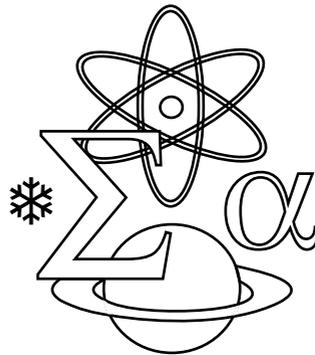


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CONTENTS

No	Author	Research Papers	Page
1	Bekim FETAJI Majlinda FETAJI Betim ÇIÇO Jovan PEHCEVSKI	Software engineering JAVA educational software by combining integrated development environment (IDE) and virtual learning environment (VLE)	3
2	Llambri SOTA Fejzi KOLANECI	Invariant measures for nonlinear random parabolic equations driven by real noise	17
3	Igli HAKRAMA Ozcan ASILKAN Artur KOÇI	An investigation into ICT Use by Albanian Business	35
4	Liljana KOLA Pranvera LAZO	Spectral separation of eosin-phodamine WT and eosin-srg extra fluorescence in water sample binary mixtures	49
5	Elida BYLYKU Florinda CFARKU Brunilda DACI Kujtim FISHKA	Radioactivity measurement of radium isotopes in drinking water using radiochemical method	57
6	Alberta LLABANI	XPS investigation of corrosion of carbon steel in CO ₂ medium	63
7	Alfred FRASHËRI Anesti QIRINXHI	Origin and temperature profiles of thermal waters from the depths of the Albanides	69
8	Mensi PRELA	Radiolarian species from jurassic cherts of Albania	79
9	Ylber MUCEKU	Land evaluation and site assessment-engineering geological mapping for regional planning and urban development in Velipoja region	101
10	Efigjeni KONGJIKA Valbona MATA Zhaneta ZEKAJ (TROJANI) Kasamedin ABDULLAI	In vitro organogenesis of Balkanic gesneriad species (Ramonda)	115
11	Ariola BACU Fadil THOMAJ	Molecular markers discriminate olive cultivar clones from central Albania	131
12	Illir MYTEBERI Arsen PROKO Mariana NIKOLLA	Application of GIS techniques in assessment of forest accessibility	139
13	Miriam NDINI	Review of hydrograph base flow recession curve analysis	149
14	Eva GAVANI Pranvera LAZO Besnik JAKAJ	Comparison of two analytical methods for the determination of irbesartan in pharmaceutical products	161
15	Ledjan MALAJ Ela HOTI Zehadin GASHI Piera DI MARTINO	Compression behaviour ketoprofen amorphous forms	169
16	Sonila VITO Afrim TABAKU	Incidence of adverse reactions to anti-tuberculosis drugs	179
17	Salvatore BUSHATI	Water assets of Albania - Niko Pano	187

SOFTWARE ENGINEERING JAVA EDUCATIONAL SOFTWARE BY COMBINING INTEGRATED DEVELOPMENT ENVIRONMENT (IDE) AND VIRTUAL LEARNING ENVIRONMENT (VLE)

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ABSTRACT

The aim of the present study was i) to verify hypotheses integration of virtual learning environment (VLE) and integrated developing environment (IDE) and their contribution in improving the efficiency and quality in learning Java programming language (because of the enhanced graphical user interface and the “hands on approach” and user-satisfaction increased by the designed graphical user interface of the virtual learning environment along with the attention during learning that implicates improving the overall efficiency of learning programming in Java), and ii) research a new software engineering approach using e-learning indicators to develop Java Educational Software solutions. The outcome of the research is a Java interactive virtual environment that provides a code editor with intelligence support, options for running Java applications or applets and capturing and validating syntax errors by the user, integrated help required by learners in order to learn Java without requiring them to leave the application framework. This approach promotes a Java learning environment as self-sufficient to achieve its objective. The software solution developed has been used in the course of object-oriented programming and the findings and outcomes are reported here.

Keywords: software engineering, Java, e-learning processes, integrated development environment

INVARIANT MEASURES FOR NONLINEAR RANDOM PARABOLIC EQUATIONS DRIVEN BY REAL NOISE

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ABSTRACT

In this paper we study the nonlinear random evolution equations in Banach spaces driven by a real noise and with random initial condition. The real noise process is defined as stationary solution of a stochastic differential equation in finite dimensional spaces (or Hilbert spaces). The aim is to prove the existence of invariant measures. The obtained theoretical results are applied in nonlinear random Boussinesq–Glover equation as well as in nonlinear random reaction–diffusion equations.

Key words: random parabolic equations, real noise, invariant measure, nonlinear random Boussinesq–Glover equation.

AN INVESTIGATION INTO ICT USE BY ALBANIAN BUSINESS

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ABSTRACT

As a developing country, Albania has undertaken a lot of changes in the implementation process of Information and Communication Technologies (ICT) both in public and private sectors. Only recently Albanian businesses have intensified the usage of ICT. In this paper, the situation of Information Systems and Technology usage in Albania is studied, focusing mostly on the business implementation of ICT. This paper provides information about the implementation of ICT from the Albanian business. The Global Information Technology Report is analyzed and taken into consideration for having a general point of view of the ICT usage in Albania. The results of a questionnaire conducted among different types of businesses are demonstrated and different approaches of ICT implementation in the Albanian businesses presented. The ICT investments and software usage for analysis, management and marketing are also investigated.

Keywords: Information Technology, Information and Communication Technology, Albania.

SPECTRAL SEPARATION OF EOSIN-RHODAMINE WT AND EOSIN-SRG EXTRA FLUORESCENCE IN WATER SAMPLE BINARY MIXTURES

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ABSTRACT

The fluorescence ability of Eosin, Rhodamine WT and Sulphorhodamine G (SRG) Extra enables their use as artificial tracers in water system studies. To facilitate the aims of such studies one can inject one, two or more dyes in different points in a chosen water system. Separation of the dyes then requires supplementary chemical treatment. In the present study spectral separation based upon pH variation of these dyes is described. The results helps decision making on which dyes can be used together in the same water system study.

Keywords: artificial tracer, fluorescence intensity (I_F), synchronous scan, Eosin, Rhodamine WT (RWT), Sulphorhodamine G (SRG) Extra

ORIGIN AND TEMPERATURE PROFILES OF THERMAL WATERS FROM THE DEPTHS OF THE ALBANIDES

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ABSTRACT

In this paper, geological data on the depth of origin and temperature profiles of thermo-mineral waters are presented. Albania is rich in geothermal resources of low enthalpy with geothermal energy located in different areas of the country and thermo-mineral waters of sulphate, sulphide, methane and iodinate-bromide types located in three geothermal zones. The location of geothermal springs, their reservoirs and physic-chemical properties of the waters, geothermal regime of the geological structures of the Albanides based on temperature at different depths, geothermal gradient and heat flow density are here analysed in detail. This study is an integrated part of interpretation of geological settings in Albania, contributing in two main fields: i) regional geological field of the Albanides, depth ruptures, etc., and ii) regional and local studies focused on potential of thermal and mineral water resources and the geothermal market in Albania. Both of these aspects are here presented and analysed.

Keywords: thermo-mineral water, heat flow density, geothermal gradient, geothermal zone

COMPARISON OF TWO ANALYTICAL METHODS FOR THE DETERMINATION OF IRBESARTAN IN PHARMACEUTICAL PRODUCTS

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ABSTRACT

In this paper, two analytical methods of High Performance Liquid Chromatography isocratic techniques were applied to evaluate first the level of precision, accuracy, sensitivity and selectivity of each of the two methods and secondly to determinate Irbesartan amounts in pharmaceutical tablets. The experiment was performed on tablet samples containing 150 mg/tab of Irbesartan.

The same laboratory technician undertook the analysis to provide consistency in the tests. Assessment of performance of the two methods was made evaluating coefficient of linearity, accuracy and repeatability parameters. Samples were prepared from homogenization of 20 regular tablets, injected six times for each method ($N = 6$). Both analytical methods showed significant differences in terms of eluting stages and wavelengths used in UV detectors, and resulted in different retention times, $R_{t1} = 9.4$ and $R_{t2} = 26.1$, for the two methods, respectively, making Method I (following NOBELFarma, 2007) more suitable for routine laboratory analysis.

Key words: Irbesartan; HPLC, linearity coefficient, accuracy, quality control, retention time

RADIOLARIAN SPECIES FROM JURASSIC CHERTS OF ALBANIA

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ABSTRACT

Well-preserved radiolarian faunas were extracted from different sections in Middle and Upper Jurassic cherts of the sedimentary cover of ophiolites in Mirdita region, northern Albania. The radiolarians are of late Bajocian–early Oxfordian age and were examined in the following sections of chert: Blinisht–Kullaxhi, Perlati i Eperm, Qershiza, Kaçinari, Peshqesh i Siperm, Kthella, Simoni, Stalosi, Bukemira, Kalur, Lumthi, Lumi i Zi.

Twelve new radiolarian species found in Albania are here illustrated and described for the first time.

Keywords: Radiolarian species, Jurassic cherts, ophiolites, Albania

COMPRESSION BEHAVIOUR OF KETOPROFEN AMORPHOUS FORMS

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ABSTRACT

In the present study, both the compression and the densification behaviours of ketoprofen-polyvinylpyrrolidone co-precipitates along with their physical mixtures (PMs) were investigated. Coprecipitates were obtained using solvent evaporation method under reduced pressure at a temperature of 40 °C. Solids were recovered, grounded in a mortar (the 0–100 mm-sieved fraction was recovered) and stored in a desiccator with the P2O5 serving as desiccant. PMs of the two compounds were obtained in the same proportions by mixing them in a V-shaped mixer. Homogeneity was reached as a result of the PMs compounds mixed in a V-shaped mixer.

The compression study was performed on a high tech mini rotary press equipped with a computerized control system to detect and analyze force-signals (pressing force and ejection force) and with ten flat 11.28 mm-diameter punches. The densification behaviour of powders was studied using an instrumented Frogerais OA single punch tablet machine.

Characterized by an increase in plastic deformability, which, inversely to PVP, is not accompanied by an elastic component, the Ket-PVP coprecipitates showed a very different mechanism. Amorphous ketoprofen form showed a different densification mechanism compared to crystalline ketoprofen, as a result of a fragmentation tendency loss and a plastic deformability acquirement.

XPS INVESTIGATION OF CORROSION OF CARBON STEEL IN CO₂ MEDIUM

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ABSTRACT

In corrosion studies it is of great interest to identify species in thin films on corrosion steel surfaces as this is where the corrosive attack begins and ends. High resolution X-ray Photoelectron Spectroscopy (XPS) is extremely effective in assessing composition and chemistry of corrosion films. Here it is used to analyze typical films formed on low carbon steel after exposure to a brine solution saturated with CO₂ at 25°C in dynamic conditions at 900 rpm in order to complement the results of previous morphology study using Scanning Electron Microscopy (Llabani 2000). The spin-orbit separation $\Delta=13.6$ eV from the Fe (2p) spectra identified the presence of Fe₂O₃ in the corrosion products, and spectra line fits for C 1s, O 1s and Fe 2p confirmed also the presence of FeCO₃. The XPS characterization results of carbon steel under these flow conditions are in accordance and with previous SEM results on the effect of flow on the corrosion process confirming that XPS and SEM are two complementary techniques on corrosion study.

Key Words: Carbon steel, brine medium, CO₂ dynamic conditions, XPS technique.

***IN VITRO* ORGANOGENESIS OF BALKANIC GESNERIAD SPECIES (*RAMONDA*)**

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ABSTRACT

Both *Ramonda serbica*, typical Albanian Gesneriad species, and *R. nathaliae* typically growing in FYROM, belong to the group of “resurrection plants” and need to be preserved as ornamental plants by cultivation. The aim of this study was to compare different micropropagation methods. JG-B medium was used to germinate the seeds for direct organogenesis. Axillary buds and plantlet bundles formation were observed in the presence of BAP and IAA (0.5 mg l⁻¹ each). A high multiplication rate is fundamental for production of a large number of plants. Callogenesis and meristemoid formation during indirect organogenesis in leaves pieces inoculated in MS medium with 10⁻⁴ M NAA and 10⁻⁵ M BAP were observed, while the formation of new plantlets was obtained in MS medium with a high ratio of cytokinin:auxin (10⁻⁵ M NAA and 10⁻⁴ M BAP). Direct and indirect organogenesis of *Ramonda* species are very similar models.

Keywords: *Ramonda serbica*, *R. nathaliae*, organogenesis, micropropagation, JG-B medium, phytohormones

MOLECULAR MARKERS DISCRIMINATE OLIVE CULTIVAR CLONES FROM CENTRAL ALBANIA

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ABSTRACT

Albanian olive cultivar diversity has been studied for many years. Most have been described morphologically in the National Catalogue of Olives of Albania (Thomaj and Panajoti, 2000), with the rest ranked among oleasters and homonymous cultivars. Since 2000, RAPDs, AFLPs, SNPs and SSRs have been also employed to characterize Albanian olive cultivars in order to assess their genetic diversity. The present paper provides a comparative analysis of two clones or cultivars—Micka and Ulliri i Bardhë i Krujës—using RAPDs and AFLPs. The genetic relationships among the cultivars were established using UPGMA cluster analysis. Although there is a high percentage of similarity among Albanian cultivars and clones, some are distinct, representing an important element regarding discrimination of autochthonous pure cultivars of Albania.

Keywords: Fingerprinting, genetic diversity, molecular markers, *Olea europaea*, olive germplasm, AFLPs, RAPDs, SNPs, SSRs

REVIEW OF HYDROGRAPH BASE FLOW RECESSION CURVE ANALYSIS

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ABSTRACT

In the planning and management of water resources, determination of low flow values for irrigation purposes, water supply, hydro-power plant and water quality applications is of great importance. A fundamental part of a hydrograph is the recession curve, a useful tool to determine low flow values and provide a graphical separation of flow components, such as surface flow, sub-surface flow and base flow. The present paper reviews literature on the exponential decay function, widely used in recession curve analysis. It also summarises graphical flow separation techniques and provides an explanation of the base flow index, illustrated with examples from two Albania rivers, explaining the development of a master recession curve of a basin or a typical recession curve.

INCIDENCE OF ADVERSE REACTIONS TO ANTI-TUBERCULOSIS DRUGS

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ABSTRACT

The recommended first line regimen for active tuberculosis treatment is associated with significant Adverse Drug Reaction (ADR). The incidence of ADRs among patients in University Hospital for Lung Disease, Tirana, was investigated the risk factors for intolerance to anti-TB drug regimen analysed. A retrospective survey of 124 patient files with proven TB who were hospitalized during 2004–2005 and treated with first line anti TB drugs was carried out. In total, 74 ADRs in 46 patients were identified. The currently available anti-TB drugs are associated with significant, sometimes serious, ADRs.

Key words: *anti-TB treatment, adverse drug reaction, tuberculosis, side effects*

APPLICATION OF GIS TECHNIQUES IN ASSESSMENT OF FOREST ACCESSIBILITY

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ABSTRACT

Application of geospatial technology has spread rapidly in recent years. Sustainable management and rational planning of management territory units comprise efficient extension and administration of road infrastructure. Forest roads construction for harvesting, operations and other services purposes has always been subjected to certain barriers and limitations. In implementation of intensive silvicultural practices, forest accessibility is of great importance. In Albania, the state determines the importance of valued accessibility in understanding both the present situation and the rational planning of an appropriate road network within a forest management unit.

GIS techniques are the appropriate tool to evaluate forest accessibility because of precision, rapidity and cost effectiveness. Here, GIS techniques were applied in the forests of Fushkuqe–Zavalina (Elbasan) for evaluation of forest accessibility. The implementation of the Hippoliti equation was used for assessing forest accessibility through database management units, georeferencing of topographic maps and satellite imagery.

Key words: ArcGIS 9, satellite imagery, forest accessibility, best path modelling, sustainable management.