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# ABSTRACTS BOOK

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# ABSTRACTS

## Curriculum Content Analysis of High School Biology, Chemistry and Geography Textbooks Based on Environmental literacy Approach in 2013- 2014 school Year

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**Abstract**
This research was conducted with the aim of studying the current condition of textbooks based on the amount of attention paid to components of Environmental literacy including knowledge, skill and environmental attitude. Research method was content analysis using Shannon's entropy technique and page analysis unit (text, questions, exercises, illustrations) was High School textbooks. Data collection tool was content analysis checklist, validity of which has been confirmed by environmental experts and curriculum designers. Results of data analysis indicated that More attention has been paid to environmental knowledge rather than environmental attitude or environmental skill and textbooks do not address environmental components equally. Based on the findings of this research, revising the curriculum content in high school curricula with regard to attention to components and indexes of Environmental literacy seems to be necessary.

Key words: curriculum, contentanalysis, environmental literacy

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## Role of teachers 'artistic skills in the improvement of teaching quality

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**Hossein Ahmadi,** Semnan University, Semnan, Iran

**Abstract**
In this paper, we examine the role of artistic abilities have been a teacher for teaching him. Given that teaching is a difficult and sensitive so use various tools it is important to improve the quality of teaching. One tool that can help the teacher is her abilities in the field of art. Having a beautiful handwriting, having a pleasant voice and having Theatrical abilities, can play an important role in the success of a teacher teaching. In this paper, examines the role of each teacher's teaching abilities are discussed. A good teacher also must be like an actor, because there may be an unpredictable condition in the class that perhaps the teacher isn't ready for that. The teacher should manage these conditions with a creative mind. Considering what that was said, having artistic skills plays an important role in increasing teaching efficiency. Three characters of a successful actor consist of the prepared body, accurate expression and creative mind. Every actor must be having a prepared body, and be able to control parts of his face, that are called mimic of face so-called acting, It is also the case for a teachers. Based on these statements, a teacher needs some kinds of skills and capacities for success in the teaching art.

Key words: Education, artistic abilities, Theatrical abilities, teacher.

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# Are Pre-service Science Teachers' Ethical Views on Genetic Issues Affected by Their Moral Values?

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**Abstract**
As teachers have an influential role on the lives of their students, the moral values they impart to their students will to a great extent determine the ethical decisions made by the students. The present study aimed to determine pre-service science teachers' ethical views and moral values in relation to some genetic issues and to determine the effect of their moral values on their ethical decisions.
In order to collect the data in the current study, a questionnaire that included items related to genetic issues and the Ethical Position Scale were employed. A positive and significant correlation was found between the pre-service science teachers' ($N$=255) total scores of their opinions about genetic applications or legal regulations and idealist (Pearson's r= 0.145, p= 0.05) or relativist (Pearson's r = 0.218, p = 0.01) moral values. The female participants were found to be more idealistic than the male participants and were found to have a greater tendency to make ethical decisions ($M_{female}$ = 42.22, $M_{male}$ = 40.85, t(2,193), $p < 0.05$).

Key words: Genetics, Ethics, Moral values, Pre-service teachers, Science education

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# NUMERICAL HEAT TRANSFER AND TURBULENT FLOW IN A CIRCULAR TUBE FITTED WITH OPENED RINGS HAVING SQUARE CROSS SECTION

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**Abstract**
In this study; heat transfer and thermal performance characteristics are numerically investigated in a steel tube of 50 cm long, outside diameter of 60 mm and inside diameter of 30 mm with constant outside surface temperature of 1000, 1200 and 1400 $K^o$. The renormalization group k-$\varepsilon$ model is used to simulate turbulence in ANSYS - FLUENT 14.5. The ribs assembly (5x5 mm cross section) were fitted in the tube and separated by 8cm pitch. Results of temperature and velocity distribution along the tube center line for the case of tube with internal ribs were compared with that of plain tube, these results show that the use of internal ribs enhance the heat transfer rate and found to possess the highest performance factors for turbulent flow.

Key words: CFD, heat transfer enhancement, cooling enhancement, internal ribs, turbulators and turbulent flow.

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# Teachers' Perception of Using GeoGebra in Teaching Mathematics in Malaysia

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**Abstract**

This quantitative study examined Malaysian teachers' perception towards using GeoGebra in teaching mathematics. Relationship between teachers' Perceived Usefulness (PU), Perceived Ease of Use (PEU), Perceived Current Competencies (PCC) of GeoGebra, and Intention to Use (IU) it as well as the variation of PU, PEU, PCC were investigated. To collect data, an online survey among 132 teachers who had already participated in GeoGebra workshops was employed. The results of correlation, t-test and multiple regression analysis revealed a positive relationship, and determined PU and PCC as two significant predictors for intention to use GeoGebra in the teaching of mathematics while PEU was found as an insignificant predictor. Additionally, while there was no significant difference between male and female teachers, a significant difference between users and non-users of GeoGebra was observed.

Key words: GeoGebra, Technology Acceptance Model, perceived usefulness, perceived ease of use, perceived current competence.

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# Optimization of high electron mobility transistors based on AlGaN/GaN for wide band applications by small-signal modeling

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**Abstract**

In this paper, we present a simple and reliable technique for determining the small-signal parameters for high electron mobility transistors based on AlGaN /GaN. The proposed method called "3D mixed" is used to extract the small equivalent circuit mode parameters analytically. Extraction of parasitic elements is performed for different size devices to show the scaling of these elements with the gate width. The model provides a good insight into the physical operation of the devices and led to devices optimization and performance prediction.

Key words: GaN high electron mobility transistor (HEMT), Wide band, Microwave, Small-signal model, Analytical model "mixed 3D".

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# Investigating of the relationship between pre-service teachers' self-esteem and stress coping attitudes

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**Abstract**
This study focused on the analysis about the relationship between pre-service teachers' self-esteem and attitudes of coping with stress. The sampling was consisted of 276 pre-service teachers studying at Hacettepe University. The data were collected through "Self-Esteem Inventory" developed by Coopersmith (1967), which was adapted to Turkish by Pişkin (1997) along with the "Inventory of Coping With Stress Attitudes" developed by Özbay (1993), which was adapted to Turkish by ve Şahin (1997). The ICWSA was consisted of 43 items with six factors and the Cronbach Alpha internal consistency coefficient was calculated as 0.81. The SEI was consisted of 25 items and Cronbach Alpha internal consistency coefficient was calculated as 0.86. The findings were used to evaluate the relationship between pre-service teachers' self-esteem and attitudes of coping with stress.

Key words: self-esteem, stress coping attitudes, pre-service teachers

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# An action research on teaching science through technology supported inquiry - based learning: a pilot study

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**Abstract**
The developed and developing countries are making an effort to enhance the quality of science education. Investments and research in this area are constantly increasing. The aim of this action research in which the teacher and the researcher were the same person aimed to make the science education more effective. The research was planned in two cycles. The first cycle consisted of identifying the problems, developing and implementing the action plan, gathering and analyzing the data, and evaluation. The participants of this first cycle were 6 students and a teacher. The first cycle that was also planned as the pilot study lasted about three months in the 2013-2014 school year. The study started with an identification of the existing problems. In order to address the problems encountered in the field, an action plan, including technology supported inquiry based learning, was developed and implemented. To evaluate the effectiveness of the implementation, quantitative (achievement tests) and qualitative (interviews, observations and documents) data were collected and analyzed. The results revealed that the first cycle of this action research will be used in developing an action plan for the second cycle to be implemented in the 2014-2015 school year.

Key words: science education, technology supported inquiry based learning, education in rural, action research.

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# The alternative physical conceptions in the subject of periodic motion among the Eleventh Grade Students in Sultanate of Oman

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**Abstract**

This study aimed to identify the alternative conceptions in the subject of periodic motion among the eleventh grade students in physics, and the percentage of prevalence of these alternative conceptions. In order to achieve the objectives of the study and answer its questions, a descriptive approach was used, and the researchers conducted a test for the detection of alternative physical perceptions. The study population consisted of the eleventh grade students enrolled in the first semester of the academic year 2013/2014 in the Sector of Saham state in North Batinah Governorate in Sultanate of Oman , and the study sample consisted of 121 students were randomly selected. The study found that the alternative conceptions of many fundamental physical concepts spread widely and vary such as: (the linear velocity, angular velocity, central acceleration, periodic time, frequency, amplitude, and mechanical resonance, etc.), and the popular spread of some of them may reach (82%). In the light of these results, the study provided a number of recommendations, most notably: the need for early detection of prevalent alternative conceptions among students in physics and training teachers on methods of discovering alternative conceptions and correcting them.

Key words: alternative conceptions, physics, periodic motion, the eleventh grade students

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# The Effect of Using Mathletics Program in the Development of Mathematical Talent among High School Students in Saudi Arabia

**Bothaina Badr,** UmmAl-Qura University, Makkah, Saudi Arabia

**Abstract**

This research paper aims at determining the effects of Mathletics program in the development of mathematical talent among high school students in Saudi Arabia. The steady growth of the global online learning has created inspiration to the education sector to consider it in their learning and teaching processes. Such attempts have been realized in Saudi Arabia. In this study, effects of Mathletics program have been determined by taking advantage of the new inclusion of mathematical instruction in high school education in Saudi Arabia. Thus, a sample of 60 students randomly selected from Makkah High School was randomly assigned to two experimental groups throughout 2013-1014 academic year. Data collected was within a ten-week period through pretest and protests equally developed for the two groups. The results of the study showed that using Mathletics program has a positive effect on the students' academic performance.

Key words:

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# Dyscalculia, Mathematics Education and Inclusion: the perception of teacher, students and parents

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**Abstract**
According to reports submitted by Italian schools, about 20% of primary school students encounter difficulties in number and calculation skills (5 out of 25) and problem solving (5-7 out of 25). Teachers often ascribe this to a non-diagnosed dyscalculia or a difficulty associated with a learning disability. However, the percentage of students diagnosed with learning disabilities seems to be in line with the percentage given by the IARLD (2005), which identifies the difficulties in mathematical cognition in comorbidity with other disorders to be 2.5% of the population and only 0.2% of those difficulties are attributed to dyscalculia. Most teachers' alerts therefore concern a learning difficulty rather than a specific disability (Lucangeli, 2006). We describe a study that we are implementing with 45 teachers and approximately 1,000 students of the region of Bologna, in order to identify tools to differentiate between learning difficulties and learning disability in mathematics, as well as teaching strategies for effective learning of all students in an inclusive school.

Key words: dyscalculia, mathematics education, ınclusion.

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# Optical Properties of (PVA-PEG-AgO) Nanocomposites

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**Abstract**
In this paper, the effect of silver oxide nanoparticles on optical properties of (PVA-PEG) Nano-composites has been investigated. The silver oxide nanoparticles were added to the polymers (polyvinyl alcohol 0.80 and polyethylene glycol 0.20) with weight percentages of (0, 2, 4, 6) wt.%. The optical properties of Nano-composites were measured in the wavelength range (200-800) nm. The experimental results show that the absorbance (A) of polymers mixture, absorption coefficient (α), extinction coefficient (k), refractive index (n) and real and imaginary dielectric constants (ε1 and ε2) are increasing with the increase of the weight percentages of silver oxide nanoparticles . The energy gap (Eg) of polymers is decreased with the increase of the silver oxide nanoparticles concentrations.

Key words: optical properties, nano-composites, PVA, silver oxide.

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# The relationship between pre-service teachers' self-esteem and emotional intelligence levels

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**Abstract**
This study was conducted to examine the relationship between chemistry preservice teachers' self-esteem and emotional intelligence levels. The sampling was consisted of 230 pre-service teachers studying at Hacettepe University, Faculty of Education. In order to reveal their self-esteem Self-Esteem Inventory was administered to chemistry preservice teachers. This inventory was developed by Coopersmith (1967) and adapted to Turkish by Pişkin (1997). The modified inventory was consisted of 25 items. The Cronbach Alpha internal consistency coefficient was calculated for the SEI as 0.86. To determine preservice teachers' EQ levels, Emotional Intelligence Scale developed by Schutte, Malouff, Hall, Haggerty, Cooper, Golden & Dornheim (1998), modified by Austin et.al. (2004) and translated into Turkish by Göçet (2006), was applied. The 5-point Likert-type scale was consisted of 37 items with three factors. The Cronbach Alpha internal consistency coefficient was calculated for the EIS as 0.81. The findings were used to evaluate the relationship between pre-service teachers' EQ levels and epistemological beliefs.

Key words: self-esteem, emotional intelligence level, preservice teacher

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# The development of science process skills in physics education

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**Abstract**
Ongoing reform of education in Slovakia had affected the teaching of physics by these main changes: inquiry – based teaching, the definition of science process skills in curriculum and focus on their importance before content standard. In this study we aimed to observe the development of these three types of science process skills: hypothesizing, interpretation of results and making conclusions. Total of nine test tasks (selected from external Science test) were presented to the group of 120 pupils from lower secondary school. The worst results were noticed for the hypothesizing (33%). We are aware of the limits in testing and distortion of gathered information. Therefore, we proposed model situation or real experiment related to six tests tasks. There is a form of feedback to get the correct answer which develops self assessment.

Key words: assessment, science process skills, hypothesising.

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# The influence of wind on the pantograph placed on the railway electric vehicles bodywork

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**Abstract**
The wind gusts with high speed can negative affect the operation of railway electric vehicles. These vehicles can achieve high performances, as long as the power supply is ensured, without discontinuities or interruptions in the process. This article is an analysis of how the wind gusts affect variation drag resistance to advancing caused by the pantograph and how they affect the supply of electricity required for vehicle movement. To this end, in a first step, we modeled geometrically in 3D EP3pantograph, which was raised to maximum working height. For simulation of air flow among the components of the collector (pantograph active) we considered how it is used and placed on the vehicle body. For analyze the effects caused by gusts of wind, we considered point values for angles within the range [0°, 180°] and speeds, a range of from 0 m/s to 30 m/s. This article is developed in programs postdoctoral studies at the University Politehnica of Bucharest.

Key words: pantograph, gusts of wind, air flow simulation.

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# Enhancement of Some Physical Properties For (PVA-PEG) Composites Polymer By Adding Aluminum Oxide Nanoparticles

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**Ahmed Hashim,** Ministry of Science and Technology, Iraq.

**Abstract**
In this paper, enhancement optical properties of (PVA-PEG) composites by adding Al2O3 nanoparticles to use the new nanocomposites in many applications such as: sensors, coatings, medical devices, solar cells.. etc.. The (PVA-PEG-Al2O3) nanocomposites are prepared by using casting method. The experimental results show that the absorbance (A) of (PVA-PEG-Al2O3) nanocomposites is increased with the increase of aluminum oxide nanoparticles concentrations. The optical constants of (PVA-PEG-Al2O3) nanocomposites (absorption coefficient (α), extinction coefficient (k), refractive index (n), real and imaginary dielectric constants (ε1 and ε2)) are increasing with the increase of the aluminum oxide nanoparticles. The energy gap (Eg) of (PVA-PEG-Al2O3) nanocomposites is decreased with the increase of the aluminum oxide nanoparticles concentrations.

Key words: aluminum oxide, absorbance, optical constants, nanocomposites.

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# Determining Attitudes and Anxiety Levels of Students in Need of Protection Towards Mathematics Course

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**Abstract**
The aim of the study is to investigate anxiety and attitude levels of students who are in need of protection towards mathematics course. Data of the study is obtained by applying " the scale of anxiety towards maths" and " the scale of attitudes towards maths" to total 8 students in the semester of 2013-2014 who are sixth, seventh and eighth grade students of SOS Kindergarten. It is shown by the results of the study that anxiety levels of students who need protection are high and they are hesitant in having attitude towards mathematics course. Also, suggestions are provided for these students in the light of findings.

Key words: Mathematics anxiety, attitudes towards Maths, children in need of protection.

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# Supply Chain Process and Green Business Activities: Application to Small and Medium Enterprises

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**Abstract**
Recently enterprises have started considering Green SCM (Supply Chain Management) for the purpose of securing competitive advantage over other enterprises because of the increase of international conventions related to the recent climate change, the strengthening of global regulations for environment protection, the demand for environmental suitability by stockholders and investors of enterprises and the consumer's preference for environment-friendly products. Green SCM is emerging as the strategy to preemptively cope with the environmental regulations. However, many small and medium enterprises are less aware of necessity of its adoption and are not ready to adopt it. This study investigates green business activities of small-medium enterprises and examines differences across SCM processes.

Key words: Green SCM, business activities, SCM process, business strategies, environment regulation

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# Influence resistance at advancing on fuel consumption for vehicles that use an internal source of energy

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**Abstract**
In the case of railway traction, an analysis on the influence the running resistance about the fuel consumption for the motors vehicles equipped with an internal source of energy(diesel engine or gas turbine) is necessary and from the perspective of the optimal way of their exploitation.
This paper aims to determine the influence they have the aerodynamic phenomena on the running resistance and therefore to the fuel consumption, in case of traction vehicles equipped with diesel motors which are operated by the railway companies in Romania.
To achieve the study, we considered the following vehicles: diesel electric locomotives LDE 060 DA of 2100 CP, LDE 060 DD of 4000 CP, LDE 060 EGM of 2100 CP, Carpathia DEM of 2300 CP and railcar Siemens Desiro.
The calculation of fuel consumption is achieved in case of a path segment with a length of 1000m. In this sector, the above-mentioned vehicles were analyzed in three distinct situations: when moving with the maximum design speed kept constant; when towing of maximum tonnage when moving a constant speed; and when it is in the process of starting.
This article is developed in the programs postdoctoral studies at the University Politehnica of Bucharest.

Key words: the running resistance, the fuel consumption, the rail vehicles with diesel motors.

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# Students' View of the Problems Faced with the Measurment and Evaluation System in the Secondary School Mathematics Education System

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**Abstract**
The main purpose of this study is to determine the problems that have been encountered in assessment and evaluation system of mathematics examinations in primary school learners' 6th, 7th and 8th grade students in the North Cyprus. Unstructured interviews were collected from 14 students who were studying in the 6th, 7th and 8th year of primary school. A qualitative research design was used to examine the student beliefs about evaluation and testing mathematics examinations. According to the findings, it showed that the lack of time devoted to mathematics examinations that teachers prepared for their students were insufficient. Students indicated that the scoring system and exam questions were inadequate. Exam questions were highly difficult with respect to the lecture given in the class and education program. Also, bonus points were not given in the examinations and exam papers not fairly scored by mathematics teacher, that because of the assessment and evaluation system.

Key words: Mathematic exams, assessment, evaluation system, students view

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# Mathematics Achievement Versus English Language Proficiency: The case of Bilingual Arab University Students

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**Abstract**
Many universities in the Arab world are gradually becoming English medium universities in place of the traditional Arabic medium. Therefore, students are now learning mathematics in English, a second language in which the students are currently acquiring. Understandably, students usually experience some problems when the medium of instruction changes from their native language to another one. This phenomenon in the case of mathematics education brings dire consequences if unchecked by mathematics educators. In this paper, we present our longitudinal study that investigates relationship between language proficiency and mathematics performance among bilingual Arab students who are studying at the university level. It was found that students' proficiency level in English language is a factor towards his performance in mathematics. The study confirmed the findings of many other studies in the same direction, and pave way for further investigation.

Key words: Mathematics, Language, Instruction, bilingualism, bilingual Arabs.

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# Contributions on the Pneumatic Cushions Vehicle

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**Abstract**
The pneumatic spring arches are used in different applications in order to eliminate vibrations and shocks (suspension vehicles and equipment) as actuators machinery, producing shocks and vibrations (presses, pneumatic hammers, looms, etc.). The pneumatic spring consists of a pliable rubber-reinforced metal elements fixed on or within the composite which is air which normally acts as a damping spring. In the generally the upper and lower steel elements are attached to the frame, so that not replaced. Besides comfort, has the advantage of allowing the vehicle to change the height depending on the dynamic stresses to which the material is subjected rolling stock. Diaphragm pneumatic actuators springs are easy to install and secure, thanks to their elasticity and flexibility, which allows a large vertical displacement. The metal plate fixation can be of two types: conical or crimped. When fixing the conical top plate is embedded in the membrane pressure and replacement of the latter can be reused. Attaching crimped arc prevents breakage from extreme stress. The upper plate is fixed through crimping on the edges of the membrane. The main advantages of pneumatic springs are allowing internal pressure variation to provide a high level of comfort while driving. It also allows the vehicle height control box to the path, or keeping constant load variation or change it automatically by dynamic loads occurring during the movement. Thanks to the special conformation of the pneumatic spring type circumvolut and the structure characteristic of the pneumatic spring with a reduced height to obtain a high run. Maintaining the operating conditions, reducing wear, achieving long operating period of the suspension system is determined by the operating conditions and the quality of the components which are included in the railway vehicle suspension.

Key words: circumvolut, wear, stress tension, air suspension

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# Development of new Ti-Mo-Fe alloys as biomaterial

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**Abstract**
Titanium and some of its alloys are known as being the most biocompatible metallic materials due to their high strength, low modulus, and high corrosion resistance in biological media. Besides other important material features, the corrosion parameters and corrosion products are responsible for limiting the biocompatibility of metallic materials, and can produce undesirable reactions in implant-adjacent and/or more distant tissues. Electrochemical corrosion behaviors of novel beta titanium alloys, Ti-4.7Mo-4.5Fe, Ti-3Mo-0.5Fe and Ti-2Mo-0.5Fe were characterized in naturally aerated Ringer's solution at room temperature compared with currently used biomedical titanium alloy, Ti-6Al-4V. The corrosion resistance of titanium alloys were investigated through open circuit potential (OCP), potentiodynamic polarization measurements and optical microscope (OM). A high corrosion resistance was obtained for all alloys due to the stable passive film formed on their surfaces. The new present alloys are promising metallic biomaterials for the future, owing to their very low elastic modulus and good corrosion resistance capabilities.

Key words: Titanium alloys, passive film, corrosion resistance, electrochemical Potentiodynamic.

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# b-g-compact in ditopological texture spaces

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**Abstract**
We introduce and study new notions of continuity, compactness and sta-bility in ditopological texture spaces based on the notions of b-g-open and b-g-closedsets and some of their characterizations are obtained.

Key words: Texture, difunction, b-g-bi-irresolute, b-g-stability.

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# The influence of air currents on people and facilities near railway

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**Abstract**
It is studied influence of the dynamic pressure of the air flow on people and equipment based on the methods that have been tested experimentally. It also analyzes the effects of pressure field on the surface of the vehicle in stationary and non-stationary regime. The article is experimental and allows some conclusions on the geometry constructions from near railway, while providing information on the harmful effects created by the dynamic pressure of the air in the vicinity of people. By using this study in the educational system of higher education, which was also achieved, it will allow a more accurate approach on rail adjacent space, both in terms of construction and technical staff as they serve.

Key words: dynamic pressure, pressure field on the surface, the air flow on people.

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# The Development of Spatial Skills through Discovering in the Geometrical Education at Primary School

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**Abstract**
There is a strong connection between 3-D and 2-D visualization of the geometrical shapes and solids. For better understanding of 3-D solids properties, it is important to have enough opportunities for manipulation with their 2-D representations, such are solid nets. According to the van Hiele´s theory, the development of geometrical thinking depends on the educational process, especially at school. We focused on the discovery activities with the 3rd and 7nd grade pupils at primary school. We chose the cube and its nets as the most familiar 3-D solid in this age. We preferred IBL pedagogies and manipulation with the Polydron as the geometric construction product. We present some analysis of pupils´ work and their results when they were finding, sorting and repairing the cube nets. Through presented activities, spatial skills and geometrical conceptions of pupils are developed.

Key words: Spatial skills, Geometrical thinking, Cube nets, Inquiry based learning.

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