer simulating software. All the conclusion results will be shown in simulation part of paper. The core objective of this paper would to design and develop a profitable biodiesel production plantby examining all models.

Keywords: Biodiesel, Modeling, Simulation, Small Scale

O 143. THE IMPORTANCE OF RENEWABLE ENERGY SOURCES FOR THE ENVIRONMENT

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ABSTRACT: Summary: all energy sources have a positive and negative environmental impact. These environmental impacts occur in different dimensions at every stage from the acquisition of energy resources to the consumption of energy. In this article, the positive environmental effects of renewable energy and the negative effects arising from fossil fuels were categorized and compared. In accordance with all this information compiled, the sustainability of renewable energy sources has been mentioned with a positive impact on the environment.

Keywords: Renewable energy, Environment, Fossil fuels.

O 144. AN ANALYSIS OF LOGISTICS VILLAGES IN TURKEY BY USING GEOGRAPHIC INFORMATION SYSTEMS (GIS): KONYA SAMPLE

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ABSTRACT: In the world of evolution and speed, the logistics services considered the essential necessity for all sectors. Also, the fundamental factor affected the firm's performance. Then, the logistic villages are the most important elements of the logistics and it contributes to the Turkish economy significantly. In this study, the definition, characteristics and advantages of the logistics villages were mentioned. Thematic map created with GIS, the qualifications and quantities of the logistic villages in it was specified. Then, the logistic village (Kayacık) in Konya was analyzed. weaknesses and strengths points were discussed.

Keywords: Geographic Information Systems (GIS), Logistics Villages.

O 145. UNDERPASS DESIGN WITH TOP-DOWN CONSTRUCTION TECHNIQUE ON RAILWAY AND HIGHWAY INTERSECTION LINES

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ABSTRACT: In this study, the definition, construction stages, advantages and disadvantages of top-down construction technique were mentioned. Within the scope of Karaman - Ulukışla high-speed train project infrastructure works, the solution of the problem encountered in the railway - highway intersection route between 201 + 900 km and 202 + 000 km was discussed with the top - down method and the numerical analysis related to this problem was performed in PLAXIS 2D computer program. Material parameters to be used in the analysis were selected according to the literature and obtained data in the field. As a result of the analysis carried out in PLAXIS 2D computer program, deformations and cross-sectional effects of the structural system were obtained. The static and dynamic safety factor of the designed system have been obtained and controlled according to permissible limits.

Keywords: Top-down, Karaman-Ulukışla high-speed train project, excavation method, top-down construction, underpass construction

O 146. CONTROL OF PERMANENT MAGNET SYNCHRONOUS MOTOR

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ABSTRACT: The use of PMSM (permanent magnet synchronous motor) in the industry increased strongly because of the advantages such as: high efficiency and torque intensity. The ordinary speed control of these motors use encoders which has the effect of increasing the noise, complexity and price of the system. To solve this problem, sensorless speed control have come to industry. There are a lot of sensorless algorithms but the most efficient methods are MRAS and SMO where EEMF (extended electromotive force) should be determined to specify the position or speed. There are two ways to implement these algorithms, either DSP or FPGA. In sensorless speed control, a model is built for the motor, this motor should work in parallel with the real motor. Real states such as currents of the motor are measured, and estimated states of the model are calculated simultaneously. This process is concurrent, and since the parallel processing is one of the best features of the FPGA, then the FPGA is more preferable than DSP in this application. So if parallel process is exist then FPGA is more preferable otherthan DSP. This work gives a simple review about control strategies of PMSM.

Keywords: FPGA, MRAS, PMSM, SVPWM

O 147. THE CHARACTERISTICS OF THE DAIRY FARMS WITH FREESTALL HOUSES SUPPORTED BY IPARD IN KONYA REGION AND THE THEIR EFFECTS ON ENVIRONMENTAL POLLUTION[#]

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ABSTRACT: International Phonetic Alphabet Rural Development (IPARD) was established by the European Union (EU) in order to improve the performance of agricultural farms in the candidate and potential candidate countries, to protect the environment and to comply with the relevant EU standards on animal welfare issues. Konya region ranks first in our country in terms of production quantity and number of animals in dairy cattle breeding. Particular, Konya region the dairy farms with freestall housing are constructed by the support of IPARD. The aim of this study is to investigate the characteristics of the dairy farms with freestall housing supported by IPARD in Konya region and to determine their effects on environmental pollution. It was investigated representative twenty dairy farms with different animal capacities by using purposeful sampling method in this region. Examined dairy farms were evaluated at 5 different groups according to their animal capacities with <50 head, 50-99 head, 100-149 head, 150-199 head and 200 head and over. In this study, the number of dairy cows 35-225, the total animal capacities 71-453, 48-332 BBHB and 62.5-398.8 LU, the production of feed 327-2509 ton, the annual total milk production 235000-1750000 L and daily milk production 18.26-22.86 L per cow and year were determined. In addition, a large number of units such as the milking shed, the milk cooling and storage tank, the pressure washer system for cleaning milking parlours and the monitoring systems as well as manure conveyors, manure mixer research, fertilizer pump and fertilizer warehouses are available in all the farms investigated. As a result, it can be said that IPARD supported projects are environmentally friendly projects which take environnmental pollution into consideration and try to solve the waste pollution.

Keywords: Dairy farm, environmental pollution, freestall houses, IPARD.

[#]*This study is presented a part of MSc Thesis of Sümeyye Verde Şanlı.*

O 148. EVALUATION OF LOCAL BIODIVERSITY: CASE STUDY, ALBANIA

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ABSTRACT: The biodiversity of an area is composed of a wide variety of plant and animal species. The nature of the species is based on their origin. Types are classified in natural and cultivated. Cultivated plants and their distribution in an area is agrobiodiversity. The importance of agrobiodiversity is because it is one of the biological and economic resources. The distribution of agrobiodiversity is conditioned by climatic conditions, vertical zoning and economic issues of species. Local biodiversity assessments are of particular importance from an ecological point of view and economic development. One case of assessment is this study of local biodiversity in Albania. Albania is located on the western part of the Balkan Peninsula, between 39 38' and 42 39' latitude and between 19 16' and 21 4' longitude. The eco zone – Korça is situated on southeast Albania, on latitude 40º27' at South of Kaltaj Mountain and Trebicka Mountain and 40º57' at Nord to Kallamas (Prespa) and on longitude 20º19'' at West Korbej Mountain (Zerec) and 20º54' at East (Cerje).When planning vegetation evaluation in areas we based on information of data base and collect informatin concerning: total plant cover and single species cover, phenological stage, climatic conditon, altitude over level sea etc. The main objectives of the study were: to define the vegetation types of the study area of Korça and the main associations and evaluation of relation between vegetation and cultivated type plants based on the altitude over level sea. The plants of Korçe ecological zone are native. These plants have been adopted to eco-climatic conditions and above sea level. There are considerable changes from one micro zone to another. The agricultural zone is located near inhabited centers. The most typical plants from the study 2006-2007 years, are: at a height of 800-1200m we see: Forest trees, Bunga (Q. petreae) and Shrubs, Bush, Hawthorn (Cartagus), at a height of 1200-1900 m we see: Forest trees: Beech (Fagus sylvatika), at a height above 1900 m Alpine zone (Dry Mountain). The height of cultivated land goes to 700-1800 m. Vegetation types definite dusting the tabular method the Similarity Index of Jaccard.

Keywords: Biodiversity, vegetation types, bio climate factors, ecosystem cultivation

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O 149. ZERO WASTE AND SUSTAINABLE DEVELOPMENT

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ABSTRACT: Zero Waste Project which was launched actual by the Environment and Urbanization Ministry of Turkish Republic in 2017. Prevention of wastefulness and more efficient use of resources have been targeted and in this context, works has been carried out. A total of 1544 people have been trained in schools, public institutions and organized industrial zones and visited to public institutions / organizations, non-governmental organizations and associations within the scope of the project. Participation was provided for the activities of universities about zero waste in Konya Province. Competitions were organized to increase the awareness among children and teenagers. The registration of 2437 institutions and 40 municipalities were done to the Zero Waste Information System Implementation Module.18,875 tons of paper and cardboard was recovered, 12,797 tons of plastic, 3850 tons of glass and 7 tons of metal waste were recycled. 1.989 tons of waste batteries were collected. 35,529 tons of non-hazardous waste was utilized. Disposal of wastes without utilizing within the recycling and recovering process causes serious loss of resources both as material and energy. There is an unavoidable increase in consumption while population and living standards in the world are increasing, and this situation increases the pressure on natural resources and disrupts the balance of the World so limited resources cannot meet the increasing needs. Considering this situation, the importance of efficient use of natural resources becomes even more apparent. For this reason, in recent years, zero waste application studies in all over the world are spreading in both the individual, institutional and municipal areas.

Keywords: Zero Waste, Sustainable Development, environment, pollution, municipality

O 150. A RESEARCH OF PARTICLE MATTER LEVEL FROM QUARRIES INDUSTRY IN KONYA "ANKARA ROAD" DISTRICT

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ABSTRACT: Air quality is affected by many types of pollutants that are emitted from various sources, including stationary and mobile. These sources release both criteria and hazardous air pollutants, which cause health effects, ecological harm, and material damage. They are generally categorized as either particulates or gas-phase pollutants. Air pollution increases the risk of respiratory and heart disease in the population. Both short- and long-term exposure to air pollutants have been associated to health impacts. One of the air pollutants is Particulate Matter (PM) that can be found in the air as primary or secondary, by their formation's type. Particles smaller than 10 microns in diameter with air we breathe easily enter our respiratory tracts and cause various damages. In Konya, the points to sample the stone quarries and the crusher facilities determined for "Ankara Road" and the "Tecora" device had measured PM_{10} and $PM_{2.5}$ for six months. Measurements was done with "Tecora" brand dust meter, $PM_{2.5}$ and PM_{10} particulate matter suspended in the atmospheric environment has the feature of continuous measurement and recording.

Keywords: Air Pollution, Particulate Matter (PM), Modelling, Quarries Industry, Health

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P 1. DETERMINATION OF FATTY ACID PROFILE OF SOME EXTRA VIRGIN OLIVE OIL BY GC-FID

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ABSTRACT: Olive oil, differently from most vegetable oils, is a natural product obtained from olive fruits. It is a natural juice and can be consumed without further treatments, so it has been produced by mechanical extraction without chemicals and any treatment (Boskou, 2006). Environmental and seasonal effects, as well as the olive oil processing methods (Di Vaio et al., 2013), has been reported to affect olive oil composition and to create different categories of olive oil that has been established by the international organizations. Among the different types of olive oil, extra virgin olive oil which is the most valuable olive oil category. In this study, an automated gas chromatography system for determination of fatty acid profile of some extra virgin olive oils was used. It was seen that olive oil species analysed have high amounts of oleic acid mostly. The biggest oleic acid ratio was %72,25 in extra virgin olive oils analysed. With this study, the olive oils to be obtained from different regions of our country have been examined by chromatographic method and their results have been compared. With the results obtained, it is aimed to draw attention to the changes in the olive oil profile of our country and make important contributions to the literature.

Keywords: Extra virgin olive oil, fatty acid profile, gas chromatography

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P 2. APPLICATION OF GEOGRAPHICAL INFORMATION SYSTEM FOR LANDSLIDE SUSCEPTIBILITY MODELING IN THE TORTUM LAKE AND ITS NEAR VICINITY (NE TURKEY) USING INFORMATION VALUE METHOD

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ABSTRACT: Landslides are natural hazards. In many countries, landslide is a major issue to threaten the lives and property of people. In this paper, Tortum Lake and its near vicinity is chosen as a study area. Tortum Lake is located in the northern part of the Uzundere District, Erzurum, NE Turkey. The main objective of this research work was to model the landslide susceptibility in study area using geographical information system (GIS) and data-driven bivariate statistical approach involving information value model. Landslide locations within the study area were identified using literature search of historical landslide records, aerial photographs and a field survey. Nine landslide-conditioning factors, including slope degree, slope aspect, altitude, lithology, vegetation coverage, soil type, geomorphology, curvature and topographic wetness index (TWI), were considered in the generation of landslide susceptibility model (LSM). The all data layers were extracted from digital elevation model (DEM), geological and topographical maps and Landsat satellite images, then were integrated on GIS software to produce the LSM of the study area. The generated LSM was validated and the results of validation show that the success rate and the prediction rate of the model are 68.1% and 71.4% respectively.

Keywords: Geographical Information System (GIS), Remote Sensing (RS), Landslide Susceptibility Modeling (LSM), Landslide Conditioning Factors (LCFs), Information Value Method (IVM), Tortum Lake

P 3. ENERGY EFFICIENCY AND CARBON EMISSION POTENTIAL COMPARISON OF HEATING SYSTEMS

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ABSTRACT: The aim of this study is to create a decision-making methodology for fuel performances and greenhouse gas emissions of heating systems by considering combination of financial and non-financial criteria, which are dependent on the region and the people, and to show logical choices numerically. For this purpose, a specific building with its architectural drawings was specified and heat loss equations were observed by using MS Excel according to TS 825- Thermal Insulation Requirements for Buildings .Calculations of heat loss were performed separately for four different types of heating zones in our country by selecting different cities in these zones. Bu using heat losses that were calculated based on placing the building in different zones, different types of heating strategies were determined. Moreover, fuel costs, installation cost and greenhouse gas emissions were determined based on different fuel usage ratios. These calculations and observed criteria were investigated and tried to explain. The results of the comparison of these selections was given in this present study.

Keywords: Heating systems, Fuel calculation, Greenhouse gas emissions, TS-825 Thermal Insulation Requirements for Buildings

P 4. IMPROVEMENT OF DRUG PRODUCTION PROCESSES: EFFECT OF ACTIVE SUBSTANCE PARTICLE SIZE DISTRIBUTION ON THE PRODUCT DISSOLUTION RATE

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ABSTRACT: One of the most prominent features of our age is the effects of strong changes that affect almost everything. So, the companies should adapt to their environment and obtain competitive advantages by renewing at the required levels, improving their processes and offering the products with high quality level at the optimum cost [1]. When the critical parameters in the processes are taken under control, it is known that the inefficient processes are reduced by rejection of inappropriate products and limitation of waste in the companies [2]. When the factors affecting the solubility and dissolution rate of molecules are listed, it has been reported that organic molecules with higher molecular size have less solubility in water than small molecules. And also, the solubility of the molecules generally reduces with increasing molecular weight [3]. In this study, a nonsterile solid form finished product including active substance named "moxifloxacin" was used and tested. The effects of particle size of the active substance on the quality of a film tablet form product including moxifloxacin were investigated. The data as shown in Table 1 were statistically analyzed and supported by case studies. As a result, optimum particle size distribution for product dissolution rate in the drug production process was determined.

Table 1. Optimum particle size distribution for moxifloxacin

		Sieve size (µm)	Amount remaining on the sieve (%)
Sieve analysis (Process optimization)	100 g	710 µm	0.3 – 4.0
		250 µm	20.0 – 40.0
		106 µm	30.0 – 55.0
		25 µm	20.0 – 30.0
		<25 µm	0

Keywords: Particle size distribution, high quality production in the pharmaceutical industry, continuous improvement, critical process control parameters

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P 5. DETERMINATION OF LINEAR AND NONLINEAR OPTICAL BEHAVIOUR OF NOVEL TETRAAZAMACROCYCLE DERIVATIVES

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ABSTRACT: In this study; the electric dipole moments, static first and hyperpolarizabilities, dynamic linear polarizabilities, first and second hyperpolarizabilities of the title tetraazamacrocycle compounds, (6E,8E,15E,17E)-7,16-bis(3,3-dimethyl-3H-indol-2-yl)-2,3,11,12-tetrakis(octyloxy)-5,14-dihydrodibenzo[b,i][1,4,8,11]tetraazacyclotetradecine (**1**) and (6E,8E,15E,17E)-7,16-bis(3,3-dimethyl-3H-pyrrolo[3,2-h]quinolin-2-yl)-2,3,11,12-tetrakis(octyloxy)-5,14-dihydrodibenzo[b,i] [1,4,8,11] tetraazacy clotetradecine (**2**), have been calculated using ab-inito and density functional theoery (DFT) methods. The measured one-photon absorption wavelengths for **1** and **2** are consistence with the theoretically obtained values using time-dependent Hartree-Fock (TDHF) technique. The nonlinear optical results computed here have been compared with the experimental data previously reported in the literature.

Keywords: Electric Dipole Moment, First Hyperpolarizability, Second Hyperpolarizability, Ab-Initio, Time-Dependent Hartree-Fock

P 6. STRENGTHENING OF RC BEAMS SUBJECTED TO CORROSION UNDER THE EFFECT OF FLEXURAL

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ABSTRACT: As a result of the failure of the reinforcement to resist corrosion, it is known to have a negative effect on the structural performance and structural safety under the influence of the earthquake. During the seismic evaluation of existing buildings, it is recommended to consider the corrosion effects in a multidimensional manner. Reduction of reinforcement diameter, loss of adherence, change of concrete cracks and mechanical properties of reinforcement are the main results of corrosion. As a result of corrosion, mass-section loss occurs in the reinforcement, concrete is cracked without any load, loss of adherence occurs, mechanical properties of reinforcement are adversely changed. There are different repair / reinforcement methods to solve these negative consequences in reinforced concrete structures. Fiber Reinforced Polymer is one of the most important methods that need to be investigated. In the scope of the project, an experimental study was carried out by considering the bending effect in structural analysis. In this study, 6 x 25x40x250 cm beam samples were produced. As a result of rusting, the behavior of the test specimens under bending, ductility, load-displacement relationship, moment-curvature relationship, adherence-slip relationship, crack width and distribution were investigated. Secondly, reinforced concrete beams rusted with 6%, 10% and 18% strengthened by FRP were investigated and the effect of FRP on corrosion and bending was investigated. The results obtained have helped to better evaluate the seismic performance levels of the building due to the comparison of the bending strength of reinforced concrete beams with different rust ratios before / after reinforcement.

Keywords: Corrosion, FRP, Strengthening, Flexural Effect

P 7. DIATOM COMMUNITY FROM EPIPHYTIC ALGAE IN DIFFERENT DEPTH SAMPLES FROM "GUR I KUQ" STATION IN OHRID LAKE

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ABSTRACT: This paper aims to present data regarding diatom community, at "Gur i Kuq" sampling site, in Lake Ohrid. Samples are collected like epiphyte in macrophyte on July 2011, in different depth from the shoreline (0.5m, 1.3m, 5m, 7m, 8.5m, 10m, 13m, 17m, 19m, 20m). There is no comprehensive and systematic review of the distribution of the endemic species in Lake Ohrid and its watershed, but probably a high number of endemic diatom species are distributed throughout the lakeFrom the microscopy examination, the most dominant species belong to pennates genera. The most abundant diatom species were: *Cyclotella ocellata* (Pantocsek), *Achnanthes minutissima* (Kützing agg.), *Amphora pediculus* (Kützing) Grunow, *Cymbella amphicephala* Naegeli, *Cocconeis placentula* var. *placentula*, *Cymbella microcephala* Grunow gr., *Cocconeis pediculus* Ehrenberg, etc., which are characterized by a specific distribution, morphological variability and ecology. Some of diatoms species were found rarely which included: *Nitzschia palea* var. *palea* (Kützing) W. Smith, *Nitzschia dissipata* (Kützing) Grunow, *Navicula cari* Ehrenberg, *Gomphonema olivaceum* var. *olivaceum*, *Diatoma vulgaris* Bory, etc. Individual species of diatoms have specific preference to habitat and requirement for water chemistry. In this sampling sites, Lake Ohrid, shows metal pollution, because more years ago, in this station has been active the mines of chromium, nickel and iron. The values of heavy metals are higher in the shoreline if we compare with different depth, which is reflected in the number of different species.

Keywords: Diatom community, epiphytic, Ohrid Lake, mines zone

P 8. AN OVERVIEW OF SOIL REMEDIATION TECHNOLOGIES

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ABSTRACT: Soil pollution is one of the most important environmental problems the world is facing nowadays. The impacts of soil pollution are definitely very important because the pollutants pass through the food chain, the ground water is polluted by these contaminants, humans may be subjected to adverse health effects, and the remediation of a contaminated land generally has a high cost and this process is mostly time consuming. In fact, pollutants directly and indirectly affect the three environments, namely air, water and soil. Soils can be contaminated as a result of air pollution and contaminated surface water used as irrigation water. Improper waste disposal, the excessive use of chemical fertilizers and pesticides in agriculture are among the other reasons for soil pollution. Contaminated soils can be remediated and there are various methods for the remediation of contaminated soils. However, it should be kept in mind that the priority is to protect the soils from contamination and to take the necessary precautions to prevent soil pollution. The technologies used for soil remediation can be divided into three categories as physical/chemical, biological and thermal methods. This review includes an assessment of soil remediation technologies considering geotechnical aspects. In this review, the recent studies on soil remediation are also overviewed.

Keywords: Soil, Pollution, Remediation, Geotechnical engineering

P 9. ASSESSMENT OF WATER QUALITY IN THE DIFFERENT DEPTH OF OHRID LAKE (ALBANIAN PART) BASED ON DIATOM INDICES

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ABSTRACT: Since many years, the siliceous algae (diatoms - *Bacillariophyta*) are used to evaluate the ecological state of surface fresh water. Lake Ohrid is the deepest lake of the Balkan, with a maximum depth of 288 m and a mean depth of 155 m. The data about water quality in Ohrid Lake, which are presented in this paper, are based in diatom composition in different depth. The diatoms communities were collected like epiphyte in macrohytes, in different depth of three sampling sites (Hudënisht, Gur i Kuq and Mëmëlisht) during yrs. 2011. Most of the species in Ohrid Lake are oligotraphent, growing up only in clean waters with low nutrients, like: *Achnanthes minutissima*, *Navicula cryptotenella*, *Cymbella microcephala, Nitzschia denticula*, *Fragilaria capucina*, etc. Other species of highest vitality in stronger mesotrophic to eutrophic waters were observed, like: *Amphora pediculus*, *Cocconeis pediculus*, *Gomphonema pumilum*, *Gomphonema olivaceum*, *Cymbella minuta*, *Diatoma vulgaris var. vulgaris*, etc. The ecological preference groups of diatoms reflect the chemical character of different streams. Such changes in diatom community structures suggest a change in environmental conditions such as, for example the deterioration of trophic status observed in Ohrid lakes. From a rough estimation of diatom species based on two standards: EN 13946:2003 and EN 14407:2004, we have calculated the Shannon Index, which gave evidence of biodiversity variations over the seasons and some differences between sampling sites. The Saprobic Index oscillated within a small band, indicative for oligo-β-mesosaprob to β-mesosaprob conditions. The Trophic Diatom Index (TI_{DIA}) and the Saprobic Index (SI) follow similar trends. The structures of the diatom communities reflect real environmental changes. These states are confirmed also by relative activities, such as: from mine and from agriculture land into the watershed area.

Key words: Ohrid Lake, diatoms indices, epiphyte in macrophyte, ecological assessment

P 10. THE IMPORTANCE OF FORAGE KOCHIA (Kochia prostrata (L) Schrad) IN RANGELAND IMPROVEMENT AND THE RESEARCHES CARRIED OUT IN KONYA CONDITIONS RELATED TO FORAGE KOCHIA

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ABSTRACT: Forage kochia (*Kochia prostrata* (L) Schrad Syn. *Bassia prostrata*) belonging *Chenopodiaceae* family is a perennial semi-evergreen sub-shrub species. This species which grows naturally in Turkey's rangelands is tolerance to drought, cold and salinity. Moreover, forage kochia remains green during dry fodder period, and cattle, sheep and goat graze gladly on the forage. While this species green fodder has got 13-18% crude protein, the crude protein ratio in dry fodder is between 9% and 11%. In a research carried out in Konya was determined as crude protein 17% DM, NDF 43% and ADF 32%. Immigrant and Snowstorm forage kochia varieties have 150-250 kg da^{-1} hay yield. However; in the search carried out Konya was stated that the populations belong the Konya province had got 107- 258 kg da^{-1} hay yield. Forage kochia is used in drought and salty rangelands improvement in the world. In our country, forage kochia have a high potential for economic yield obtain from rangelands having salinity and drought problems in KOP region. For this reason, the practices to rangeland improvement with forage kochia are started especially in Konya. This review's target is awareness arising from the importance of forage kochia by stating researches carried out and work in progress in Konya Selcuk University related to forage kochia.

Keywords: Forage Kochia, Bassia prostrata, Hay Yield, Rangeland Improvement

P 11. THE INVESTIGATION OF DEGRADATION OF RHADOMINE B DYE BY USING SILVER DOPED FE-MMT NANOCOMPOSITE

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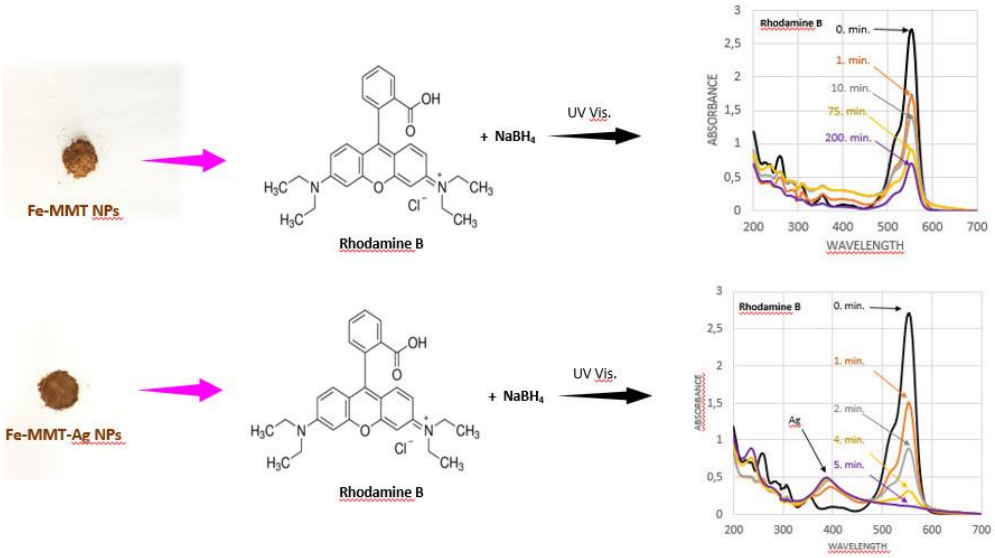
ABSTRACT: Nowadays, synthetic dyes used in industries such as leather, textile, plastic, paint, paper, food, printing, pharmaceuticals and cosmetic pose a serious threat. These dyes have a carcinogenic and toxic effect. Also, these dyes are much dangerous for ecosystem living beings as well as human life [1]. Rhodamine B (RhB), the kind of these synthetic dyes, is mostly used as a colorant in foodstuff and textile [2]. The adverse effects such as carcinogenic, neurotoxicity and chronic toxicity have been reported experimentally harmful toward humans and animals [3]. On that note, removal of RhB is an issue to consider. In this study, silver doped magnetic-clay (Fe-MMT-Ag) nanocomposite was synthesized and characterized by SEM, XRD and IR. Fe-MMT-Ag nanocomposite was used in order to degradation of RhB (Figure 1.). Sodium borohydride ($NaBH_4$) used as reducing agent during the dye degradation experiment. Fe-MMT-Ag exhibited high RhB removal rate, which reached 96,4% within 5 min. However, when Fe-MMT used alone in order to degradation of RhB, reached %75,98 within 200 min. As a result, when used Ag doped Fe-MMT nanocomposite there has been a significant improvement in the degradation of RhB. Fe-MMT magnetic nanoclay has lower and weaker catalytic properties compare to Ag doped Fe-MMT nanocomposite. Briefly, the catalytic effect of silver was evident.



Keywords: Rhodamine B, Silver, Nanocomposite, Degradation

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P 12. PHYSIOLOGICAL INVESTIGATION OF DEVELOPED HYBRID BREAD WHEAT LINES UNDER HIGH BORON AND SALT APPLICATION

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ABSTRACT: In order to enable agriculture in the areas with restricted use for supporting the rapidly growing world population, there is a need to develop grain crops that can be grown in stress conditions. Wheat production is limited by many abiotic stresses, such as nutrients deficiency or toxicity. Stress conditions such as salinity and boron toxicity that are generally seen together in arid and semi-arid regions adversely affect the growth in plants and limit the production efficiency. Although most studies have been focused on the boron deficiency depending on the general soil situation in the world, it is known that plants are exposed to boron toxicity in many regions of the world including Turkey which has the richest boron deposits in the world. The most appropriate method towards boron toxicity and salinity problems is the identification and the development of boron and salt toxicity tolerant plants. In this study, it was aimed to develop tolerant bread wheat varieties that can be grown in the regions with boron and salt toxicity problems in soil. In the experiment, along with the salt tolerant Australian genotypes, boron toxicity tolerant Turkish genotype, Bolal and developed backcross3 wheat population (BC3) containing the salt tolerant Nax1 and Nax2 genes were involved. Hence, the effects of the functions of the salt tolerant genes present in the BC3 population on growth parameters and plant EC content were investigated in this study.

Keywords: Backcross, Boron Toxicity, Salt Stress, Bread Wheat, Breeding

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P 13. DETERMINATION OF TOTAL AND ACTIVE IRON CONTENT OF STRAWBERRY GENOTYPES GROWN IN TURKEY

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ABSTRACT: Strawberry is a fruit that is available in the market when fresh fruits are limited, cultivated in different climatic zones, its investments are returned in short time, is suitable for small family business and preferred for consumption by human being. Due to cultivation of strawberries under various soil environments, producers face several challenges. Central Anatolian region of Turkey with arid and semi-arid climate suffers from iron deficiency due to low organic matter content, high pH and lime characteristics of the soil. This causes chlorosis in plants that are sensitive to iron deficiency. The occurrence of iron deficiency may vary between species and even genotypes. For the determination of iron deficiency in plants, it is not possible to determine the amount of iron available in plants by only analyzing the total Fe content of the plants. Hence, it is necessary to determine the active Fe content which is metabolically used by the plants. For this study, 12 strawberry varieties grown in Turkey with 4 replicates each, were tested under greenhouse conditions to determine their response towards different iron supply, that were 0 ppm Fe and 10 ppm Fe. Results demonstrated that G2, G11, and G12 genotypes had the highest total Fe content during the flowering periodwith respect to Fe fertilization. However, active Fe concentrations were found to be the highest in G4, G1, and G3 strawberry genotypes under Fe application. The results showed that the use of iron-enriched fertilizers increased the active iron content in plants.

Keywords: Strawberry, Iron, Total Fe content, Active Fe content

P 14. PHYSIOLOGICAL CONFIRMATION OF ROLE OF SALT TOLERANT GENES IN DEVELOPED TURKISH DURUM WHEAT GENOTYPE

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ABSTRACT: Environmental pollution, soil and water salinity leads to a reduction in global water resources. The decrease in the agricultural land due to the increasing human population is a major threat for agricultural sustainability. Various abiotic stresses such as strong winds, extreme temperatures, soil salinity, drought and floods affect the cultivation and production of agricultural products. Among different abiotic stresses, soil salinity is one of the most destructive environmental stresses for cultivated land area, which leads to a decrease in product yield and quality. A large part of Turkish soil has high pH and salinity characteristics. Therefore, plant nutrients are not available for plants in suitable forms. Being an important cereal for world including Turkey, it is beneficial to develop wheat genotypes that are tolerant to abiotic stresses. Given the absence of the D genome in durum wheat, it is less tolerant towards salt stress. Mirzabey, one of the most common durum wheat varieties produced in Turkey, and Australian durum wheat lines, 5004 and 5020-7 containing Nax genes were crossed and salt tolerance genes were transferred. Thus, in this study, Mirzabey genotype, 5004 and 5020-7 wheat lines, and 3rd generation back-crossed hybrid populations were used as the experimental material. Two salt doses, 0 mM NaCl and 100 mM NaCl, were administered. The growth parameters of the studied material and the leaf EC contents were examined. On the basis of the measured physiological parameters, the plants with the transferred salt tolerant Nax genes were more resistant towards salt stress.

Keywords: Durum wheat, salt stress, backcrossing, MAS

P 15. ESTIMATION OF MANCOZEB-BASED FUNGICIDES AS POTENTIAL POLLUTANTS BY INDUCEMENT OF PHYTO- AND GENOTOXICITY ON ALLIUM CEPA L. ALBANIAN ECOTYPE DRISHTI

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ABSTRACT: Pesticidal pollution issues are increasingly occurring all over the world. In order to estimate the potential polluting effects of some Mancozeb-based fungicides the present study investigated their phytotoxicity and genotoxicity on seeds and root meristematic cells of Allium cepa L. Albanian ecotype Drishti. Seed germination capacity, root length, evaluation of EC50-s, mitotic index, frequencies of micronuclei, chromosomal aberrations and types were applied as toxicity indicator parameters after the treatment under three time exposure periods (24, 36 and 48 hours) of biological materials with four concentrations (0.04-1.6%) of AGRIA-MANCOZEB 80 WP, MANFIL 75 WG and DITHANE M-45 blue 72 WP. The result revealed limitation in seed germination and significant root growth restriction mainly after 36- and 48 hours exposure of Manfil and AGRIA-MANCOZEB, having even EC50 values included into field applications. Cytological parameter values decreased negatively correlated with fungicide concentrations and time treatments addition showing obvious reduction of meristematic activity and increased chromosomal abnormalities and micronuclei incidence particularly at the highest concentrations of fungicide samples after 48 h exposure. The current data distinctly emphasized the phyto- and genotoxic effects on a non-target crop and assay as onion of all investigated mancozeb-based fungicides, broadly used in Albanian agriculture during the last decade, demonstrating their potential pollution impact on environmental and human population health of the surrounding ecosystems. Our findings should serve as a prominent alert for the prospective risk situation caused from indiscriminate use of fungicides, their active ingredient purity and toxic consequences on food chain organisms.

Keywords: Environmental pollution, Mancozeb-based fungicides, Allium cepa L. assay

P 16. THE PROTECTION OF BEE PRESENCE IN PASTURELAND

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ABSTRACT: The honeybee is vitally important creatures to supply of foodstuffs such as honey, nectar, pollen, royal jelly, etc. and being pollinator of about 77% of 82 plant species which are used as edible in the world. The bee presences are decreased day by day in our country and the whole world due to using pesticide, overgrazing like similar reasons. The pastureland, which is natural areas are not only a forage source for cattle, sheep, and goat, but also these areas provide survival changes of other creatures in nature. Increasing beekeeping activity in rangelands can be obtained to quality honey production from these areas and enhance to spread of the plants which are pollinated by honeybees in pastureland as the increase in these plants seed yields. For this purpose, forage crops using in rangeland improvement to the protection of bee life and enhancing of bee presence are sainfoin (Onobrychis sativa), chickpea milkvetch (Astragalus cicer), dandelion (Taraxacum officinale), wild rocket (Diplotaxis tenuifolia), etc. These forage plants having long blooming period could be meet a nectar needs of the bees. In this review inform about actions to be taken for the protection of bee presence, and forage crops which can be used for that purpose.

Keywords: Beekeeping, Forage Crops, Rangeland Improvement, Rangeland Yields

P 17. EFFECTS OF ELEMENTAL SULFUR AND K-HUMAT ALONGSIDE FESO4 AND FEEDDHA APPLICATIONS ON IRON NUTRITION OF CORN

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ABSTRACT: This study was aimed at determining the effects of $FeSO_4.7H_2O$ (19% Fe) and FeEDDHA (6%) compounds, which were supplied with elemental sulfur and K-Humat on the active and total iron content of corn plant in greenhouse conditions, and the study was conducted with four replications according to a randomized complete block design. In the experiment, 0 (control) and 10 mg Fe kg^{-1} iron were applied to soil before planting. $FeSO_4.7H_2O$ (19% Fe) and FeEDDHA (6%) with an ortho-ortho isomer of ratio 6 as an iron source were used in the study. Ferrous sulfate alone, 400 mg kg^{-1} elemental sulfur and 250 mg kg^{-1} K-humate were applied in 3 different forms. ANT CIN 98 corn variety was cultivated in an experimental soil characterized by mild alkaline reaction (7.53), clay loam texture, high lime content (28%), poor organic matter (1.68%) and insufficient level of iron (1.21 mg kg-1). In the experiment, it was determined that the active and total iron contents of the corn plant leaves varied depending on the iron sources and this change was statistically significant at 1%. While the active and total iron contents in the leaves of corn plant were 18.2 and 50.9 mg kg^{-1} in the control , respectively, these values respectively increased in the ratio of 26% and 28% by FeSO4.7H2O, 15% and 5% by FeSO4.7H2O + Elemental S, 73% and 28% by FeSO4.7H2O + K-Humat, and 95% and 37% by FeEDDHA application. In addition, although iron supply of corn plant was sufficient in all applications according to the total iron contents of plant leaves (50-250 mg Fe kg-1), iron deficiency symptoms were observed in control, FeSO4.7H2O and FeSO4.7H2O + Elemental S applications. Under this circumstance, it shows that the total iron content of the plant leaves is not an important indicator for determining the iron nutrition status of the corn plant and also increase in total and especially active iron contents of the plant by the application of these sources is not sufficient. FeSO4.7H2O + K-Humat and FeEDDHA applications did not show any signs of iron deficiency in corn plant leaves. Thus, we think that the iron content is higher than the control, rather than the increase in the total iron content of the leaves with the application of these sources. As a matter of fact, it was observed that the ratio of the active iron content in the total iron was 51% for FeEDDHA, followed by FeSO4.7H2O + K-Humat with 48%, FeSO4.7H2O + Elemental S with 43%, Control with 36% and FeSO4.7H2O with 32%. The failure of FeSO4.7H2O + Elemental S in the iron nutrition of the plant was due to the lack of pH decrease induced by sufficiently conversion of the elemental S to sulphate by the microbial pathways and the low organic matter in the soil. It was also determined that FeEDDHA was the best source of iron in terms of feeding of the plant while FeSO4.7H2O + K-Humat could be preferred in terms of economic status.

Keywords: Active iron, FeEDDHA, FeSO4.7H2O,, elemental S, K-Humate, corn, total iron

P 18. THE EFFECT OF PHYSICAL HETEROGENEITY ON THE USABILITY OF BASALTS AS RAILWAY BALLAST: A CASE STUDY FROM THE EVCİLER BASALTS, ANKARA-CENTRAL TURKEY

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ABSTRACT: The quality of railway ballast has a profound effect on the maintenance of integrity of railway. Therefore, ballast materials are expected to fulfill many specific criteria, such as crack-free, low porosity and clay content, high compressive strength, resistantance to abrasion and weathering etc. Basalts are widely used as railway ballast worldwide. Based on field observation, petrographic and physico-mechanical tests, we investigated the usability of the Evciler Basalt (Elmadağ Volcanic Complex-EVC, Ankara) as railway ballast in this study. The EVC is one of the most important Miocene volcanic field, comprising mafic mildly alkaline and intermediate to felsic calc-alkaline lavas. The mafic lavas are called as the Evciler basalts and represented by alkali basalts. They display porphyritic texture with olivine and clinopyroxene phenocrysts in an intergranular groundmass including mainly plagioclase, clinopyroxene, lesser opaque and rare anorthoclase. The field characteristics of the basalts resemble those of "aa lavas". Based on the field observations, we identified three zones from top to bottom in a few meters cooling unit of the basalts: (A) a vesiculated flow top, (B) a massive interior, and (C) a basal breccia. Following the physico-mechanical tests, we observed that water absorption, Los Angeles abrasion and magnesium sulphate soundness of the zone B are the lowest, but particle density of the zone B ranges between those of the zone A and C. Based on the obtained data, we found that the zone B is appropriate for ballast material in just conventional railway rather than the zone A and C. Accordingly, our findings show that small-scale vertical physical heterogeneity is so high in a basaltic flow, and it is advised to be careful for selection of ballast material from basaltic volcanic rocks.

Keywords: Railway Ballast, Physical Heterogeneity, Basalt, Evciler, Ankara

P 19. INVESTIGATION OF THE CHANGES THAT OCCUR IN CARROT PLANT IN BORON DEFICIENCY AND TOXICITY CONDITIONS

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ABSTRACT: Stress factors that affect the growth and development negatively and cause physiological and metabolic changes can lead to a decrease in product quality and quantity. As a result of the deficiency or toxicity of plant nutrients, the plant cannot fulfill its metabolic function. In our country's Central Anatolia Region, micro-elemental problems are experienced in a large proportion. Boron is one of these elements. Boron deficiency is observed in 26.6% of our region's soils and boron toxicity in 18%. For this reason, determination of mechanisms of resistance to boron deficiency and toxicity of plant species grown in the soils of our region play an important role. In this study, it is aimed to investigate the physiological changes of inadequate and toxic levels of boron applications, in the development of the carrot plant, which is important in our country and agricultural region. The Nantes-Orange Carrot variety, which is commercially important, was used in the study. After the seeds fully germinated into seedlings, Hoagland nutrient solution control, (0mM B), 0.5 mM B, 1 mM B, 2 mM B containing nutrient solutions were given. Changes occurring in the carrot genotype in boron deficiency and boron toxic conditions were compared with the control group. Basic growth parameters and B element contents of the stem were determined. In the carrot variety, with respect to the control, reductions occurred in the plant height, and the plant fresh and dry weight values under boron deficiency conditions and boron toxic conditions. It was determined that the greatest decreases occured in boron 0 ppm B and 2 mM B doses.

Key Words: Boron Toxicity, Boron Deficiency, Carrot.

P 20. INVESTIGATION OF DROUGHT TOLERANCE MECHANISM IN THE ROOTS OF PUMPKIN GENOTYPES

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ABSTRACT: Drought is one of the most important factors affecting agricultural production within environmental components. Drought stress, when the usable areas in the world are classified according to natural stress factors, has the highest share (i.e. 26%). The product quality of the cultivated plants exposed to drought stress is adversely affected and leads to loss of productivity. For this reason, it is important to determine the plant species resistant to drought stress, to explain the tolerance mechanisms and to determine the factors that increase or affect the drought resistance of the plants. In this study, 6% PEG 6000 was applied in a Hoagland nutrient solution to create osmotic stress in pumpkin genotypes. In the study, the previously genetically determined sensitive genotype C-27 (Cucurbita pepo L.) and the drought-tolerant C-26 (Cucurbita pepo L.) genotype were used. Measurements of root size, and root fresh weight and root dry weight values of pumpkin genotypes increased compared to the control in the C-26 genotype while, decreases in the C-27 genotype were observed. It has been determined that PEG 6000 application increases H2O2 accumulation in pumpkin genotypes. In addition, it was determined that the scavenging activity of the pumpkin genotypes exposed to drought stress increased and that these increases were greatest in the C-27 genotype.

Keywords: Pumpkin, Drought stress, H_2O_2

P 21. PURE TORSIONAL MOMENT CAPACITIES OF FULL-SCALE REINFORCED CONCRETE BEAMS SUBJECTED TO CORROSION

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ABSTRACT: The negative results resulting from the corrosion of reinforced concrete reinforcement are important for the investigation of corrosion in the reinforced concrete reinforcement. Corrosion affects the performance levels of reinforced concrete structures in addition to shortening the service life of the economic sense, and in the following stages of the destruction of structures can lead to destruction. With the resulting corrosion; the reduction of the reinforcement cross-sectional area leads to negative results such as the volume increase caused by the corrosion product and the decrease in the bond strength between the concrete and the reinforcement. With these results, the bearing capacity, bending and torsional strength of reinforced concrete elements are reduced, and the targeted building performance is avoided. Studies on estimating the bending behavior of rusted reinforced concrete elements are sufficiently available in the current literature; The behavior of rusted reinforced concrete elements under the effect of simple torsion has not been studied yet. This behavior, combined with the primary crack widths formed by corrosion, adversely affects the torsional stiffness according to the cracked section. For this purpose, 6 reinforced concrete beams of C25 concrete class were rusted at different rates by using accelerated corrosion method. In order to obtain the real corrosion rates, the reinforced concrete reinforcements were removed by mechanical and chemical cleaning before the beams were removed after the loading tests. In order to find the actual mass losses of all windings and longitudinal reinforcements, the masses of the reinforcements in the precision balance were recorded and compared with the first masses and the actual corrosion rates were also obtained. At the end of the experiment, the effects of the actual corrosion rates on the torsional moment capacity of the reinforced concrete beams, moment-curvature relations, crack width and distribution were investigated. Corroded reinforced concrete beams torsion behavior by examining; It is thought that torsional strenght can be a model for estimating the torsional moments of corroded reinforced concrete beams with the help of emprical model which is developed depending on the corrosion rate and thus to evaluate existing structures.

Keywords: corrosion; steel bars; pure torsion; beams; reinforced concrete.

P 22. REMOVAL OF METHYLENE BLUE FROM WATER BY USING CHITOSAN-CARBON BASED COMPOSITE MEMBRANES

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ABSTRACT: Chitosan and its modified forms are widely used for the removal of contaminants from aqueous solutions due to their several advantages such as being biocompatible and biodegradable, non-toxic and having a suitable hydrophilic property. In this study, a vinasse based biochar-chitosan composite membrane was prepared and its potential for the removal of methylene blue from aqueous solution was investigated. For this purpose, composite membranes were prepared by using different amount of biochar and chitosan dissolved in 1% (v/v) acetic acid and FT-IR, SEM and TGA techniques were used for their characterization. It was shown that the resulting membranes could be successfully used for the removal of methylene blue from aqueous solution.

Keywords: Chitosan, Vinasse, Biochar, Composite membrane, Methylene blue

P 23. SYNTHESIS OF SOME HYDRAZIDE-OXIME AND INVESTIGATION OF THEIR ANTIBACTERIAL PROPERTIES

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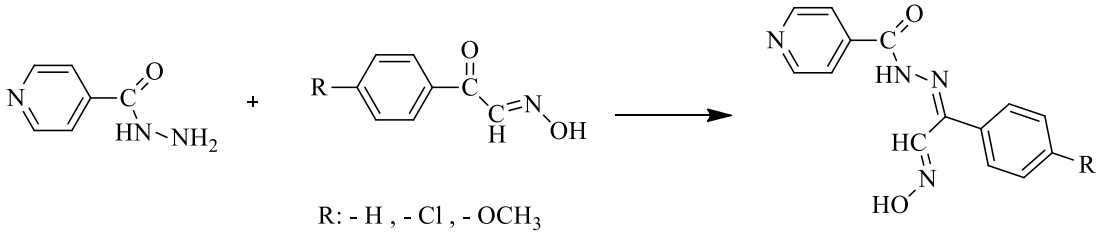
ABSTRACT: Oxime compounds and their derivatives are effective on chelate formation, biodegradability, as well as photochemical and biological reactions. Nowadays, studies on the antibacterial properties of oxime and its derivatives and the synthesis of compounds demonstrating new antibacterial properties have gained importance. In this study, the hydrazide compounds known to have antibacterial properties were synthesized by condensation of some oxime compounds with hydrazide-oxime derivatives were synthesized and their effects against some bacteria were investigated. For this purpose, isonitrosoacetophenone (keto oxime) derivatives were synthesized from acetophenone, 4-chloroacetophenone, and 4-methoxyacetophenone. Then, The N-[2-(hydroxyimino)-1-(phenylethylidene)] isonicothiohydrazide and its derivatives were synthesized from their condensation reactions with isonicotinic acid hydrazide. The structures of these compounds have been elucidated using available literature information and FT-IR, ^{1}H-NMR techniques.



Furthermore, the anti-bacterial effects of synthesized substitute hydrazide-oxime derivatives against Escherichiacoli ATCC 25922, Pseudomonasaeruginosa ATCC 15442, methicillin-sensitive Staphylococcus aureus ATCC 25923 (MSSA), Klebsiellapneumoniae ATCC 70603, Salmonella enteritidis ATCC 13076 and Sarcinalutea ATCC 9341 strains were investigated.

Keywords: Oxime, Hydrazide-oxime, Antibacterial Properties

P 24. CHARACTERIZING OF THE RAW MATERIALS AND UTILITIES FOR THE LABORATORY-SCALE BIODIESEL PRODUCTION

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ABSTRACT: Nowadays it is a well known fact that biodiesel is a renewable resource based fuel for use in diesel engines. From the most of the studies refered in the specialized literature it can be made from various oils including corn, soybean, canola, cottonseed, peanut, etc. and from animal fats, but as usually it has a more scientific term as Fatty Acid Methyl Ester (FAME). The oils and fats contain triglycerides that are chemically converted into FAME by a process called "transesterification" and the fuel produced is more environmentally friendly than petroleum diesel.
Raw materials for the biodiesel production can be as follows: vegetable oils, grases from the animal wastes and recycled; but also the waste cooking oils which has been main objective of our study. These materials all have considerable content of the triglicerides, free organic fatty acids, and other ingeredients as contaminants of them, strogly depended from the way of their pretreatment before delivery. We have considered mais olive, wheat oil, sunflower oil, soya oil, coton oil, palm oil; as well as waste cooking oil from restorants and fast food bars, caw and pig grease, etc. Since biodiesel is an ester of the fatty acids it is needed also a specific catalyst for the facilitating the starting of the transesterification process, and we have used both basic and acidic chemically content of it. Also, for the biodiesel production there are necessary some utilityes and auxiliary materials, which we have characterizing them all for the study performed in the laboratory scale. The characteristics of all the raw and other needed materials we have shown in the full version of our paper.

Keywords: biodiesel, renewable resource, waste cooking oil, transesterification, catalyst

P 25. ASSESSMENT OF PARTICULATE MATTER AND CRUSHED POWDER IN INDUSTRIAL AREA OF VAN PROVINCE

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ABSTRACT: In this study, air pollutant parameters spreading from the ready-mix concrete plant located in Çaldıran District of Van province were investigated within the scope of Particulate Matter (PM_{10}) and Decayed Dust Industry Air Pollution Control Regulation of Turkish Republic. TS 2342 standard method for the measurement of precipitated dust was used, while the TS EN 12341 standard method was used to measure Particulate Matter (PM10). Mass flow rate of dust emissions from concrete production activities in the ready mixed concrete plant with over one kg/h as a result of mass production. Industrial Air Pollution Control Regulation Annex-2 is higher than the values given in Table 2.1 was performed with AEORMOD modelling programme. According to modelling results; Concrete Production of Ready-Mixed Concrete Plant will originate from Controlled Requirements; Additive value to air pollution of 24 hour particulate matter (PM) emissions is 14,86 µg/m^3, contribution to air pollution of annual particulate matter (PM) emissions is 0.68 µg / m^3, 12.36 mg / m^2 / day for collapsing dust emissions and 1.324 mg / m^2 / day for collapsed dust emissions.

Keywords: Particulate Matter, air quality, Van Province, Industry, air pollution

P 26. ATMOSPHERIC DEPOSITION OF AIR POLLUTANTS

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ABSTRACT: Air pollution and its effects are important environmental problems. There are various gas and particulate pollutants that are released into the atmosphere by natural and anthropogenic sources or formed in the atmosphere.These pollutants in gas form (SO_2, NO_x, VOCs etc) and particulate form (PM_{10}, $PM_{2.5}$ etc) can affect human and living lives and cause material damage. The concentration of these pollutants in the atmosphere may decrease forms temporally or spatially according to proximity of the source and meteorological conditions. The removal of pollutants from the atmosphere can take place in two different ways. Pollutants can be transferred from atmosphere to other environmental ecosystems wet deposition when precipitation (rain, snow) is observed and other times by dry deposition, Anthropogenic acidic gases and soil-derived components react with water and return to the ground surface in the form of rainfall and snow by wet deposition. With dry precipitation, it is possible to spontaneously deposited these pollutants without precipitation in periods. Atmosferik deposition has various effects on aquatic and terrestrial ecosystems. It can be effective in decreasing the species and amount of sensitive fish and molluscs by increasing acidity in aquatic ecosystems. In terrestrial ecosystems, degradation and productivity of fertile agricultural lands and forest areas are reduced. It causes soil nutrients such as Ca+2, K+, Mg+2 and Na+ to be washed from soil into groundwater. It destroys artifacts made of stones such as marble, limestone and calcareous sandstone and causes crumbs and dispersions. In metallic and iron works, it causes corrosion. The effect of acidic precipitation can be manifested in continental and global dimensions. The effect of acidic atmospheric deposition can be manifested in continental and global scales. In this study, it is aimed to make a review of the researches on the chemical composition and effects of total atmospheric deposition samples in our country and in the world.

Keywords: Air pollutants, wet deposition, dry deposition, atmospheric deposition

P 27. EMISSION INVENTORIES OF GREENHOUSE GASES AND OTHER AIR POLLUTANTS

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ABSTRACT: Air pollution can be defined as the presence of one or more air pollutants in the atmosphere in amounts and times that damage human, plant and animal life, commercial or personal property and environmental quality. Sulfur dioxide, nitrogen oxides, hydrocarbons, volatile organic compounds and particulate matters are examples of air pollutants. They are described as greenhouse gases such as water vapor, carbon dioxide, ozone, methane, nitrite oxide and greenhouse gases. The greenhouse effect in a natural phenomen linked to the absorption of solar energy by the earth's atmosphere. Part of the long-wave infrared radiation emitted by the sun is not reflected back into space by the Earth's but is absorbed by greenhouse gases (GHGs) naturally occuring in atmosphere. This radiation is transformed into heat, resulting in a stable average temperature of 15^{o}C in the Earth's atmosphere. The Intergovernmental Panel on Climate Change (IPCC) projects a minimum temperature increase of 1.4^{o}C and projected sea level increase of 0.2m by 2100. The main contributors regarding greenhouse gases are fosil fuels burning for electricity production and utilisation in industry, deforestration, transportation system, agricultural waste burning, livestock emissions, sanitary landfill. Establishing emission inventories in estimating greenhouse gases and other air pollutants levels is also known. Emission inventories are the reports of the type and amount of the pollutants originating from the heating, traffic, industry, agriculture (agriculture, livestock) in the designated regions. In the past, different emission inventory studies have been completed in different scales around the world, such as IPCC-AR4, ECE-EMEP, EDGAR, CORINAIR. In this study, greenhouse gas generation processes and emission inventories methodology of air pollutants are taken into consideration. For this purpose, emission inventory studies prepared for greenhouse gas and other pollutants in our country and in the world have been examined and a review has been made.

Keywords: air pollutans, greenhose gases, emission inventory, IPCC

P 28. ENVIRONMENTAL IMPACTS OF THE INTEGRATED DRY GRANULATION METHOD APPLICATION OF FERRONICKEL SLAG

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ABSTRACT: Environmentally responsible and rentable metallurgical industries put among their key objectives the development of utilization schemes of all of its middle – products. The smelting process of nickel oxides ores is almost slag process, where about 75% of the calcine pass to slag. In the New Ferronickel smelt plant in Kosova, produced slag is thrown in the landfill without adequate proper treatment. Such exploiting concepts, without any valorisation strategy, have resulted with the no effective manufacturing cost, irrational use of resources and high concentrations of polluting components. This slag represents the mid - product, with the high value effects in economy and environment. Developed research in terms of opportunities to use it, prove that the application of the integrated dry granulation method will transform slag into a resource with improved qualities (composition and properties - by adjusting it in the valuable aggregate for cement products, asphalt concrete and all other of the construction industry). In renewable energy source, through returning it in production process and reduce its pollution impacts. Quantitative – qualitative assessments and potential economic- environmental impacts, are research object in the laboratories of the New Co "Ferronikeli", Xella-Kosovo, AHN Group - Prishtina, "Ramtech - Zagreb, Silcapor - Kosovo, etc. Obtained results are presented in this paper.

Keywords: Slag, granulation, resources, energy recuperation, products performance

P 29. STUDY OF EMBRYOGENIC AND HISTOGENESIS TECHNIQUES OF SP. CASTANEA SATIVA OF THE BURREL AREA

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ABSTRACT: Chestnut is one of the most remarkable trees in terms of greatness, hardness and endurance, as well as the most nutritious fruits in terms of nutritional value. It is not much known as industrial useful wood and therefore the use of this wood is scarce in the furniture and production of wood for construction. In patriarchal times, chestnuts have been used as wood for the production of beams in the construction of houses because it is distinguished for a high resistance to atmospheric and biological agents. Its fruits are used as nutrition not only delicious but also nourishing. Traditional culture has recognized chestnut as a tree of bread or as a means of exchange with other foods. Economic importance, even though it has been declining, chestnuts still occupy an important place in the agricultural economies of Albania, especially with the recent efforts of the Albanian government to turn the Albanian cultural identity as its representative, as in the highly urbanized foreign markets is especially demanding as a bio species. For livestock this species has emerged as valuable food for their fattening by farmers. Green dough and fruit are very nutritious, and farmers use these for feeding small livestock as sheep of goat in the dry summer period and that of dense autumn rains. Green Fruit of Castanea sativa Mill carefully squeezed without damaging the embryo brought from the village of Gjoçaj with geographic coordinates 42°11'78"N 20°06'29". We have used cleavage methods, colloid methods, and biochemical protocols.

Keywords: Chestnut, nutrition, Castanea sativa, colloid method.

P 30. OPEN MINES AND ENVIRONMENTAL PROBLEMS

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ABSTRACT: Many environmental problems may arise in the vicinity of open pit mines. These include water pollution, green tissue damage, soil pollution, image pollution, acid mine drainage, gas and dust emissions. In addition, the removal of the surface soil with open mining and the destruction of the forest areas in general and changing the soil profile in such regions is also an important problem in terms of soil quality. In open mines, pollutants in different gas and particulate form are also released during production. These emissions can be seen during drilling, blasting, transportation, unloading, storage. These emissions can be seen during drilling, blasting, transportation, unloading, storage. These pollutants can affect not only the quarry area but also the near and far surroundings. Atmospheric conditions, the size and shape of particulate matter are also important in this transport of pollutants. Fine particles can also be transported to long distances for long periods of time. Human and living health can be affected by this situation and structural materials may be damaged. The most common effects on human health can be listed as asthma crises, decreased lung function, dyspnea, irregularities in heart rhythm, before time deaths from heart lung diseases according to the duration and concentration of exposure to dust. This study includes a literature review on the environmental problems, particulate pollution and effects of open mines.

Keywords: open mining, environmental problems, particulate matter, human health

P 31. PARTICULATE MATTERS AND ITS EFFECTS ON HUMAN HEALTH

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ABSTRACT: The impact of air pollutants on health is one of the major problems of the world in the past and today. Air pollutants are present in gas and particulate form sourced by natural or anthropogenic. Particulate matter (PM) is called particles which are separated from each other in solid or liquid phase which can be suspended in air for a while. The PM can be formed released directly by the sources of pollutants (primary) or by particulate condensation of gases or by chemical reactions in the atmosphere (secondary). PM is directly released into atmosphere from various natural sources (soil, dust storms, sea sprays and ocean surfaces, volcanoes, forest, pasture fires, etc.) or anthropogenic sources (heating processes, garbage incinerator, steam generators, fires, domestic heating, traffic, agriculture and construction activities. PM sources differ in size ranges, formation mechanisms and chemical compositions. Therefore, they have various chemical and physical properties. Cancer containing organic chemicals (such as PAH, furan) are very dangerous for health. Zinc ammonium sulfate in the smoke components can be converted into sulfuric acid in the lung. Since soot, fly ash, gasoline and diesel exhaust particles contain cancers components such as benzo (a) pyrene, cancer evidents can be increased if they are inhaled for a long time. Health effects vary depending on the particle size and concentration. Health effects vary depending on the particle size and concentration. Especially in the range of 0.002µm-10µm is important for health. Coarse particles (PM10-2.5) can worsen respiratory disorders such as asthma and may cause negative affect both lung functions and heart rhtym depending on the duration of exposure. Fine particles (PM2.5) may cause various health problems, including before time death. The aim of this study is to review the effects of particulate matter pollution and its effects on human health.

Keywords: air pollution, particulate matter, human health

P 32. THE EFFECT OF WHOLEMEAL SOURDOUGH ON THE QUALITY OF SHORT DOUGH BISCUITS

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ABSTRACT: Sourdough fermentation has been also used in the production of several bakery products like cake, cracker, and pizza. Some physical quality losses such as decreasing the spread ratio and increasing the thickness and hardness value have been observed in the production of wholemeal flour (WMF) biscuits. The aim of this study is to reduce some physical quality losses of WMF biscuits by using WMF sourdough fermentation. WMF biscuits with the substitution level of l0%, 15%, 25%, 35%, and 50% wheat flour were produced and compared with WMF sourdough biscuits containing same WMF ratio. Spread ratio of the biscuits decreased, while the wholemeal flour ratio increased in the formulation ($p<0.05$). The hardness value of WMF sourdough biscuits were not significantly different than control biscuits (0% WMF) while the addition of wholemeal flour increased the hardness values WMF biscuits ($p<0.05$). The brightness L* value of the wholemeal flour biscuits decreases when adding 25% wholemeal flour, while a* value (redness) increased ($p<0.05$). The control biscuits and WMF sourdough biscuits containing 15% WMF showed the highest general acceptability scores according to the sensory analysis. The lowest scores were obtained with the increasing level WMF in the WMF sourdough biscuits. Reduction the hardness value and raise in the sensory scores were observed when the 15% WMF ratio were achieved by WMF sourdough fermentation. It was concluded that sourdough fermentation could be used to reduce the hardness of whole wheat flour biscuits in this study.

Keywords: Biscuit, wholemeal flour, sourdough fermentation

P 33. IN LAMPS POWER LOSSES' AVAILABILITY IN BUILDING HEATING

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ABSTRACT: Lighting lamps and armatures plays an important role in electrical energy consumption. A lighting device, regardless how high luminous efficiency, it has minimum 75-80 per cent of energy from taken power supply radiates heat around. Incandescent-based lighting devices, you can find the 95% of those. While this ratio is determined, it is based on the wavelengths of light that can be seen by the human eye. In this study, which is required for the formation of luminous flux, a portion of the energy losses, aims to use for heating in winter conditions. Exterior lighting devices to be mounted near of a high building as factories, schools etc. to be taken outside the building were discussed. Thus, the heating energy savings can be achieved modelled for the purpose of application, results are shown that may occur.

Keywords: Lighting, Lamp, Heating, Environmental, Efficiency

P 34. HYDRAULIC MODELING OF POTABLE WATER INFRASTRUCTURE SYSTEMS

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ABSTRACT: Hydraulic modeling is a mathematical model of the system by analyzing the hydraulic behavior of the infrastructure systems (water, sewage, drainage and flood). Mainly with hydraulic modeling in potable water lines; analysis of hydraulic behavior of lines, traceability and sustainability of the system, leak-leak detection and pressure management. In order to create hydraulic modeling, it is very important to digitize existing facilities in the field and to verify the numerical data. Simulation of potable water lines by hydraulic modeling and developing software technologies have become easier today. The location of the measuring points and the measurement equipment in potable water systems are extremely important. By revising the data in the field with the mathematical data, the calibration of the model plays a very important role in terms of close hydraulic behavior analysis. The system management is ensured to be economical, stable and sustainable as a result of the analysis of the production and operating costs of the system with the hydraulic modeling, leak-leakage and pressure management, the traceability of the system and the early warning systems and the sustainability of the system with more linear and rapid data. In this article, the aim of hydraulic modeling in potable water infrastructure systems, the necessary measurement, data and software to be performed, the adequacy of the Konya Province scale and the determination of the current situation, the benefits and the evaluation of the results are included.

Keywords: Hydraulic modeling, potable water management, hydraulic analysis

P 35. ANALYSIS OF ICHTHYIC TYPES PARASITES IN THE ALBANIAN PART OF OHRID LAKE

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ABSTRACT: The study was conducted in some areas of the Albanian part of the shore of Ohrid Lake. Parasitological evaluations were carried out in three sampling stations. In all cases, both during field and laboratory analysis, the parasitological examination was carried out using fresh fish or canned fish, for a cohort, in formalin interval 4%. The largest number of taxonon consisted of Monogonea (7 taxonon or 28% of the total number of taxonon identified). The second group was Nematoda helminths (6 taxonon or 24% of the total number). From the group crushed worms The Ohrid Lake fish cattle had parasites 4 taxonon (16% of the total number). We have found the same degree of representation (from 2 taxonon or 8% of the total number) for Ciliophora monocytes, Digenea typed worms, Acanthocephala poultry and Crustacea arthropods. Squid (*Squalius cephalus*) was the species of fish that carried the largest number of parasitic species (9 species).

Keywords: Ohrid Lake, parasitological examination, species of fish, parasitic species .

P 36. IMPACT OF POLLUTION CAUSING WATER TURBIDITY ON OHRID LAKE OVER TRANSPARENCY VALUES SECCHI (ZSD, m) AND EUPHOTIC DEEPTH (Zeu, m)

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ABSTRACT: In the Ohrid Lake the transparency of the waters of the Tushemisht area, for the depth range of 1.0-5.0 m was higher compared to the transparency of the waters of skater's jets area. In the depths that are included in the bathymetric interval of 10.0 m to 30.0 m the differences in ZSD values between these two lake areas ranged from 0.14 m to 0.01 m. These values show that water transparency tends to be unified with the transition from small bathing values to its relatively high values. The Diapason of differences proved in average transparency Values Secchi may be indicative of the approximate levels of turbidity and water pollution in the areas of skater's jetty and Tushemisht and for less pollution of water in the Lin area, compared to the two other areas. The total average euphotic depth (Zeu = 7.105 ± 0.797 m) resulted 3.06 times greater compared to the general average value of the Secchi ZSD = M = 2.325 ± 0.287. There is strong correlation between these two parameters (r = 0.967).

Keywords: Secchi depth, euphotic depth, turbidity, water pollution, conversion factor.

P 37. DEVELOPING A MOBILE APPLICATION WITH CULTUREL HERITAGE CONTENT

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ABSTRACT: The most important feature that makes our country different from The Worlds and European Countries is the richness of our natural and cultural heritage. The capital of the Hitite Civilization (Hattusha), which has been established in Anatolia on the land of Anatolia, has established its first central state in Çorum, Anatolia. As a result of a series of works carried out jointly by the Governorship of Çorum, Çorum Municipality, and Hitit University, the city has become one of the nine values World Heritage List at UNESCO. Photographs are done and the cultural values are collected in books, this culturel datas had published at Çorum Provincial Culture and Tourism Directorate Website. Traditionally, archives consist of content (historical documents, manuscripts, books, documents, audio and visual materials) in electronic libraries of all kinds of electronic objects that create historical perceptual information in culture of Çorum. By combining these data with geographic data, mobile app can be discovered by providing mobile access to a public cultural heritage with the constant access to internet of all ages in the present age, providing the users with the objects that interest them and providing them with maps showing their current location.

Keywords: Culturel Heritage, Mobile Application, Geographic Location, Smart Phones

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