Vol. 11 (3): 367-370 (2021)

NORTHERN HEMISPHERE SNOW DEPTH DISTRIBUTION USING OPTIMAL INTERPOLATION

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ABSTRACT

The distribution of snow depth over Northern Hemisphere is investigated by 2-Dimensional Optimal Interpolation applied to synoptic station snow depth measurements. The technique computes at each snow-covered grid point a daily snow depth increment as the weighted average of data increments at surrounding stations and applies it to a first guess snow depth derived from a numerical weather prediction model. Calculation of optimal weights is based on spatial correlation functions of horizontal distance and elevation with fixed e-folding scales of 120 km and 800 m, respectively. The results obtained indicates that the technique makes substantial improvements in accuracy compared to forecast snow depth especially over high-elevation terrain. The technique also improves estimations over remote poorly monitored areas due to the successful application of a large radius (600 km) and number of in-situ stations for interpolation (50).

Keywords: Station Snow Depth, Optimal Interpolation, Snow Depth Analysis

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NUCLEAR FUSION, THE ARC REACTOR, AND INNOVATIVE NUCLEAR TECHNOLOGY

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ABSTRACT

A new keystone for fusion energy has been achieved, namely high temperature superconductors (HTS), now available on industrial scale: they are able to tear down one of the most concerning issues of this research field, since it could be possible indeed to shrink the size of a tokamak without undermine its power, making fusion energy a credible solution for medium-term energy supply. The development of HTS leads to the design of Affordable Robust Compact (ARC) reactor, a compact Tokamak; this one has the prospective to reach the trade-off towards commercial production of electricity with nuclear fusion power. The actual cutting-edge technologies show some interesting and fashionable engineering design solution, that will be tested and verified in the future years. However, many issues have not been solved yet or there are still great opportunities in their development, for instances: the risk of erosion of the first wall, the thermomechanical analysis and safety of the vacuum chamber and many other ones. In an experimental reactor there will be many obstacles: the effect of disruption should be restricted to avoid damages to delicate structures of reactor, the components should be design in order to evacuate the huge amount of heat, at last but not least, a new generation of control system is required. In this scenario new materials, like HEA (high entropy alloys), could bring breath of fresh air to fusion world, their excellent mechanical properties would solve engineering problems related to harsh environment where they have to operate. Although these new materials might have a huge impact if they were introduced in the next decades, for this reason many aspects must be investigated, especially due to safety requirement of nuclear fusion plants.

Keywords: SPARC, ARC, High and medium entropy alloys, Fusion experimental Reactor Design

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THE IMPACT OF STRESS DURING CLINICAL PRACTICE AT HOSPITALS IN NURSING STUDENTS

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ABSTRACT

The purpose of this study is to see the impact of stress on the quality of student learning in clinical practices. 300 students of bachelor's degree in our Nursing School have been taken, of which 150 students are in the second year and 150 in the third year of study. The students have completed an anonymous questionnaire on how to experience stress during the practice of teaching in various hospital clinics. 62% of students have confirmed that they experienced stress during the practice. 48% of students experiencing stress are second year students and 14% of stressful students are third year students. Students have experienced a higher level of stress in practice at the surgical clinics, in emergency rooms and in the intensive care unit. Taking into account the role of internships in student formation, we need to add to the curricula the hours of hospital practices. Better coordination with preceptors in hospitals, and increased theoretical knowledge to students, would impact the minimization of stress during the practice.

Key words: stress, clinical practice, student, preceptor

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IMPACT OF MOTOR VEHICLE FLEET ON AIR POLLUTION IN THE REPUBLIC OF KOSOVO

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ABSTRACT

Mobility is considered the basic activity in social and economic life. Motorized traffic is the most massive activity within most countries. The Republic of Kosovo, in the absence of the extension and coverage of the territory with the collective transport network, remains the place where cars are used in almost every destination and purpose of mobility. The environmental and health effects of car use are already known throughout the globe, so monitoring and analysis to minimize their impact is a necessity and scientific requirement. The composition of the inventory of road vehicles will serve as the main input for the construction of the model for air pollution in the Republic of Kosovo.

Key word: mobility, air pollution, vehicle emission, environmental impact, public health and safety, ecology.

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THE EVIDENCE FOR OZONE PRESERVATION IMPORTNACE IN RESTRAINING GLOBAL WARMING

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ABSTRACT

The challenge of global warming is one of the most important and complicated issues for modern science and technology. To efficiently restrict further aggravation of negative climate trends, scientific community must have knowledge on the key reasons for the current processes in global climatology. Most modern theories of global warming coincide in the idea that greenhouse gases, the main of which is carbon dioxide, are to blame in the gradual temperature increase. However, this theory does not embrace some other important factors, such as ozone layer depletion. The study conducted for the historical period of 1979-2020 using the data on global ozone concentration, ozone hole size, carbon dioxide concentration, and air temperature, considering the correlations between these atmospheric parameters, revealed that greenhouse gases concentration is not the only driving force of current climate change. Using the method of linear correlation analysis and Mann-Kendall and Sen's slope test it was proved that air temperature tends to increase with the increase in carbon dioxide concentration and ozone hole size, while it tends to decrease in case of ozone concentration increment and replenishment of ozone hole and ozone concentration. Therefore, ozone layer preservation is another important strategy in combating and limiting global warming.

Keywords: ozone hole, greenhouse gas, air temperature, correlation.

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NOSOCOMIAL INFECTIONS IN PEDIATRIC INTENSIVE THERAPY

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ABSTRACT

Purpose. This is a prospective study with the purpose of presenting strategies to reduce the risk of Nosocomial infections in pediatric intensive care at Universitary Hospital Center "Mother Teresa", Tirana, during the period October 2019 - March 2020. Method. The study included 280 patients (0-14 years old) hospitalized in Pediatric Intensive Care, and were monitored every day from the moment of admission to the exit. Results. During the period October 2019 - March 2020, 10 (3%) patients out of 280 (97%) children admitted to the Pediatric Intensive Care, resulted with nosocomial respiratory tract infection. Pseudomonas aeruginosa in 40% of cases is the most common cause of nosocomial infections in Intensive Care Pediatrics. The average hospital stay for patients without nosocomial respiratory tract infection was 3.6 days, while those with nosocomial respiratory tract infection was 18.8 days ($p < 0.01$), regarding to nosocomial urinary tract infections, 13 (4.6%) patients out of 280 (95.4%) patients resulted positive. Escherichia Coli in 38% of cases is the most common cause of nosocomial infections in Intensive Care Pediatrics. Comparison of average of urinary catheters duration in patients with urinary tract infection 3.1 days and them without urinary tract infection 1.5 days ($p < 0.01$). Conclusıons. Medical and nursing staff play an important role in the dynamic tracking of hospitalized children in intensive pediatric care. Hand washing with bactericidal solutions, use of aseptic techniques during patient manipulation, continuous bacteriological control of the environment, etc., is the strategy for prevention of infections in pediatric intensive care units.

Keywords: Nosocomial, Respiratory, Urinary, Intensive Therapy.

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MODERN STRUCTURAL-DYNAMIC ORGANIZATION OF PHYTOCOENOSES AT ENVIRONMENTAL CONTACTS UNDER THE IMPACT OF ANTHROPOGENIC (*FIRES, CUTTING, PASTURAGE*) FACTORS (*South-Western Trans-Baikal, Russia*)

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ABSTRACT

While performing studies within the grant (RFBR No 29-05-00253), we imposed the tasks to reveal general (background) characteristics of structural-dynamic organization of the vegetation and to find out the peculiarities of formation of phytocoenoses on the sites reflecting the specifics and trends of their modern formation under anthropogenic impact, such as fires, cutting and pasturage during several decades. The studied area is situated in the transitional zone between the forest-steppe and zonal steppes characteristic for South-East Asia – i.e., in an interzonal ecotone. An interzonal ecotone consists of coenoses forming under transitional environmental conditions, in this case – between forest-steppe and steppe areas of North and Central Asia. Main attention was paid to the characteristics of the actual state of phytocoenoses forming under different conditions of their recent destructions; species composition of synfolia and the most characteristic proxy species determining the actual state and the vector of formation of steppe coenoses and forests during last decades were studied with a particular attention. Certainly, while analyzing the data obtained, we took into account as well the characteristics of the vegetation structure in the studied area presented in published papers of numerous researchers for many years – M.A. Reshchikov (1958, 1961), E.Ts. Dambiev, B.B. Namzalov, S.A. Kholboeva (2006). The results of general studies of the Baikal Region vegetation were also taken into account.

Key words: vegetation, structural, dynamic, phytocoenoses, fires, cutting, pasturage, factors; South Western, Trans Baikal.

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STUDY OF DESORPTION OF SOME INSECTICIDES FROM FOUR NATURAL ALBANIAN CLAYS

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ABSTRACT

Desorption of some insecticides used in agriculture from natural Albanian clays impregnated with these insecticides is evaluated in this study. There are well-known compounds in this field such as: Dimethoate, Methomyl, Metribuzin and 2-4-D which have been studied as insecticides. The study was performed using natural clays selected from the regions of Brari, Currila, Dardha and Prrenjasi, which have been used in parallel for other studies in the field of adsorption of insecticides through natural clays. In the course study the clays were impregnated with insecticides with a concentration of 1mg/g of clay - calculated as pure insecticide, while the desorption process was investigated from 2 hours to 24 hours and in special cases up to 48 hours. It has been noticed that the insecticides desorption from clays occurred fast, within the first few hours. Most of the insecticides are transferred into the water, with the exception of 2,4-D which desorbs slowly and for 48 hours reaches a desorption rate of 27%. Based on the studied desorption process of the selected insecticides from the natural clays, it is possible to impregnate clays with different insecticides with well-calculated concentrations and use these clays in agriculture to combat crop damage. In this way the quantities of released insecticides are completely controlled and do not create environmental pollution. The use of natural clays as adsorbants/desorbants presents an effective formulation in combating crop damage. Since the insecticides desorption from clays requires a certain time, their aimed activity is prolonged whilst causing less damage on the agricultural crops.

Keywords: study, desorption, insecticides, natural albanian clays, environmental pollution

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DETERMINATION OF HEAVY METAL CONTENT IN ASHES OF DIFFERENT WOODS OF KOSOVO

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ABSTRACT

Throughout winter many houses and residential buildings in Kosovo use wood for heating. The main purpose of the research is to know what is being accumulated within these living spaces, specifically which (heavy) metal?! In this research in order to determine the (heavy) metal content in wood ash, we have collected ashes of 9 different woods burned at home fireplaces throughout winter season. F*raxinus ornus*, *Quercus cerris*, *Quercus petraea*, *Acer campestre*, *Populus tremula*, *Carpinus orientalis* and three additional *Quercus petraea* samples collected in three different months of burning: january, february, march. For determination we have chosen AAS as a method. Our results depending on the type of wood, show presence of all metals intended for determination, in different levels of concentration: Fe, Zn, Cu, Pb, Cd, Ni. Iron is in higher concentration in all types of wood, then comes zinc specifically in ashes of Populous tremula and Acer campestris. Copper is also found in different levels of concentration and in higher concentration in Quercus cerris same as nickel. Lead and cadmium are found in lower level of concentrations. Quercus cerris has little higher concentration of lead, and lower concentrations in the samples of Quercus petraea; january, february, and march. All our results are converted to mg/kg and afterwards shown in histograms. Also, other parameters, like LOI (1-4%), pH (11-13), EC (3.34 – 15.5), and total alkalinity (301.95 – 427mg/L) are also different depending on the type of wood.

Key words: wood, metal, AAS, pollution, toxity.

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PROCEDURES OF FACILITATION OF PAIN IN NEWBORNS TO LESSEN THE PAIN DURING DIFFERENT PROCEDURES IN NEONATAL INTENSIVE BY, SUOGJ HOSPITAL, TIRANA, ALBANIA

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ABSTRACT

Purpose. To analyze whether such methods as giving oral glucose, sucking nipple and skin- skin contact with the mother's baby, and have a positive impact on the baby 's perception and sensitivity to painful procedures. Methods. It took a total of 160 neonate study, which you have undergone painful procedures such as taking blood for analysis, finding a vein,etc.. Children in the study were divided take 4 groups: 1) The first group (10 children) that were previously placed about 15-20 min in skin - skin contact with the mother. 2) The second group (45 children) who during the drilling procedure, you absorb stimulated a bottle. 3) The third group (45children) whose puncture during the procedure given oral glucose. 4) The fourth group (60 children), which have not been applied any of the above procedures during puncture. Children involved in the first three groups constituted the study group, and the fourth that of control. Behavior and response to pain was assessed on a scale DAN (Douleur Aigue Nouveau). Depending on the responses of newborns scores were determined for each group. Vital parameters were recorded (cardiac frequency, respiratory rate, SpO2) of children included in the study. Calculated scoring averages for each group and bringing vital parameters. We compared the response to pain, bringing vital parameters between control group and his own study and between study groups. He compiled 95 % confidence intervals for the differences between the control group and the study, as well as for differences within the study group. Results. Control group and one study did not differ from each other in age pregnancy, birth weight and time of drilling. We found statistically significant differences for the duration of crying (115.7 sec.) more in the control group and 95 % CI 47.5 to 183.9 sec.), the intensity of pain (1.1 points more in control and 95 % CI 0.2 to 1.9) and SpO2 (2.6 % lower in the control group and 95% CI -5 to -0.22). While for grin, cardiac and respiratory frequency differences resulted not statistically significant. Conclusions. Stimulation methods (removal of attention to pain) have significant impact in reducing pain perception and response to invasive procedures while their life values have not changed very significantly.

Key words: pain, newborn, different procedures, in neonatal intensive, vital parameters, hospital.

Vol. 11 (3): 441-448 (2021)

REACTION OF SOME NEW WHEAT LINES IN THE CONDITIONS OF TWO CULTIVATION AREA, LUSHNJE (ALBANIA), AND ISTOG (KOSOVO)

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ABSTRACT

The aim of this paper provides data on the behaviour of some new soft wheat lines created by Agroarfa (Albania), in two cultivation environments, respectively in Lushnje (Albania) and Istog (Kosovo). From the yield data of the lines result noticeable changes in terms of average yield, as well as from line to line. Some of the lines like; AF19-65 and AF-08 do not show significant differences between the two test areas, which shows that these are characterized by a better stability in terms of production. Generally, the lines with higher yields such as AF19-64, AF19-06, etc., are characterized by more pronounced differences between areas.

Keywords: index, line, randomization, stability, variation.

Vol. 11 (3): 449-452 (2021)

UNUSUAL DURATION OF HASHITOXICOSIS IN A PATIENT WITH HASHIMOTO'S THYROIDITIS: CASE STUDY

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ABSTRACT

Hashimoto's thyroiditis is a chronic autoimmune disease, which causes a gradual decrease in the production of thyroid hormones. This case study shows a woman aged 32 presented with typical hashitoxicosis symptoms. All three thyroid antibodies were elevated. Based on the clinical manifestations, physical examination and biochemical tests, an initial diagnosis of Grave's disease was made. Only after 14 months after starting the treatment the level of Thyroid Stimulating Hormone (TSH) began to increase gradually and the definitive diagnosis was Hashimoto's thyroiditis with Hypothyroidism. After that, the patient started the permanent replacement therapy with levothyroxine and remained euthyroid on levothyroxine. The case highlights the importance of thyroid ultrasound and scintigraphy at the moment of diagnosis, followed by regular biochemical tests and endocrinological consultations as the only way to avoid unnecessary radioactive iodine therapy for the patient.

Key words: Hashimoto's thyroiditis, Hashitoxicosis, Case report,Thyroid ultrasound, Thyroid, Scintigraphy.

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MAPPING OF SOIL QUALITY AND SENSITIVITY TO DEGRADATION BY ADAPTING THE MEDALUS METHOD IN THE STEPPE ZONE OF THE WILAYA OF SAIDA (ALGERIA)

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ABSTRACT

The steppe plains of Saida (Algeria) has an interest in the agricultural economy that is privileged in extensive area for sheep breeding. Due to the extensive sheep farming, it resulted with a severe degradation. In this phenomenon, by inaugurating the direct consequence of the combined action of man and climate, the recurrent drought and the increasing anthropogenic pressure affect the soil which is the main factor in the ground and the production of biomass, particularly in semi-arid area and the arid ones. By applying the MEDALUS (The Mediterranean Desertification and Land Use) that is mainly based on the investigation of the physical, biological, and socio-economic processes in this current work that will affect the evaluation of the sensitivity of the soils to the process of desertification. It is a cartography based on the combination of several types of sounds like the textural triangle USDA (United States Department of Agriculture), soil map, geological map, MNT and satellite images. The soil quality index are the basis of the mentioned method which determine the resistance to the phenomenon of desertification. These qualities are essential and can be assessed using simple soil properties such as soil texture, soil depth, parent materials, slopes and soil stoniness's, and soil morpho-pedological. This resultant has been obtained, and will be initiated after the final validation, a new decision-making aid reference for the sustainable management of steppe zones. The resulting soil sensitivity map to desertification processes includes three MEDALUS nomenclature classes: class of fragile soils, moderately sensitive soils and soils that aren't too sensitive to desertification with dominance of fragile areas on the zone.

Keywords: steppe plains, desertification, MEDALUS, arid zones, Saida.

Vol. 11 (3): 463-472 (2021)

AN ASSOCIATION BETWEEN POLYMORPHISMS RS1333049, RS10757278, HYPERTENSION AND DIABETES IN ALBANIAN PATIENTS

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ABSTRACT

Background. Hypertension and type 2 diabetes mellitus play and important role in the initiation and progression of coronary artery disease. The association between rs1333049/rs10758278 polymorphisms, type 2 diabetes mellitus and hypertension has been investigated by many authors and unfortunately no clear conclusions have been made so far. Shedding light on increasing trends in cardiovascular disease this study was aimed at evaluating the association between such genetic variants, hypertension and type 2 diabetes in Albanian patients. Subjects and methods. This was a case-control study involving 177 patients admitted at the cardiology department at Hygeia Hospital during 2015-2016 in Tirana, Albania. Patient characteristics, including clinical information regarding presence of hypertension, diabetes mellitus and other important medical history data were recorded. With regards to hypertension and diabetes, patients were divided into two groups; Non-diabetic/diabetic (Group 1) among which non-diabetic patients were designated as controls whereas diabetic designated as cases, and non-hypertensive/hypertensive (Group 2) among which non-hypertensive patients were designated as controls whereas hypertensive patients as cases. Further evaluation was performed with respect to rs1333049 and rs10757278 polymorphisms and their association with disease status. Patient genotypes were determined by allele specific polymerase chain reaction (ASPCR). Allelic and genotype frequencies were determined and tested against Hardy-Weinberg equilibrium. Odds ratio (ORs) and 95% CI were analyzed by logistic regression considering statistical significance as $p < 0.05$. Results. Despite the fact that recessive and log additive genetic models could be proposed as potential candidates to describe the association, our data did not show a statistical significance between rs1333049/rs10757278 polymorphisms and development of type 2 diabetes and hypertension. Conclusion. Our results, similar to previous studies involving individuals of European origin, provide evidence indicating lack of association of rs1333049/rs10757278 polymorphism with type 2 diabetes and hypertension in Albanian patients. This finding is somewhat controversial due to the fact that CDKN2A/B gene, upon which both polymorphisms are thought to extend their effect, has been shown to be involved with the onset of type 2 diabetes and potentially hypertension.

Key words: Hypertension, type 2 diabetes, rs1333049, rs10757278

Vol. 11 (3): 473-476 (2021)

THE DISTRIBUTION OF NATURAL RADIONUCLIDE CONCENTRATION IN SOIL IN TIRANA URBAN AREA

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ABSTRACT

The data reported in this manuscript are the results of a systematic survey of natural radioactivity concentration in soils in Tirana urban area. The activity concentrations of natural radionuclides of ^{40}K, ^{226}Ra (^{238}U) and ^{232}Th, and artificial radionuclide of ^{137}Cs in 71 soil samples were measured using a high-resolution gamma-ray spectrometry technique. The average activity concentrations of ^{40}K, ^{226}Ra and ^{232}Th were found to be 382 ± 113, 32 ± 12 and 32 ± 12 Bq/kg respectively, while, the average activity concentration of ^{137}Cs was found to be 5 ± 5 Bq/kg. These values were found to be comparable with similar studies reported in literature for different countries in the Balkans Region. Based on these data, the average annual effective dose rate was found to be 0.06 ± 0.02 mSv/y, which is comparable with the worldwide average values of 0.07 mSv/y. The results show that the radioactivity level in the soil of Tirana urban area does not pose any significant risk to population.

Keywords: Natural radioactivity; Soil; HPGe gamma-ray spectrometer; Radiological hazard; Dose rate

Vol. 11 (3): 477-482 (2021)

THE INDICATOR OF ABUNDANCE (*N* INDIVIDUALS/FISH) AND THE SPECIES DIVERSITY INDEX (D) FOR PARASITIC FAUNA IN SOME FISHES OF OHRID LAKE

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ABSTRACT

In the period from 2015 to 2017 in three areas of Ohrid Lake (west and south shore or the Albanian part of the lake) parasites were analyzed for several species of fish that populate this basin. The sampled fish were bleak (*A.scoranza*), chub (*S.cephalus*), common roach (*R.rutilus*), Ohrid gudgeon (*G.ohridanus*), Albanian roach (*P.pictum*), Western Balcan barbell (*B.rebeli*), European eel (*A.anguilla*), crucian carp (*C.carassius*), belvica (*A.ohridana*), common carp (*C.carpio*) and Ohrid brown trout (*S.letnica*). Two population parameters were evaluated for parasites; the indicator of abundance (*n* individuals/fish) and the species diversity index (D). The highest average value for abundance was calculated for *Gyrodactylis* sp (Monogenea) (10.8±7.339 individuals/fish). We found this helminth as an ectoparasite in Ohrid brown trout. We calculated the smallest abundance for *Pomphorhynchus laevis (Acanthocephala)* (0.41 ± 0.247 individuals / fish). We found this endoparasite in Western Balcan barbell and Ohrid brown trout. According to the seasons, the average values for the species diversity index (D) of the parasitofauna (parasitic fauna) were: Spring: D = 0.95±0.021; Summer: D = 0.89±0.029 and Autumn: D = 0.86±0.007. The D values we calculated for the three seasons were generally high, representing parasitic communities with high diversity.

Keywords: Ohrid Lake, parasitic fauna, Ohrid trout, Western balcan barbell, Albanian roach, Ohrid gudgeon, abundance, diversity index, heteroxenous parasites, monoxenous parasites.

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ASSESSMENT OF THE QUALITY OF MINERAL WATER, POKLEK AND VERBOC SPRINGS, IN THE AREA OF GLLOGOC, THROUGH PHYSICO-CHEMICAL ANALYSIS

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ABSTRACT

The purpose of this paper was to monitor the quality of mineral water in the springs: Poklek and Verboc, in the area of Gllogoc, through analysis: physic-chemical and heavy metals. Water quality monitoring is mandatory, especially if it's used as drinking water, therefore mineral springs (Poklek-Verboc), contain various minerals, such as salts and sulfur composition. Further research is planned to be conducted for the physico-chemical characterization, which will follow up on time to time the changes in the composition of the various components of this water. Today it is much more common for mineral water to be bottled and used for drinking. Water should be rich in minerals beneficial to the human body, where, among the minerals we mention: Magnesium that protects the heart, kidneys, muscular system, and helps digestion: Calcium as a constituent of bone and important for the dental system: Bicarbonates in significant amounts, aid digestion and are positive, for assimilating energy in the right form, etc. The analysis of the mineral water in this work involved the determination of several physico-chemical parameters (COD, BOD, conductivity, pH value, etc) and some heavy metals (Zn, Cu, Cd, Pb, Co, Ni, Al, Cr, Mn, As, Sc, Sb, Hg, Fe and Ag).

Keywords: Poklek-Verboc, mineral water; heavy metals, physical-chemical parameters.

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ESTIMATING OF ROAD ACCIDENTS DURING THE COVID-19 PANDEMIC YEAR IN ALBANIA

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ABSTRACT

The year 2020 designated as the year of the Covid-19 pandemic, has not limited the fatalities of road accidents worldwide, including Albania. In this paper we focus to analyze the accidents data from the data reported by Instat website over this year and to estimate whether this pandemic has affected to the number of road accidents and fatalities in our country. As in many other countries there is a noticeable decrease in road accidents during this year, but at the same time it seems that the number of fatalities in proportion to the reduction of accidents has not fallen. We argue that it is possible to apply Chi-Square approach and also Odss Radio approach to better identify the significant factors which affect road accidents. Furthermore through these statistical approaches we have studied the significant relation between the factors and the fatalities that occurred during 2020. It is evidenced that gender, age and months are significant factors in our accidents data; there is also a predominance of men gender in fatalities compared to women gender as well as drivers more than pedestrians. Given the rapidly increasing of lost lives in proportion to road accidents that are a major challenge for the health system, we recommend that more emphasis placed on the use of statistical methods - in the search for road safety by government researchers and road safety experts.

Keyword: Statistical approach, road accidents, road accident fatalities, significant factors.

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BIOMARKERS FOR MONITORING GYNECOLOGIC MALIGNANCIES

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ABSTRACT

Tumor markers are playing an increasingly important role in cancer detection and management. These laboratory-based tests are potentially useful in screening for early malignancy, aiding cancer diagnosis, determining prognosis, surveillance following curative surgery for cancer, up front predicting drug response or resistance, and monitoring therapy in advanced disease. Tumor marker assays, CA15-3, CA 125, and CEA are valuable biomarkers for the differential diagnosis of patients with breast and ovarian cancer providing their well-known profiles of sensitivity and specificity and thus demonstrated their reliability for routine laboratory diagnostics. The aim of the study is to evaluate the hematological, biochemical and tumor markers changes changes in gynecologic malignancies after chemotherapy. Significant decrease of CA 125, CA 125 and CEA was observed in all three types of Ca following the second cycle of chemotherapy ($p < 0.01$). The values of hemato-biochemical parameters and tumor markers are important in identifying the course of therapy.

Key words: cancer, hematobiochemical parameters, tumor markers

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MEDICAL PLANTS IN DIFFERENT SOILS WITH HEAVY METALS

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ABSTRACT

The goal of this study is to determine and evaluate environmental indicators and pollution presence in various regions of Kosovo. *Juniperus communis* L. and *Juniperus oxycedrus* L. are medical plants, useful for their therapeutic aspect. The large pollution generated in thermal electric plant, Obiliq, and from other industrial processes in the region of Mitrovica have resulted to have contaminated soil, water and plants with heavy metals over the permissible norms. Such contamination presents a permanent risk to the environment as a result of uncontrolled releases into river waters and in the lands nearby industrial zones. *Juniperus oxycedrus* L. samples have been taken in Vllahi – Shala e Bajgorës, close to mines and foundry, on the outskirts of Trepça, and have also been collected Mushtisht – Therandë. The sample of *Juniperus communis* L have been collected in Sllatinë - Fushë Kosovë, near Obiliq, and also have been collected in Novobërd – Artanë and Bajgore – Trepçe. We intend to evaluate the content of heavy metal elements like Cd, Cu, Fe, Ni, Pb and Zn using ICP-OES technique (EPA method 6010C:2007). In all five study areas it was noticed that the soils had high levels of iron, lead, nickel and zink, which in most cases was observed also in leaves and berries.

Key words*:* *Juniperus communis* L., *Juniperus oxycedrus* L., heavy metal, contamination.

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ENERGY EFFICIENCY RESULTING FROM THE CONSTRUCTION OF THE NEW PERIMETER WALLS OF THE FORMER DAJTI HOTEL IN TIRANA, ALBANIA

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ABSTRACT

The former Dajti Hotel building was at the stage of structure retrofitting works when the earthquake of 26.11.2019 struck Tirana and Durrës (Albania). Some serious damages or destruction of non-structural brick walls were found in the building. The authors of this article provided relevant solutions for the implementation of new earthquake-resistant walls, which, among other things, improve the energy efficiency of the building, besides the safety of non-destruction. This paper focuses concretely and in a detailed way on the improvement of the building's energy efficiency as a result of the proposed way for the realization of the perimeter walls in the building of the former hotel Dajti, Tirana.

Keywords: earthquake in Albania 26.11.2019, non-structural brick walls, the former Dajti Hotel building, energy efficiency improvement

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TECHNICAL AND MANAGEMENT ASPECT OF WOOD INDUSTRY RELATED TO THE TRAINING OF ENGINEERS WHO ARE PART OF THIS SECTOR

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ABSTRACT

Technical aspects in the wood processing entities is closely related to the recognition and application of the new technology. Another very important aspect of these businesses is management. They are employed in these businesses Wood Processing engineers who graduate in the Department of Wood Industry of the Agricultural University of Tirana. In this institution, students, in addition to general knowledge, science and engineering, acquire knowledge of technology and management. This study analyzes the technical and managerial problems of wood industry in Albania; relating to the knowledge of Woodworking engineers. Generally, the faculty is satisfied with the knowledge it gives to the student during the teaching process, internships, until his graduation. After graduation, it is the private sector that practically employs engineers, but it is also an indicator of measuring the degree of their formation. University education of students is very important and is seen by the labor market as a potential for continuous development and progress. The study is based on the analysis of a significant number of questionnaires structured for this purpose. The study shows that newly graduated engineers do not have the proper knowledge of new technologies. Also it needs to be done in terms of their formation with knowledge about management, especially in the conditions of Albania. The surveyed engineers say that they also need to play the role of the manager.

Key words: wood industry, wood processing engineers.

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TYPOLOGY OF PUBLIC HOUSING IN TIRANA DURING THE ITALIAN OCCUPATION: CASE STUDY "LITTORIO VILLAGE" (LAPRAKË) AND "NEW TIRANA" NEIGHBOURHOOD

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ABSTRACT

The Italian occupation has left numerous traces in Albania. It is worth mentioning the capital, Tirana, which has had significant development and progress from the influence of the Italian state in our country. This development has occurred in all areas, especially in urban planning and architecture. The Regulatory Plan of 1939-1943, created by Italian architects, left traces in the proposal and establishment of some neighbourhoods with collective housing concentrated in some regions of Tirana. This paper presents the maps and layout of these housing typologies of considerable importance for their created period. Tirana could not be excluded from the phenomena in other European countries during the same period, consisting mainly of the rapid population growth due to the migration of people from the countryside to the city and the increase of local and foreign labour force. This phenomenon led to increased demand in housing for this category of people and the need for new housing projects provided that they could accommodate as many people as possible. This paper presents neighbourhoods with collective housing of employees in Tirana, focusing on their location and plan's shapes. The study also describes the characteristics of these buildings and their organisation in the city's urban structure, highlighting the housing typologies. The comparison and confrontation of these projects (not all finalised in practice) with the popular collective housing in Europe after World War II is of particular importance. In Tirana, there is the presence of some typologies such as attached houses, block and linear collective houses. The main purpose of this paper is to identify the typology of collecte houses in Tirana during the Italian occupation. The study reveals the importance of repeating the same units inside a neighbourhood in order to rationalise the buildings to get better apartments and conditions of living. There is a strong connection between the typology of public housing and the number of families that can be accommodated in each neighbourhood's case study. The collective houses in "New Tirana" can shelter more families because of their characteristics such as the number of floors, utilisation of the land, organisation of plans with at least two apartments per floor.

Keywords: collective houses, Regulatory Plan, city-garden, public housing typology

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THEORIES AND CONCRETIZATIONS OF EXISTENTIALIST PHENOMENOLOGY: THE NEUROSCIENTIFIC PEAK OF DESIGN PROCESSES

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ABSTRACT

In the early aftermath of World War I, the academic world would be embraced by the approaches of existentialist phenomenology. This is the period whenwas developing a kind ofphilosophical research that couldinvestigate the issue of existence by focusing on the sensory experience of the human who thinks, feels, or acts. While concentrating on design disciplines, this study aims toemphasize the functions of phenomenology as a tool that managed to formulate the neuroscientific climax. Initially, the theoretical discourse of the issue is evidencedthrough the school of Merleau - Ponty and Sartre to define further the real phenomenology of Steven Holl, Adolf Loss, Petter Zumthor, Juhani Palasmaa, and others. In this way, it was managed to develop a real logic, which put the human and his already fully known nervous and sensory system in the centre of attention of all design processes. It was taken for granted the inevitable created connection between human well-being and the built environment. The paper analyses existentialist phenomenology, especially those related to design processes, as the culmination of neuroscientific theories. The research addresses a real context near the historical centre of Tirana city, which, based on sensory perceptions, suggests optimal opportunities for space development.It saw phenomenological-existentialism as an ambitious argument thatstrictly places sensory experience as the basis of architectural design.

Keywords: phenomenology, existentialism, neuroarchitecture, multi-sensory, perception

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PHYSICOCHEMICAL ANALYSIS OF THE WATER WELLS IN THE AREA OF RAHOVEC

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ABSTRACT

In this paper, as our main goal, we had the analysis of heavy metals in the water and sludge of wells, in residential areas, and the land near these wells, in the villages: Vrajak, Ratkoc and Rogovë, in the area of Rahovec. Also, the physic-chemical parameters have been our goal in the study, to make the assessment of the current situation, taking into account the climatic factors, at the time when we did the analysis. Groundwater was characterized with high solubility of salts (high or medium hardness), in contrast to surface waters, especially those at high altitudes, where the amount of magnesium and calcium salts, is smaller. Thus, it is very important to assess the quality of water in wells used as drinking water sources by people living in these villages in the municipality of Rahovec. Sampling was done in the monthly period (August/2018). By using inductively coupled plasma optical emission spectroscopy (ICP-AES), the concentrations of 10 elements were determined in: water, sludge and soil samples (As, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb and Zn).

Keywords: Pollution, environment, villages, heavy metals, water, sludge, soil, ICP-AES technique.

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STUDY OF ABSORPTION AND DESORPTION OF BENALAXYL FROM NATURAL AND ACTIVATED BRARI AND DARDHA CLAY

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ABSTRACT

The aim of this research was to study the adsorption progress of Benalaxyl from natural and activated clays of Brari and Dardha, so that these clays can be used for practical purposes fof soil and water purification. The natural clay materials originated from the regions of Brari (Tirana) 41 ° 21′14.49 ″ N; 19 ° 50′17.74.E and Dardha (Korça) 40 ° 31′16.59 ″ N; 20 ° 49′33.69 ″ E. SEM images of Dardha clay show a finer dispersity than Brari clay. Powder XRD analysis of reveal remarkable differences in their composition. Dardha clay shows a higher content of SiO_2, Al_2O_3 and CaO than Brari clay. The adsorption dependence of Benalaxyl on Brari and Dardha clays was studied at t = 20ºC and contact time: 12h; 24h; 48h; 72h, considering Benalaxyl concentrations of 0.1 g/l and 0.3 g/l. Based on the time of contact clay-aqueous solution of benalaxyl, 48h to 72h showed significant adsorption of Benalaxyl onto clays, therefore this time interval is presented and oriented further studies in this time interval. Time intervals longer than 72h showed no interest because the rate of hydrolysis increased. Most of Benalaxyl is desorbed from both clays within the first 2 hours. Dardha clay desorbs better than Brari clay.

Keywords: Benalaxyl, clay, brari, dardha, adsorption, desorption

Vol. 11 (3): 557-568 (2021)

MEASURING THE COMPLEXITY OF URBAN FORM

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ABSTRACT

Complexity is one of the essential aspects of a sustainable city. Is well noting that urban designers talk about physical urban form and design projects in term of 'complexity' (e.g., Congress for the New Urbanism 2015). The field of urban complexity provides for the exploration and increased understanding of complex urban systems and their interaction through applying mathematical methodologies and modelling techniques, which allows for the potential to make cities more resilient, sustainable and efficient places to live in. Accordingly, this article focuses on analyzing the urban complexity through its components. The urban complexity helps us better understand the development of the cities and aim for a new way of urban intervention and development. In addition, in this article, we try to achieve a chronological path through theoretical and analytical studies while focusing on measuring the complexity of urban form, primarily through structural measures: fractal and network. This study aims to interpret the urban complexity by measuring the fractal dimension and density of a specific area in Tirana. So, the fractal dimension will give us quantitative information, making us understand the space that fills the constructions and qualitative data that makes us understand the compatibility of the traces left in the space by the built masses. However, the case study analysis show that fractal dimension and its measurement in time can serve for an even more accurate orientation of the whole urban process to reach a new way of urban planning and intervention, integrated it with other necessary elements of the urban form measurement.

Key words: urban complexity, structural complexity, fractal, network, measure.

Vol. 11 (3): 569-574 (2021)

SEASONAL FLUCTUATIONS OF BIOCHEMICAL PARAMETERS IN POSTPARTUM GOATS OF LOCAL CROSS BREEDS REARED IN THE REGION OF TIARET, ALGERIA

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ABSTRACT

The aim of this study was to assess the variations of certain biochemical parameters in postpartum goats in two seasons (spring and winter). A total of fifty goats of local cross breeds in their twentieth days after parturition were used in the experiment from 2019 to 2020. Animals were reared in Tiaret region in the north-west of Algeria (35°22' N, 1°19' E) under semi-arid environment. Two blood samples were taken in heparin vacuum tubes, 25 samples in each season winter and spring, the blood was centrifuged at 3000 round for 10 minutes, The assay of the biochemical substrates was carried out with a "Beckman coutter" biochemical analyzer. Our results show that all the mean values recorded during this study were within the range of standards cited in the literature and the season had a significant influence ($p < 0.05$) on creatinine and calcium with high values in winter and decreases in spring, while the values of triglycerides, total protein and globulin were higher in winter and lower in spring without any significant difference, unlike the average values of urea, albumin, and phosphorus that increase in spring and decrease in winter. The results of this study could serve as reference values for local Algerian goats in postpartum and goats from other regions or countries with similar climatic and physiological conditions.

Keywords: goats, season, winter, spring, postpartum, biochemical parameters.

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THEORETICAL AND PRACTICAL COMPARATIVE STUDY ON THE USE OF CLAYS FOR THE TREATMENT OF WASTEWATER CONTAMINATED WITH PESTICIDES

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ABSTRACT

The purpose of this study is to compare the theoretical results which are calculated according to the DFT model, DFT calculations were performed using the code DMol3. To optimize the geometry, the triple numerical set plus the polarization base (TNP) was used. It was also used in combination with the M11L function within the generalized meta gradient (GGA) approximation. The solvent effect (H_2O) was incorporated through the conductor-like display model (COSMO). To visualize the adsorption geometry of the two selected adsorbents, namely: benalaxyl and atrazine on the surface of the clay material components, Monte Carlo (MC) simulation was performed, which was performed through the Adsorption Locator module as implemented in the Materials Studio software. 2017. Three types of clay minerals were selected for the simulation: Halloysite (a = 14,220 Å, b = 26,700 Å, c = 19,557 Å, AMCSD: 0018093), Kaolinite (a = 25,958 Å, b = 12,950 Å, c = 17,034 Å, AMCSD: 0002868) and Montmorillonite (a = 25,454 Å, b = 13,022, c = 40,427, AMCSD: 0002868). The selected separation plane is based on morphological calculations using the Bravais-Friedel-Donnay-Harker (BFDH) methodology. Achieved results in the experimental aspect realized with the methods: SEM -EDX VEGA3 LMU; Fluorscence Spectrometer X-Ray (XRF), ARL 9900 and GCMS-QP2010S, in relation to the adsorption of Atrazine and Benalaxyl on natural and activated Brayr and Pear clays are in full agreement with the theoretical calculations.

Keywords: benalaxyl, atrazine, clay, brari, dardha, monte carlo.

Vol. 11 (3): 585-592 (2021)

ALUMINUM PHOSPHIDE POISONING: CASE SERIES

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ABSTRACT

Aluminum phosphide (AlP) is an agent mostly used for it`s pesticide properties. It is the major cause of suicide poisoning associated with high mortality in Albania. As soon as AlP is exposed to a moisture environment it undergoes a reaction producing phosphine, a gas which is lethal. It inhibits cytochrome C oxidase and then it causes cell hypoxia due to the inhibition of oxidative phosphorylation. The signs and symptoms are not specific, even though nausea, vomiting, abdominal cramps and hypotension are almost always present. The diagnosis is made mainly by clinical history of the patient and clinical presentation. AlP poisoning has no antidote, and the treatment is mainly focused on symptom management, and supportive measures. This article, represents three cases of aluminium phosphide poisoning, two young girls and one young man. All of them were hospitalized due to the diagnosis of Aluminum phosphide poisoning. The diagnosis was made from clinical presentation of the patients and medical history taken mostly from them and their relatives. Two of the patients presented with abdominal pain, nausea, vomiting with characteristic garlic odor, hypotension, cyanosis, and severe metabolic acidosis. Both survived. The other one, a young girl, was taken to hospital by her friends. She was conscious, cooperative with mild and nonspecific symptoms on arrival. On the fifth day she died.
Conclusion: There is still a lot to know about pathological mechanisms of AlP poisoning, the best treatment that can be offered to a specific patient and the right time when it should be applied.

Key words: aluminum phosphide, poisoning, phosphine, hypotension.

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COMPARISON OF ELISA WITH UHPLC-ESI- MS/MS METHOD FOR THE DETERMINATION OF AFLATOXIN M_1 IN MILK

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ABSTRACT

Aflatoxin M_1 is a hydroxylated metabolite excreted in milk, which is considered as a potent health risk factor for consumers, therefore, the routine control of this toxin is essential. To monitor the concentration of this toxin, during this study are used and compared to each other for the correlation, two methods, the competitive method ELISA and UHPLC-ESI-MS/MS as a confirmative method. According to the results found using the two methods, from 192 of raw cow's milk samples analyzed, about 40% of samples resulted positive with AFM_1, among them, 6.5 % of the samples exceeded the maximum tolerable level according to ELISA method, and 5.5 % of the samples according to UHPLC-ESI-MS/MS. In conclusion, the results of this study suggest that there is a good correlation between the two methods used. The UHPLC-ESI-MS/MS method requires longer time of determination than ELISA method because there is the need of the extraction of milk samples for AFM_1 by the immunoaffinity columns ahead of quantitative analysis.

Key words: Aflatoxin M_1, Milk, ELISA, UHPLC-ESI- MS/MS, Comparison

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ADSORPTION OF BENALAXYL AND ATRAZINE IN FLY ASH THE COAL OF POWER PLANT (KOSOVO A) FROM AQUEOUS SOLUTIONS

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ABSTRACT

The development of low-cost adsorbent coal FA (Kosovo A) for pesticide removal is an important area of scientific research. With this study, we show the potential of adsorption of coal FA (Kosovo A) for removal of Benalaxyl and Atrazine from water. We have found that the amount of adsorbed Benalaxyl and Atrazine increases with an increasing amount of Coal FA (Kosovo A) in solution. The maximum capacity coal FA (Kosovo A) to adsorb Benalalaxyl and Atrazine was found to be 0.46 and 0.45 mg / g according to the Freundlich equation and 3.48 and 3.33 mg / g according to the Langmuir equation. The Freundlich adsorption equation better explains the adsorption results of pesticides (Benalaxyl and Atrazine) in Coal FA (Kosovo A), as the values of the recovery coefficient (R^2) were higher in of Freundlich equation than in the of Langmuir equation. The adsorption isotherms were of type L and show that the adsorption efficiency of the Coal FA (Kosovo A) depends on the initial concentration of Benalaxyl and Atrazine in solution and the maximum removal of Benalaxyl and Atrazine was achieved at concentrations less than 10 µg / ml. This study's results are expected to have implications for the use of Coal FA (Kosovo A) for the removal of pesticides from water.

Keywords: Benalaxyl, Atrazine, Coal FA (Kosovo A), Adsorption.

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THE NON-INCLUSIVE NATURE OF THE "HOUSE WITH ÇARDAK" TYPOLOGY IN THE ALBANIAN CONTEMPORARY URBAN CONTEXT: CASE STUDY BERAT CITY

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ABSTRACT

The purpose of this paper is to introduce, understand and analyze the traditional houses with "çardak", focusing particularly in the evolution of this typology in sloping terrains; such as that of Berat city and its invocation in nowadays housing solutions. This work aims to introduce thehouse with "çardak" and its evolution in time: find out the main architectonic charasteristic elements, the distinct morphology of this house, in order to understand it in a formal, functional and structural level; and to reinterpretate the house with "çardak": using thetraditional elements of this habitat and speaking their language in the contemporary modern houses of the Albanian urban context, addressing a ew problematic such as accessibility to this typology. The expected results are: finding out a new applicative methodology of "çardak" reinterpretation; drawing attention to these native (historical) buildings, as the most appropriatechoices for some special Albanian situations, urban and climatic conditions; bring a methodological contribution to the reflection of local tradition, to the maintainance and spreading of local identity through vernacular architecture, according to the local needs. Interventions for accessibility can decline the house from its typology; as the terrain make it really hard to implement solutions like ramps and elevators, in order to preserve its morpologhy and geometry. The underlined conclusion of this work is that the reinterpretation of the built and vernacular heritage of the past, is really important in preserving local identity and adjusting to the differences of aesthetic and functional demands of our contemporary way of building.

Keywords: Çardak, Typology Reinterpreatation, inclusive, non-inclusive, Local Identity, Morphology, Vernacular Architecture, accessibility.

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REVIEW ON THE HYDROGEOCHEMICAL EVALUATION OF LUSHNJA AQUIFER GROUNDWATERS

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ABSTRACT

The groundwater of the quaternary aquifer of Lushnja is the primary source of the public drinking water supply for the population and it is often use even for irrigation in the Lushnja district. Groundwater plays an important role in the supply of drinking water, functioning of ecosystems and the well-being of people. The study area is situated on the Peri-Adriatic Depression and is underlain by gravel deposits of Quaternary age. The Lushnja aquifer is characterized by alluvial deposits of Holocene lithologically represented by alevrites, sand, and gravel. It spreads almost all over the plain part of the Lushnja district from the Shkumbin River to the north, up to the Seman River to the south, and in the Fier-Shegan sector is connected to Berat's plain. The climate of the Lushnja area is characterized by Mediterranean subtropical sub area climate marked by short warm winters and long hot dry summer seasons. A total of 31 samples were collected in spring 2011. There were measured the concentration of major cations {(Na(+), Ca(2+), Mg(2+) and K(+)}, major anions {Cl(-), SO4 (2-) and HCO3 (-)}, electrical conductivity and total dissolved solids. The results of the hydrochemical analysis reveal that the order of cations dominance was $Mg^{2+}>Ca^{2+}>(Na^{+}+K)$ for the cations and $(HCO_3^{-} + CO_3^{2-}) > Cl^{-}$ for the anions. Further analysis shows that the main type of water of the groundwaters present in the Lushnja is $(Mg^{2+}+Ca^{2+})-HCO_3$.

Keywords: groundwater; hydrochemistry; chemical classification; water type; aquifer

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MEASUREMENT AND EVALUATION OF BLOOD LACTIC ACID, A REQUIREMENT FOR PREDICTING THE ANAEROBIC EXERCISE LOAD

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ABSTRACT

The study aims to analyze the level of lactic acid in blood before a sports activity (match) and during the match. The subjects of this analysis were more than 20 football players aged 15-16, but for study purposes we considered 12 players who were active throughout the match. The Lactate SCOUT analyzer device was used to measure lactic acid before the start and a few minutes before the end of the match, the players subject of this study were measured the level of lactic acid at these two moments (T1 and T2). The average level before the match; 55.5:12 = 4.6 mM. The average level after the match; 114.9:12 = 9.6 mM. The average difference; 88.2:12 =7.35 mM. The difference of lactic acid between T1 and T2 is 9.6-4.6 = 5.0 mM. According to the results of this study, it is concluded that the indicators of blood lactic acid level in football players aged 15-16 are in normal parameters, about 5.0 mM, compared to the indicators of superior teams which can reach about 12 mM during the match and about 4.0 mM at the beginning of the match.

Keywords: lactic acid, blood, mM, football players, match.

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MODERN TRENDS OF FORMATION OF VEGETATION UNDER DIFFERENT PHYSICAL-GEOGRAPHIC CONDITIONS IN SOUTH-WESTERN TRANS-BAIKAL

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ABSTRACT

The dynamics of vegetation formation during last decades on the background of the climate variability in continental-regional scale reflects modern trends of phytocoenoses development under different physical-geographic conditions in the Baikal Region. Due to this fact, timely corrections in determination of the vector of successional changes in belt-zonal differentiation of the vegetation cover become very actual at modern stage of trend in the phytocoenoses development. Vegetation formation in different environments must be as well considered within the whole biome. In this case, phytocoenoses at environments contact (transition) reflect the most rapidly in time all occurred and occurring changes in their structural-dynamic organization, therefore they are best models in the system of the monitoring of vegetation development at vast territories.

Key words: vegetation, successions, phytocoenoses of environments contact, monitoring, South-Western Trans-Baikal.

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EVALUATION OF NATURAL RADIOACTIVITY IN SOME ALBANIAN BOTTLED WATER SAMPLES

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ABSTRACT

According to the Council Directives 98/83/ EC, "On the quality of water intended for human consumption" and later by DCM no. 379, On the approval of the regulation "Quality of drinking water", which dates on May 25, 2016, the total concentration of the gross alpha activity in drinking water is limited to 0.1 Bq/litre and for gross beta activity concentration at 1 Bq / litre. Gross alpha activity concentration includes all alpha emitters, except for radon, while gross beta activity concentration includes all beta-emitters, except for tritium and potassium-40. The work presented in this paper is about the use of technique of liquid scintillators as an alternative technique in the determination of the natural radioactivity of some bottled water available at the Albanian market. The standard procedure for determining the overall alpha and beta activity is through proportional counters. The ability of liquid scintillators to perform alpha and beta discrimination provides the possibility of using an alternative method to that traditional approach. The measurements were performed by using the Tri-Carb 3170 TR / SL type Perkin Elmer liquid scintillator counter, capable of performing alpha / beta discrimination. The natural radioactivity values of nine bottled water samples for gross alpha activity ranges from 0.004074311 ± 0.002002 Bq/L to 0.07192243 ± 0.002888 Bq/L and for gross beta activity range from 0.068518986 ± 0.002002 Bq/L to 0.159877634 ± 0.003904 Bq/L. These values are much lower than the sanitary standards provided by the Albanian law.

Keywords: natural radioactivity, α-radioactivity, β-radioactivity, bottled water.

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REGIONAL PRIORITIES IN DESIGNING SUSTAINABLE ARCHITECTURE BASED ON CLEAN AND RENEWABLE ENERGY IN TEHRAN

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ABSTRACT

Achieving appropriate design solutions to achieve the goals of sustainable architecture and creating a residential complex based on clean energy and concerning climatic characteristics and the use of technology, is one of the most important needs of the country based on architectural vision documents for the next ten years. Localization or regulation of measurement strategies and then research of global standards of sustainable architecture is very important in this field and therefore this research considered the way to achieve the lead standard. In measuring the lead characteristics before each study, the regional scores index should be extracted and introduced in the regional study of regional sustainability priorities, and such a study did not exist in Tehran. The purpose of this study is to achieve a strategic priority classification responsive to Tehran's climate that can be the basis for measuring the success of sustainable projects and such designs, so based on areas that have this advantage, such as examples in Southern California, the project in India, Arizona, and many other regions that have this privilege, it was found that regional priority credits are determined according to its sub-criteria, based on which 130 questionnaires were surveyed among architects and civil engineers. In master's and doctoral degrees and using descriptive statistics, inference by SPSS software and credits that had the highest percentage as regional priorities, respectively, reducing water consumption, renewable energy in place, optimizing energy consumption, optimizing water consumption, waste management, and green energies were identified.

Keywords: regional priorities, sustainable architecture, clean and renewable energy, green energies

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A RARE CAUSE OF DEATH FROM SNAKE BITE POISONING: *CASE REPORT*

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ABSTRACT

Snake-bite is a well known occupational hazard, especially among farmers and other outdoor workers, and among those who live ground floor houses. Snake bites are usually clinically pictured with neurological, hematological and vascular damage. Cardiac manifestations from snake bike are not prominent. Snake bite after recovering from aluminium phosphide poisoning is yet more rare. Herein we present a rare case of death from a snake bite from one patient who previously survived a deliberately aluminium phosphide poisoning. The patient, a male 45 years old was presented to the emergency department with a slighty swollen leg from a snake bite, two days after he was discharged from hospital for a diagnosis of "Aluminium phosphide poisoning". On inspection, fang marks were identified on the medial malleolus of the right leg. On arrival, the patient was conscious, feared, restless, hypotensive, with a weak peripheral pulse. He complains for severe pain along his limb. General examination revealed: afebrile, HR 134/min, BP 90/60 mmHg, RR 21/min. Because of the patient`s previous and actual medical history, the patient was transferred in ICU for intensive care. After 36 hours he died.

Key words: snake, bite, AlP poisoning, death.

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INVESTIGATING THE EFFICIENCY OF ENERGY SOURCES MANAGEMENT IN SUSTAINABLE ARCHITECTURE

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ABSTRACT

Sustainable architecture has important consequences such as eliminating the negative effects of the building, the use of environmentally friendly materials, avoiding damage to the land, paying attention to the ecological character of the region and climatic properties, reducing the use of non-renewable resources and achieving the best level of quality of life will follow. It is impossible to manage energy consumption without considering public education at different levels of society; because what has been extracted from energy sources with effort and effort will be wasted if manpower and people do not know its value. Replacing non-renewable energy with renewable energy requires public education and the dissemination of public culture. Therefore, the use of climate design principles (energy sustainability approach) in its design seems useful and desirable; because in the design of buildings, efforts have been made to use natural energy sources. The research method in this research is a descriptive-analytical research method that according to the available sources, such as magazines, the Internet, etc., is reviewed and analyzed, and concludes that examines and describes the characteristics of climatic architecture. Techniques and tools for collecting research information are based on documentary methods. Information is collected from books, architectural articles, observations, and pictures. The results show that achieving sustainable architecture requires access to sustainable energy sources that non-renewable energy and fossil fuels are not suitable sources in this regard due to their unsustainability. But renewable energy, if consumed, will remain for future generations and, unlike fossil fuels, will not lead to pollution and global warming. Undoubtedly, by replacing renewable energies with non-renewable energies, the steps taken towards sustainable development will become stronger and stronger.

Keywords: energy sources management, sustainable architecture**,** renewable energy, energy sustainability approach

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GREEN SYNTHESIS OF 1-METHYL-2-PHENYL-3-(THIOPHEN-2-YL)-1H-INDOLE

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ABSTRACT

Indole and derivatives have emerged as central candidates for material chemistry since they show remarkable properties in solar cells. Many synthetic methods have been employed for the synthesis of indoles. Moreover, 3-thiopehenylindoles could be play very critical roles for the synthesis of novel organic materials. In the present study, 1-methyl-2-phenyl-3-(thiophen-2-yl)-1H-indole is synthesized by using three different reaction ways including Suzuki-Miyaura coupling reaction, Stille coupling reaction and MW assisted cyclization reaction. It was investigated that microwave assisted green reaction could be best ways for the formation of 1-methyl-2-phenyl-3-(thiophen-2-yl)-1H-indole.

Keywords: Indole; Green Chemistry; Microwave Irradiation, Solar cells, coupling reactions.