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TOLERANCE OF LICHENS FROM PROTECTED AREAS TO THE CHANGES OF ENVIRONMENTAL FACTORS

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ABSTRACT

In the forest-petrophitic ecosystems of the middle course of the Dniester (right bank) the lichens from 9 protected areas belonging to 34 species were recorded. Of these 12 are rare species, 3 are included in the Moldova's Red Book (2015). It was established that for 10 species the ecological valences to the substrate, illumination and humidity are very narrow, so the ecological spectrum is very narrow. Among the 10 stenoic species 2 are included in the Red Book and 8 are rare, so these will be the first affected in the case of changes in the environmental components.

Keywords: lichens, ecological valences, natural ecosystems

BIOGAS TECHNOLOGIES FOR SUSTAINABLE IMPROVEMENT OF ENERGY DIVERSITY

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ABSTRACT

The purpose of this study is to measurably assess an integrated industrial biogas plant and introduce some biogas technologies as alternative sources for energy production in the Kingdom of Saudi Arabia. Biodegradable materials such as organic wastes, sewage, municipal wastes, and green wastes are very important precursors used in energy production plants for obtaining biogas and some certain organic fertilizers. Biogas plants have many benefits; one of their primary functions is being used as anaerobic digesters with different configurations to treat animal and agricultural wastes for energy production. During the process, microorganisms convert biomass wastes into biogas, mainly methane and carbon dioxide. The study shows four steps carried out of a full-scale biogas plant for a life cycle analysis (LCA) with 950 kWh as: initially, the scope and target were defined, then inventory was analysed, the impact was assessed, and finally the results were interpreted in detail. The results of analysis showed that the biogas plant can preclude the equivalent of 2.43E+09 kg of CO_2 global warming and the ozone depletion of 18.80593 kg of CFC-11 equivalent. It was also determined that aquatic environment eutrophication contributed to the prevention of toxicity, acidification, and eco-toxicity for humans. Some organic by-products were obtained from anaerobic digestion (AD) and used as fertilizer for agricultural or other productions.

Keywords: Biogas, Biogas plant, Anaerobic digester, Life cycle analysis (LCA), Inventory analysis

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BIOETHANOL IN TURKEY

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ABSTRACT

In accordance with the estimates, fossil fuels are decreasing in the world, but these fuels will continue to be dominant sources until 2040. The share of renewable energy resources in 2040 is expected to be 16.1%. Similarly, it is expected that global electricity demand will increase up to 80%, by 2.3% rate annually, by 2040. In the light of all these considerations, renewable energies stand out for energy solutions all over the world. In this scope, one of the liquid biofuels, bioethanol is a good energy alternative not only for Turkey's energy future and agriculture, but also the world's as well. Sugar beet is the most convenient and efficient agricultural raw material source for bioethanol production. As the use of bioethanol production increases in Turkey, sugar beet production for bioethanol will increase, gradually. The production of biofuels from agricultural products and the energy agriculture that develops in agriculture sector is a rapidly growing in the world. Developed countries produce a significant portion of the energy in their own countries to meet their energy needs from agricultural products at an increasing rate. In this way, it is ensured that fossil fuels with limited reserves, which are known to have negative effects on the environment, will be used in less amounts and the income of the agricultural sector will be increased by producing high value-added products. In this study, one of the significant biofuels, bioethanol has been examined and its potential, technologies, importance and the latest situation in Turkey investigated. Also, it is aimed to support Turkey's one of the most important energy policies, which is to increase the production of domestic and renewable energies.

Keywords: Renewable Energy, Biomass, Biofuel, Bioethanol, Turkey

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DANGEROUS GOODS SUCCESS TEST DEVELOPMENT STUDY

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ABSTRACT

This is a valid and reliable achievement test for dangerous materials. The universe of this study consists of the students of Kocaeli Vocational School of Chemical Technology. The research was applied to 190 students studying chemistry program in Kocaeli Vocational School in 2018-2019 academic year. The achievement test, which measures dangerous substances, is a measurement tool applicable to vocational school degree students.

Key words: Dangerous materials ecology, achievement test, quantitative research

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CHARACTERISTICS OF THE STRUCTURE OF ACTUAL STATE OF FORESTS AND FORECAST OF ITS PROBABLE DEVELOPMENT ON THE TERRITORY OF GOLD MINING (REPRESENTED BY GOLD EXPLORATION AREA IN IRKUTSK REGION)

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ABSTRACT

The research was performed within a requirements specification concerning ecological monitoring of main components in the ecosystems aimed to assessment of available and potential impact of a gold exploring enterprise in one of gold mining areas onto the environment in Irkutsk Region (East Siberia). While performing it, normative and methodological documents as they are nowadays were taking into consideration. While studying initial state of ecosystems components, we assessed first of all the role of natural regional factors and the degree of possible anthropogenic impact onto the environment. Main limiting factors for the enterprise extension in this area may be available here functionally important forest coenoses. Their functions are: protection from erosion, environment formation and water protection. The forests forming basic cover of the studied territory are related to the first group and are in the same time zones of nuts collection in the region. Structural-dynamic organization and formation vector of forests on the enterprise territory and in its environments are most important parameters reflecting the actual state of the environment. Due to this fact, we performed a geobotanic survey to reveal coenoses typology and their structural coenotic peculiarities in different sites of forests coenoses formation. The results obtained due to this research allow to represent the peculiarities of spatial-temporal variation of forests, the degrees of their actual and probable transformation at increase of anthropogenic impact onto the environment within the licensed site. Such data may serve as a base for possible under the present condition's reconstitution activities aimed to prevention of potentially negative impact onto the vegetation at further exploration of the licensed territory.

Key words: vegetation structure, spatial-temporal variability of forests, forecast of forests formation, gold mining, Irkutsk Region

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VARIATION OF PHYSICAL AND CHEMICAL PARAMETERS OF WASTEWATER OF WASTE LANDFILL IN MITROVICA, KOSOVO

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ABSTRACT

Evert environmental pollution is associated with its effects on the host environment. Surface water pollution in the Iber River is a challenge posed by the drainage of urban waste landfill. This paper aims to show the variations in the physical and chemical parameters of urban waste water in Mitrovica and the water of the Iber River, as well as the impact of the landfill wastewater on the water quality in the Iber River. In order to achieve the realization of this work, three sampling sites were determined from which water samples were taken for laboratory analysis at different time periods during 2017-2018. The analyzed physicochemical parameters showed the following results: water temperature fluctuated by 15.7 °C until 23.3 °C, pH from 7.5 until 8.2, electrical conductivity by 315 µS/cm until 5010 uS/cm, dissolved oxygen from 1.33 mg/l until 4.41 mg/l, SHKO from 3.3 mg/l until 358 mg/l., nitrites from 0.5 mg/l until 12.7 mg/l etj. The values obtained through laboratory analysis were compared with the values of AI no. 30/2014, on limit values of waste water discharge in the water body (Republic of Kosovo) and the standard for the assessment of the ecological status of surface water in Romania, 2006 (GD 161).

Keywords: Wastewater, variation, parameter, surface, physic-chemical.

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CAUSES OF INFERTILITY AMONG COUPLES IN PRISHTINA 2000-2010

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ABSTRACT

The prevalence of infertility has increased significantly in recent years. The global prevalence of infertility is reported to be 10%-15% affecting approximately 10% of couples. The purpose of the study was to explore the causes of infertility among couples who visited the University Clinical Centre in Prishtina, Kosovo during the period of 2000-2010. Primary infertility was found in 229 (71.1%) couples and Secondary in 93 (28.9%) ones. Of the causes of infertility were: female factors in 127 (39.4%) of couples, male factors in 58 (18%), combined factors in 99 (30.7%) and unknown infertility in 38 (11.8%) of couples. In reviews of infertile couples, study of male and female factors is important and mostly the couples mentioned more than one reasons as the infertility factor. Finally, preconception care and counseling are recommended to all those who are planning a pregnancy to avoid failure.

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LANDSCAPE ANALYSIS AND REGAIN FUNCTIONALITY OF GÜLISTAN GARDEN IN THE HISTORIC VAN CASTLE

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ABSTRACT

Located along the city shores of Van Lake in Turkey, the city of Van has hosted many civilizations, and historic and archaeological wealth and heritage. The landscape and environmental restoration project, which covers an area of approximately 5.000 m² in the northeast of Van Castle supported by Van Governorship, was put into practice in 2006 under the name of "Gülistan Garden". The Gülistan Garden became a recreation area of local and foreign tourists visiting the castle and the old town until 2010. Although the garden is located in the first-degree archaeological site, it has lost its quality landscape image characteristic under negative environmental effects today due to lacking maintenance and repair works. The study aimed to reveal the cultural importance of landscape functionality for the city in today's historical sites by comparing the first years and the current status of the Gülistan Garden in terms of its visual landscape quality in the case of Van city. In the study, the landscape design project of Gülistan Garden was examined, the equipment elements, activity area, plant, and structural assets were taken into consideration, basic features in terms of quantity have been revealed. The first construction and current status visual landscape value were determined. Based on the analyses, two basic suggestions were developed for regaining the functionality of the area and the recovery of the visual value due to the low visual landscape quality and lost quality and maintain the sustainability of its landscape.

Keywords: The Gülistan Garden, Historical Landscapes, Regain Functionality, Van Castle

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FLOW OF TUBERCULOSIS BY AGE, GENDER AND CITIES DURING THE PERIOD 2003-2014 IN KOSOVO

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ABSTRACT

Tuberculosis is the ninth leading cause of deaths worldwide and is caused by a single infectious agent, Mycobacterium tuberculosis. This is a retrospective study followed during the years 2003-2014 in Kosovo. All TB patient treatment files throughout the Kosovo region were processed and all TB patients were included in the study. The study included 10669 patients disaggregated by years, and data were analyzed by gender, age and regions. Even though all age groups are at risk of tuberculosis, the prevalence is observed in the age group of 21-30 years with 22.2% of the total and age group> 60 with 24.9% of the total, with significant statistical difference with other age groups (p < 0.001). Therefore, tuberculosis in Kosovo is more prevalent in persons over 60 years, as in the developed European countries. Early diagnosis, contact processing and detection of TB cases on time will have a significant impact in reducing the TB cases.

Keywords: TB, diagnosis, trend, prevention

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GROSS ALPHA/BETA RADIOACTIVITY IN DRINKING WATER IN THE MAIN CITIES OF ALBANIA

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ABSTRACT

The main sources of radioactivity in drinking-water are: the leaching of radionuclides from rocks and soils and the deposition of radionuclides from the atmosphere. Naturally occurring radionuclides from both these sources account for almost the entire radioactivity present in Albanian drinking water. The principal responsible radionuclides in drinking water are ^{238}U, ^{232}Th, ^{40}K and, to a lesser extent, trace elements, such as ^{235}U. Alpha-emitting radioelements are ^{226}Ra, ^{224}Ra, ^{210}Po and in certain circumstances, the uranium isotopes ^{234}U and ^{235}U, as they are rather insoluble in reducing environments but are soluble in oxidizing and particularly in acidic conditions. As a consequence the control of natural radionuclides in water for human consumption has become a major goal worldwide during the recent decade. Limitations were set and the need for simple and rapid procedures for their implementation becomes necessary. As a consequence of the ICRP 65 recommendations the European Community in their directives 98/83 EC in 1998 demands for the control of radioactivity levels in water for human consumption. This has been extended in 2001 as well to Radon and long lived daughter nuclides. As a consequence the member states are enforced to transfer these directives into national legislation. An action level of 0.1 mSv/a for total natural radiation exposure from drinking water has been fixed (Council Directive 98/83/EC). According to Albanian legislation Nr.957, date 25. 11. 2015 "Guide levels of indoor radon concentration and radioactivity concentration in goods, with effect public protection", article 6 "Guidance levels for radionuclide concentration in water intended for public consumption" the gross alpha/beta screening was first carried out since it is a simple radioanalytical procedure, without regard to the identity of specific radionuclides. For gross alpha and gross beta radioactivity concentration exceeding the screening levels of 0.5 Bq/L and 1 Bq/L respectively, the further investigation is needed.

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DETERMINATION OF LONG-LIFE RADIOCESIUM [137]CS IN SOIL BY GAMMA SPECTROMETRY IN THE WESTERN LOWLAND OF ALBANIA

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ABSTRACT

A screening campaign on determination of artificial radioactivity concentration has been realized for the 41 soil samples collected at the Western Lowland of Albania. In this study the long life radiocesium ^{137}Cs activity concentration was measured by means of gamma-ray spectrometry with a HPGe detector. The calculated activity concentration values have been found to vary from 0.22 ± 0.03 Bq kg^{-1} to 24.21 ± 1.46 Bq kg^{-1}. The results have been compared with average concentrations of other countries of region found in literature. The results from this monitoring campaign are important for the human radiation exposure and provide the useful information for assessing future effects due to external factors such as human activities.

Keywords: artificial radioactivity, gamma-ray spectrometry, radiocesium, soil, monitoring

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LONG TERM STUDY OF RADIOACTIVITY IN SUPERFICIAL WATER IN ALBANIA

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ABSTRACT

Albania has more than 152 rivers and streams, forming 8 large rivers flowing from southeast to northwest, mainly discharging towards the Adriatic coast. The rivers of Albania have a total annual flow rate of 1,308 m^3/s per year. A screening of beta radioactivity in superficial waters (rivers and lakes) in Albania originates from 1970, which was one of the most important activities of Institute of Nuclear Physics (INP) for about 20 years. Samples for gross beta radioactivity were taken from representative rivers: Mat, Erzen, Ishem, Drin, Shkumbin, Seman and Vjose. Sampling has been periodic every two months. During the 1990 – 2004 after the change of political system this activity was reduced in 4 times per year. Since 2005-2007 the monitoring activity was financially supported by Ministry of Environment, National Environmental Agency (NEA), also 4 times per year. During 2007-2009 the cooperation project "Monitoring of radioactivity in drinking and surface waters in Albania" between IANP and Riso National Laboratory, University of Copenhagen supported by DEMA, Denmark. In 2015 also the NEA agency financed the monitoring of gross alpha/beta concentration in superficial waters every season of the year. Although Albanian legislation does not have limits on the level of radioactivity in river waters, use of some rivers for supply of water reservoirs for public consumption and irrigation of crops requires continuous monitoring. In this study were summarized the results of these long-term measurements.

Keywords: Gross alpha/beta radioactivity, Superficial water, Efficiency calibration

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NANOAGROCHEMICALS: ECOTOXICOLOGICAL RISK ASSESSMENT

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ABSTRACT

In the agricultural sphere, a large number of nanopreparations with insecticidal, herbicidal, fungicidal action is used to increase plant immunity to adverse environmental factors and to improve their mineral nutrition conditions. At the same time, a large amount of data on the environmental hazards of nanoproducts has been accumulated: active migration into the environment, phytotoxicity, negative impact on soil, aquatic, terrestrial ecosystems. The toxic properties of nanoparticles depend, first of all, on the presence of nanoparticles smaller than 100 nm in their composition. Therefore, a new scientific direction - nanoecotoxicology - has been actively formed recently. One of the tasks of this direction is development of methods for researching the environmental hazard of nanomaterials. The purpose of our research was to study environmental risks and to establish safety standards for the use of plant growth nanoregulators. Electron scanning and biotest methods were used (effective inhibitory action on soil N-mineralization and ecotoxicity using Allium test). It was found that in the system of nanotoxicology scanning electron microscopy method is expedient to use to determine the size, qualitative, quantitative composition, and structure of nanoparticles, which allows making assumptions about the toxicity of the nanoparticle. Biotesting methods were proposed for quantitative risk characterization and determination of safe nanoparticle application rates.

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STEROL COMPOSITION OF SEED OILS IN NINE SAFFLOWER VARIETIES CULTIVATED UNDER NORTH-EASTERN ALGERIA CONDITIONS

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ABSTRACT

Since Safflower is a drought tolerant crop, the objective of this research was to study the seed oil phytosterol -which is considered, one of the most important minor compounds, and characterizes vegetable oils- content of safflower varieties under semi-arid conditions. Our field experiment was carried out at INPV station of Constantine, North-Eastern Algeria. The plant material consists of nine safflower varieties different in their geographic origin. These genotypes were cultivated in randomized complete block design (RCBD) with three replicates. Plant seeds were grinded to fine powder, and the oil was extracted by hexane, saponified and faltered over anhydrous sodium sulphate, then, the phytochemistry profiling of the unsaponifiable matters was carried out using GC/MS. The results revealed that *Rio* and *Royal* varieties excelled and containing the highest content of seed oil sterols (61,81 and 54,16% respectively), while *80/482/3S* and *Kusumba* cultivars produced the highest hydrocarbons percentage in their seed oil (82,54 and 72,31% respectively).The variability was also remarked among genotypes when phytosterol fraction of seed oil was tested, Asian varieties (*Kusumba* and *OT-455*) contained the highest values of β-sitosterol, the dominant phytosterol, with 60,74% and54,87% respectively, while the two US cultivars *Gila* and *80/482/3S* have respectively, the major contents of stigmasterol (47,43%) and campesterol (46,79%).

Keywords: *Carthamus tinctorius* L., GC/MS analysis, phytosterols, hydrocarbons, semi-arid conditions.

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TRITIUM IN NUCLEAR FUSION SYSTEMS

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ABSTRACT

Tritium, the radioactive isotope of hydrogen, is of main interest in the research and development of fusion technology. In order to establish fusion as an energy source, tritium safety and availability must be achieved. In effect, tritium constitutes a hazard, even in low quantities, and must be handled limiting the releases to the environment. Tritium will be burn in large quantities in the event of nuclear fusion power plants, and being practically non-existent in nature, must be produced by the reactor itself. After a description of tritium radiological characteristics and hazard, the tritium breeding issue is presented, focusing particularly on the most recent European breeding blanket designs.

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MHD (MAGNETO-HYDRODYNAMICS) IN LIQUID METALS IN FUSION REACTORS: EFFECTS ON TRITIUM TRANSPORT AND INVENTORY

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ABSTRACT

The Water Cooled Lithium Lead (WCLL) is one of the breeding blanket concepts proposed for DEMO reactor. The velocity field of the electrically conducting lead-lithium eutectic alloy inside the blanket is highly influenced by the external magnetic field used for plasma confinement, due to a magnetohydrodynamic (MHD) effect. In addition, strong temperature gradients give rise to buoyancy forces, that have a great impact on flow behavior. MHD and convection significantly influences the resulting temperature and velocity fields, and therefore tritium transport. A multi-physics approach of a 3D tritium transport model is presented for a simplified geometry of the WCLL breeding blanket. In particular, MHD, buoyancy forces, advection-diffusion of tritium into the lead-lithium eutectic alloy, transfer of tritium from the liquid interface towards the steel and diffusion of tritium inside the steel have been included in this study. Tritium permeation from PbLi to the baffle, tritium concentrations and inventories inside the lead-lithium and in the EUROFER baffle have been evaluated.

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MACHINE LEARNING APPLICATION FOR OPTIMIZING ASYMMETRICAL REDUCTION OF ACETOPHENONE EMPLOYING COMPLETE CELL OF *LACTOBACILLUS SENMAIZUKE* AS AN ENVIRONMENTALLY FRIENDLY APPROACH

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ABSTRACT

Recently, optimization of the bioreduction reactions by optimization methodologies has gained special interest as these reactions are affected by several extrinsic factors that should be optimized for higher yields. An important example for these kinds of reactions is the complete cell implications for the bioreduction of prochiral ketones in which the culture parameters play crucial roles. Such biocatalysts provide environmentally friendly and clean methodology to perform reactions under mild conditions with high conversion rates. In the present work, at the first step the *Lactobacillus senmaizuke* was isolated from sourdough and the complete cell application of *Lactobacillus senmaizuke* for the bioreduction of acetophenone was optimized by an Artificial Neural networks (ANNs) to achieve the highest enantiomeric excess (*EE*, %). The culture parameters, pH, temperature, incubation period and agitation speed were the experimental factors that were optimized to maximize *EE* (%) by machine learning algorithm of Artificial Intelligence modeling and the best conditions to maximize *EE* (95.5 %) were calculated to be pH of 5.7, temperature of 35 ºC, incubation period of 76 h and agitation speed of 240 rpm with very low sum of squared error value (0.611236 %) to bioreduce acetophenone using complete cell of *Lactobacillus senmaizuke* as a sourdough isolate GRAS microbial species. Accordingly, The ANN was employed to correctly establish the enantiomeric excess values of the specimen with an average absolute error 0.080739 %.

Keywords: Sourdough, Asymmetric bioreduction, Biocatalyst, Chirality, Machine learning, ANNs, Biotransformation

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ASSESMENT OF THE HEAVY METALS PRESENCE IN THE WATER, SOIL AND LANDFILL OF THE DRENICA RIVER – NEARBY THE INDUSTRIAL BY COMPLEX FERRONICKEL

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ABSTRACT

The concentration of several heavy metals as possible contaminants were evaluated in air, water, land, and discharges from wastewater after the technological process of the Ferronickel factory. Such a study remains of immense importance due to the possibility that these contaminants can enter accumulate and bio-magnify in the environment. The study involved heavy metals such as; Zn, Pb, Cu, Fe and Ni. The reported results indicate that the concentration of these metals has exceeded the concentration values imposed by EU regulations. As results of this we propose that local government should take precautions and legislative directness to control the situation created in this context. The results obtained within this study indicate that presence of metal contamination in the study area is strongly influenced mining activities. The results presented here can serve national agencies in taking measures to implement monitoring programs for heavy metals in the areas surrounding the "Ferronickel Complex".

Keywords: heavy metals, soil, water, sterile, sludge, factory "New Ferronickel"

ENVIRONMENTAL IMPACT FROM METALURGJIK COMPLEX ``TREPÇA`` IN AREA OF MITROVICA

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ABSTRACT

During the mining and the production of the Pb-Zn "Trepça" (Mitrovica), a considerable amount of sterile material remains after the mines flotation. This possesses a possible environmental issue and can lead to contamination of water, soil and sludge. In order to evaluate the leaching of heavy metals, the determination of lead (Pb), zinc (Zn), copper (Cu), cadmium (Cd), nickel (Ni) and iron (Fe) is carried out in four types of samples: water, soil, sludge and sterile material. ICP (Inductively Coupled Plasma) was used for the determination of heavy metals. The use of Principal Component Analysis (PCA), dendograms and other statistical procedures, permitted to understand the possible source of the heavy metal presence in the analyzed samples. The results obtained within this study indicate that the metal pollution in the study area is strongly influenced by the Trepça complex. The results presented here can serve national agencies to take measures regarding the monitoring programs for heavy metals.

Keywords: heavy metals, flotation process, sludge, water, soil, ''Trepça'' complex.

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THE CORRELATION BETWEEN URBAN ROAD WIDTH AND ON STREET PARKING TIRANA, ALBANIA: CASE STUDY ISH-BLLOK AREA

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ABSTRACT

The rapid growth of the transportation sector during past years in Albania has created major problems particularly in the capital city, Tirana. The remarkable increase in car ownership and suburban sprawl has overloaded the road network in Tirana, making it insufficient and problematic. One of the most crucial transportation management strategies that can be regarded to achieve more sustainable transportation system is parking management. This paper aims to provide a survey of urban roads and on-street parking in Tirana, mainly focused in Ish-Bllok area. The study has generated data using all the physical measurements, such as traffic and volumetric counts descriptive. For this aim were exploited inferential statistical tools for the data analysis. The results conducted that road widths were narrow and could not accommodate on-street parking. Tested hypotheses confirmed that the width of roads and the number of parked vehicles were strongly correlated (r=0.75, P<0.01). Also the volume of traffic counts and the number of parked vehicles were also strongly correlated (r=0.88, P<0.01). The study therefore recommended traffic management techniques such as vehicle parking regulations and control, and the usage of off-street or multi-stories parking facilities offered by public and private sector. By orienting many drivers to other parking alternatives, we can manage efficiently the on-street parking demand.

Keywords: Traffic management, road congestion, vehicle parking, parking facility, volumetric count, land use;

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THE ACTUAL LEVEL OF INTERNATIONALIZATION OF ALBANIAN SMES AND THE MEASURE OF THEIR OVERALL PERFORMANCE

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ABSTRACT

The focus of our study is to determine the current state of internationalization of Albanian small and medium enterprises. Also, we aim to measure the level of success of Albanian small and medium enterprises that resulted to be internationally active. The study was conducted based on data collected by a survey in a sample of 200 Albanian small and medium enterprises (SMEs). These SMEs are located in 12 different counties of Albania and operate in different industries such as insurance, diary production, financial and accounting services, maintenance, clothes production, education etc. Of the total questionnaires distributed, only 81% of SMEs agreed to respond volutary, while 19% of them refused. The data collected were statistically elaborated with SPSS 20.00 and the finding were very satisfactory. Out of the total 164 SMEs that responded to the questionnaire, 84 of them were carring out international activities. Most of them used "export" as the main form of internationalization. For measuring the success of internationalization of Albanian SMEs, which resulted to be internationally active, we collected data about five different dimensions: intensity of international activity, object achievement, relative profitability, absolute profitability, management satisfaction. The combination of these five dimensions has given us the overall performance of SMEs. It resulted that the internationalization model adapted by Albanian SMEs was at a satisfactory level. The results are consistent if we compare them with the secondary data published by various organizations and institutions, as well as with the reality of the Albanian economy.

Keywords: Albania, SMEs, internationalization, performance, dimensions

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STRUCTURE AND TRENDS OF FORESTS FORMATION IN THE CENTRAL PART OF LAKE BAIKAL EASTERN SHORE

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ABSTRACT

The studies of structural-dynamic organization of forests in the central part of Lake Baikal eastern shore performed using method of field geobotanic survey (at the key sites) revealed modern trends of the formation of forest communities under different physical-geographic conditions in the Eastern Pre-Baikal in the whole. In particular, we noticed expansion of dark-coniferous trees species as undergrowth, at initial stages of timber stand formation, with appearing in the second synfolium suggesting spatial widening of a dark-coniferous component in taiga structure on the background of climate dynamics during last decades in the region. Common features of forest communities at the key sites – the Tolbazikha and Manturikha river valleys (south-eastern coast of Lake) is strengthening of dark-coniferous species position in the undergrowth of polydominant dark- and light-coniferous forests. Often on burnt sites and cuttings under the canopy of small-leaf timber stand, there is undergrowth of trees forming dark-coniferous taiga (cedar, spruce, fir) characteristic for pre-mountain region of the Khamar-Daban Ridge. According to the integrated studies data consisting of plants species composition, geoelemental (arealogical) and ecotypological (ecotypes) compositions, to ratio of belt-zonal plants groups in the communities and to structural-dynamic variability of communities with time for these physical-geographic conditions, we have to state that at present there are trends of substitution of dark-coniferous – light-coniferous taiga by dark-coniferous component everywhere. Such trends in the forests formation were noticed before several times for Lake Baikal southern and western shores, as well as in the whole Baikal Region.

Key words: geobotanic survey, structural-dynamic organization of forests, south-eastern coast of Lake Baikal, dark-coniferous – light-coniferous taiga

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STRUCTURAL-DYNAMIC PECULIARITIES OF PHYTOCOENOSES OF AN INTERZONAL ECOTONE IN SOUTH-WESTERN TRANS-BAIKAL
(Surroundings of Lake Gusinoe, Buryat Republic, Russia)

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ABSTRACT

The phytocoenoses of environments contact in the Pre-Baikal reflect modern trends of formation and development of vegetation on the territories under concrete physic-geographical conditions in the different areas of Baikal region at all. The Selenga R. Basin, including surroundings of Lake Gusinoe, is within most important biogeographic boundaries, ones of areas and provinces of southern boreal forests and zonal dry bunch-cereals Central Asian steppes, where zona forest-steppe is formed, the processes of environment degradation are more considerably expressed.

Key words: phytocoenoses, forest-steppe zone, interzonal ecoton, the South-Western Trans-Baikal

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INVESTIGATION OF SOCIO-ECONOMIC AND ENVIRONMENTAL FUNCTIONS OF URBAN GREEN SPACE

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ABSTRACT

With the expansion of urbanization and environmental problems and the resulting social damages, efforts to restore nature to the daily lives of city dwellers have become one of the main concerns of planners and officials. Therefore, the present study aimed to investigation of socio-economic and environmental functions of urban green space. The research method in this study is descriptive-analytical and the information is obtained through library studies and indirect observations, i.e. reading books and related articles. Public green spaces, especially urban parks, in the contemporary urbanized world should be seen as the beating heart of cities they are not only modulating the air in cities and reducing various noise, visual, olfactory, etc. pollution in urban spaces, rather, their indirect social, cultural, and economic functions play a central role in promoting the quality of life of citizens. Considering the important functions of urban green space and their important role in sustainable urban development, we find that creating a favorable green space is the solution to many acute urban problems. In addition to enhancing the quality of the city's landscape, it is effective in aesthetics and identity perception, which can prevent economic and physical damage to the quality of life, pollution, congestion and displacement of the middle class and brought vitality to the central areas of the city and its surroundings and it encourages people to volunteer, and on the other hand, given the components and pillars of sustainable development and their connection to the green space, we can move closer and closer to the goals of sustainable urban development by expanding and paying more attention to urban green spaces.

Keywords: socio-economic functions, environmental functions, urban green space

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CEREBRO-VASCULAR ACCIDENTS IN HEMODIALYSIS PATIENTS: A RETROSPECTIVE STUDY IN AMERIKAN HOSPITAL

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ABSTRACT

In 2010, strike was globally the second commonest cause of death and the third commonest cause of life years lost due to premature mortality. Stroke is the leading cause of neurological disability worldwide and the suffering, negative consequences to patients, careers and society as a whole are incalculable. Chronic Renal Disease and (CRD) end-stage Renal Disease (ESRD) are associated with an increased risk of stroke. The three CRD, ESRD, and stroke are associated with premature death, cognitive impairment, dementia and decreased quality of life. Due to ageing populations in hemodialysis and comorbidities mortality rate of stroke in hemodialysis is very high. Patients with CRD are more predisposed to suffer severe and recurrent strokes. For every 10 ml/min/1.73 m² reduction in glomerular filtration rate (GFR) the risk of stroke increases by 7 %. CRD and stroke are sharing cardiovascular risk factors. Traditional atherosclerotic risk factors for CVA, such as age, hypertension diabetes mellitus, and dyslipidemia are common in dialysis patients, there also are risk factors to the uremic process, predisposing hemodialysis patients to either ischemic or hemorrhagic stroke. The aim of our study is to highlight the link between stroke and factors like albumin, haemglobine, cholesterol, calcium levels, the type of vascular access and high mortality rate.

Key words: dialysis, stroke, risk factors, mortality

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EMPIRICAL RESEARCH ON THE RELATION BETWEEN INTERNAL INFLUENCING FACTORS ON THE INTERNATIONALIZATION: ALBANIAN SMES

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ABSTRACT

Small and medium enterprises (SMEs) form an essential source of growth and dynamics for advanced industrialized countries and for emergent economies (Agndal, Chetty 2007; Javalgi, Todd, 2011). According to National Strategy for Business Development and Investments 2014-2020, one of the goals of Albanian government for the midterm period is to constitute a competitive country through stimulation of SMEs and showing them the new opportunities that offer European and global market. During 2018, from the total of 162,835 active enterprises in Albania, 99% are micro, small and medium enterprises. They contribute in 73% of the Gross Domestic Product GDP and 71% of employment. Through this research we aim to identify the relation between the internal factors of SMEs and performance of internationalization for internationally active Albanian SMEs. This objective is based on four hypothesis, which will be tested based on bivariate analysis using Kendall's tau-b correlation coefficient, this is a nonparametric measure of the strength and direction of association that exist between two variables measured on at least ordinal scale. We have four regression models, one for each hypothesis that we will help us understand how the internationalization process can be forecasted based on the variables.

Keywords: empirical, internationalization, internal influencing factors, SMEs, models.

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FORMATIVE OF METAL CONTENTS IN ELECTRONIC WASTE MOBILE PHONE CIRCUIT BOARDS

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ABSTRACT

Advancement in electronic technology makes their life span shortened thus causes a huge number of electronic waste mobile phone circuit boards (WPCBs) to be produced, which presents the new global environmental challenges. Recycling of these electronic WPCBs is a positive step towards not only protect the environment but also for resource recovery. This work carried out for determining the highly valuable metal contents in electronic waste mobile phone circuit boards and finds a high-precision measurement method for the betterment of recycling technologies. HNO_3-HF-$HClO_4$ pretreatment digestion method and ICP-MS multi-analysis showed the highest copper proportion of about 83.31% in used mobile phone boards. Through the analysis of the precision data, it is verified that the method is reliable and has good reproducibility.

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VIRTUAL VERSUS CONVENTIONAL COLONOSCOPY SYSTEMATIC REVIEW

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ABSTRACT

Virtual colonoscopy (CTC) is considered investigational or experimental, for patients with inflammatory bowel disease, including Crohn's, ulcerative colitis, or diverticulitis and cancerous lesions. CTC has several advantages over colonoscopy. It is more comfortable for the patient, does not require sedation (so there is no anesthetic risk like in colonoscopy), and does not disqualify any patients for certain medical reasons, as colonoscopy sometimes does. CTC also requires less time to complete and return to normal activities than colonoscopy, it carries no risk of surgical complications. CT colonography is highly sensitive for colorectal cancer, especially when both cathartic and tagging agents are combined in the bowel preparation. Given the relatively low prevalence of colorectal cancer, primary CT colonography is more suitable than conventional colonography for initial investigation of suspected colorectal cancer, assuming reasonable specificity.

Key words: Colon, computed tomography (CT), multidetector CT, colonoscopy

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SILENT BRAIN INFARCTIONS IN HEMODIALYSIS PATIENTS

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ABSTRACT

End Stage Renal Disease ESRD is associated with an increases risk of cerebrovascular accidents with significant morbidity and mortality. Stroke is the third most common cause of cardiovascular disease death in hemodialysis patients. Chronic renal disease is an independent risk factor for stroke in the general population. The American Heart Association and American Stroke Association have redefined a stroke as brain spinal or retinal cell death attributable to ischemia, based on pathological, imaging, other objective evidence, and /or clinical evidence. Furthermore, the new definition includes the concept of "silent infarction/hemorrhage" to take into account. Lesions were discovered on neuroimaging on neuro-pathological examination without a history of acute neurological dysfunction attributed to the lesion. Objective: To highlight the risk factors for stroke in our dialysis population, to see the prevalence of stroke in this population and to find evidence of "silent infarcts. We conducted a retrospective, qualitative and descriptive study which involved 1732 patients from 5 different centers in the American Hospital starting November 2008 to December 2019. We evidenced 70 different case of cerebrovascular accidents. Also, we took a control group of 70 dialysis patients to compare, (those we did not select it preferentially, but we selected according to the ordinal registrations into the centers) A total number of 1732 of patients were observed during November 2008 till December 2019. Of these 70 patients were diagnosed with cerebrovascular accidents. The mean age was 57.6 years. 33patients were females (47%) and 37 patients were males (53%). 23 patients were younger than 55 years old and 47 patients (68%) were older than 55 years. The mean age of the control group is 53.69 years. The vascular access in 22 patients was AVF (fistula 30.4 %) and 48 had a central venous catheter (69.6%). In the control group there were 52 AVF (74.3%),1 GAV, and 17 CVC (24.3%). The average hemoglobin levels in the stroke group was 9.3 g/dl compared to 11.4 g/dl of the control group. We also performed CT scan in the control group to find evidence of "silent infarcts". The results were surprising. The prevalence of stroke among hemodialysis patients in our center resulted 4.01%. The patients with stroke tended to be older, with lower hemoglobin values and the central venous catheter represented the vascular access in the majority of the patients (69.6%). Vascular access may increase stroke risk by affecting cerebral hemodynamics. In control group hypertension was present in 57 % of patients and only 2 patients were diabetics in the control group. The presence of silent brain infarcts increases the risk of symptomatic stroke and dementia. All dialysis patient should have more preventive management, especially for hypertension.

Key words: stroke, silent brain infarction, dialysis

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TREATMENT OF CONGENITAL DISLOCATION OF THE HIP

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ABSTRACT

Developmental dysplasia of the hip (DDH) refers to hip instability, subluxation/dislocation of the femoral head, and/or acetabular dysplasia in a developing hip joint. The etiology is not yet fully understood but a breech presentation and family history of DDH are the most important risk factors. The clinical features depend on the age of the child. During the first 6 months, the child will be asymptomatic but the hip can be easily dislocated, and a clunk is felt during a hip examination. As the child grows older, contractures develop and abduction of the hip becomes limited. Deformities and leg length discrepancies also develop. A patient with DDH is at increased risk of accelerated osteoarthritis. Since DDH is a common congenital abnormality, all newborns must be screened by physical examination for DDH. Additional screening with imaging is recommended for children with a family history of DDH, a history of breech presentation, and/or clinical features of DDH. Ultrasonography is the imaging modality of choice for infants younger than 4 months, whereas x-rays are used for older children. The goal of treatment is to reduce and maintain the femoral head into the acetabulum as early as possible to allow the hip joint to develop normally. A rigid harness is used in children younger than 6 months. Children 6–18 months of age should be treated with closed reduction, while children older than 18 months should be treated with open reduction. Following either closed or open reduction, the hip should be immobilized in a hip spica cast. The prognosis is not good if treatment is initiated after 6 months.

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VAGINAL COLONIZATION AND PRETERM BIRTH

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ABSTRACT

Preterm birth is a significant cause of infant morbidity and mortality. Considerable evidence suggests that infections play a key role in causing women to have preterm labour and delivery. The specific bacteria found in the amniotic fluid and the placenta in association with premature birth are thought to come from the vagina. This is especially true in women with bacterial vaginosis. The aim of the study was to assess the association of vaginal colonization from *M. hominis* and *U. urealyticum* with preterm birth. We evaluated the genital mycoplasmas from a total of 172 vaginal swabs from pregnant and non women who admitted at the department of obstetrics in Obstetric Gynaecology University Hospital "Koco Gliozheni", Tirana, Albania, between 2015 and 2019. The mean age of women was 28.6 ($\pm$6.10) years with a range 16-57 years. 132 (76.7%) of them were pregnant. Independent risk factors for preterm birth in multivariate logistic regression resulted *U. urealyticum* (p=0.03), and mixed infections (p=0.001). U urealyticum, is an independent risk factor of preterm birth. The testing for bacterial vaginosis and its prompt treatment may reduce the risk of preterm labour.

Keywords: vaginal colonization, *M. hominis, U. Urealyticum,* preterm birth

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NUTRITION, LABORATORY AND NON-LABORATORY INDICATORS AND ITS VARIOUS VALUES (ATTRIBUTES)

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ABSTRACT

Nutrition as a material and spiritual component has at least the affective and / or determinant attributes of living, longevity, therapy, protective factors, physical beauty and dynamic lifestyle. Frequently question in our mind is.: Where are we going? What should we have to do making nutrition more and more useful individually and globally? Nutrition and bio-foods are important elements of lifestyle in the modern world. Nutrition as a choice must be oriented towards diverse and healthy diet. Furthermore, nutrition as impossibility imposes the fight against poverty as a sustainable development objective using the means argued by the Nobel Prize winners 2019, Esther Duflo, Abhijit Banerjee and Michael Kremer and Global Nutrition target 2025.

Keywords: Nutrition, material, spiritual component, laboratory and non-laboratory indicators